

**Trends In The Physician Assistant Profession:  
1991-2003**

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## **Background**

This document accompanies and describes a set of charts depicting trends in the PA profession and provides some insight as to where the profession is likely headed. The discussion and charts are organized into four sections:

1. **Context and Supply:** provides statistics on the size and growth of the PA profession and AAPA membership.
2. **Generalizability:** reviews data about AAPA members, AAPA Census respondents, and the PA profession in order to assess how well Census survey data represent the profession.
3. **Findings:** presents the distribution of the census survey respondents in each year in terms of select characteristics
4. **Projections:** provides estimates of the size of the PA workforce as well as the volume of visits and number of prescriptions for which PAs are responsible.

While reviewing this material, please note the caveats that are provided to understand the limitations of the underlying data.

## **Context and Supply**

The PA profession has grown tremendously in its short history, and the growth has been particularly pronounced in recent years:

- Since 1982, the size of the profession has increased more than four-fold.
- Between 1994 and 2003, the total number of people eligible to practice as PAs has more than doubled.
- Membership in AAPA has remained robust and stable:
- The number of AAPA Fellow Members has increased in each year.
- The percentage of people eligible to practice as PAs who became members of AAPA increased slowly through the 1980s and has hovered at close to 50 percent since about 1990.

The number of people who became eligible to practice as PAs (new graduates) has begun to slow after several years of dramatic increases:

- The number of new graduates more than doubled between 1995 and 2001.
- Since 2001, the number of new graduates has stabilized at between 4,200 and 4,400.

A larger proportion of the people who became eligible to practice as PAs more recently were members of AAPA in 2003.

- Growth in Fellow membership always lags behind the growth in the profession because new graduates are permitted to maintain a student membership in the year in which they graduate. Nevertheless, the Fellow membership in 2003 was dominated by people who became eligible to practice in recent years:
- 54 percent of the Fellow members in 2003 became eligible to practice in the last eight years.
- Between 10 and 30 percent of the people who became eligible to practice in each year between 1968 and 1974 were Fellows in 2003. In contrast, at least 55 percent of the people who became eligible to practice in each year from 1997-2002 were Fellows in 2003. (The comparable percentages for each year in the following periods, 1975-1982, 1983-1990, and 1991-1996, were 30-40%,41-47%, and 49-53%.)

The number of people eligible to practice as PAs is expected to exceed 85,000 by the year 2010. The growth of the profession has resulted from increases in both the number and size of PA programs:

- The number of PA programs in operation increased dramatically from the late eighties through the year 2000; since 2000, the number has increased only slightly.
- The number of PA programs graduating students more than doubled from 1995 to 2003.
- The average size of a graduation class from a PA program increased from 25 to just over 35 students despite the fact that new programs tend to start with smaller classes.

The profession will certainly continue to grow but the rate of growth will be slower as few new programs are expected and the average number of students enrolled by each program appears to have stabilized. Approximately 4400 people graduated from PA programs during 2003.

### **Total Number of PAs, New PAs, Accredited PA Programs Reporting New Graduates, and PAs in Clinical Practice at Years -End, 1991-2003**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
People Eligible to Practice as PAs <sup>a</sup>	25,191	26,734	28,379	30,285	32,455	34,760	37,562	41,196	45,053	49,130	53,491	57,752	61,822
New PAs <sup>b</sup>	1331	1539	1644	1918	2186	2584	2837	3662	3886	4067	4399	4244	4405
New PAs as Percentage of Total	5.3%	5.8%	5.8%	6.3%	6.7%	7.4%	7.6%	8.9%	8.6%	8.3%	8.2%	7.3%	7.1%
PA Programs with New Graduates <sup>c</sup>	53	55	55	58	62	71	78	93	100	115	122	124	127
Mean New PAs per Program	25.1	28.0	29.9	33.1	35.3	36.4	36.4	39.4	38.9	35.4	36.1	34.2	34.7
PAs in Practice at Year-End <sup>d</sup>	20,628	21,890	23,184	24,931	27,105	29,161	31,480	34,192	37,821	40,469	42,708	46,002	50,121
Percentage in Clinical Practice	81.9%	81.9%	81.7%	82.3%	83.5%	83.9%	83.8%	83.0%	83.9%	82.4%	79.8%	79.7%	81.1%

- a Figures represent the count of all individuals believed to be eligible to practice as PAs in each reference year. The individuals believed to have died prior to 1996 are excluded from the figures reported in 1996 and forward since year of death is not available. The individuals believed to have died in or after 1997 are excluded from the counts for each year after the year of death. Individuals for whom no graduation date is known or available are associated with the year in which they became NCCPA-certified. Source: AAPA Masterfile 11/03/2003.
- b Figures represent the numbers of PAs believed to have graduated during each reference year from accredited PA programs reporting new graduates. Individuals for whom no graduation date is known are associated with the year in which they became NCCPA-certified. Source: AAPA Masterfile 11/03/2003.
- c Excludes PA programs not reporting new graduates. Source: AAPA Masterfile 11/03/2003.
- d Source: Estimated from 1991-1995 AAPA Membership Census surveys; 1996 -2003 AAPA Physician Assistant Census surveys; and AAPA Masterfile 11/03/2003.

## **Generalizability**

### *Can we apply the findings from the Census to the total population of PAs?*

Most of the data upon which we base our understanding of the PA profession is derived from our annual census survey. Despite our best efforts, only 36 percent of all people who were eligible to practice as PAs participated in the 2003 census survey. Slightly more than half of Fellow members and about one fifth of non-members participated. Hence, the degree to which our census survey data represents all PAs is a matter of great concern. This concern applies even in cases in which we attempt to develop more reliable population estimates by adjusting the census data for non-response bias.

The following four variables, which are invariant with time or advance one year per year, provide relatively objective measures of the “bias” in our census survey data and our membership:

- Years lapsed since graduation
- Age
- Sex
- Race

Below we discuss the distributions of three groups: AAPA Fellow members, census respondents, and all people who were eligible to practice as PAs (i.e., the profession), with respect to these measures for the years 1991 to 2003. To complete this discussion, we also present information about specialty and educational attainment.

### *Years Lapsed Since Graduation*

The profiles for census respondents and AAPA Fellow members with respect to years lapsed since graduation are somewhat different from that of the profession. The patterns differ in that the mean number of years lapsed since graduation for the profession increased in each year since 1991, rising from 9.9 to 11.9 years. Conversely, while the mean for AAPA Fellow members increased until 1997, it decreased in each from 1998 through 2002, and then increased one-tenth of a year in 2003.

While the differences in level have been relatively consistent, they have not been particularly large. Furthermore, the differences observed between the groups and over time for each group are not surprising. They reflect three facts:

- People who have been in the profession longer are less likely than others to be in clinical practice, and therefore, are less likely to be AAPA members and/or concerned about the profession (e.g., retirees).
- Recent graduates are more likely to be in clinical practice, and therefore, are more likely than others to be AAPA members and/or concerned about the profession.
- In recent years, “newer” graduates have represented a very large proportion of the profession.

### *Age*

Since 1991, the mean age of the profession has been about one year greater than the mean age for census respondents. The differences in mean ages of AAPA members and census participants have consistently been less than one year. The mean ages for all three groups have increased only about

three years in the last 13 years. This smaller than expected change reflects two facts: the mean age at the time of graduation for PA students has consistently been between 29 and 31; the profession has grown tremendously in the last few years.

### *Sex*

In each year since 1991, the percentages of females in the PA profession, responding to the census, and among Fellow members have been very comparable, i.e., never differing by more than four percentage points. Moreover, the trend for each group shows a slow but steady increase in the proportion of females.

- The proportion of females is likely to continue to increase given that data from our most recent census survey of new PA students found that approximately 70 percent of new students were females.
- Since 1996, disproportionately more census respondents have been female. The best explanation we can offer is that proportionately fewer females had been AAPA members and non-members were not permitted to participate in the census until 1996. In addition, we have observed that females tend to be more inclined than males to participate in our surveys.

### *Race*

The percentage of non-white individuals in the profession has increased since 1991. Throughout the past 13 years, the percentage of non-white individuals in the profession has consistently been greater than the percentage of non-white individuals responding to the census and among Fellow members.

The increase in the percentage of non-whites in the profession over time is not surprising as our most recent census survey of new PA students have found that 21 percent of new students were non-white.

The fact that non-white PAs have been consistently underrepresented among Fellow members and census respondents is troubling. Two factors are likely to inhibit the success of our efforts aimed at improving this situation.

- Disproportionately more non-white PAs than white PAs work for employers such as government agencies like the VA, which do not reimburse AAPA memberships.
- Disproportionately more non-white PAs than white PAs attended programs that had combined PA and nurse practitioner programs. These graduates are less inclined to consider themselves to be PAs, and therefore, are more reluctant to join the AAPA or participate in the census surveys.

### *Specialty*

A comparison of the specialty distribution observed for the participants in the 2003 census survey with the specialty distribution that we projected for the population of PAs in clinical practice at the end of 2003 demonstrates the level of bias that can be encountered with a direct application of census findings for clinically practicing PAs. Relative to the distribution observed for the PAs who participated in the 2003 census survey, the distribution projected for the population of PAs in clinical practice at the end of 2003 included relatively fewer PAs in a surgical subspecialty (15 v 20%) and more PAs in emergency medicine (12% vs. 10%) and family practice (33 v 31%).

### ***Educational Attainment***

With respect to the degrees that PAs hold, the 2003 census respondents differ only moderately from the population of PAs represented in the AAPA Masterfile for whom educational attainment has been ascertained. Member census respondents look very much like all census respondents, yet the new graduate census respondents differ considerably from all of the other groups:

- A larger proportion of census respondents, relative to all those on the Masterfile, hold a master's degree (36% vs. 31% of PAs on the Masterfile), but over half (53%) of the new graduate census respondents hold a master's degree.
- A slightly larger proportion of census respondents received a bachelor's degree or higher from PA school (75% vs. 71% on the Masterfile) while 87 percent of new graduate respondents received a bachelor's degree or higher.
- Similarly, a larger proportion of census respondents received a master's degree from PA school (24% vs. 19% on the Masterfile); 49 percent of new graduate respondents received a master's degree from PA school.

(For this analysis, we used the educational attainment information compiled over the 13-year history of performing the census survey. Therefore, the percentages reported here do not match the percentages reported on the 2003 AAPA Physician Assistant Census Report.)

### **AAPA Census Respondents in Clinical Practice, 1991-2003**

In reading the discussion and reviewing the charts concerning trends in the characteristics of the respondents to the AAPA census surveys in 1991- 2003, please remember two points:

- Some trends may be more reflective of differences between the respondents in each year than of real changes over time. In part these differences reflect the fact that the census surveys in 1996 through 2003 attempted to collect data from all individuals who were eligible to practice as PAs, while the census surveys in 1991-1995 attempted to collect data only from AAPA Fellow members.
- Generalizing these findings to the profession is tempting particularly since these data are more complete and comprehensive than any other. However, generalizations should be made cautiously in light of the aforementioned differences that have been observed between AAPA Fellow members and other people eligible to practice as PAs, and the fact that this latter group has consistently represented a disproportionately large proportion of the non-participants.

### ***Clinical Practice Status***

In 2003, 78 percent of the census respondents reported working full-time in clinical practice, 10 percent reported working part-time, and 12 percent reported that they were not in clinical practice.

For those individuals who were members of AAPA in 2003 and participated in the 2003 census survey, 84 percent reported working full-time in clinical practice, 10 percent reported working part-time, and 7 percent reported that they were not in clinical practice (these percentages do not add to 100 due to rounding).

For individuals who graduated from PA school in 2002 and participated in the 2003 census survey, 88 percent reported working full-time in clinical practice, 7 percent reported working part-time, and 5 percent reported that they were not in clinical practice.

The proportion of census respondents not in clinical practice was less than ten percent in the years between 1991 and 1995. Beginning in 1996, the proportion of respondents not in clinical practice was greater than ten percent. This increase was a result of a change in methodology. Prior to 1996, only AAPA members were invited to participate in the census, but beginning with the 1996 census, all individuals eligible to practice as PAs were invited to participate. Given that a smaller proportion of non-members are in clinical practice, their inclusion resulted in a marked decrease in this measure.

The proportion of census respondents who were members of AAPA and reported not being in clinical practice has been remarkably stable (between five and seven percent in each year).

The proportion of new graduate census respondents not in clinical practice has fluctuated somewhat over the past several years. The percentage of new graduates not in clinical practice had been between four and five percent in each year from 1991 through 1994. In 1995, that proportion fell to under three percent. Beginning in 1997, a larger proportion of new graduates reported not being in clinical practice (5% in 1997, 6% in 1998 and 1999, and 10% in 2000). The trend was reversed in 2001 as the proportion fell to six percent, and seven percent in both 2002 and 2003.

Please note that while the percentages of PAs in clinical practice and in part-time practice have been relatively consistent over time, future increases in the percentage of females in the profession are likely to alter this pattern. Census data have consistently found:

- A much larger proportion of the female respondents are not in clinical practice (e.g., 8% of males and 15% of females in 1999 and 2000; 9% of males and 15% of females in 2001; 9% of males and 14% of females in 2002 and 2003)
- A much larger proportion of the female respondents in clinical practice work part-time for their primary clinical employer (e.g., the figures in 1999, 2000, 2001, 2002, and 2003 for females were 17%, 18%, 18%, 18%, and 18%; for males they were 4%, 6%, 6%, 6%, and 6%).

### ***Occupations of those not in clinical practice***

Of those census respondents who were not in clinical practice as a PA, only eight percent reported an occupation that was not healthcare related. Twenty-nine percent said that they worked as a non-clinical professional within healthcare and 24% were PA educators. Ten percent of those not in clinical practice as a PA reported that they were unemployed and looking for work as a PA. It is important to note that the percentages reported in this section sum to greater than 100 percent because respondents were permitted to mark all response categories that applied to them and whatever number of jobs they held. For example, it is possible that some individuals reported that they were both a PA educator and a non-clinical professional within healthcare.

Of the member census respondents who were not in clinical practice as a PA, 41 percent were PA educators, 38 percent worked as a non-clinical professional within healthcare, and 23 percent were not employed by choice. Again, percentages reported in this section sum to greater than 100 percent because respondents were permitted to mark all response categories that applied to them.

There were too few non-practicing new graduate census respondents to present meaningful statistics about other occupations.

## **Personal Characteristics of Clinically Practicing PAs**

### ***Sex***

The population of PAs in clinical practice is fairly balanced in terms of sex, however, since 1997, females have been in the majority. The relative proportion of females is expected to continue increasing as the proportion of females in PA programs is higher than that of the profession (65% in 2000, 67% in 2001 and 2002) and as the pioneers of the profession, which were predominantly male, reach retirement age.

- 58% of the clinically practicing census respondents and 67% of the clinically practicing new graduate census respondents in 2003 were female.

### ***Race***

Since 1991, the proportion of clinically practicing census respondents who are not white has increased, though not steadily.

- Slightly more than ten percent of the clinically practicing census respondents in 2003 were not white.
- Nine percent of the member census respondents were not white.
- Twelve percent of the new graduate census respondents were not white.

### ***Mean Age, Age at Graduation, Years since Graduation, and Years in Clinical Practice***

The mean age of clinically practicing census respondents was 40.6 years and the mean age at time of graduation from PA school was 30.9. The mean number of years since graduation from PA school was 9.7 and the mean number of years in clinical practice was 9.1. Very little variation has occurred with respect to these measures over the last 13 years and very little difference exists between these statistics for all respondents and member respondents

The mean age of new graduates in 2003 was 31.3 (the mean age at time of graduation from PA school was 30.3). The mean age of new graduates in 1991 was 30.8; this measure rose to about 34 in 1995 and then slowly decreased to its current level.

### ***Education***

The proportion of clinically practicing census respondents without a bachelor's degree or who hold a bachelor's degree as their highest degree has decreased steadily over the last seven years while the proportion with a master's degree has more than doubled. The trend is even more pronounced among the member respondents. The proportion of new graduate census respondents with a bachelor's degree as their highest degree has decreased from 78 percent in 1991 to 43 percent in 2003 while the proportion with a master's degree increased from 10 percent to 52 percent.

### ***Government Employment***

The proportion of AAPA census respondents working for the government has declined sharply (from 22% to 10%) during the past 13 years. Keeping in mind that non-members who have been less likely to be AAPA members were not invited to participate in the census surveys prior to 1996, these data understate the decrease. The proportion of member census respondents working for the government in 2003 was just eight percent. New graduate census respondents were even less likely to be employed by the government (17% in 1991 down to 6% in 2003).

### ***Type of Employer***

Between 1993 and 2003, the proportion of clinically practicing census respondents working for group practices increased sharply from 26% to 43%, while the proportion working for hospitals decreased sharply from 36% to 22%. These changes clearly reflect the greater emphasis that our society has placed on ambulatory care during this period. Another notable trend is the slight increase in the proportion of census respondents working for solo practice physicians in the last few years (10% in 1998 vs. 13% in 2003); 16 percent of new graduate census respondents reported working for solo physician in 2003.

### ***Primary Work Setting***

The settings with the largest proportions of PAs include single and multi-specialty group practices, solo practice physician offices, hospital operating rooms, emergency rooms, and inpatient and outpatient units of hospitals. No meaningful differences were observed between member and non-member census respondents with respect to work setting. A larger proportion of new graduate census respondents relative to all respondents reported working in solo practice physician offices (18% v 13%).

### ***AAPA Regional Distribution***

The proportion of clinically practicing PAs in each AAPA region has become more comparable over time. This is true for all clinically practicing census respondents, as well as for member census respondents. The distribution of new graduates has been more erratic as PA programs have come and gone over the years.

### ***Specialty***

The specialty fields with the largest proportion of clinically practicing 2003 census respondents are family/general practice (31%), surgical subspecialties (20%), emergency medicine (10%), medical subspecialties (10%), and general internal medicine (8%). A slightly larger proportion of member census respondents work in the surgical subspecialties (22%), otherwise, the specialty distribution of member census respondents closely mirrors that of all clinically practicing respondents, while new graduate census respondents are considerably more likely to work in the surgical subspecialties (26%) and less likely to work in family/general practice (25%).

Two notable changes have occurred in the specialty distribution of PAs between 1991 and 2003.

- The proportion of clinically practicing census respondents working in family/general practice gradually increased between 1991 and 1996 from 32 to 40 percent, but now accounts for only 31 percent.
- The proportion of PAs working in surgery decreased from 24 to 19 percent between 1991 and 1998, but has been at least 20 percent for the last five years and now stands at 23 percent.

The trends observed in the specialty distribution of member census respondents differ only slightly from that of all clinically practicing census respondents.

The proportion of new graduate census respondents working in family/general practice increased sharply through the early nineties to peak at 50% in 1996. In 2003, however, only 25 percent of the 2002 graduates were working in this field. The opposite trend occurred with respect to the surgical specialties, while the proportion of new graduates in other specialty fields remained relatively stable throughout this period.

### ***Years in Current Specialty***

Census respondents in the specialty fields of family/general practice and obstetrics and gynecology have been working in their respective specialties for an average of about eight years. Those respondents in the subspecialties on internal medicine and the “other” specialty group have the shortest tenure in their respective specialty fields with an average of just over four years. Very small differences were observed between the tenure in specialty for members and all respondents; measures on tenure in specialty for new graduate census respondents are not presented because these respondents could not have been in their specialty for more than one year.

### ***Types of Patients Seen***

Sixty-nine percent of clinically practicing census respondents see outpatients only at their primary clinical job, while 7 percent see inpatients only, 24 percent see multiple patient types, and 1 percent see nursing home patients only. Virtually no differences are observed between the types of patients seen by member respondents and all respondents, while new graduate census respondents were less likely to see outpatients only (63%) and more likely to see multiple patient types (30%).

### ***Hours Worked per Week***

The mean number of hours worked per week for primary employer for all clinically practicing census respondents was 44.6. Census respondents who were members of AAPA reported working a mean of 44.8 hours while new graduate census respondents reported working an average of 45.8 hours.

### ***Income***

Given the various forms in which we have collected data about PA income, we can explore trends concerning PA incomes only for PAs who reported a single full-time clinical job. Moreover, because the populations of respondents in each year differ dramatically with respect to a number of factors that determine income, we present data about the incomes of only new graduates and new graduates in family practice by AAPA region. In effect, these data take into account specialty, experience, and geographic location, the most important determinants of income.

The incomes for new graduates have shown waning regional variation over time. In 1991, the range was 29 percent; in 2001 the range was 10 percent, and in 2003 the range was only 8 percent.

### ***Income for New Graduates***

Changes in the mean income of new graduates can be characterized as follows.

- From 1991 to 1996, the mean incomes increased in each region in each year with annual changes ranging from one to 16 percent.
- The mean incomes in 1997 and 1998 were very comparable to the mean incomes in 1996.
- From 1998 to 1999, the mean incomes increased by between three and five percent in each region.
- From 1999 to 2000, the changes in mean income varied across regions. There were small decreases in the South Central and Northeast regions while the other three regions experienced increases ranging from one percent in the Southeast to three percent in the West.
- From 2000 through 2002, the mean income increased by between two and seven percent in each region.
- From 2002 to 2003, the mean income increased in four of the five regions (no change observed within the North Central region); the increases regions ranged from one percent in the West to six percent in the South Central region.

### ***Incomes for New Graduates in Family Practice***

The overall mean income for new graduates in family practice increased two percent from 2002 to 2003. However, the mean incomes of those in the West and Northeast regions decreased slightly from 2002, while those in the Southeast and North Central regions increased slightly and those in the South Central region increased eight percent.

- From 1991 to 1996, the mean incomes increased between 2 and 11 percent per year.
- From 1996 through 1998 mean incomes were relatively flat with small decreases in some regions.
- Between 1998 and 1999, the mean income increased by three percent overall; this increase was due, in large part, to an eight percent increase in the West region.
- Between 1999 and 2000, changes ranged from two to three percent in each region.
- In 2001, new graduates in family practice earned two percent more than their counterparts in 2000, however those in the North Central and West experienced small declines while those in other regions saw modest increases.
- From 2001 to 2002, the mean income increased six percent nationwide; those in the Northeast and West had increases of over eight percent.
- From 2002 to 2003, incomes were up about two percent; changes ranged from a two percent decrease in the West region to an eight percent gain in the South Central region.

## **Projections**

### ***Number of PAs in Clinical Practice***

As described in the first section of this presentation, the number of PAs in clinical practice has doubled in the last 10 years. To date, the US health care system appears to have accommodated the increased number of PAs:

- According to our estimates, the total number of people in clinical practice as PAs has grown from 24,969 to 50,121 (101%) in the last 10 years.
- In each year since 1991, more than 79 percent of the people eligible to practice as PAs at the time have in fact been in clinical practice.
- These findings demonstrate that society's investments in the production of PAs continue to return dividends and suggest that PAs are generally satisfied with their choice of profession.

### ***Patient Visits and Prescriptions Written***

During 2003, we estimate that PAs treated 192 million patients and prescribed or recommended 236 million medications. These figures represent an increase of five percent in the number of patient visits in 2002 and a six percent in the number of prescriptions in 2002. These increases are a result of the increase in the number of PAs in clinical practice as opposed to a higher volume of patients per PA or prescriptions per patient visit.

### ***Patient Visits by Select Disorder/Condition***

We estimate that during 2003, PAs treated over 18 million patients for respiratory/ENT infections; 18 million patients for musculoskeletal disorders/injuries, 15 million patients for allergic disorders, and 14 million patients for hypertension.