

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
Imperfect physician assistant and physical therapist admissions processes in the United States	Jones, P. E., Simpkins, S., & Hocking, J. A	<i>Journal of Educational Evaluation for Health Professions</i>	2014	Jones, P. E., Simpkins, S., & Hocking, J. A. (2014). Imperfect physician assistant and physical therapist admissions processes in the United States. <i>Journal of educational evaluation for health professions</i> , 11 .	We compared and contrasted physician assistant and physical therapy profession admissions processes based on the similar number of accredited programs in the United States and the co-existence of many programs in the same school of health professions, because both professions conduct similar centralized application procedures administered by the same organization. Many studies are critical of the fallibility and inadequate scientific rigor of the high-stakes nature of health professions admissions decisions, yet typical admission processes remain very similar. Cognitive variables, most notably undergraduate grade point averages, have been shown to be the best predictors of academic achievement in the health professions. The variability of non-cognitive attributes assessed and the methods used to measure them have come under increasing scrutiny in the literature. The variance in health professions students' performance in the classroom and on certifying examinations remains unexplained, and cognitive considerations vary considerably between and among programs that describe them. One uncertainty resulting from this review is whether or not desired candidate attributes highly sought after by individual programs are more student-centered or graduate-centered. Based on the findings from the literature, we suggest that student success in the classroom versus the clinic is based on a different set of variables. Given the range of positions and general lack of reliability and validity in studies of non-cognitive admissions attributes, we think that health professions admissions processes remain imperfect works in progress.	Education	
The Accelerated Physician Assistant Pathway: A Three-Year Medical School Curriculum for Physician Assistants to Obtain DO Degrees	Kauffman, M., & Ferretti, S. M.	<i>Academic medicine: journal of the Association of American Medical Colleges</i>	2014	Kauffman, M., & Ferretti, S. M. (2014). The Accelerated Physician Assistant Pathway: A Three-Year Medical School Curriculum for Physician Assistants to Obtain DO Degrees. <i>Academic medicine: journal of the Association of American Medical Colleges</i> .	Problem: To address physician shortages, many have called for medical schools to increase their applicant pool size by broadening their selection criteria. Physician assistants (PAs) are one group that has demonstrated competency and medical knowledge. However, financial and time barriers exist to their applying to traditional four-year programs.	Education	
Nurse practitioner and physician assistant scope of practice in 118 acute care hospitals	Kartha, A., Restuccia, J. D., Burgess, J. F., Benzer, J., Glasgow, J., Hockenberry, J., ... & Kaboli, P. J.	<i>Journal of Hospital Medicine</i>	2014	Kartha, A., Restuccia, J. D., Burgess, J. F., Benzer, J., Glasgow, J., Hockenberry, J., ... & Kaboli, P. J. (2014). Nurse practitioner and physician assistant scope of practice in 118 acute care hospitals. <i>Journal of Hospital Medicine</i> .		Workforce	
A comparison of outcomes of general medical inpatient care provided by a hospitalist-physician assistant model vs a traditional resident-based model	Singh, S., Fletcher, K. E., Schapira, M. M., Conti, M., Tarima, S., Biblo, L. A., & Whittle, J	<i>Journal of Hospital Medicine</i>	2011	Singh, S., Fletcher, K. E., Schapira, M. M., Conti, M., Tarima, S., Biblo, L. A., & Whittle, J. (2011). A comparison of outcomes of general medical inpatient care provided by a hospitalist-physician assistant model vs a traditional resident-based model. <i>Journal of Hospital Medicine</i> , 6(3), 122-130.	Approach: The authors designed a three-year accelerated curriculum for PAs to obtain DO degrees. Over the summer, after their first year of didactic instruction, students complete two 4-week primary care clinical clerkships. The second year of didactic study is followed by additional clinical clerkships, for a total of 138 weeks of instruction-82 weeks of didactic instruction, which is identical to that of the traditional curriculum, and 56 weeks of clinical clerkships.	Education	
The effect of early geriatric exposure upon career development and subspecialty selection among physician assistant students	Swanchak, L., Terry, K., & George, J	<i>The journal of physician assistant education</i>	2011	Swanchak, L., Terry, K., & George, J. (2011). The effect of early geriatric exposure upon career development and subspecialty selection among physician assistant students. <i>The journal of physician assistant education</i> : 23(1), 13-18.		Practice	
Nurse Practitioner/Physician Assistant Staffing and Critical Care Mortality	Costa, D. K., Wallace, D. J., Barnato, A. E., & Kahn, J. M	<i>CHEST Journal</i>	2014	Costa, D. K., Wallace, D. J., Barnato, A. E., & Kahn, J. M. (2014). Nurse Practitioner/Physician Assistant Staffing and Critical Care Mortality. <i>CHEST Journal</i> .	Outcomes: The inaugural class of 7 students matriculated in July 2011. In the first three years, 25 students joined the program. Mean age at matriculation is 31.8 years compared with the national mean of 25 years. Mean length of clinical practice before matriculation is 5.4 years. The inaugural class completed the COMLEX-USA Level 1 exam, achieving a 100% pass rate with a mean score 96 points above the national mean.	Education	

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Implementation of the Physician Assistant in Dutch Health Care Organizations: Primary Motives and Outcomes	van Vught, A. J., van den Brink, G. T., & Wobbes, T.	<i>The health care manager</i>	2014	van Vught, A. J., van den Brink, G. T., & Wobbes, T. (2014). Implementation of the Physician Assistant in Dutch Health Care Organizations: Primary Motives and Outcomes. <i>The health care manager</i> , 33 (2), 149-153.		international	
Physician assistant and nurse practitioner utilization in academic medical centers	Moote, M., Krsek, C., Kleinpell, R., & Todd, B	<i>American Journal of Medical Quality</i>	2011	Moote, M., Krsek, C., Kleinpell, R., & Todd, B. (2011). Physician assistant and nurse practitioner utilization in academic medical centers. <i>American Journal of Medical Quality</i> , 26(6), 452-460.	Next Steps: The authors will assess students' residency placements to gauge the medical community's reaction to the accelerated curriculum. They also recommend that alternatives to the existing admission requirements be considered. This program removes many barriers to PAs returning to medical school and expands the applicant pool by adding candidates with clinical experience, helping to address primary care physician shortages.	Workforce	
The physician assistant: Shifting the Paradigm of European medical practice?	Merkle, F., Ritsema, T. S., Bauer, S., & Kuilman, L	<i>HSR proceedings in intensive care & cardiovascular anesthesia</i>	2011	Merkle, F., Ritsema, T. S., Bauer, S., & Kuilman, L. (2011). The physician assistant: Shifting the Paradigm of European medical practice?. <i>HSR proceedings in intensive care & cardiovascular anesthesia</i> , 3(4), 255.		international	
Physician assistants in the United Kingdom: an initial profile of the profession	Ritsema, T. S., & Paterson, K. E	<i>Journal of the American Academy of Physician Assistants</i>	2011	Ritsema, T. S., & Paterson, K. E. (2011). Physician assistants in the United Kingdom: an initial profile of the profession. <i>Journal of the American Academy of Physician Assistants</i> , 24(10), 60.		Workforce	
Physician assistants in English primary care teams: a survey	Drennan, V. M., Chattopadhyay, K., Halter, M., Brearley, S., de Lusignan, S., Gabe, J., & Gage, H	<i>Journal of interprofessional care</i>	2012	Drennan, V. M., Chattopadhyay, K., Halter, M., Brearley, S., de Lusignan, S., Gabe, J., & Gage, H. (2012). Physician assistants in English primary care teams: a survey. <i>Journal of interprofessional care</i> , 26(5), 416-418.	Inpatient care provided by H-PA teams was associated with a 6.73% longer LOS (P = 0.005) but charges, risk of readmission at 7, 14, and 30 days and inpatient mortality were similar to resident-based teams. The increase in LOS was dependent on the time of admission of the patients.	Practice	
Satisfaction of doctors with the role of physician associates	Williams, L. E., & Ritsema, T. S	<i>Clinical Medicine</i>	2014	Williams, L. E., & Ritsema, T. S. (2014). Satisfaction of doctors with the role of physician associates. <i>Clinical Medicine</i> , 14(2), 113-116.		Value/Impact	
A systematic review: The role and impact of the physician assistant in the emergency department	Doan, Q., Sabhaney, V., Kissoon, N., Sheps, S., & Singer, J	<i>Emergency Medicine Australasia</i>	2011	Doan, Q., Sabhaney, V., Kissoon, N., Sheps, S., & Singer, J. (2011). A systematic review: The role and impact of the physician assistant in the emergency department. <i>Emergency Medicine Australasia</i> , 23(1), 7-15.		Workforce	
The future role of physician assistants in prepaid group practice health maintenance organizations	Johnson RE, Hooker RS, Freeborn DK	<i>J Am Academy of Physician Assistants</i>	1988	Johnson RE, Hooker RS, Freeborn DK. The future role of physician assistants in prepaid group practice health maintenance organizations. <i>J Am Acad Physician Assistants</i> . 1988; 1(2): 88-90.	H-PA team-based GM inpatient care was associated with a higher LOS but similar charges, readmission rates, and inpatient mortality to traditional resident-based teams, a finding that persisted in sensitivity analyses. <i>Journal of Hospital Medicine</i> 2011. © 2011 Society of Hospital Medicine.	Practice	
A comparison of rank and pay structure for military physician assistants	Hooker RS	<i>J Am Academy of Physician Assistants</i>	1989	Hooker RS. A comparison of rank and pay structure for military physician assistants. <i>J Am Acad Phys Asst</i> . 1989; 2(4): 293-300.			
The Preceptorship	Hooker RS	<i>Perspective on Physician Assistant Education</i>	1990	Hooker RS. The Preceptorship. <i>Perspective on Physician Assistant Education</i> . 1990; 2 (1): 4-5		Education	
"The Use of Physician Extenders in Nursing Homes: A Review"	Aaronson, W. E.	<i>Medical Care Review</i>	1991	Aaronson, W. E. (1991). The use of physician extenders in nursing homes: A review. <i>Medical Care Review</i> , 48, 411-447.		Workforce	
The military physician assistant	Hooker RS.	<i>Military Medicine</i>	1991	Hooker RS. The military physician assistant. <i>Military Medicine</i> ; 1991; 156(12): 657-660.			
The use of physician assistants in a managed health care system	Hooker RS, Freeborn D	<i>Public Health Reports</i>	1991	Hooker RS, Freeborn D. The use of physician assistants in a managed health care system. <i>Public Health Reports</i> . 1991; 106(1):90-93.			
"Is There a Role for Physician Extenders in Nursing Homes?"	Aaronson, W. E.	<i>Journal of Long Term Care Administration</i>	1992	Aaronson, W. E. (1992). Is there a role for physician extenders in nursing homes? <i>Journal of Long Term Care Administration</i> , 20(3), 18-22.		Workforce	
"Nonphysician Practitioners Panel Report"	Alexander, B. J., & Lipscomb, J.	<i>Physician Staffing for the VA</i>	1992	Alexander, B. J., & Lipscomb, J. (1992). Nonphysician practitioners panel report. In: J. Lipscomb & B. J. Alexander (Eds.), <i>Physician Staffing for the VA</i> . National Academy Press, Washington, DC.	The paper explores the potential impact if VA significantly expanded its use of Non-Physician Providers in ambulatory care and long-term care and how it would effect quality of care.	Value/Impact	

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"Federal Health Policy and PAs"	Cawley, J. F.	<i>Journal of the American Academy of Physician Assistants</i>	1992	Cawley, J. F. (1992). Federal health policy and PAs. <i>Journal of the American Academy of Physician Assistants</i> , 5 (9), 679–688.	A review of federal health workforce policy as it pertains to the physician assistant profession. Discusses the impact of the establishment of Title VII, section 747, funding for PA educational programs through the Division of Primary Care of the Health Resources and Services Administration, the passage of authorization of Medicare reimbursement for PA-provided services, and the 1977 Rural Health clinics Act.	Workforce	
"A Quarter Century of Surgical Physician Assistants"	Condit, D.	<i>Physician Assistant</i>	1992	Condit, D. (1992). A quarter century of surgical physician assistants. <i>Physician Assistant</i> , 15 (4), 3–13.		History	
"Physician Extenders Increase Healthcare Access"	Drozda, P. F.	<i>Health Progress</i>	1992	Drozda, P. F. (1992). Physician extenders increase healthcare access. <i>Health Progress</i> , 73 (4), 46–48, 74.	To ensure rural residents access to primary care services, Saint Vincent Hospital and Health Center, Billings, MT, operates five physician-operated clinics, located between 8 and 81 miles from Billings. Two of the clinics are in communities that are not large enough to sustain a physician practice, so they are staffed by certified physician assistants (PA-Cs). Licensed and practicing with supervision of a physician, PAs provide a variety of patient care services in virtually every medical specialty and environment. One-third of the nation's PAs work in primary care health professional shortage areas, providing services comparable to those of a family practitioner. National studies reveal a high degree of satisfaction among both consumers and supervising physicians regarding the level of care provided by PAs. Professional liability claims against PAs are fewer than those against physicians, probably because of the higher degree of communication and attention patients receive as a result of the team approach. PAs can increase patient contact hours, decrease waiting times, and improve access to care overall. In addition, PA utilization is a cost-effective approach to healthcare delivery.	Workforce	
"Gatekeeping Revisited: Protecting Patients from Overtreatment"	Franks, P., Clancy, C. M., & Nutting, P. A.	<i>New England Journal of Medicine</i>	1992	Franks, P., Clancy, C. M., & Nutting, P. A. (1992). Gatekeeping revisited: Protecting patients from overtreatment. <i>New England Journal of Medicine</i> , 327 (21), 424–429.		Practice	
"Access to Rural Health Care: Barriers to Practice for Non Physician Providers"	Hansen, C.	<i>Rockville, MD: Bureau of Health Professions, Health Resources and Services Administration</i>	1992	Hansen, C. (1992). Access to rural health care: Barriers to practice for nonphysician providers. <i>Rockville, MD: Bureau of Health Professions, Health Resources and Services Administration (HRSA-240-89-0037), Department of Health and Human Services.</i>		Practice	
"Employment Specialization in the PA Profession"	Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	1992	Hooker, R. S. (1992). Employment specialization in the PA profession. <i>Journal of the American Academy of Physician Assistants</i> , 5 (8), 695–704.	Early discourse on the division of the PA profession from generalist role to more specialized such as surgery, medical subspecialties (e.g., rheumatology, endocrinology, etc.).	Practice	
"Nurse Practitioners and Physician Assistants: Are They the Same?"	Huch, M. H.	<i>Nursing Science Quarterly</i>	1992	Huch, M. H. (1992). Nurse practitioners and physician assistants: Are they the same? <i>Nursing Science Quarterly</i> , 5 (2), 52–53.	This article presents a brief background on the development of PA and NP roles. According to the author, the preparation of the nurse practitioner is grounded in multiple theories, including nursing theory, while the physician assistant program focuses more specifically on medical tasks and their underlying principles. One major similarity is that the medically related functions of each practitioner must be approved and sanctioned by a physician. The author recommends continued study on the scope of practice of nurses in order to clearly delineate practice differences.	Practice	
"PA-C vs. OPA-C"	Kappes, T. J.	<i>Journal of the American Academy of Physician Assistants</i>	1992	Kappes, T. J. (1992). PA-C vs. OPA-C . . . "Physician Assistant-Certified" . . . American Society of Orthopaedic Physician Assistants. <i>Journal of the American Academy of Physician Assistants</i> , 5 (1), 70–71.		Education	

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"The Potential for Using Non-Physicians to Compensate for the Reduced Availability of Residents"	Knickman, J. R., Lipkin, M., Jr., Finkler, S. A., Thompson, W. G., & Kiel, J.	<i>Academic Medicine</i>	1992	Knickman, J. R., Lipkin, M., Jr., Finkler, S. A., Thompson, W. G., & Kiel, J. (1992). The potential for using non-physicians to compensate for the reduced availability of residents. <i>Academic Medicine</i> , 67(7), 429-438.	Both the number of residents and the amount of time existing residents have in which to carry out their activities may soon be decreasing. To consider the potential for alternative ways of staffing teaching hospitals, it is necessary to know how residents spend their time. The authors sought to learn this by conducting a time-motion study of eight internal medicine residents at two urban hospitals in New York City in 1988. The residents' activities were observed and coded by premedical students, and the authors independently classified the possible activities into (1) those that had to be done by a physician, (2) those that were educational only, and (3) those that could be done by a non-physician. A total of 1,726 activities of 67 kinds were coded, averaging 7.75 minutes each. The authors analyze and project their data using two models--the traditional model of care in which the physician is the primary medical manager of the patient, and an alternative model in which a midlevel practitioner, such as a nurse practitioner, would perform the day-to-day monitoring of patients. For example, the data indicate that in the traditional model, almost half of a resident's time is spent in activities that must be done by a physician, meaning that another kind of physician would be needed to do those activities if the resident were unavailable; but in the midlevel practitioner model, only around 20% of the activities would require a physician. The authors give detailed breakdowns of their data, estimate the kinds and numbers of non-physician health care professionals necessary to substitute for residents in appropriate activities, and review possible difficulties in implementing such substitutions.	Practice	
"Physician Assistants in Gastroenterology: Should They Perform Endoscopy?"	Lieberman, D. A., & Ghormley, J. M.	<i>American Journal of Gastroenterology</i>	1992	Lieberman, D. A., & Ghormley, J. M. (1992). Physician assistants in gastroenterology: Should they perform endoscopy? <i>American Journal of Gastroenterology</i> , 87(8), 940-943.	New technology and increased screening examinations continue to cause the demand for gastrointestinal endoscopic procedures to mushroom. Hospitals administered by the Department of Veterans Affairs, public health care facilities, and health maintenance organizations struggle to meet this demand because of limited resources for expansion of space or staff. For the past 3 yr, we have used a physician assistant in our endoscopy laboratory to assist with and perform endoscopic procedures. The benefits for our hospital include increased staff efficiency, improved housestaff education, and ability to perform an increased number of procedures with existing staff.	Practice	
"Physician Extenders: Who Is Using Them?"	Mainous, A. G., III, Bertolino, J. G., & Harrell, P. L.	<i>Family Medicine</i>	1992	Mainous, A. G., III, Bertolino, J. G., & Harrell, P. L. (1992). Physician extenders: Who is using them? <i>Family Medicine</i> , 24(3), 201-204.	The purpose of this research was to determine the proportion of adults who have received health care from physician extenders. This study used the subject population of the 1990 Kentucky Health Survey, a probability survey of all households in Kentucky. Results showed that of 687 participating subjects, 25% had received care from physician extenders during the previous two years, primarily for minor problems and routine checkups. More than 90% of these subjects reported satisfaction with the care they received. Users of physician extenders did not differ from nonusers with respect to income, education, insurance status, self-assessment of health status, or rural versus urban location. Men used physician extenders more frequently than women.	Practice	
"Physician's Assistants in Vascular and Interventional Radiology [Letter, Comment]"	McCowan, T. C., Goertzen, T. C., Lieberman, R. P., LeVeen, R. F., & Martin, V. A.	<i>Radiology</i>	1992	McCowan, T. C., Goertzen, T. C., Lieberman, R. P., LeVeen, R. F., & Martin, V. A. (1992). Physician's assistants in vascular and interventional radiology [Letter; Comment]. <i>Radiology</i> , 184(2), 582.		Practice	
"An Expanded Role for the Physician Assistant"	Meikle, T. H.	Washington, DC: Association of Academic Health Centers	1992	Meikle, T. H. (1992). <i>An Expanded Role for the Physician Assistant</i> . Washington, DC: Association of Academic Health Centers.		Workforce	

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"Profiles in Caring: PAs as Primary Care Providers for Poor and Underserved Children"	Rada-Sidinger, P., & Connor, P.	<i>Journal of the American Academy of Physician Assistants</i>	1992	Rada-Sidinger, P., & Connor, P. (1992). Profiles in caring: PAs as primary care providers for poor and underserved children. <i>Journal of the American Academy of Physician Assistants</i> , 5 (10), 784–789.		Practice	
"Must America Look to Non-Doctors for Primary Care? [interview by Mark Holoweiko]"	Schroeder, S. A.	<i>Medical Economics</i>	1992	<i>Journal of Medical Education</i> , 53 , 661–666. Schroeder, S. A. (1992). Must America look to non-doctors for primary care? [interview by Mark Holoweiko]. <i>Medical Economics</i> , 69(24), 82–87.		Workforce	
"Physicians' Assistants Doing Endoscopy?"	Smith, J. L.	<i>American Journal of Gastroenterology</i>	1992	Smith, J. L. (1992). Physicians' assistants doing endoscopy? [Editorial]. <i>American Journal of Gastroenterology</i> , 87 (8), 937–939.	Editorial	Practice	
"The FMG Debate Continues...Foreign Medical Graduate"	Stanhope, W. D., Fasser, C. E., & Cawley, J. F.	<i>Journal of the American Academy of Physician Assistants</i>	1992	Stanhope, W. D., Fasser, C. E., & Cawley, J. F. (1992). The FMG debate continues . . . Foreign medical graduate. <i>Journal of the American Academy of Physician Assistants</i> , 5 (8), 612–614.		International	
"A Survey of Minnesota Physicians Regarding Delegation of Prescriptive Practice to PAs"	Zellmer, M. R.	<i>Journal of the American Academy of Physician Assistants</i>	1992	Zellmer, M. R. (1992). A survey of Minnesota physicians regarding delegation of prescriptive practice to PAs. <i>Journal of the American Academy of Physician Assistants</i> , 5(8), 582–586.	Physicians supervising members of the Minnesota Academy of Physician Assistants (MAPA) were surveyed to determine their support for delegated prescriptive practice for physician assistants. MAPA fellow members developed a legislative proposal for delegated prescribing and asked supervising physicians to complete response cards indicating their opinion of the proposal. More than 90% of physicians responding strongly supported the proposed legislation. Similar studies in other states may help PAs develop and successfully pas prescriptive practice legislation.	Practice	
Employment specialization in the PA profession	Hooker, RS	<i>J Am Academy of Physician Assistants</i>	1992	Hooker, RS. Employment specialization in the PA profession. <i>J Am Acad Phys Assistants</i> . 1992; 5(8): 695-704		Practice	
"PA-C: PA-SEE or Passe"	Begeley, B.	<i>Journal of the American Academy of Physician Assistants</i>	1993	Begeley, B. (1993). PA-C: PA-SEE or passe, <i>Journal of the American Academy of Physician Assistants</i> , 4(4) , 297.			
"The Business of Clinical Practice"	Blaser, L.	<i>Journal of the American Academy of Physician Assistants</i>	1993	Blaser, L. (1993). The business of clinical practice. <i>Journal of the American Academy of Physician Assistants</i> , 6, 402-406.		Workforce	

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"The Impact of Physician Attitudes on Patient Satisfaction with Care for Low Back Pain"	Bush, T., Cherkin, D., & Barlow, W.	<i>Archives of Family Medicine</i>	1993	Bush, T., Cherkin, D., & Barlow, W. (1993). The impact of physician attitudes on patient satisfaction with care for low back pain. <i>Archives of Family Medicine</i> , 2 (3), 301–305.	This report investigated whether patient satisfaction was related to physicians' confidence in their abilities to effectively manage low back pain, and to examine their attitudes about patients with back pain. The confidence and attitudes of primary care providers were determined using self-administered questionnaires. Patient satisfaction with care was assessed during telephone interviews conducted 3 weeks after a clinic visit for low back pain. The study was conducted in a primary care clinic of a large health maintenance organization. Completed surveys were obtained from 21 primary care providers (18 physicians and three physician assistants) and 270 of their patients with low back pain. Three satisfaction scales specific to low back pain were used to measure patient satisfaction with regard to information received from provider, caring, and effectiveness of treatment. The results showed that the providers' attitudes about patients with low back pain were not associated with any of the patient satisfaction measures. However, patients of more confident providers were significantly more satisfied with the information they received than were patients of less confident providers. These differences could not be explained by years in practice, length of visit, patient demographics, or the severity and duration of low back pain. These findings suggest that providers who have more confidence in their abilities to effectively manage low back pain may in fact be more effective patient educators.	Value/Impact	
"Forensic Pathology and the PA [Letter to the Editor]"	Cardenas, A. P.	<i>Journal of the American Academy of Physician Assistants</i>	1993	Cardenas, A. P. (1993). Forensic pathology and the PA [Letter to the editor]. <i>Journal of the American Academy of Physician Assistants</i> , 6, 77.		Practice	
"Our Military Heritage...The Physician Assistant Profession"	Condit, D.	<i>Physician Assistant</i>	1993	Condit, D. (1993). Our military heritage . . . The physician assistant profession. <i>Physician Assistant</i> , 17 (11), 58–62.		History	
"Training Doctors for the Future: Lessons from 25 Years of Physician Assistant Education"	Estes, E. H., Jr.	<i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i>	1993	Estes, E. H., Jr. (1993). Training doctors for the future: Lessons from 25 years of physician assistant education. In D. K. Clawson & M. Osterweis (Eds.), <i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i> . Washington, DC: Association of Academic Health Centers.		Education	
"Oral Testimony Before the Physician Payment Review Commission"	Foreman, S.	<i>Washington DC: Physician Payment Review Commission</i>	1993	Foreman, S. (1993). <i>Oral Testimony Before the Physician Payment Review Commission</i> . Washington, DC: Physician Payment Review Commission.		Workforce	
"Health Care Access: Innovative Programs Using Nonphysicians"	General Accounting Office	<i>GAO/HRD-93-128, General Accounting Office</i>	1993	General Accounting Office. (1993). <i>Health care access: Innovative programs using nonphysicians</i> . GAO/HRD-93-128, General Accounting Office.		Workforce	
"The Changing Medical Profession: An International Perspective"	Hafferty, F. W., & McKinley, J. B.	<i>New York: Oxford University Press</i>	1993	Hafferty, F. W., & McKinley, J. B. (Eds.). (1993). <i>The Changing Medical Profession</i> . New York: Oxford University Press.		History	
"Effect of Nurse-Client Transaction on Female Adolescents' Oral Contraceptive Adherence"	Hanna, K. M.	<i>Image Journal of Nursing Scholarship</i>	1993	Hanna, K. M. (1993). Effect of nurse-client transaction on female adolescents' oral contraceptive adherence. <i>Image Journal of Nursing Scholarship</i> , 25(4), 285–290.	An experimental study was conducted to test the effect of a nurse-client transactional intervention (King, 1981) on 51 female adolescents' oral contraceptive adherence. Subjects were randomly assigned to a control or an experimental group. Both groups experienced the clinics' contraceptive teaching. Subjects in the experimental group experienced the transactional intervention. Contraceptive perceptions were measured immediately post-intervention and at the three-month follow-up. Oral contraceptive adherence was measured at the three-month follow-up. Female adolescents who experienced the transactional intervention had greater levels of oral contraceptive adherence than those who had not.	Practice	

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"Occupational Stress Among Physician Assistants"	Holmes, S. E., & Fasser, C. E.	<i>Journal of the American Academy of Physician Assistants</i>	1993	Holmes, S. E., & Fasser, C. E. (1993). Occupational stress among physician assistants. <i>Journal of the American Academy of Physician Assistants</i> , 6(3), 172-178.		Value/Impact	
The Roles of Physician Assistants and Nurse Practitioners in a Managed Care Organization	Hooker, R. S.	<i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i>	1993	Hooker, R. S. (1993). The roles of physician assistants and nurse practitioners in a managed care organization. In D. K. Clawson & M. Osterweis (Eds.), <i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i> . Washington, DC: The Association of Academic Health Centers.	Describes physician, PA and NP similarity and differences in roles in Kaiser Permanente Northwest Region.	Workforce	
"The Name Game"	Mastrangelo, R.	<i>ADVANCE for Physician Assistants</i>	1993	Mastrangelo, R. (1993). The name game. <i>ADVANCE for Physician Assistants</i> , 1 (3), 13.			
"Doctors, Dollars, and Determination: Making Physician Work-Force Policy"	Mullan, F., Rivo, M. L., & Politzer, R. M.	<i>Health Affairs</i>	1993	Mullan, F., Rivo, M. L., & Politzer, R. M. (1993). Doctors, dollars, and determination: Making physician work-force policy. <i>Health Affairs (Milwood)</i> , 12 (suppl), 138-151.	Because managed care is likely to feature prominently in a reformed health care system, policymakers need to examine the impact managed care will have on medical practice, physician supply, and access to primary care providers. Goals for work-force reform should focus on five areas: (1) training physicians in the generalist disciplines of family practice, general internal medicine, and general pediatrics; (2) shaping the physician work force to reflect the nation's ethnic diversity; (3) distributing physicians in a geographically equitable way; (4) maintaining the current physician-to-population ratio rather than letting it continue to grow; and (5) establishing supply needs for nurse practitioners, primary care physician assistants, and certified nurse midwives.	Workforce	
"Enhancing the Utilization of Nonphysician Services"	Office of Inspector General, Office of Enhancement and Inspection.	<i>New York: Department of Health and Human Services</i>	1993	Office of Inspector General, Office of Enhancement and Inspection. (1993). <i>Enhancing the utilization of nonphysician services</i> . New York: Department of Health and Human Services.	This report presents case studies on how three health care organizations are working to enhance the utilization of nonphysician health care providers. Evercare, a managed care delivery system in Minneapolis, illustrates how nurse practitioners working in collaboration with physicians can enhance the delivery of care to nursing home residents. St. Joseph's Hospital of Atlanta is using professional and nonprofessional hospital staff on two units to deliver more patient care services directly at the bedside. Chicago's Mercy Hospital and Medical Center is training nonprofessional workers to perform technical tasks and to work in permanent teams with registered nurses in a hospital-wide expansion of the hospital's nursing service.	Workforce	
"Physician Assistant Education: A Review of Program Characteristics by Sponsoring Institution"	Oliver, D. R.	<i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i>	1993	Oliver, D. R. (1993). Physician assistant education: A review of program characteristics by sponsoring institution. In D. K. Clawson & M. Osterweis (Eds.), <i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i> . Washington, DC: Association of Academic Health Centers.		Education	
"Roles and Functions of Non-Physician Practitioners in Primary Care"	Starfield, B. H. (Osterweis, M., & Garfinkel, S. as Editors)	<i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i>	1993	Osterweis, M., & Garfinkel, S. (1993). Roles and functions of non-physician practitioners in primary care. In D. K. Clawson & M. Osterweis (Eds.), <i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i> . Washington DC: Association of Academic Health Centers.		Workforce	
"Health Professions Education in the Future: Schools in Service to the Nation"	Pew Health Professions Commission.	<i>San Francisco: Center for the Health Professions</i>	1993	Pew Health Professions Commission. (1993). <i>Health Professions Education in the Future: Schools in Service to the Nation</i> . San Francisco: Center for the Health Professions.		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"PAs in Cardiothoracic Surgery"	Rothwell, W.	<i>Journal of the American Academy of Physician Assistants</i>	1993	Rothwell, W. (1993). PAs in cardiothoracic surgery. <i>Journal of the American Academy of Physician Assistants</i> , 6(2), 150–157.		Practice	
"Fatigue Associated with Congestive Heart Failure"	Schaefer, K. M., & Potylycki, M. J. S.	<i>Journal of Advanced Nursing</i>	1993	Schaefer, K. M., & Potylycki, M. J. S. (1993). Fatigue associated with congestive heart failure. <i>Journal of Advanced Nursing</i> , 18, 260–268.	This study aimed to refine and extend the findings of an original study which focused on the description of fatigue associated with congestive heart failure. A descriptive approach based on Levine's Conservation Model provided both quantitative and qualitative data. Qualitative data addressed personal integrity and quantitative data measured energy conservation, structural and social integrity. Patients described fatigue as being tired and exhausted and containing both physical and emotional components. Fatigue occurred as a result of stress, physical activity and disease. Patient-identified interventions included rest, distraction, medicine, and physical and spiritual activities. Age, pH and oxygen saturation were significantly related to fatigue. The findings are examined using the concept of adaptation as defined by Levine. Implications for nursing are discussed within the framework of the Conservation Model with emphasis on a holistic approach to patient care.	Practice	
"The Determinants of Utilization of Nonphysician Providers in Rural Community and Migrant Health Centers"	Shi, L., Samuels, M. E., Konrad, T. R., Ricketts, T. C, Stoskopt, C. H., & Richter, D. L.	<i>Journal of Rural Health</i>	1993	Shi, L., Samuels, M. E., Konrad, T. R., Ricketts, T. C, Stoskopt, C. H., & Richter, D. L. (1993). The determinants of utilization of nonphysician providers in rural community and migrant health centers. <i>Journal of Rural Health</i> , 9(1), 27–39.	The use of nonphysician providers, such as nurse practitioners, physician assistants, and certified nurse midwives, in rural areas is critically important due to the continued primary care access problems. This study examines the major factors influencing the use of nonphysician providers in rural community and migrant health centers based on a 1991 national survey of the centers. This study demonstrates that the employment of nonphysician providers in rural community and migrant health centers is significantly influenced by both supply and demand factors. Among supply factors, there is a significant and positive relationship between the number of total staff and the number of nonphysician providers employed. There is a significant but inverse relationship between the number of physicians and the number of nonphysician providers employed, indicating nonphysician providers primarily serve as substitutes for physicians in rural community and migrant health centers. The supply of nonphysician providers, as measured by the number of affiliated training programs, is significantly related to the employment of nonphysician providers. The demand variable, geographic location, and the centers' staffing policies are also significant determinants of the use of nonphysician providers.	Practice	
"Barriers to PA Practice in Primary Care and Rural Medically Underserved Areas"	Willis, J. B.	<i>Journal of the American Academy of Physician Assistants</i>	1993	Willis, J. B. (1993). Barriers to PA practice in primary care and rural medically underserved areas. <i>Journal of the American Academy of Physician Assistants</i> , 6(6), 418–422.		Practice	
"Status of Clinical and Academic Emergency Medicine at 111 Veterans Affairs Medical Centers"	Young, G. P.	<i>Annals of Emergency Medicine</i>	1993	Young, G. P. (1993). Status of clinical and academic emergency medicine at 111 Veterans Affairs medical centers. <i>Annals of Emergency Medicine</i> , 22(8), 1304–1309.	The objective of the study was to assess the current state of clinical and academic emergency medicine at Veterans Affairs medical centers in the nation's largest health care system. The study design was a written survey mailed to 111 veteran affairs medical centers. Results showed that in many emergency departments at Veterans Affairs medical centers, nonemergency medicine staff physicians and house staff unsupervised by emergency physicians care for patients seeking emergency medical care. In addition, there is a growing need for more emergency medicine staff physicians and emergency medicine house staff in the Veterans Affairs system. Organized emergency medicine should initiate efforts to inform administrators and legislators responsible for Veterans Affairs policy making and funding.	Workforce	

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The roles of physician assistants and nurse practitioners in a managed care organization	Hooker RS	Association of Academic Health Centers	1993	Hooker RS. The roles of physician assistants and nurse practitioners in a managed care organization. In Clawson DK, Osterweis M (eds.). <i>The Roles of Physician Assistants and Nurse Practitioners in Primary Care</i> . 1993. Association of Academic Health Centers, Washington, DC. pp 51-57.		Workforce	
"Who Should Be Called "Physician Assistants?"	Bottom, W. D., & Evans, H. A.	Journal of American Academy of Physician Assistants	1994	Bottom, W. D., & Evans, H. A. (1994): Who should be called "physician assistants?" <i>Journal of the American Academy of Physician Assistants</i> , 7, 19A-20A.		Workforce	
"Comparison of Neonatal Nurse Practitioners, Physician Assistants, and Residents in the Neonatal Intensive Care Unit"	Carzoli, R. P., Martinez-Cruz, M., Cuevas, L. L., Murphy, S., & Chiu, T.	Archives of Pediatrics & Adolescent Medicine	1994	Carzoli, R. P., Martinez-Cruz, M., Cuevas, L. L., Murphy, S., & Chiu, T. (1994). Comparison of neonatal nurse practitioners, physician assistants, and residents in the neonatal intensive care unit. <i>Archives of Pediatrics & Adolescent Medicine</i> , 148(12), 1271-1276.	The objective of this study is to compare patient care delivery by neonatal nurse practitioners and physician assistants with that of pediatric residents in the intensive care setting. The study design is a retrospective chart review after developing specific performance criteria, namely, patient management, outcome, and charges. Results demonstrated no significant differences in management, outcome, or charge variables between patients cared for by the two teams.	Practice	
"Use of Pediatric Physician Extenders in Pediatric and Neonatal Intensive Care Units"	DeNicola, L., Kleid, D., Brink, L., van Stralen, D., Scott, M., Gerbert, D., & Brennan, L.	Critical Care Medicine	1994	DeNicola, L., Kleid, D., Brink, L., van Stralen, D., Scott, M., Gerbert, D., & Brennan, L. (1994). Use of pediatric physician extenders in pediatric and neonatal intensive care units. <i>Critical Care Medicine</i> , 22 (11), 1856-1864.	The objective of this study was to determine present and future use of pediatric physician extenders in neonatal and pediatric intensive care units (ICUs). The study design was a descriptive, prospective, questionnaire survey of 130 hospitals represented by members of the Pediatric Section of the Society of Critical Care Medicine, and 18 randomly selected hospitals identified as having no pediatric intensivist. Results showed that pediatric physician extenders are extensively employed in pediatric and neonatal ICUs. They are perceived to perform at the level of second-year pediatric residents and are strongly supported by staff physicians and residents. It appears that more pediatric physician extenders will be employed in pediatric and neonatal ICUs in the future.	Practice	
"Task Force 3: Partnerships in Delivery of Cardiovascular Care"	Dracup, K., DeBusk, R. F., De Mots, H., Gaile, E. H., Sr., Norton, J. B., Jr., & Rudy, E. B.	Journal of the American College of Cardiology	1994	Dracup, K., DeBusk, R. F., De Mots, H., Gaile, E. H., Sr., Norton, J. B., Jr., & Rudy, E. B. (1994). Task force 3: Partnerships in delivery of cardiovascular care. <i>Journal of the American College of Cardiology</i> , 24(2), 296-304.		Practice	
"Barriers to Physician Assistant Practice"	Emelio, J.	In Health Personnel in the United States	1994	Emelio, J. (1994). Barriers to physician assistant practice. In <i>Health Personnel in the United States</i> . Washington, DC: U.S. Department of Health and Human Services, Health Resources and Services Administration.		Practice	
"Exploring the Use of NPs and PAs in Primary Care"	Frampton, J., & Wall, S.	HMO Practice/HMO Group	1994	Frampton, J., & Wall, S. (1994). Exploring the use of NPs and PAs in primary care. <i>HMO Practice/HMO Group</i> , 8 (4), 165-170.	Although nurse practitioners (NPs) and physician assistants (PAs) can meet a majority of primary care needs, the implications for ambulatory health centers are not straightforward. One HMO health center undertook to determine its providers' and patients' views on the role of NPs and PAs in its Internal Medicine Department. The analysis suggests that 28% of visits required the attention of a physician, though physicians actually provided 66% of visits. We conclude that it may be possible to increase the use of NPs and PAs if we can educate members, particularly younger women, about the role of NPs and PAs so as to encourage their preferentially selecting these practitioners for their routine care.	Workforce	
"Promise and Performance in Managed Care: The Prepaid Group Practice Model"	Freeborn, D. K., & Pope, C. R.	Washington DC: Johns Hopkins University Press	1994	Freeborn, D. K., & Pope, C. R. (1994). <i>Promise and Performance in Managed Care: The Prepaid Group Practice Model</i> . Washington, DC: Johns Hopkins University Press.	This book focuses on the human experience of managed care. The authors examine the effects of managed care on members as well as physicians—assessing whether members are satisfied with the care they receive, and how physicians evaluate their experience with managed care. After offering a brief history of managed care in the United States, the book addresses such questions as what determines the choice of a health plan, access to care, patient satisfaction, physician satisfaction, and the implications of these findings for the future of managed care.	Practice	

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"Same Place, Different Experience: Nurses and Residents on Pediatric Emergency Transport"	Giardino A. P., Giardino E. R., & Burns K. M.	<i>Holistic Nursing Practice</i>	1994	Giardino A. P., Giardino E. R., & Burns K. M. (1994). Same place, different experience: Nurses and residents on pediatric emergency transport. <i>Holistic Nursing Practice</i> , 8 (3), 54–63.	A questionnaire was mailed to nurse transport coordinators at the 76 United States pediatric training programs listing 35 pediatric residents or more, and a related but different questionnaire was mailed to chief pediatric residents at the same centers. Comparisons of responses to a series of questions on the role of the nurse on transport suggest that the pediatric emergency transport team offers an excellent opportunity to implement collaborative practice strategies between nurses and residents. Both groups stated the value of professional discussion and consultation to derive mutually satisfactory resolutions to patient care issues. Physician respondents indicated a genuine respect for the nurses' skill and expanded role in the care of critically ill children during transport. The transport experience offers a window of opportunity for nurses and physicians interested in developing research and practice models aimed at fostering collaboration between nurses and physicians-in-training.	Practice	
"The Utilization of Physician Extenders. Mid-Level Providers in a Large Group Practice within a Tertiary Health Care Setting"	Harbert, K., Shipman, R. A., & Conrad, W.	<i>Medical Group Management Journal/MGMA</i>	1994	Harbert, K., Shipman, R. A., & Conrad, W. (1994). The utilization of physician extenders. Mid-level providers in a large group practice within a tertiary health care setting. <i>Medical Group Management Journal/MGMA</i> , 41 (6), 26, 28, 49–50 passim.		Practice	
"Military Emergency Medicine Physician Assistants"	Herrera, J., Gendron, B. P., & Rice, M. M.	<i>Military Medicine</i>	1994	Herrera, J., Gendron, B. P., & Rice, M. M. (1994). Military emergency medicine physician assistants. <i>Military Medicine</i> , 159(3), 241–242.	For well over 200 years, non-physician practitioners have been providing quality, supplemental medical care in civilian and military communities worldwide. Physician shortages, increased accessibility, and cost-effectiveness have made supplemental health care especially appealing in the 1990s. Physician assistants are perhaps the most well-known of these physician extenders. Initially incorporated into the primary care system, physician assistants are now encouraged to specialize. One of the newest and most exciting areas of specialization is emergency medicine with residency programs available at Brooke Army Medical Center in Texas and Madigan Army Medical Center in Washington.	History	
PAs and NPs in HMOs	Hooker, R. S.	<i>HMO Practice</i>	1994	Hooker, R. S. (1994). PAs and NPs in HMOs [Editorial]. <i>HMO Practice</i> , 8, 148–150.	Brief oversight of the employment of PAs and NPs in prepaid managed care organizations.	Practice	
"Estimating the Cost of Using Non-Physician Providers in Primary Care Teams in an HMO"	Hummel, J., & Pirzada, S.	<i>HMO Practice</i>	1994	Hummel, J., & Pirzada, S. (1994). Estimating the cost of using non-physician providers in primary care teams in an HMO: Where would the savings begin? <i>HMO Practice</i> , 8, 162-164.	The economic effects attributable to employing non-physician providers (NPPs) in primary care in a large HMO were estimated by calculating the per member per month (PMPM) cost for primary care provider compensation as a function of panel size for an MD/NPP provider team. After establishing an adjusted baseline of 1352 patients for an MD working alone, we hypothetically hired an NPP for each MD and increased the average panel size from 1400 to 2800 patients in increments of 200 while reducing the number of teams to keep total enrollment constant. For panel increases of less than 650 patients the addition of an NPP to a team represented a net economic loss in terms of professional service costs. By expanding the panel size for an MD/NPP team by more than 650 patients we were able to predict a linear increase in savings. The model projects that panels of 2400 patients would result in savings of \$1.38 per member per month, approximately \$1.65 million dollars per 100,000 enrollees per year.	Value/Impact	
"A Descriptive Study of Doctorally Prepared Physician Assistants"	Jones, P. E.	<i>Journal of the American Academy of Physician Assistants</i>	1994	Jones, P. E. (1994). A descriptive study of doctorally prepared physician assistants. <i>Journal of the American Academy of Physician Assistants</i> , 7(5), 353.		Workforce	
"Physician Assistants and Health System Reform. Clinical Capabilities, Practice Activities and Potential Roles"	Jones, P. E., & Cawley, J. F.	<i>Journal of the American Medical Association</i>	1994	Jones, P. E., & Cawley, J. F. (1994). Physician assistants and health system reform. Clinical capabilities, practice activities, and potential roles. <i>Journal of the American Medical Association</i> , 271 (16), 1266–1272.		Workforce	

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"A Physician Assistant Laceration Management Program"	Katz, H. P., Cushman, I., Brooks, W., Peterson, M., Nicklas, R., Gemma, S., et al.	<i>HMO Practice</i>	1994	Katz, H. P., Cushman, I., Brooks, W., Peterson, M., Nicklas, R., Gemma, S., et al. (1994). A physician assistant laceration management program. <i>HMO Practice</i> , 8, 187–189.		Education	
"Rural Physician Assistants: A Survey of Graduates of MEDEX Northwest"	Larson, E. H., Hart, L. G., & Hummel, J.	<i>Public Health Report</i>	1994	Larson, E. H., Hart, L. G., & Hummel, J. (1994). Rural physician assistants: A survey of graduates of MEDEX Northwest. <i>Public Health Report</i> , 109, 266–274.	Graduates of MEDEX Northwest, the physician assistant training program at the University of Washington, were surveyed to describe differences between physician assistants practicing in rural settings and those practicing in urban settings. Differences in demography, satisfaction with practice and community, practice history, and practice content were explored. Of the 341 traceable graduates, 295 (86.5 percent) responded to the mail survey. Although rural- and urban-practicing physician assistants are remarkably similar in most respects--income, hours worked, levels of practice satisfaction, for example--those in rural primary care reported performing a much wider range of medical and administrative tasks than those in urban practice. Half of the physician assistants who grew up in small towns were practicing in rural places compared with 18 percent of those from large towns. The broader scope of practice available to primary care physician assistants in rural areas may be of particular interest to those considering rural careers, to people who train physician assistants, and to rural communities trying to recruit and retain physician assistants. Results also suggest that recruitment of students for rural practice should focus on rural residents. Some problems that rural practitioners are more likely to face than urban ones, such as unreasonable night call schedules and lack of acknowledgement and respect for them as professionals, need to be addressed if rural communities are to be able to attract and retain physician assistants.	Education	
"Physician-Only and Physician Assistant Statutes: A Case of Perceived but Unfounded Conflict"	Lieberman, D., & Lalwani, A.	<i>Journal of American Medical Women's Association</i>	1994	Lieberman, D., & Lalwani, A. (1994). Physician-only and physician assistant statutes: A case of perceived but unfounded conflict. <i>Journal of American Medical Women's Association</i> , 49, 146–149.	In the 1970s, after the US Supreme Court declared in Roe v Wade that a woman has a fundamental right to terminate a pregnancy, most states enacted laws decriminalizing abortion. Generally, these statutes legalized abortion when performed by a physician. (Only six states--AZ, KS, NH, OR, VT, WV--do not require explicitly that abortions be performed by physicians.) At around the same time, but for different reasons, most states adopted regulatory measures establishing and defining the profession of physician assistant (PA). These laws broadly define the scope of practice of PAs as the practice of medicine by trained and licensed professionals under the supervision of physicians. Inconsistencies between physician-only abortion laws and PA statutes have generated confusion in the medical community as to whether PAs, working under the supervision of physicians, can legally perform abortions. Using three case studies, this article examines the statutory dynamic against the backdrop of the severe and intensifying shortage of trained abortion providers in the United States. The authors conclude that the perceived conflict between physician-only and PA statutes should not preclude PAs from providing this vital service.	History	
"Will the Power of the Marketplace Produce the Workforce We Need?"	Moore, G. T.	<i>Inquiry</i>	1994	Moore, G. T. (1994). Will the power of the marketplace produce the Workforce we need? <i>Inquiry</i> , 31(3), 276–282.		Workforce	
"The Impaired PA"	Mott, J. S., & Borden S. L.	<i>Journal of the American Academy of Physician Assistants</i>	1994	Mott, J. S., & Borden S. L. (1994). The impaired PA. <i>Journal of the American Academy of Physician Assistants</i> , 7 (9), 682–684		Practice	

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"Physician Evaluation and Management of Nursing Home Residents"	Ouslander, J. G., & Osterweil, D.	<i>Annals of Internal Medicine</i>	1994	Ouslander, J. G., & Osterweil, D. (1994). Physician evaluation and management of nursing home residents. <i>Annals of Internal Medicine</i> , 120 (7), 584–592.	The diverse goals of nursing home care, the heterogeneity of nursing home residents, and the varied circumstances under which physicians care for them make their evaluation and care complex and challenging. When evaluating and caring for nursing home residents, physicians must address many issues besides treatment of multiple chronic diseases (including impairments in cognitive and physical functioning, sensory deficits, depression, and behavioral disorders associated with dementia) and concerns of family members. The physician should be integrated with an interdisciplinary team composed of nurses, rehabilitation therapists, social workers, and others. Recently implemented federal rules for nursing home care, which include the Minimum Data Set and Resident Assessment Protocols, provide a useful framework for interdisciplinary assessment and care planning and should improve the care nursing home residents receive. Better data are needed on the most cost-effective strategies for evaluating and caring for nursing home residents. Reimbursement for physician services, availability of nurse practitioners and physician assistants, and overall quality of nursing home care must be improved so physicians can better achieve the recommendations outlined.	Practice	
"Nonphysician Practitioners"	Physician Payment Review Commission		1994	Physician Payment Review Commission. (1994). <i>Nonphysician practitioners</i> . Washington, DC: Author.		Workforce	
"Nonphysician Providers and Limited License Practitioners: Scope-Of-Practice Issues"	Rogers, C.	<i>Bulletin of the American College of Surgeons</i>	1994	Rogers, C. (1994). Nonphysician providers and limited-license practitioners: Scope-of-practice issues. <i>Bulletin of the American College of Surgeons</i> , 79 (2), 12–17.	The medical community recognizes that nonphysician providers are attempting to position themselves to assume larger, more independent roles in the new health care system. The American Medical Association (AMA) addressed this issue at its 1993 annual meeting of the house of delegates with the adoption of a resolution to study the role of mid-level practitioners. A report responding to the resolution was presented at the AMA's 1993 interim meeting of the house of delegates. The focus of the report was solely on the scope of practice of nurses; PAs were not included because they work under the supervision of physicians by law, and the American Academy of Physician Assistants has declared that it has no intention of seeking independent practice from physicians. The report reviews the qualifications and roles of a variety of APNs, and determines that "care by physicians does not equate to care delivered by nurses, allied health professionals, or nontraditional caregivers." It also states that substitution of physician care by nonphysicians raises questions of patient safety, competence of therapeutic decision, and fragmentation of care. The AMA report concludes that "physician care is based on cognitive and technical skills that are shaped by a unique education and experiences to form a foundation of clinical knowledge that allows physicians to decide what needs to be done across the wide variety of human maladies; that is irreplaceable by anyone with lesser training."	Practice	
"Impediments to Progress in Health Care Workforce Policy: License and Practice Laws"	Safriet, B. J.	<i>Inquiry</i>	1994	Safriet, B. J. (1994). Impediments to progress in health care Workforce policy: License and practice laws. <i>Inquiry</i> , 31(3): 310–317.	Any meaningful reform of health care delivery will have to overcome current barriers to effective utilization of nonphysician providers. These barriers include cultural and professional realities, as well as a number of explicit legal impediments. Medical practice acts remain overly broad and indeterminate, with concomitant and unnecessary restrictions in the licensure and practice acts of nonphysician providers. If we are to achieve our goal of offering high-quality care, at an affordable cost, to everyone who needs it, we must ensure that all health care providers are able to practice within the full scope of their professional competencies.	Workforce	
"A PA By Any Other Name"	Schneller, E. S.	<i>Journal of the American Academy of Physician Assistants</i>	1994	Schneller, E. S. (1994). A PA by any other name. <i>Journal of the American Academy of Physician Assistants</i> , 7, 689–692.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"State Practice Environments and the Supply of Physician Assistants, Nurse Practitioners, and Certified Nurse-Midwives"	Sekscenski, E. S., Sansom, S., Bazell, C., Salmon, M. E., & Mullan, F.	<i>New England Journal of Medicine</i>	1994	Sekscenski, E. S., Sansom, S., Bazell, C., Salmon, M. E., & Mullan, F. (1994). State practice environments and the supply of physician assistants, nurse practitioners, and certified nurse-midwives. <i>New England Journal of Medicine</i> , 331 (19), 1266–1271.	This article argues that increasing access to primary care in the United States should involve increasing the number of PAs, NPs, and certified nurse-midwives. Practice environments in the states were assessed by reviewing journal articles and legislation and by consulting with researchers, legal scholars, and professional organizations. In all jurisdictions, information was sought about conditions in 1992. Results showed that regulation by the states of physician assistants, nurse practitioners, and certified nurse-midwives varies widely. These findings may help state legislators and regulators reduce specific barriers to practice and thus make these practitioners more available to patients.	Workforce	
"A Rural-Urban Comparative Study of Nonphysician Providers in Community and Migrant Health Centers"	Shi, L., Samuels, M. E., Ricketts, T. C., & Konrad, T. R.	<i>Public Health Reports</i>	1994	Shi, L., Samuels, M. E., Ricketts, T. C., & Konrad, T. R. (1994). A rural-urban comparative study of non-physician providers in community and migrant health centers. <i>Public Health Reports</i> , 109 (6), 809–815.	This is a study of the employment of nonphysician providers--nurse practitioners, physician assistants, and certified nurse midwives--in both rural and urban Community and Migrant Health Centers and of factors associated with their employment, based on a 1991 national survey of 383 Centers. Results of the survey suggest that nonphysician providers, in particular nurse practitioners and certified nurse midwives, primarily serve as physician substitutes, and are more likely to be employed by Centers that are larger and have affiliations with nonphysician provider training programs. Rural or urban location is not significantly related to the employment of nonphysician providers after controlling for center size. The fact that rural centers employ fewer nonphysician providers than urban centers can primarily be accounted for by their relatively small size, rather than a lack of interest. These findings demonstrate that the use of nonphysician providers is an important way both to achieve cost containment and improve access to primary care for those residing in medically underserved areas.	Workforce	
"Is Primary Care Essential?"	Starfield, B.	<i>Lancet</i>	1994	Starfield, B. (1994). Is primary care essential? <i>Lancet</i> , 344 (8930), 1129–1133.	This article focuses on the significant features of primary care in medicine. It goes into the definition of primary care, roles and functions of primary care and their measurement, proportion of practitioners needed for the adequate provision of primary care, distinction between primary care and specialty care resources, and mechanisms by which primary care operates in improving health status.	Workforce	
"Canadian Forces Physician Assistants [Letter]"	Talbot, M.	<i>Canadian Medical Association Journal</i>	1994	Talbot, M. (1994). Canadian Forces physician assistants [Letter]. <i>Canadian Medical Association Journal</i> , 150, 1058-1059.		International	
"Forecasting the Effects of Health Reform on U.S. Physician Workforce Requirement. Evidence from HMO Staffing Patterns"	Weiner, J. P.	<i>Journal of the American Medical Association</i>	1994	Weiner, J. P. (1994). Forecasting the effects of health reform on U.S. physician Workforce requirement. Evidence from HMO staffing patterns. <i>Journal of the American Medical Association</i> , 272(3), 222–230.	This article provides an estimate of the effects of health reform on the US physician Workforce requirement. Its basic methodology is to extrapolate current patterns of staffing within managed care plans to the reshaped health care system of the year 2000. In this analysis it is assumed that 40% to 65% of Americans will be receiving care from integrated managed care networks in the near future, and that all citizens will be covered by some type of health insurance. On the basis of these assumptions, this article forecasts that in the year 2000, (1) there will be an overall surplus of about 165,000 patient care physicians; (2) the requirement and supply of primary care physicians will be in relative balance; and (3) the supply of specialists will outstrip the requirement by more than 60%. In summation, it appears that national health reform--based largely on an expansion of managed care networks--will have significant impact on the US physician Workforce. Concerns have been raised by others that health system reform's shift toward more primary and preventive care will be stymied by Workforce availability. This study underscores this concern to some degree. However, the evidence presented herein suggests that the issue is not so much a primary care provider shortage as a specialty care surplus.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
Rural training sites for physician assistants	Hooker RS, Konrad TR, Gupta G	<i>J Am Academy of Physician Assistants</i>	1994	Hooker RS, Konrad TR, Gupta G. Rural training sites for physician assistants. <i>J Am Academy of Physician Assistants</i> . 1994; 6(10)	Poster abstract	Education	
Research on the PA profession: who is responsible? Point-counterpoint - the association versus academe	Hooker RS, Jones PE	<i>J Am Academy of Physician Assistants</i>	1994	Hooker RS, Jones PE. Research on the PA profession: who is responsible? Point-counterpoint - the association versus academe. <i>J Am Acad Phys Assistants</i> . 1994; 6(9): 664-669.	Early debate on who should be responsible for developing a research culture on the PA profession.		
"Physician Assistants in the Health Workforce: 1994: Final Report of the Advisory Group on Physician Assistants and the Workforce Submitted to Council on Graduate Medical Education (COGME)"	Cawley, J. F.	<i>HRSA, Council on Graduate Medical Education</i>	1995	Cawley, J. F. (1995). Physician assistants in the Health Workforce, 1994: Final report of the Advisory Group on Physician Assistants and the Workforce submitted to Council on Graduate Medical Education (COGME). Rockville, MD: Health Resources and Services Administration, Council on Graduate Medical Education.	Report from the Advisory Workgroup on Physician Assistants in the Workforce that found among other things that: (1) there would be an increase in the total number of annual PA graduates through 2000, (2) that the demand for PA services would increase in both primary care and specialties, (3) that to increase the number of PA graduates it will be necessary to increase the annual output of PA educational programs, and (4) PA educational programs will face the challenges to increase annual enrollment and maintain levels of educational quality. Recommended substantial increases in Title VII funding for PA educational programs to increase enrollment and annual number of graduates.	Workforce	
"PAs/NPs: Forging Effective Partnerships in Managed Care Systems"	Crane, S. C.	<i>Physician Executive</i>	1995	Crane, S. C. (1995). PAs/NPs: Forging effective partnerships in managed care systems. <i>Physician Executive</i> , 21 (10), 23-27.	Three issues have dominated national health policy discussions over the past three decades--how to control health expenditures, how to improve access to care, and how to ensure delivery of high-quality health services. Cost remains the principal societal concern today. An important new dimension in this debate, however, is a critical examination of the impact of the structure of the nation's health workforce on health expenditures. Within this examination, policy makers are giving specific attention to the supply of health professionals, the role of primary care, and the identification of the most appropriate professionals to deliver primary care. In particular, a renewed interest is being shown in the potential of physician assistants (PAs) and nurse practitioners (NPs) to address all three issues. This article will examine the factors that prompted this focus on health workforce issues and the implications of the use of PAs and NPs for the structure and management of the health workforce in the future.	Workforce	
"Clinical Staffing in Staff and Group-Model HMOs"	Dial, T. H., Palsbo, S. E., Bergsten, C., Gabel, J. R., & Weinder, J.	<i>Health Affairs (Millwood)</i>	1995	Dial, T. H., Palsbo, S. E., Bergsten, C., Gabel, J. R., & Weinder, J. (1995). Clinical staffing in staff- and group-model HMOs. <i>Health Affairs (Millwood)</i> , 14 (2), 168-180.	Analysts frequently have used health maintenance organization (HMO) staffing patterns as a yardstick for estimating national clinical workforce requirements. Based on a nationwide survey of fifty-four staff- and group-model HMOs, the largest sample yet used in an analysis of this type, this DataWatch examines physician-to-member ratios, the use of nonphysician providers, and HMOs' methods of estimating clinical staffing needs. Overall physician staffing ratios and primary care physician staffing ratios closely resemble those reported in previous studies, but they exhibit wide variability and are strongly correlated with HMO size. Although caution should be exercised when using HMO staffing ratios in projections of physician workforce requirements, the ratios described here support projections of a specialty physician surplus.	Workforce	
"Motivation for Hepatitis B Vaccine Acceptance among Medical and Physician Assistant Students"	Diekema, D. J., Ferguson, K. J., & Doebbeling, B. N.	<i>Journal of Internal Geriatric Medicine</i>	1995	Diekema, D. J., Ferguson, K. J., & Doebbeling, B. N. (1995). Motivation for hepatitis B vaccine acceptance among medical and physician assistant students. <i>Journal of General Internal Medicine</i> , 10(1), 1-6.	The purpose of this study is to evaluate the acceptance rate and motivation for acceptance of hepatitis B virus (HBV) vaccine among preclinical medical and physician assistant (PA) students in comparison with similar data obtained from resident and staff physicians. The study design was a cross-sectional survey of all second-year medical and PA students at the University of Iowa College of Medicine was conducted in Spring 1992. Results showed that excellent HBV vaccine acceptance rates may be achieved among preclinical medical and PA students. Recommendations of authority figures are important motivators for HBV vaccine acceptance among students.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Do Teachers' Race, Gender, and Ethnicity Matter? Evidence from the National Educational Longitudinal Study of 1988"	Ehrenberg, R. G., Goldhaber, D. D., & Brewer, D. J.	<i>Industrial and Labor Relations Review</i>	1995	Ehrenberg, R. G., Goldhaber, D. D., & Brewer, D. J. (1995). Do teachers' race, gender, and ethnicity matter? Evidence from the National Educational Longitudinal Study of 1988. <i>Industrial and Labor Relations Review</i> , 48 (3), 547-561.	Using data from the National Educational Longitudinal Study of 1988 (NELS), the authors find that the match between teachers' race, gender, and ethnicity and those of their students had little association with how much the students learned, but in several instances it seems to have been a significant determinant of teachers' subjective evaluations of their students.	Workforce	
"PAs Committed to Practice with Physician Supervision (Letter)"	Fischer, J.	<i>Texas Medicine</i>	1995	Fischer, J. (1995). PAs committed to practice with physician supervision [Letter]. <i>Texas Medicine</i> , 91 (6), 7.		Practice	
"Satisfaction of Physician Assistants and Other Nonphysician Providers in a Managed Care Setting"	Freeborn, D. K., & Hooker, R. S.	<i>Public Health Reports</i>	1995	Freeborn, D. K., & Hooker, R. S. (1995). Satisfaction of physician assistants and other nonphysician providers in a managed care setting. <i>Public Health Reports (Washington, D.C. 1974)</i> , 110 (6), 714-719.	Health maintenance organizations have employed PAs, NPs, and other health providers for decades, yet there is little information on how satisfied these providers are with this form of practice. This study examines how PAs evaluate their experience practicing in a large group model HMOs and compares their attitudes and satisfaction levels with those of others-nurse practitioners, optometrists, mental health therapists, and chemical dependency counselors. The data source is a 1992 survey of 5,000 employees of a health Kaiser Permanente NW. The survey instrument was a self-administrated questionnaire that included both structured and open-ended questions. The response rate averaged 88 percent for physician assistants and the other non-physician providers. PAs expressed the most satisfaction with the amount of responsibility, support from coworkers, job security, working hours, supervision, and task variety. They were less satisfied with workload, control over the pace of work, and opportunities for advancement. Most PAs were also satisfied with pay and fringe benefits. Chemical dependency counselors expressed the highest levels of satisfaction across the various dimensions of work and optometrists the lowest. Nurse practitioners, chemical dependency counselors, and mental health professionals also tended to be satisfied with most aspects of practice in this setting. In a number of instances, they were more satisfied than the PAs. The findings are consistent with other studies that found health maintenance organizations to be favorable practice settings for PAs. The limits of PA involvement and their role satisfaction and efficient use in HMOs are more likely to relate to physician attitudes and acceptance than to lack of support by coworkers and other attributes of the work environment.	Value/Impact	
"The Influence of Market Factors on Physician Assistant Practice Settings [Master's Thesis]"	Genova, N. J.	<i>University of Southern Maine, Edmund S. Muskie Institute of Public Affairs</i>	1995	Genova, N. J. (1995). <i>The influence of market factors on physician assistant practice settings</i> [Master's thesis]. University of Southern Maine, Edmund S. Muskie Institute of Public Affairs.		Workforce	
"Physician Extenders"	Harty-Golder, B.	<i>Journal of the Florida Medical Association</i>	1995	Harty-Golder, B. (1995). Physician extenders. <i>Journal of the Florida Medical Association</i> , 82, 417-420.		History	
"Provider-Assisted Suicide: A Survey of PA Attitudes. Results of the 1994 Michigan Survey Conducted by the Michigan Academy of Physician Assistants Public Policy Committee"	Hayden, R. J., Salley, M. A., Brasseur, J., Kircher, J. R., & Ross, R. R.	<i>Physician Assistant</i>	1995	Hayden, R. J., Salley, M. A., Brasseur, J., Kircher, J. R., & Ross, R. R. (1995). Provider-assisted suicide: A survey of PA attitudes. Results of the 1994 Michigan survey conducted by the Michigan Academy of Physician Assistants Public Policy Committee. <i>Physician Assistant</i> , 19(6), 73-76, 78.	Assisted suicide continues to be a topic of debate among health care providers, including PAs. The Public Policy Committee of the Michigan Academy of Physician Assistants surveyed all licensed PAs in Michigan regarding assisted suicide in an effort to determine whether a public policy statement should be developed, and whether that could be extrapolated into a resolution to be taken to the House of Delegates (HOD) of the American Academy of Physician Assistants in 1994. Based on the divergent results of the survey, the Michigan delegation did not submit a resolution to the HOD.	Value/Impact	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Job Satisfaction: Physician Assistants Versus Nurse Practitioners [Abstract]"	Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	1995	Hooker, R. S. (1995). Job satisfaction: Physician assistants versus nurse practitioners [Abstract]. <i>Journal of the American Academy of Physician Assistants</i> , 8(8), 15.		Value/Impact	
"Clinical Staffing in HMOs [Letter to the Editor]"	Hooker, R. S., & Cawley, J. F.	<i>Health Affairs</i>	1995	Hooker, R. S., & Cawley, J. F. (1995). Clinical staffing in HMOs [Letter to the editor]. <i>Health Affairs (Milwood)</i> 14, 282.		Workforce	
"Practicing with the Urban Underserved. A Qualitative Analysis of Motivations, Incentives, and Disincentives"	Li, L. B., Williams, S. D., & Scammon, S. L.	<i>Archives of Family Medicine</i>	1995	Li, L. B., Williams, S. D., & Scammon, S. L. (1995). Practicing with the urban underserved. A qualitative analysis of motivations, incentives, and disincentives. <i>Archives of Family Medicine</i> , 4 (2), 124–133.	The purpose of the study is to investigate the personal characteristics and professional experiences of medical providers working with medically underserved urban populations. Researchers conducted focus groups of primary care providers in public and private clinics in Salt Lake City, Utah, in which the providers had ongoing relationships with medically underserved patients. Results showed that participants revealed a strong sense of service to humanity and pride in making a difference. They thrive on the challenge of creatively dealing with their patients' complex human needs with limited health care resources. Factors critical to survival in an urban underserved setting include a hardy personality style, flexible but controllable work schedule, and multidisciplinary practice team. The camaraderie and synergy of teams generate personal support and opportunities for continuing professional development.	Practice	
"Confusing Licensure with Education: Medicine's Slippery Slope"	Lichter, P. R.	<i>Federal Bulletin</i>	1995	Lichter, P. R. (1995). Confusing licensure with education: Medicine's slippery slope. <i>Federal Bulletin</i> , 82 (1), 16–20.		Education	
Physician's Assistant (PA) and CNS	Mittman, D.	<i>Clinical Nurse Specialist</i>	1995	Mittman, D. (1995) Physician's assistant (PA) and CNS [Letter]. <i>Clinical Nurse Specialist</i> , 9 (2), 121.	Letter	Practice	
"Report on the Content of the Physician Assistant National Certifying Examination and the Physician Assistant National Recertifying Examination"	National Commission on Certification of Physician Assistants.	NCCPA	1995	National Commission on Certification of Physician Assistants. (1995). <i>Report on the Content of the Physician Assistant National Certifying Examination and the Physician Assistant National Recertifying Examination</i> . Atlanta, GA: Author.	Report	Education	
"The Substitution of Physician Assistants and Nurse Practitioners for Physician Residents in Teaching Hospitals"	Riportella-Muller, R., Libby, D., & Kindig, D.	<i>Health Affairs</i>	1995	Riportella-Muller, R., Libby, D., & Kindig, D. (1995). The substitution of physician assistants and nurse practitioners for physician residents in teaching hospitals. <i>Health Affairs</i> , 14 (2), 181–191.	This study documents features of clinical departments in teaching hospitals that are using physician assistants (PAs) and nurse practitioners (NPs) to perform some tasks previously done by medical or surgical residents. More than 60 percent of teaching hospital medical directors surveyed reported experience with substitution in their hospitals. The experience overall appears to be positive; one-third of the departments are planning to increase the number of PAs and NPs they use. The results imply that some of the services lost in house-staff reductions called for in many physician Workforce reform proposals could be provided by alternative health professionals.	Workforce	
"Vascular Access by Physician Assistants: Evaluation of an Implantable Peripheral Port System in Cancer Patients"	Rubenstein, E. B., Fender, A., Rolston, K. V., Elting, L. S., Prasco, P. J., Palmer, I., et al.	<i>Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology</i>	1995	Rubenstein, E. B., Fender, A., Rolston, K. V., Elting, L. S., Prasco, P. J., Palmer, I., et al. (1995). Vascular access by physician assistants: Evaluation of an implantable peripheral port system in cancer patients. <i>Journal of Clinical Oncology: Official Journal of the American Society of Clinical Oncology</i> 13 (6), 1513–1519.	The purpose of the study was to determine the ability of a physician assistant (PA) to insert, in an ambulatory setting, a peripheral subcutaneous implanted vascular-access device (VAD) and to evaluate the ability to transfer this training to a second PA. Researchers also evaluated the performance and complications associated with this new device. The Peripheral Access System (PAS) Port catheter system (Sims-Deltec Inc, St Paul, MN) was inserted in patients who required long-term (> 3 months) vascular access for infusion therapy. Results showed that The first PA (PA-1) successfully inserted 57 of 62 devices (92%) after gaining experience with the technique in 10 patients (success rate, five of 10 [50%]; P = .003). The second PA (PA-2) was successful in eight of 10 initial attempts (80%) and 25 of 30 overall (83%). Complications were few and limited to phlebitis, thrombosis, and a low infection rate (0.2 per 1,000 catheter days).	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Transition from Housestaff to Nonphysicians as Neonatal Intensive Care Providers: Cost, Impact on Revenue, and Quality of Care"	Schulman, M., Lucchese, K. R., & Sullivan, A. C.	<i>American Journal of Perinatology</i>	1995	Schulman, M., Lucchese, K. R., & Sullivan, A. C. (1995). Transition from housestaff to nonphysicians as neonatal intensive care providers: Cost, impact on revenue, and quality of care. <i>American Journal of Perinatology</i> , 12 (6), 442–446.	Nonphysician providers (NPP) increasingly fill roles traditionally performed by housestaff. Downsizing of a pediatric residency program prompted phased replacement of housestaff in a 26-bed neonatal intensive care unit (NICU). Subsidized education for neonatal nurse-practitioners, recruitment of physician assistants, and NPP leadership took place over 18 months, at which time all housestaff functions were assumed by NPP. Cost to establish the program, impact on hospital revenue under New York's prospective reimbursement system, and quality of care were evaluated. The net startup cost for the NPP program was \$441,000 (\$722,000 for education, salaries, staff replacement, and recruitment, partially offset by a New York State Workforce demonstration project grant). Ongoing costs of the program are \$1.2 million/yr (including salaries, off-hours medical backup, recruitment, administrative overhead, and loss of indirect and direct medical education reimbursement, partially offset by recaptured housestaff salaries and ancillary expense reductions). Access to care was maintained. Quality of care was assessed during the last 6 months of housestaff and the first 6 months of full NPP staffing, revealing similar weight-specific survival, and improvement in documentation and compliance with immunization and blood utilization guidelines during the NPP period. NPP are expensive in comparison to housestaff. Revenue is minimally adversely affected, but access to NICU services and quality of care was preserved and in some cases enhanced with NPP. In the context of graduate medical education reform, staffing problems such as ours will be encountered increasingly in inpatient subspecialty settings.	Value/Impact	
"Level of Training, Wound Care Practices, and Infection Rates"	Singer, A. J., Hollander, J. E., Cassara, G., Valentine, S. M., Thode, H. C., Jr., & Henry, M. C.	<i>American Journal of Emergency Medicine</i>	1995	Singer, A. J., Hollander, J. E., Cassara, G., Valentine, S. M., Thode, H. C., Jr., & Henry, M. C. (1995). Level of training, wound care practices, and infection rates. <i>American Journal of Emergency Medicine</i> , 13 (3), 265–268.	This prospective, nonrandomized descriptive study compares the traumatic wound infection rates in patients based on level of training of emergency department (ED) practitioners. Wounds were evaluated in 1,163 patients. A wound registry data sheet was prospectively completed on all patients sutured in the ED. All practitioners were assigned a unique identification number. Follow-up data was obtained at the time of the return visit. Patients failing to return were contacted by telephone. Data were analyzed for patient wound infection rates by practitioner level of training. Patient wound infection rates by practitioner level of training were: medical students, 0/60 (0%); all resident physicians, 17/547 (3.1%); physician assistants, 11/305 (3.6%); and attending physicians 14/251 (5.6%), P was not significant. Comparison of junior (medical students and interns) to senior practitioners (all other practitioners) found no difference in infection rates (8/262 [3.1%] v 34/901 [3.8%], P = .58). In conclusion, carefully selected patients sutured by closely supervised medical students and junior residents have infection rates as low as those sutured by more experienced practitioners.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Transformation of China's Rural Health Care Financing"	Liu, Y., Hsiao, W. C., Li, Q., Liu, X., Ren, M.	<i>Social Science and Medicine</i>	1995	Liu, Y., Hsiao, W. C., Li, Q., Liu, X., Ren, M. (1995). Transformation of China's rural health care financing. <i>Social Science & Medicine</i> , 41, 1085-1093.	In the late 1970s China launched its agricultural reforms which initiated a decade of continued economic growth and significant transformation of the Chinese society. The agricultural reforms altered the peasants' incentives, weakened community organization and lessened the central government's control over local communities. These changes largely caused the collapse of the widely acclaimed rural cooperative medical system in China. Consequently China experienced a decreased supply of rural health workers, increased burden of illnesses, disintegration of the three tier medical system, reduced primary health care, and an increased demand for hospital medical services. More than ten years have elapsed since China changed its agricultural economic system and China is still struggling to find an equitable, efficient and sustainable way of financing and organizing its rural health services. The Chinese experiences provided several important lessons for other nations: there is a need to understand the limits of the market forces and to redefine the role of the government in rural health care under a market economy; community participation in and control of local health financing schemes is essential in developing a sustainable rural health system; the rural health system needs to be dynamic, rather than static, to keep pace with changing demand and needs of the population.	International	
A survey of emergency department uses of physician assistants and nurse practitioners	Hooker RS, McCaig L	<i>J Am Academy of Physician Assistants</i>	1995	Hooker RS, McCaig L. A survey of emergency department uses of physician assistants and nurse practitioners. <i>J Am Acad Phys Assistants</i> . 1995; 8(8)		Practice	
Job satisfaction of physician assistants and nurse practitioners	Hooker RS, Freeborn DK	<i>J Am Academy of Physician Assistants</i> . [Abstract]	1995	Hooker RS, Freeborn DK. Job satisfaction of physician assistants and nurse practitioners. <i>J Am Acad Phys Assistants</i> . 1995; 8(8)		Workforce	
Managed care: Do corporatized medicine and PAs make a match	Davis A, Hawn RR, Hooker RS, Hunter-Buskey RN, King TJ, Legler C, Nelson RL, Powe ML, Theriault JA	<i>J Am Academy of Physician Assistants</i>	1995	Davis A, Hawn RR, Hooker RS, Hunter-Buskey RN, King TJ, Legler C, Nelson RL, Powe ML, Theriault JA. Managed care: Do corporatized medicine and PAs make a match? <i>J Am Academy of Physician Assistants</i> . 1995; 8(9): 74-83.		Workforce	
Managed care: The corporatization of medicine and PAs	Davis A, Hawn RR, Hooker RS, Hunter-Buskey RN, King TJ, Legler C, Nelson RL, Powe ML, Theriault JA	<i>J Am Academy of Physician Assistants</i>	1995	Davis A, Hawn RR, Hooker RS, Hunter-Buskey RN, King TJ, Legler C, Nelson RL, Powe ML, Theriault JA. Managed care: The corporatization of medicine and PAs. <i>J Am Academy of Physician Assistants</i> . 1995; 8(8): 26-36.			
"Do We Need Physician Assistants in the UK?"	Castledine, G.	<i>British Journal of Nursing</i>	1996	Castledine, G. (1996). Do we need physician assistants in the UK? <i>British Journal of Nursing</i> , 5, 124.		International	
"Physician Assistant Pursuit of Prescriptive Authority: A Five State Analysis"	Cohen, H.	<i>Master's thesis, the Johns Hopkins School of Public Health, Baltimore, MD</i>	1996	Cohen, H. (1996). <i>Physician Assistant Pursuit of Prescriptive Authority: A Five State Analysis</i> . Master's thesis, the Johns Hopkins School of Public Health, Baltimore, MD.		Gray Literature	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Evaluating the Potential of International Medical Graduates as Physician Assistants in Primary Care"	Fowkes, V., Cawley, J. F., Herlihy, N., & Cuadrado, R. R.	<i>Academic Medicine</i>	1996	Fowkes, V., Cawley, J. F., Herlihy, N., & Cuadrado, R. R. (1996). Evaluating the potential of international medical graduates as physician assistants in primary care. <i>Academic Medicine</i> , 71 (8), 886–892.	The need to increase the nation's primary care Workforce, and the presence of large numbers of international medical graduates (IMGs) who encounter barriers to licensure as physicians, have led to consideration of ways that IMGs might practice as physician assistants (PAs). Several states have explored regulatory changes that would allow IMGs to obtain PA certification through equivalency mechanisms or accelerated educational programs. In California, surveys in 1980, 1993, and 1994 collected information about the interest and preparedness among IMGs seeking PA certification. These surveys revealed that few of the IMGs were interested in becoming PAs as a permanent career, and few could show a commitment to primary care of the underserved. Of the 50 IMGs accepted into California's PA programs in recent years, 62% had academic or personal difficulties. Only 34 IMGs became certified, and all accepted jobs in primary care specialties. Two preparatory programs in California have assessed the readiness of unlicensed IMGs to enter PA programs, and they have shown that the participants did not demonstrate knowledge or clinical skills equivalent to those expected of licensed PAs. Therefore, policymakers should not consider that IMGs are or can easily become the equivalent of PAs without additional professional training in accredited PA programs. Preparatory programs appear to lessen the barriers to PA training for a few IMGs. In times of scarce resources for training, however, these programs may not be the best use of public funds to increase the primary care Workforce.	International	
"The Political History of Health Workforce Policy"	Fox, D. M.	<i>The U.S. Health Workforce: Power, Politics, and Policy</i>	1996	Fox, D. M. (1996). The political history of health Workforce policy. In M. Osterweis, C. J. McLaughlin, H. R. Manasse, & C. Hopper, C. (Eds). <i>The U.S. Health Workforce: Power, Politics, and Policy</i> . Washington, DC: Association Academic Health Centers.		History; Workforce	
"Inside the Gritty World of Pas in the New York City ME's Office"	Gerchufsky, M.	<i>ADVANCE for Physician Assistants</i>	1996	Gerchufsky, M. (1996). Inside the gritty world of PAs in the New York City ME's office. <i>ADVANCE for Physician Assistants</i> , 4 (9–10), 23–28.		Practice	
"Physician Assistants in Plastic and Reconstructive Surgery"	Gittins, P.	<i>NEWS-Line for Physician Assistants</i>	1996	Gittins, P. (1996). Physician assistants in plastic and reconstructive surgery. <i>NEWS-Line for Physician Assistants</i> , 5 (9), 4–7.		Practice	
"Patient Satisfaction with Collaborative Practice"	Hankins, G. D., Shaw, S. B., Cruess, D. F., Lawrence, H. C., III, & Harris, C. D.	<i>Obstetrics and Gynecology</i>	1996	Hankins, G. D., Shaw, S. B., Cruess, D. F., Lawrence, H. C., III, & Harris, C. D. (1996). Patient satisfaction with collaborative practice. <i>Obstetrics and Gynecology</i> , 88 (6), 1011–1015.	The objective of the study was to gather information on women's perceptions of the services delivered in collaborative obstetrics and gynecology practices and to determine whether patients perceive a difference in the delivery of services in a variety of practice settings. A cross-sectional patient satisfaction survey was developed by the Collaborative Practice Advisory Group of ACOG. Ten collaborative practices were selected to participate: five in private offices, two in clinics, two in health maintenance organizations, and one in the military. Between April 15 and May 15, 1994, 3257 completed surveys were obtained for analysis. Results showed that patients in this survey were accepting of the concept of collaborative practice and felt that it offered quicker appointments, more time with the provider, more health information, and more specific diet information than did physician-only practices.	Value/Impact	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Emergency Department Uses of Physician Assistants and Nurse Practitioners: A National Survey"	Hooker, R. S., & McCaig, L. F.	<i>American Journal of Emergency Medicine</i>	1996	Hooker, R. S., & McCaig, L. F. (1996). Emergency department uses of physician assistants and nurse practitioners: A national survey. <i>American Journal of Emergency Medicine</i> , 14 (3), 245–249.	A study was undertaken to determine the extent to which physician assistants (PAs) and/or nurse practitioners (NPs) are a source of health care delivery in emergency departments (EDs) in the United States. The National Hospital Ambulatory Medical Survey (NHAMCS) uses a multistage probability sample that examines patient visits within EDs. The sample included 437 hospitals with EDs. Visits were mostly from self-referred patients to EDs within nonfederal, short-stay hospitals, or general hospitals. Analysis of NHAMCS data found that a PA and/or NP was seen for 3.5 million ED visits in 1992. Remarkably little difference in gender, reason for visit, diagnosis, and medication prescribed was found between PA/NP visits and visits to all providers. This was the first study that systematically identified the extent of PA/NP-delivered ED services in the United States and compared it with physician services. Overall, PAs and NPs were found to be significant sources of health care service for hospital EDs. They are involved in care for almost 4% of all ED visits nationally and manage a wider range of conditions than has been previously reported. When types of visits are analyzed, including reasons for ED care, diagnosis, and treatment, it appears that visits associated with care by ED-based PA/NPs are similar to all ED visits, including those attended by emergency medicine physicians. More studies are needed to better understand the role of PAs and/or NPs in various ED settings. Recruitment and use of PAs and NPs may be a cost-effective strategy for improved delivery of emergency services.	Practice	
"Physician Assistant Impairment: A Peer Review Program for North Carolina"	Mattingly, D. E., & Curtis, L. G.	<i>North Carolina Medical Journal</i>	1996	Mattingly, D. E., & Curtis, L. G. (1996). Physician assistant impairment. A peer review program for North Carolina. <i>North Carolina Medical Journal</i> , 57 (4), 233–235.		Practice	
"Legal Issues Surrounding Professional Impairment"	Paine, S. J.	<i>Journal of the American Academy of Physician Assistants</i>	1996	Paine, S. J. (1996). Legal issues surrounding professional impairment. <i>Journal of the American Academy of Physician Assistants</i> , 9 (12), 16–19.		Workforce	
"Predicting the Degree of Rurality of Physician Assistant Practice Location"	Pan, S., Geller, J. M., Muus, K. J., & Hart, L. G.	<i>Hospital Health & Services Administration</i>	1996	Pan, S., Geller, J. M., Muus, K. J., & Hart, L. G. (1996). Predicting the degree of rurality of physician assistant practice location. <i>Hospital Health & Services Administration</i> , 41 (1), 105–119.	This study used a block multiple regression analysis to examine the impacts of different factors on the degree of rurality of physician assistants' (PAs') practice location and compared the power of each block of factors in predicting rurality. Differences in the models for PAs in primary care specialties and for PAs as a whole were also explored. The findings suggest that policies should provide support to PA students in primary care specialties and to rural-oriented PA education/training programs. Efforts to facilitate PA recruitment and retention should include, among other things, increasing practice responsibility/autonomy, broadening acceptance of PA prescriptive authority, and providing equitable reimbursement for nonphysician care of Medicare and Medicaid beneficiaries.	Workforce	
"Physicians' Assistants: Legal Implications of Extended Role [Editorial]"	Peysner, J.	<i>British Journal of Nursing</i>	1996	Peysner, J. (1996). Physicians' assistants: Legal implications of the extended role [Editorial]. <i>British Journal of Nursing</i> , 5, 592.		Practice	
"Women Family Physicians and Rural Medicine: Can the Grass be Greener in the Country?"	Rourke, L. L., Rourke, J., & Brown, J. B.	<i>Canadian Family Physician</i>	1996	Rourke, L. L., Rourke, J., & Brown, J. B. (1996). Women family physicians and rural medicine. Can the grass be greener in the country? <i>Canadian Family Physician</i> , 42, 1063–1067.	This study analyzes the need for women family physicians in rural medicine.	Practice	
"Orthopaedic PA Duties: Extensive and on the Increase"	Samsot, M., & Heinlein, M.	<i>NEWS-Line for Physician Assistants</i>	1996	Samsot, M., & Heinlein, M. (1996). Orthopaedic PA duties: Extensive and on the increase. <i>NEWS-Line for Physician Assistants</i> , 5 (4), 4–7.	An article that highlights orthopaedic PA duties through a profile on Craig Mosier, PA-C, who works at Kaiser Fontana Foundation Medical Center in Fontana, California.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Productivity of Physician Assistants and Nurse Practitioners and Health Work Force Policy in the Era of Managed Health Care"	Scheffler, R. M., Waitzman, N. J., & Hillman, J. M.	<i>Journal of Allied Health</i>	1996	Scheffler, R. M., Waitzman, N. J., & Hillman, J. M. (1996). The productivity of physician assistants and nurse practitioners and health work force policy in the era of managed health care. <i>Journal of Allied Health</i> , 25 (3), 207–217.	Managed care is spreading rapidly in the United States and creating incentives for physician practices to find the most efficient combination of health professionals to deliver care to an enrolled population. Given these trends, it is appropriate to reexamine the roles of physician assistants (PAs) and nurse practitioners (NPs) in the health care Workforce. This paper briefly reviews the literature on PA and NP productivity, managed care plans' use of PAs and NPs, and the potential impact of PAs and NPs on the size and composition of the future physician Workforce. In general, the literature supports the idea that PAs and NPs could have a major impact on the future health care Workforce. Studies show significant opportunities for increased physician substitution and even conservative assumptions about physician task delegation imply a large increase in the number of PAs and NPs that can be effectively deployed. However, the current literature has certain limitations that make it difficult to quantify the future impact of PAs and NPs. Among these limitations is the fact that virtually all formal productivity studies were conducted in fee-for-service settings during the 1970s, rather than managed care settings. In addition, the vast majority of PA and NP productivity studies have viewed PAs and NPs as physician substitutes rather than as members of interdisciplinary health care teams, which may become the dominant health care delivery model over the next 10-20 years.	Workforce	
"Effect of Physician Gender on the Prescription of Estrogen Replacement Therapy"	Seto, T. B., Taira, D. A., Davis, R. B., Safran, C., & Phillips, R. S.	<i>Journal of General Internal Medicine</i>	1996	Seto, T. B., Taira, D. A., Davis, R. B., Safran, C., & Phillips, R. S. (1996). Effect of physician gender on the prescription of estrogen replacement therapy. <i>Journal of General Internal Medicine</i> , 11(4), 197–203.	The objective of the study was to determine if women cared for by female physicians are more likely to receive postmenopausal estrogen replacement therapy than women cared for by male physicians. The study design was a case-control study with follow-up telephone survey of an outpatient practice at an urban teaching hospital in Boston, Massachusetts. Results showed that ament therapy if they are cared for by female physicians rather than male physicians even after accounting for patient preferences. Further research is required to determine whether these differences reflect differences in physicians' knowledge or attitudes regarding estrogen replacement therapy or reflect gender differences in how physicians discuss estrogen replacement therapy with their patients.	Practice	
"Determinants of Specialty Choice of Physician Assistants"	Singer, A. M., & Hooker, R. S.	<i>Academic Medicine</i>	1996	Singer, A. M., & Hooker, R. S. (1996). Determinants of specialty choice of physician assistants. <i>Academic Medicine</i> , 71 (8), 917–919.	The intent of this analysis was to identify the main factors underlying the specialty-choice decisions of PAs in the first practice year after completing PA training and the reasons for their selections. Data were collected from a 1994 survey of 4,416 PAs who had graduated in 1991-1993. Usable responses were obtained from 1,472 PAs (33%). Each PA was asked to state the specialty he or she had entered in the first practice year and also to rate each of 33 possible reasons for this decision. Primary care specialties were defined as family medicine, general internal medicine, and general pediatrics. The ratings were subjected to a factor analysis. Results showed that for the PAs in non-primary-care specialties, the most influential factors were technical orientation and income/employment. For the PAs in primary care, the most influential factors were prevention, academic environment, debt/scholarship, intellectual content, and peer influence.	Practice	
"Correctional Medicine: An Outstanding Setting for the PA"	Smith, M. O.	<i>Physician Assistant</i>	1996	Smith, M. O. (1996). Correctional medicine: An outstanding setting for the PA. <i>Physician Assistant</i> , 20 (7), 103–104.		Practice	
"Forensic Medicine"	Sylvester, P. A.	<i>Journal of the American Academy of Physician Assistants</i>	1996	Sylvester, P. A. (1996). Forensic medicine. <i>Journal of the American Academy of Physician Assistants</i> , 9, 53–65.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Emerging Role of 'Hospitalists' in the American Health Care System"	Wachter, R., & Goldman, L.	<i>New England Journal of Medicine</i>	1996	Wachter, R., & Goldman, L. (1996). The emerging role of "hospitalists" in the American health care system. <i>New England Journal of Medicine</i> , 335 (7), 514-517.	This article anticipates that the rapid growth of "hospitalists" - specialists in inpatient medicine - will be responsible for managing the care of hospitalized patients in the same way that primary care physicians are responsible for managing the care of outpatients.	Workforce	
Determinants of specialty choice of physician assistants	Singer A, Hooker RS	<i>Academic Medicine</i>	1996	Singer A, Hooker RS. Determinants of specialty choice of physician assistants. <i>Academic Medicine</i> . 1996; 71(8): 917-919.		Practice	
Emergency department uses of physician assistants and nurse practitioners in the United States: A survey	Hooker RS, McCaig L	<i>American J Emergency Medicine</i>	1996	Hooker RS, McCaig L. Emergency department uses of physician assistants and nurse practitioners in the United States: A survey. <i>American J Emergency Medicine</i> . 1996; 14(3): 245-249.		Practice	
"The Attitudes of Rural Minnesota Family Physicians toward Nurse Practitioners and Physician Assistants"	Bergeson, J., Cash, R., Boulger, J., & Bergeron, D.	<i>Journal of Rural Health</i>	1997	Bergeson, J., Cash, R., Boulger, J., & Bergeron, D. The attitudes of rural Minnesota family physicians toward nurse practitioners and physician assistants. <i>Journal of Rural Health</i> , 13(3), 196-205.	This study surveyed the attitudes of rural Minnesota family physicians toward the use of physician assistants and nurse practitioners. Forty-six percent of the 600 rural family physicians surveyed responded to the questionnaire. Approximately 90 percent of responding physicians indicated a high degree of confidence in the abilities of nonphysician providers in the areas of preventive and routine care; some concern was expressed about the proficiency of nonphysician providers taking call, covering the emergency room, and doing hospital rounds--activities that involve a broader base of clinical knowledge and diagnostic skills. Other concerns were an increased workload for physicians due to their assumed supervisory roles, an increase in complexity of cases seen by physicians, increased physician liability, job competition between nonphysician providers and physicians, and the lack of educational opportunities and supervisory guidelines for physicians regarding collaborative relationships. Appropriate roles for family physicians, nurse practitioners and physician assistants are not well-defined in the minds of respondents, and it appears future acceptance and practice patterns will depend on how these roles are established and accepted.	Practice	
"Gender Differences in Physician-Patient Communication: Evidence from Pediatric Visits"	Bernzweig, J., Takayama, J. I., Phibbs, C., Lewis, C., & Pantell, R. H.	<i>Archives of Pediatric & Adolescent Medicine</i>	1997	Bernzweig, J., Takayama, J. I., Phibbs, C., Lewis, C., & Pantell, R. H. (1997). Gender differences in physician-patient communication: Evidence from pediatric visits. <i>Archives of Pediatrics & Adolescent Medicine</i> , 151(6), 586-591.	The purpose of the study was to determine whether physician gender and patient gender influence the process of communication and parent and child satisfaction during pediatric office visits. The subjects included 212 children in a university-based pediatric primary care practice, with videotaped communication. Results showed that children communicate more with female than with male physicians and show preferences for physicians of the same gender. These findings are consistent with communication patterns in adult patients and may have a significant influence on gender disparities in health care. Efforts at improving the process and outcome of medical care should address gender differences.	Practice	
"Issues in Quality Care: The Two-Sided Coin of PA Credentialing"	Calabrese, W. J., Crane, S. C., & Legler, C. F.	<i>Journal of the American Academy of Physician Assistants</i>	1997	Calabrese, W. J., Crane, S. C., & Legler, C. F. (1997). Issues in quality care. The two-sided coin of PA credentialing. <i>Journal of the American Academy of Physician Assistants</i> , 10 (5), 121-122.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Gender and Women's Preventive Services"	Cassard, S. D., Weisman, C. S., Plichta, S. B., & Johnson, T. L.	<i>Journal Women's Health</i>	1997	Cassard, S. D., Weisman, C. S., Plichta, S. B., & Johnson, T. L. (1997). Physician gender and women's preventive services. <i>Journal Women's Health</i> , 6 (2), 199–207.	The objective of this study is to determine whether the gender of women's regular physicians, controlling for physician specialty, is associated with women's receiving key preventive services within recommended intervals. The study design is a cross-sectional, nationally representative women's health telephone survey conducted by Louis Harris and Associates in February and March 1993 for The Commonwealth Fund. Patients of women family or general practitioners are more likely than the patients of men to have received a Pap smear or a blood cholesterol test within the last 3 years, and the patients of women internists are more likely to have received a Pap test. Physician gender is associated with a higher likelihood of mammography, but this finding was limited to patients ages 40-49 of women family or general practitioners. Physician gender does not affect receipt of blood pressure screening or breast examination. Analyses reveal limited evidence that physician gender affects women's receipt of preventive services. Physician specialty appears to be a more powerful predictor of preventive services received.	Practice	
"The Possibility of an Impending Health Professions Glut"	Cawley, J. F., & Jones, P. E.	<i>Journal of the American Academy of Physician Assistants</i>	1997	Cawley, J. F., & Jones, P. E. (1997). The possibility of an impending health professions glut. <i>Journal of the American Academy of Physician Assistants</i> , 10, 80–92.		Workforce	
"Use of Physician Extenders and Fast Tracks in United States Emergency Departments"	Ellis, G. L., & Brandt, T. E.	<i>American Journal of Emergency Medicine</i>	1997	Ellis, G. L., & Brandt, T. E. (1997). Use of physician extenders and fast tracks in United States emergency departments. <i>American Journal of Emergency Medicine</i> , 15 (3), 229–232.	To describe current practice regarding the use of physician extenders (PEs) and the "fast track" (FT) concept in United States emergency departments (EDs), a telephone survey of 250 US health care facilities offering emergency services was conducted. Of the EDs surveyed, 21.6% were using PEs at the time of the survey, and of those not using PEs, 23.5% intended to do so within the next 2 years. Those using PEs had been using them for a mean duration of 3.5 years (the mode was 2 years). The mean number of hours of PE coverage was 11.4 hours on weekdays and 11.5 hours on weekends (the mode was 12 hours both on weekdays and weekends). In general, the use of PEs increased with increasing hospital size and ED census, in more urban settings, in teaching facilities, and in the Northeast region of the country. Thirty percent of EDs surveyed had FT, and of those that did not have FT at the time of the survey, 32.8% intended to institute FT within 2 years. Of those that had FT, the mean number of years in use was 2.4 (the mode was 2). The use of FT increased with increasing hospital size and ED census, in teaching hospitals, and in the Northeast region. FT was most common in the suburban setting. The mean estimated percentage of ED patients going through FT was 30.1%. The mean number of hours per day of FT operation was 13.4 hours on weekdays and 13.7 hours on weekends (the mode was 12 hours/day both on weekdays and weekends). Of hospitals using PEs in the ED, 56.0% had FT; of hospitals without PEs in the ED, 23.5% had FT.	Workforce	
"Training of Medical Assistants in Mozambique for Surgery in a Rural Setting"	Garrido, P. I.	<i>South African Journal of Surgery</i>	1997	Garrido, P. I. (1997). Training of medical assistants in Mozambique for surgery in a rural setting. <i>South African Journal of Surgery</i> , 35 (3), 144–145.		International; Education	
"Is There An Undersupply of PAs?"	Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	1997	Hooker, R. S. (1997). Is there an undersupply of PAs? <i>Journal of the American Academy of Physician Assistants</i> , 10(9), 81, 94, 97–98, 101–102 passim.	Editorial offering a contradictory view at a time leaders in the US PA profession were wondering if there were too many PAs and not enough jobs. The author's view was that demand was far exceeding the supply of physicians, NPs and PAs and would continue so in the near future.	Workforce	
"Physician Assistants in American Medicine"	Hooker, R. S., & Cawley, J. F.	<i>New York: Churchill Livingstone</i>	1997	Hooker, R. S., & Cawley, J. F. (1997). <i>Physician Assistants in American Medicine</i> . New York: Churchill Livingstone.		History	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Patient Satisfaction: Comparing Physician Assistants, Nurse Practitioners, and Physicians"	Hooker, R. S., Potts, R., & Ray, W.	<i>Permanente Journal</i>	1997	Hooker, R. S., Potts, R., & Ray, W. (1997). Patient satisfaction: Comparing physician assistants, nurse practitioners and physicians. <i>Permanente Journal</i> , 1 (1), 38-42.	The objective of the study was to evaluate patient satisfaction with care as managed by different types of providers: PAs, NPs, certified nurse midwives (CNMs), and physicians. Questionnaires were mailed to members of a large health maintenance organization who visited medical offices in any of five medical specialties during 1995 or the first half of 1996. Patient-generated scores for eight provider attributes were combined to generate a mean score for each attribute by provider type. Scores were then compared. Satisfaction was reported by 89% to 96% of patients of PAs, NPs, CNMs, and physicians with regard to courtesy, understanding of problem, ability to explain, use of understandable words, listening, time spent, and confidence in provider. Clinicians in orthopedics and in obstetrics and gynecology scored slightly higher than did primary care clinicians. No statistically significant differences in scores were seen between providers by type, by age, by gender, or by length of employment. In conclusion, patient satisfaction with interpersonal care appears to depend on communication and style and not on type of provider.	Value/Impact	
"Do We Still Need Doctors?"	Lantos, J. D.	<i>New York: Routledge</i>	1997	Lantos, J. D. (1997). <i>Do We Still Need Doctors?</i> New York: Routledge.	This book is a personal account from the front lines of the moral and political battles that are reshaping America's health care system.	Practice	
"Integration of Physician Assistants and Surgical Residents in a General Surgery Residency"	Rosenfeld, J. C.	<i>Current Surgery</i>	1997	Rosenfeld, J. C. (1997). Integration of physician assistants and surgical residents in a general surgery residency. <i>Current Surgery</i> , 54, 556-558.		Practice	
"Practice Environment and the Employment of Nurse Practitioners, Physician Assistants, and Certified Nurse Midwives by Community Health Centers"	Shi, L. & Samuels, M. E.	<i>Journal of Allied Health</i>	1997	Shi, L., & Samuels, M. E. (1997). Practice environment and the employment of nurse practitioners, physician assistants, and certified nurse midwives by community health centers. <i>Journal of Allied Health</i> , 26(3), 105-111.	This report examines the relation between state variations in the regulation of nurse practitioners (NPs), physician assistants (PAs), and certified nurse midwives (CNMs), and the employment of these nonphysician providers (NPPs) by community health centers (CHCs). Data for this report came from a 1991-92 survey of CHCs assessing the employment of NPPs, and secondary available data. The dependent variables examined were the numbers of NPPs currently employed by CHCs. Independent variables included 1992 practice environment scores, CHC location, number of CHC physicians, and NPP-to-population ratios. The number of NPs and PAs employed by CHCs was significantly associated with practice environment for these practitioners. NPP-to-population ratios and the number of CHC physicians are also significantly associated with NPP employment by CHCs. State decision makers may reduce legislative and regulatory barriers to practice as a way to improve the practice environment for nonphysician primary care providers, particularly NPs and PAs. Thus, community health centers can employ adequate number of NPPs to fulfill their mission of serving the poor and underserved population.	Workforce	
"Partners of the Heart: Vivien Thomas and His Work with Alfred Blalock: An Autobiography"	Thomas, C.	<i>University of Pennsylvania Press</i>	1997	Thomas, C. (1997). <i>Partners of the Heart: Vivien Thomas and His Work with Alfred Blalock: An Autobiography</i> . Philadelphia: University of Pennsylvania Press.	This is an autobiography of Vivien Thomas, the first Black man to hold a professional position at one of America's premier medical institutions, and his relationship with mentor and renowned heart surgeon Alfred Blalock. The book also details the beginnings of modern cardiac surgery, crucial investigations into the nature of shock, and Blalock's methods of training surgeons.	History	
"Seeking a Practice Challenge? PAs in Federal Prisons"	Vause, R. C., Beeler, A., & Miller-Blanks, M.	<i>Journal of the American Academy of Physician Assistants</i>	1997	Vause, R. C., Beeler, A., & Miller-Blanks, M. (1997). Seeking a practice challenge? PAs in federal prisons. <i>Journal of the American Academy of Physician Assistants</i> , 10 (2), 59-62.		Practice	
Is there an undersupply of PAs?	Hooker RS	<i>J Am Academy of Physician Assistants</i>	1997	Hooker RS. Is there an undersupply of PAs? <i>J Am Academy of Physician Assistants</i> . 1997; 10 (9): 81, 94, 97, 98, 101-102.		Workforce	

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Training costs of physician assistants	Hooker RS	<i>Vital Signs: Oregon Society of Physician Assistants</i>	1997	Hooker RS. Training costs of physician assistants. <i>Vital Signs: Oregon Society of Physician Assistants</i> . 1997; 17(2): 6-7.		Education	
Analysis of the costs of NSAIDs-associated gastropathy: experience in a US health maintenance organization	Johnson RE, Hornbrook MC, Hooker RS, Woodson GT, Shneidman R	<i>Pharmacoeconomics</i>	1997	Johnson RE, Hornbrook MC, Hooker RS, Woodson GT, Shneidman R. Analysis of the costs of NSAIDs-associated gastropathy: experience in a US health maintenance organization. <i>Pharmacoeconomics</i> . 1997; 12(1): 76-88.		Practice	
Patient satisfaction: comparing physician assistants, nurse practitioners and physicians	Hooker RS, Potts R, Ray W.	<i>The Permanente Journal</i>	1997	Hooker RS, Potts R, Ray W. Patient satisfaction: comparing physician assistants, nurse practitioners and physicians. <i>The Permanente Journal</i> 1997; 1(1): 38-42.		Workforce	
A timeline of the physician assistant profession	Hooker RS, Cawley JF	<i>J Am Academy of Physician Assistants</i>	1997	Hooker RS, Cawley JF. A timeline of the physician assistant profession. <i>J Am Academy of Physician Assistants</i> . 1997; 11(1): 24-26.		History	
"The Effect of a Physician Assistant on the Hospitalization of Nursing Home Residents"	Ackermann, R. J., & Kemle, K. A.	<i>Journal of the American Geriatric Society</i>	1998	Ackermann, R. J., & Kemle, K. A. (1998). The effect of a physician assistant on the hospitalization of nursing home residents. <i>Journal of the American Geriatrics Society</i> , 46(5), 610-614.	OBJECTIVES: To describe the impact of regular visits to a nursing home by a gerontologist physician assistant (PA) on the hospitalization and medical costs of patients. DESIGN: A 6-year case series (1992-1997) incorporating events before and after introduction of a PA in May 1994. The PA visited the nursing home 3 to 4 times per week, provided nearly all of the acute medical care, and alternated routine visits with supervising physicians. The setting was in a 92-bed teaching nursing home in central Georgia. Results showed that the introduction of regular visits to nursing home patients by a physician assistant can reduce hospitalization and medical costs of these frail older people.	Value/Impact	
"Acceptance of Nurse Practitioners and Physician Assistants in Meeting the Perceived Needs of Rural Communities"	Baldwin, K. A., Sisk, R. J., Watts, P., McCubbin, J., Brockschmidt, B., & Marion, L. N.	<i>Public Health Nurse</i>	1998	Baldwin, K. A., Sisk, R. J., Watts, P., McCubbin, J., Brockschmidt, B., & Marion, L. N. (1998). Acceptance of nurse practitioners and physician assistants in meeting the perceived needs of rural communities. <i>Public Health Nurse</i> , 15(6), 389-397.	This paper describes the results of a study exploring community acceptance of nurse practitioners and physician assistants in rural medically underserved areas. Community acceptance in the context of this study implies not only satisfaction with care received, but also willingness of the community to support NP/PA practice through its infrastructure and encourage members to initially seek and continue to receive care from an NP or PA. Five focus groups were conducted in each of five rural medically underserved communities. The two most pervasive findings were the lack of previous exposure to NPs and PAs and the general belief that NPs and PAs would be accepted in these communities if certain conditions could be met. The theme of conditional acceptance included both personal and system factors. Personal factors included friendliness, competence, willingness to enter into the life of the community, and the ability to keep information confidential. System factors considered critical for acceptance included service type, integration with the existing health care system, cost, geographic proximity, and availability. The results of this study offer insight into community attitudes and suggest marketing strategies for those who plan to introduce NP or PA services into rural communities.	Value/Impact	
"Physician Assistant Task Force on the Impact of Managed Care"	Ballweg, R. M., Cawley, J., Crane, S. C., et al.	<i>University of California, San Francisco, Center for Health Professions</i>	1998	Ballweg, R. M., Cawley, J., Crane, S. C., et al. (1998). <i>Physician assistant task force on the impact of managed care</i> . A joint report of the Pew Health Professions Commission and the Center for the Health Professions. San Francisco: University of California, San Francisco, Center for Health Professions.		Value/Impact	
"Physician Views on the PA Profession"	Blessing, J. D., Askin, D. G., Cook, P. A., Diamond, M. A., Huntington, C. G., & Kaplan, M. E.	<i>Physician Assistant</i>	1998	Blessing, J. D., Askin, D. G., Cook, P. A., Diamond, M. A., Huntington, C. G., & Kaplan, M. E. (1998). Physician views on the PA profession. <i>Physician Assistant</i> , 22(6), 1100-1116.		Practice	

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"The Malpractice Experience: How PAs Fare"	Brock, R.	<i>Journal of the American Academy of Physician Assistants</i>	1998	Brock, R. (1998). The malpractice experience: How PAs fare. <i>Journal of the American Academy of Physician Assistants</i> , 11(6), 93-94.		Practice	
"Physician Assistants and Malpractice Risk: Findings from the National Practitioner Data Bank"	Cawley, J. F., Rohrs, R., & Hooker, R. S.	<i>Federal Bulletin</i>	1998	Cawley, J. F., Rohrs, R., & Hooker, R. S. (1998). Physician assistants and malpractice risk: Findings from the National Practitioner Data Bank. <i>Federal Bulletin</i> , 85 (4), 242-247.		Practice	
"Advanced Practice Nursing: Is the Physician's Assistant an Accident of History or a Failure to Act?"	Christman, L.	<i>Nursing Outlook</i>	1998	Christman, L. (1998). Advanced practice nursing: Is the physician's assistant an accident of history or a failure to act? <i>Nursing Outlook</i> , 46 (2), 56-59.	The medical profession has attempted for several decades to establish collaborative relationships with the nursing profession. The reported responses of some nursing professional organizations to these overtures may be responsible for the development of the physician assistant profession and should occasion consideration of the voices heard from these organizations today. The nursing profession should examine its past responses to these overtures, reflect on its status in the 1990s, and learn from its past while planning strategies to cope with the current chaos in health care.	Practice	
"Roles of Nonphysician Clinicians as Autonomous Providers of Patient Care"	Cooper, R. A., Henderson, T., & Dietrich, C. L.	<i>Journal of the American Medical Association</i>	1998	Cooper, R. A., Henderson, T., & Dietrich, C. L. (1998). Roles of nonphysician clinicians as autonomous providers of patient care. <i>Journal of the American Medical Association</i> , 280 (9), 795-802.	Studies were undertaken to assess the practice prerogatives of nonphysician clinicians (NPCs) in 10 disciplines that, collectively, are the major nonphysician contributors to the delivery of medical and surgical services. These disciplines include nurse practitioners, physician assistants, nurse-midwives, chiropractors, acupuncturists, naturopaths, optometrists, podiatrists, nurse anesthetists, and clinical nurse specialists. Marked differences were found in the practice prerogatives that states granted NPCs in the various disciplines. For most disciplines, the magnitude of their prerogatives correlated with the numbers of NPCs practicing in each state. At their maximal levels, state practice prerogatives authorized a high degree of autonomy and a broad range of authority to provide discrete levels of uncomplicated primary and specialty care. The recent growth in these prerogatives is fostering new opportunities for NPCs; however, it also is creating a pluralism that has the potential to further fragment the US health care system. It is time for regulatory integration and professional collaboration so that a health care Workforce that includes a diversity of disciplines can be assured of providing a coherent set of patient care services in the future.	Workforce	
"Current and Projected Workforce of Nonphysician Clinicians"	Cooper, R. A., Laud, P., & Dietrich, C. L.	<i>Journal of the American Medical Association</i>	1998	Cooper, R. A., Laud, P., & Dietrich, C. L. (1998). Current and projected Workforce of nonphysician clinicians. <i>Journal of the American Medical Association</i> , 280(9), 788-794.	Nonphysician clinicians (NPCs) are becoming increasingly prominent as health care providers. This study examines 10 such disciplines: nurse practitioners (NPs), physician assistants (PAs), nurse-midwives, chiropractors, acupuncturists, naturopaths, optometrists, podiatrists, nurse anesthetists, and clinical nurse specialists. The aggregate number of NPCs graduating annually in these 10 disciplines doubled between 1992 and 1997, and a further increment of 20% is projected for 2001. Assuming that enrollments remain at the levels attained in 2001, NPC supply will grow from 228000 in 1995 to 384000 in 2005, and it will continue to expand at a similar rate thereafter. The greatest growth is projected among those NPCs who provide primary care services. Moreover, the greatest concentrations of both practicing NPCs and NPC training programs are in those states that already have the greatest abundance of physicians. On a per capita basis, the projected growth in NPC supply between 1995 and 2005 will be double that of physicians. Because of the existing training pipeline, it is probable that most of the growth projected for 2005 will occur. The further expansion of both NPC and physician supply thereafter warrants careful reconsideration.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Commentary from the Front Lines: Improving the National Health Service Corps' Use of Nonphysician Medical Providers"	Earle-Richardson, G. B., & Earle-Richardson, A. F.	<i>Journal of Rural Health</i>	1998	Earle-Richardson, G. B., & Earle-Richardson, A. F. (1998). Commentary from the front lines: Improving the National Health Service Corps' use of nonphysician medical providers. <i>Journal of Rural Health, 14</i> (2), 91–97.	Migrant and community health centers, funded by the Bureau of Primary Health Care (BPHC), provide a vital service to rural communities by ensuring accessible and affordable medical care. One way the BPHC helps communities staff these centers is through the National Health Service Corps (NHSC). In this program, medical professionals receive scholarships or educational loan repayment in return for practicing in medically underserved regions where migrant and community health centers are located. Nurse practitioners, physician assistants, and nurse midwives (nonphysician providers) are a recent addition to the NHSC, and they offer the advantages of reduced cost and a strong primary care orientation. In this commentary, the authors recount their own experiences as a nonphysician provider NHSC scholarship recipient and spouse, and they identify five underlying problems with the current system, which lead to poor nonphysician provider retention. (1) Too few potential placement sites are made available from the outset. (2) NHSC placement deadlines do not allow enough time for making the best possible placement. (3) Many community health centers are not highly supportive of or invested in the program. (4) NHSC efforts to support the development of local medical providers from within underserved regions are inadequate. (5) NHSC officers working with nonphysician providers do not demonstrate a high degree of commitment to achieving an optimal provider-site match. Changes in the NHSC program based on these five problems are recommended to improve the retention of nonphysician providers in this important program.	Education	
"Who Shall Live? Health, Economics, and Social Choice (Economic Ideas Leading to the 21st Century) (3rd ed)"	Fuchs, V. R.	<i>World Scientific</i>	1998	Fuchs, V. R. (1998). <i>Who Shall Live?: Health, Economics, and Social Choice (Economic Ideas Leading to the 21st Century)</i> (3rd ed.). River Edge, NJ: World Scientific.		Value/Impact	
"Physicians and Nonphysician Clinicians: Complements or Competitors?"	Grumbach, K., & Coffman, J.	<i>Journal of the American Medical Association</i>	1998	Grumbach, K., & Coffman, J. (1998). Physicians and nonphysician clinicians: Complements or competitors? <i>Journal of the American Medical Association, 280</i> (9), 825–826.	For most of the 20th century, physicians have enjoyed a privileged position in US society. This "professional sovereignty" was buttressed by regulations that shielded physicians from competitors, such as laws granting the profession control over training and licensure and restricting opportunities for others to practice medicine. Physicians exercised considerable latitude in setting their own fees and in practicing medicine, with minimal external oversight or intrusion. Many physicians perceive that the managed care revolution is threatening to end this "golden era." Managed care organizations impose fee schedules, authorize clinical decisions, and restrict practice opportunities through selective contracting	Practice	
"The New Generation of Nurse Practitioners: Is More Enough?"	Harper, D., & Johnson J.	<i>Health Affairs</i>	1998	Harper, D., & Johnson J. (1998). The new generation of nurse practitioners: Is more enough? <i>Health Affairs, 17</i> (5), 158–164.	An article that discusses the boom in nurse practitioner education, the clinician Workforce, and where nurse practitioners' expertise can best be used.	History	
"'Confusion's Masterpiece:' The Development of the Physician Assistant Profession"	Holt, N.	<i>Bulletin of the History of Medicine</i>	1998	Holt, N. (1998). "Confusion's masterpiece:" The development of the physician assistant profession. <i>Bulletin of the History of Medicine, 72</i> (2), 246–278.	Historical review of the early development of the PA profession and those supporting and opposed such as organized nursing. The confusion is that afterwards the nursing profession developed their own - the nurse practitioner.	History	
"Educating PAs in an HMO: A 15-Year Experience"	Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	1998	Hooker, R. S. (1998). Educating PAs in an HMO: A 15-year experience. <i>Journal of the American Academy of Physician Assistants, 11</i> (11), 45–56.	Economic analysis on how a PA student can enhance and improve the productivity of a physician in an HMO. The benefit is more patients seen and the HMO can view a prospective employee.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Nurse Practitioners and Physician Assistants as Primary Care Providers in Institutional Settings"	Jacobson, P. D., Parker, L. E., & Coulter, I. D.	<i>Inquiry</i>	1998	Jacobson, P. D., Parker, L. E., & Coulter, I. D. (1998). Nurse practitioners and physician assistants as primary care providers in institutional settings. <i>Inquiry</i> , 35 (4), 432–446.	This paper describes the scope of primary care practice and autonomy of nurse practitioners (NPs) and physician assistants (PAs) at nine health maintenance organizations (HMOs) and multispecialty clinics (MSCs). We found that the larger an institution's managed care population, the greater the NPs' and PAs' scope of practice and autonomy, although patients with complex illnesses or multisystem problems usually were referred directly to a physician. Alternative policies to increase the number of primary care physicians might slow the growth in hiring new NPs and PAs, but are unlikely to reduce their primary care role in managed care settings. Further research is needed to consider whether these results are applicable to a broader range of practice settings.	Practice	
"The 5 R's of Becoming a Psychiatric Nurse Practitioner: Rationale, Readying, Roles, Rules, and Reality"	Johnson, B. X.	<i>Journal of Psychosocial Nursing and Mental Health Services</i>	1998	Johnson, B. X. (1998). The 5 R's of becoming a psy-chiatric nurse practitioner: Rationale, readying, roles, rules, and reality. <i>Journal of Psychosocial Nursing and Mental Health Services</i> , 36 (9), 20–24, 38–39.	1. Psychiatric nurse practitioners (NPs) are advanced practice registered nurses who deliver primary mental health and psychiatric care to clients and families. 2. Psychiatric NP curricula include advanced health assessment, pathology, pharmacology, NP role development, and psychiatric-mental health content, such as diagnosing and managing mental illnesses, providing therapies, and promoting mental health. 3. The degree of prescriptive autonomy of psychiatric NPs is determined by each state's Nurse Practice Act.	Practice	
"Intracranial Pressure Monitor Placement by Mid-Level Practitioners"	Kaups, K. L., Parks, S. N., & Morris, C. L.	<i>Journal of Trauma</i>	1998	Kaups, K. L., Parks, S. N., & Morris, C. L. (1998). Intracranial pressure monitor placement by midlevel practitioners. <i>Journal of Trauma</i> , 45 (5), 884–886.		Practice	
"Physician Assistants and Nurse Practitioners in Hospital Outpatient Departments, 1993-1994"	McCaig, L. F., Hooker, R. S., Sekscenski, E. S., & Woodwell, D. A.	<i>Public Health Reports</i>	1998	McCaig, L. F., Hooker, R. S., Sekscenski, E. S., & Woodwell, D. A. (1998). Physician assistants and nurse practitioners in hospital outpatient departments, 1993–1994. <i>Public Health Reports (Washington, DC: 1974)</i> , 113 (1), 75–82.	OBJECTIVE: To describe the characteristics of visits to physician assistants (PAs) and nurse practitioners (NPs) in hospital outpatient departments in the United States. METHODS: Data from the 1993 and 1994 National Hospital Ambulatory Medical Care Surveys were used to compare hospital outpatient department visits in which the patient was seen by a PA or NP, or both, with outpatient visits to all practitioners. RESULTS: An average of 64 million annual outpatient visits were made in 1993-1994, and patients were seen by PAs, NPs, or both, at 8% of these visits. PA-NP visits were more likely than total visits to occur in the Midwest, in non-urban areas, and in obstetric-gynecology clinics, and a higher proportion involved patients younger than age 25. Smaller differences were found between PA-NP visits and total outpatient visits in "reason for visit," "principal diagnosis," and "medication prescribed." CONCLUSION: Beyond the care they provide in physicians' offices and other non-hospital settings, PAs and NPs make an important contribution to ambulatory health care delivery in hospital outpatient departments.	Practice	
"Use of Physician Assistants as Surgery/Trauma House Staff at an American College of Surgeons-Verified Level II Trauma Center"	Miller, W., Riehl, E., Napier, M., Barber, K., & Dabideen, H.	<i>Journal of Trauma</i>	1998	Miller, W., Riehl, E., Napier, M., Barber, K., & Dabideen, H. (1998). Use of physician assistants as surgery/trauma house staff at an American College of Surgeons–verified level II trauma center. <i>Journal of Trauma</i> , 44 (2), 372–376.	A literature and record review was conducted to examine the use of physician assistants in a large community hospital's verified trauma center. Current and historical outcomes were analyzed regarding the trauma surgeon/physician assistant model. Results showed that Injury Severity Scores increased 19%, transfer time to the operating room decreased 43%, transfer time to the intensive care unit decreased 51%, and transfer time to the floor decreased 20%. The length of stay for admissions decreased 13%, and the length of stay for neurotrauma intensive care unit patients decreased 33%. Thus, the Hurley Medical Center trauma surgeon/physician assistant model is a viable alternative for verified trauma centers unable to maintain a surgical residency program.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Uncertainty in Illness"	Mishel, M. H.	<i>Image Journal of Nursing Scholarship</i>	1998	Mishel, M. H. (1998). Uncertainty in illness. <i>Image Journal of Nursing Scholarship</i> , 20, 225–232.	The middle-range nursing theory of uncertainty in illness is presented from both a theoretical and empirical perspective. The theory explains how persons construct meaning for illness events, with uncertainty indicating the absence of meaning. A model of the uncertainty theory displaying the concepts and their relationships forms the basis for the theoretical and empirical material. Discussion of the theory is organized around three major themes: the antecedents of uncertainty, the process of uncertainty appraisal and coping with uncertainty.	Practice	
"The Role of Uninsurance and Race in Healthcare Utilization by Rural Minorities"	Mueller, K. J., Patil, K., & Boilesen, E.	<i>Health Service Research</i>	1998	Mueller, K. J., Patil, K., & Boilesen, E. (1998). The role of uninsurance and race in healthcare utilization by rural minorities. <i>Health Service Research</i> , 33 (3, pt 1), 597–610.	The objective of this study was to examine the independent effects of minority status, residence, insurance status, and income on physician utilization, controlling for general health status and the presence of acute or chronic health problems. Of special interest was the question of utilization differences among rural minority populations, as compared with urban non-Latino whites. The study used data from the 1992 National Health Interview Survey. Results found that the most salient determinant of utilization of healthcare services is insurance status, regardless of race/ethnicity or (rural or urban) place of residence. Racial and ethnic minorities were less likely than whites to use physician services, and use was generally lower for rural residents. The most striking differences were for rural Latinos and rural Asians/other persons.	Workforce	
"A Three-Year Retrospective Analysis of the Economic Impact on Clinical Practice Sites Involved in Training Second-Year Physician Assistant Students"	Pedersen, D. M., Houchins, J., Pedersen, K. J., & Aldrich, T.	<i>Perspective on Physician Assistant Education</i>	1998	Pedersen, D. M., Houchins, J., Pedersen, K. J., & Aldrich, T. (1998). A three-year retrospective analysis of the economic impact on clinical practice sites involved in training second-year physician assistant students. <i>Perspective on Physician Assistant Education</i> , 9 (1), 8–13.	The purpose of the study is to determine the financial implications of the involvement of second-year PA students in the clinical practices of supervising primary care physicians from 1993-1996. Researchers logged over 100,000 patient encounters, documenting level of involvement by the supervising physician, type of patient problem, and patient demographics over three consecutive second-year classes during their nine-month primary care preceptorships. Results showed that the involvement of a PA student in a clinical primary care practice is financially beneficial to the practice. The increasing percentage of stage 4 encounters over the study period may be due to the impact of managed care and its emphasis on productivity.	Value/Impact	
"The Roy Adaptation Model"	Roy, S. C., & Andrews, H. A.	<i>Appleton & Lange</i>	1998	Roy, S. C., & Andrews, H. A. (1998). <i>The Roy Adaptation Model</i> . Norwalk, CT: Appleton & Lange.			
"Care Activities and Outcomes of Patients Cared for by Acute Care Nurse Practitioners, Physician Assistants, and Resident Physicians: A Comparison"	Rudy, E. B., Davidson, L. J., Daly, B., Clochesy, J. M., Sereika, S., Baldisseri, M., et al.	<i>American Journal of Critical Care</i>	1998	Rudy, E. B., Davidson, L. J., Daly, B., Clochesy, J. M., Sereika, S., Baldisseri, M., et al. (1998). Care activities and outcomes of patients cared for by acute care nurse practitioners, physician assistants, and resident physicians: A comparison. <i>American Journal of Critical Care</i> , 7 (4), 267–281.	The objective of this study was to compare the care activities performed by acute care nurse practitioners and physician assistants and the outcomes of their patients with the care activities and patients' outcomes of resident physicians. Sixteen acute care nurse practitioners and physician assistants and a matched group of resident physicians were studied during a 14-month period. Data on the subjects' daily activities and on patients' outcomes were collected 4 times. Results showed that the tasks and activities performed by acute care nurse practitioners and physician assistants are similar to those performed by resident physicians. However, residents treat patients who are sicker and older than those treated by acute care nurse practitioners and physician assistants. Patients' outcomes are similar for both groups of subjects.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Women's Perceptions of Group Support and Adaptation to Breast Cancer"	Samarel, N., Fawcett, J., Krippendorf, K., Piacentino, J. C., Eliasof, B., Hughes, P., et al.	<i>Journal of Advanced Nursing</i>	1998	Samarel, N., Fawcett, J., Krippendorf, K., Piacentino, J. C., Eliasof, B., Hughes, P., et al. (1998). Women's perceptions of group support and adaptation to breast cancer. <i>Journal of Advanced Nursing, 28</i> , 1259–1268.	Formal cancer support groups are thought to assist women to adapt to the physiological and psychosocial sequelae of breast cancer. To shed some light on this untested clinical assumption, this Roy Adaptation Model of Nursing-based study was designed to explore women's own reports about their adaptation to breast cancer and their participation in support groups. This article reports the results of the quantitative content analysis of structured telephone interviews with 70 women who participated in group social support and education for breast cancer. Almost three-quarters of the women expressed a positive change in attitude towards breast cancer, and all regarded participation in the groups as positive. A majority reported adaptive physiological, self-concept, role function, and interdependence mode effects of breast cancer and group participation. Additional research is needed to show how different types of cancer support groups, including social support and education groups and psychotherapy groups, contribute to women's responses. Research is also needed to separate the effects of group social support and education from other sources of social support that may have contributed to the women's responses, and to further explore feelings of normalization expressed by some women.	Practice	
"Innovations in Dermatology"	Samsot, M.	<i>NEWS-line for Physician Assistants</i>	1998	Samsot, M. (1998). Innovations in dermatology. <i>NEWS-line for Physician Assistants, 7</i> , 4–7.	An article that highlights innovations in dermatology through a profile on two PAs at Hansen and Taylor Dermatology in Salt Lake City, Utah.	Practice	
"Rural and Urban Nonphysician Providers in Georgia"	Strickland, W. J., Strickland, D. L., & Garretson, C.	<i>Journal of Rural Health</i>	1998	Strickland, W. J., Strickland, D. L., & Garretson, C. (1998). Rural and urban nonphysician providers in Georgia. <i>Journal of Rural Health, 14</i> (2), 109–120.	Nonphysician providers make valuable contributions to health care in rural areas. This study examines provider and practice characteristics, location preference, and reasons for location preference among Georgia nurse practitioners (NPs), certified nurse midwives, and physician assistants (PAs) (N = 1,079). Data collected through a statewide survey revealed that providers were concentrated in urban areas. Rural providers tended to be older, less educated, possess fewer specialty credentials, and were employed longer than urban providers. NPs were significantly more likely to prefer smaller communities, and PAs were significantly more likely to prefer larger communities. Providers who preferred smaller communities were likely to practice in rural and urban areas, but providers who preferred larger communities were substantially more likely to practice in urban areas. Providers who preferred smaller communities were significantly more likely to mention the importance of community dynamics, while providers who preferred larger communities were significantly more likely to mention professional context.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Effect of Therapeutic Touch on Pain and Anxiety in Burn Patients"	Turner, J. G., Clark, A. J., Gauthier, D. K., & Williams, M.	<i>Journal of Advanced Nursing</i>	1998	Turner, J. G., Clark, A. J., Gauthier, D. K., & Williams, M. (1998). The effect of therapeutic touch on pain and anxiety in burn patients. <i>Journal of Advanced Nursing</i> , 28, 10–20.	The purpose of this single-blinded randomized clinical trial was to determine whether therapeutic touch (TT) versus sham TT could produce greater pain relief as an adjunct to narcotic analgesia, a greater reduction in anxiety, and alterations in plasma T-lymphocyte concentrations among burn patients. Therapeutic touch is an intervention in which human energies are therapeutically manipulated, a practice conceptually supported by Rogers' (1970) theory of unitary human beings. Data were collected at a university burn centre in the south-eastern United States. The subjects were 99 men and women between the ages of 15 and 68 hospitalized for severe burns, and they received either TT or sham TT once a day for 5 days. Baseline data were collected on day 1, data were collected before and after treatment on day 3, and post-intervention data were collected on day 6. Instruments included the McGill Pain Questionnaire, Visual Analogue Scales for Pain, Anxiety and Satisfaction with Therapy, and an Effectiveness of Therapy Form. Blood was drawn on days 1 and 6 for lymphocyte subset analysis. Medication usage for pain in mean morphine equivalents, and mean doses per day of sleep, anxiety and antidepressant medications were recorded. Subjects who received TT reported significantly greater reduction in pain on the McGill Pain Questionnaire Pain Rating Index and Number of Words Chosen and greater reduction in anxiety on the Visual Analogue Scale for Anxiety than did those who received sham TT. Lymphocyte subset analyses on blood from 11 subjects showed a decreasing total CD8 + lymphocyte concentration for the TT group. There was no statistically significant difference between groups on medication usage.	Practice	
"The Use of Standardized Patients to Evaluate a Physician Assistant Program Curriculum"	Whitman, N. A., & Pedersen, D.	<i>Perspective on Physician Assistant Education</i>	1998	Whitman, N. A., & Pedersen, D. (1998). The use of standardized patients to evaluate a physician assistant program curriculum. <i>Perspective on Physician Assistant Education</i> , 9 (2), 93–96.	The purpose of this article is to describe the use of standardized patients to evaluate a physician assistant curriculum. Patients were recruited from a pool of about 35 applicants and matched according to age, gender, build, and personality traits. Results showed how PA students fared in caring for patients in four categories: smoking cessation, HIV, depression, and alcohol abuse.	Education	
Physician assistants and malpractice risk: Findings from the National Practitioner Data Bank	Cawley JF, Rohrs RC, Hooker RS.	<i>Federation Bulletin: J Med Licensure and Discipline</i>	1998	Cawley JF, Rohrs RC, Hooker RS. Physician assistants and malpractice risk: Findings from the National Practitioner Data Bank. <i>Federation Bulletin: J Med Licensure and Discipline</i> . 1998; 85 (4): 242-247.		Workforce	
Educating PAs in an HMO: A 15-year experience	Hooker RS	<i>J Am Academy of Physician Assistants</i>	1998	Hooker RS. Educating PAs in an HMO: A 15-year experience. <i>J Am Academy of Physician Assistants</i> . 1998; 11(11): 45-56.		History	
Books for physician assistants	Hooker RS, Cawley JF	<i>Perspective on Physician Assistant Education</i>	1998	Hooker RS, Cawley JF. Books for physician assistants. <i>Perspective on Physician Assistant Education</i> . 1998; 9(2): 87-90.		Education	
Managed Care: What is its impact on physician assistants?	Blessing DJ, Cawley JF, Crane SC, Hooker RS, Rahr R, Rollason DH, Trojniak B	<i>Physician Assistant</i>	1998	Blessing DJ, Cawley JF, Crane SC, Hooker RS, Rahr R, Rollason DH, Trojniak B. Managed Care: What is its impact on physician assistants? <i>Physician Assistant</i> . 1998; 22(1): 67-98.		Practice	
Blue Ribbon Panel report on physician assistant program expansion	Carter RD, Cawley JF, Fowkes V, Hooker RS, Rackover MA, Zellmer M	<i>Perspective on Physician Assistant Education</i>	1998	Carter RD, Cawley JF, Fowkes V, Hooker RS, Rackover MA, Zellmer M. Blue Ribbon Panel report on physician assistant program expansion. <i>Perspective on Physician Assistant Education</i> . 1998; 9(1): 21-30.		Education	
Physician assistants and nurse practitioners in hospital outpatient departments: 1993-1994	McCaig L, Hooker RS	<i>Public Health Reports</i>	1998	McCaig L, Hooker RS. Physician assistants and nurse practitioners in hospital outpatient departments: 1993-1994. <i>Public Health Reports</i> . 1998; 113(1): 75-82.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Role of Nurse Practitioner and Physician Assistants in the Care of Hospitalized Children"	American Academy of Pediatrics: Committee on Hospital Care	<i>Pediatrics</i>	1999	American Academy of Pediatrics. Committee on Hospital Care. (1999). The role of the nurse practitioner and physician assistants in the care of hospitalized children. <i>Pediatrics</i> , 103(5 Pt 1), 1050-1052.	The positions of nurse practitioner and physician assistant were created approximately 30 years ago. Since then, the role and responsibilities of these individuals have developed and grown and now may include involvement in the care of hospitalized patients. The intent of this statement is to suggest a manner in which nurse practitioners and physician's assistants may participate in and contribute to the care of the hospitalized child on the general inpatient unit, among other areas.	Workforce	
"Physician Assistants and Nurse Practitioners: Rural-Urban Settings and Reimbursement for Services"	Anderson, D. M. & Hampton, M. B.	<i>Journal of Rural Health</i>	1999	Anderson, D. M. & Hampton, M. B. (1999). Physician assistants and nurse practitioners: Rural-urban settings and reimbursement for services. <i>Journal of Rural Health</i> , 15(2), 252-263.	This study examined the role of payment sources in the utilization of physician assistants and nurse practitioners using the 1994 National Hospital Ambulatory Medical Care Survey (NHAMCS) conducted by the National Center for Health Statistics, U.S. Centers for Disease Control and Prevention. Rural vs. urban results were compared. The study found that significant rural-urban differences exist in the relationships between payment sources and the utilization of physician assistants and nurse practitioners. The study also found that payment source affects varied for physicians, physician assistants and nurse practitioners who saw outpatients in hospital settings. Surprisingly, prepaid and HMO types of reimbursements are shown to have no relationship with physician assistant and nurse practitioner utilization, and this finding is the same for both rural and urban patient visits. After controlling for other influences, the study shows that physicians, physician assistants and nurse practitioners are each as likely as the other to be present at a rural managed care visit. However, physicians are much more likely than physician assistants and nurse practitioners to be present at an urban managed care visit.	Workforce	
"A Description of Physician Assistant Post-Graduate Residency Training: The Director's Perspective"	Aprey, D., & Helms, L.	<i>Perspective on Physician Assistant Education</i>	1999	Asprey, D., & Helms, L. (1999). A description of physician assistant post-graduate residency training: The director's perspective. <i>Perspectives on Physician Assistant Education</i> , 10(3) , 124-131.	This study was undertaken with the purpose of characterizing physician assistant residency training in the United States. This study utilized a non-experimental, descriptive research design and describes various characteristics, activities, and opinions regarding physician assistant, postgraduate residency training from the residency program director's perspective.	Education	
"Physician Assistant: A Guide to Clinical Practice (2nd ed)"	Ballweg, R. M., Stolberg, S., Sullivan, E. M.	<i>Philadelphia: Saunders/Elsevier Science</i>	1999	Ballweg, R. M., Stolberg, S., Sullivan, E. M. (1999). <i>Physician Assistant: A Guide to Clinical Practice</i> (2nd ed). Philadelphia: Saunders/Elsevier Science.		History	
"Decentralized Didactic Training for Physician Assistants: Academic Performance across Training Sites"	Ballweg, R. M., & Wick, K. H.	<i>Journal of Allied Health</i>	1999	Ballweg, R. M., & Wick, K. H. (1999). Decentralized didactic training for physician assistants: Academic performance across training sites. <i>Journal of Allied Health</i> , 28, 220-225.		Education	
"Into the Future: Physician Assistants Look to the 21st Century: A Strategic Plan for the Physician Assistant Profession"	Benjamin, R., Bigby, J. A., Blessing, D., et al.	<i>Perspective on Physician Assistant Education</i>	1999	Benjamin, R., Bigby, J. A., Blessing, D., et al. for the Bureau of Health Professions (1999). Into the future: Physician Assistants look to the 21st century: A strategic plan for the physician assistant profession. <i>Perspectives on Physician Assistant Education</i> , 10(2) , 73-81.	In 1998, the Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions contracted with the Association of Physician Assistant Programs Profession (APAP) to develop a 3-year strategic plan for the physician assistant profession. This report is the culmination of the effort of this group of health care experts to offer advice and direction.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Do Advanced Practice Nurses and Physician Assistants Benefit Small Rural Hospitals?"	Bergeron, J., Neuman, K., & Kinsey, J.	<i>Journal of Rural Health</i>	1999	Bergeron, J., Neuman, K., & Kinsey, J. (1999). Do advanced practice nurses and physician assistants benefit small rural hospitals? <i>Journal of Rural Health</i> 15(2), 219-232.	This paper uses survey data from 285 small rural hospitals and case studies of 36 of these hospitals to answer questions about the extent to which advanced practice nurses and physician assistants provide primary care in small, rural hospitals, the benefits that might bring to the hospitals as well as the reactions of the public. The study used survey data collected as part of an evaluation of 285 hospitals, which received a Rural Health Care Transition grant from the Health Care Financing Administration in 1993 and 1994. Most of the hospitals used the practitioners; 70 percent used nurse practitioners; 30 percent used physician assistants; and 20 percent used both. There were some negative reactions to the use of the practitioners, but, overall, there was acceptance and benefits to the hospitals in the form of reduced recruitment costs, increased revenues and increased service offerings. These practitioners are beneficial to rural hospitals, and mechanisms to encourage their acceptance should be developed and implemented.	Value/Impact	
"Women's Responses to Battering: A Test of the Model"	Campbell, J. C., & Soeken, K. L.	<i>Research in Nursing and Health</i>	1999	Campbell, J. C., & Soeken, K. L. (1999). Women's responses to battering: A test of the model. <i>Research in Nursing and Health</i> , 22, 49-58.	A volunteer community sample of 141 well-educated, economically heterogeneous, primarily African American (80%), urban battered women was used to test a model of women's responses to battering. The model, based on Orem's theory, was developed previously with an independent sample. The major independent variables were physical and nonphysical abuse, and self-care agency. The outcomes were physical and emotional health. Using structural equation modeling techniques, there was sufficient support for the model structure to conclude preliminary support for the overall model. There was both a direct effect of abuse on health, and an indirect effect mediated through self-care agency as a protective factor.	Practice	
"Procedures Performed by Iowa Family Practice Physician Assistants"	Dehn, R., & Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i> , 12(4)	1999	Dehn, R., & Hooker, R. S. (1999). Procedures performed by Iowa family practice physician assistants. <i>Journal of the American Academy of Physician Assistants</i> , 12 (4), 63-77.		Practice	
"Current Clinical Nutrition Issues. Nutrition Knowledge and Attitudes of Physician Assistants"	Demory-Luce, D. K., & McPherson, R. S.	<i>Topics in Clinical Nutrition</i>	1999	Demory-Luce, D. K., & McPherson, R. S. (1999). Current clinical nutrition issues. Nutrition knowledge and attitudes of physician assistants. <i>Topics in Clinical Nutrition</i> , 14 (2), 71-82.	By means of a mailed survey, the nutrition knowledge and attitudes of physician assistants (PAs) in Texas were examined. The 764 PAs (54.2%) who completed the questionnaire had a mean knowledge score of 70%. Knowledge scores were significantly related to level of education but not to other demographic and practice variables. The majority of the PAs supported the importance of nutrition in their clinical practices; however, many PAs indicated that they were not satisfied with the amount of nutrition education in their PA programs and felt that PA programs should place a greater emphasis on nutrition education. Suggestions are offered for improvement in PA nutrition education and patient counseling skills.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Self-Report of Delivery of Clinical Preventive Services by U.S. Physicians: Comparing Specialty, Gender, Age, Setting of Practice, and Area of Practice"	Ewing, G. B., Selassie, A. W., Lopez, C. H., & McCutcheon, E. P.	<i>American Journal of Preventive Medicine</i>	1999	Ewing, G. B., Selassie, A. W., Lopez, C. H., & McCutcheon, E. P. (1999). Self-report of delivery of clinical preventive services by U.S. physicians: Comparing specialty, gender, age, setting of practice, and area of practice. <i>American Journal of Preventive Medicine</i> , 17, 62–72.	The purpose of this report is to summarize national survey results for key clinical preventive services provided by primary care physicians, characterize the results by demographic and practice attributes of the respondents, and compare the results to those obtained in other studies. The study design is a cross-sectional study. Results showed that few of the physicians surveyed reported providing most indicated clinical preventive services more than 80% of the time. For the purposes of this paper, > 80% provision of preventive services is considered adequate. Female physicians reported providing more preventive services involving exercise, diet, alcohol/drugs, seatbelts, sexual activity, family planning, immunizations, and screening procedures. Physicians aged < 50 reported providing more preventive services involving smoking, alcohol/drugs, seatbelts, sexual activity, and family planning. Older physicians generally reported more delivery of vaccines and screening procedures. Practitioners from big metropolitan areas reported more preventive services involving alcohol/drugs and family planning while respondents in rural areas reported less immunizations and screening procedures. When analyzed by specialty, physicians reporting the most preventive care varied by type of preventive care.	Practice	
"Resolving the Gatekeeper Conundrum: What Patients Value in Primary Care and Referrals to Specialists"	Grumbach, K., Selby, J. V., Damberg, C., Bindman, A. B., Quesenberry, C., Jr., Truman, A. et al.	<i>Journal of the American Medical Association</i>	1999	Grumbach, K., Selby, J. V., Damberg, C., Bindman, A. B., Quesenberry, C., Jr., Truman, A. et al. (1999). Resolving the gatekeeper conundrum: What patients value in primary care and referrals to specialists. <i>Journal of the American Medical Association</i> , 282 (3), 261–266.	The objective of the study was to determine the extent to which patients value the role of their primary care physicians as first-contact care providers and coordinators of referrals, whether patients perceive that their primary care physicians impede access to specialists, and whether problems in gaining access to specialists are associated with a reduction in patients' trust and confidence in their primary care physicians. A cross-sectional survey was mailed in the fall of 1997 to 12707 adult patients who were members of managed care plans and received care from 10 large physician groups in California. The response rate among eligible patients was 71%. A total of 7718 patients (mean age, 66.7 years; 32 % female) were eligible for analysis. Results showed that patients value the first-contact and coordinating role of primary care physicians. However, managed care policies that emphasize primary care physicians as gatekeepers impeding access to specialists undermine patients' trust and confidence in their primary care physicians.	Value/Impact	
"Quality of Primary Care Practice in a Large HMO According to Physician Specialty"	Grumbach, K., Selby, J. V., Schmittdiel, J. A., & Quesenberry, C. P., Jr.	<i>Health Services Research</i>	1999	Grumbach, K., Selby, J. V., Schmittdiel, J. A., & Quesenberry, C. P., Jr. (1999). Quality of primary care practice in a large HMO according to physician specialty. <i>Health Services Research</i> , 34 (2), 485–502.	The objective of the study was to determine if physician specialty was associated with differences in the quality of primary care practice and patient satisfaction in a large, group model HMO. The study design was a cross-sectional patient survey measured patient reports of physician performance on primary care measures of coordination, comprehensiveness, and accessibility of care, preventive care procedures, and health promotion. Additional items measured patient satisfaction and health values and beliefs. Results show few differences in the quality of primary care were observed by physician specialty in the setting of a large, well-established group model HMO. These similarities may result from the direct influence of practice setting on physician behavior and organization of care or, indirectly, through the types of physicians attracted to a well-established group model HMO. In some settings, practice organization may have more influence than physician specialty on the delivery of primary care.	Value/Impact	
"Military Medicine"	Gwinn, D. H., & Keller, J. E.	<i>Physician Assistant: A Guide to Clinical Practice (2nd ed.)</i>	1999	Gwinn, D. H., & Keller, J. E. (1999). Military medicine. In R. M. Ballweg, S. Stolberg, & E. Sullivan (Eds.), <i>Physician Assistant: A Guide to Clinical Practice</i> (2nd ed.). Philadelphia: W. B. Saunders.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"In Kosovo, Making a Difference"	Henson, K. E.	<i>Journal of the American Academy of Physician Assistants</i>	1999	Henson, K. E. (1999). In Kosovo, making a difference. <i>Journal of the American Academy of Physician Assistants</i> , 12(12), 77–79.	Lieutenant Henson is an Army PA serving as the battalion physician assistant for Task Force 1-77 of Task Force Falcon, the US military presence in Kosovo; the letter was written in August 1999.	International	
"Cost-Benefit Analysis of Physician Assistants [Dissertation]"	Hooker, R. S.	<i>Portland State University</i>	1999	Hooker, R. S. (1999). <i>Cost-benefit analysis of physician assistants</i> [Dissertation]. Portland State University.	Over 300,000 episodes of acute care were analyzed as to use of resources by physicians and PAs in 3 different departments. Health status of the patient and cost of care were some of the many variables held constant. In the aggregate the labor was always less with a PA but in some instances the use of resources were less intense for the same diagnosis. Study validates that PAs do not negate their cost-effectiveness by taking care of patients from physicians in the same setting.	Value/Impact	
"Physician Assistants as Inpatient Caregivers. A New Role for Mid-Level Practitioners"	Kessler, R., & Berlin, A.	<i>Cost Quality</i>	1999	Kessler, R., & Berlin, A. (1999). Physician assistants as inpatient caregivers. A new role for mid-level practitioners. <i>Cost Quality</i> , 5, 32–33.		Practice	
"Recent Developments in Primary Care in the United Kingdom: From Competition to Community-Oriented Primary Care"	Koperski, M., & Rodnick, J. E.	<i>Journal of Family Practice</i>	1999	Koperski, M., & Rodnick, J. E. (1999). Recent developments in primary care in the United Kingdom: From competition to community-oriented primary care. <i>Journal of Family Practice</i> , 48 (2), 140–145.	In 1990, changes to the National Health Service (NHS) in the United Kingdom introduced a form of US-style competition that broadened the role of general practitioners (GPs). However, the changes (called GP fundholding) produced greater inequality between practices and reduced the capacity of the NHS to plan strategically. Alternative models have been developed that retain the increased influence of primary care, promote community-oriented primary care (COPC), and facilitate strategic planning. A recent proposal from the government turns away from the competition model of 1990 to encourage GP commissioning. It offers the opportunity to create an NHS that is led by a primary care agenda, including better links with the community, and a focus on public health and social services with the goal of improving the health of populations.	International	
"The Adoption of Provider-Based Rural Health Clinics by Rural Hospitals: A Study of Market and Institutional Forces"	Krein, S. L.	<i>Health Services Research</i>	1999	Krein, S. L. (1999). The adoption of provider-based rural health clinics by rural hospitals: A study of market and institutional forces. <i>Health Services Research</i> , 34(1), 33–60.	The objective of the study was to examine the response of rural hospitals to various market and organizational signals by determining the factors that influence whether or not they establish a provider-based rural health clinic (RHC) (a joint Medicare/Medicaid program). A longitudinal design and pooled cross-sectional data were used, with the rural hospital as the unit of analysis. Key findings showed that adoption of provider-based RHCs by rural hospitals appears to be motivated less as an adaptive response to observable economic or internal organizational signals than as a reaction to bandwagon pressures. In conclusion, rural hospitals with limited resources may resort to imitating others because of uncertainty or a limited ability to fully evaluate strategic activities. This can result in actions or behaviors that are not consistent with policy objectives and the perceived need for policy changes. Such activity in turn could have a negative effect on some providers and some rural residents.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Dimensions of Retention: A National Study of the Locational Histories of Physician Assistants"	Larson, E. H., Hart, L. G., Goodwin, M. K., Geller, J., & Andrilla, C.	<i>Journal of Rural Health</i>	1999	Larson, E. H., Hart, L. G., Goodwin, M. K., Geller, J., & Andrilla, C. (1999). Dimensions of retention: A national study of the locational histories of physician assistants. <i>Journal of Rural Health, 15</i> (4), 391–402.	This study describes the locational histories of a representative national sample of physician assistants and considers the implications of observed locational behavior for recruitment and retention of physician assistants in rural practice. Through a survey, physician assistants listed all the places they had practiced since completing their physician assistant training, making it possible to classify the career histories of physician assistants as "all rural," "all urban," "urban to rural" or "rural to urban." The study examined the retention of physician assistants in rural practice at several levels: in the first practice, in rural practice overall and in states. Physician assistants who started their careers in rural locations were more likely to leave them during the first four years of practice than urban physician assistants, and female rural physician assistants were slightly more likely to leave than men. Those starting in rural practice had high attrition to urban areas (41 percent); however, a significant proportion of the physician assistants who started in urban practice settings left for rural settings (10 percent). This kept the total proportion of physician assistants in rural practice at a steady 20 percent. While 21 percent of the earliest graduates of physician assistant training programs have had exclusively rural careers, only 9 percent of physician assistants with four to seven years of experience have worked exclusively in rural settings. At the state level, generalist physician assistants were significantly more likely to leave states with practice environments unfavorable to physician assistant practice in terms of prescriptive authority, reimbursement and insurance.	History	
"Physician Assistants in the Department of Veteran Affairs"	Lyman, P., Elli, L., & Gebhart, R.	<i>Veterans Health System Journal</i>	1999	Lyman, P., Elli, L., & Gebhart, R. (1999). Physician assistants in the Department of Veterans Affairs. <i>Veterans Health System Journal, 4</i> (3), 25–29.		Practice	
"Do PAs in Clinical Practice Find Their Work Satisfying?"	Marvelle, K., & Kraditor, K.	<i>Journal of the American Academy of Physician Assistants</i>	1999	Marvelle, K., & Kraditor, K. (1999). Do PAs in clinical practice find their work satisfying? <i>Journal of the American Academy of Physician Assistants, 12</i> (11), 43–50.	Few PAs--17% of those eligible to practice--have left the profession or chosen another career. One hypothesis is that PAs are satisfied with their profession and their work. To test this hypothesis, the AAPA conducted a survey of the professional satisfaction of AAPA members in clinical practice, collecting data using the 1998 AAPA member opinion survey that had been mailed to 17,336 PAs. Usable responses were received from 12,766 (73.6%) members in clinical practice. Measured were satisfaction with work environment, satisfaction with clinical practice, satisfaction with job, impression of the job market, and outlook on the profession. By all measures, PAs are highly satisfied with their choice of career and job. When respondents were asked to rate all aspects of their job taken together, 90% responded excellent (31%) or good (59%). Ninety percent said that they would definitely (47%) or probably (43%) become a PA if they were starting a career today.	Value/Impact	
"Analysis of Physician Assistant Program Performance on the PANCE Based on Degree Granted, Length of Curriculum and Duration of Accreditation"	McDowell, L., Clemens, D., & Frosch, D.	<i>Perspective on Physician Assistant Education</i>	1999	McDowell, L., Clemens, D., & Frosch, D. (1999). Analysis of physician assistant program performance on the PANCE based on degree granted, length of curriculum, and duration of accreditation. <i>Perspective on Physician Assistant Education, 10</i> (4), 180–184.		Education	
"Predicting Success on the Physician Assistant National Certifying Examination"	Oakes, D. L., MacLaren, L. M., Gorie, C. T., & Finstuen, K.	<i>Perspective on Physician Assistant Education</i>	1999	Oakes, D. L., MacLaren, L. M., Gorie, C. T., & Finstuen, K. (1999). Predicting success on the physician assistant national certifying examination. <i>Perspective on Physician Assistant Education, 10</i> (2), 63–69.	This study was conducted to determine the predictors of the level of success on the Physician Assistant National Certifying Examination (PANCE). The study examined independent variables categorized as demographics, academic performance, and clinical performance as predictors of the level of success on the PANCE. Final results indicated that higher scores in the first and third trimesters predict higher PANCE scores.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Mood and Blood Pressure Responses in Black Female Caregivers and Noncaregivers"	Picot, S. J., Zauszniewski, F., Debanne, S. M., & Holston, E. C.	<i>Nursing Research</i>	1999	<i>Nonphysician practitioners</i> . Washington, DC: Author. Picot, S. J., Zauszniewski, F., Debanne, S. M., & Holston, E. C. (1999). Mood and blood pressure responses in black female caregivers and noncaregivers. <i>Nursing Research</i> , 48(3), 150–161.	The objective of the study was to examine the relationship between mood symptoms and daytime ambulatory blood pressures during a 12-hour period in Black female caregivers and noncaregivers. A prospective cohort design was employed to study black females 18 years of age or older identified by randomly selected elders as the provider or potential provider of 5 or more hours of care per week to the elder. Results showed that among black caregivers, elevated anger was associated with significant decreases in diastolic blood pressure, while lowered anger was associated with significant increases in diastolic blood pressure. Whether lower anger scores reflect a low level of perceived anger or suppressed anger among black caregivers should be explored in future studies.	Practice	
"The Changing Nature of Rural Health Care"	Ricketts, T. C.	<i>Annual Review of Public Health</i>	1999	Ricketts, T. C. (1999). The changing nature of rural health care. <i>Annual Review of Public Health</i> , 21 (1), 639–657.	The rural health care system has changed dramatically over the past decade because of a general transformation of health care financing, the introduction of new technologies, and the clustering of health services into systems and networks. Despite these changes, resources for rural health systems remain relatively insufficient. Many rural communities continue to experience shortages of physicians, and the proportion of rural hospitals under financial stress is much greater than that of urban hospitals. The health care conditions of selected rural areas compare unfavorably with the rest of the nation. The market and governmental policies have attempted to address some of these disparities by encouraging network development and telemedicine and by changing the rules for Medicare payments to providers. The public health infrastructure in rural America is not well understood but is potentially the most fragile aspect of the rural health care continuum.	History	
"One Hospital's Successful 20-Year Experience with Physician Assistants in Graduate Medical Education"	Russell, J. C., Kaplowe, J., & Heinrich, J. J.	<i>Academic Medicine</i>	1999	Russell, J. C., Kaplowe, J., & Heinrich, J. J. (1999). One hospital's successful 20-year experience with physician assistants in graduate medical education. <i>Academic Medicine</i> , 74 (6), 641-645.	The downsizing of residencies and the migration of residents to outpatient settings create an increasing need to protect residents' educational experiences and to maintain standards of hospital care. Some hospitals have solved this dilemma by using mid-level practitioners (MLPs), including physician assistants (PAs), to augment the diminished staffs of residents in their surgical residencies. The authors describe how their hospital has done so. Their surgical PA program, begun in 1979, seeks to meet the hospital's expectations for in-house coverage of surgical patients, to protect the educational integrity of the physician residency program in surgery, to allow protected time for residents' conferences and clinics, and to prepare residents for future practice in multidisciplinary teams. The PA and residents' services are partly separated, which reduces the potential for resident-PA conflict. Responsibilities for both residents and PAs are stratified (junior vs senior status). Both services are teaching services, which helps motivate PAs to be committed to the service and helps foster the equality between residents and PAs that the program strives for. The residents have come to value the PAs, and the program's goals have been achieved, including protecting time for residents' education and maintaining humane on-call schedules for residents. The authors discuss job satisfaction, turnover, and the hard financial realities of paying for PAs' salaries, benefits, and educational programs, as well as the loss of Medicare DME and IME reimbursements when a PA replaces a resident. Ways some of these costs can be recovered are outlined. The authors conclude with recommendations on how to deal with six key issues of PA or other MLP programs: need for institutional commitment; importance of local circumstances; emphasis on partnership, not competition, between PAs and residents; value of an education component; need to build a cohesive program, and the importance of effective PA leadership.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistants in Neurology Practice"	Taft, J. M., & Hooker, R. S.	<i>Neurology</i>	1999	Taft, J. M., & Hooker, R. S. (1999). Physician assistants in neurology practice. <i>Neurology</i> , 52 (7), 1513.	Researchers undertook a telephone survey of 46 physician assistants (PAs) who worked full-time in a neurology practice. This survey was performed using a purposive sample method. Each survey participant was asked both specific and open-ended questions. A follow-up letter sought additional information about the PA's practice. There was a 100% response from all telephone contacts and a 94% response rate from the paper survey. Results showed that the gender of PAs was evenly divided and ages ranged from 29 to 65 years, with a mean of 44 years. The average number of years in practice was 13.5, with a range of 1 to 25. The number of years in neurology practice was 7.2. Fifty-seven percent of surveyed PAs worked in group practice settings with at least four other neurologists. One-fourth of the PAs were employed by a hospital and saw approximately 26 patients per week. Medical office-based PAs (33) report that they saw an average of 43 patients a week.	Practice	
"Training Medical Assistants for Surgery"	Vaz, F., Bergstrom, S., Vaz, M., Langa, J., & Bugalho, A.	<i>Bulletin of the World Health Organization</i>	1999	Vaz, F., Bergstrom, S., Vaz, M., Langa, J., & Bugalho, A. (1999). Training medical assistants for surgery. <i>Bulletin of the World Health Organization</i> , 77(8), 688-691.	This report details a successful program in Mozambique for training middle-level health workers to perform fairly advanced surgical procedures in remote areas where the services of consultants are virtually unobtainable. Manpower and financial constraints obliged Mozambique to train medical assistants to perform surgical work in rural areas, where three broad priorities were identified: pregnancy-related complications, trauma-related complications, and emergency inflammatory conditions.	International; Education	
"Screening Flexible Sigmoidoscopy by Nonphysician Endoscopists: It's Here to Stay, but Is It the Right Test to Do? [Editorial]"	Wong, R. C. K.	<i>Gastrointestinal Endoscopy</i>	1999	Wong, R. C. K. (1999). Screening flexible sigmoidoscopy by nonphysician endoscopists: It's here to stay, but is it the right test to do? [Editorial]. <i>Gastrointestinal Endoscopy</i> , 49 (2), 262-264.		Practice	
"Qualities of Effective Preceptors on Physician Assistant Students: Third Place Award J. Peter Nyquist Student Writing Competition"	Zayas, T. T.	<i>Perspective on Physician Assistant Education</i>	1999	<i>ADVANCE for Physician Assistants</i> , 16 (5-6), 52-54. Zayas, T. T. (1999). Qualities of effective preceptors on physician assistant students: Third place award J. Peter Nyquist student writing competition. <i>Perspective on Physician Assistant Education</i> , 10(1), 7-11.	A survey was conducted to examine the opinions of preceptors, PA students, and recent PA program graduates regarding the effectiveness of preceptors. Surveys were mailed to 100 preceptors of PA students enrolled in Emory's PA program and to 100 PAs graduating from Emory's PA program in 1996 and 1997. Thirty-five current second year and 44 current third-year Emory PA students were also surveyed. Results showed that students and preceptors uniformly identified several qualities of effective preceptors, and preceptors also indicated their motivation for becoming preceptors, identified their strengths and weaknesses, and expressed interest in faculty development to be provided by the Emory PA program.	Education	
Physician assistants in neurology practice: A national survey	Taft J, Hooker RS.	<i>Neurology</i>	1999	Taft J, Hooker RS. Physician assistants in neurology practice: A national survey. <i>Neurology</i> . 1999; 52 (7): 1513.		Practice	
Physician assistant research: Physician Assistant Forum	Blessing JD, Dehn R, Glick AD, Hooker RS, McNeill DL, Pedersen DM	<i>Physician Assistant</i>	1999	Blessing JD, Dehn R, Glick AD, Hooker RS, McNeill DL, Pedersen DM. Physician assistant research: Physician Assistant Forum. <i>Physician Assistant</i> . 1999; 23(4): 76-93.			
On surveying orthopedic PAs	Hooker RS	<i>Surgical Physician Assistant</i>	1999	Hooker RS. On surveying orthopedic PAs. <i>Surgical Physician Assistant</i> . 1999; 5(3): 17 (Letter to the Editor).		Practice	
Procedures performed by Iowa family practice physician assistants	Dehn R, Hooker RS	<i>J Am Academy of Physician Assistants</i>	1999	Dehn R, Hooker RS. Procedures performed by Iowa family practice physician assistants. <i>J Am Academy of Physician Assistants</i> . 1999; 12(4): 63-77.		Practice	
"Nurse Practitioner, Nurse Midwife, and Physician Assistant Attitudes and Care Practices Related to Persons with HIV/AIDS"	Martin, J. E., & Bedimo, A. L.	<i>Journal of the American Academy of Nurse Practitioners</i>	2000	Martin, J. E., & Bedimo, A. L. (2000). Nurse Practitioner, nurse midwife, and physician assistant attitudes and care practices related to persons with HIV/AIDS. <i>Journal of the American Academy of Nurse Practitioners</i> . 12(2), 35-41.	This study suggests that mid-level providers such as PAs and NPs have relatively low avoidance and high empathy toward people living with AIDS and are willing to care for HIV-infected individuals.	Practice	
"The Economic Basis of Physician Assistant Practice"	Hooker, R. S.	<i>Physician Assistant</i>	2000	Hooker, R. S. (2000). The economic basis of physician assistant practice. <i>Physician Assistant</i> . 24, 51-66, 71.	A review of literature found that a PA can safely assume at least 83 percent of all primary care visits without direct physician supervision, and that using the substitution ratio, a PA can perform at least 75% of a physician's tasks at a cost of 44 percent of the physician's salary.	Value/Impact	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Economics of Physician Assistant Employment"	Hooker, R. S.	<i>Physician Assistant</i>	2000	Hooker, R. S., (2000). The economics of physician assistant employment. <i>Physician Assistant</i> . 24, 67.	Examined 12,782 medical office visits made by patients to a non-profit, prepaid group practice and found every medical condition managed by PAs had a lower total episode cost than similar episodes managed by a physician.	Value/Impact	
"Health Care Utilization by Old-Old Long-Term Care Facility Residents: How do Medicare Fee-for-Service and Capitation Rates Compare?"	Phillips, V. L., Paul, W., Becker, E. R., Osterweil, D., & Ouslander, J. G.	<i>Journal of the American Geriatric Society</i>	2000	Phillips, V. L., Paul, W., Becker, E. R., Osterweil, D., & Ouslander, J. G. (2000). Health care utilization by old-old long-term care facility residents: how do Medicare fee-for-service and capitation rates compare? <i>Journal of the American Geriatric Society</i> . 28(10), 1330-1336.	Medicare Part A and B reimbursement data gathered from billing records found teams of geriatricians and physician extenders can reduce hospitalization rates and overall expenditures.	Value/Impact	
"The Multicultural Sensitivity of Physician Assistant Students"	Jibaja M.L., Sebastian R., Kingery P., & Holcomb J.D.	<i>Journal of Allied Health</i>	2000	Jibaja M.L., Sebastian R., Kingery P., & Holcomb J.D. (2000). The multicultural sensitivity of physician assistant students. <i>Journal of Allied Health</i> . 29(2), 79-85.	Using a specially designed instrument, the authors examined physician assistant students' multicultural sensitivity at four points before, during, and after the 30 months of a master's degree program. The students (n = 19) were found to have become more multiculturally sensitive by the end of the program.	Education	
"A Rural-Urban Comparison of Patterns of Physician Assistant Practice"	Martin, K.E.	<i>Journal of American Academy of Physician Assistants</i>	2000	Martin, K.E. A rural-urban comparison of patterns of physician assistant practice. <i>JAAPA</i> . 13(7), 49-50, 56, 59.	To learn more about PAs in rural and urban settings and their willingness to practice in underserved areas, the author conducted a census of all PAs who hold a Pennsylvania license.	Workforce	
"State Scholarships, Loan Forgiveness, and Related Programs"	Pathman, D. E., Taylor, D. H. Jr., Konrad, T. R., King, T. S., Harris, T., Henderson, T. M., Koch, G. G.	<i>Journal of the American Medical Association</i>	2000	Pathman, D. E., Taylor, D. H. Jr., Konrad, T. R., King, T. S., Harris, T., Henderson, T. M., Koch, G. G. (2000). State Scholarships, Loan Forgiveness, and Related Programs. <i>JAMA</i> . 284(16), 2084-2092.	In 1996, found 370 midlevel practitioners were serving obligations to state programs providing financial support in exchange for service in defined underserved areas, excluding programs receiving federal support. This number of midlevel practitioners was comparable to those in federal programs. There were 82 such programs in 41 states in 1996, more than double the 39 that existed in 1990.	Workforce	
"Patient Satisfaction with Physician Assistants in an ED Fast Track"	Counselman, F. L., Graffeo, C. A., & Hill, J. T.	<i>American Journal of Emergency Medicine</i>	2000	Counselman, F. L., Graffeo, C. A., & Hill, J. T. (2000). Patient Satisfaction with Physician Assistants in an ED Fast Track. <i>American Journal of Emergency Medicine</i> . 18(6), 661-665.	A survey of patients seen by a PA in an emergency department fast track found patients to be very satisfied with their care, with the mean patient satisfaction score of 93 out of 100 possible points. Twelve percent of patients indicated they would be willing to wait longer to be seen primarily by an emergency physician rather than a PA.	Value/Impact	
"'Elder' Physician Assistants and Their Practices"	Duryea, W.R., & Hooker, R.S.	<i>Journal of American Academy of Physician Assistants</i>	2000	Duryea, W.R., & Hooker, R.S. (2000). "Elder" physician assistants and their practices. <i>JAAPA</i> . 13(4), 67, 71-4, 80.	This study describes the phenomenon of a rising number of elder PAs in the ranks of the nation's health providers and their patterns of practice.	Practice	
"Testing for Chlamydia and Sexual History Taking in Adolescent Females: Results from a Statewide Survey of Colorado Primary Care Providers"	Torkko, K.C., Gershman, K., Crane, L.A., Hamman, R., & Baron, A.	<i>Pediatrics</i>	2000	Torkko, K.C., Gershman, K., Crane, L.A., Hamman, R., & Baron, A. (2000). Testing for Chlamydia and sexual history taking in adolescent females: results from a statewide survey of Colorado primary care providers. <i>Pediatrics</i> . 2000 Sep;106(3): E32.	Questionnaire to random sample of Colorado physicians, NPs, and PAs found NPs and pediatricians most likely to report testing sexually active adolescent females for Chlamydia, and PAs and internal medicine specialists were least likely. Female providers were more likely to test.	Practice	
"Sharing the Mantle of Primary Female Care: Physicians, Nurse Practitioners, and Physician Assistants"	Coulter, I., Jacobson, P., & Parker, L. E.	<i>Journal of the American Medical Women's Association</i>	2000	Coulter, I., Jacobson, P., & Parker, L. E. (2000). Sharing the Mantle of Primary Female Care: Physicians, Nurse Practitioners, and Physician Assistants. <i>Journal of the American Medical Women's Association</i> . 55(2), 100-103.	Key informant interviews with providers and administrators at nine MCOs and multispecialty clinics found the shortage of women health care providers as an important contributing factor in why institutions began to hire NPs and PAs. Many women patients prefer to see same-sex providers but there are not enough female physicians to meet this demand. NPs and PAs were more interested in preventive care than were physicians, and therefore came to play a central role in delivery of women's primary care.	Practice	
"Health Workforce Issues Confronting Physician Assistants"	Dehn, R.W., & Cawley, J.F.	<i>Journal of American Academy of Physician Assistants</i>	2000	Dehn, R.W., & Cawley, J.F. (2000). Looking into tomorrow. Health Workforce issues confronting physician assistants. <i>JAAPA</i> . 13(11),29-32, 35-38, 43-46.	In this article, the authors review and discuss (1) Workforce data on physicians, PAs, and nurse practitioners and (2) projections of the number of these clinicians who will be trained in the future. We then analyze (1) data that describe the past 11 years of PA education and (2) data that address the experience of recent graduates of PA education programs who have sought employment.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"State Scholarships, Loan Forgiveness, and Related Programs"	Pathman, D. E., Taylor, D. H. Jr., Konrad, T. R., King, T. S., Harris, T., Henderson, T. M., Koch, G. G.	<i>Journal of the American Medical Association</i>	2000	Pathman, D. E., Taylor, D. H. Jr., Konrad, T. R., King, T. S., Harris, T., Henderson, T. M., Koch, G. G. (2000). State Scholarships, Loan Forgiveness, and Related Programs. <i>JAMA</i> . 284(16), 2084-2092.	This study found that in 1996, 370 midlevel practitioners were serving obligations to state programs providing financial support in exchange for service in defined underserved areas, excluding programs receiving federal support. This number of midlevel practitioners was comparable to those in federal programs. There were 82 such programs in 41 states in 1996, more than double the 39 that existed in 1990.	Workforce	
"Practice of Pediatric Pulmonology: Results of the Future of Pediatric Education Project (FOPE)"	Redding, G. J., Cloutier, M. M., Dorkin, H. L., Brotherton, S. E., & Mulvey, H. J.	<i>Pediatric Pulmonology</i>	2000	Redding, G. J., Cloutier, M. M., Dorkin, H. L., Brotherton, S. E., & Mulvey, H. J. Practice of pediatric pulmonology: results of the Future of Pediatric Education Project (FOPE). <i>Pediatric Pulmonology</i> . 30(3), 190-197.	Survey of pediatric pulmonologists found most use physician extenders to provide care.	Workforce	
"It's All in the Name: The Case for Associate Physicians"	Anthony, M.	<i>ADVANCE for Physician Assistants</i>	2000	Anthony, M. (2000). It's all in the name: The case for associate physicians. <i>ADVANCE for Physician Assistants</i> , 8(6), 16.		History	
"Patient Care by Physician Assistants and by Physicians in an Emergency Department"	Arnopolin, S. L., & Smithline, H. A.	<i>Journal of the American Academy of Physician Assistants</i>	2000	Arnopolin, S. L. & Smithline, H. A. (2000). Patient care by physician assistants and by physicians in an emergency department. <i>Journal of the American Academy of Physician Assistants</i> , 13(12), 39-40, 49-50, 53-54, 81.	This study compared emergency physicians with emergency department physician assistants (PAs) to determine whether PAs are an appropriate option for providing services rendered by physicians in this setting. The study design was an observational retrospective review of a hospital database (July 1995 to June 1996) from an urban urgent-care facility. A total of 9,601 patient encounters were analyzed. Results showed that despite a few large differences in some diagnostic groups, the two types of provider had, overall, small but clinically insignificant differences in length of visit and total charges. The magnitude of difference in length of visit and total charges strongly suggests that PAs, when compared with physicians, are a viable staffing option in an urgent care facility.	Workforce	
"A Description of Physician Assistant Post-Graduate Residency Training: The Resident's Perspective"	Asprey, D., & Helms, L.	<i>Perspective on Physician Assistant Education</i>	2000	Asprey, D., & Helms, L. (1999). A description of physician assistant post-graduate residency training: The resident's perspective. <i>Perspectives on Physician Assistant Education</i> , 11(2), 79-86.	This study was undertaken to characterize PA residency training in the United States from the perspective of participants. Methods: This study utilizes a non-experimental, descriptive research design to describe residents' perspectives of various characteristics, activities and opinions regarding PA postgraduate residency training.	Education	
"The Wineglass Model: Tracking the Locational Histories of Health Professionals"	Baer, L. D., Geslera, W. M., & Konrad, T. R.	<i>Social Science and Medicine</i>	2000	Baer, L. D., Geslera, W. M., & Konrad, T. R. (2000). The wineglass model: Tracking the locational histories of health professionals. <i>Social Science & Medicine</i> , 50(3), 317-329.	This paper introduces a space-time continuum model to evaluate the effectiveness of programs that encourage recruitment and retention of health professionals. Based on the shape of a wineglass, the model provides a framework to study the locational histories of a cohort of health professionals, both conceptually and quantitatively.	History	
"Will a Physician Assistant Improve Your Dermatology Practice?"	Baker, K. E.	<i>Seminars in Cutaneous Medicine and Surgery</i>	2000	Baker, K. E. (2000). Will a physician assistant improve your dermatology practice? <i>Seminars in Cutaneous Medicine and Surgery</i> , 19(3), 201-203.		Practice	
"Administrator, Consultant Credit PA Background for Success"	Brotherton, P.	<i>AAPA News</i>	2000	Brotherton, P. (2000). Administrator, consultant credit PA background for success. <i>AAPA News</i> , 21, 7.		Practice	
"An Office to Study, Preserve, and Present the History of the Physician Assistant Profession"	Carter, R. D.	<i>Perspective on Physician Assistant Education</i>	2000	Carter, R. D. (2000). An office to study, preserve, and present the history of the physician assistant profession. <i>Perspective on Physician Assistant Education</i> , 11 (3), 185-187.	This paper details the creation of an office for the study, preservation, and presentation of PA history within the Department of Community and Family Medicine at the Duke University Medical Center.	History	
"Physician Assistants: A Young Profession Celebrates the 35th Anniversary of its Birth in North Carolina"	Carter, R. D., & Strand, J.	<i>North Carolina Medical Journal</i>	2000	Carter, R. D., & Strand, J. (2000). Physician assistants: A young profession celebrates the 35th anniversary of its birth in North Carolina. <i>North Carolina Medical Journal</i> , 61 (5), 249-256.		History	
"The Obsolete Physician?"	Cawley, J. F.	<i>Clinicians Publishing Group</i>	2000	Cawley, J. F. (2000). <i>The Obsolete Physician?</i> Clifton, NJ: Clinicians Publishing Group.	Column that makes the observation that the role of the physician in medicine is changing and evolving. Notes that in the future, the role of the physician as front-line clinician may change as physician assistants and nurse practitioners assume more responsibility for medical care provision (particularly in primary care) and that the role of the physician will likely shift toward staff management, sub-specialization, and care of complex illness.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Marketplace Demand for Physician Assistants: Results of a National Survey of 1998 Graduates"	Cawley, J. F., Simon, A., Blessing, J. D., Pedersen, D. M., & Link, M. S.	<i>Perspective on Physician Assistant Education</i>	2000	Cawley, J. F., Simon, A., Blessing, J. D., Pedersen, D. M., & Link, M. S. (2000). Marketplace demand for physician assistants: Results of a national survey of 1998 graduates. <i>Perspective on Physician Assistant Education</i> , 11 (1), 12–17.		Workforce	
"Caring for Terminally Ill Patients: A Comparative Analysis of Physician Assistant and Medical Students' Attitude"	Chaikin, E. J., Thornby, J. I., & Merrill, J.	<i>Perspective on Physician Assistant Education</i>	2000	Chaikin, E. J., Thornby, J. I., & Merrill, J. (2000). Caring for terminally ill patients: A comparative analysis of physician assistant and medical students' attitude. <i>Perspective on Physician Assistant Education</i> , 11 (2), 87–94.		Education	
"The Emerging Role of Physician Assistants in the Delivery of Dermatological Health Care"	Clark, A. R., Monroe, J. R., Feldman, S. R., Fleischer, A. B., Hauser, D. A., & Hinds, M. A.	<i>Dermatologic Clinics</i>	2000	Clark, A. R., Monroe, J. R., Feldman, S. R., Fleischer, A. B., Hauser, D. A., & Hinds, M. A. (2000). The emerging role of physician assistants in the delivery of dermatological health care. <i>Dermatologic Clinics</i> , 18 (2), 297–302.		Workforce	
"Treating Patients from Other Cultures"	Cohen, S.	<i>Perspective on Physician Assistant Education</i>	2000	Cohen, S. (2000). Treating patients from other cultures. <i>Perspective on Physician Assistant Education</i> , 11(2), 129–130.		History; Education	
Credentialing	Condit, D.	<i>Surgical Physician Assistant</i>	2000	Condit, D. (2000). Credentialing. <i>Surgical Physician Assistant</i> , 6 (8), 7–8.		Education	
"Patient Satisfaction with Physician Assistants (PAs) in an ED Fast Track"	Counselman, F. L., Graffeo, C. A., & Hill, J. T.	<i>American Journal of Emergency Medicine</i>	2000	Counselman, F. L., Graffeo, C. A., & Hill, J. T. (2000). Patient satisfaction with physician assistants (PAs) in an ED fast track. <i>American Journal of Emergency Medicine</i> , 18 (6), 661–665.	The study objective was to determine patient satisfaction with physician assistants (PAs) in an emergency department (ED) fast track (FT). An additional goal was to determine if patients would be willing to wait longer to be seen primarily by an emergency physician (EP) rather than a PA. The study was conducted between March 1, 1999 and May 1, 1999 at a community hospital with an annual ED census of 48,644 patients; 18% are seen in the ED FT. All patients were seen primarily by a PA. An anonymous survey was given to patients at time of discharge. Patients rated their degree of satisfaction by placing an X on a 100 millimeter visual analogue scale. Patients also indicated if they would be willing to wait longer to be seen primarily by an EP rather than a PA. A total of 111 surveys were analyzed, for a response rate of 11%. Sixty-two patients (56%) were women and 49 men (44%), with a mean age of 28 years. Twenty-seven patients (24%) were younger than 18 years and required a legal guardian to complete the survey. The mean patient satisfaction score was 93 (95% CI: 90.27 to 95.73). Only 13 patients (12%) indicated they would be willing to wait longer to be seen primarily by an EP rather than a PA. Patients seen in an ED FT are very satisfied with the care rendered by a PA. Few patients would be willing to wait longer in such a setting to be seen primarily by an EP.	Value/Impact	
"The Distribution of Rural Female Generalist Physicians in the United States"	Doescher, M. P., Ellsbury, K. E., & Hart, L. G.	<i>Journal of Rural Health</i>	2000	Washington, DC: National Academy Press. Doescher, M. P., Ellsbury, K. E., & Hart, L. G. (2000). The distribution of rural female generalist physicians in the United States. <i>Journal of Rural Health</i> , 16(2), 111–118.	This research study presents data describing the geographic distribution of female physicians in the United States. Researchers examine the geographic distribution of all active U.S. allopathic physicians recorded in the October 1996 update of the American Medical Association Physician Masterfile. Percentages and numbers of female physicians by professional activity, specialty type, and geographic location are reported. Findings reveal there were fewer than 7,000 female allopathic physicians practicing in rural America in 1996. The proportion of generalist female physicians who practice in rural settings was significantly lower than the proportion who practice in urban locations. Although members of the most recent 10-year medical school graduation cohort of female generalist physicians were slightly more likely to practice in rural areas than members of earlier cohorts, female physicians remained significantly underrepresented in rural areas. States varied dramatically in rural female generalist underrepresentation.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Elder Physician Assistants and Their Practices"	Duryea, W.R., & Hooker, R.S.	<i>Journal of the American Academy of Physician Assistants</i>	2000	Duryea, W. R., & Hooker, R. S. (2000). Elder physician assistants and their practices. <i>Journal of the American Academy of Physician Assistants</i> , 13(4), 67–68, 71–72, 74, 80, 82, 85.	This study describes the phenomenon of a rising number of elder PAs in the ranks of the nation's health providers and their patterns of practice. A subpopulation cohort of practicing PAs 60 years and older was compared to all PAs. Age range, gender, practice setting, specialty, and other demographic variables were analyzed using established methods. Differences between elder PAs and all other PAs and services provided by the two groups were examined. Results showed that America's corps of PAs continues to work into and beyond the usual retirement age for most workers, and is caring for a greater percentage of older persons than all PAs are. Most elder PAs practice in family or general medicine and prefer to practice in a rural area. These practice preferences mirror results of previous studies of the practices of elder physicians in the United States and Canada. The aging of PAs has important implications for clinical practice and health Workforce planning. If PAs were encouraged to take early retirement, more elderly patients would be shifted to younger providers--with the potential to affect delivery of primary care services in rural communities.	Practice	
"Examining Referral Practices of Primary Care Physician Assistants"	Enns, S. M., Muma, R. D., & Lary, M. J.	<i>Journal of the American Academy of Physician Assistants</i>	2000	Enns, S. M., Muma, R. D., & Lary, M. J. (2000). Examining referral practices of primary care physi-cian assistants. <i>Journal of the American Academy of Physician Assistants</i> , 13 (5), 81, 84, 86, 118.	Various barriers to specialty referrals that are initiated by physician assistants (PAs) have been reported to limit a PA's ability to care for patients effectively when they have a medical problem that requires specialty intervention. To assist in evaluating this matter, researchers conducted a survey to assess referral practices and perceived barriers to referral among primary care PAs in the United States. The study method was a cross-sectional, random sample of 500 primary care PAs from across the United States. Though the study identifies barriers, more research is needed for definitive results.	Practice	
"Health Care for a Legion of Aging Baby Boomers"	Frary, T. N., Fleming, D. K., Kemle, K., Segal-Gidan, F., & Simon, B.	<i>Journal of the American Academy of Physician Assistants</i>	2000	Frary, T. N., Fleming, D. K., Kemle, K., Segal-Gidan, F., & Simon, B. (2000). Health care for a legion of aging baby boomers. <i>Journal of the American Academy of Physician Assistants</i> , 13 (4), 23–24, 27–28, 31.		Practice	
"International Rotations: An Informal Survey of PA Schools"	Heinerich, J.	<i>ADVANCE for Physician Assistants</i>	2000	Heinerich, J. (2000). International rotations: An informal survey of PA schools. <i>ADVANCE for Physician Assistants</i> , 8, 30.		International	
"PA Union Movement Flourishes in NY"	Herrick, T.	<i>Clinician News</i>	2000	Herrick, T. (2000). PA union movement flourishes in NY. <i>Clinician News</i> , 4, 19–20.		Workforce	
"The Economics of Physician Assistant Employment"	Hooker, R. S.	<i>Physician Assistant</i>	2000	Hooker, R. S. (2000). The economics of physician assistant employment. <i>Physician Assistant</i> , 24 (4), 67–85.		Value/Impact	
"Address to the 1995 Graduating Class of the Utah PA Program"	Jameson, K. P.	<i>Perspective on Physician Assistant Education</i>	2000	Jameson, K. P. (2000). Address to the 1995 graduating class of the Utah PA Program. <i>Perspective on Physician Assistant Education</i> , 11 (2), 125–128.		Education	
"Survey on Utilization of Nonsurgeon Practitioners in Cardiothoracic Surgery (SUNPICS)"	Lee, J., Cooper, J., Lopez, E. C., King, B., & Duhaylongsod, F.	<i>Surgical Physician Assistant</i>	2000	Lee, J., Cooper, J., Lopez, E. C., King, B., & Duhaylongsod, F. (2000). Survey on utilization of nonsurgeon practitioners in cardiothoracic surgery (SUNPICS). <i>Surgical Physician Assistant</i> , 6 (12), 14–21.		Practice	
"Pneumothorax As A Complication of Central Venous Cannulation Performed by Physician Assistants"	Marsters, C. E.	<i>Surgical Physician Assistant</i>	2000	Marsters, C. E. (2000). Pneumothorax as a complication of central venous cannulation performed by physician assistants. <i>Surgical Physician Assistant</i> , 6 (3), 18–24.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Revising Appointment, Promotion, and Tenure Procedures to Incorporate an Expanded Definition of Scholarship: The University of Kentucky College of Medicine Experience"	Nora, L. M., Poreroy, C., Curry, T. E., Jr., Hill, N. S., Tibbs, P. A., & Wilson, E. A.	<i>Academic Medicine</i>	2000	Nora, L. M., Poreroy, C., Curry, T. E., Jr., Hill, N. S., Tibbs, P. A., & Wilson, E. A. (2000). Revising appointment, promotion, and tenure procedures to incorporate an expanded definition of scholarship: The University of Kentucky College of Medicine experience. <i>Academic Medicine</i> , 75 (9), 913–924.	Scholarly activity and scholarly productivity are key features of the academic health center (AHC) and the work of college of medicine faculty. Recent changes in the academic environment of the University of Kentucky (UK) College of Medicine led to an examination of its appointment, promotion, and tenure procedures. This, in turn, led to a re-examination of the college's definition of scholarship. This article describes three of UK's scholarship-related challenges, particularly those related to clinical departments. The authors describe some of the new procedures being implemented to address these challenges; these include new faculty designations, clearer articulation of promotion procedures, explicit recognition of multiple forms of scholarship, expectations for investment in junior faculty, and mandatory discussion of faculty success in chairs' annual reviews. Faculty reactions, positive and negative, to these changes in procedures are also presented.	Education	
"Supporting the Rural Health Care Safety Net"	Ormond, B. A., Wallin, S., & Goldenson, S. M.	<i>Urban Institute</i>	2000	Ormond, B. A., Wallin, S., & Goldenson, S. M. (2000). <i>Supporting the Rural Health Care Safety Net</i> . Washington, DC: Urban Institute.	This report discusses the challenges faced in the health care sector in several communities. It describes the ways in which governments and individual providers in these communities have attempted to strengthen rural health delivery systems and ensure access to essential health services, particularly for the low-income population. The experiences of the communities discussed here highlight universal concerns in the rural health care sector and show the diversity of approaches to addressing these problems.	Workforce	
"Pulse of the Profession: The Hospitalist PA: An Emerging Opportunity"	Ottley, R. G., Agbontaen, J. X., & Wilkow, B. R.	<i>Journal of the American Academy of Physician Assistants</i>	2000	Ottley, R. G., Agbontaen, J. X., & Wilkow, B. R. (2000). Pulse of the profession. The hospitalist PA: An emerging opportunity. <i>Journal of the American Academy of Physician Assistants</i> , 13 (11), 21–22.		Practice	
"Emphasizing Domestic Violence Prevention in the Physician Assistant Curriculum"	Phelps, P. B., & Lyons, G. G.	<i>Perspective on Physician Assistant Education</i>	2000	Phelps, P. B., & Lyons, G. G. (2000). Emphasizing domestic violence prevention in the physician assistant curriculum. <i>Perspective on Physician Assistant Education</i> , 11 (1), 43–44.	The author argues that domestic violence needs to be taught as a preventable disease since it is associated with a variety of harmful health conditions.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"How Many Rural Doctors Do We Have?"	Ricketts, T. C., Hart, L. G., & Pirani, M.	<i>Journal of Rural Health</i>	2000	Ricketts, T. C., Hart, L. G., & Pirani, M. (2000). How many rural doctors do we have? <i>Journal of Rural Health, 16</i> (3), 198–207.	The number of physicians practicing in the nonmetropolitan areas of the United States in relation to population has increased over the past two decades, but more slowly than the number of physicians in metropolitan counties. During the same period, there was a growing acceptance of the perception that the physician work force in the United States exceeded the number necessary to meet the requirements of an efficient health care system. This has caused policy-makers to consider reforming the incentives for training physicians and restricting the entry of physicians from other countries into the United States. The supply figures on which these assessments of oversupply were made are based on "head counts" of the number of licensed, active physicians. By using more detailed data describing the licensed practicing physicians in the states of North Carolina and Washington, and by using estimates of professional activity collected as part of the Socioeconomic Monitoring System of the American Medical Association, estimates of the number of full-time equivalent physicians actually in practice in the two states and the comparative productivity of those physicians were made. Based on the state-level data, the estimates of actively practicing physicians are approximately 14 percent lower than the head-count number in North Carolina and, by using a more conservative estimation method, are approaching a 10 percent lower number than the head-count number in Washington. Using national productivity data, the effective supply of nonmetropolitan physicians appears to have not grown significantly over the past 10 years, and for family physicians the supply has declined by 9 percent. These estimates of the effective physician supply support long-held claims that rural communities continue to experience a severe undersupply of practitioners. These results suggest that the way in which physicians are counted needs to be re-examined, especially in rural places where the ratios of providers to population are more sensitive to small changes in supply.	Workforce	
"Physician Assistants in Nonclinical Roles Put Medical Knowledge to Work on a Broader Scale"	Rogers, B.	<i>AAPA News</i>	2000	Rogers, B. (2000). Physician assistants in nonclinical roles put medical knowledge to work on a broader scale. <i>AAPA News 6</i> , 8–9.		Practice	
"PAs Become Part of Political Process by Running for Public Office"	Simmons, J.	<i>AAPA News</i>	2000	Simmons, J. (2000). PAs become part of political process by running for public office. <i>AAPA News, 21</i> (1), 14.		Workforce	
"Nutrition Education in Physician Assistant Programs"	Sullivan, S.	<i>Perspective on Physician Assistant Education</i>	2000	Sullivan, S. (2000). Nutrition education in physician assistant programs: A national survey. <i>Perspective on Physician Assistant Education, 11</i> (1), 18-24.		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Nurse Practitioners' Impact on Primary Health Care Outcomes in Rural Clients"	Taylor, L. G.	<i>Dissertation Abstracts International</i>	2000	Taylor, L. G. (2000). Nurse practitioners' impact on primary health care outcomes in rural clients. <i>Dissertation Abstracts International</i> , 61(11b), 5804.	The purpose of this descriptive cross-sectional study was to determine if a significant difference exists in perceived primary health care outcomes of rural clients treated by nurse practitioners and those treated by physicians or physician assistants. Primary health care outcomes were defined as (a) perceived satisfaction with care, (b) compliance with antibiotic medications, and (c) perceived health. Three hypotheses were tested: (1) There is a significant difference in satisfaction with care among rural clients treated by a nurse practitioner and those treated by a physician or a physician assistant. (2) There is a significant difference in compliance with antibiotic medications among rural clients treated by a nurse practitioner and those treated by a physician or a physician assistant. (3) There is a significant difference in perceived health among rural clients treated by a nurse practitioner and those treated by a physician or a physician assistant. The sample of 151 subjects (a) were age 18 or older, (b) could read and understand English, and (c) lived in a pre-defined rural county. The majority of subjects were female, white, and married. There was no significant difference found in satisfaction with care or compliance with antibiotic medications among rural clients treated by a nurse practitioner and those treated by a physician or physician assistant. Clients of nurse practitioners had higher levels of perceived health, general health, and physical health than clients of physicians or physician assistants. Rural clients in this study were more satisfied with nurse practitioners in relation to general satisfaction, interpersonal manner, time spent with health care provider, and accessibility and convenience. Financially, rural clients in this study were more satisfied when treated by physicians and nurse practitioners when compared to physician assistants. Nurse practitioners are independent practitioners of primary health care. This study supports nurse practitioners as valuable providers of primary health care in rural environments.	Value/Impact	
"The Role of the Physician Extender in Radiology"	Van Valkenburg, J., Ralph, B., Lopatofsky, L., Campbell, M., & Brown, D.	<i>Radiologic Technology</i>	2000	Van Valkenburg, J., Ralph, B., Lopatofsky, L., Campbell, M., & Brown, D. (2000). The role of the physician extender in radiology. <i>Radiologic Technology</i> , 72 (1), 45-50.	This article examines the role of the radiology practitioner assistant (RPA), a physician extender first defined in the 1970s. The purpose of the research was to determine RPAs' accuracy in recognizing abnormal image patterns and their ability to independently perform gastrointestinal fluoroscopic procedures. The results support previous research indicating that technologists with additional education, training and radiologist supervision can detect abnormal image patterns and perform fluoroscopy successfully.	Workforce	
"Whitman Sampler. Is Teaching a Certifiable Profession?"	Whitman, N. A.	<i>Perspective on Physician Assistant Education</i>	2000	Whitman, N. A. (2000). Whitman sampler. Is teaching a certifiable profession? <i>Perspective on Physician Assistant Education</i> , 11 (2), 136.		Education	
Centers of excellence in physician assistant studies [editorial]	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2000	Hooker RS. Centers of excellence in physician assistant studies [editorial]. <i>J Am Academy of Physician Assistants</i> . 2000; 13 (5): 6-10.		Education	
The economics of physician assistant employment	Hooker RS.	<i>Physician Assistant</i>	2000	Hooker RS. The economics of physician assistant employment. <i>Physician Assistant</i> . 2000; 24 (4): 51-54, 57-60, 63-66, 71.		Value/Impact	
Elder physician assistants and their practices	Duryea W, Hooker RS.	<i>J Am Academy of Physician Assistants</i>	2000	Duryea W, Hooker RS. Elder physician assistants and their practices. <i>J Am Academy of Physician Assistants</i> . 2000; 13 (4): 67-85.		Workforce	
Physician assistants and the practice of neurology	Taft J, Hooker RS	<i>J Am Academy of Physician Assistants</i> .	2000	Taft J, Hooker RS. Physician assistants and the practice of neurology. <i>J Am Academy of Physician Assistants</i> . 2000; 13 (3): 97-106.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistant Entrepreneurs"	Barnes, D., & Hooker, R. S.	<i>Physician Assistant</i>	2001	Barnes, D., & Hooker, R. S. (2001). Physician assistant entrepreneurs. <i>Physician Assistant</i> . 25(10), 36-41.	Interviews with 57 self-employed PAs (93% male) found they had an average of 19 years clinical experience and 8 years owning their own business. All had a professional relationship with a physician and were highly satisfied with the arrangement.	Workforce	
"Rochester, New York: A Decade of Emergency Department Overcrowding"	Schneider, S., Zwerner, F., Doniger, A., Dick, R., Czapranski, T., & Davis, E.	<i>Academic Emergency Medicine</i>	2001	Schneider, S., Zwerner, F., Doniger, A., Dick, R., Czapranski, T., & Davis, E. Rochester, New York: a decade of emergency department overcrowding. <i>Academic Emergency Medicine</i> . 8(11), 1044-1040.	Study of strategies to reduce ED overcrowding in Rochester in the last decade found a transition team (mid-level provider along with an RN or LPN) who cared for inpatients boarded in ED among successful strategies.	Value/Impact	
"Doing Unto Others? Emergency Medicine Residents' Willingness to be Treated by Moonlighting Residents and Nonphysician Clinicians in the Emergency Department"	Larkin, G. L., Kantor, W., & Zielinski, J. J.	<i>Academic Emergency Medicine</i>	2001	Larkin, G. L., Kantor, W., & Zielinski, J. J. (2001). Doing unto others? Emergency medicine residents' willingness to be treated by moonlighting residents and nonphysician clinicians in the emergency department. <i>Academic Emergency Medicine</i> . 8(9), 886-892.	Survey of emergency medicine residents asked them about their preferences if they were a patient found 54% would agree to be seen by a resident, 17% willing to be seen by a CRNP and 24% willing to be seen by a PA. 34% viewed mid-level providers as a professional threat, with males 2.25 more likely and those with higher household incomes 1.94 times more likely to have this perception.	Practice	
"National Estimates of Physician Assistant Productivity"	Larson, E.H., Hart, L.G., & Ballweg, R.	<i>Journal of Allied Health</i>	2001	Larson, E.H., Hart, L.G., & Ballweg, R. (2001). National estimates of physician assistant productivity. <i>Journal of Allied Health</i> . 30(3), 146-52.	Analysis of productivity data from a nationally representative sample of physician assistants showed PAs performed 61.4 outpatient visits per week compared with 74.2 visits performed by physicians, for an overall physician full-time equivalent (FTE) estimate of 0.83.	Practice	
"Practice Autonomy among Primary Care Physician Assistants: The Predictive Abilities of Selected Practice Attributes"	Chumbler, N.R., Weier, A.W., & Geller, J.M.	<i>Journal of Allied Health</i>	2001	Chumbler, N.R., Weier, A.W., & Geller, J.M. Practice autonomy among primary care physician assistants: the predictive abilities of selected practice attributes. <i>Journal of Allied Health</i> . 30(1), 2-10.	This study examined the predictive abilities of practice attributes with respect to multidimensional aspects of practice autonomy (clinical decision making and prescriptive authority) in primary care PAs.	Workforce	
"Use of Physician Assistants and Nurse Practitioners in Primary Care"	Hooker, R. S., & McCaig, L. F.	<i>Health Affairs</i>	2001	Hooker, R. S., & McCaig, L. F. (2001). Use of physician assistants and nurse practitioners in primary care, 1995-1999. <i>Health Affairs</i> . 20(4), 231-238.	In this paper we analyze primary care physician office encounter data from the 1995-1999 National Ambulatory Medical Care Surveys. About one-quarter of primary care office-based physicians used PAs and/or NPs for an average of 11 percent of visits.	Workforce	
"Physician Assistants in Texas"	Jones, P.E., & Hooker, R.S.	<i>Texas Medicine</i>	2001	Jones, P.E., & Hooker, R.S. (2001). Physician assistants in Texas. <i>Texas Medicine</i> . 97(1), 68-73.	A descriptive study was undertaken to examine the physician assistant (PA) Workforce in Texas as part of an ongoing effort to meet the health needs of Texas residents.	Workforce	
"Implementation and Evaluation of a Telemedicine Course for Physician Assistants"	Apsrey, D., Zollo, S., & Kienzle, M.	<i>Academic Medicine</i>	2001	Apsrey, D., Sollo, S., & Kienzle, M. (2001). Implementation and evaluation of a telemedicine course for physician assistants. <i>Academic Medicine</i> , 76(6), 652-655.	Clinical telemedicine uses interactive video technologies and telecommunications networks to deliver medical consultations to distant patients and their primary care providers. Telemedicine provides real-time access to specialists whose services might not otherwise be available in rural or medically underserved areas. While recently there has been dramatic growth in the use of telemedicine, there is little evidence that telemedicine as a patient care delivery system has been incorporated into the medical school curriculum. The authors describe the current status of telemedicine in medical curricula and report on efforts at the University of Iowa to incorporate telemedicine into the curriculum of its Physician Assistant Program.	Education	
"An Investigation of Potential Criteria for Ranking Physician Assistant Programs"	Blessing, J. D., Hooker, R. S., Jones, P. E., & Rahr, R. R.	<i>Perspective on Physician Assistant Education</i>	2001	Blessing, J. D., Hooker, R. S., Jones, P. E., & Rahr, R. R. (2001). An investigation of potential criteria for ranking physician assistant programs. <i>Perspective on Physician Assistant Education</i> , 12(3) , 160-166.		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"What Makes the Day: An Analysis of the Content of Physician Assistants Practice"	Cawley, J. F., Andrews, M. D., Barnhill, G. C., Webb, L., & Hill, K.	<i>Journal of the American Academy of Physician Assistants</i>	2001	Cawley, J. F., Andrews, M. D., Barnhill, G. C., Webb, L., & Hill, K. (2001). What makes the day: An analysis of the content of physician assistant's practice. <i>Journal of the American Academy of Physician Assistants</i> , 14(5), 41-42, 44, 47-50, 55-56.	Report of the 1998 PA Practice Analysis of the National Commission on Certification of Physician Assistants a detailed study of the knowledge, skills and abilities important for safe and effective PA practice. The aim was to update and revalidate the content blueprints for NCCPA certifying and recertifying examinations by identifying the tasks and essential knowledge/skills that are representative of the actual clinical practice roles of PAs; (2) identifying differences in the practices of entry-level PAs and seasoned professionals; and (3) identifying tasks and knowledge, skills, and abilities that are specific to PA practice in specialty areas. Found that that the domains of knowledge most important for PAs were (1) Subjective Data Gathering; (2) Assessment; and (3) Objective Data Gathering. Findings suggest that there is a central core of medical knowledge, tasks and skills valued that are performed often and consistently by practicing PAs. This core of knowledge and skills appears to apply to virtually all specialties and settings.	Practice	
"A Literature and Medicine Course in the Physician Assistant Studies Curriculum"	Corso, T.	<i>Perspective on Physician Assistant Education</i>	2001	Corso, T. (2001). A literature and medicine course in the physician assistant studies curriculum. <i>Perspective on Physician Assistant Education</i> , 12 (1), 17-23.	When 91% of American medical schools offer a Literature and Medicine course in their curricula, it is not known to what extent such a course is offered in a PA program. PA program faculty members of bachelor's and master's degree programs, affiliated with medical schools and not, were surveyed about the use of teaching medicine through literature (poems, short stories, novels), the importance of reading to writing, the importance of writing well as a PA, and whether their program offers a course. The results indicated that only 8.3% of the surveyed programs offer a course and that there was no effect as to degree granted or affiliation with a medical school on these results.	Education	
"Professionalism, the Third Logic: On the Practice of Knowledge"	Freidson, E.	<i>Chicago: University of Chicago Press</i>	2001	Freidson, E. (2001). <i>Professionalism, the Third Logic: On the Practice of Knowledge</i> . Chicago: University of Chicago Press.	This book explores the meaning and implications of professionalism as a form of social organization. Eliot Freidson formalizes professionalism by treating it as an ideal type grounded in the political economy; he presents the concept as a third logic, or a more viable alternative to consumerism and bureaucracy. He asks us to imagine a world where workers with specialized knowledge and the ability to provide society with especially important services can organize and control their own work, without directives from management or the influence of free markets.	Practice	
"The Economics of Physician Assistant Employment"	Hooker, R. S.	<i>Physician Assistant</i>	2001	Hooker, R. S. (2001). The economics basis of physician assistant practice. <i>Physician Assistant</i> , 24 (4), 51-71.		Value/Impact	
"Use of Physician Assistants and Nurse Practitioners in Primary Care, 1995-1999"	Hooker, R. S., & McCaig, L. F.	<i>Health Affairs</i>	2001	Hooker, R. S., & McCaig, L. F. (2001). Use of physician assistants and nurse practitioners in primary care, 1995-1999. <i>Health Affairs (Milwood)</i> , 20 (4), 231-238.	Federal policies and state legislation encourage the use of physician assistants (PAs) and nurse practitioners (NPs) in primary care, although the nature of their work has not been fully analyzed. In this paper we analyze primary care physician office encounter data from the 1995-1999 National Ambulatory Medical Care Surveys. About one-quarter of primary care office based physicians used PAs and/or NPs for an average of 11 percent of visits. The mean age of patients seen by physicians was greater than that for PAs or NPs. NPs provided counseling/education during a higher proportion of visits than did PAs or physicians. Overall, this study suggests that PAs and NPs are providing primary care in a way that is similar to physician care.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Comparison of Physician Assistant Programs by Tuition Costs"	Hooker, R. S., & Warren, J.	<i>Perspective on Physician Assistant Education</i>	2001	Hooker, R. S., & Warren, J. (2001). Comparison of physician assistant programs by tuition costs. <i>Perspective on Physician Assistant Education</i> , 12, 87–91.	Researchers undertook a descriptive study of PA programs by examining some of the opportunity cost variables that might be critically viewed by an applicant who is applying to various PA programs. Data was gathered from over 124 PA programs. Results showed that there is almost a 16-fold difference from the low end to high end of PA tuition costs. On average, the tuition burden for a public-funded PA education is approximately one-third of private education tuition. The debt imposed on students by higher tuition PA programs may lead graduates away from lower-paying primary care roles to higher-paying nonprimary care positions in order to pay for their education.	Education	
"Training of Nurse Practitioners and Physician Assistants to Perform Screening Flexible Sigmoidoscopy"	Horton, K., Reffel, A., Rosen, K., & Farraye, F. A.	<i>Journal of the American Academy of Nurse Practitioners</i>	2001	Horton, K., Reffel, A., Rosen, K., & Farraye, F. A. (2001). Training of nurse practitioners and physician assistants to perform screening flexible sigmoidoscopy. <i>Journal of the American Academy of Nurse Practitioners</i> , 13 (10), 455–459.	The purpose of the study was to describe colorectal cancer-screening program at Harvard Vanguard Medical associates, a large multispecialty medical group, in which nurse practitioners (NPs) and physician assistants (PAs) perform screening flexible sigmoidoscopies. Scientific literature, consensus statements and guidelines, and the protocol utilized to train NPs and PAs to perform flexible sigmoidoscopy. Data from 9,500 screening procedures are presented. Results showed that in comparison with gastroenterologists, trained NP and PA endoscopists perform screening flexible sigmoidoscopy with similar accuracy and safety but at lower cost.	Education	
"How Physician Assistants Use and Perceive Complementary and Alternative Medicine"	Houston, E. A., Bork, C. E., Price, J. J., Jordan, T. R., & Dake, J. A.	<i>Journal of the American Academy of Physician Assistants</i>	2001	Houston, E. A., Bork, C. E., Price, J. J., Jordan, T. R., & Dake, J. A. (2001). How physician assistants use and perceive complementary and alternative medicine. <i>Journal of the American Academy of Physician Assistants</i> , 14(1), 29–30, 33–34, 39–40, 44–46 passim, 46.	The use of complementary and alternative medicine (CAM) is growing in the United States. Patients and their health care providers are increasingly accepting of complementary and alternative therapies. The purpose of this study was to identify physician assistants' (PAs') attitudes, beliefs, knowledge, training, recommendations for, and personal use of CAM. A random sample of 500 practicing PAs was sent a four-page, 78-item survey investigating their personal use of, recommendations for, and perceptions of the efficacy and safety of complementary and alternative therapies. Of PAs eligible to complete the survey, 50% responded. Chi-square analyses found a significant relationship between knowledge level and recommendation for CAM; status of use and belief that CAM exerts a placebo effect; status of use and recommendation for CAM; and source of information on CAM and recommendation for CAM. With the increasing prevalence of use of CAM, PAs need to be informed regarding CAM therapies.	Practice	
"Introduced into Evidence: PAs Are Recommending, and Using, CAM [Editorial]"	Jarski, R. W.	<i>Journal of the American Academy of Physician Assistants</i>	2001	Jarski, R. W. (2001). Introduced into evidence. PAs are recommending, and using, CAM [Editorial]. <i>Journal of the American Academy of Physician Assistants</i> , 14(1), 6–12.		Practice	
"Physician Assistants in Texas"	Jones, P. E., & Hooker, R. S.	<i>Texas Medicine</i>	2001	Jones, P. E., & Hooker, R. S. (2001). Physician assistants in Texas. <i>Texas Medicine</i> , 97 (1), 68–73.	Understanding the health requirements of a state begins with identifying the population at need and the Workforce available to meet those needs. A descriptive study was undertaken to examine the physician assistant (PA) Workforce in Texas as part of an ongoing effort to meet the health needs of Texas residents. In September 2000, Texas had 2237 licensed PAs practicing in 186 counties. Education for PAs in Texas began in 1970 and currently includes one private, one military, and six public programs. Most practicing PAs in Texas graduate from in-state programs and tend to locate within the state. Preparations are under way to shift the public undergraduate programs to graduate degree programs. Although barriers to health care access in Texas remain a substantial public health issue, PAs have helped reduce these barriers, especially in many rural communities. The supply of and demand for Texas PAs appear to be in equilibrium. Policy implications are discussed.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistant Education in Substance Abuse"	Judd, C. R., & Hooker, R. S.	<i>Perspective on Physician Assistant Education</i>	2001	Judd, C. R., & Hooker, R. S. (2001). Physician assistant education in substance abuse. <i>Perspective on Physician Assistant Education</i> , 12 (3), 172–176.	In order to assess whether there was an on-going effort to improve or expand PA curriculum on substance-related disorders, researchers surveyed PA Programs in 2000. One hundred and seven programs out of 116 returned surveys. All programs report they provide instruction in substance-related disorders, with time allocated from 5 to 25 hours. Most programs assign reading, and one-third use films and videotapes. The majority emphasizes diagnosis, acute management, medical complications, and prevention of substance use disorders. Almost all programs provide instruction on the MAST and CAGE screening tools. Clinical training experiences where treatment of substance-related disorders were emphasized included psychiatry, emergency medicine, family medicine, and internal medicine. These findings suggest that content education regarding substance abuse and related disorders has increased in the interval from 1992, when a similar survey was conducted, to 2000, but the increase is not uniform across all programs. This component of PA education continues to vary widely in regards to depth and content of instruction.	Education	
"Hospital Care by Hospital-Based and Clinic-Based Faculty: A Prospective, Controlled Trial"	Kearns, P. J., Wang, C. C., Morris, W. J., Low, D. G., Deacon, A. S., Chan, S. Y., & Jensen, W. A.	<i>Archives of Internal Medicine</i>	2001	Kearns, P. J., Wang, C. C., Morris, W. J., Low, D. G., Deacon, A. S., Chan, S. Y., & Jensen, W. A. (2001). Hospital care by hospital-based and clinic-based faculty: A prospective, controlled trial. <i>Archives of Internal Medicine</i> , 161 (2), 235–241.	This study compared the clinical outcomes and cost of care for patients treated by hospital-based and clinic-based attending physicians devoting dramatically different amounts of time to supervising residents on the medical wards of a suburban county hospital. Results showed that an increase of faculty time and involvement for supervision of resident-managed hospital care did not improve clinical outcomes or decrease costs during the 1-year study period.	Practice	
"Medical Schools in the United States"	Liaison Committee on Medical Education.	<i>Journal of the American Medical Association</i>	2001	Liaison Committee on Medical Education. (2001). Medical schools in the United States. <i>Journal of the American Medical Association</i> , 286 (9), 1085–1093.		Education	
"Physician Assistant Program Accreditation-History in the Making"	McCarty, J. E., Stuetzer, L., & Somers, J. E.	<i>Perspective on Physician Assistant Education</i>	2001	McCarty, J. E., Stuetzer, L., & Somers, J. E. (2001). Physician assistant program accreditation— History in the making. <i>Perspective on Physician Assistant Education</i> , 12 (1), 24–38.	On September 15, 2000, the Accreditation Review Committee on Education for the Physician Assistant took the necessary legal steps to become a freestanding accrediting agency as of January 1, 2001. As of that date, the evaluation and accreditation of PA educational programs will be the responsibility of the renamed Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). New Bylaws and policies for the commission were also officially adopted. The new agency is incorporated in the state of Illinois.	Education	
"Are Patients' Office Visits with Physicians Getting Shorter?"	Mechanic, D., McAlpine, D. D., & Rosenthal, M.	<i>New England Journal of Medicine</i>	2001	Mechanic, D., McAlpine, D. D., & Rosenthal, M. (2001). Are patients' office visits with physicians getting shorter? <i>New England Journal of Medicine</i> , 344 (3), 198–204.	This study aimed to investigate whether managed care creates pressure on physicians to increase productivity, see more patients, and less spend less time with each patient. The study design involved using representative data from the National Ambulatory Medical Care Survey (NAMCS) of the National Center for Health Statistics and the American Medical Association's Socioeconomic Monitoring System (SMS) to examine the length of office visits with physicians from 1989 through 1998. Results showed that the growth of managed health care has not been associated with a reduction in the length of office visits. The observed trends cannot be explained by increases in physicians' availability, shifts in the distribution of physicians according to sex, or changes in the complexity of the case mix.	Practice	
"Programs Degree Task Force Final Paper, September 28, 2000"	Miller, A. A., Allison, L., Asprey, D., et al.	<i>Perspective on Physician Assistant Education</i>	2001	Miller, A. A., Allison, L., Asprey, D., et al. (2001). Programs degree task force final paper, September 28, 2000. <i>Perspective on Physician Assistant Education</i> , 11, 157–160.		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"PAs and Dermatology. Good Times, Nice Work, and a Special Issue"	Monroe, J. R.	<i>Journal of the American Academy of Physician Assistants</i>	2001	Monroe, J. R. (2001). PAs and dermatology. Good times, nice work, and a special issue. <i>Journal of the American Academy of Physician Assistants</i> , 14 (4), 4–10.		Practice	
"Medicare Coverage of Non-Physician Practitioner Services"	Office of Inspector General	<i>Office of Evaluations and Inspections, OIG, Department of Health and Human Services</i>	2001	Office of Inspector General (OIG). (2001). <i>Medicare coverage of non-physician practitioner services</i> . New York (OEI New York Regional Office): Office of Evaluations and Inspections, OIG, Department of Health and Human Services.	The purpose of this report is to describe the scope of services nurse practitioners, clinical nurse specialists, and physician assistants provide to Medicare beneficiaries, and to identify any potential vulnerabilities that may have emerged since the Balanced Budget Act of 1997.	Workforce	
"Health Promotion and Wellness in Physician Assistant Programs"	Perkins, J. E., Rahr, R. R., & Kurial, M.	<i>Perspective on Physician Assistant Education</i>	2001	Perkins, J. E., Rahr, R. R., & Kurial, M. (2001). Health promotion and wellness in physician assistant programs. <i>Perspective on Physician Assistant Education</i> , 12 (1), 5–12.	The purpose of this study was to describe the current PA curricula and educational efforts to health promotion and wellness. A questionnaire was sent to all US PA program directors and faculty in Spring 2000. Results showed that most PA programs have a large number of health promotion and wellness topics in their curricula. Program directors and faculty are also in agreement as to the relative importance of these topics.	Education	
"PA Devotes Career to Psychiatric Care"	Rose, C.	<i>NEWS-Line for Physician Assistants</i>	2001	Rose, C. (2001). PA devotes career to psychiatric care. <i>NEWS-Line for Physician Assistants</i> , 10(3), 4–7.	This article highlights William Hardy, MS, PA-C, who works in the challenging field of mental health as a psychiatric Physician Assistant at Skyview Mental Health Facility in Rusk, Texas.	Practice	
"Seventeenth Annual Report on Physician Assistant Education in the United States, 2000-2001"	Simon, A. F., Link, M.S., & Miko, A.S.	<i>Association for Physician Assistant Programs</i>	2001	Simon, A. F., Link, M.S., & Miko, A.S. (2001). Seventeenth Annual Report on Physician Assistant Education in the United States, 2000–2001. Alexandria, VA: <i>Association of Physician Assistant Programs</i> .		Education	
"A New Way of Making Doctors: Distance Learning for Nontraditional Students"	Stead, E. A., Jr.	<i>North Carolina Medical Journal</i>	2001	Stead, E. A., Jr. (2001). A new way of making doctors: Distance learning for nontraditional students. <i>North Carolina Medical Journal</i> , 62(6), 326–327.	Dr. Eugene A. Stead argues that accredited medical schools should establish distance learning curricula that would allow experienced, community-bound health professionals (PAs and NPs) to take medical school courses from home or work. This would allow society to build upon the talents of these "non-traditional" but seasoned clinical veterans and even improve access to healthcare in underserved areas.	Education	
An Investigation of potential criteria for ranking of physician assistant programs	Blessing JD, Hooker RS, Jones PE, Rahr R	<i>Perspective on Physician Assistant Education</i>	2001	Blessing JD, Hooker RS, Jones PE, Rahr R. An investigation of potential criteria for ranking of physician assistant programs. <i>Perspective on Physician Assistant Education</i> . 2001; 12(3): 160-166		Education	
Patient attitudes about physician assistants	Hooker RS	<i>PA Source</i>	2001	Hooker RS. Patient attitudes about physician assistants. <i>PA Source</i> . 2001; 1(6): 4-5.		Workforce	
Physician assistant education in substance abuse	Judd C, Hooker RS	<i>Perspective on Physician Assistant Education</i>	2001	Judd C, Hooker RS. Physician assistant education in substance abuse. <i>Perspective on Physician Assistant Education</i> . 2001; 12(3): 172-176.		Education	
Use of physician assistants and nurse practitioners in primary care, 1995-1999	Hooker RS, McCaig L	<i>Health Affairs</i>	2001	Hooker RS, McCaig L. Use of physician assistants and nurse practitioners in primary care, 1995-1999. <i>Health Affairs</i> . 2001; 20(4): 321-328.		Practice	
Entrepreneurial physician assistants	Barnes D, Hooker RS	<i>Physician Assistant</i>	2001	Barnes D, Hooker RS. Entrepreneurial physician assistants. <i>Physician Assistant</i> . 2001; 25(10): 36-42		Practice	
Comparing demographics of physician assistants and nurse practitioners	Hooker, RS	<i>Clinician Reviews</i>	2001	Hooker, RS. Comparing demographics of physician assistants and nurse practitioners. <i>Clinician Reviews</i> . 2001; 10 (10): 31-34.		Workforce	
Comparing physician assistant programs by tuition costs	Hooker RS, Warren J	<i>Perspective on Physician Assistant Education</i>	2001	Hooker RS, Warren J. Comparing physician assistant programs by tuition costs. <i>Perspective on Physician Assistant Education</i> . 2001; 14 (2): 87-91.		Education	
Physician assistants in Texas	Jones PE, Hooker RS.	<i>J Texas Medicine</i>	2001	Jones PE, Hooker RS. Physician assistants in Texas. <i>J Texas Medicine</i> . 2001; 97 (1): 68-73.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"A Comparison of Physician Assistant Programs by National Certification Examination Scores"	Hooker, R.S., Hess, B., & Cipher, D.	<i>Perspective on Physician Assistant Education</i>	2002	Hooker, R.S., Hess, B., & Cipher, D. (2002). A Comparison of Physician Assistant Programs by National Certification Examination Scores. <i>Perspective on Physician Assistant Education</i> . 13(2), 81-86.	Multiple regression of PANCE scores by PA program attributes found only 3.6% of variability accounted for by a set of program variables, examinee age, and gender.	Education	
"The Economic Benefit for Family/General Medicine Practices Employing Physician Assistants"	Grzybicki D.M., Sullivan P.J., Oppy J.M., Bethke A.M., & Raab S.S.	<i>American Journal of Managed Care</i>	2002	Grzybicki D.M., Sullivan P.J., Oppy J.M., Bethke A.M., & Raab S.S. (2002) The economic benefit for family/general medicine practices employing physician assistants. <i>American Journal of Managed Care</i> . 8(7),613-620.	OBJECTIVE: To measure the economic benefit of a family/general medicine physician assistant (PA) practice. CONCLUSIONS: Family/general medicine PAs are of significant economic benefit to practices that employ them.	Value/Impact	
"A Cost Analysis of Physician Assistants in Primary Care"	Hooker, R. S.	<i>Journal of American Academy of Physician Assistants</i>	2002	Hooker, R. S. (2002). A cost analysis of physician assistants in primary care. <i>JAAPA</i> . 15(11), 39-43.	This study examines the cost associated with employing PAs from the employers perspective. Analysis of data on record for episode, patient characteristics, health status, etc., found that for every medical condition managed by PAs, the total episode cost was less than similar episode managed by a physician.	Value/Impact	
"Resource Use by Physician Assistant Services Versus Teaching Services"	Van Rhee, J. V., Ritchie, J., & Eward, A. M.	<i>Journal of American Academy of Physician Assistants</i>	2002	Rhee, J. V., Ritchie, J., & Eward, A. M. (2002). Resource use by physician assistant services versus teaching services. <i>JAAPA</i> . 15(1), 33-42.	Analysis of administrative data from a large community teaching hospital for patients admitted to internal medicine service found PAs used fewer total ancillary resources for patients with pneumonia, and fewer laboratory resources for patients with stroke, pneumonia, and congestive heart failure than did residents. No significant differences were found in LOS or use of radiology resources. However, significantly higher mortality among pneumonia cases were detected for PAs.	Practice	
"The Effect of Easy Breathing on Asthma Management and Knowledge"	Cloutier, M. M., Wakefield, D. B., Carlisle, P. S., Bailit, H. L., & Hall, C. B.	<i>Archives of Pediatric & Adolescent Medicine</i>	2002	Cloutier, M. M., Wakefield, D. B., Carlisle, P. S., Bailit, H. L., & Hall, C. B. (2002). The effect of Easy Breathing on asthma management and knowledge. <i>Archives of Pediatric & Adolescent Medicine</i> . 156(10), 1045-1051.	Pre- and post-test found an asthma management program improved clinician knowledge of guidelines. Pretest scores for physicians was higher than for midlevel practitioners. Scores increased significantly in post-test for physicians and midlevel practitioners; in follow-up tests 18 months later, improvements for factual and guideline responses disappeared but were sustained for applied questions for 78% of physicians and 65% of midlevel practitioners.	Value/Impact	
"Measuring Burnout in Emergency Medicine Physician Assistants"	Bell R. B., Davison, M., & Sefcik, D.	<i>Journal of American Academy of Physician Assistants</i>	2002	Bell R. B., Davison, M., & Sefcik, D. A first survey: Measuring burnout in emergency medicine physician assistants. <i>JAAPA</i> . 15(3), 40-51.	Using the Maslach Burnout Inventory (a device used in prior studies on emergency physicians) and the EMPA Demographic, Work, and Lifestyle Characteristics Survey, we assessed the burnout levels of emergency medicine physician assistants (EMPAs) and the presence of characteristics associated with higher burnout levels. 59% had moderate or high burnout levels on the Emotional Exhaustion subscale; 66% on the Depersonalization subscale; and only 34% on the Personal Accomplishment subscale.	Practice	
"Primary Care Enrollment Levels in Staff and Group Model Health Maintenance Organizations: A Standard to Compare Military Enrollment with Civilian Organizations"	Johnson, G. P.	<i>Military Medicine</i>	2002	Johnson, G. P. Primary care enrollment levels in staff and group model health maintenance organizations: A standard to compare military enrollment with civilian organizations. <i>Military Medicine</i> . 167(5), 370-373.	A literature review to determine civilian staff and group model HMO primary care provider staffing found average of 1,473 members per primary care physician. When physician extenders are considered, average enrollment is 1,156 members per primary care provider.	Workforce	
"A Pilot Project on Ethnogeriatrics and Cultural Competency Training for Physician Assistant Students"	Lipstreuer, E., D'Eramo, A., Ewing, L., & Rose, J.	<i>The Gerontologist</i>	2002	Lipstreuer, E., D'Eramo, A., Ewing, L., & Rose, J. (2002). A Pilot Project on Ethnogeriatrics and Cultural Competency Training for Physician Assistant Students. <i>The Gerontologist</i> . 42(1), 109.	In a model pilot training program, two methods were used to introduce concepts of ethnogeriatrics to first year PAS (N=25).	Education	
"Ability of the Objective Structured Clinical Examination to Differentiate Surgical Residents, Medical Students, and Physician Assistant Students"	Merrick, H.W., Nowacek, G.A., Boyer, J., Padgett, B., Francis, P., Gohara, S.F., & Staren, E.D.	<i>Journal of Surgical Research</i>	2002	Merrick, H.W., Nowacek, G.A., Boyer, J., Padgett, B., Francis, P., Gohara, S.F., & Staren, E.D. (2002). Ability of the Objective Structured Clinical Examination to differentiate surgical residents, medical students, and physician assistant students. <i>Journal of Surgical Research</i> . 106(2), 319-322.	The purpose of this study was to investigate whether the standard OSCE would differentiate performance of subjects with different levels and/or types of training. CONCLUSIONS: The differences among group performance appeared to reflect the level of experience of the learners, with PAs scoring quite close to both surgical residents and medical students.	Education	
"Use of Nonphysician Health Care Providers for Skin Cancer Screening in the Primary Care Setting"	Oliveria, S.A., Altman, J.F., Christos, P.J., & Halpern, A.C.	<i>Preventive Medicine</i>	2002	Oliveria, S.A., Altman, J.F., Christos, P.J., & Halpern, A.C. Use of nonphysician health care providers for skin cancer screening in the primary care setting. <i>Preventive Medicine</i> . 34(3),374-9.	In this study, a survey was conducted of primary care physicians to determine physician use and amenability to use of nonphysician health care providers to perform skin cancer screening in comparison with other cancer screening examinations. CONCLUSIONS: Primary care physicians are currently utilizing nonphysician health care providers to perform cancer screening examinations and the majority of those surveyed are amenable to the use of these providers for such examinations.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Nurse Practitioners and Physician Assistants in Hospital Outpatient Departments"	Lin, S. X., Hooker, R. S., Lenz, E. R., & Hopkins, S. C.	<i>Nursing Economics</i>	2002	Lin, S. X., Hooker, R. S., Lenz, E. R., & Hopkins, S. C. (2002). Nurse practitioners and physician assistants in hospital outpatient departments, 1997-1999. <i>Nursing Economics</i> . 20(4), 174-179.	Encounter data from the National Hospital Ambulatory Medical Care Survey (NHAMCS) were used to examine patterns of nurse practitioner (NP) and physician assistant (PA) practice styles. Overall practice by NPs and PAs accounted for nearly 10% of outpatient visits.	Practice	
"Breast Self-Examination: Who Teaches It, Who Is Taught, and How Often?"	Nekhlyudov, L., Barton, M. B., Elmore, J. G., & Fletcher, S. W.	<i>Cancer Causes Control</i>	2002	Nekhlyudov, L., Barton, M. B., Elmore, J. G., & Fletcher, S. W. (2002). Breast self-examination: who teaches it, who is taught, and how often? <i>Cancer Causes Control</i> . 13(4), 343-351.	Study of computerized medical records over 10 years for 2,242 randomly selected women aged 40-69 with no history of breast cancer and at least one screening for breast cancer at a large New England HMO found internists and nonphysician providers more likely to teach at least half their patients than were Ob/Gyns.	Practice	
"The Effects of Absence of Emergency Medicine Residents in an Academic Emergency Department"	French, D., Zwemer, F. L., & Schneider, S.	<i>Academic Emergency Medicine</i>	2002	French, D., Zwemer, F. L., & Schneider, S. (2002). The effects of absence of emergency medicine residents in an academic emergency department. <i>Academic Emergency Medicine</i> . 9(11), 1205-1210.	Study of quality indicators comparing emergency medicine resident care with an alternative model using mid-level providers found no measurable difference for most quality indicators studied. Model without residents was less efficient in admitting patients.	Practice	
"Ultrasound-Assisted Percutaneous Liver Biopsy Performed by a Physician Assistant"	Gunneson, T.J., Menon, K.V., Wiesner, R.H., Daniels, J.A., Hay, J.E., Charlton, M.R., Porayko MK.	<i>American Journal of Gastroenterology</i>	2002	Gunneson, T.J., Menon, K.V., Wiesner, R.H., Daniels, J.A., Hay, J.E., Charlton, M.R., Porayko MK. (2002). Ultrasound-assisted percutaneous liver biopsy performed by a physician assistant. <i>American Journal of Gastroenterology</i> . 97(6),1472-1475.	OBJECTIVE: This article reports on the complication rate and efficiency of ultrasound-assisted percutaneous liver biopsy performed by an experienced physician assistant. CONCLUSION: Outpatient percutaneous liver biopsy can be safely and effectively performed by a trained physician assistant.	Practice	
"Beliefs Regarding the Effectiveness of Stroke Prevention Practices: Differences among Provider Specialties"		<i>Journal of Clinical Outcomes Management</i>	2002	Johnston, D. C. C., Oddone, E. Z., Horner, R. D., & Stechuchak, K. (2002). Beliefs regarding the effectiveness of stroke prevention practices: Differences among provider specialties. <i>Journal of Clinical Outcomes Management</i> . 9(12), 667-675.	Survey to determine whether providers with different specialty training differ in perception of effectiveness of common diagnostic and therapeutic practices for stroke prevention found wide variations. For example, 65% of surgeons rated angiography as effective for asymptomatic patients compared to 11% of mid-level providers.	Practice	
"Use of Non-Physician Health Care Providers for Skin Cancer Screening in the Primary Care Setting"	Oliveria, S.A., Altman, J.F., Christos, P.J., & Halpern, A.C.	<i>Preventive Medicine</i>	2002	Oliveria, S.A., Altman, J.F., Christos, P.J., & Halpern, A.C. Use of non-physician health care providers for skin cancer screening in the primary care setting. <i>Preventive Medicine</i> . 34(3),374-9.	In this study, a survey was conducted of primary care physicians to determine physician use and amenability to use of non-physician health care providers to perform skin cancer screening in comparison with other cancer screening examinations. CONCLUSIONS: Primary care physicians are currently utilizing non-physician health care providers to perform cancer screening examinations and the majority of those surveyed are amenable to the use of these providers for such examinations.	Practice	
"Trends in the Supply of Physician Assistants and Nurse Practitioners in the United States"	Hooker, R. S. & Berlin, L. E.	<i>Health Affairs</i>	2002	Hooker, R. S. & Berlin, L. E. (2002). Trends in the supply of physician assistants and nurse practitioners in the United States. <i>Health Affairs</i> . 21(5), 174-181.	In 2001 an estimated 103,612 nurse practitioners (NPs) and physician assistants (PAs) were in clinical employment in the US. The roles of PAs and NPs in providing comparable physician services are similar; they differ in that NPs are predominantly in primary care, while PAs are divided between primary and specialty care.	Workforce	
"Physician Assistants in the United States"	Mittman, D.E., Cawley, J.F., Fenn, W.H.	<i>British Medical Journal</i>	2002	Mittman, D.E., Cawley, J.F., Fenn, W.H. (2002). Physician Assistants in the United States. <i>British Medical Journal</i> . Vol. 325, Iss. 7362; pg. 485.	An introduction to the PA profession for an international audience. A brief overview of PA origins is given, PAs are distinguished from NPs, and PA scope of practice is outlined.	History	
"Specialty of Ambulatory Care Physicians and Mortality among Elderly Patients after Myocardial Infarction"	Avanian, J. Z., Landrum, M. B., Guadagnoli, E., & Gaccione, P.	<i>New England Journal of Medicine</i>	2002	Avanian, J. Z., Landrum, M. B., Guadagnoli, E., & Gaccione, P. (2002). Specialty of ambulatory care physicians and mortality among elderly patients after myocardial infarction. <i>New England Journal of Medicine</i> , 247, 1678-1686.	The purpose of this study was to investigate whether the outcome after a myocardial infarction is influenced by the type of physician providing ambulatory care. Results showed that ambulatory visits to cardiologists were associated with greater use of cardiac procedures and decreased mortality after myocardial infarction. Concurrent care by an internist or a family practitioner was associated with a further reduction in mortality.	Practice	
"Master's Level Nurse Practitioner Educational Programs. Findings from the 2000-2001 Collaborative Curriculum Survey"	Berlin, L. E., Harper, D., Werner, K. E., & Stennett, J. E.	<i>American Association of Critical Care Nurses and National Organization of Nurse Practitioner Faculties</i>	2002	Berlin, L. E., Harper, D., Werner, K. E., & Stennett, J. E. (2002). Master's level nurse practitioner educational programs. Findings from the 2000-2001 collaborative curriculum survey. Washington, DC: American Association of Critical Care Nurses and National Organization of Nurse Practitioner Faculties.	Based on a survey of master's level nurse practitioner (NP) educational programs, this report presents data on: (1) types of programs and their characteristics; (2) programs by NP role preparation (single track, dual track, or combined NP/clinical nurse specialist); (3) course content areas included in core master's and clinical (didactic and/or clinical practicum) curriculum content; (4) selected aspects of faculty workload associated with clinical supervision; and (5) Web-based capacity of NP programs. (Appendices contain the survey instrument and a list of institutions providing information for the report.) (EV)	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Skill Mix in the Health Care Workforce: Reviewing the Evidence"	Buchan, J., & Dal Poz, M. R.	<i>Bulletin of the World Health Organization</i>	2002	Buchan, J., Dal Poz, M. R. (2002). Skill mix in the health care workforce: reviewing the evidence. <i>Bulletin of the World Health Organization</i> , 575-580.	This paper discusses the reasons for skill mix among health workers being important for health systems. It examines the evidence base (identifying its limitations), summarizes the main findings from a literature review, and highlights the evidence on skill mix that is available to inform health system managers, health professionals, health policy-makers, and other stakeholders.	Workforce	
"State Regulations of the Physician Assistant Profession"	Davis, A.	<i>Journal of the American Academy of Physician Assistants</i>	2002	Davis, A. (2002). State regulations of the physician assistant profession. <i>Journal of the American Academy of Physician Assistants</i> , 15 (10), 27-32.		Workforce	
"Does Experience Count?"	Dehn, R. W.	<i>Clinical Advisor</i>	2002	Dehn, R. W. (2002). Does experience count? <i>The Clinical Advisor</i> , 5 (1), 98.		Practice	
"Physician Assistants. American Idea of Physician Assistants Can Be Anglicized"	Fenn, W. H.	<i>British Medical Journal (Clinical Research Ed.)</i>	2002	Fenn, W. H. (2002). Physician assistants. American idea of physician assistants can be Anglicized. <i>British Medical Journal (Clinical Research Ed.)</i> , 324 (7339), 735.		International	
"Physician Assistant Student and Faculty Perceptions of Physician Assistant Residency Training Programs"	Fishfader, V., Henning, B., & Knott, P.	<i>Perspective on Physician Assistant Education</i>	2002	Fishfader, V., Henning, B., & Knott, P. (2002). Physician assistant student and faculty perceptions of physician assistant residency training programs. <i>Perspective on Physician Assistant Education</i> , 13(1), 34-38.		Education	
"Satisfaction and Well-Being of Primary Care Providers in Managed Care"	Freeborn, D. K., Hooker, R. S., & Pope, C. R.	<i>Evaluation & The Health Professions</i>	2002	Freeborn, D. K., Hooker, R. S., & Pope, C. R. (2002). Satisfaction and well-being of primary care providers in managed care. <i>Evaluation & The Health Professions</i> , 25 (2), 239-254.	This study compared perceptions about the practice environment and the job satisfaction of physician assistants (PAs), nurse practitioners (NPs), and primary care physicians in a large group-model HMO. The data source was a self-administered mail survey (average response rate = 79%). PA/NPs and primary care physicians reported that professional autonomy was not a problem and were satisfied with most aspects of practice in this setting. Common areas of dissatisfaction included patient load and amount of time with patients. PA/NPs were more likely than the physicians to experience stress on a daily basis, however, and were less likely to report that they would choose the practice setting again. They also were significantly less satisfied than the physicians with their incomes and fringe benefits. These findings suggest that more attention should be given to practice conditions and compensation of PAs and NPs in managed care.	Value/Impact	
"Trends in the Supply of Physician Assistants and Nurse Practitioners in the American Health Care System"	Hooker, R. S., & Berlin, L.	<i>Health Affairs</i>	2002	Hooker, R. S., & Berlin, L. (2002). Trends in the supply of physician assistants and nurse practitioners in the American health care system. <i>Health Affairs</i> , 21 (5), 174-181.		Workforce	
"A Kernel in the Pod: The Adventures of a 'Midlevel' Clinician in a Top-Level World"	Jones, J. M.	<i>Xlibris Corporation</i>	2002	Jones, J. M. (2002). <i>A Kernel in the Pod: The Adventures of a "Midlevel" Clinician in a Top-Level World</i> . Philadelphia: Xlibris Corporation.	An autobiography about one man's journey to become a Physician Assistant and carving out his niche in a sometimes hostile medical practice world.	Practice	
"Globalizing the PA Profession"	Kuhns, D. H.	<i>Journal of the American Academy of Physician Assistants</i>	2002	Kuhns, D. H. (2002). Globalizing the PA profession. <i>Journal of the American Academy of Physician Assistants</i> , 15(10), 45-50.	US physician assistants (PAs) have long been working in other parts of the world. Recently, several countries in Western Europe have begun to investigate whether the PA concept can help their own predicted health provider shortages. The author, who was the first PA to work internationally with the humanitarian group Doctors Without Borders, reviews the current status of PAs around the world and identifies the emerging issues, obstacles, and opportunities associated with globalizing the profession.	International	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Trends in Antimicrobial Prescribing Rates for Children and Adolescents"	McCaig, L. F., Besser, R. E., & Hughes, J. M.	<i>Journal of the American Medical Association</i>	2002	McCaig, L. F., Besser, R. E., & Hughes, J. M. (2002). Trends in antimicrobial prescribing rates for children and adolescents. <i>Journal of the American Medical Association</i> , 287 (23), 3096–3102.	The objective of the study is to assess changes in antimicrobial prescribing rates overall and for respiratory tract infections for children and adolescents younger than 15 years. The study design used National Ambulatory Medical Care Survey data provided by 2500 to 3500 office-based physicians for 6500 to 13 600 pediatric visits during 2-year periods from 1989-1990 through 1999-2000. Results showed that the rate of antimicrobial prescribing overall and for respiratory tract infections by office-based physicians for children and adolescents younger than 15 years decreased significantly between 1989-1990 and 1999-2000.	Practice	
"Nurse Practitioners and Physician Assistants Revisited: Do Their Practice Patterns Differ in Ambulatory Care?"	Mills, A. C., & McSweeney, M.	<i>Journal of Professional Nursing</i>	2002	Mills, A. C., & McSweeney, M. (2002). Nurse practitioners and physician assistants revisited: Do their practice patterns differ in ambulatory care? <i>Journal of Professional Nursing</i> , 18(1), 36–46.	The education and regulation of nurse practitioners and physician assistants would suggest unique role differentiations and practice functions between the professions. This study explored to what extent their practice patterns in primary care actually differ. It was hypothesized that the primary care services provided by nurse practitioners would tend to be women and family health services, health prevention and promotion oriented, provided to minority and socioeconomic disadvantaged patients, and less dependent on physician supervision. In contrast, the services provided by physician assistants would more likely be medical/surgical oriented; diagnostic, procedural, and technical in nature; likely to be in rural areas; and more dependent on physician supervision. The study used patient data from the National Ambulatory Medical Care Survey and National Hospital Ambulatory Medical Care Survey. Although some differences emerged, the argument is not compelling to suggest strong, unique, practice differences across all ambulatory care settings between the two types of nonphysician providers. It is the specific type of ambulatory setting that influences the practice pattern for both provider groups. If practice patterns are less distinctive than previously believed, more opportunities for interdisciplinary education need to be explored, and health policies that promote a discipline-specific primary care Workforce may need to be reexamined.	Practice	
"Big Doctoring in America"	Mullan, F.	Berkeley, CA: University of California Press	2002	Mullan, F. (2002). <i>Big Doctoring in America</i> . Berkeley, CA: University of California Press.	Fitzhugh Mullan, a pediatrician, writer, and historian, interviewed dozens of primary care practitioners and argues that primary care is a fascinating, important, and still endangered calling.	Value/Impact	
"Community-Oriented Primary Care: New Relevance in a Changing World"	Mullan, F., & Epstein, L.	<i>American Journal of Public Health</i>	2002	Mullan, F., & Epstein, L. (2002). Community-oriented primary care: New relevance in a changing world. <i>American Journal of Public Health</i> , 92(11), 1748–1755.	The authors provide a global overview of COPC, tracing its conceptual roots, reviewing its many manifestations, and exploring its future prospects as an organizational paradigm for the democratic organization of community health services. The authors also examine the pitfalls and paradoxes of COPC and suggest its future utility. COPC has important values and methods to offer disparate but powerful movements in public health worldwide.	Practice	
"Rural-Urban Differences in Visits to Primary Care Physicians"	Probst, J. C., Moore, C. G., Baxley, E. G., & Lammie, J. J.	<i>Family Medicine</i>	2002	Probst, J. C., Moore, C. G., Baxley, E. G., & Lammie, J. J. (2002). Rural-urban differences in visits to primary care physicians. <i>Family Medicine</i> , 34 (8), 609–615.	This study explored ambulatory practice differences between rural and urban primary care physicians. Visits to family, general practice, internal medicine, and pediatric physicians from the 1996 and 1997 National Ambulatory Medical Care Surveys were analyzed. "Rural" was defined as outside a metropolitan statistical area. Results showed that family physicians handled the majority of rural visits, even among pediatric populations. Acute injuries represented 6.1% of rural visits versus 5.0% of urban visits. Conditions likely to be associated with pain (degenerative joint disease, low-back pain, myalgias, headaches, and bursitis) were higher among rural visits (8.5% versus 5.4% urban). Preventive counseling and services and anticipatory guidance for children were provided less frequently in rural visits.	Practice	

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"Physician Assistants Working and Volunteering Abroad [unpublished doctoral dissertation]"	Rogers, S. E.	Arizona School of Health Sciences Physician Assistant School	2002	Rogers, S. E. (2002). <i>Physician assistants working and volunteering abroad: A survey</i> . Unpublished doctoral dissertation, Arizona School of Health Sciences Physician Assistant School, Mesa, AZ.		Gray Literature; International	
"Medical Outreach to Homeless Substance Users in New York City: Preliminary Results"	Rosenblum, A., Nuttbrock, L., McQuiston, H., Magura, S., & Joseph, H.	Substance Use & Misuse	2002	Rosenblum, A., Nuttbrock, L., McQuiston, H., Magura, S., & Joseph, H. (2002). Medical outreach to homeless substance users in New York City: Preliminary results. <i>Substance Use & Misuse</i> , 37(8-10), 1269-1273.	An innovative, experimental, medical out-reach initiative, using a fully-equipped mobile medical van with a staff of 2 part-time physicians, a physician assistant, a social worker, and a driver/medical aid serving the needs of 1048, mostly male, minority group, high-level, homeless New York City substance users with infectious diseases is described. The study sample (N = 250) was divided into experimental S's who received intensive case management and a control group who could choose to refer themselves to the SW. Biological tests revealed high rates of cocaine use and infectious diseases. Preliminary 4-month outcomes (N = 128) showed reductions in drug use, homelessness and health complaints in both groups; experimental subjects compared with controls received more Public Assistance and had fewer emergency room visits.	Practice	
"Continued Growth for Military PAs"	Salzer, S. W.	Journal of the American Academy of Physician Assistants	2002	Salzer, S. W. (2002). Continued growth for military PAs. <i>Journal of the American Academy of Physician Assistants</i> , 15(10), 35-39.	The US military physician assistant (PA) originated from the corpsmen and medics of the army, navy, air force, and Coast Guard. PAs have been present in every military campaign since 1980 and serve in a wide variety of medical roles. Their combat role has expanded so that in many instances the PA has replaced the physician as the front-line care provider. All have moved from warrant officer into the commissioned officer ranks, a change that has enabled them to rise into command and administrative positions. Narrowing of the pay differential between military and civilian PAs has contributed to their retention.	History; Workforce	
"Who Will Care for the Aging American Population?"	Segal-Gidan, F.	Journal of the American Academy of Physician Assistants	2002	Segal-Gidan, F. (2002). Who will care for the aging American population? <i>Journal of the American Academy of Physician Assistants</i> , 15(12), 4, 7.		Workforce	
"Liver Biopsy: Who Should Do It...and Who Will Show Up in Court?"	van Leeuwen, D. J.	Journal of Gastroenterology	2002	van Leeuwen, D. J. (2002). Liver biopsy: Who should do it . . . and who will show up in court? <i>American Journal of Gastroenterology</i> , 97(6), 1285-1288.	This is a discussion of two articles that highlight how liver biopsies are increasingly being done by those other than the primary attending physician of the patient.	Practice	
"A Shortage of Physicians or a Surplus of Assumptions?"	Weiner, J. P.	Health Affairs	2002	Weiner, J. P. (2002). A shortage of physicians or a surplus of assumptions? <i>Health Affairs</i> , 21(1), 160.	The author argues that a medical Workforce out of balance, in either direction, can ave a considerable negative impact on society.	Workforce	
"Should Non-Physicians Perform Cosmetic Procedures?"	White, S. M., & Geronemus, R.	Dermatologic Surgery	2002	White, S. M., & Geronemus, R. (2002). Should non-physicians perform cosmetic procedures? <i>Dermatologic Surgery</i> , 28(9), 856-859.	The author argues that nonphysicians are vital to global health care delivery. In cosmetic dermatology, they are also an important part of the care delivered. By upholding only the highest standards of training, supervision, and practice can we ensure the optimal outcome for our patients and advance the field of cosmetic dermatology and surgery.	Practice	
A comparison of physician assistant programs by national certification examination scores	Hooker RS, Hess B, CIPHER D	Perspective on Physician Assistant Education	2002	Hooker RS, Hess B, CIPHER D. A comparison of physician assistant programs by national certification examination scores. <i>Perspective on Physician Assistant Education</i> . 2002; 13(2): 81-86.		Education	
Improving education and practice in substance use disorders and policy recommendations on substance abuse education for physician assistants	Judd CR, Hooker RS, Morgan P	Substance Abuse	2002	Judd CR, Hooker RS, Morgan P. Improving education and practice in substance use disorders and policy recommendations on substance abuse education for physician assistants. <i>Substance Abuse</i> . 2002; 23(3S): 273-287.		Education	
Physician assistants in a changing world	Hooker RS, Kole L.	Journal of the American Academy of Physician Assistants	2002	Hooker RS, Kole L. Physician assistants in a changing world [editors for this special edition and editorial]. <i>Journal of the American Academy of Physician Assistants</i> . 2002; 15(10): 4-32.	Editors for a JAAPA special edition. Written as an editorial introducing the 25th anniversary of the US PA profession.		

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Satisfaction and well-being of primary care providers in managed care	Freeborn DK, Hooker RS, Pope CR	<i>Evaluation and the Health Professions</i>	2002	Freeborn DK, Hooker RS, Pope CR. Satisfaction and well-being of primary care providers in managed care. <i>Evaluation and the Health Professions</i> . 2002; 25(2): 239-254.			
Physician assistant students and their cadavers: Narratives on the gross anatomy experience	Henry L, Hooker RS, Statler PM	<i>Perspective on Physician Assistant Education</i>	2002	Henry L, Hooker RS, Statler PM. Physician assistant students and their cadavers: Narratives on the gross anatomy experience. <i>Perspective on Physician Assistant Education</i> . 2002; 13(1): 17-23.		Education	
Physician assistant student gross anatomy cost	Hooker RS	<i>Perspective on Physician Assistant Education</i>	2002	Hooker RS. Physician assistant student gross anatomy costs. <i>Perspective on Physician Assistant Education</i> . 2002; 13(1): 39.			
"Examining Attitudes of Specialist Physicians Regarding Physician Assistant Referrals"	Enns, S. M., Wynn, T., Muma, R. D., & Lary, M. J.	<i>Journal of Allied Health</i>	2003	Enns, S. M., Wynn, T., Muma, R. D., & Lary, M. J. (2003). Examining attitudes of specialist physicians regarding physician assistant referrals. <i>Journal of Allied Health</i> . 32(4), 270-274.	The purpose of this study was to examine the attitudes of the referral specialist physician toward direct referral of patients from primary care PAs.	Practice	
"The Relationship between Self-Efficacy and Student Physician Assistant Clinical Performance"	Opacic, D.A.	<i>Journal of Allied Health</i>	2003	Opacic, D.A. (2003). The relationship between self-efficacy and student physician assistant clinical performance. <i>Journal of Allied Health</i> . 32(3), 158-66.	The purpose of this study was to investigate the predictive relationship between student self-efficacy beliefs, achievement expectations, perceived outcome values, and subsequent clinical performance. The results reveal that self-efficacy, and not just academic performance, is a significant predictor of a student's clinical performance.	Education	
"Who is Caring for the Underserved? A Comparison of Primary Care Physicians and Non-Physician Clinicians in California and Washington"	Grumbach, K., Hart, L. G., Mertz, E., Coffman, J., & Lorella, P.	<i>Annals of Family Medicine</i>	2003	Grumbach, K., Hart, L. G., Mertz, E., Coffman, J., & Lorella, P. (2003). Who is Caring for the Underserved? A Comparison of Primary Care Physicians and Non-Physician Clinicians in California and Washington. <i>Annals of Family Medicine</i> . 1(2), 97-104.	An analysis of 1998 administrative and survey data on primary care clinicians in California and Washington found PAs ranked first or second in each state in proportion of their members practicing in rural areas or Health Professional Shortage Areas (HPSAs). In California, PAs also had the largest proportion of their members working in vulnerable population areas.	Practice	
"Rural and Urban Physicians' Perceptions Regarding the Role and Practice of the Nurse Practitioner, Physician Assistant, and Certified Nurse Midwife"	Burgess, S. E., Pruitt, R. H., Maybee, P., Metz, A. E. Jr., & Leuner, J.	<i>Journal of Rural Health</i>	2003	Burgess, S. E., Pruitt, R. H., Maybee, P., Metz, A. E. Jr., & Leuner, J. (2003). Rural and urban physicians' perceptions regarding the role and practice of the nurse practitioner, physician assistant, and certified nurse midwife. <i>Journal of Rural Health</i> . 19 (Suppl),321-328.	The purpose of this study was to investigate and compare differences, if any, between rural and urban primary care physicians' perceptions of the role and practice of non-physician providers.	Workforce	
"The Contribution of Nurse Practitioners and Physician Assistants to Generalist Care in Washington State"	Larson, E. H., Palazzo, L., Berkowitz, B., Pirani, M. J., & Hart, L. G.	<i>Health Services Research</i>	2003	Larson, E. H., Palazzo, L., Berkowitz, B., Pirani, M. J., & Hart, L. G. (2003). The contribution of nurse practitioners and physician assistants to generalist care in Washington State. <i>Health Services Research</i> . 38(4), 1033-1050.	The objective of this study was to quantify the total contribution to generalist care made by nurse practitioners (NPs) and physician assistants (PAs) in Washington State. Analysis of licensure renewal survey data found nurse practitioners and physician assistants make up 23.4% of the generalist provider population and provide 21.0% of the generalist outpatient visits in Washington State.	Workforce	
"Inappropriate Medication Use in Older Emergency Department Patients: Results of a National Probability Sample"	Budnitz, D. S., Nadine, S., Kegler, S. R., & Richards, C. L.	<i>Academic Emergency Medicine</i>	2003	Budnitz, D. S., Nadine, S., Kegler, S. R., & Richards, C. L. (2003). Inappropriate medication use in older emergency department patients: results of a national probability sample. <i>Academic Emergency Medicine</i> . 147(11), 755-765.	Analysis of National Hospital Ambulatory Medical Care Survey ED data in 2000 looked at inappropriate medications for patients >= 65 and found that being seen by a resident or physician extender was not significantly associated with inappropriate medication prescription.	Practice	
"Physicians' Use of Nonphysician Healthcare Providers for Colorectal Cancer Screening"	Sansbury, L.B., Klabunde, C.N., Mysliwiec, P., & Brown, M.L.	<i>American Journal of Preventive Medicine</i>	2003	Sansbury, L.B., Klabunde, C.N., Mysliwiec, P., & Brown, M.L. (2003). Physicians' use of nonphysician healthcare providers for colorectal cancer screening. <i>American Journal of Preventive Medicine</i> . 25(3),179-86.	This article describes physicians' use of nurse practitioners and physician assistants to provide CRC screening with the fecal occult blood test (FOBT), flexible sigmoidoscopy, and colonoscopy, as well as physicians' attitudes toward using these providers to perform flexible sigmoidoscopy. CONCLUSIONS: These results show current involvement of nurse practitioners and physician assistants in the delivery of CRC screening to be limited.	Practice	
"A Survey of Academic Departments of Emergency Medicine Regarding Operation and Clinical Practice: Two Years Later"	Stead, L. G., Boenau, I., Skiendzielewski, J., & Counselman, F. L.	<i>Academic Emergency Medicine</i>	2003	Stead, L. G., Boenau, I., Skiendzielewski, J., & Counselman, F. L. (2003). A survey of academic departments of emergency medicine regarding operation and clinical practice: two years later. <i>Academic Emergency Medicine</i> . 10(4), 393-396.	Similar surveys of academic departments of emergency medicine conducted in 1999, 1998 and 1996. Percentage of departments using mid-level providers remained unchanged (65-68%) and most common use of mid-level providers was for fast-track setting.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Videoconferencing for Practice-Based Small-Group Continuing Medical Education: Feasibility, Acceptability, Effectiveness, and Cost"	Allen, M., Sargeant, J. Mann, K. Fleming, M., & Premi, J.	<i>Journal for Continuing Education in Health Professions</i>	2003	Allen, M., Sargeant, J. Mann, K. Fleming, M., & Premi, J. (2003). Videoconferencing for practice-based small-group continuing medical education: Feasibility, acceptability, effectiveness, and cost. <i>Journal of Continuing Education in Health Professions</i> , 23(1), 38-47.	The purpose of this study was to evaluate the feasibility, acceptability, effectiveness, and cost of conducting practice-based, small-group CME learning by videoconference. Through a videoconferencing link, 10 learners in three communities were guided through four practice-based learning modules by a trained facilitator at a fourth site. Data were collected through evaluation questionnaires, direct observation by the research team, pre- and post-knowledge tests, a focus group, and an interview. Results showed some difficulty in technology and moderating during videoconferencing, but an increase in knowledge gain. Videoconferencing has the potential to bring the benefits of small-group, practice-based learning to many physicians; however, strict attention to videoconferencing techniques is required. Cost is also an important consideration.	Value/Impact	
"Federal Funding of the Physician Assistant Profession"	Ballweg, R. M.	<i>Perspective on Physician Assistant Education</i>	2003	Ballweg, R. M. (2003). Federal funding of the physician assistant profession. <i>Perspective on Physician Assistant Education</i> , 14(1), 4-5.	An editorial on the federal funding of the PA profession.	Workforce	
"Interest in Physician Assistant/Public Health Dual-Degree Programs"	Benzie, K., Miller, K., Cawley, J. F., & Heinrich, J.	<i>Perspective on Physician Assistant Education</i>	2003	Benzie, K., Miller, K., Cawley, J. F., & Heinrich, J. (2003). Interest in physician assistant/public health dual-degree program. <i>Perspective on Physician Assistant Education</i> , 14(1), 40-41.	The purpose of the study was to conduct an assessment on the existence of, and the potential interest in, dual-degree programs in public health and PA education across the nation. Results showed that of the 133 accredited PA programs in the United States, 10 schools had both a PA and a public health program. Responding programs indicated that perceived advantages of the dual-degree included a greater understanding of the public health perspective, a better grasp of population based care with emphasis on the disadvantaged and underserved populations, and an understanding that the health of the community is essential to the health of the individual.	Education	
"The American Registry of Physicians' Associates- Forerunner of the Association of Physician Assistant Programs"	Carter, R. D., & Fasser. C. E.	<i>Perspective on Physician Assistant Education</i>	2003	Carter, R. D., & Fasser. C. E. (2003). The American registry of physicians' associates—Forerunner of the Association of Physician Assistant Programs. <i>Perspective on Physician Assistant Education</i> , 14(2), 114-115.		Workforce	
"Physician Assistant Education and PANCE Performance: A Passing Controversy?"	Cawley, J. F.	<i>Perspective on Physician Assistant Education</i>	2003	Cawley, J. F. (2003). Physician assistant education and PANCE performance: A passing controversy? <i>Perspective on Physician Assistant Education</i> , 13, 79-80.	Editorial that discusses studies that examined the relationship between higher academic degrees and pass rates on the PANCE.	Education	
"Physician Assistants: Does the U.S. Experience Have Anything to Offer Other Countries?"	Cawley, J. F., & Hooker, R. S.	<i>Journal of Health Services Research & Policy</i>	2003	Cawley, J. F., & Hooker, R. S. (2003). Physician assistants: Does the U.S. experience have anything to offer other countries? <i>Journal of Health Services Research & Policy</i> , 8(2), 65-67.	In the USA, Canada, The Netherlands and elsewhere, several successful models of PA education have emerged globally. Programs are structured to train a capable clinician in a shorter time than that of a doctor, with less investment and easier deployment. Although the PA concept has a firm foundation in the USA, the American version cannot and should not be exported in toto. The fundamental models of PA education are to prepare competent and effective practitioners who have the capability to take on a wide range of medical tasks working with doctors in either primary or secondary care. How programmes are constructed should take into account the political context and the requirements and financial resources of the country.	International; History	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Origins of Nurse-Midwifery in the United States and its Expansion in the 1940s"	Dawley, K.	<i>Journal of Midwifery & Women's Health</i>	2003	Dawley, K. (2003). Origins of nurse-midwifery in the United States and its expansion in the 1940s. <i>Journal of Midwifery & Women's Health</i> , 48(2), 86–95.	This article reviews the origins of nurse-midwifery in the United States during the early decades of the 20th century and explores professional expansion between 1940 and 1950. Nurse-midwifery emerged from the vision of public health nurses, obstetricians, and social reformers concerned about high maternal and infant mortality rates at the turn of the century. Desirous of promoting child health, they provided prenatal care for pregnant women and assisted physicians, while also supporting women during labor and birth at home. Seeking to expand their specialty by introducing nurse-midwifery, they joined the campaign to eliminate traditional immigrant and African American midwives. By the early 1930s, there were only two sites for the practice of nurse-midwifery in the United States: Frontier Nursing Service and Maternity Center Association. Over the next 20 years, nurse-midwifery expanded in response to physician shortages, the emergence of a childbirth education movement, and women's demands for participation in birth. In the 1940s, the greatest expansion occurred in the South and Southwest in home birth, birthing centers, and an occasional community hospital.	History	
"The New Primary Care"	Dowling, B., & Glendinning, C.	<i>Open University Press</i>	2003	Dowling, B., & Glendinning, C. (2003). <i>The New Primary Care</i> . Berkshire, United Kingdom: Open University Press.			
"PAs filling the gap in patient care in academic hospitals"	Duffy, K.	<i>Perspective on Physician Assistant Education</i>	2003	Duffy, K. (2003). PAs filling the gap in patient care in academic hospitals. <i>Perspective on Physician Assistant Education</i> , 14, 158–162.		Workforce	
"The English Patient"	Fenn, W. H.	<i>Journal of the American Academy of Physician Assistant</i>	2003	Fenn, W. H. (2003). The English patient. <i>Journal of the American Academy of Physician Assistants</i> , 16 (2), 43–47.		International	
"The Characteristics and Roles of Rural Health Clinics in the United States: A Chartbook"	Gale, J. A., & Coburn A. F.	<i>Portland, ME: University of Southern Maine</i>	2003	Gale, J. A., & Coburn A. F. (2003). <i>The Characteristics and Roles of Rural Health Clinics in the United States: A Chartbook</i> . Portland, ME: University of Southern Maine, Edmund S. Muskie School of Public Service.	Reports on the results of a national survey of Rural Health Clinics (RHCs). Information was collected on a wide range of topics of concern to RHCs including: 1) the characteristics and operations of the clinics; 2) their location relative to the underservice problems and access needs of rural areas; 3) safety net functions of RHCs; 4) staffing, recruitment and financial issues; and 5) involvement in the training of health care professionals. Among the findings: most RHCs continue to serve rural, underserved communities; RHCs are filling a valuable safety net role by serving Medicaid, uninsured, and low-income patients and providing free and reduced cost care; recruitment and retention is a problem for RHCs, and some RHCs face continued financial challenges despite cost-based reimbursement. RHCs continue to be an important source of primary care and safety net services in rural communities. Legislative efforts to address concerns about the program have included the refinement of the shortage area criteria used by the RHC program (Balanced Budget Act of 1997) and the implementation of a Medicaid prospective payment system (Benefits Improvement and Protection Act of 2000). Additional research is needed to understand the impact of these changes on the RHCs and the residents of rural communities served by them.	Practice	
"Rural Healthy People 2010: A Companion Document to Healthy People 2010"	Gamm, L. D., Hutchison, L. L., Dabney, B. J., & Dorsey A. M.	<i>The Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Research Center</i>	2003	Gamm, L. D., Hutchison, L. L., Dabney, B. J., & Dorsey A. M. (Eds.) (2003). <i>Rural Healthy People 2010: A Companion Document to Healthy People 2010</i> . Volume 1. College Station, TX: The Texas A&M University System Health Science Center, School of Rural Public Health, Southwest Rural Research Center. Retrieved June 22, 2008, from http://www.srph.tamhsc.edu/centers/rhp2010/Volume1.pdf		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Pathology Resident Attitudes and Opinions about Pathologists' Assistants"	Grzybicki, D. M., & Vrbin C. M.	<i>Archives of Pathology & Laboratory Medicine</i>	2003	Grzybicki, D. M., & Vrbin C. M. (2003). Pathology resident attitudes and opinions about pathologists' assistants. <i>Archives of Pathology & Laboratory Medicine</i> , 127 (6), 666-672.	The objective of the study is to obtain descriptive information regarding pathology resident attitudes and opinions about pathologists' assistants in anatomic pathology practice and to assess the implications of resident attitudes and opinions for pathology practice and training. The study design was a self-administered, mailed, voluntary, anonymous questionnaire was distributed to a cross-sectional sample of pathology residents in the United States (2531 pathology residents registered as resident members of one of the national pathology professional organizations). Results showed that the majority of residents expressed overall positive attitudes and opinions about pathologists' assistants and felt that pathologists' assistants enhanced resident training by optimizing resident workload. A minority (10%-20%) of residents expressed negative attitudes or opinions about pathologists' assistants. Additionally, some residents reported a lack of knowledge about pathologists' assistants' training or roles.	Education	
"Education"	Hammond, J.	<i>Physician Assistant: A Guide to Clinical Practice (3rd ed.)</i>	2003	Hammond, J. (2003). Education. In R. M. Ballweg, S. Stolberg, & E. M. Sullivan (Eds.), <i>Physician Assistant: A Guide to Clinical Practice (3rd ed.)</i> . Philadelphia: Saunders/Elsevier Science.		Education	
"Physician Assistants in American Medicine (2nd Edition)"	Hooker, R. S., & Cawley, J. F.	<i>New York: Churchill Livingstone</i>	2003	Hooker, R. S., & Cawley, J. F. (2003). <i>Physician Assistants in American Medicine (2nd ed.)</i> . New York: Churchill Livingstone.		History	
"Physician Assistants in the Canadian Forces"	Hooker, R. S., MacDonald, K., & Patterson, R.	<i>Military Medicine</i>	2003	Hooker, R. S., Macdonald, K., & Patterson, R. (2003). Physician assistants in the Canadian forces. <i>Military Medicine</i> , 168, 948-950.	Canada is struggling with burgeoning health care access problems. At the same time, this nation may be overlooking an available resource to help address specific physician shortages. The services of more than 130 physician assistants in the Canadian Department of National Defense are used to off-set and amplify physician services. Their extensive education and training, along with their international experience in war-torn areas, dealing with wounded and ill military personnel, refugees, civilians, epidemics, and other health care problems make them particularly valuable assets. Yet, upon discharge from military service and reentry into the civilian sector, they are left without the legislation and formal recognition as a health care provider that would enable them to use these skills to help improve medical care access. This study provides the first description of the training and activity of Canadian physician assistants.	International	
"Utilization of Physician Assistants: Incentives and Constraints for Rural Physicians"	Isberner, F. R., Lloyd, L., Simon, B., Joyce, M. S., & Craven, J. M.	<i>Perspective on Physician Assistant Education</i>	2003	Isberner, F. R., Lloyd, L., Simon, B., Joyce, M. S., & Craven, J. M. (2003) Utilization of physician assistants: Incentives and constraints for rural physicians. <i>Perspective on Physician Assistant Education</i> , 14(2), 69-73.	This study surveyed primarily rural Illinois physicians to identify incentives and constraints that influence their receptivity to utilization of PAs. Results showed that receptive physicians reported 6 incentives related to appointments, workload, productivity, education/counseling, complex cases, and patient satisfaction. Unreceptive physicians identified 4 constraints related to perceived patient opposition, malpractice risk, overstepping authority, and continuity of care. Receptive physicians also identified perceived patient opposition as a constraint.	Workforce	
"Physician Assistant Education: A Call for Standardized Prerequisites"	Jones, P. E., & Miller, A. A.	<i>Perspective on Physician Assistant Education</i>	2003	Jones, P. E., & Miller, A. A. (2003). Physician assistant education: A call for standardized prerequisites. <i>Perspective on Physician Assistant Education</i> , 13, 114. J		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Trained and Supervised Physician Assistants Can Safely Perform Diagnostic Cardiac Catheterization with Coronary Angiography"	Krasuski, R. A., Wang, A., Ross, C., Bolles, J. F., Moloney, E. L., Kelly, L. P., et al.	<i>Catheterization and Cardiovascular Interventions</i>	2003	Krasuski, R. A., Wang, A., Ross, C., Bolles, J. F., Moloney, E. L., Kelly, L. P., et al. (2003). Trained and supervised physician assistants can safely perform diagnostic cardiac catheterization with coronary angiography. <i>Catheterization and Cardiovascular Interventions</i> , 59 (2), 157–160.	Using a prospectively collected database of patients undergoing cardiac catheterization, researchers sought to compare the outcomes of procedures performed by supervised physician assistants (PAs) with those performed by supervised cardiology fellows-in-training. Outcome measures included procedural length, fluoroscopy use, volume of contrast media, and complications including myocardial infarction, stroke, arrhythmia requiring defibrillation or pacemaker placement, pulmonary edema requiring intubation, and vascular complications. Class 3 and 4 congestive heart failure was more common in patients who underwent procedures by fellows compared with those undergoing procedures by PAs (P = 0.001). PA cases tended to be slightly faster (P = 0.05) with less fluoroscopic time (P < 0.001). The incidence of major complications within 24 hr of the procedure was similar between the two groups (0.54% in PA cases and 0.58% in fellow cases). Under the supervision of experienced attending cardiologists, trained PAs can perform diagnostic cardiac catheterization, including coronary angiography, with complication rates similar to those of cardiology fellows-in-training.	Education; Practice	
"Primary Care Medicine in Crisis: Toward Reconstruction and Renewal"	Moore, G., & Showstack, J.	<i>Annals of Internal Medicine</i>	2003	Moore, G., & Showstack, J. (2003). Primary care medicine in crisis: Toward reconstruction and renewal. <i>Annals of Internal Medicine</i> , 138 (3), 244–247.	This article discusses how primary care is in crisis. Despite its proud history and theoretical advantages, the field has failed to hold its own among medical specialties. While the rest of medicine promises technology and sophistication, the basic model of primary care has changed little over the past half-century. Many of the causes of this struggle may lie within primary care itself, ranging from failure to articulate to the public (and insurers and policymakers) what value it, and it alone, can offer, to taking on an ever-broadening set of roles and responsibilities while all too often falling short of its promises. Also, in the emerging health care system, the lack of a discrete definition of primary care has allowed managed care organizations and payers, among others, to define the role of primary care to suit their own interests. In response to a changing marketplace, political uncertainty, and shifting consumer expectations, the author argues that primary care will need to reconstruct itself and emerge as a redefined product that is attractive to patients, payers, and primary care practitioners alike.	History	
"Report on the Findings of the Ad Hoc Committee on International Physician Assistant Education"	Pedersen, K. J., Hooker, R. S., Legler, C. F., Kortyna, D. E., Harbert, K. R., Eisenhauer, W. A., & Baggett, A.	<i>Perspective on Physician Assistant Education</i>	2003	Pedersen, K. J., Hooker, R. S., Legler, C. F., Kortyna, D. E., Harbert, K. R., Eisenhauer, W. A., & Baggett, A. (2003). Report on the findings of the Ad Hoc Committee on International Physician Assistant Education. <i>Perspective on Physician Assistant Education</i> , 14 (4), 220–232.	In May 2002, the APAP Ad Hoc Committee on International PA Education began its development of a white paper on international issues relating to APAP and the education of physician assistants. Specifically, the committee reviewed the results of a survey on international PA education, canvassed PA faculty to learn about their experiences with international student rotations, and identified PA educational activities outside the United States. From this preliminary research, the committee formulated nine objectives and corresponding goals to guide its work.	International; Education	
"A Primer on Oncology for the Primary Care PA"	Polansky, M.	<i>Journal of the American Academy of Physician Assistants</i>	2003	Polansky, M. (2003). A primer on oncology for the primary care PA. <i>Journal of the American Academy of Physician Assistants</i> , 16 (10), 8–11.		Practice	
"Occupational and Environmental Medicine"	Ramos, M.	<i>Physician Assistant: A Guide to Clinical Practice</i>	2003	Ramos, M. (2003). Occupational and environmental medicine. In R. M. Ballweg, S. Stolberg, & E. Sullivan (Eds.), <i>Physician Assistant: A Guide to Clinical Practice</i> . (2nd ed.). Philadelphia: W. B. Saunders.	A book on the specialty of occupational and environmental medicine within the PA profession.	Practice	
"Team Learning in Medical Education: Initial Experiences at Ten Institutions"	Searle, N. S., Haidet, P., Kelly, P. A., Schneider, V. F., Seidel, C. L., & Richards, B. F.	<i>Academic Medicine</i>	2003	Searle, N. S., Haidet, P., Kelly, P. A., Schneider, V. F., Seidel, C. L., & Richards, B. F. (2003). Team learning in medical education: Initial experiences at ten institutions. <i>Academic Medicine</i> , 78 (10), S55.	This paper describes the initial experiences of ten institutions with team learning (TL), a teaching method which fosters small-group learning in a large-class setting. After initial pilot studies at one institution, nine additional institutions implemented TL in one or more courses. Results showed that within 18 months, TL has been used in 40 courses (from 5% to 100% of the time) and all ten institutions will increase its use next year.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"SPAO 2003: ENT PA Productivity Survey"	Society of Physician Assistants in Otorhinolaryngology/Head & Neck Surgery"		2003	Society of Physician Assistants in Otorhinolaryngology/Head & Neck Surgery. (2003). <i>SPAO 2003: ENT PA productivity survey</i> . Retrieved June 6, 2008, from http://www.entpa.org/scope_of_practice.html		Practice	
"The Future of Primary Care"	Sox, H. C.	<i>Annals of Internal Medicine</i>	2003	Sox, H. C. (2003). The future of primary care. <i>Annals of Internal Medicine</i> , 138 (3), 230–232.	This editorial focuses on concerns and suggestions about primary care. The article defines primary care, makes observations that fewer young physicians are choosing residency training that leads to careers in primary care, explains reasons for the declining attractiveness of primary care careers, and suggests how primary care can restructure itself to be more responsive to patients and attractive to in-training physicians.	Workforce	
"Primary Care Training Grants Through Title VII, Section 747: The Duke Experience"	Strand J., & Carter, R.	<i>Perspective on Physician Assistant Education</i>	2003	Strand J., & Carter, R. (2003). Primary care training grants through Title VII, section 747: The Duke experience. <i>Perspective on Physician Assistant Education</i> , 14 (1), 25–30.	The Duke University PA program has benefited for many years from funding through primary care training grants under Title VII, Section 747. While in the earliest years funding assisted with the infrastructure of the PA education itself, it now provides support to enhance Duke's educational efforts. Duke's current funding supports recruitment, retention, and placement of PA students and graduates from underrepresented minority and disadvantaged backgrounds in primary care and medically underserved communities. It also provides assistance with development of curricula in oral health and genetics and allowed Duke to expand its PA teaching fellowship to a full-time position. The Duke PA program primary care training grant projects are described in detail, and outcomes delineated.	Education	
"Physician Assistants Enhance Quality of Care in Asthma Patients"	Thomas, G. P., McNellis, R. J., & Ortiz, G. R.	<i>Journal of Allergy and Clinical Immunology</i>	2003	Thomas, G. P., McNellis, R. J., & Ortiz, G.R. (2003). Physician assistants enhance quality of care in asthma patients. <i>Journal of Allergy and Clinical Immunology</i> , 111(Abtract Supplement), S71–S440.		Value/Impact	
Physician assistant journalism and the peer review process	Hooker RS	<i>Perspective on Physician Assistant Education</i>	2003	Hooker RS. Physician assistant journalism and the peer review process. <i>Perspective on Physician Assistant Education</i> . 2003; 14(4): 149-150.			
Review of doctoral dissertations on physician assistants: 1972-2001	Hooker RS, Mayo H	<i>Physician Assistant</i>	2003	Hooker RS, Mayo H. Review of doctoral dissertations on physician assistants: 1972-2001. <i>Physician Assistant</i> . 2003; 27(2): 28-34.	Summary of doctoral dissertations related to the PA profession and/or written by PAs including a listing of the topics.		
"Performance of Military-Trained Physician Assistants on the Physician Assistant National Certification Examination"	Cody, J.T., Adamson, K.A., Parker, R.L., Morrey S.L., & Maxwell, E.E.	<i>Military Medicine</i>	2004	Cody, J.T., Adamson, K.A., Parker, R.L., Morrey S.L., & Maxwell, E.E. (2004). Performance of military-trained physician assistants on the physician assistant national certification examination. <i>Military Medicine</i> . 169(1), 34-37.	Comparison of the national certification examination pass rates for a military program with those of accredited civilian programs found graduates of the military program had a significantly higher pass rate and higher average scores than their civilian counterparts.	Education	
"Effect of a Multiple-Site Intensive Care Unit Telemedicine Program on Clinical and Economic Outcomes: An Alternative Paradigm for Intensivist Staffing"	Breslow, M. J., Rosenfeld, B. A., Doerfler, M., Burke, G., Yates, G., Stone, D. J., Tomaszewicz, P., Hochman, R., & Plocher, D. W.	<i>Critical Care Medicine</i>	2004	Breslow, M. J., Rosenfeld, B. A., Doerfler, M., Burke, G., Yates, G., Stone, D. J., Tomaszewicz, P., Hochman, R., & Plocher, D. W. (2004). Effect of a multiple-site intensive care unit telemedicine program on clinical and economic outcomes: an alternative paradigm for intensivist staffing. <i>Critical Care Medicine</i> . 32(1):31-38.	Found ICU telemedicine program using intensivists and physician extenders was associated with improved clinical outcomes and hospital financial benefits.	Value/Impact	
"Physician Assistants in Occupational Medicine: How Do They Compare to Occupational Physicians?"	Hooker, R. S.	<i>Occupational Medicine</i>	2004	Hooker, R. S., (2004). Physician assistants in occupational medicine: How do they compare to occupational physicians? <i>Occupational Medicine</i> . 54, 153-158.	Analysis of administrative data found physicians saw a mean of 2.9 patients/hr compared to 2.5 patients/hr for PAs, but PAs worked more hours and saw more patients in a year than physicians. Average charge per patient visits and total charge per episode were similar. Salary for physicians was approximately twice as much per hour as a PA.	Practice	
"Use of Mid-Level Practitioners to Achieve Labor Cost Savings in Primary Care Practice of an MCO"	Roblin, D. W., Howard, D. H., Becker, E. R., Adams, K. E., & Roberts, M. H.	<i>Health Services Research</i>	2004	Roblin, D. W., Howard, D. H., Becker, E. R., Adams, K. E., & Roberts, M. H. (2004). Use of Mid-level Practitioners to Achieve Labor Cost Savings in Primary Care Practice of an MCO. <i>Health Services Research</i> . 39(3), 607-626.	Data from twenty-six primary care practices and approximately 2 million visit records found PAs/NPs attended to 1 in 3 adult medicine visits and 1 in 5 pediatric medicine visits. The likelihood of PA/NP visits are higher among patients presenting with minor acute illness and lower than average among older patients. Practitioner labor costs per visit and total labor costs per visit were lower among practices with greater use of PAs/NPs	Value/Impact	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistant Vocational Satisfaction"	Labarbera, D.M.	<i>Journal of American Academy of Physician Assistants</i>	2004	Labarbera, D.M. (2004). Physician assistant vocational satisfaction. <i>JAAPA</i> . 17(10), 34-36.	Physician assistants (PAs) are known to be highly satisfied with their vocational choices, but the reasons for this high degree of satisfaction are not known. From qualitative data, 21 factors for vocational satisfaction and 29 factors for dissatisfaction were identified.	Practice	
"Patient Satisfaction with Primary Care: Does Type of Practitioner Matter?"	Roblin, D.W., Becker, E.R., Adams, E.K., Howard, D.H., & Roberts M. H.	<i>Medical Care</i>	2004	Roblin, D.W., Becker, E.R., Adams, E.K., Howard, D.H., & Roberts M. H. (2004). Patient satisfaction with primary care: does type of practitioner matter? <i>Medical Care</i> . 42(6), 579-590.	OBJECTIVE: The objective of this study was to evaluate the association of patient satisfaction with type of practitioner attending visits in the primary care practice of a managed care organization. CONCLUSIONS: Averaged over many primary care visits provided by many physicians and midlevel practitioners, patients in this MCO were as satisfied with care provided by PAs/NPs as with care provided by MDs.	Value/Impact	
"Underutilization of Digital Rectal Examination When Screening for Prostate Cancer"	Murthy, G. D., Byron, D. P., & Pasquale, D.	<i>Archives of Internal Medicine</i>	2004	Murthy, G. D., Byron, D. P., & Pasquale, D. (2004). Underutilization of Digital Rectal Examination When Screening for Prostate Cancer. <i>Archives of Internal Medicine</i> . 164(3), 313-316.	Review of records found DRE underutilized when screening for prostate cancer across all health care providers, but female providers and physician extenders outperformed male providers and physicians.	Practice	
"Physician Assistants as Providers of Surgically Induced Abortion Services"	Goldman, M. B., Occhiuto, J. S., Peterson, L. E., Zapka, J. G., & Palmer, R. H.	<i>American Journal of Public Health</i>	2004	Goldman, M. B., Occhiuto, J. S., Peterson, L. E., Zapka, J. G., & Palmer, R. H. (2004). Physician assistants as providers of surgically induced abortion services. <i>American Journal of Public Health</i> . 94(8), 1352-1357.	OBJECTIVE: This article compared complication rates after surgical abortions performed by physician assistants with rates after abortions performed by physicians. CONCLUSIONS: Surgical abortion services provided by experienced physician assistants were comparable in safety and efficacy to those provided by physicians.	Practice	
"Nursing Home Characteristics and Potentially Preventable Hospitalizations of Long-Stay Residents"	Intrator, O., Zinn, J., & Mor, V.	<i>Journal of the American Geriatric Society</i>	2004	Intrator, O., Zinn, J., & Mor, V. (2004). Nursing Home Characteristics and Potentially Preventable Hospitalizations of Long-Stay Residents. <i>Journal of the American Geriatric Society</i> . 52, 1730-1736.	A cross-sectional prospective study using Minimum Data Set assessments, CMS inpatient claims and eligibility records, Online Survey Certification Automated Records, and Area Resource File data on nursing homes found facilities with NP/PAs were associated with lower hospitalization rates for ACS conditions.	Workforce	
"Comparative Review of Use of Physician Assistants in a Level I Trauma Center"	Oswanski, M. F., Sharma, O. P., & Shekhar, S. R.	<i>The American Surgeon</i>	2004	Oswanski, M. F., Sharma, O. P., & Shekhar, S. R. (2004). Comparative Review of Use of Physician Assistants in a Level I Trauma Center. <i>The American Surgeon</i> . 70(3), 272-279.	The purpose of this study was to assess the quality of patient care during transition from resident to PA-assisted trauma program (without residents) and comparative simultaneous support. Substitution of residents with PAs had no impact on patient mortality; however, LOS (from EC to floor), was statistically reduced by one day.	Practice	
"Coping with a Crowded ED: An Expanded Unique Role for Midlevel Providers"	Ganapathy, S., & Zwemer, F.L. Jr.	<i>American Journal of Emergency Medicine</i>	2004	Ganapathy, S., & Zwemer, F.L. Jr. (2003). Coping with a crowded ED: an expanded unique role for midlevel providers. <i>American Journal of Emergency Medicine</i> . 21(2),125-8.	This article describes the role of PAs and NPs in the ED acting as caregivers for admitted ED patients that are waiting for a bed so that MDs can care for more patients.	Workforce	
"The Dermatology Workforce Shortage"	Resneck, J. Jr., & Kimball, A. B.	<i>Journal of the American Academy of Dermatology</i>	2004	Resneck, J. Jr., & Kimball, A. B. (2004). The Dermatology Workforce Shortage. <i>Journal of the American Academy of Dermatology</i> . 50(1), 50-54.	Survey of practicing dermatologists found use of physician extenders among other measures such as wait times, searches for new employees, etc. as support for the existence of a dermatologist shortage	Workforce	
"The Impact of Program Characteristics on the Physician Assistant National Certifying Examination Scores and Pass Rates"	Asprey, D., Dehn, R., & Kreiter, C.	<i>Perspective on Physician Assistant Education</i>	2004	Asprey, D., Dehn, R., & Kreiter, C. (2004a). The impact of program characteristics on the Physician Assistant National Certifying Examination scores and pass rates. <i>Perspectives on Physician Assistant Education</i> , 15(1), 33-37.	Study that showed little to no relationship of academic credential awarded by PA F418programs with pass rates on the PANCE.	Education	
"The Impact of Age and Gender on the Physician Assistant National Certifying Examination Scores and Pass Rates"	Asprey, D., Dehn, R., & Kreiter, C.	<i>Journal of Physician Assistant Education</i>	2004	Asprey, D., Dehn, R., & Kreiter, C. (2004b). The impact of age and gender on the Physician Assistant National Certifying Examination scores and pass rates. <i>Perspectives on Physician Assistant Education</i> , 15(1), 38-41.	The purpose of this study was to investigate the influence of age and gender on PANCE performance. PANCE scores were obtained from the National Commission on Certification of Physician Assistants (NCCPA) for three cohorts. In each of the three years studied, there was a statistically significant negative correlation between age and PANCE score, indicating that lower scores were obtained by older examinees. Failure rates of examinees reveal a statistically significant and moderately positive relationship between age and likelihood of failure. The relationship between age and score was significantly more pronounced in the male examinees.	Education	
"Physician Assistant, A Guide to Clinical Practice (3rd ed)"	Ballweg, R. M., Stolberg, S., Sullivan, E. M.	<i>Philadelphia: Saunders/Elsevier Science</i>	2004	Ballweg, R. M., Stolberg, S., Sullivan, E. M. (2004). <i>Physician Assistant: A Guide to Clinical Practice</i> (3rd ed). Philadelphia: Saunders/Elsevier Science.		History	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"New Steam from an Old Cauldron - The Physician Supply Debate"	Blumenthal, D.	<i>New England Journal of Medicine</i>	2004	Blumenthal, D. (2004). New steam from an old cauldron - The physician supply debate. <i>New England Journal of Medicine</i> , 250(17), 1780-1781.	A discussion on past and current efforts to assess and manage the supply of physicians and an analysis of the debates beneath the physician Workforce debate.	Workforce	
"Occupational medicine: The use of physician assistants and the changing role of the occupational and environmental medicine provider"	Bunn, W. B., III, Holloway, A. M., & Johnson, C. E.	<i>Occupational Medicine</i> , 54, 3145-3146	2004	Bunn, W. B., III, Holloway, A. M., & Johnson, C. E. (2004). Occupational medicine: The use of physician assistants and the changing role of the occupational and environmental medicine provider. <i>Occupational Medicine</i> , 54, 3145-3146.	Editorial: In this issue, Hooker compares physician and physician assistant activities in the occupational health setting in the USA and Nicholson analyzes the variations in the supply of and role of medical practitioners in the UK. Although there is a need for increased occupational health provider time, the demand for different levels of training varies between locations.	Workforce	
"Evidence-Based Strategies to Foster Adherence and Improve Patient Outcomes"	DiMatteo, M. R.	<i>Journal of the American Academy of Physician Assistants</i>	2004	DiMatteo, M. R. (2004). Evidence-based strategies to foster adherence and improve patient outcomes. <i>Journal of the American Academy of Physician Assistants</i> , 17(11), 18-21.		Workforce	
"Contemporary Nursing Knowledge: Analysis and Evaluation of Nursing Models and Theories (2nd ed.)"	Fawcett, J.	<i>Philadelphia: F.A. Davis</i>	2004	Fawcett, J. (2004). <i>Contemporary Nursing Knowledge: Analysis and Evaluation of Nursing Models and Theories</i> (2nd ed.). Philadelphia: F.A. Davis.		Practice	
"Health Care Economics (6th Edition)"	Feldstein, P. J.	<i>Thomas Delmar Learning</i>	2004	Feldstein, P. J. (2004). <i>Health Care Economics</i> (6th ed.). Albany, NY: Thomson Delmar Learning; Delmar Series in Health Services Administration			
"The Physician Assistant and Community-Oriented Primary Care"	Gofin, J & Cawley, J. F.	<i>Perspective on Physician Assistant Education</i>	2004	Gofin, J., & Cawley, J. F. (2004). The physician assistant and community-oriented primary care. <i>Perspective on Physician Assistant Education</i> , 2(15), 126-128.	A brief report which outlines the Community-Oriented Primary Care model.	Practice	
"Use of Physician Extenders in Surgical Pathology Practice"	Grzybicki, D. M., Vrbin, C. M., Reilly, T. L., Zarbo, R. J., & Raab, S. S.	<i>Archives of Pathology & Laboratory Medicine</i>	2004	Grzybicki, D. M., Vrbin, C. M., Reilly, T. L., Zarbo, R. J., & Raab, S. S. (2004). Use of physician extenders in surgical pathology practice. <i>Archives of Pathology & Laboratory Medicine</i> , 128 (2), 165-172.	The objective of this study is to measure and describe the use of nonphysician personnel for surgical pathology gross examination in order to gain a better understanding of the current surgical pathology Workforce. A voluntary, mailed questionnaire containing items related to the use of multiple nonphysician personnel types in surgical pathology was distributed to (1) a cross-sectional sample (n = 968) of US pathologists and (2) a purposive sample of pathologist directors of surgical and/or anatomic pathology (n = 77) located at teaching institutions. Results showed that the use of a variety of nonphysician laboratory personnel for surgical pathology gross examination is common, particularly in academic pathology practice.	Practice	
"The Role of International Medical Graduates in America's Small Rural Critical Access Hospitals"	Hagopian, A., Thompson, M. J., Kaltenbach, E., & Hart L. G.	<i>Journal of Rural Health</i>	2004	Hagopian, A., Thompson, M. J., Kaltenbach, E., & Hart L. G. (2004). The role of international medical graduates in America's small rural critical access hospitals. <i>Journal of Rural Health</i> , 20 (1), 52-58.	Critical access hospitals (CAHs) are a federal Medicare category for isolated rural facilities with 15 or fewer acute care beds that receive cost-based reimbursement from Medicare. This study examines the role of foreign-born international medical graduates (IMGs) in the staffing of CAHs. Chief executive officers (CEOs) of CAH facilities answered a telephone survey on their use of IMGs and the characteristics of those IMGs in winter 2002 (388 responded, for a 96% response rate). Overall, 1 (24%) in 4 admitting physicians in CAHs are graduates of non-US medical schools (compared with 23% of physicians nationally), although the rates are higher for CAHs in persistent poverty counties, CAHs that report recruitment problems, and CAHs with smaller medical staffs. Hospitals east of the Mississippi River are more heavily reliant on IMGs than hospitals in the west. Most IMGs are internists (59%) and most (61%) come from India, the Philippines, or Pakistan. Hospital administrators rate the clinical skills of their IMGs highly and their interpersonal skills only slightly lower. Almost half of CAH administrators said their communities recruited their first IMGs during or after 1994, the year of pro-IMG legislative changes.	Workforce	

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"Best Practice Approach to the Development of an International Physician Assistant Program: The University of Arnhem-Nijmegen Model"	Harbert, K., van den Brink, G., Smith, R., & van Bergen, B.	<i>Perspective on Physician Assistant Education</i>	2004	Harbert, K., van den Brink, G., Smith, R., & van Bergen, B. (2004). Best practice approach to the development of an international physician assistant program: The University of Arnhem-Nijmegen model. <i>Perspective on Physician Assistant Education, 15</i> (2), 106–115.	For the last three years, the development of the PA profession in the Netherlands has been an ongoing vision of the University of Arnhem-Nijmegen. A variety of qualitative and quantitative methods were used to gather data and develop the model that was used for the PA Educational program and the PA profession in the Netherlands. The first students were admitted in 2003 and began the graduate PA program at the University of Arnhem-Nijmegen in November of that year. The university used a best practice approach to develop an innovative graduate program.	Practice	
"The National Commission on Certification of Physician Assistants: History and Role"	Hooker, R. S., Carter, R., & Cawley, J. F.	<i>Perspective on Physician Assistant Education</i>	2004	Hooker, R. S., Carter, R., & Cawley, J. F. (2004). The national commission on certification of physician assistants: History and role. <i>Perspective on Physician Assistant Education, 15</i> (1), 8–15.	The history and role of the certification exam for the PA profession. Test scores trends.	History; Education	
"The Effects of a Full-Time Physician Assistant Staff on Postoperative Outcomes in the Cardiothoracic ICU: 1-Year Results"	Hormann, B. M., Bello, S. J., Hartman, A. R., & Jacobs, M.	<i>Surgical Physician Assistant</i>	2004	Hormann, B. M., Bello, S. J., Hartman, A. R., & Jacobs, M. (2004). The effects of a full-time physician assistant staff on postoperative outcomes in the cardiothoracic ICU: 1-year results. <i>Surgical Physician Assistant, 10</i> (10), 38–41.		Practice	
"Nursing Home Characteristics and Potentially Preventable Hospitalizations of Long-Stay Residents"	Intrator, O., Zinn, J., & Mor, V.	<i>Journal of the American Geriatrics Society</i>	2004	Intrator, O., Zinn, J., & Mor, V. (2004). Nursing home characteristics and potentially preventable hospitalizations of long-stay residents. <i>Journal of the American Geriatrics Society, 52</i> (10), 1730–1736.	The objective of the study was to examine the association between having a nurse practitioner/physician assistant (NP/PA) on staff, other nursing home (NH) characteristics, and the rate of potentially preventable/avoidable hospitalizations of long-stay residents, as defined using a list of ambulatory care-sensitive (ACS) diagnoses. The study design was a cross-sectional prospective study using Minimum Data Set (MDS) assessments in Maine, Kansas, New York, and South Dakota. Results showed that Employment of NP/PAs in NHs, the provision of intravenous therapy, and the operation of certified nurse assistant training programs appear to reduce ACS hospitalizations, and may be feasible cost-saving policy interventions.	Workforce	
"Cultural Competency Curriculum: Components for Inclusion in Physician Assistant Education"	Jacques, P.	<i>Perspective on Physician Assistant Education</i>	2004	Jacques, P. (2004). Cultural competency curriculum: Components for inclusion in physician assistant education. <i>Perspective on Physician Assistant Education, 15</i> , 102–105.	Medical education has proposed several curricular models to better prepare physicians to care for culturally diverse patients as U.S. population demographics change. The Association of Physician Assistant Programs has increased awareness of cultural issues through its publications and conferences, but, as of yet, has not developed a model curriculum. Cultural competency issues affect physician assistants (PAs) as much as they do physicians. This paper proposes logistics for incorporating into one physician assistant (PA) program already existing curricular modules that address cultural competency.	Education	
"An Integrated Evidence-Based Medicine Curriculum in Physician Assistant Training: From Undergraduate to Postgraduate"	Keahey, D., & Goldgar, C.	<i>Perspective on Physician Assistant Education</i>	2004	Keahey, D., & Goldgar, C. (2004). An integrated evidence-based medicine curriculum in physician assistant training: From undergraduate to postgraduate. <i>Perspective on Physician Assistant Education, 15</i> (2), 91–98.	This article is an overview of the University of Utah Physician Assistant Program's (UPAP) EBM curriculum that is focused on clinical relevance and utility. It also outlines how programs can adapt for themselves UPAP's EBM curriculum to satisfy graduate-level educational requirements, as the master's degree become the standard for PA education.	Education	
"Factors Influencing the Retention and Attrition of Community Health Aides/Practitioners in Alaska"	Landon, B., Loudon, J., Selle, M., & Doucette, S.	<i>Journal of Rural Health</i>	2004	Landon, B., Loudon, J., Selle, M., & Doucette, S. (2004). Factors influencing the retention and attrition of community health aides/practitioners in Alaska. <i>Journal of Rural Health, 20</i> (3), 221–230.	The purpose of the study was to identify factors contributing to retention in Alaska's Community Health Aide Program (CHAP), a unique program employing local, indigenous peoples as primary care nonphysician providers in extremely remote frontier, tribal Alaskan communities. Key informant interviews were conducted with 41 community health aides/practitioners in 15 villages statewide. The study found five fundamental needs of health aides as crucial for retention of personnel. These needs include strong co-worker support, access to basic training, a fully staffed clinic, good community support, and supportive families.	Practice	
"The Bosun's Chronicle"	Loblolly boys	<i>The Bosun's Chronicle</i>	2004	Loblolly boys. (February 2004). <i>The Bosun's Chronicle, 4</i> (2). Retrieved May 11, 2008, from http://www.julianstockwin.com/Newsletter/Newsletter%20Feb%202004.txt	Loblolly boys were PA like caregivers to seamen in the US Navy during the 19th century		

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Can A Senior House Officer's Time Be Used More Effectively?"	Mitchell, J., Hayhurst, C., & Robinson, S. M.	<i>Emergency Medical Journal</i>	2004	Mitchell, J., Hayhurst, C., & Robinson, S. M. (2004). Can a senior house officer's time be used more effectively? <i>Emergency Medicine Journal</i> , 21 (5), 545–547.	The objective of the study was to determine the amount of time senior house officers (SHO) spent performing tasks that could be delegated to a technician or administrative assistant and therefore to quantify the expected benefit that could be obtained by employing such physicians' assistants (PA). SHOs working in the emergency department were observed for one week by pre-clinical students who had been trained to code and time each task performed by SHOs. Activity was grouped into four categories (clinical, technical, administrative, and other). Those activities in the technical and administrative categories were those we believed could be performed by a PA. Results showed that in this department an average of 15% of coded SHOs working time was spent performing administrative and technical tasks, rising to 17% of coded time during a night shift. This is equivalent to an average time of 78 minutes per 10 hour shift/SHO. Most tasks included in these categories could be performed by PAs thus potentially decreasing patient waiting times, improving risk management, allowing doctors to spend more time with their patients, and possibly improving doctors' training.	Practice	
"Advanced Practice Nurses: The Preferred Primary Care Provider for the Twenty First Century"	Mundinger, M. O.	<i>San Francisco: Jossey-Bass</i>	2004	Mundinger, M. O. (2004). <i>Advanced Practice Nurses: The Preferred Primary Care Provider for the Twenty-First Century</i> . San Francisco: Jossey-Bass.	Design manifesto for the NP to become independent primary care clinicians.		
"Cultural Perspectives. The Story Catches You and You Begin to Understand"	Parrish, T. G.	<i>Perspective on Physician Assistant Education</i>	2004	Parrish, T. G. (2004). Cultural perspectives. The story catches you and you begin to understand. <i>Perspective on Physician Assistant Education</i> , 14 (2), 131–134.	This paper explores the literature on cultural competence, medical ethics, and the provision of culturally competent medical care in the United States. It uses the book <i>The Spirit Catches You and You Fall Down</i> , by Anne Fadiman, as the basis for discussions about cultural differences and effective medical care and understanding. It also attempts to show the need for improved cross-cultural communication in medicine.	Practice	
"Use of Midlevel Practitioners to Achieve Labor Cost Savings in the Primary Care Practice of an MCO"	Roblin, D. W., Howard, D. H., Becker, E. R., Adams, E. K., & Roberts, M. H.	<i>Health Services Research</i>	2004	Roblin, D. W., Howard, D. H., Becker, E. R., Adams, E. K., & Roberts, M. H. (2004). Use of midlevel practitioners to achieve labor cost savings in the primary care practice of an MCO. <i>Health Services Research</i> , 39(3), 607–626.	The objective of the study is to estimate the savings in labor costs per primary care visit that might be realized from increased use of physician assistants (PAs) and nurse practitioners (NPs) in the primary care practices of a managed care organization (MCO). Researchers used twenty-six capitated primary care practices of a group model MCO. Data on approximately two million visits provided by 206 practitioners were extracted from computerized visit records for 1997–2000. Computerized payroll ledgers were the source of annual labor costs per practice from 1997–2000. Results showed that primary care practices that used more PAs/NPs in care delivery realized lower practitioner labor costs per visit than practices that used less.	Value/Impact	
"Physician Assistants in Interventional Radiology Practice"	Stecker, M. S., Armenoff, D., & Johnson, M. S.	<i>Journal of Vascular and Interventional Radiology</i>	2004	Physician assistants in interventional radiology practice. <i>Journal of Vascular and Interventional Radiology</i> , 15 (3), 221–227.	Interventional radiology (IR) is a clinical subspecialty; as such, there is a large amount of direct patient care. However, until recently, this topic has not been a major focus in radiology training programs. Additionally, as interventional radiologists develop busier and busier practices, there is less time to spend with individual patients. Physician extenders such as physician assistants (PAs) represent an excellent way to improve clinical patient care. This article describes what PAs are and how they work together with physicians. It illustrates differences between PAs and other physician extenders and describes the duties that may be delegated to PAs in the IR setting.	Practice	
"Challenges of the 80-Hour Resident Work Rules: Collaboration between Surgeons and Nonphysician Practitioners"	Todd, B. A., Resnick, A., Stuhlemmer, R., Morris, J. B., & Mullen, J.	<i>Surgical Clinics of North America</i>	2004	Todd, B. A., Resnick, A., Stuhlemmer, R., Morris, J. B., & Mullen, J. (2004). Challenges of the 80-hour resident work rules: Collaboration between surgeons and nonphysician practitioners. <i>Surgical Clinics of North America</i> , 84 (6), 1573–1586.	This article attempts to determine how the addition of NPs, PAs, and other healthcare providers have changed surgical resident education, patient outcomes, and patient and staff satisfaction.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Changing Professional Practice of Physician Assistants, 1992-2000"	Wing, P., Langlier, M. H., Salsberg, E., & Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	2004	Wing, P., Langlier, M. H., Salsberg, E., & Hooker, R. S. (2004). The changing professional practice of physician assistants, 1992–2000. <i>Journal of the American Academy of Physician Assistants</i> , 17, 37–49.	This paper describes a new professional practice index for the PA profession for 2000 that reflects current practice environments more accurately than did an index developed to reflect practice environments in 1992. In addition, the paper examines the relationships among the profession, its professional environment, and physicians, as well as the relationship between the PA profession and access to care for underserved populations.	Practice	
"A Descriptive Analysis of Capstone Projects and Requirements in Physician Assistant Academic and Professional Master's Degree Programs"	Zellmer, M., & Hadley, R.	<i>Perspective on Physician Assistant Education</i>	2004	Zellmer, M., & Hadley, R. (2004). A descriptive analysis of capstone projects requirements in physician assistant academic and professional master's degree programs. <i>Perspective on Physician Assistant Education</i> , 15, 82–87.	The purpose of this study is to characterize the curricula and capstone projects of master's level PA programs. An electronic survey of PA programs was conducted regarding degree status and capstone requirements. Responses project that over 80% of PA programs will grand master's degrees by 2005. There are currently equal numbers of academic and professional curricular and degree types. The professional degree is more common among programs anticipating a transition to the master's degree. The typical capstone project requires a formal proposal, allows 12 months to complete the project, involves about 5 academic credits, and generally does not require institutional review board review.	Education	
Physician assistant journalism: failures and successes	Hooker RS	<i>Perspective on Physician Assistant Education</i>	2004	Hooker RS. Physician assistant journalism: failures and successes. <i>Perspective on Physician Assistant Education</i> . 2004; 15(2): 79-81.			
"Outcome Study of Substance Impaired Physicians and Physician Assistants under Contract with North Carolina Physicians Health Program for the Period 1995-2000"	Ganley, O. H., Pendergast, W. J., Wilkerson, M. W. & Mattingly D. E.	<i>Journal of Addictive Diseases</i>	2005	Ganley, O. H., Pendergast, W. J., Wilkerson, M. W. & Mattingly D. E. (2005). Outcome study of substance impaired physicians and physician assistants under contract with North Carolina Physicians Health Program for the period 1995-2000. <i>Journal of Addictive Diseases</i> . 24(1), 1.	The objective of this 6-year retroactive chart review is to compare outcomes between chemically dependent physicians and physician assistants under contract with the North Carolina Physicians Health Program (NCPHP). Of 233 physicians 91% had a good outcome, compared to only 59% of 34 physician assistants in this sample	Practice	
"Assessment of Stress in Physician Assistant Students"	Kuhn, L., Kranz, P. L., Koo, F., Cossio, G., & Lund, N. L.	<i>Journal of Instructional Psychology</i>	2005	Kuhn, L., Kranz, P. L., Koo, F., Cossio, G., & Lund, N. L. (2005). Assessment of Stress in Physician Assistant Students. <i>Journal of Instructional Psychology</i> . 32 (2), 167-178.	27 full-time students within the Physician Assistant Studies Program at The University of Texas - Pan American were anonymously surveyed to determine their levels of stress while enrolled in their first semester. The majority of respondents reported that their stress levels at this point in the program fell within the moderate to considerable range.	Education	
"Patient Satisfaction with Physician Assistant, Nurse Practitioner, and Physician Care: A National Survey of Medicare Beneficiaries"	Hooker, R. S., Cipher, D. J., & Sekscenski, E.	<i>Journal of Clinical Outcomes Management</i>	2005	Hooker, R. S., Cipher, D. J., & Sekscenski, E. (2005). Patient satisfaction with physician assistant, nurse practitioner, and physician care: A national survey of Medicare beneficiaries. <i>Journal of Clinical Outcomes Management</i> . 12(2), 88.	Objective: To assess the extent to which the experiences of older patients vary according to type of primary care provider (i.e., physician assistant [PA], nurse practitioner [NP], or physician). Conclusion: Medicare beneficiaries are generally satisfied with their medical care and do not distinguish preferences based on type of provider. PAs and NPs may be a Workforce that could be expanded to care for the rising needs of the elderly.	Value/Impact	
"Relationship between Provider Type and the Attainment of Treatment Goals in Primary Care"	Federman, D. G., Krishnamurthy, R., Kancir, S., Goulet, J., & Justice, A.	<i>American Journal of Managed Care</i>	2005	Federman, D. G., Krishnamurthy, R., Kancir, S., Goulet, J., & Justice, A. (2005). Relationship between provider type and the attainment of treatment goals in primary care. <i>American Journal of Managed Care</i> . 11(9), 561-566.	EMRs of patients seen at Veterans Affairs Connecticut Health Care system in a 6 month period with disease codes of CAD, diabetes or hypertension compared those seen by physicians, mid-level practitioners and residents. Mid-level practitioners were more likely to see patients who were younger, had alcohol or drug disorders or severe mental illness, hypertension, but less likely to see patients with diabetes compared to physicians. Mid-level practitioners were significantly more likely to attain A1C goals compared to residents. Physicians were more likely to attain blood pressure goals, but no significant difference was noted for blood pressure control between mid-level practitioners and residents.	Practice	
"Physician Assistant and Nurse Practitioner Prescribing: 1997-2002"	Hooker, R.S., & CIPHER, D.J.	<i>Journal of Rural Health</i>	2005	Hooker, R.S., & CIPHER, D.J. (2005). Physician assistant and nurse practitioner prescribing: 1997-2002. <i>Journal of Rural Health</i> . 21(4), 355-360.	The objective of this study was to describe the characteristics of providers, patients, and the type of prescriptions written by PAs and NPs and to compare these activities to those of physicians in metropolitan and nonmetropolitan settings. Overall, PAs and NPs are prescribing in a manner similar to physicians in the type of medications used in their patient management.	Practice	

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"Diabetes Referrals at a Veterans Administration Tertiary Facility: Who Are the Patients and Why Are They Referred?"	Nguyen, C. V., Powers, A. C., Greenspan, D. L., Elasy, T. A.	<i>Diabetes Care</i>	2005	Nguyen, C. V., Powers, A. C., Greenspan, D. L., Elasy, T. A. (2005). Diabetes Referrals at a Veterans Administration Tertiary Facility: Who are the patients and why are they referred? <i>Diabetes Care</i> . 28(2), 423-424.	Patients with diabetes referred to an endocrinology services at a VA tertiary facility found number of referrals from physicians and midlevel providers approximately equal, but the mean HbA1c significantly higher in patients referred from PCPs compared to patients referred from specialists.	Practice	
"Exploring Barriers and Facilitators to the Use of Computerized Clinical Reminders"	Saleem, J. J., Patterson, E. S., Militello, L., Render, M. L., Orshansky, G., & Asch, S. M.	<i>Journal of the American Informatics Association</i>	2005	Saleem, J. J., Patterson, E. S., Militello, L., Render, M. L., Orshansky, G., & Asch, S. M. (2005). Exploring barriers and facilitators to the use of computerized clinical reminders. <i>Journal of the American Informatics Association</i> . 12, 438-447.	Observation of nurses, physicians and mid-level practitioners using computerized clinical reminders found barriers to effective use, including lack of coordination between nurses and providers.	Practice	
"Quality of HIV Care Provided by Nurse Practitioners, Physician Assistants, and Physicians"	Wilson, I. B., Landon, B. E., Hirschhorn, K. M., McInnes, K., Ding, L., Marsden, P. V., & Cleary, P. D.	<i>Annals of Internal Medicine</i>	2005	Wilson, I. B., Landon, B. E., Hirschhorn, K. M., McInnes, K., Ding, L., Marsden, P. V., & Cleary, P. D. (2005). Quality of HIV Care Provided by Nurse Practitioners, Physician Assistants, and Physicians. <i>Annals of Internal Medicine</i> . 143(10),729-736.	Objective: To compare the quality of care provided by NPs and PAs with that provided by physicians. Conclusions: For the measures examined, the quality of HIV care provided by NPs and PAs was similar to that of physician HIV experts and generally better than physician non-HIV experts.	Practice	
"Effects of Work Hour Reduction on Residents' Lives: A Systematic Review"	Fletcher, K. E., Underwood, W. 3rd., Davis, S. Q., Mangrulkar, R. S., McMahon, L. F., Saint, S.	<i>Journal of the American Medical Association</i>	2005	Fletcher, K. E., Underwood, W. 3rd., Davis, S. Q., Mangrulkar, R. S., McMahon, L. F., Saint, S. (2005). Effects of Work Hour Reduction on Residents' Lives: A Systematic Review. <i>JAMA</i> . 294(9), 1088-1100.	Literature review using MEDLINE and EMBASE found 54 articles on impact of work hour reduction on residents lives and found physician extenders among interventions used to decrease resident work hours.	Workforce	
"Residency Work-Hours Reform. A Cost Analysis Including Preventable Adverse Events"	Nuckols, T. K., & Escarce, J. J.	<i>Journal of General Internal Medicine</i>	2005	Nuckols, T. K., & Escarce, J. J. (2005). Residency work-hours reform. A Cost analysis including preventable adverse events. <i>Journal of General Internal Medicine</i> . 20(10), 873-8.	Cost analysis using published literature estimated reform's net cost in 2001 dollars and found transferring excess work to lowest level providers appropriate would cost \$673 million, to mid-level providers would cost \$1.1 billion. Large drop in adverse events is needed to make reform cost neutral for teaching hospitals.	Value/Impact	
"Physician Assistants as Physician Extenders in the Pediatric Intensive Care Unit Setting: A 5-Year Experience"	Mathur, M., Rampersad, A., Howard, K., & Goldman, G.M.	<i>Pediatric Critical Care Medicine</i>	2005	Mathur, M., Rampersad, A., Howard, K., & Goldman, G.M. (2005). Physician assistants as physician extenders in the pediatric intensive care unit setting: A 5-year experience. <i>Pediatric Critical Care Medicine</i> . 6(1), 14-9.	OBJECTIVE: To describe the scope of practice and complementary role of physician assistants as physician extenders in the pediatric intensive care unit. CONCLUSIONS: Physician assistants play a complementary role as physician extenders in the pediatric intensive care unit, enabling compliance with New York state and Accreditation Council for Graduate Medical Education resident work hour regulations. Physician assistants perform similar tasks and activities as the pediatric intensive care unit residents and integrate well with them in enhancing bedside patient care.	Practice	
"Effects of Work Hour Reduction on Residents' Lives: A Systematic Review"	Fletcher, K. E., Underwood, W. 3rd., Davis, S. Q., Mangrulkar, R. S., McMahon, L. F., Saint, S.	<i>Journal of the American Medical Association</i>	2005	Fletcher, K. E., Underwood, W. 3rd., Davis, S. Q., Mangrulkar, R. S., McMahon, L. F., Saint, S. (2005). Effects of Work Hour Reduction on Residents' Lives: A Systematic Review. <i>JAMA</i> . 294(9), 1088-1100.	Literature review using MEDLINE and EMBASE found 54 articles on impact of work hour reduction on residents lives and found physician extenders among interventions used to decrease resident work hours.	Workforce	
"The Employment of Nurse Practitioners and Physician Assistants in U.S. Nursing Homes"	Intrator, O., Zhanlian, F., Mor, V., Gifford, D., Bouroaniere, M., & Zinn, J.	<i>The Gerontologist</i>	2005	Intrator, O., Zhanlian, F., Mor, V., Gifford, D., Bouroaniere, M., & Zinn, J. (2005). The Employment of Nurse Practitioners and Physician Assistants in U. S. Nursing Homes. <i>The Gerontologist</i> . 45(4), 486-495.	The study tests the hypotheses that facilities in states with higher Medicaid rates, and those in more competitive markets and markets with higher managed care penetration, are more likely to employ NPs or PAs. Facilities in more competitive markets, and in markets with higher managed care penetration, were more likely to employ NPs or PAs	Workforce	
"The Feminization of the Physician Assistant Profession"	Lindsay, S.	<i>Women's Health</i>	2005	Lindsay, S. (2005). The feminization of the physician assistant profession. <i>Women's Health</i> . 41(4),37-61.	This paper explores the reason for the increase of women in the physician assistant profession in recent decades and whether gender differences exist in how PAs are utilized. Twenty-one qualitative interviews with male and female physician assistants and key informants were conducted to assess the reasons for the influx of women.	Workforce	
"Maintaining Professional Flexibility: The Case Against Accreditation of Postgraduate Physician Assistant Programs"	American Academy of Physician Assistants	<i>Journal of American Academy of Physician Assistants</i>	2005	American Academy of Physician Assistants. (2005). Maintaining professional flexibility: The case against accreditation of postgraduate physician assistant programs. <i>Journal of the American Academy of Physician Assistants</i> , 18(8) , 14-16.		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Medical Malpractice Myth"	Baker, T.	<i>University of Chicago Press</i>	2005	Baker, T. (2005). <i>The Medical Malpractice Myth</i> . Chicago: The University of Chicago Press.		History	
"Medical Errors and Medical Narcissism"	Banja, J.	<i>Boston: Jones & Bartlett</i>	2005	Banja, J. (2005). <i>Medical Errors and Medical Narcissism</i> . Boston: Jones & Bartlett.		Practice	
"Privatization and its Discontents - The Evolving Chinese Health Care System"	Blumenthal, D. & Hsiao, W.	<i>New England Journal of Medicine</i>	2005	Blumenthal, D. & Hsiao, W. (2005). Privatization and its discontents - The evolving Chinese healthcare system. <i>New England Journal of Medicine</i> , 353(11), 1165-1170.		International	
"Physician Assistants Can Do Majority of GPs' Work"	Cameron, I.	<i>Pulse</i>	2005	Cameron, I. (2005). Physician assistants can do majority of GPs' work. <i>Pulse</i> , 65 (19), 8.		Practice	
"Rising Number of Nurse Practitioners in Canada"	Canadian Institute for Health Information.	<i>Canadian Institute for Health Information</i>	2005	Canadian Institute for Health Information. (2005). Rising number of nurse practitioners in Canada. Retrieved August 22, 2008 from http://www.icis.ca/cihiweb/dispPage.jsp?cw_page=media_		International; Workforce	
"Physician Extenders Impact Trauma Systems"	Christmas, A. B., Reynolds, J., Hodges, S., Franklin, G. A., Miller, F. B., Richardson, J. D., & Rodriguez, J. L.	<i>Journal of Trauma</i>	2005	Christmas, A. B., Reynolds, J., Hodges, S., Franklin, G. A., Miller, F. B., Richardson, J. D., & Rodriguez, J. L. (2005). Physician extenders impact trauma systems. <i>Journal of Trauma</i> , 58(5), 917-920.	The implementation of revised surgical resident work hours has led many teaching hospitals to integrate health care extenders into the trauma service. Researchers undertook this review to assess the effectiveness of these individuals in meeting the goals of the work hour restrictions and whether they impact other hospital and patient outcomes. Results showed that after the incorporation of physician extenders, there were statistically significant reductions in floor, intensive care unit, and overall hospital lengths of stay. Patient mortality and cost per patient remained unchanged. As graduate medical education becomes ever more regulated, physician extenders can be successfully integrated into busy academic Level I trauma centers. This integration positively impacts patient flow and resident work hours without altering patient outcomes or direct hospital cost.	Value/Impact	
"Doubling Back Over Roads Once Traveled: Creating a National Organization for Nurse-Midwifery"	Dawley, K.	<i>Journal of Midwifery & Women's Health</i>	2005	Dawley, K. (2005). Doubling back over roads once traveled: Creating a national organization for nurse-midwifery. <i>Journal of Midwifery & Women's Health</i> , 50(2), 71-82.	The quest for a new national organization began in 1940 and concluded in November 1955 in Kansas City, Missouri, with the founding meeting of the American College of Nurse-Midwifery. This article looks at the conflicts with organized nursing about the place and role of nurse-midwives in the newly reorganized American Nurses Association and the National League for Nursing. Discussions and disagreements within nurse-midwifery over the need for a nonexclusive national organization that would set professional standards are examined.	History	
"The American College of Nurse-Midwives and its Antecedents: A Historic Time Line"	Dawley, K., & Burst, H. V.	<i>Journal of Midwifery & Women's Health</i>	2005	Dawley, K., & Burst, H. V. (2005). The American College of Nurse-Midwives and its antecedents: A historic time line. <i>Journal of Midwifery & Women's Health</i> , 50(1), 16-22.	In celebration of the 50th anniversary of the American College of Nurse-Midwives, this time line presents a chronologic history of the development of nurse-midwifery in the United States. It places the introduction of nurse-midwifery in American health care into its historic context and follows the evolution of the profession through early attempts at forming a national organization, the eventual formation of the American College of Nurse-Midwifery, and the subsequent merger with the American Association of Nurse-Midwives, to create the American College of Nurse-Midwives. The work of the College between 1955 and the turn of the 21st century is highlighted.	History	
"Laser Physician Legal Responsibility for Physician Extender Treatments"	Goldsterg, D. J.	<i>Lasers in Surgery and Medicine</i>	2005	Goldberg, D. J. (2005). Laser physician legal responsibility for physician extender treatments. <i>Lasers in Surgery and Medicine</i> , 37(2), 105-107.	Increased demand for non-invasive cosmetic laser procedures has led to an increase in the use of physician extenders (PE). This demand has now led to a variety of medical legal concerns surrounding the use of lasers by non-physician PE.	Workforce	
"Look What's Next in Telemedicine: The Physician Assistant and Telemedicine"	Goldstein, N.	<i>Hawaii Medical Journal</i>	2005	Goldstein, N. (2005). Look what's next in telemedicine: The physician assistant and telemedicine. <i>Hawaii Medical Journal</i> , 64 (5), 116.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Changes in Students' Perceptions of Interdisciplinary Practice Reaching the Older Adult through Mobile Service Delivery"	Hayward, K. S., Kochniuk, L., Powell, L., & Peterson, T.	<i>Journal of Allied Health</i>	2005	Hayward, K. S., Kochniuk, L., Powell, L., & Peterson, T. (2005). Changes in students' perceptions of inter-disciplinary practice reaching the older adult through mobile service delivery. <i>Journal of Allied Health, 34</i> (4), 192–198.	This study examined students' perceptions of interdisciplinary health care practice in a facilitated, community-based practicum experience. Students' perceptions of interdisciplinary practice relative to their own profession and other health disciplines were examined before and after involvement in mobile service delivery to the older adult in a collaborative team approach. Univariate repeated-measures analysis of variance revealed significant pretest to posttest and discipline effects following the interdisciplinary interaction of students in the practicum experience. Univariate analysis revealed a significant change in students' perceptions of professional competence and autonomy, actual cooperation and resource sharing within and across professions, and understanding of the value and contributions of other professionals from pretest to posttest. The findings support the need for educators to facilitate communication through innovative interdisciplinary clinical opportunities for health professions students to influence perceptions that promote active participation in a team approach to care delivery in an increasingly complex health care system.	Education	
"Mid-Level Health Workers in South Africa: Not an Easy Option"	Hugo, J.	<i>South African Health Review</i>	2005	Hugo, J. (2005). <i>Health workers in South Africa: Not an easy option</i> . Retrieved August 28, 2008, from www.hst.org.za/uploads/files/sahr05_chapter11.pdf	This chapter discusses the need for mid-level workers in South Africa. It compares the recommendations regarding mid-level workers of the Pick Report on Human Resources (2001) with the current situation. It then gives an overview of developments on a range of mid-level health workers and makes some recommendations based on this information.	International	
"A Day in the Life: How PAs Live and Work"	Kimmos, B.	<i>Journal of the American Academy of Physician Assistants</i>	2005	Kimmos, B. (2005). A day in the life. How PAs live and work. <i>Journal of the American Academy of Physician Assistants, 18</i> (12), 28–30.		Practice	
"Charting a Course to Competency"	Kohlhepp, B., Rohrs, R., & Robinson, P.	<i>Journal of the American Academy of Physician Assistants</i>	2005	Kohlhepp, B., Rohrs, R., & Robinson, P. (2005). Charting a course to competency. <i>Journal of the American Academy of Physician Assistants, 18</i> (7), 14–15, 18.	Guest Editorial.	Education	
"The Global Applicability of Physician Assistants"	Legler C. F., Pedersen K. J., Bensulock, M. M., & Kennedy W. W.	<i>Poster Session</i>	2005	Legler C. F., Pedersen K. J., Bensulock, M. M., & Kennedy W. W. (2005). <i>The global applicability of physician assistants</i> . Poster session. Retrieved April 12, 2007, from http://www.paeaonline.org/iacpage.html		International	
"Go Ahead. Test a Lawyer's Ingenuity. Try to Limit Damages"	Liptak, A.	<i>The New York Times</i>	2005	Liptak, A. (2005, March 6). Go ahead. Test a lawyer's ingenuity. Try to limit damages. <i>The New York Times</i> , section 4, p. 5.	New York Times article that discusses a study that suggests that limiting one sort of healthcare damage award merely causes other kinds of damages to increase.		
"An Analysis of Job Satisfaction Among Physician Assistants in Taiwan"	Liu, C., Chien, C., Chou, P., Liu, J., Chen, V. T., Wei, J., et al.	<i>Health Policy</i>	2005	Liu, C., Chien, C., Chou, P., Liu, J., Chen, V. T., Wei, J., et al. (2005). An analysis of job satisfaction among physician assistants in Taiwan. <i>Health Policy, 73</i> (1), 66–77.		Value/Impact	
"Bush's Next Target: Malpractice Lawyers"	Lohr, S.	<i>The New York Times</i>	2005	Lohr, S. (2005, February 27). Bush's next target: Malpractice lawyers. <i>The New York Times</i> , section 3, p. 1.	A New York Times article discussing the Bush administration and how it plans to target medical malpractice lawyers.	Workforce	
"National Hospital Ambulatory Medical Care Survey (NHAMCS): 2003 Emergency Department Summary"	McCaig, L. F. & Burt, C. W.	<i>Vital and Health Statistics</i>	2005	McCaig, L. F. & Burt, C. W. (2005). National hospital ambulatory medical care survey (NHAMCS): 2003 emergency department summary. <i>Vital and Health Statistics, 358</i> .		Workforce	
"Physician Compensation and Production Survey: 2005 Report Based on 2004 Survey"	Medical Group Management Association	<i>Medical Group Management Association</i>	2005	Medical Group Management Association. (2005). Physician Compensation and Production Survey: 2005 Report Based on 2004 Survey. Englewood, CO: Medical Group Management Association.		Workforce	
"The Metrics of the Physician Brain Drain"	Mullan, F.	<i>New England Journal of Medicine</i>	2005	Mullan, F. (2005). The metrics of the physician brain drain. <i>New England Journal of Medicine, 353</i> (1), 1810–1818.	This article discusses the effects of the substantial immigration of physicians to developed countries. The study finds that reliance on international medical graduates in the United States, the United Kingdom, Canada, and Australia is reducing the supply of physicians in many lower-income countries.	International	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Use of Mid-Level Providers in Dermatology: A Liability Risk?"	Nestor, M. S.	<i>Seminars in Cutaneous Medicine and Surgery</i>	2005	Nestor, M. S. (2005). The use of mid-level providers in dermatology: A liability risk? <i>Seminars in Cutaneous Medicine and Surgery</i> , 24 (3), 148–151.	The use of mid-level providers, nurse practitioners, and physician assistants is growing in the practice of dermatology, fueled by a perceived shortage of dermatologists and the promise of practice enhancement. Exactly how the physician extender is used in the dermatology practice can either increase or decrease the risk of malpractice liability and ultimately may be a factor in whether the dermatologist prevails in a malpractice case. Although dermatologists can delegate care to physician extenders, they cannot delegate the liability risk. It is up to the dermatologist to embrace those principles and practices that enhance patient care, decrease medical errors, and improve physician/practice patient relationships to ultimately decrease the risk of malpractice liability.	Practice	
"Is There Time for Management of Patients with Chronic Diseases in Primary Care"	Østbye, T., Yarnall, K. S., Krause, K. M., Pollak, K., Gradison, M., & Michener, J. L.	<i>Annals of Family Medicine</i>	2005	Østbye, T., Yarnall, K. S., Krause, K. M., Pollak, K., Gradison, M., & Michener, J. L. (2005). Is there time for management of patients with chronic diseases in primary care? <i>Annals of Family Medicine</i> , 3 (3), 209–214.	This study investigates why many patients fail to receive recommended chronic disease care. Researchers applied guideline recommendations for 10 common chronic diseases to a panel of 2,500 primary care patients with an age-sex distribution and chronic disease prevalences similar to those of the general population, and estimated the minimum physician time required to deliver high-quality care for these conditions. The result was compared with time available for patient care for the average primary care physician. Results showed that current practice guidelines for only 10 chronic illnesses require more time than primary care physicians have available for patient care overall. Streamlined guidelines and alternative methods of service delivery are needed to meet recommended standards for quality health care.	Practice	
"Financial Returns to Society by National Health Service Corps Scholars Who Receive Training as Physician Assistants and Nurse Practitioners [unpublished doctoral dissertation]"	Philpot, R. J.	<i>University of Florida</i>	2005	Philpot, R. J. (2005). Financial returns to society by National Health Service corps scholars who receive training as physician assistants and nurse practitioners. Unpublished doctoral dissertation, <i>University of Florida</i> .		Gray Literature; Education	
"Lessons from Pediatrics Residency Program Directors' Experiences with Work Hour Limitations in New York State"	Samuels, R. C., Chi, G. W., Rauch, D. A., Palfrey, J. S., & Shelov, S. P.	<i>Academic Medicine</i>	2005	Samuels, R. C., Chi, G. W., Rauch, D. A., Palfrey, J. S., & Shelov, S. P. (2005). Lessons from pediatrics residency program directors' experience with work hour limitations in New York state. <i>Academic Medicine</i> , 80 (5), 467–471.	The purpose of this study is to evaluate the impact of residency work hour limitations on pediatrics residency programs in New York State, and to learn lessons that can be used nationally with the implementation of the Accreditation Council of Graduate Medical Education's similar rules. A three-page questionnaire was mailed to all pediatrics residency program directors in New York. The questionnaire assessed methods used to accommodate the work hour limitations and perceptions of the limitations' effects. Results showed that only large programs used night floats and night teams to meet work hour requirements. Programs of all sizes and in all settings used cross coverage and sent residents home immediately post call. About half of the programs hired additional nonresident staff, usually nurse practitioners, physician assistants, and/or attendings. The most frequently reported effects were decreases in the amount of time residents spent in inpatient settings, patient continuity in inpatient settings, flexibility of residents' scheduling, and increased logistical work needed to maintain continuity clinic. A summary of advice to other program directors was "be creative" and "be flexible."	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"A Policy and Program Analysis of Federal Support for Physician Assistant Education: Title VII, Section 747 of the Public Health Act"	Vangsnes, E. H.	<i>Perspective on Physician Assistant Education</i>	2005	Vangsnes, E. H. (2005). A policy and program analysis of federal support for physician assistant education: Title VII, Section 747 of the Public Health Act. <i>Perspective on Physician Assistant Education</i> , 16(2), 79–83.	The current administration proposes a 96% cut below the fiscal year 2005 level of \$300 million for Title VII funding, of which Section 747 supports PA education. Such a drastic reduction in funding suggests the need for a serious review of the pros and cons for this type of funding. A retrospective review of the relevant published research from 1964 through 2005 related to funding of PA education was conducted. Results showed that Title VII, Section 747 funding has provided an avenue or PA education development and growth. The outcomes of Title VII funding have been difficult to measure given the current means of evaluation. While continued funding of Title VII, Section 747 programs remain controversial, the limited evidence from PA programs that were recipients of Title VII funding demonstrates successful educational program development and recruitment of disadvantaged and minority individuals.	Workforce	
"The Development of Physician Assistant Education in the Netherlands"	Verboon, E. M.	<i>Perspective on Physician Assistant Education</i>	2005	Verboon, E. M. (2005). The development of physician assistant education in the Netherlands. <i>Perspective on Physician Assistant Education</i> , 16 (2), 108–109.	This article discusses the development of the PA profession in the Netherlands due to the discrepancy between supply and demand for health care providers.	International; Education	
"Developing a Medical Care Practitioner to Meet the Needs of England"	Westwood, O. M., & Richardson, L.	<i>Perspective on Physician Assistant Education</i>	2005	Westwood, O. M., & Richardson, L. (2005). Developing a medical care practitioner to meet the needs of England. <i>Perspective on Physician Assistant Education</i> , 16 (11), 51–54.	This article explains that in response of the current and future skills shortfall in the United Kingdom, a significant effort is under way to introduce new ways of working with the National Health Service, and the physician assistant model is one example of this Workforce redesign.	International	
"Geriatric Medicine and the Future of the Physician Assistant Profession"	Woolsey, L. J.	<i>Perspective on Physician Assistant Education</i>	2005	Woolsey, L. J. (2005). Geriatric medicine and the future of the physician assistant profession. <i>Perspective on Physician Assistant Education</i> , 16 (1), 24–28.	Adults over the age of 65 are currently the fastest growing population in the United States. As people continue to live longer, they are more likely to be faced with both chronic and acute illnesses. These increases in illness are contributing to a growing health care shortage in the field of geriatric medicine. Physician assistant training needs to reflect current trends in the medical field by implementing early positive educational experiences with the elderly and by incorporating topics of aging into all areas of the curriculum.	Practice	
PAs and NPs: The hidden rheumatology workforce	Hooker RS, Cawley JF	<i>Arthritis Practitioner</i>	2005	Hooker RS, Cawley JF. PAs and NPs: The hidden rheumatology workforce. <i>Arthritis Practitioner</i> . 2005; 1 (3): 34.			
A brief overview of physician assistants in the United States	Cawley JF, Hooker RS	<i>The Advisor</i>	2005	Cawley JF, Hooker RS. A brief overview of physician assistants in the United States. <i>The Advisor: J Nat Assoc Advisors for the Health Profession</i> . 2005; 25 (2): 6-10.			
Patient satisfaction with physician assistant, nurse practitioner and physician care: a national survey of Medicare beneficiaries	Hooker RS, Cipher DJ, Sekscenski E	<i>J Clinical Outcomes and Management</i>	2005	Hooker RS, Cipher DJ, Sekscenski E. Patient satisfaction with physician assistant, nurse practitioner and physician care: a national survey of Medicare beneficiaries. <i>J Clinical Outcomes and Management</i> . 2005; 12 (2): 88-92.			
"A Comparison of Intensive Care Unit Physician Staffing Costs at the 3 Mayo Clinic Sites"	Bloomfield, E. L., Divertie, G. D., Burger, C. D., Larson, J. S., Brown D. R., Patel, B. M., Rady, M. Y., & Murray M. J.	<i>Mayo Clinic Proceedings</i>	2006	Bloomfield, E. L., Divertie, G. D., Burger, C. D., Larson, J. S., Brown D. R., Patel, B. M., Rady, M. Y., & Murray M. J. (2006). A Comparison of Intensive Care Unit Physician Staffing Costs at the 3 Mayo Clinic Sites. <i>Mayo Clinic Proceedings</i> . 81(11), 1457-1461.	Examination of staff composition and number of beds in ICUs in 2004 at three Mayo clinic sites found use of residents and fellows is more cost-efficient than use of non-physician providers.	Value/Impact	
"Trends in Professional Mix and Cost of Outpatient Mental Health Care"	Greenberg, G. A., & Rosenheck, R. A.	<i>Journal of Mental Health Policy and Economics</i>	2006	Greenberg, G. A., & Rosenheck, R. A. (2006). Trends in professional mix and cost of outpatient mental health care. <i>Journal of Mental Health Policy and Economics</i> . 9(3), 133-136.	Compared outpatient mental health services provided at Veterans Health Administration and found greater use of non-physician providers at facility level was associated with greater per capita outpatient cost.	Value/Impact	
"PA Attitudes toward Prescription Drug Costs"	Vangsnes, E.	<i>Journal of American Academy of Physician Assistants</i>	2006	Vangsnes, E. (2006). PA attitudes toward prescription drug costs. <i>JAAPA</i> . 19(10), 44-46, 48-9.	This descriptive comparative study assessed PAs' knowledge of drug costs and attitudes about prescribing prescription medications. Forty percent of the sample population were able to accurately identify the correct cost of medications. Most of the sample population considered costs when making a prescriptive decision. There were significant differences in the prescribing attitudes of PAs in various practice settings and medical specialties.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Academic Degrees and Clinical Practice Characteristics: The University of Washington Physician Assistant Program"	Evans, T. C., Wick, K. H., Brock, D. M., Schaad, D. C., & Ballweg, R.	<i>Journal of Rural Health</i>	2006	Evans, T. C., Wick, K. H., Brock, D. M., Schaad, D. C., & Ballweg, R. Academic Degrees and Clinical Practice Characteristics: The University of Washington Physician Assistant Program: 1969-2000. <i>The Journal of Rural Health</i> . 22(3), 212-219.	A survey of 880 graduates from the University of Washington PA program found respondents who had no academic degree when entering the PA program were significantly more likely than those who started the program with a degree to work in primary care, nonmetropolitan areas, and to self-report they work with the medically underserved.	Education	
"Abortion Education in Nurse Practitioner, Physician Assistant, and Certified Nurse-Midwifery Programs: A National Survey"	Foster, A.M., Polis, C., Allee, M.K., Simmonds, K., Zurek, M., & Brown, A.	<i>Contraception</i>	2006	Foster, A.M., Polis, C., Allee, M.K., Simmonds, K., Zurek, M., & Brown, A. (2006). Abortion education in nurse practitioner, physician assistant and certified nurse-midwifery programs: a national survey. <i>Contraception</i> . 73(4), 408-414.	OBJECTIVE: This study was undertaken to examine the inclusion and extent of abortion education in accredited nurse practitioner (NP), physician assistant (PA) and certified nurse-midwifery (CNM) programs in the United States. CONCLUSION: Abortion education is deficient in NP, PA and CNM programs in the United States.	Education	
"Are Older Patients Satisfied with Physician Assistants and Nurse Practitioners?"	Cipher, D.J., Hooker, R.S., & Sekscenski, E.	<i>Journal of American Academy of Physician Assistants</i>	2006	Cipher, D.J., Hooker, R.S., & Sekscenski, E. (2006). Are older patients satisfied with physician assistants and nurse practitioners? <i>JAAPA</i> . 19(1), 36, 39-40, 42-44.	OBJECTIVE: To determine how satisfied older American consumers are with physician assistant (PA) and nurse practitioner (NP) care. CONCLUSION: Findings suggest that patients are generally satisfied with their medical care and do not distinguish preferences based on types of providers.	Value/Impact	
"Prescribing Trends by Nurse Practitioners and Physician Assistants in the United States"	Cipher, D. J., Hooker, R. S., & Guerra, P.	<i>Journal of the American Academy of Nurse Practitioners</i>	2006	Cipher, D. J., Hooker, R. S., & Guerra, P. (2006). Prescribing trends by nurse practitioners and physician assistants in the United States. <i>Journal of the American Academy of Nurse Practitioners</i> . 18(6), 291-296.	Analysis of data form the National Ambulatory Medical Care Survey database sampled 99,346 primary care visits over a 6 year period where prescriptions were written. NP or PA was provider for 5% of primary care visits in the database. PAs were more likely to prescribe controlled substance for a visit than a physician or NP. In rural areas, NPs wrote significantly more prescriptions than physicians or PAs.	Practice	
"Amelioration of Increased Intensive Care Unit Service Readmission Rate after Implementation of Work-Hour Restrictions"	Frankel, H. L., Foley, A., Norway, C., & Kaplan, L.	<i>Journal of Trauma, Injury, Infection, and Critical Care</i>	2006	Frankel, H. L., Foley, A., Norway, C., & Kaplan, L. (2006). Amelioration of Increased Intensive Care Unit Service Readmission Rate after Implementation of Work-Hour Restrictions. <i>The Journal of Trauma, Injury, Infection and Critical Care</i> . 61, 116-121.	Physician assistant support in an urban teaching hospital was found to reduce the rate of SICU readmissions that had initially risen after the implementation of resident work hour restrictions.	Value/Impact	
"The Effect of Work Hour Restrictions on the Education of Orthopedic Surgery Residents"	Peabody, T.	<i>Clinical Orthopedics and Related Research</i>	2006	Peabody, T. The effect of work hour restrictions on the education of orthopedic surgery residents. (2006). <i>Clinical Orthopedics and Related Research</i> . 449, 128-133.	2005 survey of orthopedic program directors, chairs and members of Resident Leadership Forum on effect of work hour restrictions on residents found departments have adapted by hiring additional physician extenders	Workforce	
"Care of Critically Ill Surgical Patients Using the 80-Hour Accreditation Council of Graduate Medical Education Work-Week Guidelines: A Survey of Current Strategies"	Gordon, C. R., Axelrad, A., Alexander, J. B.	<i>The American Surgeon</i>	2006	Gordon, C. R., Axelrad, A., Alexander, J. B. (2006). Care of Critically Ill Surgical Patients Using the 80-Hour Accreditation Council of Graduate Medical Education Work-Week Guidelines: A Survey of Current Strategies. <i>The American Surgeon</i> . 72, 497-499.	Survey of Program Directors of Surgery found 30% use physician extenders to help cover ICU during daytime and 11 percent use them during night.	Workforce	
"Even Patients with Changing Moles Face Long Dermatology Appointment Wait-Times: A Study of Simulated Patient Calls to Dermatologists"	Tsang, M. W., & Resneck, J. S.	<i>Journal of Allied Health</i>	2006	Tsang, M. W., & Resneck, J. S. (2006). Even patients with changing moles face long dermatology appointment wait-times: A study of simulated patient calls to dermatologists. <i>Journal of Allied Health</i> . 38(3), 127-131.	Scripted telephone calls to 851 dermatologists to assess wait times found many dermatologists employed a physician extender, and wait times for extenders were significantly shorter than for physicians.	Workforce	
"Physician Assistants and Nurse Practitioners: The United States Experience"	Hooker, R.S.	<i>Medical Journal of Australia</i>	2006	Hooker, R.S. (2006). Physician Assistants and Nurse Practitioners: the United States Experience. <i>Medical Journal of Australia</i> .Vol. 185, Iss. 1; pg 4.	PAs and NPs are described for an Australian readership. Topics covered include history, demographics, scope of practice, licensure, specialties, education, productivity, and efficiency, and the benefits of a team model of care.	History	
"Accreditation Review Commission on Education for Physician Assistant"		<i>Accreditation Standards for Physician Assistant Education (3rd ed.)</i>	2006	Accreditation Review Commission on Education for the Physician Assistant. (2006). <i>Accreditation Standards for Physician Assistant Education</i> (3rd ed.). Duluth, GA: Author. Retrieved September 14, 2006, from http://www.arcpa.org/General/standards/newStandards3.31.05.pdf		Education	
"Utilizing a Substance Use Attitudes, Practices, and Knowledge Survey for Multidisciplinary Curriculum Development"	Alexander, D., Waters, V., McQueen, K., & Basinger, S.	<i>Substance Abuse</i>	2006	Alexander, D., Waters, V., McQueen, K., & Basinger, S. (2006). Utilizing a substance use attitudes, practices and knowledge survey for multidisciplinary curriculum development. <i>Substance Abuse</i> , 26 (3-4), 63-66.	Development and administration of a substance use attitudes questionnaire to social work students and clinicians, physician assistant students and practitioners, and medical interns is described.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Clinical Skills Utilized by Physician Assistants in Rural Primary Care Settings"	Asprey, D.	<i>Journal of Physician Assistant Education</i>	2006	Asprey, D. (2006). Clinical skills utilized by physician assistants in rural primary care settings. <i>Journal of Physician Assistant Education</i> , 17(2), 45-47.	The purpose of this study was to 1) identify the frequency with which various clinical skills are used by PAs practicing in rural areas, and 2) to ascertain the importance that PAs in rural practice place on various clinical skills. Of the 185 surveys mailed to eligible participants, a total of 94 were returned, resulting in a response rate of 50.8%. Data from this study helps direct faculty as to which specific skills to include in educational programs that prepare PAs for primary medicine.	Practice	
"Primary Care - Will it Survive?"	Bodenheimer, T.	<i>New England Journal of Medicine</i>	2006	Bodenheimer, T. (2006). Primary care - will it survive? <i>New England Journal of Medicine</i> , 255(9), 861-864.	A discussion on the current state of primary care and the need for reform and policy to save it.	Workforce	
"Physician Practice in the Nursing Home. Collaboration with Nurse Practitioners and Physician Assistants"	Caprio, T. V.	<i>Annals of Long Term Care</i>	2006	Caprio, T. V. (2006). Physician practice in the nursing home: Collaboration with nurse practitioners and physician assistants. <i>Annals of Long Term Care</i> , 14 (3), 17-24.	This article discusses the current research and outcomes of PA and NP nursing home practice in the context of physical collaboration and establishing the direction for future research.	Practice	
"The Effect of Resident Work Hour Restrictions on Physician Assistant Hospital Utilization"	Cawley, J. F., & Hooker, R. S.	<i>Journal of Physician Assistant Education</i>	2006	Cawley, J. F., & Hooker, R. S. (2006). The effect of resident work hour restrictions on physician assistant hospital utilization. <i>Journal of Physician Assistant Education</i> , 17 (3), 41-43.	The limitation placed by the Accreditation Commission on Graduate Medical Education on physician resident work hours in 2004 resulted in various strategies on the part of graduate medical education (GME) programs to adjust to the loss of this traditional source of hospital labor. One approach has been the use of physician assistants (PAs) as hospitalists and inpatient providers. Employment of PAs in inpatient hospital settings increased from 2000 to 2006, perhaps partly as a result of resident work hour restrictions. This medical workforce shift requires further documentation and evaluation.	Workforce	
"The Competence and Curriculum Framework for the Medical Care Practitioner Consultation Document"	The Competence and Curriculum Framework Steering Group on Behalf of the Medical Care Practitioner National Programme Board	<i>Surrey, England: Department of Health</i>	2006	The Competence and Curriculum Framework Steering Group on behalf of the Medical Care Practitioner National Programme Board. (2006). <i>The competence and curriculum framework for the medical care practitioner consultation document</i> . Surrey, England: Department of Health.		Education	
"American Medical Education 100 Years after the Flexner Report"	Cooke, M., Irby, D. M., Sullivan, W., & Ludmerer, K.	<i>New England Journal of Medicine</i>	2006	Cooke, M., Irby, D. M., Sullivan, W., & Ludmerer, K. (2006). American medical education 100 years after the Flexner report. <i>New England Journal of Medicine</i> , 355 (13), 1339-1344.	This article summarizes the changes in medical education over the past century and describe the current challenges, using as a framework the key goals of professional education: to transmit knowledge, to impart skills, and to inculcate the values of the profession.	Education; History	
"Perspectives on the Physician Assistant Specialty Credentialing Debate: "Mountains Beyond Mountains"	Crane, S. C.	<i>Journal of the American Academy of Physician Assistants</i>	2006	Crane, S. C. (2006). Perspectives on the physician assistant specialty credentialing debate: "Mountains beyond mountains." <i>Journal of the American Academy of Physician Assistants</i> , 19 (8), 16.		Education	
"Counting Health Workers: Definitions, Data, Methods, and Global Results"	Dal Poz, M. R., Kinfu Y., Drager, S., Kunjumen T., & Diallo K.	<i>Geneva, Switzerland: World Health Organization</i>	2006	Dal Poz, M. R., Kinfu Y., Drager, S., Kunjumen T., & Diallo K. (2006). <i>Counting health workers: Definitions, data, methods and global results</i> . Geneva, Switzerland: World Health Organization.	This background paper to the World Health Report 2006 describes the approaches followed in assembling the global database as well as some preliminary analysis of the content of the source data. The broad picture of health workers worldwide is examined and some useful strategies for improving health Workforce statistics are highlighted.	International	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Practice Locations of Graduates of Family Physician Residency and Nurse Practitioner Programs: Considerations within the Context of Institutional Culture and Curricular Innovation through Titles VII and VIII"	Edwards, J. B., Wilson, J. L., Behringer, B. A., Smith, P. L., Ferguson, K. P., Blackwelder, R. B., et al.	<i>Journal of Rural Health</i>	2006	Edwards, J. B., Wilson, J. L., Behringer, B. A., Smith, P. L., Ferguson, K. P., Blackwelder, R. B., et al. (2006). Practice locations of graduates of family physician residency and nurse practitioner programs: Considerations within the context of institutional culture and curricular innovation through Titles VII and VIII. <i>Journal of Rural Health, 22</i> (1), 69–77.	The purpose of this study is to describe and assess federally supported curricular innovations at East Tennessee State University designed to promote family medicine and nurse practitioner graduate interest in rural and underserved populations. The study design involves a descriptive analysis of a survey to determine practice locations of nurse practitioner graduates and graduates of 3 family medicine residencies. Results showed that overall, 83% of family medicine residency and 80% of nurse practitioner graduates selected practice locations in areas with medically underserved or health professions shortage designations; 48% of family physicians and 38% of nurse practitioners were in rural areas. Therefore, graduates who study in an educational setting with a mission-driven commitment to rural and community health and who participate in curricular activities designed to increase their experience with rural and underserved populations choose, in high numbers, to care for these populations in their professional practice.	Education	
"Issues Regarding the Development of a Physician Assistant Program in Manitoba"	Fleisher, W. P., Chan, M. K., & McConnell, K.	<i>Journal of Physician Assistant Education</i>	2006	Fleisher, W. P., Chan, M. K., & McConnell, K. (2006). Issues regarding the development of a physician assistant program in Manitoba. <i>Journal of Physician Assistant Education, 17</i> (1), 53–54.	This article discusses the development of PA programs in Manitoba, Canada.	International	
"The State of the Physician Assistant Profession in Ghana"	Gazekpo, V.	<i>Journal of Physician Assistant Education</i>	2006	Gazekpo, V. (2006). The state of the physician assistant profession in Ghana. <i>Journal of Physician Assistant Education, 17</i> (1), 55.	A report on the state of the physician assistant profession in Ghana by Victor Gazekpo, the President of Central University College in Ghana.	International	
"Good Medical Practices"	General Medical Council	London: Author	2006	General Medical Council. (2006). <i>Good Medical Practices</i> . London: Author.			
"A New Rating System Applied to 'Tips for Learning and Teaching Evidence-Based Medicine'"	Goldgar, C.	<i>Journal of Physician Assistant Education</i>	2006	Goldgar, C. (2006). A new rating system applied to "tips for learning and reaching evidence-based medicine." <i>Journal of Physician Assistant Education, 17</i> (3), 48–50.	The article provides information on a series titled "Tips for Learning and Teaching Evidence-Based Medicine (EBM)" formed by the EBM Teaching Tips Working Group in Canada. The authors of the series have remarked that it emphasizes to both clinical learners and teachers of EBM principles. It is aimed to guide teachers on clinical settings, such as ward rounds, during journal club exercises and in formal lectures.	Education	
"The Practice Doctorate: Perspectives of Early Adopters"	Hathaway, D., Jacob, S., Stegbauer, C., Thompson, C., & Graff, C.	<i>Journal of Nursing Education</i>	2006	Hathaway, D., Jacob, S., Stegbauer, C., Thompson, C., & Graff, C. (2006). The practice doctorate: Perspectives of early adopters. <i>Journal of Nursing Education, 45</i> (12), 487–496.	The emergence of the Doctor of Nursing Practice (DNP) degree is being described as a disruptive innovation that is altering the landscape of nursing and health care and creating a great deal of controversy within and beyond the profession of nursing. This article proposes that the DNP is actually the natural evolution of a larger disruptive innovation begun in the late 1960s with the advent of nurse practitioner programs. As expected with disruptive innovations, many challenges face those who are early adopters and who forge ahead during the early phase of innovation and later during the upmarketing phase. As faculty and administrators of one of the early, second-generation DNP programs, the authors are fully aware of ongoing discussion and issues related to the practice doctorate. This article shares the experiences of this group of early adopters and their insights into controversies surrounding the DNP movement.	Practice	
"National Ambulatory Medical Care Survey: 2004 Summary"	Hing, E., Cherry, D. K., & Woodwell, D. A.	<i>Advance Data From Vital and Health Statistics</i>	2006	Hing, E., Cherry, D. K., & Woodwell, D. A. (2006). National ambulatory medical care survey: 2004 summary. <i>Advance Data From Vital and Health Statistics, 374</i> , Hyattsville, MD: National Center for Health Statistics.		Workforce	
"History of the Navy Corpsman"	Weiner, J. D.		2006	<i>History of the navy corpsman</i> . (December 2006). Retrieved March 2, 2008, from http://www.jeffreywiener.com/pamphlet.htm		History	
"Challenges of Training Doctors in the New English NHS"	Hutchinson, L.	<i>British Medical Journal</i>	2006	Hutchinson, L. (2006). Challenges of training doctors in the new English NHS. <i>British Medical Journal, 332</i> (7556), 1502–1504.	Linda Hutchinson discusses whether changes in the design and delivery of services in England would be at the expense of medical education and training.	International; Education	

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"Value Added: Graduate-Level Education in Physician Assistant Education"	Joslin, V. H., Cook, P., Ballweg, R., Cawley, J. F., Miller, A. A., Sewell, D., Somers, J. E., et al.	<i>Journal of Physician Assistant Education</i>	2006	Joslin, V. H., Cook, P., Ballweg, R., Cawley, J. F., Miller, A. A., Sewell, D., Somers, J. E., et al. (2006). Value added: Graduate-level education in physician assistant programs. <i>Journal of Physician Assistant Education</i> , 17 (2), 16–30.	A discussion of the gradual movement of Physician Assistant programs to become a Master's Degree Option.	Education	
"Medical Education after the Flexner Report"	Kindman, L. A.	<i>New England Journal of Medicine</i>	2006	Kindman, L. A. (2006). Medical education after the Flexner report. <i>New England Journal of Medicine</i> , 356 (1), 90.		Education	
"Who Will Provide Health Care for You and Me? Facing the Crisis of Primary Care"	Kirk, L. M.	<i>ACP Observer</i>	2006	Kirk, L. M. (2006). Who will provide health care for you and me? Facing the crisis in primary care. <i>ACP Observer</i> . Retrieved November 5, 2007, from http://www.acponline.org/journals/news/july06/president.htm		Workforce	
"Chairman's Speech at the House of Delegates, Monday, May 29, 2006"	Kohlhepp, B.		2006	Kohlhepp, B. (2006). <i>Chairman's speech at the House of Delegates, Monday, May 29, 2006</i> . Retrieved July 5, 2008, from https://www.nccpa.net/News_06AAPAConfAnnouncement.aspx			
"Government Official to PAs: 'Ontario Is Open for Business'"	Kuttler, H.	<i>AAPA News</i>	2006	Kuttler, H., & American Academy of Physician Assistants. (2006). Government official to PAs: "Ontario is open for business." <i>AAPA News</i> , 27 (11), 6.		International	
"ACC/AHA 2005 Guideline Update: Chronic Heart Failure in the Adult"	Larson, L. W., Gerbert, D. A., Herman, L. M., Leger, M. M., McNellis, R., O'Donoghue, D. L., et al.	<i>Journal of the American Academy of Physician Assistants</i>	2006	Larson, L. W., Gerbert, D. A., Herman, L. M., Leger, M. M., McNellis, R., O'Donoghue, D. L., et al. (2006). ACC/AHA 2005 guideline update: Chronic heart failure in the adult. <i>Journal of the American Academy of Physician Assistants</i> , 19 (4), 53–57.	The American College of Cardiology and the American Heart Association jointly compose guidelines in the area of cardiovascular disease and update them as understanding of disease processes and treatment strategies evolve. The guideline reviewed in this article is a 2005 update to the 2001 guidelines for the evaluation and management of heart failure.	Education	
"Physician Compensation and Production Survey: 2006 Report Based on 2005 Survey"	Medical Group Management Association	<i>Medical Group Management Association</i>	2006	Medical Group Management Association. (2005). Physician Compensation and Production Survey: 2006 Report Based on 2005 Survey. Englewood, CO: Medical Group Management Association.		Workforce	
"Summary Report: 2006 Review of Physician Recruitment Incentives"	Merritt, Hawkins, & Associates		2006	Merritt, Hawkins, & Associates. (2006). <i>Summary report: 2006 review of physician recruitment incentives</i> . Retrieved June 24, 2008, from http://www.merrithawkins.com/pdf/2006_incentive_survey.pdf		Workforce	
"When the Tide Goes Out: Health Workforce in Rural, Remote, and Indigenous Communities"	Murray, R. B., & Wronski, I.	<i>Medical Journal of Australia</i>	2006	Murray, R. B., & Wronski, I. (2006). When the tide goes out: Health Workforce in rural, remote and indigenous communities. <i>Medical Journal of Australia</i> , 185(1), 37–38.	There is compelling evidence for the success of the "rural pipeline" (rural student recruitment and rurally based education and professional training) in increasing the rural Workforce. The nexus between clinical education and training, sustaining the health care Workforce, clinical research, and quality and safety needs greater emphasis in regional areas. A "teaching health system" for non-metropolitan Australia requires greater commitment to teaching as core business, as well as provision of infrastructure, including accommodation, and access to the private sector. Workforce flexibility is mostly well accepted in rural and remote areas. There is room for expanding the scope of clinical practice by non-medical clinicians in both an independent codified manner (eg, nurse practitioners) and through flexible local medical delegation (eg, practice nurses, Aboriginal health workers, and therapists). The imbalance between subspecialist and generalist medical training needs to be addressed. Improved training and recognition of Aboriginal health workers, as well as continued investment in Indigenous entry to other health professional programs, remain policy priorities.	International	
"Vision Paper: The Future Regulation of Advanced Practice Nursing"	National Council of State Boards of Nursing		2006	National Council of State Boards of Nursing. (2006). <i>Vision Paper: The Future Regulation of Advanced Practice Nursing</i> . Chicago: Author.		Workforce	

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"The Doctoral Pipeline in Physician Assistant Education"	Orcutt, V. L., Hildebrand, A., & Jones, P. E.	<i>Journal of Physician Assistant Education</i>	2006	Orcutt, V. L., Hildebrand, A., & Jones, P. E. (2006). The doctoral pipeline in physician assistant education. <i>Journal of Physician Assistant Education</i> , 17(1), 6–9.	This study examined the intentions and motivations of PA faculty regarding the pursuit of doctoral education in 2003. Variables assessed included the characteristics of faculty and the educational programs they were pursuing, including type of program and degree awarded, delivery methods, and presence or absence of institutional support. A 15-item web-based survey was sent to PA faculty identified via the Physician Assistant Education Association faculty directory. Results showed that the population of doctorally prepared PA faculty will nearly double by the year 2010, with the majority completing PhD degrees via on campus delivery. While a significant number of faculty are investigating programs, few anticipate enrolling in the near future, which would result in minimal growth in the number of doctorally prepared faculty beyond 2010.	Education	
"The Marriage of Problem-Based Learning with Standardized Patients: An Evaluation of Physician Assistant Students' Cultural Competency in Communication"	Parkhurst, D. C., & Ramsery, C. M.	<i>Journal of Physician Assistant Education</i>	2006	Parkhurst, D. C., & Ramsery, C. M. (2006). The marriage of problem-based learning with standardized patients: An evaluation of physician assistant students' cultural competency in communication. <i>Journal of Physician Assistant Education</i> , 17(1), 58–62.	As a way of assessing cultural competency in students and introducing problems in high-risk populations into the curriculum, the Barry University Physician Assistant Program utilized a problem-based learning approach in a clinical laboratory setting. Ten different modules were employed. Service learning partners from the community were evaluators and simulated patients enacted standardized scenarios. Results showed that laboratory evaluators and standardized patients who evaluated one class of students over 2 years noted qualitative improvements. In evaluating the students, the members of the cultural community (actors and moderators), felt comfortable with the students and with their ability to counsel them. The researchers conclude that coupling cultural diversity and problems of high-risk populations with problem-based learning methodology exposes students to high-risk topics pertinent to specific populations and aids assessment of students' cultural competence.	Education	
"The Medical Care Practitioner: Developing a Physician Assistant Equivalent for the United Kingdom"	Parle, J. V., Ross, N. M., & Doe, W. F.	<i>Medical Journal of Australia</i>	2006	Parle, J. V., Ross, N. M., & Doe, W. F. (2006). The medical care practitioner: Developing a physician assistant equivalent for the United Kingdom. <i>Medical Journal of Australia</i> , 185(1), 13–17.	A range of demographic, social and other factors are creating a crisis in the provision of clinical care in the United Kingdom for which the physician assistant (PA) model developed in the United States appears to offer a partial solution. Local and national moves are underway to develop a similar cadre of registered health care professionals in England, with the current title of medical care practitioners (MCPs). A competence and curriculum framework document produced by a national steering group has formed the basis for a recent consultation process. A limited evaluation of US-trained PAs working in the West Midlands region of England in both primary care and acute secondary care suggests that PA activity is similar to that of doctors working in primary care and to primary care doctors working in the accident and emergency setting. The planned introduction of MCPs in England appears to offer, first, an effective strategy for increasing medical capacity, without jeopardising quality in frontline clinical services; and, second, the prospect of increased flexibility and stability in the medical workforce. The deployment of MCPs may offer advantages over increasing the number of doctors or taking nurses out of nursing roles. The introduction of MCPs may also enhance service effectiveness and efficiency.	International	
"National Health Service Corps Staffing and the Growth of the Local Rural Non-NHSC Primary Care Physician Workforce"	Pathman, D. E., Fryer, G. E., Jr., Phillips, R. L., Smucny, J., Miyoshi, T., & Green, L. A.	<i>Journal of Rural Health</i>	2006	Pathman, D. E., Fryer, G. E., Jr., Phillips, R. L., Smucny, J., Miyoshi, T., & Green, L. A. (2006). National Health Service Corps staffing and the growth of the local rural non-NHSC primary care physician workforce. <i>Journal of Rural Health</i> , 22(4), 285–293.	The purpose of the study is to assess long-term changes in the non-National Health Service Corps (NHSC) primary care physician workforce of rural underserved counties that have received NHSC staffing support relative to workforce changes in underserved counties without NHSC support. Results showed that the NHSC contributed positively to the non-NHSC primary care physician workforce in the rural underserved counties where its clinicians worked during the 1980s and 1990s.	Workforce	

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"Determinants of Faculty Job Satisfaction and Potential Implications for Physician Assistant Program Personnel"	Reed, L.	<i>Journal of Physician Assistant Education</i>	2006	Reed, L. (2006). Determinants of faculty job satisfaction and potential implications for physician assistant program personnel. <i>Journal of Physician Assistant Education</i> , 17 (1), 30–35.		Value/Impact	
"Integrating Midlevel Practitioners into a Teaching Service"	Reines, H. D., Robinson, L., Duggan, M., O'Brien, B. M., & Aulenbach, K.	<i>American Journal of Surgery</i>	2006	Reines, H. D., Robinson, L., Duggan, M., O'Brien, B. M., & Aulenbach, K. (2006). Integrating midlevel practitioners into a teaching service. <i>American Journal of Surgery</i> , 192 (1), 119–124.	Meeting the educational needs and requirements of surgical resident physicians while achieving optimal patient care is a challenge for program directors. Midlevel practitioners (MLPs) were employed by a large community teaching hospital to augment the surgical teaching service, to improve continuity of patient care, and to provide resident physicians with greater flexibility to participate in classroom, operative, and clinical educational experiences. The MLPs were carefully integrated into the surgical program by creating the necessary buy-in, developing positive relationships, decreasing resistance, and reinforcing acceptance when demonstrated. MLPs function at the level of junior resident physicians and are active participants in the teaching and evaluation process. Structurally, MLPs receive their assignments from and report to the chief resident physician, but are ultimately responsible to the program director. Instituting the program required providing financial justification to administration and flexibility in meeting the diverse needs of the four teams. As a result, surgical resident physicians have been sufficiently freed from service activities to be able to capitalize on learning activities that range from surgeries to conferences. MLPs can be integrated into a surgical teaching program and become a positive force in the education of resident physicians.	Education	
"How Do Surgical Residents and Non-Physician Practitioners Play Together in the Sandbox?"	Resnick, A. S., Todd, B. A., Mullen, J. L., & Morris, J. B.	<i>Current Surgery</i>	2006	Resnick, A. S., Todd, B. A., Mullen, J. L., & Morris, J. B. (2006). How do surgical residents and non-physician practitioners play together in the sandbox? <i>Current Surgery</i> , 63 (2), 155–164.	One year after the start of a program that hired PAs and NPs as reinforcements in response to the reduction of resident work hours, the authors wanted to study the effects it has had on both surgery resident education and NPP job satisfaction. An electronic, anonymous survey was conducted during a monthly surgery resident meeting, and out of 72 categorical and preliminary surgery residents, 50% submitted answers to 12 questions. A similar electronic survey was administered to all 56 NPPs, with 45% responding. Results suggested that implementation of the 80-hour workweek and introduction of NPs and PAs onto the inpatient surgical services has altered resident education at the authors' institution. Although overall most residents view the addition of NPPs to the clinical services as positive, there are concerns about the program. Although hired to fill the void left by decreasing labor hours of residents, NPPs do not necessarily have the same goals as surgery residents and there is confusion about how NPPs fit into the hierarchy of the traditional surgical team.	Practice	
"Shortages of Medical Personnel at Community Health Centers: Implications for Planned Expansion"	Rosenblatt, R. A., Andrilla, C., Holly, A., Curtin, T., & Hart, L. G.	<i>Journal of the American Medical Association</i>	2006	Rosenblatt, R. A., Andrilla, C., Holly, A., Curtin, T., & Hart, L. G. (2006). Shortages of medical personnel at community health centers: Implications for planned expansion. <i>Journal of the American Medical Association</i> , 295 (9), 1042–1049.	The objective of the study is to examine the status of Workforce shortages that may limit Community Health Centers (CHC) expansion. The researchers administered a survey questionnaire of all 846 federally funded US CHCs that directly provide clinical services and are within the 50 states and the District of Columbia between May and September 2004. Results showed that CHCs face substantial challenges in recruitment of clinical staff, particularly in rural areas. The largest numbers of unfilled positions were for family physicians at a time of declining interest in family medicine among graduating US medical students. The success of the current US national policy to expand CHCs may be challenged by these Workforce issues.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Development and Outcomes of a Rural Track within a Primary Care Physician Assistant Program"	Ruff, C. C., Gray, J., Arthur, M., & Merenstein, G.	<i>Journal of Physician Assistant Education</i>	2006	Ruff, C. C., Gray, J., Arthur, M., & Merenstein, G. (2006). Development and outcomes of a rural track within a primary care physician assistant program. <i>Journal of Physician Assistant Education</i> , 17(4), 37–41.	A PA education program rural track was developed to improve non-metropolitan placement. Graduates (1997-2003) of this rural track were interviewed about the community and area of health care in which they practiced and their admission files were reviewed to identify previous rural community exposure. Of the 19 graduates with rural backgrounds, 58% of those with little or no rural background are also serving in rural areas. Changes to both the clinical and didactic curriculum increased student exposure to rural settings and courses more appropriate for rural practice. By emphasizing rural placement, this PA program successfully integrated a rural track into its existing curriculum and increased the percentage of graduates practicing in rural areas, independent of previous exposure to rural communities.	Education	
"Physician Workforce Shortages: Implications and Issues for Academic Health Centers and Policymakers"	Salzberg, E., & Grover, A.	<i>Academic Medicine</i>	2006	Salzberg, E., & Grover, A. (2006). Physician Workforce shortages: Implications and issues for academic health centers and policymakers. <i>Academic Medicine</i> , 81(9), 782–787.	A physician shortage is likely given current levels of medical education and training. Because an increase in physician supply through expansion of U.S. medical school capacity will require ten or more years, there is little time left to affect the supply of new physicians in 2020 when a substantial number of baby boomers will be over 70 years of age. Even with a substantial increase in medical education and training capacity, it is unlikely that all of the increased demand for health services can be met with physicians. In addition to the challenges of expanding medical school enrollment, the nation will need to grapple with other ramifications of demand exceeding supply. This includes assessing how to deliver services more effectively and efficiently and the future roles of the physician and other health professionals. These challenges are particularly difficult for medical schools and teaching hospitals, the cornerstones of medical education and training in the United States. Osteopathic and off-shore schools targeted to Americans have been willing and able to grow more quickly and less expensively than U.S. medical schools, in part because of their more narrow approaches to medical education. In addition, physicians from less developed countries continue to migrate to the United States in significant numbers. Medical schools, teaching hospitals, and policymakers will need to address several major questions as they respond to the shortages. They will either confront and address these issues in the next few years or they will be forced to change by others in the future.	Workforce	
"Facing the Health Worker Crisis in Developing Countries: A Call for Global Solidarity"	Smith, M. K., & Hendersen-Andrade, N.	<i>Bulletin of the World Health Organization</i>	2006	Smith, M. K., & Hendersen-Andrade, N. (2006). Facing the health worker crisis in developing countries: A call for global solidarity. <i>Bulletin of the World Health Organization</i> , 84, 426.	This article discusses the global chronic under-funding of health systems in developing countries, which has led to the current health worker crisis.	International	
"De Physician Assistant: Een Nieuwe Masteropleiding Binnen Het Medisch Domein Van De Gezondheidszorg in Nederland [The Physician Assistant in the Dutch Health Care]"	Spengelink-Schut, G., Koch, R. P. P., & Kort, H. S. M.	<i>Dutch Journal of Education and Health Care</i>	2006	Spengelink-Schut, G., Koch, R. P. P., & Kort, H. S. M. (2006). De physician assistant: Een nieuwe masteropleiding binnen het medisch domein van de gezondheidszorg in Nederland. [The physician assistant in the Dutch health care]. <i>Dutch Journal of Education and Health Care</i> , 5, 18–22.		International	
"The Practicante: Puerto Rico Physician Assistant Prototype"	Strand, J.	<i>Journal of Physician Assistant Education</i>	2006	Strand, J. (2006). The practicante: Puerto Rico physician assistant prototype. <i>Journal of Physician Assistant Education</i> , 17(2), 60–62.	This article is a discussion of the practicante, Puerto Rico's equivalent to the Physician Assistant. Exported from Spain to Puerto Rico, the practicante was used to extend physician health care services in the commonwealth from the mid-1800's into the 1940s. It is ironic that the last place in the US and its territories to enact enabling legislation for PAs was the first place in the Western hemisphere to legitimize and use a PA-like provider.	International	
"The Role of the Physician Assistant in the Psycho-Oncology Team"	Tabachnick, D.	<i>Psycho-Oncology</i>	2006	Tabachnick, D. (2006). The role of the physician assistant in the psycho-oncology team. <i>Psycho-oncology</i> , 15(1), S63–S64.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Registered Nurse Population: Findings from the 2004 National Sample Survey of Registered Nurses"	U.S. Department of Health & Human Services. Health Resources Services Administration		2006	U.S. Department of Health & Human Services. Health Resources Services Administration. (2006). The registered nurse population: Findings from the 2004 national sample survey of registered nurses. Retrieved August 19, 2008, from http://bhpr.hrsa.gov/healthWorkforce/reports/rnpopulation/preliminaryfindings.htm		Workforce	
"Physician Assistants: Leiden University Medical Center, the Netherlands"	van Everdinck, I., den Hollander E., van der Lecq A., & Reiter L.	<i>American Academy of Physician Assistants Annual PA Conference, San Francisco</i>	2006	van Everdinck, I., den Hollander E., van der Lecq A., & Reiter L. (2006). <i>Physician assistants: Leiden University Medical Center, the Netherlands</i> . Presented at the American Academy of Physician Assistants Annual PA Conference, San Francisco.		International	
"The Shortage of Physicians and the Future Role of Nurses"	Whitcomb, M. E.	<i>Academic Medicine</i>	2006	Whitcomb, M. E. (2006). The shortage of physicians and the future role of nurses. <i>Academic Medicine</i> , 81 (9), 779-780.	Since the supply of physicians will not be adequate to care for the increasing population of patients with chronic diseases, academic medicine's leadership must place the needs of patients in the forefront and work with the leadership of nursing to determine how best to provide the care those patients will need.	Workforce	
Analyzing survey research in US physician assistant education: 1992-2005	Jones PE, Hooker RS, Mulitalo KE	<i>Abstracts, Association for Medical Education in Europe</i>	2006	Jones PE, Hooker RS, Mulitalo KE. Analyzing survey research in US physician assistant education: 1992-2005. In: Abstracts, Association for Medical Education in Europe, Cotone Congressi, Genoa, Italy; 2006: 71.			
"Predicting Future Staffing Needs at Teaching Hospitals: Use of an Analytical Program with Multiple Variables"	Mitchell, C. C., Ashley, S. W., Zinner, M. J., & Moore, F. D. Jr.	<i>Archives of Surgery</i>	2007	Mitchell, C. C., Ashley, S. W., Zinner, M. J., & Moore, F. D. Jr. (2007). Predicting future staffing needs at teaching hospitals: use of an analytical program with multiple variables. <i>Archives of Surgery</i> . 142(12), 1226.	Used computer model to predict future staffing needs due to the impact of changes in resident work hours and service growth. The study estimates in the next 5 years the hospitals will need to hire 10 physician assistants at the cost of \$1,134,000, which is \$441,000 cheaper than hiring hospitalists.	Workforce	
"An Evidence Based Alcohol Screening, Brief Intervention and Referral to Treatment (SBIRT) Curriculum for Emergency Department (ED) Providers Improves Skills and Utilization"	Bernstein, E., Bernstein, J., Feldman, J., Fernandez, W., Hagan, M., Safi, C., Owens, P	<i>Substance Abuse</i>	2007	Bernstein, E., Bernstein, J., Feldman, J., Fernandez, W., Hagan, M., Safi, C., Owens, P. (2007). An evidence based alcohol screening, brief intervention and referral to treatment (SBIRT) curriculum for emergency department (ED) providers improves skills and utilization. <i>Substance Abuse</i> . 28(4), 79-92.	ED providers, including physician extenders, were surveyed before and after. The authors found that 3 month follow-up scores for utilization of SBIRT skills improved significantly over the baseline.	Value/Impact	
"Physician Assistant Education in the United States"	Jones, P.E.	<i>Academic Medicine</i>	2007	Jones, P.E. (2007). Physician Assistant Education in the United States. <i>Academic Medicine</i> . Vol. 82, No. 9. 882-887.	An overview of PA education in the US. Topics include growth in the number of PA education programs over time, commitment to the physician-dependent relationship, curriculum design, demographics of the typical student, and future challenges to quality PA education	Education	
"The Status of Complementary and Alternative Medicine Education in U.S. Physician Assistant Programs"	Lloyd, L.F., Simon, B., Dunn, L.R., & Isberner, F.R.	<i>Teaching and Learning in Medicine</i>	2007	Lloyd, L.F., Simon, B., Dunn, L.R., & Isberner, F.R. (2007). The status of complementary and alternative medicine education in U.S. physician assistant programs. <i>Teaching and Learning in Medicine</i> . 19(2), 174-179.	PURPOSE: This study was designed to identify the content, methods, purpose, and orientation to complimentary and alternative medicine (CAM) education in PA curricula. CONCLUSION: Most PA programs have incorporated CAM instruction into their curricula.	Education	
"Retention of Physician Assistants in Rural Health Clinics"	Henry, L. R., & Hooker, R. S.	<i>Journal of Rural Health</i>	2007	Henry, L. R., & Hooker, R. S. (2007). Retention of physician assistants in rural health clinics. <i>Journal of Rural Health</i> . 23(3), 207-214.	Qualitative exploratory study in 8 rural towns found major factors contributing to retention of autonomous rural PAs to include confidence in ability to provide adequate health care, desire for small town life, residing in community, and being involved with the community.	Practice	
"Gender Differences in Rural and Urban Practice Location Among Mid-Level Health Care Providers"	Lindsay S.	<i>Journal of Rural Health</i>	2007	Lindsay S. (2007). Gender Differences in Rural and Urban Practice Location Among Mid-level Health Care Providers. <i>The Journal of Rural Health</i> . 23(1), 72-76.	Semi-structured interviews with 55 with nurse practitioners, PAs and nurse anesthetists in New York and Pennsylvania found family and community ties played a key role in influencing practice location. Men were drawn to the broad scope of practice and autonomous nature of rural practice, where women in rural areas enjoyed the more personable environment and greater respect from colleagues and patients.	Practice	
"How PAs Improve Access to Care for the Underserved"	Staton, F.S., Bhosle, M.J., Camacho, F.T., Feldman, S.R., & Balkrishnan, R.	<i>Journal of American Academy of Physician Assistants</i>	2007	Staton, F.S., Bhosle, M.J., Camacho, F.T., Feldman, S.R., & Balkrishnan, R. How PAs improve access to care for the underserved. <i>JAAPA</i> . 20(6), 32, 34, 36.	The objective of this study was to test the hypothesis that poorer patients in outpatient clinics are more likely to see PAs than physicians. CONCLUSION: Considerable use is made of PAs in all settings, and they tend to be utilized in otherwise underserved, rural populations who do not have health insurance.	Practice	

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"Patient Attitudes toward Physician Assistants"	Dehn, R. W.	<i>Journal of American Academy of Physician Assistants</i>	2007	Dehn, R. W. (2007). Patient attitudes toward physician assistants. <i>JAAPA</i> . 20(10), 58-70.	Patients of physicians using physician assistants in their practices were surveyed to determine attitudes toward these assistants. Eighty-seven percent of the patients who received physical examinations from physician's assistants were very satisfied.	Value/Impact	
"Midlevel Providers in a Level I Trauma Service: Experience at Wesley Medical Center"	Nyberg, S.M., Waswick, W., Wynn, T., & Keuter, K.	<i>Journal of Trauma</i>	2007	Nyberg, S.M., Waswick, W., Wynn, T., & Keuter, K. (2007). Midlevel providers in a Level I trauma service: experience at Wesley Medical Center. <i>Journal of Trauma</i> . 63(1), 128-134.	The purpose of this cross-sectional study was to assess the level of satisfaction of patients, physicians and nurses, and ancillary providers with the care provided by the midlevel providers (MLPs) who are utilized as house officers in a Level I trauma service. CONCLUSION: Trauma patients and healthcare team members of the trauma service at Wesley Medical Center, an accredited Level I trauma center, are generally satisfied with care provided by MLPs.	Value/Impact	
"Patient Acceptance of a Novel Preventive Care Delivery System"	Denberg, T. D., Ross, S. E., & Steiner, J. F.	<i>Preventive Medicine</i>	2007	Denberg, T. D., Ross, S. E., & Steiner, J. F. (2007). Patient acceptance of a novel preventive care delivery system. <i>Preventive Medicine</i> . 44(6), 543-546.	Survey of patients in the waiting room of an academic general medicine practice in 2005 found 93% (n=354) affirmed that either requiring primary care provider involvement in preventive services is not always needed, or is an inconvenience or unnecessary expense. Over 70% were open to non-PCP centered method of receiving preventive services	Value/Impact	
"Midlevel Practitioner Workforce Analysis at a University-Affiliated Teaching Hospital"	Kirton, O. C., Folcik, M. A., Ivy, M. E., Calabrese, R., Dobkin, E., Pepe, J., Palter, M.	<i>Archives of Surgery</i>	2007	Kirton, O. C., Folcik, M. A., Ivy, M. E., Calabrese, R., Dobkin, E., Pepe, J., Palter, M. (2007). Midlevel Practitioner Workforce Analysis at a University-Affiliated Teaching Hospital. <i>Archives of Surgery</i> . 142(4), 336-341.	Analysis of patient volume in 2005 in a 867 bed urban hospital (116 are surgical beds) looked at workload staffing index and found 4 services that benefited from addition of new midlevel practitioners.	Workforce	
"Short Wait Times for Patients Seeking Cosmetic Botulinum Toxin Appointments and Dermatologists"	Resneck, J. S. Jr., Lipton, S., & Pletcher, M. J.	<i>Journal of the American Academy of Dermatology</i>	2007	Resneck, J. S. Jr., Lipton, S., & Pletcher, M. J. (2007). Short wait times for patients seeking cosmetic botulinum toxin appointments and dermatologists. <i>Journal of the American Academy of Dermatology</i> . 57(6), 986-989.	Scripted patient telephone calls made to 898 dermatologists in 12 metropolitan areas found 27% of dermatologists employed physician extenders, and 39% of these extenders offered appointments for botulinum toxin with shorter waiting times (median 6 days) than appointments for dermatologists (median 8 days).	Practice	
"Growth and Change in the Physician Assistant Workforce in the United States"	Larson, E.H., & Hart, L. G.	<i>Journal of Allied Health</i>	2007	Larson, E.H., & Hart, L. G. (2007). Growth and change in the physician assistant Workforce in the United States, 1967-2000. <i>Journal of Allied Health</i> . 36(3),121-130.	This report describes key elements of change in the demography and distribution of the PA population between 1967 and 2000, as well as the spread of PA training programs. Individual-level data from the American Academy of Physician Assistants, supplemented with county-level aggregate data from the Area Resource File, were used to describe the emergence of the PA profession between 1967 and 2000.	Workforce	
"Predicting Future Staffing Needs at Teaching Hospitals: Use of an Analytical Program with Multiple Variables"	Mitchell, C. C., Ashley, S. W., Zinner, M. J., & Moore, F. D. Jr.	<i>Archives of Surgery</i>	2007	Mitchell, C. C., Ashley, S. W., Zinner, M. J., & Moore, F. D. Jr. (2007). Predicting future staffing needs at teaching hospitals: use of an analytical program with multiple variables. <i>Archives of Surgery</i> . 142(12), 1226.	Used computer model to predict future staffing needs due to the impact of changes in resident work hours and service growth. The study estimates in the next 5 years the hospitals will need to hire 10 physician assistants at the cost of \$1,134,000, which is \$441,000 cheaper than hiring hospitalists.	Workforce	
"Missing in Action: Care by Physician Assistants and Nurse Practitioners in National Health Surveys"	Morgan, P. A., Strand, J., Østbye, T., & Albanese, M. A.	<i>Health Services Research</i>	2007	Morgan, P. A., Strand, J., Østbye, T., & Albanese, M. A. (2007). Missing in Action: Care by Physician Assistants and Nurse Practitioners in National Health Surveys. <i>Health Services Research</i> . 42(5), 2022-2037.	To assess applicability of national health survey data for generalizable research on outpatient care by physician assistants (PAs) and nurse practitioners (NPs). Surveys varied with respect to applicability to PA and NP care.	Workforce	
"Professionalization in New Primary Care Roles"	Abbott, S., Dadabhoy, S., Dalphinis, J., Hill, M., & Smith, R.	<i>Practice Nursing</i>	2007	"Abbott, S., Dadabhoy, S., Dalphinis, J., Hill, M., & Smith, R. (2007). Professionalization in new primary care roles. <i>Practice Nursing</i> , 18(8), 413-417.	This paper considers the similarities and differences between three roles in primary care: the new roles of physician assistant and advanced nurse practitioner, and the established role of GP. It draws on a process evaluation of a pilot conducted by a primary care trust developing the physician assistant role. Semi-structured interviews with trainee physician assistants revealed different perceptions of the use of nursing and medical models in the physician assistant role. Physician assistant trainees emphasized the similarities of medical and nursing models, while GP mentors emphasized the new skills that physician assistants needed: lateral thinking, rapid differential diagnoses and treatment plans. One view was that intuition (rapid access of tacit knowledge) is important but cannot be acquired quickly. In the future, physician assistant trainees will be science graduates rather than, as in this pilot, nurses. The physician assistant role will therefore help the NHS address Workforce shortages by drawing on a larger segment of the labour market than at present.	Workforce	

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"Physician Assistants - A Solution to Wait Times in Canada?"	Ashton, C. W., Aiken, A., & Duffie, D.	<i>Healthcare Management Forum/Forum Gestion Des Soins De Sante</i>	2007	Ashton, C. W., Aiken, A., & Duffie, D. (2007). Physician Assistants- A solution to wait times in Canada? <i>Healthcare Management Forum/Forum Gestion Des Soins De Sante</i> , 20(2), 38-42.	This paper reviews the history and role of the Physician Assistant (PA), both in Canada and internationally, and outlines the clinical competencies currently held by this provider to fill the role of a physician extender in our country. PAs' experiences are reported in the Canadian Forces (CF), where they have been employed for many years, and in Manitoba, where they are used as surgical assistants. The potential for the PA to be incorporated into our provincial health care systems will be considered in light of common barriers to Health Human Resources (HHR) strategic implementation.	International	
"Comparison of Medical Student and Physician Assistant Student Performance on Standardized-Patient Assessments"	Asprey, D., Hegmann, T., & Bergus, B.	<i>Journal of Physician Assistant Education</i>	2007	Asprey, D., Hegmann, T., & Bergus, B. (2007). Comparison of medical student and physician assistant student performance on standardized-patient assessments. <i>Journal of Physician Assistant Education</i> , 18(4), 16-19.	This study compares performance of third-year medical students and PA students in well-established Standardized Patients (SP) testing program over a 3-year period at the University of Iowa Carver College of Medicine. Both groups participated in the same SP exams and SP cases. Results showed no significant differences between the two types of students.	Education	
"Surgical Graduates' Perspectives on Postgraduate Physician Assistant Training Programs"	Brenneman, A., Hemminger, C., & Dehn, R.	<i>Journal of Physician Assistant Education</i>	2007	Brenneman, A., Hemminger, C., & Dehn, R. (2007). Surgical graduates' perspectives on postgraduate physician assistant training programs. <i>Journal of Physician Assistant Education</i> , 18(1), 42-44.	Postgraduate training (residency) programs for physician assistants (PAs) have existed since 1971 but few studies have looked at their impact on clinical practice. This study surveyed graduates of surgical PA postgraduate programs and compared their responses to AAPA census data for PAs in surgery. The two groups were similar when years since graduation were compared, with the additional year of training for the residency group taken into account. This survey suggests that residency graduates earn salaries similar to those of informally trained surgical PAs when hours worked per week are adjusted for.	Education	
"Physician Assistants in Geriatric Medicine"	Brugna, R., Cawley, J. F., & Baker, M. D.	<i>Clinical geriatrics</i>	2007	Brugna, R., Cawley, J. F., & Baker, M. D. (2007). Physician assistants in geriatric medicine. <i>Clinical Geriatrics</i> , 15, 2-9.	A PA can assume the role of a geriatric medicine provider who can offer comprehensive geriatric assessment with a focus on the functional status, cognitive status, and special needs of the patient. Geriatric patients often are clinically challenging, and may present with multiple interrelated, complex, chronic, or acute medical conditions requiring an interdisciplinary approach to care and rehabilitation. Physician assistants by training are capable of evaluating, referring, and monitoring patient services. Physician assistants have an interdependent role with members of the geriatric medicine team, and can provide therapists with valuable information regarding a patient's functional, cognitive, and medical status. Their future is bright in geriatric care.	Practice	
"New Role, New Country: Introducing Physician Assistants to Scotland"	Buchan, J., O'May, F., & Ball, J.	<i>Human Resources for Health</i>	2007	Buchan, J., O'May, F., & Ball, J. (2007). New role, new country: Introducing U.S. physician assistants to Scotland. <i>Human Resources for Health</i> , 5, 13.	This paper draws from research commissioned by the Scottish Executive Health Department (SEHD). It provides a case study in the introduction of a new health care worker role into an already well established and "mature" Workforce configuration It assesses the role of US style physician assistants (PAs), as a precursor to planned "piloting" of the PA role within the National Health Service (NHS) in Scotland.	International	
"Ambulatory Medical Care Utilization Estimates for 2005"	Burt, C. W., McCaig, L. F., & Rechtsteiner, E. A.	<i>Advance Data</i>	2007	Burt, C. W., McCaig, L. F., & Rechtsteiner, E. A. (2007). Ambulatory medical care utilization estimates for 2005. <i>Advance Data</i> , 29 (388), 1-15.	This report presents statistics on ambulatory care visits to physician offices, hospital outpatient departments, and hospital emergency departments in the United States in 2005. Ambulatory medical care utilization is described in terms of patient, practice, facility, and visit characteristics.	Practice	
"Limits on Resident Duty Hours Promote Collaboration between Medical Staff and Physician Extenders"	Callahan, E	<i>Medical Staff Briefing</i>	2007	Callahan, E. (2007). <i>Limits on resident duty hours promote collaboration between medical staff and physician exten-ders</i> . Medical Staff Briefing. Retrieved May 28, 2008, from http://www.healthleadersmedia.com/content/89842/topic/WS_HLM2_HOM/Limits-on-resident-duty-hours-promote-collaboration-between-medical-staff-and-physician-		Practice	
"National Ambulatory Medical Care Survey (NHAMCS): 2005 Summary"	Cherry, D. K., Woodwell, D. A., & Rechtsteiner, E. A.	<i>Advance Data from Vital and Health Statistics</i>	2007	Cherry, D. K., Woodwell, D. A., & Rechtsteiner, E. A. (2007). National Ambulatory Medical Care Survey (NHAMCS): 2005 summary. <i>Advance Data from Vital and Health Statistics</i> , 387. Hyattsville, MD: Centers for Disease Control and Prevention, National Center for Health Statistics.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Overview of Nurse Practitioner Scopes of Practice in the United States"	Christian, C., Dower, C., & O'Neil, E.	San Francisco: University of California San Francisco Center for the Health Professions	2007	Christian, C., Dower, C., & O'Neil, E. (2007). <i>Overview of Nurse Practitioner Scopes of Practice in the United States</i> . San Francisco: University of California San Francisco Center for the Health Professions.	Nurse Practitioners (NPs) are registered nurses who are prepared beyond initial nursing education in an NP program to provide primary care directly to patients. NP educational requirements, certification mechanisms and legal scopes of practice are decided at the state level and vary considerably. This brief discusses the findings of the Chart Overview of Nurse Practitioner Scopes of Practice in United States (the "Chart"). The Chart provides a current overview of statutes and regulations governing the practice of nurse practitioners (NPs). It is a snapshot of NP scopes of practice in the 50 U.S. states and the District of Columbia.	Practice	
"Military Physician Assistants: Their Background and Education"	Colver, J. E., Blessing, D., & Hinojosa, J.	Journal of Physician Assistant Education	2007	Colver, J. E., Blessing, D., & Hinojosa, J. (2007). Military physician assistants; their background and education. <i>Journal of Physician Assistant Education</i> , 18 (3), 40–45	This paper examines the history and connection between the US military and the PA profession.	History; Education	
"Evaluation of Student Confidence in utilizing EBM Skills Following Completion of an EBM Curriculum"	Coniglio, D., Menezes, P., Moorman, P., Morgan, P., & Schmidt, M.	Journal of Physician Assistant Education	2007	Coniglio, D., Menezes, P., Moorman, P., Morgan, P., & Schmidt, M. (2007). Evaluation of student confidence in utilizing EBM skills following completion of an EBM curriculum. <i>Journal of Physician Assistant Education</i> , 18 (2), 7–13.	Researchers discuss the Evidence Based Curriculum at their institution and report results of an analysis of self-reported student confidence in performing EBM skills. The study was conducted over a period of three years. In each successive year, confidence scores for performing each EBM skill improved.	Education	
"New Directions for Nurse Practitioners and Physician Assistants in an Era of Physician Shortages"	Cooper, R. A.	Academic Medicine	2007	Cooper, R. A. (2007). New directions for nurse practitioners and physician assistants in an era of physician shortages. <i>Academic Medicine</i> , 82 (9), 827–828.	During the past 35 years, the roles for nurse practitioners (NPs) and physician assistants (PAs) have evolved in parallel with the roles that physicians have come to play. Shifting needs in primary care and expanding opportunities in specialty medicine have been the dominant trends. Future directions will be influenced additionally by the deepening physician shortage. NPs are preparing for this future by developing doctoral-level training programs in comprehensive care, whereas PAs are adding training opportunities in specific specialties. Yet, neither discipline has expanded its training capacity to the degree that will be required, and, like physicians, neither will have a supply of practitioners that will match future demand. Coordinated planning to increase the educational infrastructure for physicians, NPs, and PAs is essential.	Workforce	
"PA Specialties: Society for Physician Assistants in Pediatrics"	Cornell, S.	ADVANCE for Physician Assistants	2007	Cornell, S. (2007). PA specialties: Society for physician assistants in pediatrics. <i>ADVANCE for Physician Assistants</i> , 15 (10), 18.		Practice	
"Nurse Practitioners and Physician Assistants: Do You Know the Difference?"	Curran, J.	Medsurg Nursing	2007	Curran, J. (2007). Nurse practitioners and physician assistants: Do you know the difference? <i>Medsurg Nursing</i> , 15 (6), 404–407.	A comparison of Physician Assistants and Nurse Practitioners.	Practice	
"The Effect of a Rapid Response Team on Major Clinical Outcome Measures in a Community Hospital"	Dacey, M. J., Mirza, E. R., Wilcox V., Doherty, M., Mello, J., Boyer, A., et al.	Critical Care Medicine	2007	Dacey, M. J., Mirza, E. R., Wilcox V., Doherty, M., Mello, J., Boyer, A., et al. (2007). The effect of a rapid response team on major clinical outcome measures in a community hospital. <i>Critical Care Medicine</i> , 35 (9), 2076–2082.	The objective of this study is to determine the effect of a rapid response system composed primarily of a rapid response team led by physician assistants on the rates of in-hospital cardiac arrests, total and unplanned intensive care unit admissions, and hospital mortality. The study design was a prospective, controlled, before and after trial at a 350 bed nonteaching community hospital. Results showed that the deployment of an RRT led by physician assistants with specialized skills was associated with significant decreases in rates of in-hospital cardiac arrest and unplanned intensive care unit admissions.	Practice	

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"The United States Rheumatology Workforce: Supply and Demand, 2005-2025"	Deal, C. L., Hooker, R. S., Harrington, T., Birnbaum, N., Hogan, P., Bouchery, E., et al.	<i>Arthritis and Rheumatism</i>	2007	Deal, C. L., Hooker, R. S., Harrington, T., Birnbaum, N., Hogan, P., Bouchery, E., et al. (2007). The United States rheumatology Workforce: Supply and demand, 2005–2025. <i>Arthritis and Rheumatism</i> , 56(3), 722–729.	The objective of this study was to develop and apply a model that allows prediction of current and future supply and demand for rheumatology services in the US. A supply model was developed using the age and sex distribution of current physicians, retirement and mortality rates, the number of fellowship slots and fill rates, and practice patterns of rheumatologists. A Markov projection model was used to project needs in 5-year increments from 2005 to 2025. Based on assessment of supply and demand under current scenarios, the demand for rheumatologists is expected to exceed supply in the coming decades. Strategies for the profession to adapt to this changing health care landscape include increasing the number of fellows each year, utilizing physician assistants and nurse practitioners in greater numbers, and improving practice efficiency.	Workforce	
"2006 National Survey of PA Program Admission Prerequisites"	Dehn, R.	<i>Journal of Physician Assistant Education</i>	2007	Dehn, R. (2007). 2006 national survey of PA program admission prerequisites. <i>Journal of Physician Assistant Education</i> , 18 (1), 45–47.		Education	
"Challenges to Assuring Access to Oncology Services"	Erikson, C., Salsberg, E., Forte, G., Bruinooge, S., & Goldstein, M.	<i>Journal of Oncology Practice</i>	2007	Erikson, C., Salsberg, E., Forte, G., Bruinooge, S., & Goldstein, M. (2007). Challenges to assuring access to oncology services. <i>Journal of Oncology Practice</i> , 3 (2), 87–88.	The purpose of the study was to conduct a comprehensive analysis of supply of and demand for oncology services through 2020. This study was commissioned by the Board of Directors of ASCO. Results show that demand for oncology services is expected to rise rapidly, driven by the aging and growth of the population and improvements in cancer survival rates, at the same time the oncology Workforce is aging and retiring in increasing numbers. Demand is expected to rise 48% between 2005 and 2020. The supply of services provided by oncologists during this time is expected to grow more slowly, approximately 14%, based on the current age distribution and practice patterns of oncologists and the number of oncology fellowship positions.	Workforce	
"Emergency Medicine in Russia"	Gaufberg, S.		2007	Gaufberg, S. (2007). <i>Emergency medicine in Russia</i> . Retrieved May 12, 2008, from http://www.emedicine.com/emerg/topic725.htm		International	
"Results of the PAEA 2006 Survey of PA Program Expansion Plans"	Glicken, A. D., & Lane, S.	<i>Journal of Physician Assistant Education</i>	2007	Glicken, A. D., & Lane, S. (2007). Results of the PAEA 2006 survey of PA program expansion plans. <i>Journal of Physician Assistant Education</i> , 18(1), 48–53.		Education	
"The Child Health Associate Physician Assistant Program - An Enduring Educational Model Addressing the Needs of Families and Children"	Glicken, A. D., Merenstein, G., & Arthur, M. S	<i>Journal of Physician Assistant Education</i>	2007	The child health associate physician assistant program—An enduring educational model addressing the needs of families and children. <i>Journal of Physician Assistant Education</i> , 18(3), 24–29.	The Child Health Associate (CHA) Physician Assistant Program was established by Dr. Henry Silver in 1968 in response to a need for pediatric health care providers. In 1973, the CHA/PA program was the first PA program in the country to award a master's degree and the legislation that originally established the regulatory framework for CHAs was the precursor to many state practice acts for the physician assistant (PA) profession. The program now trains PAs in primary care, with added expertise in pediatrics, through an innovative 36-month curriculum that integrates clinical experience across all three years. The program's unique approach to integrating primary and specialty care education may serve as a model for developing nations attempting to address a shortage of pediatric providers.	Education	
"Achieving Mastery through the Competencies"	Guerra, P.	<i>Journal of the American Academy of Physician Assistants</i>	2007	Guerra, P. (2007). Achieving mastery through the competencies. <i>Journal of the American Academy of Physician Assistants</i> , 20 (12), 12.	An article discussing the importance of competencies and the need to continue to develop tools by which individual PAs can accurately evaluate their own performance in each of the competencies.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Future of Remote Health Services: Summary of an Expert Panel Discussion"	Haselkorn, A., Coyle, M., & Doarn, C. R.	<i>Telemedicine and e-Health</i>	2007	Haselkorn, A., Coyle, M., & Doarn, C. R. (2007). The future of remote health services: Summary of an expert panel discussion. <i>Telemedicine and e-Health</i> , 13, 341–347.	Health Technology Center (HealthTech), a nonprofit research and education organization that develops objective technology forecasts, hosted an expert panel discussion aimed at delineating the future of remote health services (RHS). RHS is defined as involving patient care interactions that are geographically disparate and enabled by telecommunications, information technology, and sensor technology. Key players involved are physicians and nonphysician clinicians, sick or healthy individuals, and their friends or family. An expert panel gathered October 2006, in San Francisco, CA, to respond to the forecasts generated by HealthTech regarding the expected impact of RHS on health care in the next 2 to 5 years and beyond. The panel consisted of a carefully selected group of experts representing diverse viewpoints, and included clinicians, providers, engineers, lawyers, consumer representatives, policy makers, developers, representatives of large employers, academics, and Workforce experts. The interaction of the interdisciplinary expert panel produced a number of key implications pertaining to the delivery of RHS and its influence on the healthcare industry. Drivers and barriers to the diffusion of RHS were delineated, and the full potential value of the technology to patients, health delivery systems, and health plans was analyzed in depth. The expert panel provided a plethora of information predicting the future course of RHS and its impact on health delivery. While the complete report and set of forecasts that stems from this research are proprietary, this paper offers a summary of that meeting.	Practice	
"Understanding the Roles of PAs and NPs in Rheumatology"	Hooker, R. S.	<i>Arthritis Practitioner</i>	2007	Hooker, R. S. (2007). Understanding the roles of PAs and NPs in rheumatology. <i>Arthritis Practitioner</i> , 3 (5), 42.	Commentary about the rising presence of PA/NPs in a medical subspecialty.	Workforce	
"The Globalization of the Physician Assistant Profession"	Hooker, R. S., Hogan, K., & Leeker, E.	<i>Journal of Physician Assistant Education</i>	2007	Hooker, R. S., Hogan, K., & Leeker, E. (2007). The globalization of the physician assistant profession. <i>Journal of Physician Assistant Education</i> , 18(3), 76–85.	The global spread of the PA profession is a medical Workforce phenomenon largely born at the turn of the century. This study used investigative journalism techniques to collect information about the use of PAs outside of the United States. As of 2007, at least seven countries - Australia, Canada, England, the Netherlands, Scotland, South Africa, and Taiwan - are in various stages of expansion of PA-like medical workers that function under the supervision of a doctor. With the exception of Taiwan and South Africa, these countries have American-trained PAs working as expatriates, and most are developing educational programs that produce a healthcare provider functioning as an addition to the doctor. Each country has made its PA a distinct entity, with cultural and educational influences shaping their roles. Common denominators of these PAs are: they function as semiautonomous clinicians under the direct supervision of a doctor and have roles that tend to complement those of the doctor. Historical observations suggest the development of the PA profession in different countries tends to follow a similar path and that lessons learned from these nations may be useful in further expansion of the profession.	International	
"Mid-Level Workers: High Level Bungling?"	Hugo, J., & Mfenyana, K.	<i>South African Medical Journal</i>	2007	Hugo, J., & Mfenyana, K. (2007). Midlevel workers: High level bungling? <i>South African Medical Journal</i> , 97 (03), 147–148.		International	
"Analysis of Malpractice Claims with a Focus on Oxytocin Use in Labour"	Jonsson, M., Norden, S. L., & Hanson, U.	<i>Acta Obstetrica et Gynecologica Scandinavica</i>	2007	Jonsson, M., Norden, S. L., & Hanson, U. (2007). Analysis of malpractice claims with a focus on oxytocin use in labour. <i>Acta Obstetrica et Gynecologica Scandinavica</i> , 86(3), 315–319.	The objective of this study was to analyse the motives behind disciplinary action in obstetric malpractice cases concerning delivery, and to evaluate the frequency of inappropriate oxytocin use in these cases. An analysis of all malpractice claims resulting in disciplinary action against physicians and midwives during the period 1996-2003. Investigations and decisions made by the Board of Medical Responsibility were reviewed with special focus on the use of oxytocin. Results showed that in a Swedish setting, a few common clinical problems pervade; interpretation of FHR patterns and the use of oxytocin account for the majority of rulings of negligence in malpractice cases regarding delivery. Analysis of the cases suggests that the adverse fetal outcomes could possibly have been prevented.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistants: Education, Practice, and Global Interest"	Legler, C. F., Cawley, J. F., & Fenn, W. H.	<i>Medical Teacher</i>	2007	Legler, C. F., Cawley, J. F., & Fenn, W. H. (2007). Physician assistants: Education, practice and global interest. <i>Medical Teacher</i> , 29 (1), 22–25.	The purpose of the article is to discuss the PA model as it pertains to other countries. The researchers reviewed relevant literature related to physician assistant education, practice, and global interest. The results showed that several countries including the United Kingdom, Scotland, Canada, The Netherlands, Taiwan, South Africa and Ghana are exploring or re-exploring the concept of the physician assistant as a way to quickly and efficiently train and employ autonomous and flexible health workers to address their nation's healthcare needs.	Practice; International	
"Outcomes of Care by Hospitalists, General Internists, and Family Physicians"	Lindenauer, P. K., Rothberg, M. B., Pekow, P. S., Kenwood, C., Benjamin, E. M., & Auerbach, A. D.	<i>New England Journal of Medicine</i>	2007	Lindenauer, P. K., Rothberg, M. B., Pekow, P. S., Kenwood, C., Benjamin, E. M., & Auerbach, A. D. (2007). Outcomes of care by hospitalists, general internists, and family physicians. <i>New England Journal of Medicine</i> , 357(25), 2589–2600.	This study compared patients cared for by general internists, hospitalists, and family physicians. The study was conducted through a retrospective cohort study of 76,926 patients 18 years of age or older who were hospitalized between September 2002 and June 2005 for pneumonia, heart failure, chest pain, ischemic stroke, urinary tract infection, acute exacerbation of chronic obstructive pulmonary disease, or acute myocardial infarction at 45 hospitals throughout the United States. Results showed that for common inpatient diagnoses, the hospitalist model is associated with a small reduction in the length of stay without an adverse effect on rates of death or readmission. Hospitalist care appears to be modestly less expensive than that provided by general internists, but it offers no significant savings as compared with the care provided by family physicians.	Practice	
"Telehealth Distance Mentoring of Students"	Loera, J. A., Kuo, Y. F., & Rahr, R. R.	<i>Telemedicine Journal and E-Health</i>	2007	Loera, J. A., Kuo, Y. F., & Rahr, R. R. (2007). Telehealth distance mentoring of students. <i>Telemedicine Journal and E-Health</i> , 13 (1), 45–50.	This study used telemedicine instruments to enable faculty to study the potential for teaching students the skills needed to perform a history and physical examination in an elderly person. The distance mentoring study was designed as a pilot-based on limited faculty time available to determine the effectiveness of teaching students using telemedicine. Students were also surveyed regarding the experience of visiting an independent living facility and about the reliability and their level of comfort using telemedicine. Most students found telemedicine to be reliable, most gained confidence and an acceptable level of comfort using telemedicine instruments to interact with elderly volunteer residents of an independent living facility. Students improved their physical examination skills and gained confidence administering special questionnaires (geriatric depression scale, Mini Mental State Examination [MMSE], clock drawing test, Tinetti Assessment) to elderly volunteers and recommended that all Physician Assistant (PA) program students should visit an independent living facility (ILF).	Education	
"Foreign-Trained Doctors Dominate Pilot Project"	Magnus, B.	<i>Canadian Medical Association Journal</i>	2007	Magnus, B. (2007). Foreign-trained doctors dominate pilot project. <i>Canadian Medical Association Journal</i> , 178 (11), 1411.	An article discussing a series of Ontario pilot projects evaluating the use of physician assistants in hospital and other healthcare settings.	International	
"Perfected and Strengthened through Trials and Suffering"	Martin, D.	<i>Journal of the American Academy of Physician Assistants</i>	2007	Martin, D. (2007). Perfected and strengthened through trials and suffering. <i>Journal of the American Academy of Physician Assistants</i> , 20 (1), 52–53.	Dave Martin, MPAS, PA-C, recounts his personal experiences as a family practice PA in a small community.	Practice	
"The Next Wave: "Physician Extenders"	McCabe, D.	<i>Canadian Medical Association Journal</i>	2007	McCabe, D. (2007). The next wave: "Physician extenders." <i>Canadian Medical Association Journal</i> , 177 (5), 477.	A discussion about the emergence of the PA profession in Canada.	International; Workforce	
"Physician Liability for Medical Errors of Nonphysician Clinicians: Nurse Practitioners and Physician Assistants"	Moses, R. E., & Feld, A. D.	<i>American Journal of Gastroenterology</i>	2007	Moses, R. E., & Feld, A. D. (2007). Physician liability for medical errors of nonphysician clinicians: Nurse practitioners and physician assistants. <i>American Journal of Gastroenterology</i> , 102, 6–9.	The article discusses the responsibility of gastroenterologists for the errors made by non physician clinicians, including nursing practitioners and physician's assistants. Some of the errors such as negligent supervision, malpractice, vicarious liability and diagnosis failure are discussed. The article suggests hiring only those non physicians who meet the educational requirements, are experienced and are have the knowledge of state rules to ensure effective medical care is delivered.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Non-Physician Clinicians in 47 Sub-Saharan African Countries"	Mullan, F., & Frehywot, S.	<i>Lancet</i>	2007	Mullan, F., & Frehywot, S. (2007) Non-physician clinicians in 47 sub-Saharan African countries. <i>Lancet</i> , 270 (9605), 2158-2163.	This research identified non-physician clinicians (NPCs) in 25 of 47 countries in sub-Saharan Africa, although their roles varied widely between countries. In nine countries, numbers of NPCs equalled or exceeded numbers of physicians. In general NPCs were trained with less cost than were physicians, and for only 3–4 years after secondary school. All NPCs did basic diagnosis and medical treatment, but some were trained in specialty activities such as caesarean section, ophthalmology, and anaesthesia. Many NPCs were recruited from rural and poor areas, and worked in these same regions. Low training costs, reduced training duration, and success in rural placements suggest that NPCs could have substantial roles in the scale-up of health Workforces in sub-Saharan African countries, including for the planned expansion of HIV/AIDS prevention and treatment programmes.	International	
"What's Different About Rural Health Care?"	National Rural Health Association.		2007	National Rural Health Association. (2007). <i>What's different about rural health care?</i> Retrieved June 22, 2008, from http://www.ruralhealthweb.org/go/left/about-rural-health/what-s-different-about-rural-health-care		Workforce	
"The Diagnosis and Management of Hepatitis C: The Role of Physician Assistant"	Neighbors, J.	<i>Internet Journal of Academic Physician Assistants</i>	2007	Neighbors, J. (2007). The diagnosis and management of hepatitis C: The role of the physician assistant. <i>Internet Journal of Academic Physician Assistants</i> , 5(2), 16.	Hepatitis C will pose a serious challenge to the health care system during the next 2 decades. Physician assistants can play an important role in the screening, diagnosis, and management of hepatitis C infection, and in educating patients about this disease. Screening for risk factors for hepatitis C virus (HCV) can be used to identify most infected individuals, who can then be tested for the presence of anti-HCV antibodies and HCV RNA. Hepatitis C can be treated with a combination of pegylated interferon plus ribavirin, and the virus can be cleared in a significant percentage of infected individuals.	Practice	
"Addressing Clinical Preceptorship Teaching Development"	O'Callaghan, N.	<i>Journal of Physician Assistant Education</i>	2007	O'Callaghan, N. (2007). Addressing clinical preceptorship teaching development. <i>Journal of Physician Assistant Education</i> , 18 (4), 37–39.		Education	
"Extending Rural and Remote Medicine with a New Type of Health Worker: Physician Assistants"	O'Connor, T. M., & Hooker, R. S.	<i>Australian Journal of Rural Health</i>	2007	O'Connor, T. M., & Hooker, R. S. (2007). Extending rural and remote medicine with a new type of health worker: Physician assistants. <i>Australian Journal of Rural Health</i> , 15 (6), 346–351.	The purpose of this paper was to demonstrate that the medical Workforce shortage is an international phenomenon and to review one of the strategies developed in the USA in the late 1960s: the physician assistant model of health service provision. The authors consider whether this model could provide one strategy to help address the medical Workforce shortage in Australia. A systematic review of the literature about medical Workforce shortages, strategies used to address the medical Workforce shortage, and the physician assistant role was undertaken. Literature used for the review covered the period 1967-2006. Physician assistants provide safe, high-quality and cost-effective primary care services under the direction of a doctor and respond to Workforce shortages in rural and remote areas, family practice medicine and hospital settings. This model of health care provision has been adopted in several other developed countries, including England, Scotland, the Netherlands and Canada. The physician assistant concept might provide Australia with a novel strategy for addressing its medical Workforce shortage, particularly in rural and remote settings.	Practice	
"Twenty-Second Annual Report on Physician Assistant Educational Programs in the United States, 2005-2006"	Physician Assistant Education Association		2007	Physician Assistant Education Association. (2007). <i>Twenty-Second Annual Report on Physician Assistant Educational Programs in the United States, 2005–2006</i> . Alexandria, VA: Author.		Education	

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"A Historical Perspective on Postgraduate Physician Assistant Education and the Association of Postgraduate Physician Assistant Programs"	Polansky, M.	<i>Journal of Physician Assistant Education</i>	2007	Polansky, M. (2007). A historical perspective on postgraduate physician assistant education and the association of postgraduate physician assistant programs. <i>Journal of Physician Assistant Education</i> , 18 (3), 100–108.	PA clinical postgraduate programs are distinguished from on-the-job training in that they have clearly defined learning objectives which are met through a balance of didactic education and supervised clinical experience. The first recognized clinical postgraduate physician assistant (PA) program was the Montefiore Medical Center Postgraduate Surgical Physician Assistant Program, established in 1971. There are now more than 40 such programs in more than a dozen specialties. In 1988, a number of postgraduate PA programs formed the Association of Postgraduate Physician Assistant Programs, which has over the years been instrumental in establishing educational standards for postgraduate PA programs. In 2006 the Accreditation Review Commission on Education for the Physician Assistant adopted accreditation standards for postgraduate PA programs. As PAs move increasingly into specialties and interest in specialty recognition is heightened, there is a great need for research on the relative effectiveness of on-the-job versus formal postgraduate training.	History; Education	
"Nonphysician Clinicians in the Neonatal Intensive Care Unit: Meeting the Needs of our Smallest Patients"	Reynolds, E. W., & Bricker, J. T.	<i>Pediatrics</i>	2007	Reynolds, E. W., & Bricker, J. T. (2007). Nonphysician clinicians in the neonatal intensive care unit: Meeting the needs of our smallest patients. <i>Pediatrics</i> , 119 (2), 361-369.	These researchers have developed a postgraduate training program for physician assistants in neonatology that they hope will improve local and regional Workforce shortages. In this article, they discuss the history of neonatal nurse practitioners and physician assistants in newborn care and outline the program that we developed. They further discuss some of the barriers they had to overcome in developing this program. They suggest that their program can serve as a model for other neonatology programs to adequately prepare physician assistants for a career in the NICU.	Practice	
"Central Application Service for Physician Assistants: Five-Year Report"	Ruback, T. J., Coombs, J., Keck, M., McDaniel, J., Agar Barwick, T., Kang, S., et al.	<i>Journal of Physician Assistant Education</i>	2007	Ruback, T. J., Coombs, J., Keck, M., McDaniel, J., Agar Barwick, T., Kang, S., et al. (2007). Central application service for physician assistants: Five-year report. <i>Journal of Physician Assistant Education</i> , 18 (3), 52–59.	This study was initiated by the Physician Assistant Education Association to summarize the annual data collected by the Centralized Application Service for Physician Assistants (CASPA) and to highlight trends and data points of interest over the 5-year history of the service. The data analyzed over the 5-year period were collected via an online portal through which applicants complete and submit their applications to CASPA. Results showed that during the 5 years between 2002 and 2006, CASPA experienced a 37% growth in the number of programs participating in the service. The number of unique applicants identified through CASPA also rose steadily throughout this period. Major demographic features of applicants, including age, gender, age by gender, ethnic composition, and disadvantaged status, remained relatively constant.	Education	
"Meeting Challenges in the Delivery of Surgical Care"	Sigurdson, L.	<i>Clinical & Investigative Medicine</i>	2007	Sigurdson, L. (2007). Meeting challenges in the delivery of surgical care. <i>Clinical & Investigative Medicine</i> , 30(Suppl. 4), S35–S36.	The purpose of this investigation is to explore the inefficiencies in a current Canadian surgeon's practice, examine the feasibility of PA employment, and evaluate the financial impacts. The study was performed in three parts. Results showed that hiring and proper implementation of PAs, in conjunction with increases in operating room capacity, have the potential to markedly increase the capability of surgeons to deal with length surgical wait lists in a cost effective manner.	Workforce	
"Integrating Cultural Competency across the Curriculum"	Straker, H., & LeLacheur, S.	<i>Journal of Physician Assistant Education</i>	2007	Straker, H., & LeLacheur, S. (2007). Integrating cultural competency across the curriculum. <i>Journal of Physician Assistant Education</i> , 18 (2), 60–63.	The article focuses on the concept of cultural competency. It is stated that cultural competency medical education is the process where a clinician learns to work with patients of different cultures. According to the article, most medical education programs, including physician assistant (PA) programs provide courses and modules to promote knowledge and attitudes to enhance cross-cultural interactions between a patient and a practitioner.	Education	
"Medical Education in the Netherlands"	Ten Cate, O.	<i>Medical Teacher</i>	2007	Ten Cate, O. (2007). Medical education in the Netherlands. <i>Medical Teacher</i> , 29(8), 752–757.	This paper aims to draw a picture of current medical education in the Netherlands. The article goes into the history of Dutch medical education, the development of medical education in the modern age, and the successes and critical issues that surround current Dutch medical education.	International	

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"Survey of Attitudes and Behaviors Toward Alcohol and Other Drug Use in Allied Health and Physician Assistant Students"	Baldwin, J. N., Davis-Hall, R. E., DeSimone II, E. M., Scott, D. M., Agrawal, S., & Reardon, T. P.	<i>Journal of Allied Health</i>	2008	Baldwin, J. N., Davis-Hall, R. E., DeSimone II, E. M., Scott, D. M., Agrawal, S., & Reardon, T. P. (2008). Survey of Attitudes and Behaviors Toward Alcohol and Other Drug Use in Allied Health and Physician Assistant Students. <i>Journal of Allied Health</i> . 37(3), 156-161.	Attitudes and behaviors toward alcohol and other drug use were assessed among a subgroup of allied health and physician assistant students within two university-based health professions educational institutions in a Midwestern state in 1999.	Education	
"Nurse Practitioner and Physician Assistant Interest in Prescribing Buprenorphine"	Roose, R. J., Kunins, H. V., Sohler, N. L., Elam, R. T., & Cunningham C. O.	<i>Journal of Substance Abuse Treatment</i>	2008	Roose, R. J., Kunins, H. V., Sohler, N. L., Elam, R. T., & Cunningham C. O. (2008). Nurse practitioner and physician assistant interest in prescribing buprenorphine. <i>Journal of Substance Abuse Treatment</i> . 34(4), 456-459.	Survey of providers attending HIV conferences in 6 large US cities found 48.6% of non-physician providers were interested in prescribing buprenorphine. Compared to infectious disease specialists, non-physician providers and generalist physicians were significantly more interested in prescribing buprenorphine.	Practice	
"Impact of Physician Assistant Care on Office Visit Resource Use in the United States"	Morgan P.A., Shah N.D., Kaufman J.S., & Albanese M.A.	<i>Health Services Research</i>	2008	Morgan P.A., Shah N.D., Kaufman J.S., & Albanese M.A. (2008). Impact of physician assistant care on office visit resource use in the United States. <i>Health Services Research</i> . 43(5 Pt 2), 1906-1922.	Analysis of MEPS data found adult patients who saw physician assistants for a large portion of their yearly office visits had, on average, 16 percent fewer visits per year, than patients who saw only physicians. These findings account for adjustments for patient complexity.	Practice	
"An Update on the Utilization of Standardized Patients in Physician Assistant Education"	Coplan, B., Essary, A. C., Lohenry, K., & Stoehr, J. D.	<i>Journal of Physician Assistant Education</i>	2008	Coplan, B., Essary, A. C., Lohenry, K., & Stoehr, J. D. (2008). An update on the utilization of standardized patients in physician assistant education. <i>Journal of Physician Assistant Education</i> . 19(4), 14-19.	The primary goals of this project were to examine the extent of standardized patient (SP) use during the didactic and clinical phases of physician assistant (PA) programs and to determine how many programs use various SP activities to teach as well as assess clinical skills. The results show a broad reliance on standardized patients to assess various aspects of clinical skills training in PA education.	Education	
"Non-Physician Practitioners' Overall Enhancement to a Surgical Resident's Experience"	Buch, K. E., Genovese, M. Y., Conigliaro, J. L., Nguyen, S. Q., Novembre, C. L., & Divino, C. M.	<i>Journal of Surgical Education</i>	2008	Buch, K. E., Genovese, M. Y., Conigliaro, J. L., Nguyen, S. Q., Novembre, C. L., & Divino, C. M. (2008). Non-physician practitioners' overall enhancement to a surgical resident's experience. <i>Journal of Surgical Education</i> . 65(1), 50-53.	Survey of surgical residents in Mount Sinai Surgical Residency Program found NPP and residents have similar perceptions about NPP function, both believe NPP on service decreases resident workload. More NPPs than residents feel NPPs contribute to residents' clinical education and that NPPs provide better continuity of care. 75% of NPPs believe they function at senior resident level or above, where 90.5% residents believe NPPs function at intern level or below.	Education	
"Outcomes of Tube Thoracostomies Performed by Advanced Practice Providers Vs. Trauma Surgeons"	Bevis, L. C., Berg-Copas, G. M., Thomas, B. W., Vasquez, D. G., Wetta-Hall, R., Brake, D., ...Harrison, P.	<i>American Journal of Critical Care</i>	2008	Bevis, L. C., Berg-Copas, G. M., Thomas, B. W., Vasquez, D. G., Wetta-Hall, R., Brake, D., ...Harrison, P. (2008). Outcomes of Tube Thoracostomies Performed by Advanced Practice Providers vs. Trauma Surgeons. <i>American Journal of Critical Care</i> . 17(4), 357-363.	OBJECTIVES: To determine whether the quality of tube thoracostomies performed by advanced practice providers (PAs & NPs) is comparable to that performed by trauma surgeons and to ascertain whether complication rates differ as to who performed the procedure. RESULTS: Differences between practitioner type...were not significant. CONCLUSION: Use of advanced practice providers provides consistent and quality tube thoracostomies. Employment of these practitioners may be a reasonable solution for staffing trauma centers.	Practice	
"Nurse Practitioners and Physician Assistants in the Intensive Care Unit: An Evidence-Based Review"	Kleinpell, R.M., Ely, E.W., & Grabenkort, R.	<i>Critical Care Medicine</i>	2008	Kleinpell, R.M., Ely, E.W., & Grabenkort, R. (2008). Nurse practitioners and physician assistants in the intensive care unit: an evidence-based review. <i>Critical Care Medicine</i> . 36(10), 2888-2897.	OBJECTIVE: To identify published literature on the role of nurse practitioners and physician assistants in acute and critical care settings; to review the literature using non-quantitative methods and provide a summary of the results to date incorporating studies assessing the impact and outcomes of nurse practitioner and physician assistant providers in the intensive care unit; and to identify implications for critical care practice. CONCLUSIONS: Although existing research supports the use of nurse practitioners and physician assistants in acute and critical care settings, a low level of evidence was found with only two randomized control trials assessing the impact of nurse practitioner and PA care	Value/Impact	
"Implementation fo a Physician Assistant/Hospitalist Service in an Academic Medical Center; Impact on Efficiency and Patient Outcomes"	Roy, C.L., Liang, C.L., Lund, M., Boyd, C., Katz, J.T., McKean, S., & Schnipper J.L.	<i>J Hosp Med</i>	2008	Roy, C.L., Liang, C.L., Lund, M., Boyd, C., Katz, J.T., McKean, S., & Schnipper J.L. (2008). Implementation of a physician assistant/hospitalist service in an academic medical center: impact on efficiency and patient outcomes. <i>J Hosp Med</i> . 3(5), 361-368.	OBJECTIVE: To evaluate the quality and efficiency of patient care on a physician assistant/hospitalist service compared with that of traditional house staff services. CONCLUSIONS: For general medicine inpatients admitted to an academic medical center, a service staffed by hospitalists and physician assistants can provide a safe alternative to house staff services, with comparable efficiency.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Effect of Disease Management Algorithm and Dedicated Postacute Coronary Syndrome Clinic on Achievement of Guideline Compliance: Results from the Parkland Acute Coronary Event Treatment Study"	Yurio, J., Viswanatha, S., See, R., Uchal, L., McWhorter, J. A., Spencer, N...McGuire, D. K.	<i>Journal of Investigative Medicine</i>	2008	Yurio, J., Viswanatha, S., See, R., Uchal, L., McWhorter, J. A., Spencer, N...McGuire, D. K. (2008). The effect of disease management algorithm and dedicated postacute coronary syndrome clinic on achievement of guideline compliance: results from the parkland acute coronary event treatment study. <i>Journal of Investigative Medicine</i> . 56(1), 15-25.	The implementation of a post acute coronary syndromes clinic run by a physician extender applying disease management algorithm did not measurably improve adherence to treatment goals.	Practice	
"Psychosocial Issues in Primary Care Physician Assistant Practice: A Descriptive Study"	Kilgore, C., Richter, R. R., Siler, W.L., & Sayre-Stanhope, D.	<i>Journal of Physician Assistant Education</i>	2008	Kilgore, C., Richter, R. R., Siler, W.L., & Sayre-Stanhope, D. (2008). Psychosocial issues in primary care physician assistant practice: a descriptive study. <i>Journal of Physician Assistant Education</i> . 19(4), 4-13.	This study examines the frequency of psychosocial issues seen in primary care PA practice and the degree and manner in which PAs respond to the psychosocial issues seen. Conclusions: A variety of psychosocial issues are frequently seen in primary care PA practice.	Practice	
"Characteristics of Office-Based Physicians and Their Medical Practices: United States, 2005-2006"	Hing, E. & Burt, C. W.	<i>Vital and Health Statistics</i>	2008	Hing, E. & Burt, C. W. (2008). Characteristics of office-based physicians and their medical practices: United States, 2005-2006. <i>Vital and Health Statistics</i> . 166, 1-34.	Analysis of data from the 2005 and 2006 National Ambulatory Medicare Care Surveys found 11.5 percent of medical practices employed at least one mid-level provider	Practice	
"Federally Employed Physician Assistants"	Hooker, R. S.	<i>Military Medicine</i>	2008	Hooker, R. S. (2008). Federally Employed Physician Assistants. <i>Military Medicine</i> . Vol. 173, Iss. 9; pg. 895.	The federal government is the largest single employer of clinically active PAs in the US. The author presents an overview of how PAs are being used and the critical roles they play in the federal health care system. A centralized recruitment and retention strategy is one suggested option to help the government compete with private sector and civilian opportunities.	Practice	
"The US Dermatology Workforce: A Specialty Remains in Shortage"	Kimball, A.B., & Resneck, J.S. Jr.	<i>Journal of the American Academy of Dermatology</i>	2008	Kimball, A.B., & Resneck, J.S. Jr. (2008). The US dermatology Workforce: a specialty remains in shortage. <i>Journal of the American Academy of Dermatology</i> . 59(5), 741-745.	METHODS: This study sought to follow up the large data set collected by the American Academy of Dermatology in 2002; the survey was repeated in 2005 and 2007. PA RELEVANT CONCLUSIONS: In 2007, 23% of practices reported employing a physician assistant and 10% a nurse practitioner (up from 15% and 8% in 2002)	Workforce	
"Industry Funding of Medical Education: A Report from the AAMC Task Force"	Association of American Medical Colleges	<i>AAMC Task Force Report</i>	2008	Association of American Medical Colleges. (2008). Industry funding of medical education: A report from the AAMC task force. Washington, DC: Author.		Education	
"Report on the Audit of Health Workforce in Rural and Regional Australia"	Australian Government of Health and Ageing		2008	Australian Government of Health and Ageing. (2008). Report on the audit of health Workforce in rural and regional Australia, April 2008. Commonwealth of Australia Canberra.		International; Workforce	
"Physician Assistant: A Guide to Clinical Practice (4th ed)"	Ballweg, R. M.	<i>Philadelphia: Saunders/Elsevier Science</i>	2008	Ballweg, R. M. (2008). <i>Physician Assistant: A Guide to Clinical Practice</i> (4th ed). Philadelphia: Saunders/Elsevier Science.		History	
"Options for Expanding the Health Workforce"	Brooks, P. M., Robinson, L., & Ellis, N.	<i>Australian Health Review</i>	2008	Brooks, P. M., Robinson, L., & Ellis, N. (2008). Options for expanding the health Workforce. <i>Australian Health Review</i> , 32(1), 156-160.	Health Workforce reform remains a major challenge for Australia. The recent Productivity Commission report provided some guidance but few of the recommendations have been implemented. Health economies (and with them the health Workforce) will continue to expand as the burden of disease increases. The important issue is to expand the current Workforce but provide for a generalist stream that allows flexibility and retraining. The future health Workforce needs to be able to provide patient-centred care, to have a focus on public health and disease prevention, use information and the new communication technologies, to be able to work as part of a team and partner with a range of organisations and to be dedicated to quality improvement within the health system	Workforce	
"The Doctor of Nursing Practice Degree: Lessons from the History of the Professional Doctorate in Other Health Disciplines"	Brown-Benedict, D. J.	<i>Journal of Nursing Education</i>	2008	Brown-Benedict, D. J. (2008). The doctor of nursing practice degree: Lessons from the history of the professional doctorate in other health disciplines. <i>Journal of Nursing Education</i> , 47(10) , 448-457.	Despite the American Association of Colleges of Nursing's adoption of the Doctor of Nursing Practice (DNP) degree as the appropriate level of education for advanced practice, a number of controversies have persisted, including questions of timing, academic support, grandfathering, diffusion of nursing research, and economics. This article discusses the path to the professional doctorate in optometry, osteopathy, public health, pharmacy, physical therapy, audiology, chiropractic, and naturopathy. It reveals similar struggles to professionalism and the consensus drawn from doctoral development in these fields. It concludes with lessons for a path forward for the DNP.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Use of Standardized Patients in the Training and Evaluation of Physician Assistant Students"	Calhoun, B. C., Vrbin, C. M., & Grzybicki, D. M.	<i>Journal of Physician Assistant Education</i>	2008	Calhoun, B. C., Vrbin, C. M., & Grzybicki, D. M. (2008). The use of standardized patients in the training and evaluation of physician assistant students. <i>Journal of Physician Assistant education</i> , 19(1), 18-23.	The primary aim of this study was to determine the extent to which program use SPs and whether SP utilization varied by the program's affiliation with an academic center on medical school. Self-administered surveys were sent to one academic coordinator at each of the then 134 accredited PA programs. 96 programs returned surveys. Results showed that the majority of accredited PA training programs used Standardized Patients. Although they play a range of educational roles, they are most commonly used for the most sensitive components of physical examination.	Education	
"Assessment of Emergency Physician Workforce Needs in the United States, 2005"	Camargo, C. A., Jr., Ginde, A. A., Singer, A. H., Espinola, J. A., Sullivan, A. F., Pearson, J. F., et al.	<i>Academic Emergency Medicine</i>	2008	Camargo, C. A., Jr., Ginde, A. A., Singer, A. H., Espinola, J. A., Sullivan, A. F., Pearson, J. F., et al. (2008). Assessment of emergency physician work-force needs in the United States, 2005. <i>Academic Emergency Medicine</i> , 5(12), 1317-1320.	The objective was to estimate emergency physician (EP) Workforce needs, taking into account the diversity of U.S. emergency departments (EDs) and various projections of EP supply and demand. Results showed that the supply of EM residency-trained, board-certified EPs is not likely to meet demand in the near future. Alternative EP staffing arrangements merit further considerations	Workforce	
"People v. Whitaker: The Trial and its Aftermath in California"	Carter, R., Thompson, A., & Stanhope, B.	<i>Journal of Physician Assistant Education</i>	2008	Carter, R., Thompson, A., & Stanhope, B. (2008). <i>People v. Whitaker: The trial and its aftermath in California. Journal of Physician Assistant Education</i> , 19(2), 44-51. C		History	
"Correctional Medicine"	Chavez, R. S.	<i>Physician Assistant: A Guide to Clinical Practice (4th ed)</i>	2008	Chavez, R. S. (2008). Correctional medicine. In R. Ballweg, E. M. Sullivan, D. Brown, & D. Vetrosky (Eds.), <i>Physician Assistant: A Guide to Clinical Practice (4th ed., pp. 828-850). Philadelphia: Saunders/Elsevier.</i>		Practice	
"National Ambulatory Care Medical Survey (NHAMCS): 2006 Summary"	Cherry, D. K., Hing, E., Woodwell, D. A., & Rechtsteiner, E. A.	<i>National Health Statistics Report</i>	2008	Cherry, D. K., Hing, E., Woodwell, D. A., & Rechtsteiner, E. A. (2008). National Ambulatory Medical Care Survey (NHAMCS): 2006 summary. <i>National Health Statistics Report</i> , 3. Hyattsville, MD: Centers for Disease Control and Prevention, National Center for Health Statistics.		Workforce	
"Military medicine"	Chitwood, J. L.	<i>Physician Assistant: A Guide to Clinical Practice (4th ed)</i>	2008	Chitwood, J. L. (2008). Military medicine. In R. Ballweg, E. M. Sullivan, D. Brown, & D. Vetrosky (Eds.), <i>Physician Assistant: A Guide to Clinical Practice (4th ed., pp. 851-860). Philadelphia: Saunders/Elsevier.</i>		Practice	
"Will Generalist Physician Supply Meet Demands of an Increasing and Aging Population?"	Colwill, J. M., Cultice, J. M., & Kruse, R. L.	<i>Health Affairs</i>	2008	Colwill, J. M., Cultice, J. M., & Kruse, R. L. (2008). Will generalist physician supply meet demands of an increasing and aging population? <i>Health Affairs</i> , 27(3), 232-241.	Researchers predict that population growth and aging will increase family physicians' and general internists' workloads by 29 percent between 2005 and 2025. Researchers also expect a 13 percent increased workload for care of children by pediatricians and family physicians. However, the supply of generalists for adult care, adjusted for age and sex, will increase 7 percent, or only 2 percent if the number of graduates continues to decline through 2008. Deficits are expected of 35,000-44,000 adult care generalists, although the supply for care of children should be adequate. These forces threaten the nation's foundation of primary care for adults.	Workforce	
"Introducing Physician Assistants into New Roles: International Experiences"	Frossard, L. A., Liebich, G., Hooker, R. S., Brookes, P. M., & Robinson, L.	<i>Medical Journal of Australia</i>	2008	Frossard, L. A., Liebich, G., Hooker, R. S., Brookes, P. M., & Robinson, L. (2008). Introducing physician assistants into new roles: International experiences. <i>Medical Journal of Australia</i> , 188(4), 199-201.		International; Workforce	
"The Political Process"	Gara, N., & Davis, A.	<i>Physician Assistant: A Guide to Clinical Practice (4th ed)</i>	2008	Gara, N., & Davis, A. (2008). The political process. In R. Ballweg, E. Sullivan, D. Brown, & D. Vetrosky (Eds.), <i>Physician Assistant: A Guide to Clinical Practice (4th ed., pp. 44-91). Philadelphia: Elsevier/ Saunders.</i>		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Reason for Visit: Is Migrant Health Care that Different?"	Henning G. F., Graybill, M., & George, J.	<i>Journal of Rural Health</i>	2008	Henning G. F., Graybill, M., & George, J. (2008). Reason for visit: Is migrant health care that different? <i>Journal of Rural Health</i> , 24(2), 219–220.	The purpose of this pilot study was to determine the reasons for which migrant agricultural workers in Pennsylvania seek health care. Participants were individuals 14 years of age and over, actively involved in agricultural labor and presenting for medical care at 6 migrant health centers. Bilingual health care providers randomly selected and interviewed the participants. The most commonly reported reason for visiting the health care provider was for physical examination. The most frequent acute problems were related to the musculoskeletal and integumentary systems. Frequently cited problems in the medical history were hypertension, musculoskeletal/back pain, and gastrointestinal conditions. Most medications being taken were for cardiovascular or pain-related problems. These results suggest that migrant workers present with medical problems that are similar to those of the general primary care population. Many problems were recurrent and represented common chronic medical conditions.	Practice	
"The Use of Physician Assistants and Nurse Practitioners in Rheumatology. Principles of Non-Pharmacological Management of Musculoskeletal Conditions"	Hooker, R. S.	<i>Rapid Medical Media</i>	2008	Hooker, R. S. (2008). <i>The Use of Physician Assistants and Nurse Practitioners in Rheumatology. Principles of Non-Pharmacological Management of Musculoskeletal Conditions</i> . Sussex, UK: Rapid Medical Media, 2008.		Practice	
"Emergency Medicine Services: Interprofessional Care Trends"	Hooker, R. S., Cipher, D. J., Cawley, J. F., Herrmann, D., & Melson, J.	<i>Journal of Interprofessional Care</i>	2008	Hooker, R. S., Cipher, D. J., Cawley, J. F., Herrmann, D., & Melson, J. (2008). Emergency medicine services: Interprofessional care trends. <i>Journal of Interprofessional Care</i> , 22 (2), 167–178.	To understand trends in emergency medicine and interprofessional roles in delivering this care, we analyzed a 10-year period (1995-2004) by provider, patient characteristics, and diagnoses. The focus was on how doctors, physician assistants (PAs) and nurse practitioners (NPs) share emergency medicine visits. The National Hospital Ambulatory Medical Care Survey of over 1 billion "weighted" emergency room visits for 1995 to 2004 was analyzed. The majority of patients were female (53.2%); the mean age of all patients was 35.3 years old. By 2004, physicians were the provider of record for emergency visits at 92.6%, with PAs at 5.7% and NPs at 1.7%. Emergency visits increased for all three providers over the ten years with PA growth doubling during this same period. Medications were prescribed for three-quarters of the visits and were consistent in the mean number of prescriptions written across the three prescribers. No significant differences emerged when urban and rural settings were compared. Expansion of the roles and interprofessional care provided by NPs and PAs include increasing acceptance, clarification of legal and regulatory aspects of practice, shared roles, team approaches to shortages of fully-trained doctors, and the limitation of working hours of physician postgraduate trainees. The US forecast for emergency department visits is expected to outpace the growth of the population and the supply of emergency medicine providers. In view of an increasing emergency medical demand and a continuing shortage of physician personnel, policies are needed for Workforce planning to meet the demand.	Workforce	
"Physician Assistant and Nurse Practitioner: Malpractice Claims and Compensation, 1991 to 2008"	Hooker, R. S., Nicholson J., & Le, T.	<i>Unpublished manuscript</i>	2008	Hooker, R. S., Nicholson J., & Le, T. (2008). <i>Physician assistant and nurse practitioner: Malpractice claims and compensation 1991 to 2008</i> . Unpublished manuscript.		Gray Literature; Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Role Delineation of Rheumatology Physician Assistants"	Hooker, R. S., & Rangan, B.V.	<i>Journal of Clinical Rheumatology</i>	2008	Hooker, R. S., & Rangan, B.V. (2008). Role delineation of rheumatology physician assistants. <i>Journal of Clinical Rheumatology</i> , 14 (4), 202–205.	A role delineation study of rheumatology PAs was undertaken to learn how they provide care. Four databases were merged into a master file of 112 rheumatology PAs. A combination of telephone interviews and web-based surveys allowed probing the role, relationship and scope of practice of the study population. Results showed that PAs employed in rheumatology practices function in a role that is delegated by their supervising doctor. This self-report survey suggests this activity is at a high skill level. They are evaluating patients, initiating treatment, and following them longitudinally. Most find this career satisfying. Increasing the number of rheumatology PAs may offset some of the physician losses experienced as a result of retirement.	Workforce	
"Medicare, Graduate Medical Education, and New Policy Directions"	Iglehart, J.	<i>New England Journal of Medicine</i>	2008	Iglehart, J. (2008). Medicare, graduate medical education, and new policy directions. <i>New England Journal of Medicine</i> , 359 (6), 643–650.	This report discusses the key issues that surround graduate medical education policy as it relates to Medicare and Medicaid.	Education	
"Health Workforce: A Case for Physician Assistants? Report No. 24"	Jolly, R.	<i>Parliamentary Library, Commonwealth of Australia</i>	2008	Jolly, R. (2008). Health Workforce: A case for physician assistants? Report no. 24, Parliamentary Library, Commonwealth of Australia, Canberra, 1–36.		Workforce	
"Doctor and Physician Assistant Distribution in Rural and Remote Texas Counties"	Jones, P. E.	<i>Australian Journal of Rural Health</i>	2008	Jones, P. E. (2008). Doctor and physician assistant distribution in rural and remote Texas counties. <i>Australian Journal of Rural Health</i> , 16(2), 12.		Workforce	
"Postgraduate Education for the Physician Assistant: Where Are We Heading?"	Knott, P.	<i>Journal of Physician Assistant Education</i>	2008	Knott, P. (2008). Postgraduate education for the physician assistant: Where are we heading? <i>Journal of Physician Assistant Education</i> , 19 (3), 6–7.	The author reflects on the job offered to him as a feature editor for a section in a journal which explores issues needing education of physician assistants (PAs) beyond their entry-level training program. He hopes to see the section of the journal a place for scholarly debate which defines the true nature of the postgraduate education of a PA. He claims that the issue presents an example of the first postgraduate PA training program that rises to a doctoral degree in a clinical specialty.	Education	
"Expanding PAs' Roles in Aesthetic Practices"	Lennox, K. P.	<i>ADVANCE for Physician Assistants</i>	2008	Lennox, K. P. (2008). Expanding PAs' roles in aesthetic practices. <i>ADVANCE for Physician Assistants</i> , 16 (1–2), 30.	Krystie P. Lennox, PA-C, gives advice to PAs on how to succeed in aesthetic medicine.	Workforce	
"A Longitudinal Analysis of the General Surgery Workforce in the United States"	Lynge, D. C., Larson, E. H., Thompson, M. J., Rosenblatt, R. A., & Hart, L. G.	<i>Archives of Surgery</i>	2008	Lynge, D. C., Larson, E. H., Thompson, M. J., Rosenblatt, R. A., & Hart, L. G. (2008). A longitudinal analysis of the general surgery Workforce in the United States, 1981–2005. <i>Archives of Surgery</i> , 143(4), 345–350.	This study analyzed the supply of general surgeons in the United States through a retrospective longitudinal analysis. Results showed that the overall number of general surgeons per 100 000 population has declined by 25.91% during the past 25 years. The decline has been most marked in urban areas. However, more remote rural areas continue to have significantly fewer general surgeons per 100 000 population. These findings have implications for training, recruiting, and retaining general surgeons	Workforce	
"CASPA The Applicant Pool - 2007 Cycle 7 Report"	McDaniel, M. J.	<i>Savannah, GA</i>	2008	McDaniel, M. J. (2008, November). <i>CASPA The Applicant Pool—2007 Cycle 7 Report</i> . Savannah, GA: CASPA Advisory Committee, Physician Assistant Education Association.		Education	
"Education"	Morton-Rias, D., & Hammond, J.	<i>Physician Assistant: A Guide to Clinical Practice</i>	2008	Morton-Rias, D., & Hammond, J. (2008). Education. In R. M. Ballweg, E. M. Sullivan, D. Brown, & D. Vetroskly (Eds.), <i>Physician Assistant: A Guide to Clinical Practice</i> (4th ed.). Philadelphia: Elsevier/ Saunders.		Education	
"Physician Assistant Medical Practice in the Health Care Workforce: A Retrospective Study of Medical Malpractice and Safety Comparing Physician Assistants to Physicians and Advanced Practice Nurses [unpublished dissertation]"	Nicholson, J. G.	<i>University of Wisconsin, Madison</i>	2008	Nicholson, J. G. (2008). Physician Assistant Medical Practice in the Health Care Workforce: A Retrospective Study of Medical Malpractice and Safety Comparing Physician Assistants to Physicians and Advanced Practice Nurses. Unpublished dissertation, University of Wisconsin, Madison.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Quality of Diabetes Care in Family Medicine Practices: Influence of Nurse-Practitioners and Physician's Assistants"	Ohman-Strickland, P. A., Orzano, A. J., Solberg, L. I., DiCiccio-Bloom, B., O'Malley, D., Tallia, A. F., Balasubramanian. B. A. et al.	<i>Annals of Family Medicine</i>	2008	Ohman-Strickland, P. A., Orzano, A. J., Solberg, L. I., DiCiccio-Bloom, B., O'Malley, D., Tallia, A. F., Balasubramanian. B. A. et al. (2008). Quality of diabetes care in family medicine practices: Influence of nurse-practitioners and physician's assistants. <i>Annals of Family Medicine</i> , 6(1), 14-22.	The aim of this study was to assess whether the quality of diabetes care differs among practices employing nurse-practitioners (NPs), physician's assistants (PAs), or neither, and which practice attributes contribute to any differences in care. This cross-sectional study of 46 family medicine practices from New Jersey and Pennsylvania measured adherence to American Diabetes Association diabetes guidelines via chart audits of 846 patients with diabetes. Practice characteristics were identified by staff surveys. Hierarchical models determined differences between practices with and without NPs or PAs. Results showed that family practices employing NPs performed better than those with physicians only and those employing PAs, especially with regard to diabetes process measures. The reasons for these differences are not clear.	Practice	
"The Supply and Demand of Physician Assistants in the United States: A Trend Analysis"	Orcutt, V. L.	<i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i>	2008	Orcutt, V. L. (2008). The supply and demand of physician assistants in the United States: A trend analysis. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> , 68 (8), 5118.	The supply of non-physician clinicians (NPCs), such as physician assistant (PAs), could significantly influence demand requirements in medical Workforce projections. This study predicts supply of and demand for PAs from 2006 to 2020. The PA supply model utilized the number of certified PAs, the educational capacity (at 10% and 25% expansion) with assumed attrition rates, and retirement assumptions. Gross domestic product (GDP) chained in 2000 dollar and US population were utilized in a transfer function trend analyses with the number of PAs as the dependent variable for the PA demand model. Historical analyses revealed strong correlations between GDP and US population with the number of PAs. The number of currently certified PAs represents approximately 75% of the projected demand. At 10% growth, the supply and demand equilibrium for PAs will be reached in 2012. A 25% increase in new entrants causes equilibrium to be met one year earlier. Robust application trends in PA education enrollment (2.2 applicants per seat for PAs is the same as for allopathic medical school applicants) support predicted increases. However, other implications for the PA educational institutions include recruitment and retention of qualified faculty, clinical site maintenance and diversity of matriculates. Further research on factors affecting the supply and demand for PAs is needed in the areas of retirement age rates, gender, and lifestyle influences. Specialization trends and visit intensity levels are potential variables.	Workforce	
"OECD Health Data 2008: Statistics and Indicators for 30 Countries"	Organisation for Economic Co-Operation and Development		2008	Organisation for Economic Co-operation and Development (OECD). (2008). OECD health data 2008: Statistics and indicators for 30 countries. Retrieved April 13, 2007, from http://www.oecd.org/document/30/0,2340,en_2649_37407_12968734_1_1_1_37407,00.html	OECD Health Data 2008, released on 26 June 2008, offers the most comprehensive source of comparable statistics on health and health systems across OECD countries. It is an essential tool for health researchers and policy advisors in governments, the private sector and the academic community, to carry out comparative analyses and draw lessons from international comparisons of diverse health care systems.	International; Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Productivity of PAs, APRNs, and Physicians in Utah"	Pedersen, D. M., Chappell, B., Elison, G., & Bunnell, R.	<i>Journal of the American Academy of Physician Assistants</i>	2008	Pedersen, D. M., Chappell, B., Elison, G., & Bunnell, R. (2008). The productivity of PAs, APRNs, and physicians in Utah. <i>Journal of the American Academy of Physician Assistants</i> , 21 (1), 42–47.	The physician assistant Workforce in Utah is experiencing remarkable growth, with a 9% net annual rate of increase since 1998. An additional 84 PAs provided patient care in Utah in the 4-year period of 1998 through 2001, an average increase of 21 per year. The Utah Medical Education Council believes that the demand for PAs will be high over the next 10 to 15 years, with several factors fueling this growth. Productivity is one of these factors. Even though Utah PAs make up only approximately 6.3% of the state's combined clinician (physician, PA, advanced practice registered nurse [APRN]) Workforce; the PAs contribute approximately 7.2% of the patient care full-time equivalents (FTE) in the state. This is in contrast to the 10% FTE contribution made by the state's APRN Workforce, which has nearly triple the number of clinicians providing patient care in the state. The majority (73%) of Utah PAs work at least 36 hours per week. Utah PAs also spend a greater percentage of the total hours worked in patient care, when compared to the physician Workforce. The rural PA Workforce reported working a greater number of total hours and patient care hours when compared to the overall PA Workforce.	Workforce	
"Who Else is Providing Care in Dermatology Practices? Trends in the Use of Nonphysician Clinicians"	Resneck J. S., Jr. & Kimball, A. B.	<i>Journal of the American Academy of Dermatology</i>	2008	Resneck J. S., Jr. & Kimball, A. B. (2008). Who else is providing care in dermatology practices? Trends in the use of nonphysician clinicians. <i>Journal of the American Academy of Dermatology</i> , 58 (2), 211–216.	This study investigated which dermatology practices use PAs, how they are supervised, and the services that PAs are providing. Researchers analyzed results of the American Academy of Dermatology's 2007 practice profile survey to learn more about patterns of nonphysician clinician (NPC) use. Results found that in the setting of persistently long patient wait times and difficulty recruiting new physician staff, dermatologists have rapidly turned to PAs and NPs to help meet patient demand for care. These NPCs are primarily caring for new and established medical dermatology patients under indirect supervision. In the absence of explicit consensus or policy as to how the field should ensure future access to care for patients with skin disease, growth in the use of NPCs has continued, with significant variation in use and supervision patterns.	Workforce	
"The Role of Physician Assistants in Oncology"	Ross A. C.	<i>ADVANCE for Physician Assistants</i>	2008	Ross A. C. (2008). The role of physician assistants in oncology. <i>ADVANCE for Physician Assistants</i> , 12 (3), 46–49.	The purpose of the study was to understand the deployment of physician assistants (PAs) in oncology. A recent analysis of the oncology Workforce in the United States commissioned by ASCO predicted a significant shortage of providers by 2020. A descriptive study was undertaken using a Web-based questionnaire survey. Invited participants, including all PAs listed in the national PA database (n = 855) and all PAs at The University of Texas M. D. Anderson Cancer Center (Houston, TX; n = 159), were mailed letters directing them to the Web-based survey. The study produced a 30% response rate. Results showed that oncology PAs are used in multiple medical settings, and many assume high-level responsibilities.	Workforce	
"Physician Assistants: A UK Perspective on Clinical Need, Education, and Regulation"	Ross, N., & Parle, J.	<i>Clinical Teacher</i>	2008	Ross, N., & Parle, J. (2008). Physician assistants: A UK perspective on clinical need, education and regulation. <i>Clinical Teacher</i> , 5 (1), 28–32.	In this paper, the authors describe PA profession developments in the United Kingdom.	International	
"A Clinical Doctorate in Emergency Medicine for Physician Assistants: Postgraduate Education"	Salyer, S. W.	<i>Journal of Physician Assistant Education</i>	2008	Salyer, S. W. (2008). A clinical doctorate in emergency medicine for physician assistants: Postgraduate education. <i>Journal of Physician Assistant Education</i> , 19 (3), 53–56.	Postgraduate education in emergency medicine for PAs was developed over 30 years ago and has now evolved into a clinical doctorate degree at one institution, the US Army postgraduate education program in emergency medicine, at Brooke Army Medical Center, Fort Sam Houston, Texas, is 18 months in length and currently admits four PAs a year. IT is highly structured to expose PAs to almost all battlefield trauma conditions. This paper outlines the structure of this unique program and a profile of the first graduates.	Education	
"Is There a Doctor in the House? Market Signals and Tomorrow's Supply of Doctors"	Scheffler, R. M.	<i>Stanford University Press</i>	2008	Scheffler, R. M. (2008). <i>Is There a Doctor in the House? Market Signals and Tomorrow's Supply of Doctors</i> . Berekley, CA: Stanford University Press.	Richard M. Scheffler shows how shifts in market power underlie changes in the healthcare Workforce and how these shifts will affect the future availability of doctors.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Delivering Health Care in America"	Shi, L., & Singh, D. A.	Jones & Bartlett	2008	Shi, L., & Singh, D. A. (2008). <i>Delivering Health Care in America</i> . Sudbury, MA: Jones & Bartlett.	This book provides a comprehensive overview of the basic structures and operations of the US health system—from its historical origins and resources, to its individual services, cost, and quality.	History	
"What Do Physician Extenders in a General Surgery Residency Really Do?"	Stahlfeld, K. R., Robinson, J. M., & Burton, E. C.	<i>Journal of Surgical Education</i>	2008	Stahlfeld, K. R., Robinson, J. M., & Burton, E. C. (2008). What do physician extenders in a general surgery residency really do? <i>Journal of Surgical Education</i> , 65(5), 354–358.	The 80-hour workweek has forced surgical training programs to employ physician extenders to reduce work hours and improve the educational environment. The purpose of this study was to document objectively the specific workload provided by physician extenders and to evaluate any objective or subjective benefit provided to the residency program. Over 4 consecutive months, all orders written by 2 physician extenders associated exclusively with the general surgery residency program at the researchers' institution were reviewed and categorized. Results showed that physician extenders wrote appropriate orders and reduced resident workload. Educational opportunities increased because fewer residents left conference for acute patient care issues, and 1 fewer resident was absent during the day secondary to 1 less resident being sent home postcall. Performance on the American Board of Surgery In-Training Examination (ABSITE) increased dramatically for a focused group of residents. As the expense of each extender is approximately \$90,000, justification to administration is dependent on the institutional support and efficiency of the residency program. A clear simple outcome is that by improving standing orders and clinical pathways, and by using an electronic medical record system, noneducational work hours can be reduced significantly.	Practice	
"One Day in the Life"	Steiner, S.	<i>Journal of the American Academy of Physician Assistants</i>	2008	Steiner, S. (2008). One day in the life. <i>Journal of the American Academy of Physician Assistants</i> , 21 (43), 22–24.		Practice	
"Side by Side: Can Physician Assistants Help Rural Doctors?"	Sweet, M.	<i>Australian Rural Doctor</i>	2008	Sweet, M. (2008, April). Side by side: Can physician assistants help rural doctors? <i>Australian Rural Doctor</i> , 6–14.		Practice	
"Occupational Outlook Handbook"	U.S. Department of Labor, Bureau of Labor Statistics	<i>Physicians and Surgeons</i>	2008	U.S. Department of Labor, Bureau of Labor Statistics (2008). <i>Occupational Outlook Handbook. Physicians and Surgeons</i> . Retrieved February 29, 2008, from http://www.bls.gov/oco/ocos074.htm#projections_data		Workforce	
"Postgraduate Physician Assistant Training Programs in the United States: Emerging Trends and Opportunities"	Wiemiller, M. J. P. M., Somers, K. K., & Adams, M. B.	<i>Journal of Physician Assistant Education</i>	2008	Wiemiller, M. J. P. M., Somers, K. K., & Adams, M. B. (2008). Postgraduate physician assistant training programs in the United States: emerging trends and opportunities. <i>Journal of Physician Assistant Education</i> , 19 (4), 58–63.	This descriptive review was completed for the purpose of delineating existing postgraduate PA programs and projecting similarities among them. Data provided in this descriptive review showed commonality in training postgraduate PAs and how accreditation of all programs will be necessary to monitor ongoing excellence in postgraduate training and the emergence of new postgraduate training programs.	Education	
"Sponsorship of PA Educational Programs"	Wright, K., Cawley, J. F., Ahuja, M., & Hooker, R. S.	<i>Physician Assistant Education Association [presentation]</i>	2008	Wright, K., Cawley, J. F., Ahuja, M., & Hooker, R. S. (2008, Fall). <i>Sponsorship of PA educational programs</i> . Presented to the Physician Assistant Education Association, Alexandria, VA.		Education	
"PAs in the U.S. Public Health Service"	Zarychta, W. A., Milner, M. R., & Hunter-Buskey, R. N.	<i>ADVANCE for Physician Assistants</i>	2008	Zarychta, W. A., Milner, M. R., & Hunter-Buskey, R. N. (2008). PAs in the U.S. public health service. <i>ADVANCE for Physician Assistants</i> , 16 (5-6), 52-54.	This article describes the history and mission of the USPHS and identifies several of the roles of PAs within the organization.	History	
The extension of rheumatology services with physician assistants and nurse practitioners	Hooker RS	<i>Best Practice & Research: Clinical Rheumatology</i>	2008	Hooker RS. The extension of rheumatology services with physician assistants and nurse practitioners. <i>Best Practice & Research: Clinical Rheumatology</i> . 2008; 22 (3): 523-533.		Practice	
Autonomous physician assistants in remote locations: perspectives from the communities they serve	Henry L, Hooker RS	<i>Journal of Physician Assistant Education</i>	2008	Henry L, Hooker RS. Autonomous physician assistants in remote locations: perspectives from the communities they serve. <i>Journal Physician Assistant Education</i> . 2008; 19 (1): 34-37.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
Pale sunlight through a dusty window: physician assistant research	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2008	Hooker RS. Pale sunlight through a dusty window: physician assistant research. <i>Journal of the American Academy of Physician Assistants</i> . 2008. 21(11): 13.	Editorial on a call for more PA focused research.	Education	
International Physician Assistant Development	Hooker RS	<i>In Physician Assistants; A Guide to Clinical Practice</i>	2008	Hooker RS. International Physician Assistant Development. In <i>Physician Assistants; A Guide to Clinical Practice</i> . R. Ballweg, E. Sullivan, Vertrosky, D (eds.) 4th Edition. 2008; WB Saunders, Boston, MA.		International	
"Assessing the Correlation of Student Clinical Encounters and PANCE Performance"	Min, E., Comstock, H., & Dickey, B.	<i>Journal of Physician Assistant Education</i>	2009	Min, E., Comstock, H., & Dickey, B. (2009). Assessing the correlation of student clinical encounters and PANCE performance. <i>Journal of Physician Assistant Education</i> . 20(1), 39-41.	Little research exists regarding the correlation between the quantity of clinical encounters and performance on the Physician Assistant National Certifying Examination (PANCE) scores. The findings of the analysis revealed no significant correlation between numbers of clinical encounters and PANCE scores.	Education	
"Assessing the Factors that Affect Potential Prescribing Patterns of Plan B in UTMB Physician Assistant Students"	Munsell, D., Conner, L., Hickman, L., & Thurman, K.	<i>Internet Journal of Academic Physician Assistants</i>	2009	Munsell, D., Conner, L., Hickman, L., & Thurman, K. (2009). Assessing the factors that affect potential prescribing patterns of Plan B in UTMB physician assistant students. <i>Internet Journal of Academic Physician Assistants</i> . 6(2).	The aim of this study was to explore what values and beliefs play a role in physician assistant students' opinions on Plan B and whether or not they will prescribe it in the future. The results showed that the strongest factor influencing students to prescribe Plan B in the future is the individual patient scenario, while the strongest factor influencing them to not prescribe Plan B is religious beliefs.	Practice	
"Medical Spanish Curriculum: A Five-Year Retrospective Analysis of Physician Assistant Student Performance"	Forister, J. G., & González C. M.	<i>Journal of Physician Assistant Education</i>	2009	Forister, J. G., & González C. M. (2009). Medical Spanish curriculum: a five-year retrospective analysis of physician assistant student performance. <i>Journal of Physician Assistant Education</i> . 20(2), 14-16.	Purpose: To evaluate the effectiveness of medical Spanish instruction by assessing Spanish language comprehension in physician assistant (PA) education. Conclusions: Medical Spanish instruction to PA students provides a basis for the development of foreign language competency for use in the clinical setting.	Education	
"Provider Networks and Primary-Care Signups: Do they Restrict Use of Medical Services?"	Deb, P. & Trevidi, P. K.	<i>Health Economics</i>	2009	Deb, P. & Trevidi, P. K. (2009). Provider networks and primary-care signups: do they restrict use of medical services? <i>Health Economics</i> . 18(12), 1361-1380.	Data from the Community Tracking Survey (1996-1998) show enrollees in plans with networks of physicians have fewer office-based visits to non-physician medical professionals but more ER visits and hospital stays. Individuals in plans requiring signup w/primary care provider have more visits to non-physician providers of care, more surgeries and hospital stays, but fewer ER visits.	Workforce	
"The Self-Reported, Perceived Effect of Interactions with Pharmaceutical Industry on Physician Assistant Students and Recent Program Graduates"	Caputo, C., Swanson, M., Quigley, T., Ablah, E., & Asprey, D.	<i>Journal of Physician Assistant Education</i>	2009	Caputo, C., Swanson, M., Quigley, T., Ablah, E., & Asprey, D. (2009). The self-reported, perceived effect of interactions with pharmaceutical industry on physician assistant students and recent program graduates. <i>Journal of Physician Assistant Education</i> . 20(3), 31-35.	Survey of PA students at Wichita State University found all respondents reported at least one type of interaction with a pharmaceutical industry representative, and majority reported they would be less likely to be influenced by marketing strategies than would their colleagues.	Education	
"Using the Angoff Method to Set Defensible Cutoff Scores for Standardized Patient Performance Evaluations in PA Education"	Carlson, J., Tomkowiak, J., & Stilp, C.	<i>Journal of Physician Assistant Education</i>	2009	Carlson, J., Tomkowiak, J., & Stilp, C. (2009). Using the Angoff method to set defensible cutoff scores for standardized patient performance evaluations in PA education. <i>Journal of Physician Assistant Education</i> . 20(1), 15-23.	Purpose: This study explored the reliability and credibility of a standardized patient (SP)-based performance exam in physician assistant (PA) education with passing standards set using the Angoff method. Conclusions: The Angoff method proved to be a reliable and credible method for setting a passing cut-off score for the exam.	Education	
"A Pilot Study Assessing PA Students' Self-Assessment of Professionalism"	Knight, D., Higgins, R., Moser, S., & Groh, C.	<i>Journal of Physician Assistant Education</i>	2009	Knight, D., Higgins, R., Moser, S., & Groh, C. (2009). A pilot study assessing PA students' self-assessment of professionalism. <i>Journal of Physician Assistant Education</i> . 20(1), 24-29.	PURPOSE: This was a pilot project to develop a survey tool to measure students' self-perception of professionalism and to measure change in their perception over the course of their didactic year of study. CONCLUSIONS: It appears that some aspects of professionalism actually decrease during educational training, according to our results and at least one other study.	Education	
"Organizational Infrastructure of American Physician Assistant Education Programs"	Wright, K.A., Cawley, J.F., Hooker, R.S., & Ahuja, M.	<i>Journal of Physician Assistant Education</i>	2009	Wright, K.A., Cawley, J.F., Hooker, R.S., & Ahuja, M. (2009). Organizational infrastructure of American physician assistant education programs. <i>Journal of Physician Assistant Education</i> . 20 (3), 15-21.	Member programs of the Physician Assistant Education Association (PAEA) were surveyed in 2008. Demographic characteristics, sponsorship, and administrative structure were probed. Conclusions: Substantial variation exists among institutions sponsoring PA programs.	Education	
"Physician Assistants and Nurse Practitioners as a Usual Source of Care"	Everett, C. M., Schumacher, J. R., Wright, A., & Smith, M. A.	<i>Journal of Rural Health</i>	2009	Everett, C. M., Schumacher, J. R., Wright, A., & Smith, M. A. (2009). Physician assistants and nurse practitioners as a usual source of care. <i>Journal of Rural Health</i> . 25(4), 407-414.	Cross-sectional analysis with phone and mail surveys of Wisconsin Longitudinal Study found participants without insurance or with public insurance other than Medicare more likely than those with private insurance to utilize PAs/NPs. Patients of PA/NPs more likely to be women, younger, and have lower perceived access than those utilizing doctors. No significant difference in self-rated health or delays receiving care.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Low-Income Parents' Views on the Redesign of Well-Child Care"	Coker, T. R., Chung, P. J., Cowgill, B. O., Chen, L. & Rodriguez, M. A.	<i>Pediatrics</i>	2009	Coker, T. R., Chung, P. J., Cowgill, B. O., Chen, L. & Rodriguez, M. A. (2009). Low-income parents' views on the redesign of well-child care. <i>Pediatrics</i> . 2009 Jul;124(1):194-204.	Focus groups of low-income parents on redesigning a well-child care program found most parents endorsed non-physician providers and alternative locations and formats as desirable adjuncts to usual physician-provided, clinic-based well-child care. Non-physician providers were viewed as potentially more expert in behavioral/developmental issues than physicians and more attentive to the parent-provider relationship.	Value/Impact	
"Advance Care Planning in the Primary Care Setting: A Comparison of Attending Staff and Resident Barriers"	Tung, E. E., & North, F.	<i>American Journal of Hospice and Palliative Care</i>	2009	Tung, E. E., & North, F. (2009). Advance care planning in the primary care setting: a comparison of attending staff and resident barriers. <i>American Journal of Hospice and Palliative Care</i> . 26(6), 456-463.	Survey of staff provider and resident physicians found staff provider more likely than resident physicians to discuss advance care planning (ACP) and also more likely to believe that non-physician members of the care team should counsel patients about ACP	Practice	
"Dermatology Diagnosis Among Rural and Urban Physician Assistants"	Brown, B., Bushardt, R., Harmon, K., & Nguyen, S. A.	<i>Journal of American Academy of Physician Assistants</i>	2009	Brown, B., Bushardt, R., Harmon, K., & Nguyen, S. A. (2009). Dermatology diagnosis among rural and urban physician assistants. <i>JAAPA</i> . 22(12), 32-37.	This study sought to identify differences in the ability of rural and urban PAs to diagnose skin disorders. Average quiz score was higher for rural PAs than for urban PAs	Practice	
"Replacing an Academic Internal Medicine Residency Program with a Physician Assistant-Hospitalist Model: A Comparative Analysis Study"	Dhuper, S., & Choksi, S.	<i>Journal of Medical Quality</i>	2009	Dhuper, S., & Choksi, S. Replacing an academic internal medicine residency program with a physician assistant-hospitalist model: a comparative analysis study. <i>Journal of Medical Quality</i> . 24(2), 132-139.	This study describes a comparative analysis of replacing medical residents with physician assistants and hospitalists on patient outcomes in a community hospital. Quality of care provided by the physician assistants-hospitalists model was equivalent.	Practice	
"Staff Commitment to Trauma Care Improves Mortality and Length of Stay at a Level I Trauma Center"	Mains, C., Scarborough, K., Bar-Or, R., Hawkes, A., Huber, J., Bourg, P., & Bar-Or, D.	<i>Journal of Trauma, Infection, and Critical Care</i>	2009	Mains, C., Scarborough, K., Bar-Or, R., Hawkes, A., Huber, J., Bourg, P., & Bar-Or, D. (2009). Staff Commitment to Trauma Care Improves Mortality and Length of Stay at a Level I Trauma Center. <i>The Journal of Trauma, Infection and Critical Care</i> . 66(5), 1315-1320.	Level I trauma center found presence of in-house core trauma surgeons and PAs reduced overall mortality and hospital LOS.	Value/Impact	
"Mid-level Practitioner Role Evaluation in an American College of Surgeons-Verified Trauma Surgery Service: The 23-Year Experience at Hurley Medical Center"	Mikhail, J., Millerz, W., & Wagner, J.	<i>Journal of Trauma Nursing</i>	2009	Mikhail, J., Millerz, W., & Wagner, J. (2009). Mid-level Practitioner Role Evaluation in an American College of Surgeons-Verified Trauma Surgery Service: The 23-Year Experience at Hurley Medical Center. <i>Journal of Trauma Nursing</i> . 16(1), 33-4.	Review of mid-level practitioners in absence of a surgical residency between 1985 and 2007 found use of mid-level practitioners allowed establishment of effective and efficient surgery coverage while growing the trauma program.	Practice	
"Development of a Flexible Sigmoidoscopy Training Program for Rural Nurse Practitioners and Physician Assistants to Increase Colorectal Cancer Screening among Alaska Native People"	Redwood, D., Joseph, D. A., Christensen, C., Provost, E., Peterson, V. L., Espey, D., Sacco, F.	<i>Journal of Health Care for the Poor and Underserved</i>	2009	Redwood, D., Joseph, D. A., Christensen, C., Provost, E., Peterson, V. L., Espey, D., Sacco, F. (2009). Development of a Flexible Sigmoidoscopy Training Program for Rural Nurse Practitioners and Physician Assistants to Increase Colorectal Cancer Screening among Alaska Native People. <i>Journal of Health Care for the Poor and Underserved</i> . 20(4), 1041-1048.	At Alaska Native Medical Center in Anchorage, colorectal cancer screening rates improved dramatically with the initiations of a dedicated flexible sigmoidoscopy screening program staffed by mid-level providers.	Practice	
"The Impact of Non-Physician Clinicians: Do They Improve the Quality and Cost-Effectiveness of Health Care Services?"	Laurant, M., Harmsen, M., Wollersheim, H., Grol, R., & Sibbald, B.	<i>Medical Care Research and Review</i>	2009	Laurant, M., Harmsen, M., Wollersheim, H., Grol, R., & Sibbald, B. The Impact of Non-physician Clinicians: Do They Improve the Quality and Cost-Effectiveness of Health Care Services? <i>Medical Care Research and Review</i> . 66(6), 365-395.	The evidence suggests that non-physician clinicians working as substitutes or supplements for physicians in defined areas of care can maintain and often improve the quality of care and outcomes for patients. The effect on health care costs is mixed, with savings dependent on the context of care and specific nature of role revision.	Practice	
"National Trends in the United States of America Physician Assistant Workforce from 1980 to 2007"	He, X.Z., Cyran, E., & Salling, M.	<i>Human Resources for Health</i>	2009	He, X.Z., Cyran, E., & Salling, M. (2009). National trends in the United States of America physician assistant Workforce from 1980 to 2007. <i>Human Resources for Health</i> . 7, 86.	OBJECTIVE: to determine the demographic distribution of the PA Workforce and PA-to-population relationships. CONCLUSION: Educational level, percentage of minority, and age of the PA Workforce have increased over time.	Workforce	
"Trends in Midlevel Provider Utilization in Emergency Departments from 1997 to 2006"	Menchine, M. D., Wiechmann, W., & Rudkin, S.	<i>Academic Emergency Medicine</i>	2009	Menchine, M. D., Wiechmann, W., & Rudkin, S. (2009). Trends in Midlevel Provider Utilization in Emergency Departments from 1997 to 2006. <i>Academic Emergency Medicine</i> . 16(10), 963-969.	Analysis on ED portion of NHAMCS data from 1997-2006 found percent of patients seen by mid-level provider (MLP) increased from 5.5% to 12.7%, and proportion of hospitals using MLPs increased from 28.3% to 77.2%. Younger patients, non-southern geographic region, and triage acuity were associated with increased MLP use.	Workforce	
"Analysis of Incomes of New Graduate Physician Assistants and Gender, 1998-2006"	Zorn, J., Snyder, J., & Satterblom, K.	<i>Journal of Allied Health</i>	2009	Zorn, J., Snyder, J., & Satterblom, K. (2009). Analysis of incomes of new graduate physician assistants and gender, 1998-2006. <i>Journal of Allied Health</i> . 38(3),127-31.	The purpose of this study was to determine if there was a gender-based difference in starting incomes paid to new graduate physician assistants. The results of the study indicate that female new graduate physician assistants received a lower income than their male counterparts, even when other confounders were considered.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Using Practice Analysis to Improve the Certifying Examinations for PAs"	Arbett, S., Lathrop, J., & Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	2009	Arbett, S., Lathrop, J., & Hooker, R. S., (2009). Using practice analysis to improve the certifying examinations for PAs. <i>Journal of the American Academy of Physician Assistants, 22(2)</i> , 31-36.	A practice analysis is a tool that bridges knowledge and clinical performance into a format that permits assessment. For physician assistants (PAs), this contributes to a psychometrically sound examination administered by the National Commission on Certification of Physician Assistants (NCCPA). The 2004 practice analysis of 5,282 completed PA surveys (13.4% out of 39,517 sent) was representative of the PA population in years experience, geographical distribution, and practice specialty. The survey revealed 8 content domains with formulating the most likely diagnosis, basic science concepts, and pharmaceutical therapeutics as the three skills needed for most scenarios. The data were also analyzed by patient acuity (acute limited, chronic progressive, life-threatening emergency). As a result, NCCPA's test item pool and content blueprint for assessing core knowledge of American PAs on the Physician Assistant National Certifying Examination (PANCE) and the Physician Assistant National Recertifying Examination (PANRE) has been enhanced.	Education	
"Evaluation of Physician Assistants to NHS Scotland: Final Report"	Farmer, J., Currie, M., West, C., Hyman, J., & Arnott, N.	<i>Centre for Rural Health UHI Millennium Institute The Centre for Health Science Perth Road Inverness</i>	2009	Farmer, J., Currie, M., West, C., Hyman, J., & Arnott, N. (2009). Evaluation of Physician Assistants to NHS Scotland: Final Report. Centre for Rural Health UHI Millennium Institute The Centre for Health Science Perth Road Inverness, IV2 3JH.		International	
"Physician Assistant Postgraduate Education Arguments"	Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	2009	Hooker, R. S. (2009). Physician assistant postgraduate education arguments. <i>Journal of the American Academy of Physician Assistants, 22 (5)</i> , 13.	Editorial as to the opportunity cost of an additional year of PA training versus on-the-job training. Noted is that many of the post-graduate programs have failed to survive.	Education	
"Overcoming Barriers to Publication"	Lane, S., & Jones, P. E.	<i>Journal of the Physician Assistant Education</i>	2009	Lane, S., & Jones, P. E. (2009). Overcoming barriers to publication. <i>Journal of the Physician Assistant Education, 20 (1)</i> , 4-5.	A discussion of the barriers associated with research publication by Steven Lane, MA, managing editor, and P. Eugene Jones, PhD, PA-C, and Editor in Chief.	Practice	
"PA Doctoral Degree Debt"	Makinde, J. F., & Hooker, R. S.	<i>ADVANCE for Physician Assistants</i>	2009	Makinde, J. F., & Hooker, R. S. (2009). PA doctoral degree debt. <i>ADVANCE for Physician Assistants, 17 (3)</i> , 30-31.	The objective of the study is to illustrate the costs to individuals and to society of a PA pursuing a doctoral degree and to have the result serve as an index case for further analysis. Results showed that the PA with a doctoral degree does not seem to be well understood by the PA profession, society or even individuals. This study is intended to be the first step in the larger process of understanding the social benefit of producing a physician assistant with a doctoral degree.	Education	
"Specialty and Geographic Distribution of the Physician Workforce: What Influences Medical Student and Resident Choices?"	Phillips, R. L., Doodoo, M. S., Petterson, S., Bazemore, A., Teevan, B., Bennett, K., et al.	<i>Washington DC: Policy Studies in Family Medicine and Primary Care</i>	2009	Phillips, R. L., Doodoo, M. S., Petterson, S., Bazemore, A., Teevan, B., Bennett, K., et al. (2009). Specialty and Geographic Distribution of the Physician Workforce: What Influences Medical Student and Resident Choices? Washington, DC: Policy Studies in Family Medicine and Primary Care, Robert Graham Center. .		Workforce	
"The Physician Assistant in General Practice in the Netherlands"	Simkens, A. B. M., van Baar, M. E., van Balen, F. A. M., Verheij, R. A., van den Hoogen, H. J. M., & Schrijvers, A. J. P.	<i>Journal of Physician Assistant Education</i>	2009	Simkens, A. B. M., van Baar, M. E., van Balen, F. A. M., Verheij, R. A., van den Hoogen, H. J. M., & Schrijvers, A. J. P. (2009). The physician assistant in general practice in the Netherlands. <i>Journal of Physician Assistant Education, 20 (1)</i> , 30-38.	In 2003, the first US-trained PA was employed in the Netherlands because of difficulties in recruiting general practitioners (GP). This study describes the uses of this PA. Researchers studied clinical activities of GP care for number and type of contacts, diagnoses, drug prescriptions, and new referrals, in a general practice in the Netherlands, before and after the introduction of the PA. Data were obtained from electronic medical records. Results showed that the PA improved access to GP care. The PA did not lead to a major decrease in the GPs workload or major redefinition of the GP role. Overall, the range of the PA's clinical activities was comparable to that of the GPs.	International	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
It's time for an international congress of physician assistants	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2009	Hooker RS. It's time for an international congress of physician assistants. <i>Journal of the American Academy of Physician Assistants</i> . 2009. 22(12): 12.	A signal that with a global PA movement underway an interrestional congress might be appropriate to bring together education and deployment experiences.	International	
Are physician assistants in America's best interest?	Hooker RS.	<i>J Am Academy of Physician Assistants</i>	2009	Hooker RS. Are physician assistants in America's best interest? <i>Journal of the American Academy of Physician Assistants</i> . 2009. 22(9): 12.	The author uses the concept of public good to argue that PAs have been in America's best interest. He illustrates how this has been proven with the outcomes of Title VII.	Workforce	
Physician assistant postgraduate education arguments	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2009	Hooker RS. Physician assistant postgraduate education arguments. <i>Journal of the American Academy of Physician Assistants</i> [editorial]. 2009. 22(5): 13.		Education	
"Medical Team Training and Coaching in the Veterans Health Administration; Assessment and Impact on the First 32 Facilities in the Programme"	Neily, J., Mills, P., Lee, P., Carney, B., West, P., Percarpio, K., Mazzia, L., Douglas, E.P., Bagian, J.P.	<i>Qual Saf Health Care</i>	2010	Neily, J., Mills, P., Lee, P., Carney, B., West, P., Percarpio, K., Mazzia, L., Douglas, E.P., Bagian, J.P. (2010). Medical team training and coaching in the veterans health administration; assessment and impact on the first 32 facilities in the programme. <i>Qual Saf Health Care</i> . 19:360-364.	METHODS: This study is a descriptive analysis of reactions to the implementation of a Medical Team Training (MTT) program for OR and ICU staff at 32 Veterans Health Administration facilities. RESULTS: "...Improved teamwork was reported by 84% of OR and 75% of ICU implementation teams. Efficiency improvements were reported by 94% of OR implementation teams. Almost all facilities (97%) reported a success story or avoiding an undesirable event." CONCLUSIONS: Sites are implementing MTT with a positive impact on patients and staff...implementation was facilitated through follow-up support. This may have contributed to the early success of MTT.	Value/Impact	
"Potentially Avoidable Hospitalizations of Nursing Home Residents: Frequency, Causes, and Costs"	Ouslander, J.G., Lamb, G., Perloe, M., Givens, J.V.H., Kluge, L., Rutland, T., Atherly, A., Saliba, D.	<i>Journal of the American Geriatric Society</i>	2010	Ouslander, J.G., Lamb, G., Perloe, M., Givens, J.V.H., Kluge, L., Rutland, T., Atherly, A., Saliba, D. (2010). Potentially Avoidable Hospitalizations of Nursing Home Residents: Frequency, Causes, and Costs. <i>Journal of the American Geriatric Society</i> . 58:627-635.	OBJECTIVES: To examine the frequency and reasons for potentially avoidable hospitalizations of nursing home (NH) residents in a sample of Georgia NHs. MEASUREMENTS: Ratings using a structured review of medical records by expert NH clinicians. RESULTS: The availability of the medical director, physicians, and PAs/NPs was greater in NHs with low-hospitalization rates. Availability of an on-site PA or NP was among the most highly rated factors necessary to reduce avoidable hospitalizations.	Practice	
"Role of Advanced Nurse Practitioners and Physician Assistants in Washington State"	Britell, J.C.	<i>Journal of Oncology Practice</i>	2010	Britell, J.C. (2010). Role of advanced nurse practitioners and physician assistants in Washington state. <i>J Oncol Pract</i> . Jan;6(1):37-8.	Washington practices have embraced advanced practitioners. Given the diversity of practice patterns, practices can learn from one another how to maximize ANP/NP roles. Practices need to promote practice-based educational opportunities to attract ANPs/PAs to medical oncology.	Practice	
"Understanding the Role of Physician Assistants in Oncology"	Ross, A.C., Polansky, M.N., Parker, P.A., Palmer, J.L.	<i>Journal of Oncology Practice</i>	2010	Ross, A.C., Polansky, M.N., Parker, P.A., Palmer, J.L. (2010). Understanding the role of physician assistants in oncology. <i>J Oncol Pract</i> . Jan;6(1):26-30.	Oncology PAs are used in multiple medical settings, and many assume high-level responsibilities. Future research addressing function and factors that limit use of PAs may allow for improved organizational efficiency and enhancement in the delivery of health care.	Workforce	
"Acceptance of Physician Assistants and Nurse Practitioners in Trauma Centers"	Nyberg, S. M., Keuter, K. R., Berg, G. M., Helton, A. M., & Johnston, A. D.	<i>Journal of the American</i>	2010	Nyberg, S. M., Keuter, K. R., Berg, G. M., Helton, A. M., & Johnston, A. D. Acceptance of physician assistants and nurse practitioners in trauma centers. <i>JAAPA</i> . 2010 Jan;23(1):35-7, 41.	The purpose of this study is to determine the prevalence of PAs and NPs in US trauma centers, to document their roles, and to identify their potential future utilization by trauma centers. In most trauma centers, PAs/NPs are utilized to complete the traditional duties of a surgical PA/NP, with fewer performing invasive procedures. Finally, 19% of responding trauma centers who do not currently utilize PAs/NPs state that they intend to in the future.	Workforce	
"Choice of Specialty among Physician Assistants in the U.S."	Morgan, P., & Hooker, R. S.	<i>Health Affairs</i>	2010	Morgan, P., & Hooker, R. S. (2010). Choice of specialty among physician assistants in the U.S. <i>Health Affairs</i> . 2010; 29 (5): 887-892.	Comparison of PA subspecialty density per physician in same specialty.	Practice	
Physician assistants working in the Department of Veterans Affairs	Woodmansee DJ, Hooker RS	<i>Journal of the American Academy of Physician Assistants</i>	2010	Woodmansee DJ, Hooker RS. Physician assistants working in the Department of Veterans Affairs. <i>Journal of the American Academy of Physician Assistants</i> . 2010; 23(11); 41-44.		Practice	
Are Australians willing to be treated by a physician assistant?	Hooker RS, Harrison K, Pashen D	<i>Australasian Medical Journal</i>	2010	Hooker RS, Harrison K, Pashen D. Are Australians willing to be treated by a physician assistant? <i>Australasian Medical Journal AMJ</i> . 2010; 3(7): 407-413.		International	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
Patient willingness to be seen by physician assistants, nurse practitioners, and residents in the emergency setting: does the presumption of assent have an empirical basis?	Larkin GL, Hooker RS	<i>American Journal of Bioethics</i>	2010	Larkin GL, Hooker RS. Patient willingness to be seen by physician assistants, nurse practitioners, and residents in the emergency setting: does the presumption of assent have an empirical basis? <i>American Journal of Bioethics</i> . 2010; 10(8): 1-10.		Practice	
Physician assistant career mobility and the potential for more primary care	Hooker RS, Cawley JF, Leinweber W	<i>Health Affairs</i>	2010	Hooker RS, Cawley JF, Leinweber W. Physician assistant career mobility and the potential for more primary care. <i>Health Affairs</i> . 2010; 29 (5); 880-886.		Workforce	
Veterans' perceptions of care by nurse practitioners, physician assistants, and physicians: a comparison from satisfaction surveys	Budzi D, Lurie S, Singh K, Hooker RS	<i>Journal of the American Academy of Nurse Practitioners</i>	2010	Budzi D, Lurie S, Singh K, Hooker RS. Veterans' perceptions of care by nurse practitioners, physician assistants, and physicians: a comparison from satisfaction surveys. <i>Journal of the American Academy of Nurse Practitioners</i> . 2010; 22 (3): 170-176.		Practice	Letter to the Editor by coauthors July 2010 refuting some of the statements made by the first author.
Prescribing by physician assistants and nurse practitioners	Hooker RS	<i>American Journal of Managed Care</i>	2010	Hooker RS. Prescribing by physician assistants and nurse practitioners. <i>American Journal of Managed Care</i> . 2010; 16(12): e356-357.		Practice	
Physician assistant role flexibility and career mobility	Cawley JF, Hooker RS	<i>J Am Academy of Physician Assistants</i>	2010	Cawley JF, Hooker RS. Physician assistant role flexibility and career mobility. <i>Journal of the American Academy of Physician Assistants</i> [editorial]. 2010. 23(8): 10		Workforce	
Physician assistants, economics, and workforce modeling	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2010	Hooker RS. Physician assistants, economics, and workforce modeling. <i>Journal of the American Academy of Physician Assistants</i> [editorial]. 2010. 23(7): 10.		Workforce	
A PA time capsule: A historical window for the future	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2010	Hooker RS. A PA time capsule: A historical window for the future. <i>Journal of the American Academy of Physician Assistants</i> [editorial]. 2010. 23(4): 14.		History	
The future of the physician assistant movement	Hooker RS	<i>Medical Journal of Australia [editorial]</i>	2010	Hooker RS. The future of the physician assistant movement. <i>Medical Journal of Australia</i> [editorial]. 2010; 192 (3): 116.		International	
"Evaluation of Multiple Variables Predicting the Likelihood of Passage and Failure of PANCE"	Ennulat, C.W., Garrubba, C., DeLong, D.	<i>Journal of Physician Assistant Education</i>	2011	Ennulat, C.W., Garrubba, C., DeLong, D. (2011). Evaluation of multiple variables predicting the likelihood of passage and failure of PANCE. <i>J Physician Assist Educ</i> . 22(1):7-18.	This research suggests that all assessment measures tested can provide helpful estimates of PANCE performance; however the combined SUMM and MCQ solution provided the most reliable and accurate prediction of PANCE performance for "high risk" students.	Education	
"The Evaluation of Physician Assistant Students' History-Taking Abilities Using Actors as Standardized Patients"	Langen, W.H., Hanson, D., Fien, R., Parkhurst, D.	<i>Journal of Physician Assistant Education</i>	2011	Langen, W.H., Hanson, D., Fien, R., Parkhurst, D. (2011). The evaluation of physician assistant students' history-taking abilities using actors as standardized patients. <i>J Physician Assist Educ</i> . 22(4):34-7.	The value of professional actors as standardized patients (SPs) was evaluated in an exercise that normally uses students for SPs. PA students perceived the actor SPs as more similar to real patients than peers simulating patients, developed greater confidence in history-taking ability, and believed that they significantly enhanced their history-taking skills.	Education	
"The Relationship between Formative and Summative Examinations and PANCE scores; Can the Past Predict the Future?"	Massey, S., Stallman, J, Lee, L., Klingaman, K., Holmerud, D.	<i>Journal of Physician Assistant Education</i>	2011	Massey, S., Stallman, J, Lee, L., Klingaman, K., Holmerud, D. (2011). The relationship between formative and summative examinations and PANCE scores; can the past predict the future? <i>J Physician Assist Educ</i> . 22(1):41-5.	This pilot study demonstrated that valid predicted scores could be generated from formative and summative examinations to provide valuable feedback and to identify students at risk of failing the PANCE.	Education	
"How to Add a New Midlevel Provider to Your Practice"	Englert, C.J., Berger, M.A.	<i>The Journal of Medical Practice Management</i>	2011	Englert, C.J., Berger, M.A. (2011) How to add a new midlevel provider to your practice. <i>Journal of Medical Practice Management</i> . May-Jun;26(6):371-3.	The addition of a Mid-Level Practitioner (MLP) can address many of the impending changes in healthcare, while increasing the quality and profitability of the practice. This article outlines the initial steps to take when adding an MLP to your practice.	Workforce	
"Nurse Practitioners, Certified Nurse Midwives, and Physician Assistants in Physician Offices"	Park, M., Cherry, D., Decker, S.	<i>NCHS Data Brief</i>	2011	Park, M., Cherry, D., Decker, S. (2011) Nurse Practitioners, Certified Nurse Midwives, and Physician Assistants in Physician Offices. <i>NCHS Data Brief</i> . No. 69.	In 2009, 49.1% of office-based physicians were in practices that used nurse practitioners (NPs), certified nurse midwives (CNMs), or physician assistants (PAs). Primary care physicians were more likely to have NPs, CNMs, or PAs than physicians of other specialties. Physicians in larger and multi-specialty group practices were more likely to work with NPs, CNMs, or PAs than those in smaller and single-specialty group practices. Older physicians were less likely than middle-aged physicians to be in practices that had NPs, CNMs, or PAs. Analysis was based on the sample of 1,592 physicians.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Employment of Mid-Level Providers in Primary Care and Control of Diabetes"	Jackson GL, Lee SY, Edelman D, Weinberger M, Yano EM.	<i>Prim Care Diabetes</i>	2011	Jackson GL, Lee SY, Edelman D, Weinberger M, Yano EM. Employment of mid-level providers in primary care and control of diabetes. <i>Prim Care Diabetes</i> . 2011 Apr;5(1):25-31.	Diabetes control among primary care patients appeared to benefit from inclusion of NPs, while an analogous association was not found for PAs.	Practice	
"Physician Assistant and Nurse Practitioner Utilization in Academic Medical Centers"	Moote, M., Krsek, C., Kleinpell, R., Todd, B	<i>American Journal of Medical Quality</i>	2011	Moote, M., Krsek, C., Kleinpell, R., Todd, B (2011). Physician assistant and nurse practitioner utilization in academic medical centers. <i>Am J Med Qual</i> . Nov-Dec;26(6):452-60.	PAs and NPs have been integrated into most services of respondent AMCs, where they are positively rated for the value they bring to these organizations. The primary reason cited by most AMCs for employing PAs and NPs was Accreditation Council for Graduate Medical Education resident duty hour restrictions (26.9%).	Value/Impact	
"A Comparison of Outcomes of General Medical Inpatient Care Provided by a Hospitalist-Physician Assistant Model Vs. a Traditional Resident-Based Model"	Singh, S., Fletcher K., et. al.	<i>Journal of Hospital Medicine</i>	2011	Singh, S., Fletcher K., et. al. (2011) A Comparison of Outcomes of General Medical Inpatient Care Provided by a Hospitalist-Physician Assistant Model Vs a Traditional Resident-Based Model. <i>J Hospital Medicine</i> . 6:122-130.	Retrospective cohort study of 9681 general medical (GM) hospitalizations between January 2005 and December 2006 using a hospital administrative database. Multivariable mixed models to adjust for a wide variety of potential confounders and account for multiple patient visits to the hospital to compare the outcomes of 2171 hospitalizations to H-PA teams with those of 7510 hospitalizations to resident teams (RES). RESULTS: Inpatient care provided by H-PA teams was associated with a 6.73% longer LOS but charges, risk of readmission at 7, 14, and 30 days and inpatient mortality were similar to resident-based teams. The increase in LOS was dependent on the time of admission of the patients. CONCLUSIONS: H-PA team-based GM inpatient care was associated with a higher LOS but similar charges, readmission rates, and inpatient mortality to traditional resident-based teams, a finding that persisted in sensitivity analyses.	Value/Impact	
"Physician Assistant and Advance Practice Nurse Care in Hospital Outpatient Departments: United States, 2008-2009"	Hing, E. & Uddin, S.	<i>NCHS Data Brief</i>	2011	Hing, E. & Uddin, S. (2011). Physician assistant and advance practice nurse care in hospital outpatient departments: United States, 2008-2009. <i>NCHS Data Brief</i> . Nov;(77):1-8.	PAs or APNs are providing an increasing share of care delivered in OPDs compared with the previous decade. The findings in this report suggest that PAs or APNs continue to provide a critical health care function by providing care in settings with fewer physicians, such as rural locations, small hospitals, and nonteaching hospitals.	Practice	
"Predictive Modeling the Physician Assistant Supply: 2010-2025"	Hooker, R.S., Cawley, J.F., Everett, C.M.	<i>Public Health Rep.</i>	2011	Hooker, R.S., Cawley, J.F., Everett, C.M. (2011). Predictive modeling the physician assistant supply: 2010-2025. <i>Public Health Rep</i> . Sep-Oct;126(5):708-16.	The number of clinically active PAs is projected to increase by almost 72% in 15 years. Attrition rates, especially retirement patterns, are not well understood for PAs, and variation could affect future supply. While the majority of PAs are in the medical specialties and subspecialties fields, new policy steps funding PA education and promoting primary care may add more PAs in primary care than the model predicts.	Workforce	
"The Physician Assistant Workforce in Indiana: Preparing to Meet Future Health Care Needs"	Snyder J, Zorn J, Gjerde T, Burkhart J, Rosebrock L.	<i>Journal of American Academy of Physician Assistants</i>	2011	Snyder J, Zorn J, Gjerde T, Burkhart J, Rosebrock L. The physician assistant Workforce in Indiana: preparing to meet future health care needs. <i>JAAPA</i> . 2011 Dec;24(12):50, 53-7.	More PAs in Indiana are practicing in medical specialties than in primary care. As health care policy and regulatory changes evolve, future studies will be needed to understand the impact on the health care Workforce of Indiana PAs. This study will serve as a baseline for those studies.	Workforce	
"Health Care Reform and the Health Care Workforce--The Massachusetts Experience"	Staiger, D., Auerbach, D., Buerhaus, P.	<i>New England Journal of Medicine</i>	2011	Staiger, D., Auerbach, D., Buerhaus, P. (2011) Health Care Reform and the Health Care Workforce -- The Massachusetts Experience. <i>New England Journal of Medicine</i> . 10.1056/NEJMp1106616	Study examined increase in rates of health care employment in Massachusetts following health care reform passage; health care providers employment increased by 2.8%, while support staff such as thearpirists, technicians and aids increased by 18%.	Workforce	
Community Health Centers: Providers, Patients, and Content of Care.	Hing E, Hooker RS.	<i>NCHS data brief</i>	2011	Hing E, Hooker RS. Community Health Centers: Providers, Patients, and Content of Care. NCHS data brief no. 65. Hyattsville, MD: National Center for Health Statistics. 2011.			
Gaps in the supply of physicians, advance practice nurses, and physician assistants	Sargen M, Hooker RS, Cooper RA.	<i>Journal of the American College of Surgeons</i>	2011	Sargen M, Hooker RS, Cooper RA. Gaps in the supply of physicians, advance practice nurses, and physician assistants. <i>Journal of the American College of Surgeons</i> . 2011; 212(4): 991-999.	Prediction model of physician supply with and without increases in PAs, NPs and resident physicians. Widely used model incorporating demand for services.	Workforce	
Primary health care in community health centers and comparisons with office-based practice	Hing E, Hooker RS, Ashman J.	<i>Journal of Community Health</i> .	2011	Hing E, Hooker RS, Ashman J. Primary health care in community health centers and comparisons with office-based practice. <i>Journal of Community Health</i> . 2011; 36(3): 406-413.			
Physician assistant education: five countries.	Hooker RS, Kuilman L.	<i>Journal of Physician Assistant Education</i>	2011	Hooker RS, Kuilman L. Physician assistant education: five countries. <i>Journal of Physician Assistant Education</i> . 2011; 22(1): 53-58.		Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
Physician assistants in Canada: update on health policy initiatives	Jones I, Hooker RS	<i>Canadian Family Physician</i>	2011	Jones I, Hooker RS. Physician assistants in Canada: update on health policy initiatives. <i>Canadian Family Physician</i> . 2011; 57(3): e83-e88.		Practice	
Physician assistants in emergency medicine: the impact of their role	Hooker RS, Klocko DJ, Larkin GL	<i>Academic Emergency Medicine</i>	2011	Hooker RS, Klocko DJ, Larkin GL. Physician assistants in emergency medicine: the impact of their role. <i>Academic Emergency Medicine</i> . 2011; 18(1): 72-77.	Systematic review of the use of PAs in emergency medicine literature and a narrative summary of implications from that review. Authors offer areas for additional research.	Practice	
The role of physician assistants in rural health care: a systematic review of the literature	Henry L, Hooker RS, Yates K	<i>Journal of Rural Health</i>	2011	Henry L, Hooker RS, Yates K. The role of physician assistants in rural health care: a systematic review of the literature. <i>Journal of Rural Health</i> . 2011; 27 (2); 220-229.	Systematic review of the use of PAs in rural medicine literature and a narrative summary of implications from that review. Authors offer areas for additional research.	Practice, Workforce	
Taking the long view on physician assistants	Hooker RS	<i>Journal of Physician Assistant Education</i>	2011	Hooker RS. Taking the long view on physician assistants. <i>Journal of Physician Assistant Education</i> [editorial]. 2011. 22(4): 4-5.		Practice	
Physician assistant retirement	Hooker RS	<i>J Am Academy of Physician Assistants [commentary]</i>	2011	Hooker RS. Physician assistant retirement. <i>Journal of the American Academy of Physician Assistants</i> [commentary]. 2011; 24(11): 68.		Practice	
Sticker shock: the price of physician assistant education	Hooker RS	<i>Journal of Physician Assistant Education</i>	2011	Hooker RS. Sticker shock: the price of physician assistant education. <i>Journal of Physician Assistant Education</i> [editorial]. 2011. 22(1): 4-5.		Education	
Physician Assistant Program Characteristics and Faculty Credentials on Physician Assistant National Certifying Exam Pass Rates	Bushardt, R.L., Booze, L.E., Hewett, M.L., Hildebrandt, C., Thomas, S.E	<i>Journal of Physician Assistant Education</i>	2012	Bushardt, R.L., Booze, L.E., Hewett, M.L., Hildebrandt, C., Thomas, S.E. (2012). Physician assistant program characteristics and faculty credentials on physician assistant national certifying exam pass rates. <i>Physician Assist Educ</i> . 3(1):19-23.	Results from this study suggest that if a program is seeking to increase its student performance on the PANCE, it may be more helpful to focus resources on improving student-to-faculty ratio, regardless of whether or not the faculty are doctoral level.	Education	
"Predicting Physician Assistant Students' Professionalism by Personality Attributes"	Moser, S., & Dereczyk, A	<i>Journal of Physician Assistant Education</i>	2012	Moser, S., & Dereczyk, A. (2012). Predicting physician assistant students' professionalism by personality attributes. <i>J Physician Assist Educ</i> . 23(3):28-32.	Healthy personality characteristics predict high levels of self-reported professionalism according to this study. Conversely, unhealthy personality characteristics will predict a low level of self-reported professionalism. Personality profiles can be incorporated into the admission process to select a higher percentage of candidates who value and emulate professionalism, producing better practitioners.	Practice	
"Impact of Hospital Employed Physician Assistants on a Level II, Community-based Orthopaedic Trauma System"	Althausen, P.L., Shannon, S., Owens, B., Cvitash-C M., Lu, M., O'Mara, T.J., & Bray, T.J.	<i>Journal of Orthopedic Trauma</i>	2012	Althausen, P.L., Shannon, S., Owens, B., Cvitash-C M., Lu, M., O'Mara, T.J., & Bray, T.J. (2012) Impact of Hospital Employed Physician Assistants on a Level II, Community-based Orthopaedic Trauma System. <i>J Orthop Trauma</i> . Jun 22. [Epub ahead of print]	Although the physician assistant's collections do not cover their costs, the indirect economic and patient care impacts are clear. By increasing emergency room pull through and decreasing times to OR, operative times, lengths of stay and complications, their existence is clearly beneficial to hospitals, physicians and patients as well.	Value/Impact	
"How is the Department of Veteran Affairs Addressing the New Accreditation Council for Graduate Medical Education Intern Work Hour Limitations?" Solutions from the Association of Veteran Affairs Surgeons"	Hayman, A.V., Tarpley, J.L., Berger, D.H., Wilson, M.A., Livingston, E.H., Kibbe, M.R.	<i>American Journal of Surgery</i>	2012	Hayman, A.V., Tarpley, J.L., Berger, D.H., Wilson, M.A., Livingston, E.H., Kibbe, M.R.; Association of VA Surgeons. (2012). How is the Department of Veterans Affairs addressing the new Accreditation Council for Graduate Medical Education intern work hour limitations? Solutions from the Association of Veterans Affairs Surgeons. <i>American Journal of Surgery</i> . Nov;204(5):655-62.	The public expects the medical community to produce safe, experienced surgeons, while demanding they are well rested and directly supervised at all times. The ability to meet these expectations can be challenging. The most common solution chosen by the VA centers was hiring physician extenders (37%). The most common type of extender was a nonphysician extender, that is, nurse practitioner or physician assistant (70%).	Value/Impact	
"Examining Intercultural Sensitivity and Competency of Physician Assistant Students"	Huckabee, M.J., Matkin, G.S.	<i>Journal of Allied Health</i>	2012	Huckabee, M.J., Matkin, G.S. (2012). Examining intercultural sensitivity and competency of physician assistant students. <i>J Allied Health</i> . Fall;41(3):e55-61.	Enhanced curricular instruction such as exploring cultural assessment methods and controversies in health care differences, combined with increased clinical experiences with diverse cultures, are recommended to help move students past the minimization stage to gain greater cultural competency.	Education	
"Should We Rethink How We Teach Cultural Competency in Physician Assistant Education?"	Kelly, P.J.	<i>Journal of Physician Assistant Education</i>	2012	Kelly, P.J. (2012) Should we rethink how we teach cultural competency in physician assistant education? <i>J Physician Assist Educ</i> . 23(3):42-5.	Cultural competency training has traditionally been viewed as addressing race and ethnicity and its influence on health care disparity. There are many aspects of culture or diversity that have been overshadowed in physician assistant education but are equally as important. These cultural elements include socioeconomic status, religion, sexual orientation, and disability. This article will briefly discuss the importance of these elements and how each can affect the medical care of patients in these diverse populations.	Workforce	

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"Factors that Influence Physician Assistant Program Graduates to Choose Rural Medicine Practice"	Diemer, D., Leafman, J., Nehrenz, G.M. Sr, Larsen, H.S.	<i>Journal of Physician Assistant Education</i>	2012	Diemer, D., Leafman, J., Nehrenz, G.M. Sr, Larsen, H.S. (2012). Factors that influence physician assistant program graduates to choose rural medicine practice. <i>J Physician Assist Educ.</i> 2;23(1):28-32.	PAs with a rural background and those that completed rural clerkships have a greater propensity toward rural practice after graduation. It is possible, for programs with an interest or a mission of increasing the number of their graduates who choose rural practice, that knowledge of factors that influence their graduates' practice choices may prove beneficial.	Practice	
"Factors that Influence Physician Assistant Choice of Practice Location"	Smith, B., Muma, R.D., Burks, L., Lavoie, M.M.	<i>Journal of American Academy of Physician Assistants</i>	2012	Smith, B., Muma, R.D., Burks, L., Lavoie, M.M. (2012). Factors that influence physician assistant choice of practice location. <i>JAAPA.</i> Mar;25(3):46-51.	Certain US rural areas have inadequate access to health care providers. Health care educational institutions have made nationwide efforts to recruit students from rural areas, in the hope that they will return upon graduation. This 2009 study focused on the physician assistant (PA) profession's endeavors in this effort.	Workforce	
"Physician Assistants Contribution to Emergency Department Productivity"	Brook, C., Chomut, A., Jeanmonod, R.K.	<i>West J Emerg Med</i>	2012	Brook, C., Chomut, A., Jeanmonod, R.K. (2012) Physician assistants contribution to emergency department productivity. <i>West J Emerg Med.</i> May;13(2):181-5.	In the ED, PAs saw 1.16 patients and generated 2.35 RVUs per hour. The length of the shift did not affect productivity. Productivity did not fluctuate significantly with changing departmental volume.	Practice	
"Productivity Assessment of Physician Assistants and Nurse Practitioners in Oncology in an Academic Medical Center"	Moote, M., Nelson, R., Veltkamp, R., Campbell, D.	<i>J Onc Practice</i>	2012	Moote, M., Nelson, R., Veltkamp, R., Campbell, D. (2012) Productivity Assessment of Physician Assistants and Nurse Practitioners in Oncology in an Academic Medical Center. <i>J Onc Practice.</i> ePub March 13, 2012.	This study revealed significant variability with regard to productivity across all oncology services, notably with direct billable services. However, when analysis was expanded to include bundled revenue, total PA and NP productivity increased substantially. Importantly, our study revealed clear examples of underutilization of both PAs and NPs, highlighting opportunities to enhance their roles. The study included 22 PAs and 26 NPs.	Workforce	
"The Effectiveness of a Provider in Triage in the Emergency Department: A Quality Improvement Initiative to Improve Patient Flow"	Love, R.A., Murphy, J.A., Lietz, T.E., Jordan, K.S.	<i>Adv Emerg Nurs J</i>	2012	Love, R.A., Murphy, J.A., Lietz, T.E., Jordan, K.S. (2012). The effectiveness of a provider in triage in the emergency department: a quality improvement initiative to improve patient flow. <i>Adv Emerg Nurs J.</i> Jan-Mar;34(1):65-74.	The purpose of this article is to present a quality improvement initiative designed and implemented to improve patient flow through an ED by redesigning the triage process to increase the efficiency and timeliness of initial patient contact with a licensed medical provider, increasing patient satisfaction, and decreasing the number of patients who leave without being seen.	Practice	
"Non-Physician Providers as Clinical Providers in Cystic Fibrosis: Survey of US programs"	Brown, R.F., Willey-Courand, D.B., George, C., McMullen, A., Dunitz, J., Slovis, B., Perkett, E.	<i>Pediatric Pulmonary</i>	2012	Brown, R.F., Willey-Courand, D.B., George, C., McMullen, A., Dunitz, J., Slovis, B., Perkett, E. (2012). Non-physician providers as clinical providers in cystic fibrosis: Survey of US programs. <i>Pediatr Pulmonol.</i> Jun 19. [Epub ahead of print]	Non-physician providers (NPPs) including nurse practitioners (NPs) and physician assistants (PAs) are important members of CF care teams, but limited data exist about the extent NPPs are involved in CF care. A subcommittee was established by the CF Foundation to gather information about current involvement of NPPs. CONCLUSIONS: NPPs are working with physicians in many centers and have the potential to help meet the increasing clinical Workforce demands. Further evaluation of financial issues is indicated to continue the support of NPP jobs in CF.	Workforce	
"Perceptions of Roles, Practice Patterns, and Professional Growth Opportunities: Broadening the Scope of Advanced Practice in Oncology"	McCorkle, R., Engelking, C., Lazenby, M., Davies, M.J., Ercolano, E., Lyons, C.A.	<i>Clinical Journal of Oncology Nursing</i>	2012	McCorkle, R., Engelking, C., Lazenby, M., Davies, M.J., Ercolano, E., Lyons, C.A. (2012). Perceptions of roles, practice patterns, and professional growth opportunities: broadening the scope of advanced practice in oncology. <i>Clin J Oncol Nurs.</i> Aug;16(4):382-7.	This cross-sectional study used a computerized self-report survey of 32 targeted nurse practitioners and physician assistants employed in the cancer center of an urban teaching hospital. A model of advanced oncology practice needs to be developed that will empower APPs to provide high-quality patient care at the fullest extent of their knowledge and competence.	Practice	
"Physician Assistant and Nurse Practitioner Utilization in Radiation Oncology within an Academic Medical Center"	Moote, M., Wetherhold, R., Olson, K., Froelich, R., Vedhapudi, N., Lash, K., Moore, S., Hayman, J.	<i>Practical Radiation Oncology</i>	2012	Moote, M., Wetherhold, R., Olson, K., Froelich, R., Vedhapudi, N., Lash, K., Moore, S., Hayman, J. (2012) Physician assistant and nurse practitioner utilization in radiation oncology within an academic medical center. <i>Practical Radiation Oncology.</i> 2, e31-e37.	Nearly half (46%) of physician extender time was spent performing indirect patient care. Physician extenders performed most (84.3%) of the first encounters for follow-up appointments; however, these patients were seen independently by physician assistants (PAs) and nurse practitioners (NPs) only 51% of the time. Physician extenders perceived their utilization within the department would be improved with well-defined position goals (80%), less clerical work (40%), more involvement in treatment planning (40%), more training (40%), and more involvement with new patient consults (20%). Physicians felt the utilization of physician extenders could be improved by providing more training (33%), increased physician extender involvement in treatment planning (22%), increased physician extender involvement in new patient consults (11%), and increased autonomy (11%).	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
Are Dutch patients willing to be seen by a physician assistant instead of a medical doctor?	Kuilman L, Nieweg RMB, van der Schans CP, Strijbos JH, Hooker RS.	<i>Human Resources for Health</i>	2012	Kuilman L, Nieweg RMB, van der Schans CP, Strijbos JH, Hooker RS. Are Dutch patients willing to be seen by a physician assistant instead of a medical doctor? <i>Human Resources for Health</i> . 2012; 10(9): 34-40.	Netherland study of the concept of a PA to patients who are naïve as to what a PA is. Outcomes is that >90% are willing to be seen by a PA if time is the trade off for convenience.		
Will Canadians accept care by physician assistants?	Doan Q, Hooker RS, Wong H, Singer J, Sheps S, KISSOON N, Johnson D.	<i>Canadian Family Physician</i>	2012	Doan Q, Hooker RS, Wong H, Singer J, Sheps S, KISSOON N, Johnson D. Will Canadians accept care by physician assistants? <i>Canadian Family Physician</i> . 2012; 58(7). e459-464.	Canadian study of mothers in a paediatric emergency room who are naïve as to what a PA is. Outcomes is that >90% are willing to be seen by a PA if time is the trade off for convenience.		
Primary care and non-physician clinicians.	Cawley JF, Hooker RS, Crowley D.		2012	Cawley JF, Hooker RS, Crowley D. Primary care and non-physician clinicians. Chapter 3. Primary Care and Hot Topics. <i>Primary Care</i> , InTech Publishers, 2012.			
Characteristics of older clinically active physician assistants.	Hooker RS, Ramos C, Daly RP, Fang R.	<i>Journal of the American Academy of Physician Assistants</i>	2012	Hooker RS, Ramos C, Daly RP, Fang R. Characteristics of older clinically active physician assistants. <i>Journal of the American Academy of Physician Assistants</i> . 2012; 25(1): 48-53.	Comparison of all PAs and those age 55 or older. The outcome is that the older PA is more likely to be female and working in family medicine in a non-urban setting.		
The contributions of physician assistants in primary care systems	Hooker RS, Everett CM.	<i>Health and Social Care in the Community</i> .	2012	Hooker RS, Everett CM. The contributions of physician assistants in primary care systems. <i>Health and Social Care in the Community</i> . 2012; 20(1): 20-31.	A comprehensive and narrative review of the literature on the role of PAs in various primary care employment settings.		
An endowed chair in physician assistant studies	Hooker RS	<i>Journal of Physician Assistant Education</i>	2012	Hooker RS. An endowed chair in physician assistant studies. <i>Journal of Physician Assistant Education</i> [editorial]. 2012. 23(2): 4-5.		Education	
"Survey Shows Consumers Open to a Greater Role for Physician Assistants and Nurse Practitioners"	Dill, M., Pankow, S., Erikson, C., & Shipman, S.	<i>Health Affairs</i>	2013	Dill, M., Pankow, S., Erikson, C., & Shipman, S. (2013) Survey Shows Consumers Open to a Greater Role for Physician Assistants and Nurse Practitioners. <i>Health Affairs</i> . 32(6):1135-1142.	This study examines provider preferences from patients' perspective, using data from the Association of American Medical Colleges' Consumer Survey. About half of the respondents preferred to have a physician as their primary care provider. However, when presented with scenarios wherein they could see a physician assistant or a nurse practitioner sooner than a physician, most elected to see one of the other health care professionals instead of waiting. The vast majority of respondents (82.5%) indicated that they knew what either a physician assistant or nurse practitioner was prior to taking the survey. Most (81.4%) had seen a physician assistant or a nurse practitioner for their care at some point in time, and 39.6% reported seeing one during their most recent medical care visit. (N=2,035)	Value/Impact	
"Best Care at Lower Cost: The Path to Continuously Learning Health Care in America"	IOM (Institute of Medicine)	<i>The National Academies Press</i>	2013	IOM (Institute of Medicine). 2013. Best care at lower cost: The path to continuously learning health care in America. Washington, DC: <i>The National Academies Press</i> .	The Institute of Medicine (IOM) convened the Committee on the Learning Health Care System in America to explore the most fundamental challenges to health care today and to propose actions that can be taken to achieve a health care system characterized by continuous learning and improvement. The report, Best Care at LowerCost: The Path to Continuously Learning Health Care in America, explores the imperatives for change, the emerging tools that make transformation possible, the vision for a continuously learning health care system, and the path for achieving this vision. The title of the report underscores that care that is based on the best available evidence, takes appropriate account of individual preferences, and is delivered reliably and efficiently—best care— is possible today, and also is generally less expensive than the less effective, less efficient care that is now too commonly provided. Report includes recommendations for patient-centered care and continuing health care professional education.	Value/Impact	
"Using an Expanded Oral Health Curriculum by Practicing Physician Assistants"	Anderson, K. L., Smith, B.S., & Brown, G.	<i>Journal of Physician Assistant Education</i>	2013	Anderson, K. L., Smith, B.S., & Brown, G. (2013). Using an expanded oral health curriculum by practicing physician assistants. <i>Journal of Physician Assistant Education</i> , 24(3).	Dental hygiene faculty provided oral health education to 46 PA students. Six months later in practice, these students felt they were able to identify oral issues and perform oral health tasks, although PAs working in primary care performed significantly more oral health procedures than those in specialist settings.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Wages and Work Conditions As Determinants for Physicians' Work Decisions"	Askildsen, J.E., & Holmås, T. H.	<i>Applied Economics</i>	2013	Askildsen, J.E., & Holmås, T. H. (2013). Wages and work conditions as determinants for physicians' work decisions. <i>Applied Economics</i> , 45(3), 397-406	This study examined the relationship between wages and physicians' choice of work between the public hospital sector and elsewhere. For PAs, higher wages at public hospitals negatively affected the decision to earn external income. For chief physicians, certain work conditions and characteristics affected their decision to earn external income, not higher wages.	Value/Impact	
"Community Health Center Access to Resources for their Patients with Diabetes"	Baig, A .A., Locklin, C. A., Campbell, A., Schaefer, C. T., Heuer, L. J., Lee, S. M., & Chin, M. H.	<i>Journal of Immigrant and Minority Health</i>	2013	Baig, A .A., Locklin, C. A., Campbell, A., Schaefer, C. T., Heuer, L. J., Lee, S. M., & Chin, M. H. Community Health Center Access to Resources for their Patients with Diabetes. <i>Journal of Immigrant and Minority Health</i> , 1-6.	High proportion (HP) community health center providers (>25% of their site diabetes population is Latino) were more likely to have access to PAs and certified diabetes educators, greater access to Spanish-speaking providers, and implement more culturally tailored diabetes education programs and outreach programs than non-HPs.	Practice	
"Integrating Cultural Competency throughout a First-Year Physician Assistant Curriculum Steadily Improves Cultural Awareness"	Beck, B., Scheel, M. H., De Oliveira, K., & Hopp, J.	<i>Journal of Physician Assistant Education</i>	2013	Beck, B., Scheel, M. H., De Oliveira, K., & Hopp, J. Integrating cultural competency throughout a first-year physician assistant curriculum steadily improves cultural awareness. <i>Journal of Physician Assistant Education</i> , 24(2).	This study tracked student self-assessments of cultural awareness at regular 4-month intervals during the first year of a PA program to test the effectiveness of a cultural competency component in the curriculum. Results showed that cultural awareness among PA students benefits from repeated exposures to cultural competency lessons.	Education	
"Physician Assistant Program Education on Spirituality and Religion in Patient Encounters"	Berg, G. M., Whitney, M. P., Wentling, C. J., Hervey, A. M., & Nyberg, S.	<i>Journal of Physician Assistant Education</i>	2013	Berg, G. M., Whitney, M. P., Wentling, C. J., Hervey, A. M., & Nyberg, S. (2013). Physician assistant program education on spirituality and religion in patient encounters. <i>Journal of Physician Assistant Education</i> , 24(2).	A sample of PA programs were surveyed to determine educational practices regarding spirituality and religion during patient encounters. Most respondents reported students' desire to be trained to discuss spirituality and religion, although a significant number do not offer this training. Over half of the programs would consider adding spirituality discussions with patients to the curriculum, but the majority would not add religious discussions with patients.	Education	
"Primary Care Physician Assistants in Nebraska"	Bhuyan, S. S., Deras, M., Ritsema, T. S., Huckabee, M. J., & Stimpson, J. P.	<i>Center for Health Policy</i>	2013	Bhuyan, S. S., Deras, M., Ritsema, T. S., Huckabee, M. J., & Stimpson, J. P. (2013). Primary Care Physician Assistants in Nebraska. <i>Center for Health Policy</i> .	Workforce survey data from the Health Professions Tracking Service (HPTS) at the University of Nebraska Medical Center from 2007-2011 were used to describe trends and characteristics of Nebraska's primary care Workforce. Though the number of primary care PAs rose by 18% from 2007 to 2011, at least 350 more PAs are needed to fill demand created by the aging population and the federal health reform law in 2014.	Workforce	
"Practice Characteristics and Lifestyle Choices of Men and Women Physician Assistants and the Relationship to Career Satisfaction"	Biscardi, C. A., Mitchell, J., Simpkins, S., & Zipp, G. P.	<i>Journal of Allied Health</i>	2013	Biscardi, C. A., Mitchell, J., Simpkins, S., & Zipp, G. P. (2013). Practice Characteristics and Lifestyle Choices of Men and Women Physician Assistants and the Relationship to Career Satisfaction. <i>Journal of Allied Health</i> , 42(3), 157-162.	This study aimed to find any gender-related differences in career satisfaction for PAs. The study found no significant difference between men and women PAs in regards to career satisfaction and ability to achieve work-life balance.	Value/Impact	
"Physician Assistant Training in Oral Health: An Interprofessional Approach"	Bowser, J., Deutchman, M., Potter, B., & Glickin, A. D.	<i>Journal of Interprofessional Care</i>	2013	Bowser, J., Deutchman, M., Potter, B., & Glickin, A. D. (2013). Physician Assistant Training in Oral Health: An Interprofessional Approach. <i>Journal of Interprofessional Care</i> . (Vol. 27, pp. 129-129). 52		Education	
"Advancing Oral Health in Physician Assistant Education: Evaluation of an Innovative Interprofessional Oral Health Curriculum"	Bowser, J., Sivahop, J., & Glickin, A.	<i>Journal of Physician Assistant Education</i>	2013	Bowser, J., Sivahop, J., & Glickin, A. (2013). Advancing oral health in physician assistant education: evaluation of an innovative interprofessional oral health curriculum. <i>Journal of Physician Assistant Education</i> , 24(3).	The impact of an oral health curriculum was evaluated by measuring increases in knowledge about oral health topics and implementation of oral health skills in the clinical year. Results showed that students demonstrated significant and persistent gains in knowledge and used oral health skills in the clinical year, particularly in the area of patient education about oral health.	Education	
"The Military Veteran to Physician Assistant Pathway: Building the Primary Care Workforce"	Brock, D., Bolon, S., Wick, K., Harbert, K., Jacques, P., Evans, T., & Gianola, F. J.	<i>Academic Medicine</i>	2013	Brock, D., Bolon, S., Wick, K., Harbert, K., Jacques, P., Evans, T., & Gianola, F. J. (2013). The Military Veteran to Physician Assistant Pathway: Building the Primary Care Workforce. <i>Academic Medicine</i> , 88(12), 1890-1894.	The PA profession initially emerged to utilize the skills of returning Vietnam-era military medics and corpsmen to fortify deficits in the health care Workforce. Today, the nation again faces projected health care Workforce shortages and a significant armed forces shutdown. The author identifies current strategies being implemented to encourage and support military health care personnel to enter the PA Workforce.	History	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Team Communication: Reporting the Effectiveness of a Large-Scale Innovative Interprofessional Training Opportunity"	Brock, D., Chiu, C. J., Hammer, D., Abu-Rish, E., Zierler, B., Schaad, D., Liner, D., Vorvick, L., Wilson, S., & Blondon, K.	<i>Journal of Interprofessional Care</i>	2013	Brock, D., Chiu, C. J., Hammer, D., Abu-Rish, E., Zierler, B., Schaad, D., Liner, D., Vorvick, L., Wilson, S., & Blondon, K. (2013). Team Communication: Reporting the Effectiveness of a Large-Scale Innovative Interprofessional Training Opportunity." <i>Journal of Interprofessional Care</i> (Vol. 27, pp. 200-201).	The University of Washington healthcare schools developed a large-scale innovative interprofessional training activity that brought together students from various health professions for a half-day training including didactic instruction and three team simulations. Students reported an improved understanding of team behaviors, self-reported attitudes, motivation, utility, and self-efficacy around working in interprofessional teams. However, "mutual support" was rated significantly lower than other subscales.	Education	
"Correlations between PANCE Performance, Physician Assistant Program Grade Point Average, and Selection Criteria"	Brown, G., Imel, B., Nelson, A., Hale, L. S., & Jansen, N.	<i>Journal of Physician Assistant Education</i>	2013	Brown, G., Imel, B., Nelson, A., Hale, L. S., & Jansen, N. (2013). Correlations between PANCE performance, physician assistant programs grade point average, and selection criteria. <i>Journal of Physician Assistant Education</i> , 24(1).	The purpose of this study was to examine correlations between first-time PANCE scores, GPAs, and specific selection criteria. Results showed no/limited correlation between PANCE scores and undergraduate GPA, healthcare experience, and selection criteria. There was correlation between PANCE scores and overall PA program GPA, PA pharmacology grades, and PA anatomy grades.	Education	
"Institutional Sponsorship, Student Debt, and Specialty Choice in Physician Assistant Education"	Cawley, J. F., & Jones, P. E.	<i>Journal of Physician Assistant Education</i>	2013	Cawley, J. F., & Jones, P. E. (2013). Institutional sponsorship, student debt, and specialty choice in physician assistant education. <i>Journal of Physician Assistant Education</i> , 24(4), 4-8.	This study investigates the roles that institutional sponsorship and student debt have on specialty choice in physician assistant education. Sponsorship has trended of late to private institutions, and there is a disproportionate debt burden associated with attending privately sponsored programs. This may correlate with the trend of PAs selecting specialty practice over primary care.	Education	
"A Conversation with E. Harvey Estes, Jr., M.D."	Cawley, J.F.	<i>Journal of Physician Assistant Education</i>	2013	Cawley, J. F. (2013). "A Conversation with E. Harvey Estes, Jr., M.D." <i>Journal of Physician Assistant Education</i> 2013; 24:22-24.	This transcript involves a conversation between James Cawley and Dr. E. Harvey Estes, a protégé and contemporary of Dr. Eugene Stead, the founder of the first PA program at Duke University. Estes has spent his life devoted to the growth and development of the PA profession. This interview touches on his early origins in the Duke program and spand through his views on current state of the PA profession.	History	
"What Do We Know about Retired Physician Assistants? A Preliminary Study"	Coombs, J. M., Hooker, R. S., & Brunisholz, K. D.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Coombs, J. M., Hooker, R. S., & Brunisholz, K. D. (2013). What do we know about retired physician assistants? A preliminary study. <i>Journal of the American Academy of Physician Assistants</i> , 26(3), 44-48.	This study investigated retirement patterns of PAs by undertaking a survey in 2011 using a national database. Out of 625 qualified respondents, the mean age of retirement was 61 years, duration of PA career was 29 years on average, 43% retired from family/general medicine, 11% retired from emergency medicine, nearly all received social security and medicare, 20% wished they had retired later in life, around 74% of men and women said they retired at the right time, and the reasons for retiring varied widely.	Workforce	
"Physician Assistants and Their Intent to Retire"	Coombs, J. M., Hooker, R. S., & Brunisholz, K.	<i>The American Journal of Managed Care</i>	2013	Coombs, J. M., Hooker, R. S., & Brunisholz, K. (2013). Physician assistants and their intent to retire. <i>The American Journal of Managed Care</i> , 19(7), e256	This study set out to determine predictors of PAs to retire or permanently leave clinical practice in order to create a measure of retention and attrition for purposes of forecasting PA supply. Results showed that PAs 55 years and older reported that they are likely to delay retirement from practice until 67 years of age, on average, and women were less confident than men in retirement preparation.	Workforce	
"Recalibrating to Meet the Nation's Workforce Demands"	Cooper, R. A.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Cooper, R. A. (2013). Recalibrating to meet the nation's Workforce demands. <i>Journal of the American Academy of Physician Assistants</i> , 26(2), 10.	This article is a commentary on why there are gaps in the supply of primary care providers. Dr. Cooper suggests that these shortages are due to pipeline issues (matriculants to medical programs are heavily skewed to higher-income families), preceptor issues (lack of qualified faculty and preceptor sites for NP and PA programs), and political will (Though the Affordable Care Act emphasizes primary care, it does not remove the caps on residency training or provide support for PA or NP programs at levels that could allow for meaningful increases in capacity).	Workforce	
"Physician Assistants in Primary Care: Trends and Characteristics"	Coplan, B., Cawley, J., & Stoehr, J.	<i>Annals of Family Medicine</i>	2013	Coplan, B., Cawley, J., & Stoehr, J. (2013). Physician assistants in primary care: trends and characteristics. <i>The Annals of Family Medicine</i> , 11(1), 75-79.	This study aimed to identify demographic characteristics associated with PAs who practice in primary care through data from the 2009 American Academy of Physician Assistants' Annual Census Survey. Results showed that one-third of PAs worked in primary care and that the percentage was declining. Also, women who were of older age and Hispanic were more likely to work in primary care practice.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistant Model for Lung Procurements: A Paradigm Worth Considering"	Costa, J., D'Ovidio, F., Bacchetta, M., LaVelle, M., Singh, G., & Sonett, J. R.	<i>Annals of Thoracic Surgery</i>	2013	Costa, J., D'Ovidio, F., Bacchetta, M., LaVelle, M., Singh, G., & Sonett, J. R. (2013). Physician Assistant Model for Lung Procurements: A Paradigm Worth Considering. <i>The Annals of Thoracic Surgery</i> , 96(6), 2033-2037.	Researchers make a case for training physician assistants to perform lung procurements, a procedure typically performed only by surgical fellows or attending cardiothoracic surgeons. A single institution reviewed 287 consecutive lung procurements by a PA or fellow over 5 years. Injury rate and rates for pulmonary graft dysfunction grade 2 and 3 were significantly lower for the PA compared to the resident cohort. Thus, use of experienced PAs in donor lung procurements is argued to be a safe and viable alternative offering continuity of technical expertise and evaluation of lung allografts.	Practice	
"The Assistant Medical Officer in Sri Lanka: Mid-Level Health Worker in Decline"	De Silva, V., Strand de Oliveira, J., Liyanage, M., & Østbye, T.	<i>Journal of Interprofessional Care</i>	2013	De Silva, V., Strand de Oliveira, J., Liyanage, M., & Østbye, T. (2013). The Assistant Medical Officer in Sri Lanka: mid-level health worker in decline. <i>Journal of Interprofessional Care</i> , 27(5), 432-433.	The history of Assistant Medical Officers (AMOs) in Sri Lanka can be traced back to the 1860s. Their training from the beginning followed an allopathic, 'evidence based' model. AMOs have played a key role in rural and peripheral health care, through staffing of government central dispensaries and maternity homes and may have contributed to Sri Lanka's favorable health outcomes. While there are currently approximately 2000 AMOs, their training course was discontinued in 1995. It was argued that the quality of care provided by the AMOs is substandard relative to that of physicians. The success, rapid expansion and integration of physician assistant programs into the US health care system have recently spurred other countries to introduce similar programs. This paper reviews Sri Lanka's move in the opposite direction, phasing out the AMO profession, without any research into their contributions to access to interprofessional primary health care and positive health outcomes.	International; History	
"The Texas Health Workforce Benefit of Military Physician Assistant Program Veterans"	Jones, P. E., & Hooker, R. S.	<i>Journal of Physician Assistant Education</i>	2013	Eugene, Jones, P., & Hooker, R. S. The Texas Health Workforce Benefit of Military Physician Assistant Program Veterans. <i>Journal of Physician Assistant Education</i> , 24(3).	Researchers studied the redistribution of PAs upon service departure to determine if the Interservice Physician Assistant Program (IPAP) had an effect on the Texas PA Workforce. Results showed that 7% of licensed Texas PAs attended a military PA training program, 58.3% reported practice in primary care settings, and 41.7% reported practice in specialty clinical practice settings. The study determined an estimated 16 years of community Workforce productivity per veteran PA following completion of military service.	Value/Impact	
"Division of Primary Care Services between Physicians, Physician Assistants, and Nurse Practitioners for Older Patients with Diabetes"	Everett, C. M., Thorpe, C. T., Palta, M., Carayon, P., Gilchrist, V. J., & Smith, M. A.	<i>Medical Care Research and Review</i>	2013	Everett, C. M., Thorpe, C. T., Palta, M., Carayon, P., Gilchrist, V. J., & Smith, M. A. (2013). Division of primary care services between physicians, physician assistants, and nurse practitioners for older patients with diabetes. <i>Medical Care Research and Review</i> , 70(5), 531-541.	This study investigated how to incorporate PA/NPs into primary care teams. Using data from a large physician group, researchers described the division of patients and services (e.g., acute, chronic, preventive, other) between primary care providers for older diabetes patients on panels with varying levels of PA/NP involvement (i.e., no role, supplemental provider, or usual provider of care). Panels with PA/NP usual providers had higher proportions of patients with Medicaid, disability, and depression. Patients with physician usual providers had similar probabilities of visits with supplemental PA/NPs and physicians for all service types. However, patients with PA/NP usual providers had higher probabilities of visits with a supplemental physician.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistants and Nurse Practitioners Perform Effective Roles on Teams Caring for Medicare Patients with Diabetes"	Everett, C., Thorpe, C., Palta, M., Carayon, P., Bartels, C., & Smith, M. A.	<i>Health Affairs</i>	2013	Everett, C., Thorpe, C., Palta, M., Carayon, P., Bartels, C., & Smith, M. A. (2013). Physician Assistants and Nurse Practitioners Perform Effective Roles On Teams Caring For Medicare Patients With Diabetes. <i>Health Affairs</i> , 32(11), 1942-1948.	Using Medicare claims and electronic health record data from a large physician group, researchers compared outcomes for two groups of adult Medicare patients with diabetes whose conditions were at various levels of complexity: those whose care teams included PAs or NPs in various roles, and those who received care from physicians only. Outcomes were generally equivalent in thirteen comparisons. In four comparisons, outcomes were superior for the patients receiving care from PAs or NPs, but in three other comparisons the outcomes were superior for patients receiving care from physicians only. Specific roles performed by PAs and NPs were associated with different patterns in the measure of the quality of diabetes care and use of health care services. No role was best for all outcomes. Findings suggest that patient characteristics, as well as patients' and organizations' goals, should be considered when determining when and how to deploy PAs and NPs on primary care teams.	Workforce	
"Projecting Surgeon Supply Using A Dynamic Model"	Fraher, E. P., Knapton, A., Sheldon, G. F., Meyer, A., & Ricketts, T. C.	<i>Annals of Surgery</i>	2013	Fraher, E. P., Knapton, A., Sheldon, G. F., Meyer, A., & Ricketts, T. C. (2013). Projecting surgeon supply using a dynamic model. <i>Annals of surgery</i> , 257(5), 867-872.	The objective of this study was to develop a projection model to forecast the head count and full-time equivalent supply of surgeons by age, sex, and specialty in the United States from 2009 to 2028. Forecasts show that overall surgeon supply will decrease 18% during the period from 2009 to 2028 with declines in all specialties except colorectal, pediatric, neurological surgery, and vascular surgery. Model simulations suggest that none of the proposed changes to increase graduate medical education currently under consideration will be sufficient to offset declines. The length of time it takes to train surgeons, the anticipated decrease in hours worked by surgeons in younger generations, and the potential decreases in graduate medical education funding suggest that there may be an insufficient surgeon Workforce to meet population needs. Existing maldistribution patterns are likely to be exacerbated, leading to delayed or lost access to time-sensitive surgical procedures, particularly in rural areas.	Workforce	
"Physician Assistants: From Pipeline to Practice"	Glicken, A. D., & Miller, A. A.	<i>Academic Medicine</i>	2013	Glicken, A. D., & Miller, A. A. (2013). Physician assistants: From pipeline to practice. <i>Academic Medicine</i> , 88(12), 1883-1889.	PAs are effective partners in changing the health care environment and have enormous potential as a Workforce. However, the overall impact of the PA pipeline on projected shortages remains unclear. Barriers exist to optimal deployment, including faculty shortages, scope-of-practice regulations, and a lack of clinical placement sites. This article brings together data that provides a comprehensive picture of PAs contributions to the healthcare Workforce in the hopes of influencing future policy makers and Workforce planners to maximize potential contributions of PAs in the future.	Workforce	
"Impact of Physician Assistants on the Outcomes of Patients with Acute Myelogenous Leukemia Receiving Chemotherapy in an Academic Medical Center"	Glitzbecker, B. E., Yolin-Raley, D. S., DeAngelo, D. J., Stone, R. M., Soiffer, R. J., & Alyea, E. P.	<i>Journal of Oncology Practice</i>	2013	Glitzbecker, B. E., Yolin-Raley, D. S., DeAngelo, D. J., Stone, R. M., Soiffer, R. J., & Alyea, E. P. (2013). Impact of Physician Assistants on the Outcomes of Patients With Acute Myelogenous Leukemia Receiving Chemotherapy in an Academic Medical Center. <i>Journal of Oncology Practice</i> , 9(5), e228-e233.	The purpose of this study was to assess the quality of acute myelogenous leukemia (AML) care provided by a PA service compared with the traditional model. Data was retrospectively collected on patients admitted with AML for reinduction chemotherapy from 2008 to 2012. The data demonstrate equivalent mortality and ICU transfers, with a decrease in LOS, readmission rates, and consults for patients cared for in the PA service. This suggests that the PA service is associated with increased operational efficiency and decreased health service use without compromising health care outcomes.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Contribution of Physician Assistants in Primary Care: A Systematic Review"	Halter, M., Drennan, V., Chattopadhyay, K., Carneiro, W., Yiallourous, J., de Lusignan, S., & Grant, R.	<i>BMC Health Services Research</i>	2013	Halter, M., Drennan, V., Chattopadhyay, K., Carneiro, W., Yiallourous, J., de Lusignan, S., & Grant, R. *2913(. The contribution of Physician Assistants in primary care: a systematic review. <i>BMC Health Services Research</i> , 13(1), 223.	This systematic review aimed to appraise the evidence of the contribution of PAs within primary care, defined for this study as general practice, relevant to the UK or similar systems. Medline, CINAHL, PsycINFO, BNI, SSCI and SCOPUS databases were searched from 1950 to 2010. The research evidence of the contribution of PAs to primary care was mixed and limited. However, the continued growth in employment of PAs in American primary care suggests that this professional group is judged to be of value by increasing numbers of employers. Further specific studies are needed to fill in the gaps in our knowledge about the effectiveness of PAs' contribution to the international primary care Workforce.	Practice	
"Computerized Prescriber Order Entry Implementation in a Physician Assistant-Managed Hematology and Oncology Inpatient Service: Effects on Workflow and Task Switching"	Hanauer, D. A., Zheng, K., Commiskey, E. L., Duck, M. G., Choi, S. W., & Blayney, D. W.	<i>Journal of Oncology Practice</i>	2013	Hanauer, D. A., Zheng, K., Commiskey, E. L., Duck, M. G., Choi, S. W., & Blayney, D. W. (2013). Computerized Prescriber Order Entry Implementation in a Physician Assistant-Managed Hematology and Oncology Inpatient Service: Effects on Workflow and Task Switching. <i>Journal of Oncology Practice</i> , 9(4), e103-e114.	The objective of this study was to quantify the impact of an inpatient computerized prescriber order entry (CPOE) implementation on workflow, with an emphasis on ordering and direct patient care time. The researchers conducted a direct-observation time-and-motion study of the provider team of a hematology/oncology inpatient service both before and after CPOE implementation, characterizing workflow into 60 distinct activity categories. The provider team comprised physician assistants supervised by attending physicians. Results showed that CPOE implementation did not negatively affect time available for direct patient care. On the contrary, workflow fragmentation decreased.	Practice	
"Percentage of Emergency Department (ED) Visits during which a Patient Was Seen by a Physician Assistant or Nurse Practitioner, Overall and without a Physician Present"	Hing, E., & Brown, A.	<i>NCHS Data Brief</i>	2013	Hing, E., & Brown, A. (2013). Percentage of Emergency Department (ED) Visits During Which a Patient Was Seen by a Physician Assistant or Nurse Practitioner, Overall and Without a Physician Present" <i>National Hospital Ambulatory Medical Care Survey</i> , United States, 2000-2010.	The percentage of hospital ED visits during which a patient was seen by a PA or NP increased from 7% in 2000 to 17% in 2010. The percentage of ED visits during which a patient was seen by a PA or NP and did not see a physician increased from 3% in 2000 to 7% in 2010.	Workforce	
"Physician Assistant and Advance Practice Nurse Care in Hospital Outpatient Departments: United States, 2008-2009"	Hing, E., & Uddin, S.	<i>NCHS Data Brief</i>	2013	Hing, E., & Uddin, S. (2013). Physician assistant and advance practice nurse care in hospital outpatient departments: United States, 2008-2009, <i>NCHS Data Brief</i> , 2011, no. 77.	NCHS Data Brief report key findings include: 1) Hospital outpatient department visits attended only by PAs or advanced practice nurses (APNs) increased by 50% from 2000-2001 to 2008-2009. 2) The more urban the hospital location, the lower the percentage of visits seen only by PAs or APNs, 3) A higher percentage of PA or APN-only visits were to general medicine and obstetric or gynecology clinics compared with pediatric and surgical clinics. 4) PAs and APNs saw a higher percentage of visits where a new problem was the major reason for the visit compared with chronic condition, flare-up, or pre/post surgery visits.	Workforce	
"Specialization Training Programs for Physician Assistants: Symbolic Violence in the Medical Field?"	Hlavin, J. A., & Callahan, J. L.	<i>Health Sociology Review</i>	2013	Hlavin, J. A., & Callahan, J. L. Specialization training programs for physician assistants: Symbolic violence in the medical field?. <i>Health Sociology Review</i> , 22(2), 200-209.	This study analyzes the issues confronting postgraduate PA training programs. The paper discusses implications related to shifts in power amongst the different stakeholders concluding that, although formal postgraduate PA training can be beneficial to both the PA and the medicine, considerations related to underlying agendas need attention.	Education	
"Physician Assistant Education: An Analysis of the Journal of Physician Assistant Education"	Hocking, J., Crowley, D., & Cawley, J. F.	<i>Journal of Physician Assistant Education</i>	2013	Hocking, J., Crowley, D., & Cawley, J. F. (2013). Physician assistant education: an analysis of the Journal of Physician Assistant Education. <i>Journal of Physician Assistant Education</i> , 24(2).	A retrospective, systematic analysis of published research articles in the Journal of Physician Assistant Education and its predecessor publication was conducted. Nearly one-fourth of all articles considered were dedicated to studying various PA curricula. Methodological approaches used in these studies tended toward Internet-based surveys, but telephone-based surveys retained the highest response rate (97%). Among study subjects (cohorts) examined, the most frequently studied cohort consisted of PA students, who displayed high response rates (74.4%).	Education	
"A Physician Assistant Rheumatology Fellowship"	Hooker, R. S.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Hooker, R. S. (2013). A physician assistant rheumatology fellowship. <i>Journal of the American Academy of Physician Assistants</i> , 26(6), 49-52.	A rheumatology postgraduate fellowship for physician assistants was inaugurated in 2004 as a pilot initiative to supplement shortages in rheumatologists. An administrative analysis documented that each PA trainee achieved a high level of rheumatology exposure and proficiency. Classes in immunology, rheumatology, and internal medicine augmented clinical training. Faculty and trainees considered PA postgraduate training in rheumatology worthwhile.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Changing Physician Assistant Profession: A Gender Shift"	Hooker, R. S., Robie, S. P., Coombs, J. M., & Cawley, J. F.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Hooker, R. S., Robie, S. P., Coombs, J. M., & Cawley, J. F. (2013). The changing physician assistant profession: A gender shift. <i>Journal of the American Academy of Physician Assistants</i> , 26(9), 36-44.	The physician assistant (PA) movement originally served as an avenue for male veterans to transition into the civilian Workforce. After a half-century of development, the profession in the United States is now predominantly female and nonveteran. Using archival data and other resources, this article documents the influences on gender and age shifts in the PA profession with related policy perspectives. Now entering its sixth decade, the profession continues to evolve as demand for PA services outpaces supply.	History	
"Ambulatory and Chronic Disease Care by Physician Assistants and Nurse Practitioners"	Hooker, R. S., Benitez, J. A., Coplan, B. H., & Dehn, R. W.	<i>Journal of Ambulatory Care Management</i>	2013	Hooker, R. S., Benitez, J. A., Coplan, B. H., & Dehn, R. W. (2013). Ambulatory and chronic disease care by physician assistants and nurse practitioners. <i>The Journal of ambulatory care management</i> , 36(4), 293-301.	This research study analyzed ambulatory visits by provider type and diagnosis focusing on chronic diseases to identify differences in patients seen by each type of provider. Both physician assistants and nurse practitioners attended 14% of 777 million weighted visits. Overall, diabetes and hypertension accounted for 2% to 4% of visits. The distribution of visits for chronic disease diagnoses appears to be similar for all 3 providers (physicians, nurse practitioners, and physician assistants). These findings may improve organizational efficiency in ambulatory systems.	Practice	
"Working Together in the Best Interest of Patients"	Johnson, J. E.	<i>Journal of the American Board of Family Medicine</i>	2013	Johnson, J. E. (2013). Working together in the best interest of patients. <i>The Journal of the American Board of Family Medicine</i> , 26(3), 241-243.	The findings by Peterson et al. show that over half of all family physicians work with nurse practitioners, physician assistants, and certified nurse midwives. While tensions surrounding leadership of teams remain an issue, there are many systems problems that all primary care providers need to face together. This commentary presents the challenges to address in order to keep the focus of care on the patient.	Practice	
"The Perception and Satisfaction of Patients Seen at a Rural Physician Assistant-Directed Headache Specialty Clinic"	Jones, J. M.	<i>Cephalalgia</i>	2013	Jones, J. M. (2013). The Perception and Satisfaction of Patients Seen at a Rural Physician Assistant-Directed Headache Specialty Clinic. <i>Cephalalgia</i> (Vol. 33, No. 58, pp. 118-118).	The objective of the study was to examine the attitudes and satisfaction of patients seen at a PA-directed headache specialty clinic in a rural setting. An eighteen item questionnaire was given to 100 random patients via Internet survey or hard copy (for those who were computer literate) who had at least one completed visit at a PA directed headache specialty clinic. Results showed that while there was a hesitation some patients about seeing a PA for headache specialty care prior to the first visit, most were very satisfied after at least one visit.	Value/Impact	
"Primary Care Technicians: A Solution to the Primary Care Workforce Gap"	Kellermann, A. L., Saultz, J. W., Mehrotra, A., Jones, S. S., & Dala, S.	<i>Health Affairs</i>	2013	Kellermann, A. L., Saultz, J. W., Mehrotra, A., Jones, S. S., & Dala, S. (2013). Primary care technicians: a solution to the primary care Workforce gap. <i>Health Affairs</i> , 32(11), 1893-1898.	This article briefly reviews strategies and barriers to closing the primary Workforce gap through 1) training more primary care physicians, 2) boosting the supply of NPs or PAs or both, and 3) using community health workers to extend the reach of primary care physicians. The article goes on to propose a new approach adapted from the widely accepted model of emergency medical services.	Workforce	
"A Framework for Service Learning in Physician Assistant Education that Fosters Cultural Competency"	Kelly, P.J.	<i>Journal of Physician Assistant Education</i>	2013	Kelly, P.J. (2013). A framework for service learning in physician assistant education that fosters cultural competency. <i>The Journal of Physician Assistant Education: The Official Journal of the Physician Assistant Education Association</i> , 24(2), 32.	The author encourages PA programs to adopt Yoder's framework for service-learning. The framework was successful in dental education and represents a solid model for health-care professional service-learning.	Education	
"Outcomes of Nurse Practitioners and Physician Assistant Patient Encounters"	Kleinpell, R., & Hohmann, S.	<i>Chest</i>	2013	Kleinpell, R., & Hohmann, S. (2013). Outcomes of Nurse Practitioners and Physician Assistant Patient Encounters. <i>Chest</i> , 144(4_MeetingAbstracts), 532A.		Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Medical Group Practice Characteristics Influencing Inappropriate Emergency Department and Avoidable Hospitalization Rates"	Kralewski, J., Dowd, B., Knutson, D., Savage, M., & Tong, J.	<i>Journal of Ambulatory Care Management</i>	2013	Kralewski, J., Dowd, B., Knutson, D., Savage, M., & Tong, J. (2013). Medical Group Practice Characteristics Influencing Inappropriate Emergency Department and Avoidable Hospitalization Rates. <i>The Journal of Ambulatory Care Management</i> , 26(4), 286-291.	The inappropriate use of emergency departments (EDs) and ambulatory care sensitive hospital admission rates by patients attributed to a national sample of 212 medical group practices is documented, and the characteristics of practices that influence these rates are identified. Hospital-owned practices have higher nonemergent and emergent primary care treatable ED rates and higher ambulatory care sensitive hospitalization rates. Practices with electronic health records have lower inappropriate ED rates but those in rural areas have significantly higher rates. Practices with lower operating costs have higher inappropriate ED and ambulatory care sensitive rates, raising questions about the costs of preventing these incidents at the medical group practice level.	Value/Impact	
"Physician Assistant Education in Germany"	Kuilman, L., Matthews, C., & Dierks, M.	<i>Journal of Physician Assistant Education</i>	2013	Kuilman, L., Matthews, C., & Dierks, M. (2013). Physician assistant education in Germany. <i>Journal of Physician Assistant Education</i> , 24(2), 38-41.	This article presents an overview and history of the PA profession in Germany. The first German PA program began in 2005. As of 2013, there are three operational PA programs, with a fourth to be inaugurated in the fall of 2013. The programs have produced approximately 100 graduates, all with a nursing background. The PA model of shifting tasks from medical doctors to PAs appears to be growing among senior physicians and hospital administrators. While the development of a German PA movement is in its nascent stage, the training, deployment, and evolution of PA training programs appears underway.	International; History	
"States with the Least Restrictive Regulations Experienced the Largest Increase in Patients Seen by Nurse Practitioners"	Kuo, Y. F., Loresto, F. L., Rounds, L. R., & Goodwin, J. S.	<i>Health Affairs</i>	2013	Kuo, Y. F., Loresto, F. L., Rounds, L. R., & Goodwin, J. S. (2013). States with the least restrictive regulations experienced the largest increase in patients seen by nurse practitioners. <i>Health Affairs</i> , 32(7), 1236-1243.	This study assesses the impact of state regulations on the increase in care provided by NPs in the United States, using a 5 percent national sample of Medicare beneficiaries. The study found that between 1998 and 2010, the number of Medicare patients receiving care from NPs increased fifteenfold. By 2010, states with the least restrictive regulations of NP practice had a 2.5-fold greater likelihood of patients' receiving their primary care from NPs than did the most restrictive states. Relaxing state restrictions on NP practice should increase the use of NPs as primary care providers, which in turn would reduce the current national shortage of primary care providers.	Workforce	
"Physician Assistant Students' Views Regarding Interprofessional Education: A Focus Group Study"	Lie, D., Walsh, A., Segal-Gidan, F., Banzali, Y., & Lohenry, K.	<i>Journal of Physician Assistant Education</i>	2013	Lie, D., Walsh, A., Segal-Gidan, F., Banzali, Y., & Lohenry, K. (2013). Physician assistant students' views regarding interprofessional education: a focus group study. <i>Journal of Physician Assistant Education</i> , 24(1).	The purpose of this study was to identify and report PA student experiences, learning, and opinions regarding interprofessional education (IPE). A series of open-ended questions was constructed and designed to solicit PA students' opinions about the need for IPE, preferred teaching strategies, and implementation methods, using focus group methodology. Results showed that PA students recognize the importance of IPE and request early, required clinical experiences led by well-trained interprofessional faculty with the option to choose clinical sites. The study also suggests that student preferences should be considered in IPE curriculum design.	Education	
"Comparison of the Quality of Patient Referrals From Physicians, Physician Assistants, and Nurse Practitioners"	Lohr, R. H., West, C. P., Beliveau, M., Daniels, P. R., Nyman, M. A., Mundell, W. C., & Beckman, T. J.	<i>Mayo Clinic Proceedings</i>	2013	Lehr, R. H., West, C. P., Beliveau, M., Daniels, P. R., Nyman, M. A., Mundell, W. C., & Beckman, T. J. (2013). Comparison of the Quality of Patient Referrals from Physicians, Physician Assistants, and Nurse Practitioners. <i>Mayo Clinic Proceedings</i> (Vol. 88, No. 11, pp. 1266-1271).	The objective of the study was to compare the quality of referrals of patients with complex medical problems from NPs, PAs, and physicians to general internists through a retrospective comparison study involving regional referrals from an academic medical center from January 1, 2009 to December 31, 2010. Results showed that the quality of referrals to an academic medical center was higher for physicians than for NPs and PAs regarding the clarity of the referral question, understanding of pathophysiology, and adequate prereferral evaluation and documentation.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Understanding the Motivations of the Multigenerational Physician Assistant Workforce"	Lopes, J. E., & Delellis, N. O.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Lopes, J. E., & Delellis, N. O. (2013). Understanding the motivations of the multigenerational physician assistant Workforce. <i>Journal of the American Academy of Physician Assistants</i> , 26(10), 46-50.	This study asked a convenience sample of practicing PAs to rate the importance of a number of work-related factors known to influence job satisfaction. The highest ranked motivator was "stable and secure future" for both baby boomers and millenials. Millenials ranked "chance to benefit society" as second, while baby boomers ranked "friendly and congenial associates" as second. Other highly ranked motivators included "chance to learn new things", "working as part of a team", and "chance to make a contribution to important decisions." This study and previous work using a similar methodology indicates that what motivates workers remains remarkably consistent across time and populations.	Workforce	
"Care Directed by a Specialty-Trained Nurse Practitioner or Physician Assistant Can Overcome Clinical Inertia in Management of Inpatient Diabetes?"	Mackey, P. A., Boyle, M. E., Walo, P. M., Castro, J. C., Cheng, M. R., & Cook, C. B.	<i>Endocrine Practice</i>	2013	Mackey, P. A., Boyle, M. E., Walo, P. M., Castro, J. C., Cheng, M. R., & Cook, C. B. (2013). Care Directed by a Specialty-Trained Nurse Practitioner or Physician Assistant can Overcome Clinical Inertia in Management of Inpatient Diabetes? <i>Endocrine Practice</i> , 1-27.	The objective of the study was to determine the impact of care directed by a specialty-trained NP or PA on use of a basal-bolus insulin therapy and glycemic control in a population of non-critically ill patients with diabetes through a retrospective review of diabetes patients evaluated between July 1 and December 31, 2011. Diabetes care assisted by an NP/PA trained in inpatient diabetes management resulted in greater use of recommended basal-bolus insulin therapy and correlated with lower mean glucose levels before discharge. Adapting this model for use outside an endocrinology consult service needs to be explored so the expertise can be brought to a broader inpatient population with diabetes.	Value/Impact	
"Dermatology Procedural and Surgical Skills Workshop for Medical and Physician Assistant Students"	Martin, J., Jalalat, S. Z., & Wagner, R. F.	<i>Journal of Cosmetics, Dermatologic of Sciences and Applications</i>	2013	Martin, J., Jalalat, S. Z., & Wagner, R. F. (2013). Dermatology Procedural and Surgical Skills Workshop for Medical and Physician Assistant Students. <i>Journal of Cosmetics, Dermatological Sciences and Applications</i> , 3, 44.	Researchers initiated and evaluated a resident-led surgical skills workshop through the Department of Dermatology. Participants received instructions on surgical tools/techniques followed by hands-on practice. Anonymous surveys administered to 24 medical and physician assistant students assessed their skill level, confidence level, and likelihood of using surgical skills in future practice preand post-workshop using a 1 - 5 Likert scale. Overall experience was also assessed. Results showed a statistically significant change in skill and confidence levels, and no change in utility.	Education	
"A History of the Alaska Physician Assistant, 1970-1980"	Marzucco, J., Hooker, R. S., & Ballweg, R. M.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Marzucco, J., Hooker, R. S., & Ballweg, R. M. (2013). A history of the Alaska physician assistant, 1970-1980. <i>Journal of the American Academy of Physician Assistants</i> , 26(12), 45-51.	The introduction of physician assistants (PAs) into Alaska began in 1971 with seven MEDEX Northwest students, who were paired with physician preceptors for 12 months. Scores of PAs were recruited as health officers on the Trans-Alaska Pipeline System starting in 1974, and by 1977 the state had 200 PAs. In 1979, the Alaska Board of Medical Examiners ratified the first set of regulations and began issuing licenses the following year. Throughout the 1970s and following pipeline completion, more PAs were employed by private, state, and federal agencies to meet the needs of a growing population. Forty years later, Alaska has one of the richest legacies in PA deployment of any state. This article is based on the authors' memories, communications with those involved in the program, and historical documents archived at the MEDEX Northwest Physician Assistant Program at the University of Washington in Seattle, along with Alaskan archival sources.	History	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Use of Noncognitive Factors in Physician Assistant Admissions"	McDaniel, M. J., Thrasher, A., & Hiatt, T.	<i>Journal of Physician Assistant Education</i>	2013	McDaniel, M. J., Thrasher, A., & Hiatt, T. (2013). The use of noncognitive factors in physician assistant admissions. <i>Journal of Physician Assistant Education</i> , 24(1).	PURPOSE: To Identify the most influential noncognitive factors valued in admissions processes by PA programs throughout the United States, as well as the motivators for and barriers to using these factors. METHODS: A literature search was performed using PubMed and JPAE to identify noncognitive factors that were reported to have an effect on admissions in various health professions. A survey was developed incorporating the most frequently identified factors and was electronically distributed to all program directors of the PAEA. RESULTS: There were 94 respondents from 154 programs surveyed (61% response rate). The five most influential cognitive factors were faculty/staff/interviewer interactions, career motivation, knowledge of profession, maturity, and professionalism. The most important motivator for using noncognitive factors were identified as academic success and career success. All factors did not vary based on PA program. The factors identified with the highest levels of regional variance were leadership experience, self-awareness, cultural sensitivity, undergraduate institution, and peer interaction. CONCLUSION: These study results will assist PA applicants in becoming more competitive and provide programs with additional factors for consideration in the admissions practices.	Education	
"Physician Assistant Students' Perceived Breastfeeding Knowledge and Counseling Skills Before and After Web-Based Curriculum and Lactation Shadowing Experience"	Meusch, S. M., Elliott, E. P., & Fasser, C. E.	<i>Journal of Physician Assistant Education</i>	2013	Meusch, S. M., Elliott, E. P., & Fasser, C. E. (2013). Physician assistant students' perceived breastfeeding knowledge and counseling skills before and after web-based curriculum and lactation shadowing experience. <i>Journal of Physician Assistant Education</i> , 24(3).	PURPOSE: This study assessed physician assistant (PA) students' self-perceived knowledge/counseling skills regarding breastfeeding before and after a newly implemented web-based curriculum and lactation consultant shadowing experiences. METHODS: The study included 37 students (100% response rate) at the principal investigator's institution, Baylor College of Medicine. A 19-item, Likert-scale electronic questionnaire was provided to students before and after participation in a new breastfeeding curriculum experience. Wilcoxon signed-rank and Mann-Whitney U tests were used for analysis. The curriculum consisted of seven self-paced, web-based modules concerning fundamental topics of breastfeeding, as well as a 3-hour lactationconsultant shadowing experience. RESULTS: Significant improvement in self-perceived knowledge/counseling skills was noted, with an overall mean precurriculum score of 40.19, versus 76.59 for the postcurriculum score (statistically significant at $z = -5.30$, $P < .05$). Gender and age group score comparisons revealed no significant differences. CONCLUSION: Participation in the new curriculum and shadowing experience significantly increased PA students' levels of confidence concerning their breastfeeding knowledge/counseling skills.	Education	
"Physician Assistant Home Visit Program to Reduce Hospital Readmissions"	Nabagiez, J. P., Shariff, M. A., Khan, M. A., Molloy, W. J., & McGinn Jr, J. T.	<i>The Journal of Thoracic and Cardiovascular Surgery</i>	2013	Nabagiez, J. P., Shariff, M. A., Khan, M. A., Molloy, W. J., & McGinn Jr, J. T. (2013). Physician assistant home visit program to reduce hospital readmissions. <i>The Journal of Thoracic and Cardiovascular Surgery</i> , 145(1), 225-233.	A physician assistant home care (PAHC) program providing house calls was initiated to decrease hospital readmission rates. The study evaluated the 30-day readmission rates and diagnoses before and during PAHC to identify determinants of readmission and interventions to reduce readmissions. There were 361 patients (51%) in the control group and 340 patients (49%) in the PAHC group. Overall readmission rate for the control group was 16% (59 patients) and 12% (42 patients) for the PAHC group, a 25% reduction in the rate of readmissions ($P = .161$). The rate of infection-related readmissions was reduced from 44% (26 patients) to 19% (8 patients) ($P = .010$). Home interventions included adjustment of medications (90%), ordering of imaging studies (7%), and administering direct wound care (2%). CONCLUSION: The 30-day readmission rate was reduced by 25% in patients receiving PAHC visits. The most common home intervention was medication adjustment, most commonly to diuretic agents, medications for hypoglycemia, and antibiotics.	Practice	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Development of an Advanced Practice Team in an Academic PICU Using an Eight Month Orientation"	Newman, C., Dobyns, E., & Gunville, C.	<i>Critical Care Medicine</i>	2013	Newman, C., Dobyns, E., & Gunville, C. (2013). 123: Development of An Advanced Practice Team in An Academic PICU Using An Eight Month Orientation. <i>Critical Care Medicine</i> , 41(12), A24.	This study described a model for implementing and expanding a team of Pediatric Nurse Practitioners (NPs) and Physician Assistants (PAs). METHODS: An 8 month orientation for new hire PAs and NPs was developed at a 26 bed academic PICU. Orientation begins with a 1 week "boot camp" with pharmacists, respiratory therapists, nutritionists, and bedside nurses as well as simulated training in bedside procedures. In addition to PICU, rotations occur in anesthesia, cardiac intensive care unit (CICU), hospitalist service and rapid response team (RRT). Education includes lectures on common PICU conditions, bimonthly advanced practice education sessions, weekly PICU fellow lectures, and the Pediatric Fundamentals of Critical Care Medicine course. Patient care expands from a single patient with oversight to an eventual full load. Pairing allows increased autonomy with reduced patient load. RESULTS: All new hires who have undergone the 8 month orientation were retained. The team has grown from weekday coverage of 4 patients to caring for up to 16 patients, 24 hours a day, 7 days a week. Based on experience to date, several services have requested that specific populations be cared for primarily by this team. CONCLUSIONS: It is possible to implement and develop an advanced practice program in a busy PICU utilizing an 8 month orientation program.	Education	
"Assessing the Productivity of Advanced Practice Providers Using a Time and Motion Study"	Ogunfiditimi, F., Takis, L., Paige, V. J., Wyman, J. F., & Marlow, E.	<i>Journal of Healthcare Management</i>	2013	Ogunfiditimi, F., Takis, L., Paige, V. J., Wyman, J. F., & Marlow, E. (2013). Assessing the productivity of advanced practice providers using a time and motion study. <i>Journal of Healthcare Management</i> , 58(3).	The Resource-Based Relative Value Scale is widely used to measure healthcare provider productivity and to set payment standards. The scale, however, is limited in its assessment of pre- and postservice work and other potentially non-revenue-generating healthcare services, what we have termed service-valued activity (SVA). In an attempt to quantify SVA, researchers conducted a time and motion study of providers to assess their productivity in inpatient and outpatient settings. Using the Standard Time and Motion Procedures checklist as a methodological guide, researchers provided personal digital assistants (PDAs) that were prepopulated with 2010 Current Procedural Terminology codes to 19 advanced practice providers (APPs). The APPs were instructed to identify their location and activity each time the PDA randomly alarmed. The providers collected data for 3 to 5 workdays, and those data were separated into revenue-generating services (RGSs) and SVAs. Multiple inpatient and outpatient departments were assessed. The inpatient APPs spent 61.6 percent of their time on RGSs and 35.1 percent on SVAs. Providers in the outpatient settings spent 59.0 percent of their time on RGSs and 38.2 percent on SVAs. This time and motion study demonstrated an innovative method and tool for the quantification and analysis of time spent on revenue- and non-revenue-generating services provided by healthcare professionals. The new information derived from this study can be used to accurately document productivity, determine clinical practice patterns, and improve deployment strategies of healthcare providers.	Workforce	
"The US Healthcare Workforce and the Labor Market Effect on Healthcare Spending and Health Outcomes"	Pellegrini, L. C., Rodriguez-Monguio, R., & Qian, J.	<i>International Journal of Healthcare Finance and Economics</i>	2013	Pellegrini, L. C., Rodriguez-Monguio, R., & Qian, J. (2013). The US healthcare Workforce and the labor market effect on healthcare spending and health outcomes. <i>International Journal of Healthcare Finance and Economics</i> , 1-15.	This study examines the causes of healthcare employment growth and Workforce composition in the US and evaluates the labor market's impact on healthcare spending and health outcomes. Study results show that labor force participation rate shows a more robust effect on healthcare spending, morbidity, and mortality than the unemployment rate. Furthermore, declining labor force participation negatively impacts overall health status and mortality for males aged 16-64. The study also describes trends in Medicare and Medicaid and employment.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Which Family Physicians Work Routinely With Nurse Practitioners, Physician Assistants, or Certified Nurse Midwives?"	Peterson, L. E., Blackburn, B. Petterson, S., Puffer, J. C., Bazemore, A., & Phillips, R. L.	<i>Journal of Rural Health</i>	2013	Peterson, L. E., Blackburn, B. Petterson, S., Puffer, J. C., Bazemore, A., & Phillips, R. L. (2013). Which Family Physicians Work Routinely With Nurse Practitioners, Physician Assistants, or Certified Nurse Midwives? <i>The Journal of Rural Health</i> .	This study determined what level characteristics were associated with working NPs, PAs, or Certified Nurse Midwives (CNMs). Of the 3,855 family physicians in the sample, 60% reported routinely working with NPs, PAs, or CNMs. In regression analysis, characteristics positively associated with working with NPs, PAs, or CNMs were providing gynecological care, multispecialty group practice, any rural setting, and higher availability of PAs. Restrictive NP scope of practice laws failed to reach significance. This study suggests that the number of family physicians routinely working with NPs, PAs, and CNMs continues to increase, which may allow for improved access to healthcare, particularly in rural areas.	Practice	
"Most Family Physicians Work Routinely with Nurse Practitioners, Physician Assistants, or Certified Nurse Midwives"	Peterson, L. E., Phillips, R. L., Puffer, J. C., Bazemore, A., & Petterson, S.	<i>Journal of the American Board of Family Medicine</i>	2013	Peterson, L. E., Phillips, R. L., Puffer, J. C., Bazemore, A., & Petterson, S. (2013). Most family physicians work routinely with nurse practitioners, physician assistants, or certified nurse midwives. <i>The Journal of the American Board of Family Medicine</i> , 26(3), 244-245.	This study asked family physicians how routinely they worked with nurse practitioners, physician assistants, and/or certified midwives in the Workforce. In this 2-week period, 5818 family physicians residing in the 50 United States completed the survey. Compared with other family physicians in the ABFM database, those in the sample were slightly younger, more likely to be women, and more likely to be currently board certified and to have completed more Maintenance of Certification activities than those not in the sample. Nearly 60% of respondents reported routinely working with NPs, PAs, or CNMs. Physicians more likely to work with these clinicians were younger and live in rural areas. These data suggest that the number of family physicians routinely working with NPs, PAs, and CNMs is continuing to increase.	Workforce	
"Who Can Provide Effective and Safe Termination of Pregnancy Care? A Systematic Review"	Renner, R. M., Brahmi, D., & Kapp, N.	<i>BJOG: An International Journal of Obstetrics and Gynaecology</i>	2013	Renner, R. M., Brahmi, D., & Kapp, N. (2013). Who can provide effective and safe termination of pregnancy care? A systematic review. <i>BJOG: An International Journal of Obstetrics & Gynaecology</i> , 120(1), 23-31.	The objective of the study was to systematically review the evidence to assess whether termination of pregnancy services by nonphysician providers could be performed safely and effectively. The study identified five controlled studies comprising of 8908 women undergoing first-trimester surgical termination of pregnancy and medical termination of pregnancy. The mid-level group included midwives, nurses, auxiliary nurse midwives, and physician assistants trained in termination of pregnancy services. Safety and efficacy outcomes, including incomplete termination of pregnancy, hemorrhage, or injury to the uterus or cervix, did not differ significantly between providers.	Practice	
"Nurse Practitioners and Physician Assistants Are Complements to Family Medicine Physicians"	Rohrer, J. E., Angstman, K. B., Garrison, G. M., Pecina, J. L., & Maxson, J. A.	<i>Population Health Management</i>	2013	Rohrer, J. E., Angstman, K. B., Garrison, G. M., Pecina, J. L., & Maxson, J. A. (2013). Nurse Practitioners and Physician Assistants Are Complements to Family Medicine Physicians. <i>Population Health Management</i> , 16(4), 242-245.	This research studied the association between NP/PA and physician visits when NPs/PAs are not working as primary care providers (PCPs). A sample of 400 family medicine patients drawn from 1 large multisite practice was studied using multiple logistic regression analysis. NPs/PAs did not function as PCPs during the study period. Patients were defined as outliers if they visited physicians more than 5 times in a year. Patients who visited NPs/PAs in non-retail clinics were significantly more likely to be physician visit outliers. Visits to NPs/PAs in retail clinics were not related to physician visits. NP/PA visits in standard medical office settings complement physician visits when the NPs/PAs were not working as PCPs in this large multisite practice. Health care reform proposals relying on increased use of NPs/PAs may be more cost-efficient if NPs/PAs are located in retail settings or function as PCPs.	Value/Impact	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"RECIST Measurements in Cancer Treatment: Is There a Role for Physician Assistants? A Pilot Study"	Sailer, A. M., Douwes, D. C., Cappendijk, V. C., Bakers, F. C., Wagemans, B. A., Wildeberger, J. E., & Beets-Tan, R. G.	<i>Cancer Imaging</i>	2013	Sailer, A. M., Douwes, D. C., Cappendijk, V. C., Bakers, F. C., Wagemans, B. A., Wildeberger, J. E., & Beets-Tan, R. G. RECIST measurements in cancer treatment: is there a role for physician assistants? A pilot study. <i>Cancer Imaging</i> , 14(1), 12.	Aim of this pilot study was to evaluate whether it is feasible to transfer the radiologist's task of RECIST measurements to a trained radiology physician assistant and whether this influences diagnostic performance. 177 lesions in twenty patients were measured on baseline and two follow-up CTs using RECIST 1.1: Arm A according to routine clinical practice where various radiologists read scans of the referred patients. Arm B according to the experimental setting where a radiology physician assistant performed RECIST measurements of target lesions defined by the radiologists on baseline scans. Performance and agreement were compared between groups. Results showed that RECIST measurements performed by a paramedic are a feasible alternative to standard practice. This could impact the workflow of radiological units, opening ways to re-assigning radiologists' important, standardized but time consuming tasks to paramedics.	Workforce	
"Trends in the Earnings of Male and Female Health Care Professionals in the United States, 1987 to 2010"	Seabury, S. A., Chandra, A., & Jena, A. B.	<i>JAMA Internal Medicine</i>	2013	Seabury, S. A., Chandra, A., & Jena, A. B. (2013). Trends in the Earnings of Male and Female Health Care Professionals in the United States, 1987-2010. <i>JAMA Internal Medicine</i> , 173(18), 1748-1750.	This article investigated whether the gender gap in earnings among US physicians had closed over time, particularly compared with the earnings gap for other healthcare professionals and workers overall. According to the study results, there was no statistically significant improvement over time in the earnings of female physicians relative to male physicians. Overall, the gender gap decreased considerably outside of the health care industry but inconsistently within it.	Workforce	
"Mid-Level Providers Working in a Low-Acuity Area Are More Productive Than in a High-Acuity Area"	Silberman, M., Jeanmonod, D., Hamden, K., Reiter, M., & Jeanmonod, R.	<i>Western Journal of Emergency Medicine</i>	2013	Silberman, M., Jeanmonod, D., Hamden, K., Reiter, M., & Jeanmonod, R. (2013). Mid-level Providers Working in a Low-acuity Area are More Productive than in a High-acuity Area. <i>Western Journal of Emergency Medicine</i> , 14(6), 598.	This study compared the productivity of Mid-Level Providers staffing a low-acuity and high-acuity area of a community emergency department. This was a retrospective review of MLP productivity at a single center 42,000-volume community ED from July 2009 to September 2010. Results showed that MLPs staffing a low-acuity area treated more patients/hour and generated more relative value units per hour than when staffing a high-acuity area.	Workforce	
"A Recipe for Success: Advanced Practice Professionals Decrease Trauma Readmissions"	Smith, G., Waibel, B. Evans, P., & Goettler, C.	<i>Critical Care Medicine</i>	2013	Smith, G., Waibel, B. Evans, P., & Goettler, C. (2013). 606: A recipe for success: Advanced Practice Professionals decrease trauma readmissions. <i>Critical Care Medicine</i> , 41(12), A149.	This study examined how Advanced Practice Practitioners (APPs) like PAs and NPs improved the work burden for existing trauma systems. Trauma readmissions were evaluated from 2001-2012. Elective surgeries and non trauma readmissions were excluded. Length of stay (LOS), age, Injury Severity Score (ISS) and disposition 'not home' were compared. Results showed that the addition of APP to the trauma staff resulted in increased quality of service which was delivered during an era of increasing clinical responsibilities for the trauma division and increasingly restricted resident work hours.	Workforce	
"The Roles of Nurse Practitioners and Physician Assistants in Rheumatology Practices in the US"	Solomon, D. H., Bitton, A., Fraenkel, L., Brown, E., Tsao, P., & Katz, J. N.	<i>Arthritis Care and Research</i>	2013	Solomon, D. H., Bitton, A., Fraenkel, L., Brown, E., Tsao, P., & Katz, J. N. (2013). The roles of nurse practitioners and physician assistants in rheumatology practices in the US. <i>Arthritis care & Research</i> .	A recent Workforce study of rheumatology in the US suggests that during the next several decades, the demand for rheumatology services will outstrip the supply of rheumatologists. Midlevel providers such as nurse practitioners and physician assistants may be able to alleviate projected shortages. The study administered a nationwide survey of midlevel providers during 2012. Most respondents reported that they had substantial patient care responsibilities, used disease activity measures for RA, and incorporated TTT in their practice. These data suggest midlevel providers may help to reduce shortages in the rheumatology Workforce and conform with recommendations to employ TTT strategies in RA treatment.	Workforce	
"Methods Used in the Gross Anatomy Lab to Facilitate Learning by First-Year Students in a New Physician Assistant Program"	Syed, M., Akhter, N., Hayes, H., & Davies, D.	<i>The FASEB Journal</i>	2013	Syed, M., Akhter, N., Hayes, H., & Davies, D. (2013). Methods used in the gross anatomy lab to facilitate learning by first-year students in a new Physician Assistant Program (722.1). <i>The FASEB Journal</i> , 28(1 Supplement), 722-1.	The University of Arkansas for Medical Sciences opened a new Physician Assistant (PA) Program in its College of Health Professions in the summer of 2013 with 26 students. Unlike most gross anatomy courses that use a regional approach, the PA students were taught with a system-based approach. Briefly, the effectiveness of these lab-teaching strategies is quantitatively evidenced by the strong performance of students on examinations.	Education	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Qualitative Study of Employment of Physician Assistants by Physicians Benefits and Barriers in the Ontario Healthcare System"	Taylor, M. T., Taylor, D. W., Burrows, K., Cunnington, J., Lombardi, A., & Liou, M.	<i>Canadian Family Physician</i>	2013	Taylor, M. T., Taylor, D. W., Burrows, K., Cunnington, J., Lombardi, A., & Liou, M. Qualitative study of employment of physician assistants by physicians Benefits and barriers in the Ontario health care system. <i>Canadian Family Physician</i> , 59(11), e507-e513.	This study explored the experiences and perceptions of Ontario physician assistant employers about the barriers to and benefits of hiring PAs. A qualitative design of semi-structured interviews was used. Physician-specific benefits to hiring PAs included increased flexibility, the opportunity to expand practice, the ability to focus more time on complex patients, overall reduction in work hours and stress, and an opportunity for professional fellowship. Physicians who hired PAs without government financial support said PAs were affordable as long as they were able to retain them. Barriers to hiring PAs included uncertainty about funding, the initial need for intensive supervision and training, and a lack of clarity around delegation of acts.	Workforce	
"Physician Assistant Anatomy Education: Does Prior Anatomy Experience Predict Performance?"	Terhune, C. E., Melcher, B. Q., & Taylor, A. B.	<i>The FASEB Journal</i>	2013	Terhune, C. E., Melcher, B. Q., & Taylor, A. B. (2013). Physician assistant anatomy education: does prior anatomy experience predict performance? <i>FASEB Journal</i> (Vol. 27). Federation Amer Soc Exp Biol.	Anatomy education in the Duke Physician Assistant (PA) program has been historically prosection-based and heavily clinically oriented. Based on alumni feedback, in 2009 this course was transformed into a foundational anatomy course with studentperformed dissection. As part of this modification, data were collected describing incoming students' prior anatomy experience. These data were used to combine experienced and non-experienced students into lab groups to optimize group learning and maximize lab resource use. At present, the researchers have three years of data for students in this new anatomy curriculum. This data was also used to evaluate whether past experience predicts course performance and/or performance on the Physician Assistant Clinical Knowledge Rating and Assessment Tool (PACKRAT). Results showed that prior anatomy experience is not a significant (P>0.05) predictor of anatomy performance or PACKRAT scores. However, anatomy performance was significantly related to performance on the PACKRAT. The study acknowledges that there may be multiple confounding factors that could be related to these outcomes.	Education	
"A Survey of Fellow Members of the Society of Dermatology Physician Assistants"	Thomas, E., Coombs, j., Kim, J., & Hyde, M.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Thomas, E., Coombs, j., Kim, J., & Hyde, M. (2013). A survey of fellow members of the Society of Dermatology Physician Assistants. <i>Journal of the American Academy of Physician Assistants</i> , 26(2), 56.	Income and productivity data of physician assistants (PAs) practicing in dermatology were measured by a survey instrument developed by the authors. The median income for PAs in dermatology was \$100,000, and the median annual production was \$500,000. PAs in dermatology appear to generate adequate revenue to be profitable to a dermatology practice.	Workforce	
"ICU Nurse Practitioner and Physician Assistant Utilization and In-Hospital Mortality"	Wallace, D. J., Barnato, A. E., Kahn, J. M., & Kelly, D. M.	<i>American Journal of Respiratory Critical Care Medicine</i>	2013	Wallace, D. J., Barnato, A. E., Kahn, J. M., & Kelly, D. M. (2013). ICU Nurse Practitioner and Physician Assistant Utilization and In-Hospital Mortality. <i>Americal Journal of Respiratory Critical Care Medicine</i> , 187, A1572.	This study investigated NP/PA utilization in critical care settings and the effect of NP/PA staffing on patient outcomes through retrospective cohort design. Results showed that in the sample, ICU staffing with NP/PAs was common and associated with similar patient outcomes compared to ICUs without NP/PA staffing. NP/PAs appeared to be a safe adjunct to physicians-in-training in academic hospitals and my yield lower odds of death for critically ill patients in non-academic ICUs.	Practice	
"Career Patterns of Physician Assistants: A Retrospective Longitudinal Study"	Warner, M. L., Maio, C., & Hudmon, K. S.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Warner, M. L., Maio, C., & Hudmon, K. S. (2013). Career patterns of physician assistants: A retrospective longitudinal study. <i>Journal of the American Academy of Physician Assistants</i> , 26(6), 44-48.	The objectives of this study were to characterize the number and type of practice specialties and to explore attitudes towards career flexibility in the PA profession. Practice patterns were examined using a survey of AAPA member and non-member graduates from the classes of 1978, 1988, and 1998. Results showed that overall, respondents reported practicing in an average of 1.95 specialty practices per decade over the course of their career. Conclusions of the study were that most PAs changed specialties during their career, and this trait of the profession was highly valued.	Practice	

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"Safety of Aspiration Abortion Performed by Nurse Practitioners, Certified Nurse Midwives, and Physician Assistants under a California Legal Waiver"	Weitz, T. A., Taylor, D., Desai, S., Upadhyay, U. D., Waldman, J., Battistelli, M. F., & Drey, E. A.	<i>American Journal of Public Health</i>	2013	Weitz, T. A., Taylor, D., Desai, S., Upadhyay, U. D., Waldman, J., Battistelli, M. F., & Drey, E. A. (2013). Safety of aspiration abortion performed by nurse practitioners, certified nurse midwives, and physician assistants under a California legal waiver. <i>American Journal of Public Health</i> , 103(3), 454-461.	This study examined the impact on patient safety if nurse practitioners (NPs), certified nurse midwives (CNMs), and physician assistants (PAs) were permitted to provide aspiration abortions in California. The study design was a prospective, observational study. Results showed that abortion complications were clinically equivalent between newly trained NPs, CNMs, and PAs and physicians, supporting the adoption of policies to allow these providers to perform early aspirations to expand access to abortion care.	Value/Impact	
"Introducing Physician Assistants into an Intensive Care Unit: Process, Problems, Impact, and Recommendations"	White, H., & Round, J. E.	<i>Clinical Medicine</i>	2013	White, H., & Round, J. E. (2013). Introducing physician assistants into an intensive care unit: process, problems, impact and recommendations. <i>Clinical Medicine</i> , 13(1).	This study used surveys and semi-structured interviews to explore the process and end results of three PAs who began working in the pediatric intensive care unit at St. George's Hospital, Tooting. Initially, there was a large discrepancy between expectations and the capabilities of the PAs. Shortly after starting, there was friction arising from PAs being untrained in PICU activities, and the facts that they would take training opportunities from other staff and that their remuneration was disproportionate to their usefulness. At five months, all those interviewed stressed the positive impact of PAs on patient care and the running of the unit. Staff had found that the PAs had integrated well and there was little evidence of earlier frictions. When surveyed at 10 months, PAs were undertaking most PICU procedures, albeit with some supervision. The study shows that PAs can be a valuable addition to the medical Workforce, but that predictable problems can mar their introduction. Solutions are suggested for other units intending to follow this model.	Practice	
"Assessing the Academic and Professional Needs of Trauma Nurse Practitioners and Physician Assistants"	Wilson, L. N., Wainwright, G. A., Stehly, C. D., Stoltzfus, J., & Hoff, W. S.,	<i>Journal of Trauma Nursing</i>	2013	Wilson, L. N., Wainwright, G. A., Stehly, C. D., Stoltzfus, J., & Hoff, W. S., (2013). Assessing the academic and professional needs of trauma nurse practitioners and physician assistants. <i>Journal of Trauma Nursing</i> , 20(1), 51-55.	This study offers a baseline assessment of the academic and professional needs of the contemporary trauma PAs/NPs in the United States. A 14-question electronic survey, using SurveyMonkey, was distributed to PAs/NPs at trauma centers identified through the American College of Surgeons Web site and other online resources. There were 120 survey respondents: 60 NPs and 60 PAs. Sixty-two respondents (52%) worked at level I trauma centers and 95 (79%) were hospital-employed. Nearly half (49%) reported working in trauma centers for 3 years or less. One hundred nineteen respondents (99%) acknowledged the importance of trauma-specific education; 98 (82%) were required by their institution to obtain such training. Thirty-five respondents (32%) reported receiving \$1000 per year or less as a continuing medical education benefit. Insufficient mentorship, professional development, and academic development were identified by 22 (18%), 16 (13%), and 30 (25%) respondents, respectively. Opportunities to network with trauma PAs/NPs outside their home institution were identified as insufficient by 79 (66%). While PAs/NPs in trauma centers recognize the importance of continued contemporary trauma care and evidence-based practices, attending trauma-related education is not universally required by their employers. Financial restrictions may pose an additional impediment to academic development. Therefore, resource-efficient opportunities should be a prime consideration for advanced practitioners education, especially since half of the reported Workforce has 3 years or less experience.	Practice	
"Using Nurse Practitioners and Physician Assistants in an Academic Otorhinolaryngology Practice"	Ziebarth, M. T.	<i>Otolaryngology-Head and Neck Surgery</i>	2013	Ziebarth, M. T. (2013). Using Nurse Practitioners and Physician Assistants in an Academic Otorhinolaryngology Practice. <i>Otolaryngology-Head and Neck Surgery</i> , 149(2suppl), P142-P143.	Objectives: 1) Recognize the value of the Nurse Practitioner/Physician Assistant (NP/PA) in an otorhinolaryngology practice. 2) Describe application of care models to achieve improved outcomes for patients and increased job satisfaction for providers. Conclusions: The NP/PA providers perform a variety of services for the patient and the collaborating physician. The care models used allow each provider (MD, NP/PA) to use their time to the best of their ability, increasing job satisfaction and thereby providing high quality, cost effective care.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistants in American Medicine: The Half-Century Mark"	Cawley, J. F. & Hooker, R. S.	<i>American Journal of Managed Care</i>	2013	Cawley, J. F. & Hooker, R. S. (2013). Physician assistants in American medicine: the half-century mark. <i>American Journal of Managed Care</i> , 19(10): e333-41.	The objective of this article is to describe the PA in US medicine for policy background and analysis. In January 2013, approximately 89,500 PAs were licensed: 65% were women. Four-fifths were under the age of 55 years. PAs are trained in 2.5 years at one-fourth the cost of a physician and begin producing patient care 4 years before a physician is independently functional. One-third of PAs work with primary care physicians; 65% work in non-primary care practices. Popular specialties are family medicine, emergency medicine, surgery, and orthopedics. PAs are revenue producers for employers and expand access and clinical productivity in most practice settings. Roles for PAs have expanded into hospital settings and graduate medical education programs. About 7300 PAs graduate annually, and this number is expected to grow to 9000 by the end of the decade. Predictive modeling suggests that demand for medical services will grow faster than the combined supply of physicians, PAs, and nurse practitioners, particularly in primary care. PA quality of care appears indistinguishable from that of physician-delivered services.	History	
"The Role of Physician Assistants in Pediatric Emergency Medicine: The Physician's View"	Doan, Q., Piteau, S., Sheps, S., Singer, J., Wong, H., Johnson, D., Kissoon, N.	<i>CJEM</i>	2013	Doan, Q., Piteau, S., Sheps, S., Singer, J., Wong, H., Johnson, D., Kissoon, N. (2013). The role of physician assistants in pediatric emergency medicine: the physician's view. <i>CJEM</i> ; 15(0): 1-9.	The objective of the study was to define the range of clinical conditions Canadian emergency pediatricians consider appropriate for management by physician assistants (PAs) and the degree of autonomy PAs should have in the pediatric emergency department (PED). Researchers conducted a cross-sectional, pan-Canadian survey using electronic questionnaire technology: the Active Campaign Survey tool. They targeted PED physicians using the Pediatric Emergency Research Canada (PERC) network database (N = 297). Three outcome measures were assessed: demographic information, familiarity with PAs, and PA clinical roles in the PED. The level of PA involvement was assessed for 57 common nonemergent clinical conditions. Results: Of 297 physicians, 152 completed the survey, for a response rate of 51.2%. None of the 57 clinical categories achieved at least 85% agreement regarding PA management without direct physician involvement. Twenty-four clinical conditions had ≥ 15% agreement that any PA involvement would be inappropriate. For the remaining 33 clinical conditions, more than 85% of respondents felt that PA could appropriately manage but were divided between requiring direct and only indirect physician supervision. Respondents' selection of the number of conditions felt to be appropriate for PA involvement varied between the size of the emergency department (ED) in which they work (larger EDs 87.7-89.1% v. smaller EDs 74.2%) and familiarity with the clinical work of PAs in the ED (90.5-91.5% v. 82.2-84.7%). In conclusion, this national survey of Canadian PED physicians suggests that they feel PAs could help care for a large number of nonemergent clinical cases coming to the PED, but these clinical encounters would have to be directly supervised by a physician.	Workforce	

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	Cawley, J.F., Hooker, R.S.	<i>American Journal of Managed Care</i>	2013	Cawley, J.F., Hooker, R.S. (2013) Physician Assistants in American Medicine: The Half-Century Mark. <i>Am J Manag Care</i> . 2013;19(10):e333-e341	<p>Background: The concept of the physician assistant (PA) was developed by US physicians in the 1960s as a workforce strategy to improve the delivery of medical services. Then as now there is an anticipated shortage of physicians, particularly in primary care. Use of PAs is viewed as 1 possible strategy to mitigate this growing gap in provider services.</p> <p>Objectives: To describe the PA in US medicine for policy background and analysis.</p> <p>Description: In January 2013, approximately 89,500 PAs were licensed: 65% were women. Four-fifths were under the age of 55 years. PAs are trained in 2.5 years at one-fourth the cost of a physician and begin producing patient care 4 years before a physician is independently functional. One-third of PAs work with primary care physicians; 65% work in non-primary care practices. Popular specialties are family medicine, emergency medicine, surgery, and orthopedics. PAs are revenue producers for employers and expand access and clinical productivity in most practice settings. Roles for PAs have expanded into hospital settings and graduate medical education programs. About 7300 PAs graduate annually, and this number is expected to grow to 9000 by the end of the decade. Predictive modeling suggests that demand for medical services will grow faster than the combined supply of physicians, PAs, and nurse practitioners, particularly in primary care. PA quality of care appears indistinguishable from that of physician-delivered services.</p> <p>Conclusions: Optimal organizational efficiency and cost savings in health services delivery will depend on how well the PA can be utilized.</p>	Health Workforce	
	Thomas, E. Coombs, J., Kim, J. Hyde, M.	JAAPA	2013	Thomas, E. Coombs, J., Kim, J. Hyde, M. (2013) A Survey of Fellow Members of the Society of Dermatology Physician Assistants.	Income and productivity data of physician assistants (PAs) practicing in dermatology (N = 302) were measured by a survey instrument developed by the authors. The median income for PAs in dermatology was \$100,000, and the median annual production was \$500,000. PAs in dermatology appear to generate adequate revenue to be profitable to a dermatology practice.		
Origins of the physician assistant movement in the United States. <i>Journal of the American Academy of Physician Assistants</i> .	Cawley JF, Cawthon E, Hooker RS.	<i>Journal of the American Academy of Physician Assistants</i>	2013	Cawley JF, Cawthon E, Hooker RS. Origins of the physician assistant movement in the United States. <i>Journal of the American Academy of Physician Assistants</i> . 2012; 25(12): 36-42.	Historical overview of what preceded the PA movement and why it occurred.	History	
Working with the poor	Hooker RS	<i>Canadian Family Physician [commentary]</i>	2013	Hooker RS. Working with the poor. <i>Canadian Family Physician</i> [commentary]. 2013		Practice	
Physician assistants working with the medically underserved	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2013	Hooker RS. Physician assistants working with the medically underserved. <i>Journal of the American Academy of Physician Assistants</i> [commentary]. 2013; 26(4): 12.		Practice	
"Training Physician Assistants for Rural Appalachia, NC"	Bushardt, R. L., Whitt, F. K., & Gregory, T.	<i>NC Medical Journal</i>	2014	Bushardt, R. L., Whitt, F. K., & Gregory, T. (2014). Training Physician Assistants for Rural Appalachia. <i>NC Medical Journal</i> , 75(1), 53-55.	Wake Forest School of Medicine and the College of Health Sciences at Appalachian State University are partnering to train PAs to practice as primary care providers in medically underserved parts of Western North Carolina. The partnership will also develop interprofessional education and team-based training activities for health professions students.	Education	
"Global Supply of Health Professionals"	Crisp, N., & Chen, L.	<i>New England Journal of Medicine</i>	2014	Crisp, N., & Chen, L. (2014). Global supply of health professionals. <i>New England Journal of Medicine</i> , 270(10), 950-957.	This journal article investigates the global crisis of severe shortages and marked maldistribution of health professionals. The author details the forces shaping global supply and demand, the effect on health professionals, and the frontiers of educational reform.	Workforce	

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"Non-Physician Performance of Lower and Upper Endoscopy: A Systematic Review and Meta-Analysis"	Day, L. W., Siao, D., Inadomi, J. M., & Somsouk, M.	<i>Endoscopy</i>	2014	Day, L. W., Siao, D., Inadomi, J. M., & Somsouk, M. (2014). Non-physician performance of lower and upper endoscopy: a systematic review and meta-analysis. <i>Endoscopy</i> .	The objective of this study was to characterize non-physician performance of lower and upper endoscopic procedures. Researchers conducted bibliographical searches on studies where patients underwent endoscopic procedures performed by a non-physician and outcomes were reported. Available studies suggest that when non-physicians perform endoscopic procedures, especially lower endoscopies, outcomes and adverse events are in line with those of physicians.	Practice	
"Peer Feedback among Interprofessional Allied Health Students in the Anatomy Lab"	Dowdy, J., Martin, C., Nichols, C., & Edmonson, A.	<i>The FASEB Journal</i>	2014	Dowdy, J., Martin, C., Nichols, C., & Edmonson, A. (2014). Peer feedback among interprofessional allied health students in the anatomy lab (722.3). <i>The FASEB Journal</i> , 28(1 Supplement), 722-3.	This study evaluated feedback given by interprofessional allied health (PA, OT, and PT) students in anatomy lab. When evaluating positive comments, we saw no difference between feedback given by students from different departmental programs. However, departmental differences did exist regarding the focus of constructive criticisms. When compared to feedback from students in other programs, PT students identified more professionalism issues in their peers (51%), OT students cited personal behavior issues more often (44%), and PA students placed greater emphasis on knowledge deficiencies (22.5%). The researchers of the study propose that difference in importance placed on attributes and skills may be due to differences between programmatic objectives, timing of anatomy, and/or degree level of the program.	Education	
"Utilization and Impact on Fellowship Training of Non-Physician Advanced Practice Providers in Intensive Care Units of Academic Medical Centers: A Survey of Critical Care Program Directors"	Joffe, A. M., Pastores, S. M., Maerz, L. L., Mathur, P., & Lisco, S. J.	<i>Journal of Critical Care</i>	2014	Joffe, A. M., Pastores, S. M., Maerz, L. L., Mathur, P., & Lisco, S. J. (2014). Utilization and Impact on Fellowship Training of Non-Physician Advanced Practice Providers in intensive care units of academic medical centers: a survey of critical care program directors. <i>Journal of Critical Care</i> , 29(1), 112-115.	The objectives of this study were to determine the utilization of Advanced Practice Providers (APPs), such as physician assistants and nurse practitioners, in the intensive care units (ICU)s of academic medical centers (AMCs) and to assess the perceptions of critical care fellowship program directors (PDs) regarding the impact of these APPs on fellowship training. The researchers administered a cross-sectional national survey questionnaire to program directors of 331 adult Accreditation Council for Graduate Medical Education-approved critical care fellowship training programs (internal medicine, anesthesiology and surgery) in US AMCs. The survey revealed that APPs are utilized in a large number of US AMCs with critical care training programs. Program director respondents believed that patient care and fellowship training were positively impacted by APPs.	Value/Impact	
"Fast Track by Physician Assistants Shortens Waiting and Turnaround Times of Trauma Patients in an Emergency Department"	Theunissen, B. H., J. J., Lardenoye, S., Hannemann, P. H., Gerritsen, K., Brink, P. R. G., & Poeze, M.	<i>European Journal of Trauma and Emergency Surgery</i>	2014	Theunissen, B. H., J. J., Lardenoye, S., Hannemann, P. H., Gerritsen, K., Brink, P. R. G., & Poeze, M. (2014). Fast Track by physician assistants shortens waiting and turnaround times of trauma patients in an emergency department. <i>European Journal of Trauma and Emergency Surgery</i> , 1-5.	The study sought to determine whether the introduction of a separate patient flow comprising patients with simple, non-complex health issues [Fast Track (FT)] in a Dutch emergency department setting (ED), without the introduction of additional staff, and treated by a physician assistant, would have favourable effects on waiting and turnaround times without deleterious effects for patients with a higher urgency. The waiting times and length of stay for surgical and orthopaedic patients in the ED were measured and compared 3 months before and 3 months after the introduction of FT. Results showed that the introduction of FT performed by a physician assistant resulted in a significant drop in waiting time and length of stay in a Dutch ED setting. This reduction was realised without the allocation of additional staff and even reduced waiting and turnaround times for the patients with a high urgency.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Effectiveness of Substitution of Hospital Ward Care from Medical Doctors to Physician Assistants: A Study Protocol"	Timmermans, M. J., van Vught, A. J., Wensing, M., Laurant, M. G.	<i>BMC Health Services Research</i>	2014	Timmermans, M. J., van Vught, A. J., Wensing, M., Laurant, M. G. (2014). The effectiveness of substitution of hospital ward care from medical doctors to physician assistants: a study protocol. <i>BMC Health Services Research</i> , 14:43.	This study aims to evaluate the effects of substitution of hospital ward care to PAs. In a multicenter matched controlled study, the traditional model in which the role of hospitalist is taken solely by MDs (MD model) is compared with a mixed model in which a PA functions as a hospitalist, contingent with MDs (PA/MD model). Twenty intervention and twenty control wards are included across The Netherlands, from a range of medical specialisms. Primary outcome measure is patients' length of hospital stay. Secondary outcomes include indicators for quality of hospital ward care, patients experiences with medical ward care, patients health-related quality of life, and healthcare providers' experiences. An economic evaluation is conducted to assess the cost implications and potential efficiency of the PA/MD model. For most measures, data is collected from medical records or questionnaires in samples of 115 patients per hospital ward. Semi-structured interviews with healthcare professionals are conducted to identify determinants of efficiency, quality and continuity of care and barriers and facilitators for the implementation of PAs in the role of hospitalist. Findings from this study will help to further define the role of nonphysician clinicians and provides possible key components for the implementation of PAs in hospital ward care. Like in many studies of organizational change, random allocation to study arms is not feasible, which implies an increased risk for confounding. A major challenge is to deal with the heterogeneity of patients and hospital departments.	Workforce	
"Is Provider Type Associated with Cancer Screening and Prevention: Advanced Practice Registered Nurses, Physician Assistants, and Physicians"	Kepka, D., Smith, A., Zeruto, C., Yabroff, K. R.	<i>BMC Cancer</i>	2014	Kepka, D., Smith, A., Zeruto, C., Yabroff, K. R. (2014). Is provider type associated with cancer screening and prevention: advanced practice registered nurses, physician assistants, and physicians. <i>BMC Cancer</i> ; 14:233.	This study investigates the relationship between an advanced practice registered nurse (APRN)/PA visits and receipt of guideline-consistent cancer screening and prevention recommendations. Data from the 2010 National Health Interview Survey were analyzed with multivariate logistic regression to assess provider type seen and receipt of guideline-consistent cancer screening and prevention recommendations (n = 26,716). Results showed that women who saw a primary care physician (PCP) and an APRN/PA or a PCP without an APRN/PA in the past 12 months were more likely to be compliant with cervical and breast cancer screening guidelines than women who did not see a PCP or APRN/PA (all p < 0.0001 for provider type). Women and men who saw a PCP and an APRN/PA or a PCP without an APRN/PA were also more likely to receive guideline consistent colorectal cancer screening and advice to quit smoking and participate in physical activity than women and men who did not see a PCP or APRN/PA (all p < 0.01 for provider type).	Practice	
"Advanced Practice Registered Nurses, Physician Assistants, and Cancer Prevention Screening: A Systematic Review"	Smith, A. A., Kepka, D., Yabroff, K. R.	<i>BMC Health Services Research</i>	2014	Smith, A. A., Kepka, D., Yabroff, K. R. (2014). Advanced practice registered nurses, physician assistants, and cancer prevention and screening: a systematic review. <i>BMC Health Services Research</i> , 14:68.	This study aims to review the current literature on the participation and roles of APRN/PAs in providing cancer screening and prevention recommendations in primary care settings in the United States. Researchers searched MEDLINE and CINAHL to identify studies published in 1990–2011 reporting on cervical, breast, and colorectal cancer screening and smoking cessation, diet, and physical activity recommendations by APRN/PAs in the United States. A total of 15 studies met all of our eligibility criteria. Results showed that APRN/PAs are involved in recommending cancer screening and prevention, although we found variation across screening tests and health behavior recommendations.	Workforce	
"Groups Associated with 'Assistant Physicians': Top Publications"	Cooper, I. F., Siadaty, M. S.	<i>BioMedLib Review</i>	2014	Cooper, I. F., Siadaty, M. S. (2014). 'Groups' associated with 'Assistant Physicians': Top Publications. <i>BioMedLib Review</i> ; Group; AssistantPhysicians: 706293710. ISSN: 2331-5717.		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"The Contribution of Physicians, Physician Assistants, and Nurse Practitioners toward Rural Primary Care: Findings from a 13-State Survey"	Doescher, M. P., Andrilla, C. H., Skillman, S. M., Morgan, P., Kaplan, L.	<i>Med Care</i>	2014	Doescher, M. P., Andrilla, C. H., Skillman, S. M., Morgan, P., Kaplan, L. (2014). The contribution of physicians, physician assistants, and nurse practitioners toward rural primary care: findings from a 13-state survey. <i>Med Care</i> ; 2014 Jun; 52(6): 549-56.	For each provider group, this study quantifies the average weekly number of outpatient primary care visits and the types of services provided within and beyond the outpatient setting. A randomly drawn sample of 788 physicians, 601 PAs, and 918 NPs with rural addresses in 13 US states responded to a mailed questionnaire that measured reported weekly outpatient visits and scope of services provided within and beyond the outpatient setting. Results showed that compared with physicians, average weekly outpatient visit quantity was 8% lower for PAs and 25% lower for NPs (P<0.001). After multivariate adjustment, this gap became negligible for PAs (P=0.56) and decreased to 10% for NPs (P<0.001). Compared with PAs and NPs, primary care physicians were more likely to provide services beyond the outpatient setting, including hospital care, emergency care, childbirth attending deliveries, and after-hours call coverage	Practice	
"How Does Provider Supply and Regulation Influence Health Care Markets? Evidence from Nurse Practitioners and Physician Assistants"	Stange, K.	<i>Journal of Health Economics</i>	2014	Stange, K. (2014). How does provider supply and regulation influence health care markets? Evidence from nurse practitioners and physician assistants. <i>Journal of Health Economics</i> , 33:1-27.	Nurse practitioners (NPs) and physician assistants (PAs) now outnumber family practice doctors in the United States and are the principal providers of primary care to many communities. Recent growth of these professions has occurred amidst considerable cross-state variation in their regulation, with some states permitting autonomous practice and others mandating extensive physician oversight. I find that expanded NP and PA supply has had minimal impact on the office-based healthcare market overall, but utilization has been modestly more responsive to supply increases in states permitting greater autonomy. Results suggest the importance of laws impacting the division of labor, not just its quantity.	Workforce	
"Supply of Physician Assistants: 2013-2026"	Hooker, R. S. & Muchow, A. N.	<i>Journal of the American Academy of Physician Assistants</i>	2014	Hooker, R. S. & Muchow, A. N. (2014). Supply of physician assistants: 2013-2026. <i>27(3): 39-45.</i>	As part of healthcare reform, physician assistants (PAs) are needed to help mitigate the physician shortage in the United States. This requires understanding the population of clinically active PAs for accurate prediction purposes. An inventory projection model of PAs drew on historical trends, the PA stock, graduation estimates, retirement trends, and PA intent to retire data. A new source of licensed health professionals, Provider 360 Database, was obtained to augment association information. Program growth and graduate projections indicated an annual 4.7% trend in new entrants to the Workforce, offset by annual attrition estimates of 2.9%. As of 2013, there were 84,064 licensed PAs in the United States. The stock and flow equation conservatively predicts the supply of PAs to be 125,847 by 2026. Although the number of clinically active PAs is projected to increase at least by half by 2026, substantial gaps remain in understanding career trends and early attrition influences. Furthermore, education production could be constrained by inadequate clinical training sites and scarcity of faculty.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Advanced Practice Registered Nurses and Physician Assistants in Sleep Centers and Clinics: A Survey of Current Roles and Educational Background"	Colvin, L., Cartwright, A., Collop, N., Freedman, N., Mcleod, D., Weaver, T. E., Rogers, A. E.	<i>Journal of Clinical Sleep Medicine</i>	2014	Colvin, L., Cartwright, A., Collop, N., Freedman, N., Mcleod, D., Weaver, T. E., Rogers, A. E. (2014). Advanced practice registered nurses and physician assistants in sleep centers and clinics: a survey of current roles and educational background. <i>Journal of Clinical Sleep Medicine</i> , 15;10(5): 581-7.	The objective of the study is to survey Advanced Practice Registered Nurse (APRN) and Physician Assistant (PA) utilization, roles and educational background within the field of sleep medicine. Electronic surveys distributed to American Academy of Sleep Medicine (AASM) member centers and APRNs and PAs working within sleep centers and clinics. Results showed that approximately 40% of responding AASM sleep centers reported utilizing APRNs or PAs in predominantly clinical roles. Of the APRNs and PAs surveyed, 95% reported responsibilities in sleep disordered breathing and more than 50% in insomnia and movement disorders. Most APRNs and PAs were prepared at the graduate level (89%), with sleep-specific education primarily through "on the job" training (86%). All APRNs surveyed were Nurse Practitioners (NPs), with approximately double the number of NPs compared to PAs. In conclusion, APRNs and PAs were reported in sleep centers at proportions similar to national estimates of NPs and PAs in physicians' offices. They report predominantly clinical roles, involving common sleep disorders.	Workforce	
"The Impact of Ethics and Work-Related Factors on Nurse Practitioners' and Physician Assistants' Views on Quality of Primary Healthcare in the United States"	Ulrich, C. M., Zhou, Q. P., Hanlon, A., Danis, M., Grady, C.	<i>Applied Nursing Research</i>	2014	Ulrich, C. M., Zhou, Q. P., Hanlon, A., Danis, M., Grady, C. (2014). The impact of ethics and work-related factors on nurse practitioners' and physician assistants' views on quality of primary healthcare in the United States. <i>Applied Nursing Research</i> , 27(3):152-6.	The aim of this study was to quantitatively assess whether the quality of the care that practitioners deliver is influenced by ethics and work-related factors. This paper is a secondary data analysis of a cross-sectional self-administered mailed survey of 1,371 primary care NPs and PAs randomly selected from primary care and primary care subspecialties in the United States. Results showed that ethics preparedness and confidence were significantly associated with perceived quality of care (p<0.01) as were work-related characteristics such as percentage of patients with Medicare and Medicaid, patient demands, physician collegiality, and practice autonomy (p<0.01). Forty-four percent of the variance in quality of care was explained by these factors. Ethics preparedness and confidence were significantly associated with perceived quality of care (p<0.01) as were work-related characteristics such as percentage of patients with Medicare and Medicaid, patient demands, physician collegiality, and practice autonomy (p<0.01). Forty-four percent of the variance in quality of care was explained by these factors.	Value/Impact	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistants and the Disclosure of Medical Error"	Brock, D. M., Quella, A., Lipira, L., Lu, D. W., Gallagher, T. H.	<i>Academic Medicine</i>	2014	Brock, D. M., Quella, A., Lipira, L., Lu, D. W., Gallagher, T. H. (2014). Physician assistants and the disclosure of medical error. <i>Academic Medicine</i> , 89(6): 858-62.	Evolving state law, professional societies, and national guidelines, including those of the American Medical Association and Joint Commission, recommend that patients receive transparent communication when a medical error occurs. Recommendations for error disclosure typically consist of an explanation that an error has occurred, delivery of an explicit apology, an explanation of the facts around the event, its medical ramifications and how care will be managed, and a description of how similar errors will be prevented in the future. Although error disclosure is widely endorsed in the medical and nursing literature, there is little discussion of the unique role that the physician assistant (PA) might play in these interactions. PAs are trained in the medical model and technically practice under the supervision of a physician. They are also commonly integrated into interprofessional health care teams in surgical and urgent care settings. PA practice is characterized by widely varying degrees of provider autonomy. How PAs should collaborate with physicians in sensitive error disclosure conversations with patients is unclear. With the number of practicing PAs growing rapidly in nearly all domains of medicine, their role in the error disclosure process warrants exploration. The authors call for educational societies and accrediting agencies to support policy to establish guidelines for PA disclosure of error. They encourage medical and PA researchers to explore and report best-practice disclosure roles for PAs. Finally, they recommend that PA educational programs implement trainings in disclosure skills, and hospitals and supervising physicians provide and support training for practicing PAs.	Practice	
The Role of Physician Assistants in Health Care Delivery	National Governors Association	<i>Report</i>	2014	A. Dunker, E. Krofah, F. Isasi. The Role of Physician Assistants in Health Care Delivery (Washington, D.C.: National Governors Association Center for Best Practices, September 22, 2014).	Physician assistants (PAs) make up a small but rapidly expanding part of the health care workforce. Their training and education produce a sophisticated and flexible medical professional who can function in many specialty areas and within many practice structures. Because of their adaptability and lower cost, PAs can play an important role in the health care delivery system.	Workforce	
How Does Provider Supply and Regulation Influence Health Care Market's?	Stange, K.	<i>Journal of Health Economics</i>	2014	Stange, K. How Does Provider Supply and Regulation Influence Health Care Market's? Evidence from Nurse Practitioners and Physician Assistants. (2014) <i>JHealth Economics</i> 33:1-27.	Nurse practitioners (NPs) and physician assistants (PAs) now outnumber family practice doctors in the United States and are the principal providers of primary care to many communities. Recent growth of these professions has occurred amidst considerable cross-state variation in their regulation, with some states permitting autonomous practice and others mandating extensive physician oversight. I find that expanded NP and PA supply has had minimal impact on the office-based healthcare market overall, but utilization has been modestly more responsive to supply increases in states permitting greater autonomy. Results suggest the importance of laws impacting the division of labor, not just its quantity.	Workforce	
Census of physician assistants: 2013	Hooker RS, Muchow AN	<i>Journal of the American Academy of Physician Assistants</i>	2014	Hooker RS, Muchow AN. Census of physician assistants: 2013. <i>Journal of the American Academy of Physician Assistants</i> . 2014; 27(7): 35-39.		Workforce	
Physician assistants working with medically underserved and economically disadvantaged populations.	Henry L, Hooker RS.	<i>Journal of the American Academy of Physician Assistants</i>	2014	Henry L, Hooker RS. Physician assistants working with medically underserved and economically disadvantaged populations. <i>Journal of the American Academy of Physician Assistants</i> . 2014; 27(1): 36-42.		Workforce	
Is physician assistant autonomy inevitable?	Hooker RS	<i>J Am Academy of Physician Assistants</i>	2014	Hooker RS. Is physician assistant autonomy inevitable? <i>Journal of the American Academy of Physician Assistants</i> [commentary]. 2015; 28 (in press).		Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Primary Care: America's Health in a New Era"	Donaldson, M. S., et al.	Washington, DC: National Academy Press	1996a	Donaldson, M. S., et al. (1996a). <i>Primary Care: America's Health in a New Era</i> . Washington, DC: National Academy Press.		Practice	
"Defining Primary Care"	Donaldson, M. S., et al.	<i>Primary Care: America's Health in a New Era</i>	1996b	Donaldson, M. S., et al. (1996b). Defining primary care. In <i>Primary Care: America's Health in a New Era</i> .		Practice	
"The Employment and Use of Nurse Practitioners and Physician Assistants by Rural Hospitals"	Krein, S. L.	<i>Journal of Rural Health</i>	1997a	Krein, S. L. (1997a). The employment and use of nurse practitioners and physician assistants by rural hospitals. <i>Journal of Rural Health</i> , 13 (1), 45–58.	The purpose of this study was: (1) to describe and compare the employment and use of nurse practitioners and physician assistants by rural hospitals in an eight-state region in the northwestern United States (Minnesota, North Dakota, South Dakota, Iowa, Montana, Idaho, Oregon and Washington); and (2) to examine how different market and organizational factors influence the employment of nurse practitioners and physician assistants by rural hospitals. Data for the study were collected through telephone interviews of rural hospital administrators (N = 407) and analyzed using both descriptive tables and logistic regression. Study results show that rural hospitals are important employers of both nurse practitioners and physician assistants, although there is a greater demand for than supply of both types of practitioners. Moreover, there are several differences in the characteristics of hospitals that employ the different types of practitioners. Rural hospitals use nurse practitioners and physician assistants to enhance their delivery of outpatient services, and a major factor related to the employment of nurse practitioners and physician assistants by rural hospitals is the Rural Health Clinic program. The majority of hospitals that use nurse practitioners, as well as those that use physician assistants, indicate that nurse practitioners and physician assistants can prescribe medications and order lab tests and X-rays, but considerably fewer report that nurse practitioners and physician assistants have admitting or discharge privileges. Physician assistants appear to provide a more expanded scope of services in rural hospitals. Nonetheless, rural hospitals seem to employ nurse practitioners and physician assistants for similar reasons: (1) to extend care, assist physicians, or increase access to primary care; (2) because physicians are unavailable or too difficult to recruit; (3) because nurse practitioners or physician assistants are considered cost-effective or more economical for rural areas; and, (4) for Rural Health Clinic certification.	Practice	
"Rural Hospitals and Provider-Based Rural Health Clinics: The Influence of Market and Institutional Forces (Nurse Practitioner, Physician Assistant)"	Krein, S. L.	<i>Dissertation Abstracts International</i>	1997b	Krein, S. L. (1997b). Rural hospitals and provider-based rural health clinics: The influence of market and institutional forces (nurse practitioner, physician assistant). <i>Dissertation Abstracts International</i> , 58 (05b), 2381.		Workforce	
"Care and Convictions: PA Practice in Corrections Medicine"	Cornell, S.	<i>ADVANCE for Physician Assistants</i>	2000a	Cornell, S. (2000a). Care and convictions: PA practice in corrections medicine. <i>ADVANCE for Physician Assistants</i> , 8, 60–61.		Practice	
"PA Clinical Analyst and Researcher Find Nonclinical Jobs Rewarding"	Howard, P. L.	<i>AAPA News</i>	2000a	Howard, P. L. (2000a). PA clinical analyst and researcher find nonclinical jobs rewarding. <i>AAPA News</i> , 21, 4-10.		Value/Impact	
"Beyond the Clinic: PAs in Forensic Medicine"	Howard, P. L.	<i>AAPA News</i>	2000b	Howard, P. L. (2000b). Beyond the clinic: PAs in forensic medicine. <i>AAPA News</i> , 12 (21), 1, 10, 11.		Practice	
"Evaluation of U.S.-Trained Physician Assistants Working in the NHS in England: The Introduction of U.S.-Trained Physician Assistants to Primary Care and Accident and Emergency Departments in Sandwell and Birmingham"	Woodin, J., McLeod, H., McManus, R., & Jelphs, K.	<i>BMJ News</i>	2005a	Woodin, J., McLeod, H., McManus, R., & Jelphs, K. (2005a, March 20). Evaluation of U.S.-trained physician assistants working in the NHS in England: The introduction of U.S.-trained physician assistants to primary care and accident and emergency departments in Sandwell and Birmingham. <i>BMJ News</i> , p. 14.		International	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Evaluation of U.S.-Trained PAs Working in the NHS in England: Final Report"	Woodin, J., Mcleod, H., McManus, R., & Jelphs, K.	<i>Birmingham: Health Services Management Center</i>	2005b	Woodin, J., Mcleod, H., McManus, R., & Jelphs, K. (2005b). <i>Evaluation of U.S.-trained PAs Working in the NHS in England. Final Report.</i> Birmingham: Health Services Management Centre, Department of Primary Care and General Practice, University of Birmingham.	This report presents the findings of an evaluation commissioned from an evaluation commissioned from the Health Services Management Center (HSMC) by the Department of Health (NHS Modernisation Agency) Changing Workforce Program (CWP). The evaluation seeks to provide evidence about the impact of PAs, drawing on qualitative interviews and activity data about consultations collected from the sites at which PAs have been working.	International	
"Physician Assistant education: An Abbreviated History"	Cawley, J. F.	<i>Journal of Physician Assistant Education</i>	2007a	Cawley, J. F. (2007a). Physician assistant education: An abbreviated history. <i>Journal of Physician Assistant Education, 18</i> (3), 6–15.	Describes the highlights of the initiation and development of physician assistant educational programs. Physician assistant educational programs began as part of a larger movement in the creation of new health professions. The educational organizations of the PA profession were fashioned by physician leaders in medical education. In developing PA programs, progressive physicians and others created innovative approaches to medical education that included decentralized education, emphasis on psychosocial components, and creative deployment approaches. The competency-based PA model employed ideas and elements that were ahead of their time in health professions education. PA education moved to a degree-based system in the 1990s. PA education was based on nontraditional models of medical education that have proved to be successful in training effective generalist clinicians. Features discussion of notable physician leaders in PA education such as Thomas Piemme, Alfred Sadler, Rhodes Haverty, Jack Ott, Denis Oliver, Bill Wilson, and others who founded programs and helped to build the PA education organization.	Education	
"From PAs in Urgent Care to Chief Executive Officer"	Kuttler, H.	<i>AAPA News</i>	2007a	Kuttler, H. (2007a). From PAs in urgent care to chief executive officer. <i>AAPA News, 28</i> (28), 8.		Practice	
"Who Will Lead?"	Whitcomb, M. E.	<i>Academic Medicine</i>	2007a	Whitcomb, M. E. (2007a). Who will lead? <i>Academic Medicine, 82</i> (2), 115–116.			
"No Longer Invisible: Challenges to Physician Assistant Education"	Cawley, J. F.	<i>Journal of Physician Assistant Education</i>	2007b	Cawley, J. F. (2007b). No longer invisible: Challenges to physician assistant education. <i>Journal of Physician Assistant Education, 18</i> (4), 7–8.		Education	
"Placing Students with Preceptors a 'Scramble' for PA Programs"	Kuttler, H.	<i>AAPA News</i>	2007b	Kuttler, H. (2007b). Placing students with preceptors a "scramble" for PA programs. <i>AAPA News, 28</i> (16), 1–6.		Education	
"The Shortage of Physicians: A Challenge for the Physician Assistant Profession"	Whitcomb, M. E.	<i>Journal of Physician Assistant Education</i>	2007b	Whitcomb, M. E. (2007b). The shortage of physicians: A challenge for the physician assistant profession. <i>Journal of Physician Assistant Education, 18</i> (1), 5–6.	The author details how nonphysician health care professionals will have to assume responsibility for providing a range of clinical care services that have traditionally been considered to be entirely within the domain of physician practice, since there is a serious shortage of physicians in the Workforce. The author goes on to explain the challenges to the PA profession in filling this need.	Workforce	

Title	Authors	Publisher	Publish Date	Full Citation	Description of Findings	Key Themes	Comment
"Physician Assistants and Title VII Support"	Cawley, J. F.	<i>Academic Medicine</i>	2008a	Cawley, J. F. (2008a). Physician assistants and title VII support. <i>Academic Medicine</i> , 83, 1049–1056.	Federal support through Title VII, Section 747 has played an important role in promoting the use of physician assistants (PAs) in primary care and in the growth and institutionalization of PA educational programs in the United States. Federal Workforce policy approaches include PAs in strategies to (1) increase the supply of generalist providers, (2) better balance the distribution of providers to rural and medically underserved areas, and (3) improve the diversity of the health Workforce. Evidence from several decades shows that, likely because of Title VII program incentives, PAs have met expectations in terms of practicing in primary care specialties and serving in rural and medically underserved areas. Yet, increasingly, market forces and decreasing federal support for Title VII are affecting these trends, with PAs, like physicians, being drawn to specialty practices. There is considerable use of PAs in all practice settings in U.S. medicine. For several decades, PA training programs have demonstrated that they are efficient means of preparing clinicians who provide considerable benefit to society in return for a modest public investment. At the present time, when the climate seems not to favor public subsidy of health professions education, it may be wise for policy makers to consider strategies that address the long-term needs of the health care Workforce and the public for primary care clinicians. This article is part of a theme issue of <i>Academic Medicine</i> on the Title VII health professions training programs.	Workforce	
"Twenty-Third Annual Report on Physician Assistant Educational Programs in the United States, 2006-2007"	Physician Assistant Education Association		2008a	Physician Assistant Education Association. (2008a). Twenty-Third Annual Report on Physician Assistant Educational Programs in the United States, 2006–2007.		Education	
"Biographies: Richard A. Smith, MD, MPH"	Physician Assistant History Center		2008a	Physician Assistant History Center. (2008a). <i>Biographies: Richard A. Smith, MD, MPH</i> . Retrieved February 9, 2008, from http://www.pahx.org/smith-richard .	A biography of Dr. Richard A. Smith, developer of the MEDEX concept.	History	
"Doctoral Degrees for Physician Assistants"	Cawley, J. F.	<i>Journal of the American Academy of Physician Assistants</i>	2008b	Cawley, J. F. (2008b). Doctoral degrees for physician assistants. <i>Journal of the American Academy of Physician Assistants</i> , 21, 13.		Education	
"PA Programs' Purchasing Power Survey"	Physician Assistant Education Association		2008b	Physician Assistant Education Association. (2008b). PA Programs' Purchasing Power Survey. Alexandria, VA: Author.		Education	
"Biographies: Henry K. Silver, MD (1918-1991)"	Physician Assistant History Center		2008b	Physician Assistant History Center. (2008b). <i>Biographies: Henry K. Silver, MD (1918–1991)</i> . Retrieved February 9, 2008, from http://www.pahx.org/silver-henry-k .	A biography of Dr. Henry K. Silver, who launched the Child Health Associate Program at the University of Colorado Medical Center, the first PA program to offer its graduates a master's degree.	History	
"Twenty-Fourth Annual Report on Physician Assistant Educational Programs in the United States, 2007-2008"	Physician Assistant Education Association		2008c	Physician Assistant Education Association. (2008c). <i>Twenty-Fourth Annual Report on Physician Assistant Educational Programs in the United States, 2007–2008</i> . Alexandria, VA: Author.		Education	
"Biographies: John Webster Kirklin, MD (1917-2004)"	Physician Assistant History Center		2008c	Physician Assistant History Center. (2008c). <i>Biographies: John Webster Kirklin, MD (1917–2004)</i> . Retrieved February 9, 2008 from http://www.pahx.org/kirklin-john-w .	A biography of Dr. John Webster Kirklin, the founder of the nation's first formal educational program to train surgeon assistants.	History	
"The Medical School's Mission and the Population's Health"	White, K. L. & Connelly, J. E.			White, K. L. & Connelly, J. E. (1992). <i>The Medical School's Mission and the Population's Health</i> . New York: Springer-Verlag.	This volume contains the proceedings of a conference on Medical Education in Canada, the United Kingdom, the United States, and Australia sponsored by The Royalty Society of Medicine Foundation, Inc. and The Josiah Macy, Jr. Foundation. An international panel of authorities discussed how medical schools in those four countries could profit from each other's experience in organizing medical education so that faculty and students recognize more fully their responsibility for understanding and meeting the health needs of the community. Perspectives in medical education, clinical practice, epidemiology, and government are presented.	International	