Medical Residency

Executive Summary

Medical residency consists of 3-7 years of training in a healthcare setting after completion of medical school, and is a prerequisite for full licensure as a physician. Residencies are primarily funded by Medicare, but can also be supported by state and private funds. The number of available residencies nationally has not kept up with the number of graduating medical students. Simultaneously, many areas in the country face healthcare workforce shortages. In Missouri, assistant physicians may provide limited healthcare services without having completed medical residency.

Highlights

- The United States is estimated to experience a shortage of between 54,100 and 139,000 physicians (primary and specialty care) by 2033.
- In 2018, there were 33,167 total residency positions available and 43,909 applicants.
- Medical residencies are primarily financed jointly by Medicare, state funds, and resident host institutions. The number of residency positions nationwide is determined by funding availability from these three sources.
- Federal legislation has been proposed to increase the number of available residencies with 50% of slots reserved for specialty areas.

Limitations

- Data on the volume and quality of healthcare contributions by assistant physicians are limited.

Research Background

U.S. Healthcare Workforce Projections

As of 2020, an estimated 83 million Americans live in areas with a primary care physician shortage.[1] The Association of American Medical Colleges (AAMC) estimates that the United States could see a shortage of between 54,100 and 139,000 physicians (primary and specialty) by 2033. By that time, the U.S. population is projected to grow to around 360 million. In particular, the population aged 65 and over is projected to grow by 45.1% between 2018 and 2033. This is expected to increase the demand for physicians who provide care for older individuals in particular.[2]

In addition, the AAMC projects that demand could increase by an additional 70,000 to 145,000 physicians if currently underserved populations reach the same level of healthcare utilization as individuals who do not face barriers such as being uninsured or living in a rural area.[2]

Meanwhile, over 40% of currently active physicians will be 65 or older by 2030, creating further supply constraints due to retirements.[2] To address healthcare workforce shortages, Missouri has recently considered legislation pertaining to advanced practice nursing scope of practice, and medical licensure reciprocity.

Medical Residency

To become a licensed physician, individuals must earn a medical degree (either an MD or DO) at an accredited medical school and then enter a residency program. These programs, which last 3-7 years depending on the area of practice, provide medical school graduates with hands-on clinical and educational experience under the supervision of experienced physicians, and can take place in a variety of healthcare environments. Residency requirements are established at the national level by the Accreditation Council for Graduate Medical Education.[3]

Medical school graduates secure residencies through the National Resident Matching Program, a nonprofit organization that uses automated software to "match" prospective residents with available residency slots. In 2018, there were 33,167 total residency positions available and 43,909 applicants.[4] Medical school graduates may reapply for residency training, but healthcare employment opportunities for individuals who fail to secure a residency have historically been limited since residency is a prerequisite for physician licensure.[3]

Funding Medical Residencies

Medical residencies are primarily financed jointly by Medicare, state funds, and resident host institutions. The number of residency positions nationwide is determined by funding availability from these three sources. As of 2020, approximately 145,000 residents were completing training in the U.S.[1]

Graduate Medical Education Payments

The Centers for Medicare & Medicaid Services (CMS) pay teaching hospitals both directly and indirectly to offset costs related to graduate medical education (GME). In 2018, CMS paid hospitals about $15 billion for GME training. Eligible hospitals receive Medicare Direct GME (DGME) payments to offset costs of training such as resident salary and benefits, malpractice insurance, and conference/travel fees. Hospitals also receive Indirect GME (IGME) payments for resident activities such as additional diagnostic tests or procedures, record keeping, and specialized medical technology use. The Government Accountability Office found that the cost of training can vary from $35,000-226,000 per resident, and that GME payments provide hospitals with an average of $171,000 per resident.[1]

Federal legislation caps the number of CMS-funded residency slots at a hospital equivalent to the number of residents that were funded at that institution in 1996. However, around 70% of teaching hospitals host additional residents beyond this cap by drawing upon other sources of funding (discussed in more detail below). Congress introduced the Resident Physician Shortage Reduction Act in 2019, which proposed to increase the number of GME-funded residency

positions by 15,000 positions over five years. At least 7,500 of these slots would be reserved for residents in a shortage specialty residency program, as designated by the Health Resources and Services Administration.[5]

State-level Residency Funding

As of 2018, 43 states and Washington, D.C., provided GME payments via state Medicaid programs. In total, states provided $5.58 billion in GME payments that year. Missouri provided $141.7 million in state DGME payments to hospitals in 2018. State revenues for GME in Missouri come from state general revenues, local government contributions, and provider taxes.[6]

Institutional Funding

While most GME support comes from public funds, hospitals may use their own revenues to support medical residents. Though uncommon, hospitals may solicit and rely on private philanthropic contributions as part of their funding strategies. A report from RAND Corporation finds that hospitals with service needs, particularly in specialty and subspecialty programs, are more likely to fund additional residents using their own funding sources.[7]

Medical Residents and Assistant Physicians in Missouri

Missouri has approximately 16,700 active physicians (5,300 in primary care areas), 6 schools that grant MD and DO degrees, 23 teaching hospitals, 4,400 MD/DO students, and 3,000 residents in training (~300 not supported by Medicare DGME payments). Although the state ranks 3rd nationally in the number of MD/DO students enrolled per capita, only 37.4% of physicians remain in the state to practice after completing residency (42nd in the country).[8,9] Healthcare workforce shortages are well-documented in Missouri, particularly in rural areas (see our Science Note on the topic).

Across the country, rural training track (RTT) residency programs have been designed to increase retention of medical residents and help ease provider shortages. These programs are located in rural areas and are accredited separately from other residency programs due to their smaller size and (typically) lower resource availability. They are often integrated with a larger, more urban, residency program.

The University of Missouri is launching the Bothwell Family Medicine Residency, the first true rural residency training track program in the state, in Sedalia in 2022. Each year, two residents per year will spend their first year of training at the University of Missouri in Columbia before transitioning to Sedalia for their second and third years of training. While residents who complete RTT programs are more likely to go on to serve as physicians in rural settings, the Bothwell Residency program does not require residents to practice in rural Missouri after completion.[10,11]

One study calculates the amount of "rural workforce years" provided by physicians trained in RTT programs, and finds that every graduate from an RTT program provides 2.89 times the

amount of rural workforce years as a graduate from a non-RTT program, due to higher retention of RTT graduates in rural areas.[10]

Assistant Physicians

In 2014, Missouri enacted legislation to establish the position of "assistant physician," (not to be confused with physician assistants, who also provide limited healthcare services but typically receive masters degree-level training in a specialized program rather than attending medical school). These individuals must have proficiency in English and have successfully completed Step 2 of the United States Medical Licensing Examination (USMLE) or the equivalent of another board-approved medical licensing examination, but not be enrolled in a residency program, to be eligible for an assistant physicianship. These individuals may only provide primary care services (defined as family practice, general practice, internal medicine, pediatrics, obstetrics, or gynecology; MO Rev. Stat. § 334.038) in medically underserved rural or urban areas, or in pilot project areas established for this purpose.(MO Rev. Stat. § 334.036) Their scope of practice may include taking histories, performing physical examinations and routine therapeutic procedures, and assisting with surgeries. Assistant physicians may also prescribe some medication with approval from the state board of pharmacy.(MO Rev. Stat. § 334.037)

They must also enter into collaborative practice agreements with a supervising physician, who must be continuously present for at least a 1-month period before allowing the assistant physician to practice without supervision.(MO Rev. Stat. § 334.037) After this, the assistant physician must still practice within a 50-mile radius of the supervising physician, and the supervising physician must review more than 10% of patient records. A supervising physician may not enter into collaborative practice agreements with more than 6 assistant physicians.[3]

During 2017, 99 assistant physicians were licensed in Missouri, but only 25 of them entered a collaborative agreement and were therefore able to practice. Of the 99 licensed assistant physicians, 92 were international medical school graduates, 76 of whom received medical degrees from schools in the Caribbean region. Of the 7 U.S. medical school graduates, none were from schools in Missouri. Assistant physicians in this cohort had significantly lower pass rates on all four USMLE Step Examinations than U.S. medical graduates who entered residency. Though there is evidence that higher USMLE exam scores correspond to higher quality of care, data in this report were available only for one year, so the current number and performance status of assistant physicians in Missouri is unknown.[12,13]

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