



PAAs in Cardiology

Founded on the concept of collaborative practice, the PA profession is a natural fit for team-based cardiology. In cardiology practices and departments, PAs increase patient access and contribute to improved quality by providing medical care and care coordination. PAs are a cost-effective resource for meeting patients' medical needs.¹⁻³

EDUCATION AND CERTIFICATION

Comprehensive master's degree programs provide PAs with a rigorous, generalist medical education. Programs typically last 27 months⁴ and employ an intensive curriculum modeled on that used in medical schools.

The classroom phase covers basic medical sciences, including anatomy, physiology, pharmacology, physical diagnosis, behavioral sciences, and medical ethics. PA students take more than 75 hours in pharmacology, 175 hours in behavioral sciences, more than 400 hours in basic sciences, and nearly 580 hours of clinical medicine. This is followed by clinical rotations in family medicine, internal medicine, general surgery,

pediatrics, obstetrics and gynecology, emergency medicine, and psychiatry. Students may elect cardiology rotations. PA students complete at least 2,000 hours of supervised clinical practice by graduation.^{5,6}

After graduation, PAs must pass a national certifying exam and obtain a state license. To maintain certification, PAs must complete 100 hours of continuing medical education (CME) every two years and pass a national recertification exam every 10 years.⁷

PAs are lifelong learners who seek additional training for varied reasons such as to practice in a particular specialty, to demonstrate competence for credentialing or to gain expertise in a focused clinical subject. For example, a PA may participate in simulation training to learn invasive cardiovascular procedures. There are a few postgraduate PA programs focused on cardiac care – two in cardiology and several in critical care and cardiac critical care. In addition, there are several in cardiothoracic surgery.

PA WORKFORCE

Cardiology is the largest internal medicine subspecialty for PAs. Nationally, approximately 4,000 certified PAs practice in cardiology. An additional 3,600 PAs practice in cardiac and thoracic surgery.⁸ With the number of PAs expected to increase over the next decade, these numbers are likely to increase.^{9,10}

A 2016 survey of PAs in cardiology found more than half (58%) are group-practice based and 42% are hospital-based. A majority (67%) provide inpatient and out-patient care. The survey found increased

PA education by the numbers

27 continuous months
75 hours of pharmacology
175 hours in behavioral sciences
400+ basic sciences
580 hours clinical medicine
2,000+ hours in clinical rotations

clinical autonomy for PAs compared with 2012 findings. The majority (65 percent) reported working with a cardiologist onsite most of the time and available for consultation. Almost 20 percent (19.5) reported practicing while the attending is offsite, up from 13.5 percent in 2012. Respondents also reported more autonomy when performing procedures. “Increased acceptance of PAs by hospitals, insurers and patients, along with a relatively short supply of cardiologists and a desire by physicians for a favorable work-life balance may all contribute to greater autonomy for PAs,” the survey report noted.¹¹

PA SCOPE OF PRACTICE IN CARDIOLOGY

PAs provide a broad range of medical care to cardiology patients, with varied clinical duties depending on the subspecialty and setting. PAs take medical histories, perform physical examinations, order and interpret laboratory and diagnostic tests, diagnose illness, develop and manage treatment plans for their patients, prescribe medications, perform procedures (e.g., cardioversions, insert temporary pacer wires, adjust and remove balloon pumps), and assist in surgery.

PAs administer key tests, including cardiac stress tests, tilt table tests, and diagnostic cardiac catheterizations. In hospitals, PAs commonly perform admissions, take call, make daily rounds, provide patient education, and coordinate discharges. Their knowledge of pathophysiology, cardiovascular drugs, ventilator management, and cardiac devices facilitates treatment of inpatients and outpatients with cardiac conditions.

The peer reviewed medical literature provides a window into an impressive range of PA roles including providing adult and pediatric cardiac intensive care,¹²⁻¹⁴ serving on dedicated heart valve teams,^{15,16} performing diagnostic cardiac catheterizations including coronary angiography, and staffing chest pain evaluation centers within emergency departments.¹⁷ In many cases, PAs focus on specialty areas such as valve repair, congenital heart disease, robotic, and minimally invasive procedures or transplantation.¹⁸

Findings from 2016 workforce survey¹⁰

Most common outpatient duties

- Clinical follow-up care
- Initiate, titrate, and refill medications
- Patient education
- Anticoagulant management
- Supervising stress tests

Most common inpatient duties

- Hospital rounds
- Discharge summaries
- Cardiology consults
- Admission H&Ps
- Post-procedure management

Reported Δ since 2012 survey

- More cardiology experience
- Increased PA autonomy
- Decreased ED management
- Increased post-procedure management

Most common procedures

- Balloon pump removal
- Elective cardioversion
- Central line placement
- Temporary pacing wires
- Swan-Ganz placement

THIRD-PARTY REIMBURSEMENT

Medical and surgical services delivered by PAs are covered by Medicare, Medicaid, TRICARE, and nearly all commercial payers.

The Medicare program covers services provided by PAs in all practice settings at a uniform rate of 85 percent of the physician fee. Generally, all services for which Medicare would pay if provided by a physician are also covered when performed by a PA, in accordance with state law. Those include services provided in an office or clinic, any department of a hospital including the emergency department, a skilled nursing facility, an ambulatory surgical center and a patient’s home. All 50 states and the District of Columbia cover medical services provided by PAs under Medicaid.

The Center for Medicare and Medicaid Innovation includes PAs as providers who can prescribe exercise and establish individualized treatment plans under its cardiac rehabilitation incentive payment model. The episode-based model will test the impact of providing an incentive payment to hospitals where beneficiaries are hospitalized for a heart attack or bypass surgery, who then use cardiac rehabilitation services in the 90-day care period following hospital discharge.

Nearly all commercial payers reimburse for services provided by PAs, however, they do not necessarily follow Medicare guidelines. Because of variation in claims submission, it is important to verify each payer's specific coverage policies for PAs.

For more information about third-party coverage, visit <https://www.aapa.org/reimbursement/>.

CONCLUSION

Many studies attest to the high quality of care PAs provide, favorably comparing it to physician care.¹⁹⁻²² One national study based on 650,000 cardiology patient encounters concluded that care provided by teams with PAs or NPs was equivalent to or better than care provided by physician-only practices.²³ In addition, patient satisfaction with PAs is very high. With a PA on staff, access to the care team improves, wait times decrease, and patient satisfaction rises.^{24,25}

The American College of Cardiology (ACC) supports team-based care as a way to increase access and expand services to underserved populations and geographic areas.²⁶⁻²⁸ In its 2015 policy statement on the role of advanced practice providers, ACC acknowledged the significance of team-based care for meeting future cardiovascular disease (CVD) demands.²⁹ Although death rates from CVD are declining, CVD still accounts for 1 in 3 deaths in the United States, and deaths from heart disease are expected to more than double by 2050. With a rapidly aging population, rising obesity rates, and predicted cardiology workforce shortages, cardiology care teams that include PAs will be essential to increasing access, improving quality and outcomes, and holding down costs.

“Cardiovascular team-based care is a paradigm for practice that can transform care, improve heart health, and help meet the demands of the future.”

— From ACC policy on cardiovascular team-based care and the role of advanced practice providers. [Brush 2015](#).

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REFERENCES

- 1 Miller AP, Handberg AM, Rodgers GP. It takes a team to deliver optimal cardiovascular care. *J Am Coll Cardiol*. 2018;72(8):948-51.
- 2 Rodgers GP, Linderbaum JA, Pearson DD, et al. 2020 ACC clinical competencies for nurse practitioners and physician assistants in adult cardiovascular medicine: A report of the ACC competency management committee. *J Am Coll Cardiol*. 2020;75(19):2483-2517.
- 3 Rymer JA, Chen AY, Thomas L, et al. Advanced practice provider versus physician-only outpatient follow-up after acute myocardial infarction. *J Am Heart Assoc*. 2018;7(17):1-9.

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- 4 Physician Assistant Education Association. *Program report 34: By the numbers. Data from the 2018 program survey*. Washington, DC; 2019.
 - 5 American Academy of PAs. What is a PA? <https://www.aapa.org/what-is-a-pa/> Accessed October 2, 2020.
 - 6 AAPA. PA Education—Preparation for excellence. [Issue brief]. Alexandria, VA; 2020. <https://www.aapa.org/download/61328/> Accessed October 2, 2020.
 - 7 National Commission on Certification of Physician Assistants. Maintaining certification. <https://www.nccpa.net/certificationprocess>. Accessed October 2, 2020.
 - 8 AAPA. 2020 AAPA salary survey. Unpublished data. Alexandria, VA.
 - 9 American Association of Medical Colleges. *The complexities of physician supply and demand: Projections from 2018 to 2033*. Prepared for the AAMC by IHS Markit Ltd. Washington, DC. June 2020.
 - 10 ARC-PA. Projected growth by state. Duluth, GA. 2020. <http://www.arc-pa.org/wp-content/uploads/2020/07/Projected-Growth-as-of-7.1.2020.pdf> Accessed October 2, 2020.
 - 11 American College of Cardiology PA Work Group. The evolution of the physician assistant workforce in cardiology. *Cardiology*. 2018;47(1):18-19.
 - 12 Katz JN, Minder M, Olenchock B. The genesis, maturation, and future of critical care cardiology. *J Am Coll Cardiol*. 2016;68(1):67-79.
 - 13 Arora RC, Chatterjee S, Shake JG, et al. Survey of contemporary cardiac surgery intensive care unit models in the United States. *Ann Thorac Surg*. 2020;109:702-10.
 - 14 Moynihan KM, Snaman JM, Kaye EC, et al. Integration of pediatric palliative care into cardiac intensive care: A champion-based model. *Pediatrics*. 2019;144(2):e2019-0160.
 - 15 Coylewright M, Mack MJ, Holmes DR Jr, O’Gara, PT. A call for an evidence-based approach to the heart team for patients with severe aortic stenosis. *J Am Coll Cardiol*. 2015;65(14):1472-1480.
 - 16 Vahl TP, Kodali SK, Leon MB. Transcatheter aortic valve replacement: A modern-day “Through the Looking-Glass” adventure. *J Am Coll Cardiol*. 2016;67(12):1472-1487.
 - 17 Winchester DE, Brandt J, Schmidt C, et al. Diagnostic yield of routine noninvasive cardiovascular testing in low-risk acute chest pain patients. *Am J Cardiol*. 2015;116(2):204-207.
 - 18 Dearani JA, Nowak MJ. The expanding role of certified physician assistants in cardiac specialties. *Cardiology Today*. June 3, 2015.
 - 19 Nabagiez JP, Shariff MA, Molloy WJ, Demissie S, McGinn JT. Cost Analysis of Physician Assistant Home Visit Program to Reduce Readmissions After Cardiac Surgery. *Ann Thorac Surg*. 2016;145(1):225-33.
 - 20 Faza NN, Akeroyd JM, Ramsey DJ, et al. Effectiveness of NPs and PAs in managing diabetes and cardiovascular disease. *JAAPA*. 2018;31(7):39-45.
 - 21 Morgan PA, Smith VA, Berkowitz TSZ, et al. Impact of physicians, nurse practitioners, and physician assistants on utilization and costs for complex patients. *Health Affairs*. 2019;38(6):1028–36.
 - 22 Jiao S, Murimi IB, Stafford RS, et al. Quality of prescribing by physicians, nurse practitioners, and physician assistants in the United States. *Pharmacotherapy*. 2018;38(4):417–27.
 - 23 Virani SS, Maddox TM, Chan PS, et al. Provider type and quality of outpatient cardiovascular disease care. *J Am Coll Cardiol*. 2015;66(16):1803-12.
 - 24 Martin BD, Matthews A, Young M, et al. Patient satisfaction in a high volume academic clinic: Do physician assistants and residents help or hurt? Presented at: American Academy of Pediatrics Annual Conference; October 2015; Washington DC.
 - 25 Hooker RS, Moloney-Johns AJ, McFarland MM. Patient satisfaction with physician assistant/associate care: an international scoping review. *Human Resources for Health*. 2019;17(1):104.
 - 26 Brush JE Jr, Handberg EM, Biga C, et al. ACC health policy statement on cardiovascular team-based care and the role of advanced practice providers. *J Am Coll Cardiol*. 2015;65:2118–36.
 - 27 ACC. The cardiovascular team section. <https://www.acc.org/membership/sections-and-councils/cardiovascular-team-section> Accessed October 2, 2020.
 - 28 Poppas A. Leading through change. *JACC* 2020;75(21):2744-5.
 - 29 Brush, 2015.