



INDIANA'S PHYSICIAN PIPELINE-TO-PRACTICE IN CONTEXT



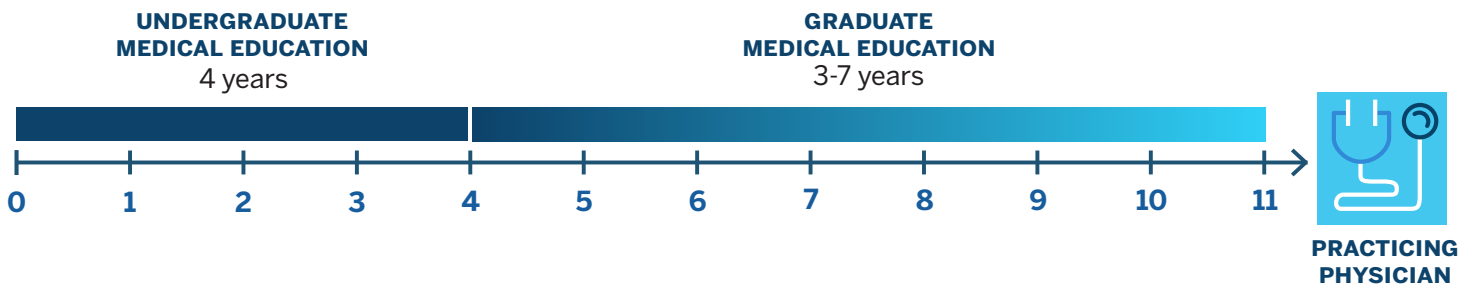
INDIANA UNIVERSITY
SCHOOL OF MEDICINE

BACKGROUND

PHYSICIANS are foundational to the provision of high-quality medical care and positive health outcomes. Examining the physician pipeline to practice is a critical step toward developing state-level initiatives and policies that aim to strengthen the workforce.

WHAT IS THE PHYSICIAN PIPELINE-TO-PRACTICE?

NUMBER OF YEARS IN EACH STAGE OF THE PIPELINE



The medical education pipeline includes several steps that must be accomplished between post-secondary education to obtaining full medical licensure.

- 1. Undergraduate Medical Education** is commonly known as medical school. Physicians are trained in basic medical concepts for four years.¹ A portion of the time spent in medical school provides clinical hands-on training with patients. Medical school prepares physicians for the next phase of medical education.¹
- 2. Graduate Medical Education** includes medical residency and fellowships. A medical residency is a required structured series of clinical and/or other learning experiences as part of graduate medical education. Residency is meant to prepare physicians to practice unsupervised in their chosen specialty.² All physicians complete a medical residency, some physicians complete an additional 1-3 years of fellowship for advanced training.²
- 3. Practicing Physicians** have completed all medical education requirements, are fully licensed and able to practice in their specialty independently.³

The Bowen Center, in concert with the Indiana Department of Health, assessed Indiana's family medicine, obstetric/gynecology, and pediatric physician pipeline to practice. The [Indiana Medical Education Pipeline-to-Practice Study](#) provides a summary of these evaluation findings. This brief seeks to compare Indiana's overall physician pipeline to the pipeline in neighboring states and national averages. This context provides additional insights to support informed workforce planning.

¹ AAMC. What to Expect in Medical School. Available at: <https://students-residents.aamc.org/choosing-medical-career/what-expect-medical-school>

² Accreditation Council for Graduate Medical Education: Glossary of Terms (2024); Available at: https://www.acgme.org/globalassets/ab_acgmeglossary.pdf

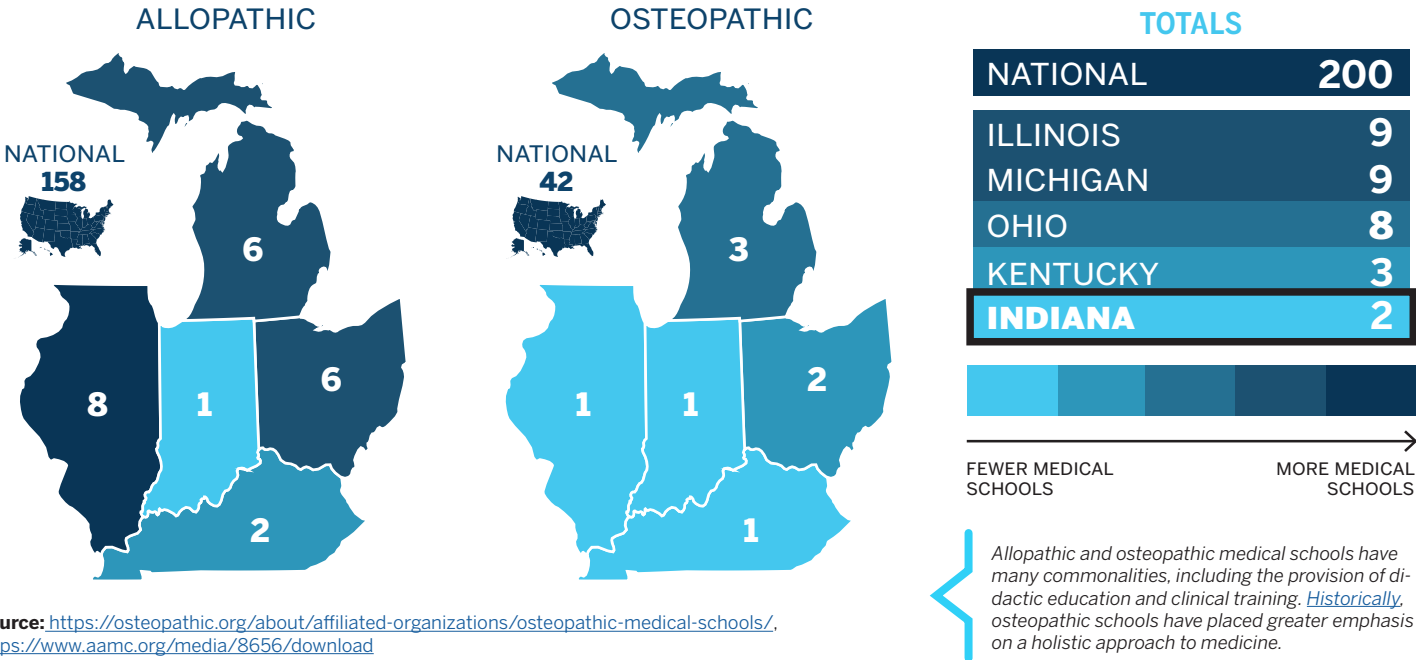
³ Definition of a Physician. American Medical Association. 2025. <https://policysearch.ama-assn.org/policyfinder/detail/H-405.969?uri=%2FAMADoc%2FHOD.xml-0-3589.xml>



PHYSICIAN DATA SNAPSHOT

HOW DOES INDIANA STACK UP?

NUMBER OF MEDICAL SCHOOLS, BY TYPE



Source: <https://osteopathic.org/about/affiliated-organizations/osteopathic-medical-schools/>, <https://www.aamc.org/media/8656/download>

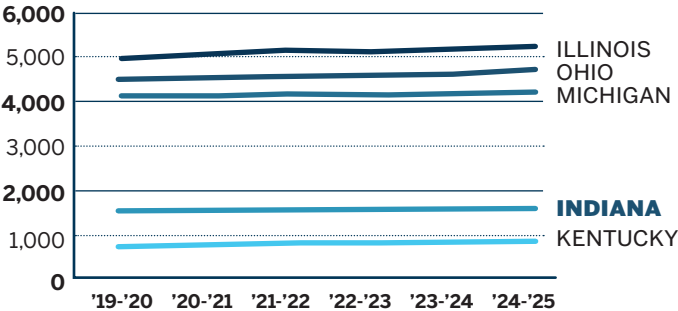
UNDERGRADUATE MEDICAL EDUCATION

The number of medical schools and corresponding enrollment within a state provides important insight into its undergraduate medical education capacity. Nationally, there are 200 medical schools and an average of four medical schools per state. Indiana has two medical schools (Indiana University School of Medicine and the Marion University College of Osteopathic Medicine). This is lower than the national average and our neighboring states.

MEDICAL SCHOOL ENROLLMENT

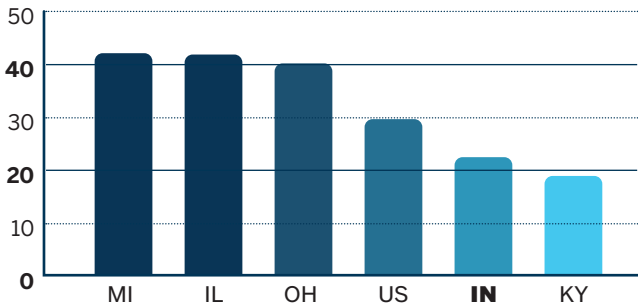
Medical schools are quite varied in their enrollment, therefore, the number of medical schools within a state alone is not sufficient to understand its medical education capacity. State-level medical school enrollment is a direct indicator of the state's contribution to physician workforce development. Growth trends from the last six years demonstrate increasing medical school enrollment nationally and within each state in the Midwest. Although Indiana has experienced increased medical school enrollment, these increases are smaller than those in neighboring states. It is also important to look at enrollment numbers in the context of population size. This helps clarify how the pipeline of medical students compares to the number of people needing medical care. For 2024-2025, Indiana had 22 medical students for every 100,000 Hoosiers. This ratio was lower than the national figure as well as the figures for all of Indiana's bordering states, except Kentucky.

TOTAL MEDICAL SCHOOL ENROLLMENT
BY YEAR



Source: [AAMC 2024 Facts](#): Enrollment, Graduates, and MD-PhD Data, Total Enrollment by U.S. Medical School and Gender

MEDICAL STUDENTS ADJ. FOR POP.
STUDENTS PER 100,000 PEOPLE

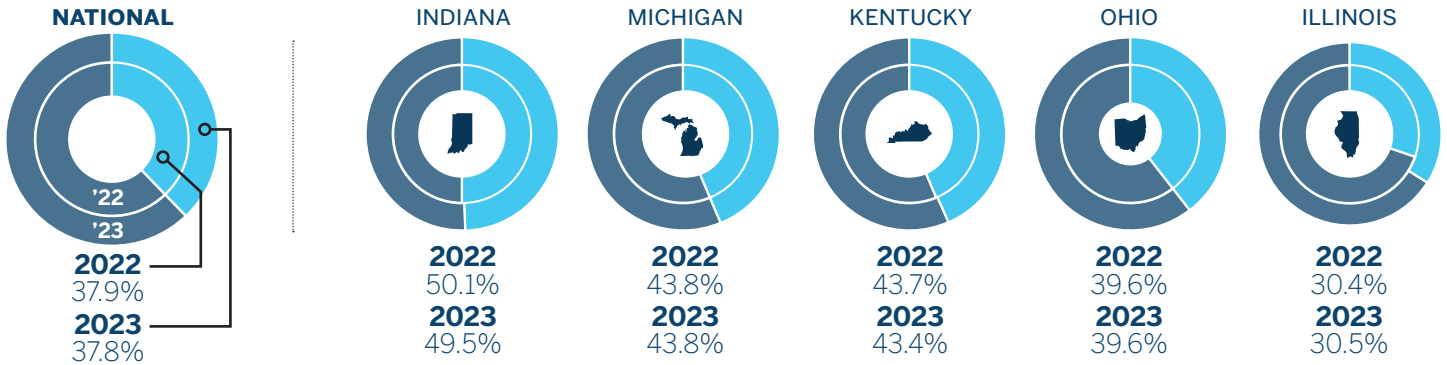


Source: [AAMC 2024 Facts](#): Enrollment, Graduates, and MD-PhD Data, Total Enrollment by U.S. Medical School and Gender. U.S. Census, [State Population Totals: 2020-2024](#)

RETAINING MEDICAL SCHOOL GRADUATES

Although training medical students in Indiana is important, we must also retain them within the state for their practice. According to national data from the Association of American Medical Colleges, about 38% of physicians stay in the state where they complete medical school. Indiana’s retention rate is much higher than the national average and our contiguous states.

MEDICAL SCHOOL RETENTION
PERCENT OF PHYSICIANS RETAINED FROM MEDICAL SCHOOL 2022-23



Source: AAMC U.S. Physician Workforce Data Dashboard, <https://www.aamc.org/data-reports/report/us-physician-workforce-data-dashboard>

GRADUATE MEDICAL EDUCATION

After graduating from medical school, physicians complete Graduate Medical Education (GME) in a specialty area through participation in a medical residency program. State-level GME programs and residency positions are important indicators of the strength of a state’s medical education pipeline to practice as [previous research](#) suggests physicians are more likely to stay and practice where they complete their medical residency training.

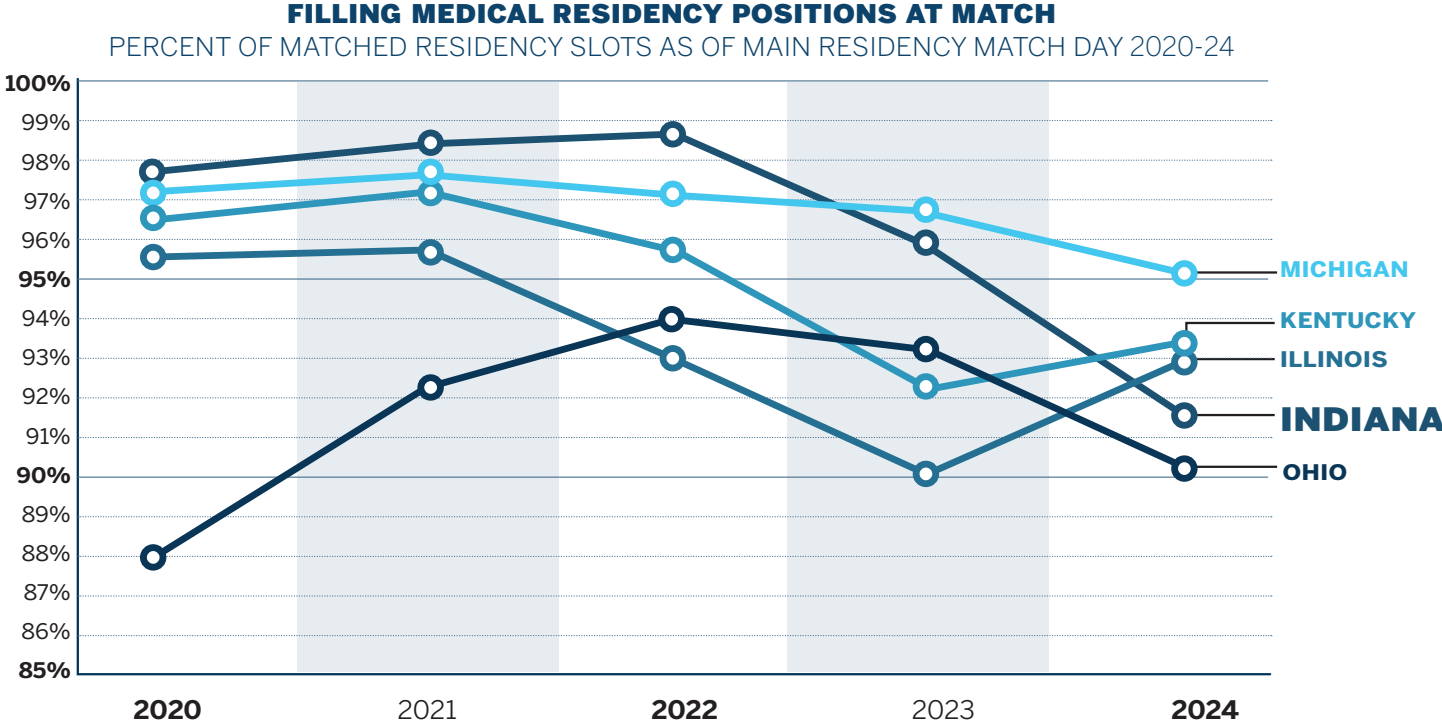
Medical students are matched to medical residency programs during the spring of their fourth year of medical school. The [National Resident Matching Program](#) (NRMP) is the organization that oversees this process. The match allows medical students and residency program directors to confidentially rank their preferences for placements. NRMP then strategically matches students and programs based on this ranking and participants are notified about their placement on Match Day.

Most medical students place into a medical residency during the match, but some do not. Also, some medical residency programs do not fill all their open positions at match. Medical students can be placed into an open medical residency position after the match through NRMP’s Supplemental Offer and Acceptance Program (SOAP). During SOAP, unmatched medical students apply to unfilled residency programs. Offers are then extended by the residency programs to students who fit their preferences.



HOW DOES INDIANA STACK UP WITH REGARDS TO FILLING MEDICAL RESIDENCY POSITIONS AT MATCH?

Overall, [NRMP](#) reports that 93.8% of all residency positions across the country were filled as of Match Day 2024. Accordingly, Indiana and all neighboring states also had unmatched residency positions. In 2020, Indiana filled 98% of allotted slots during the match, but this decreased to 92% in 2024. Illinois, Michigan, and Ohio also experienced decreases in filled slots over the same period. Kentucky, on the other hand, filled 88% of its slots in 2020 and 90% in 2024.

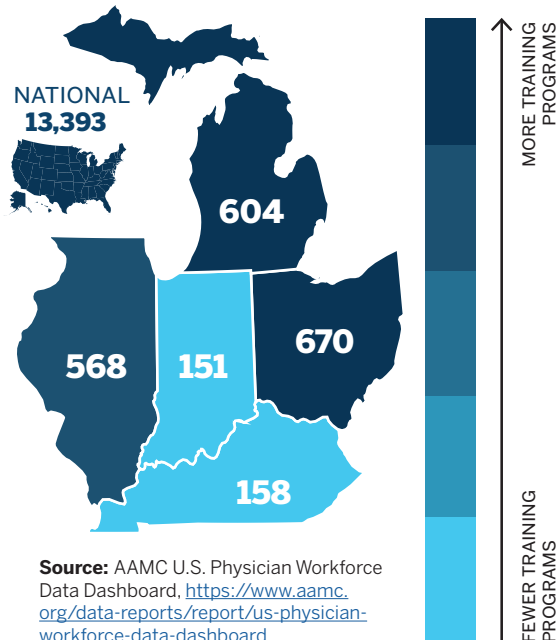


Note: Data does not include SOAP matches. Data calculated from National Resident Matching Program (NRMP). For raw data, please visit the NRMP website: <https://www.nrmp.org/wp-content/uploads/2024/03/Main-Match-Program-Results-2020-2024.pdf>

MEDICAL RESIDENT CAPACITY

To understand a state’s capacity for medical resident training, it is important to look at the number of available training programs (see chart at right) as well as how many residents are enrolled in those programs (see graphic on next page). Nationally, there are nearly 13,400 medical residency programs training more than 162,600 physicians. With only 151 residency programs and 1,749 medical residents, Indiana has the fewest residency training programs among neighboring states.

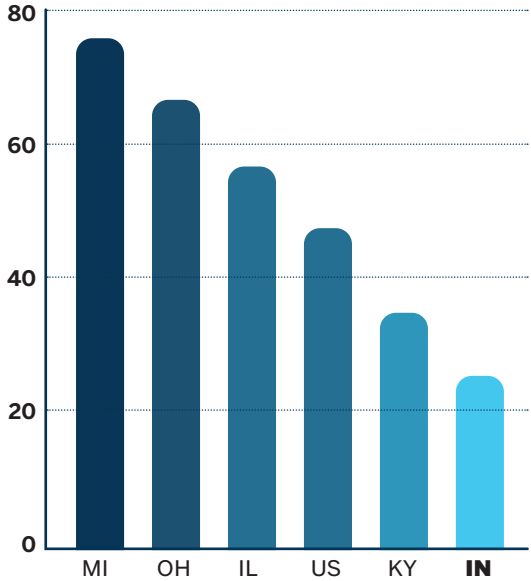
NUMBER OF RESIDENCY TRAINING PROGRAMS



BOWEN

MEDICAL RESIDENT ADJ. FOR POP.

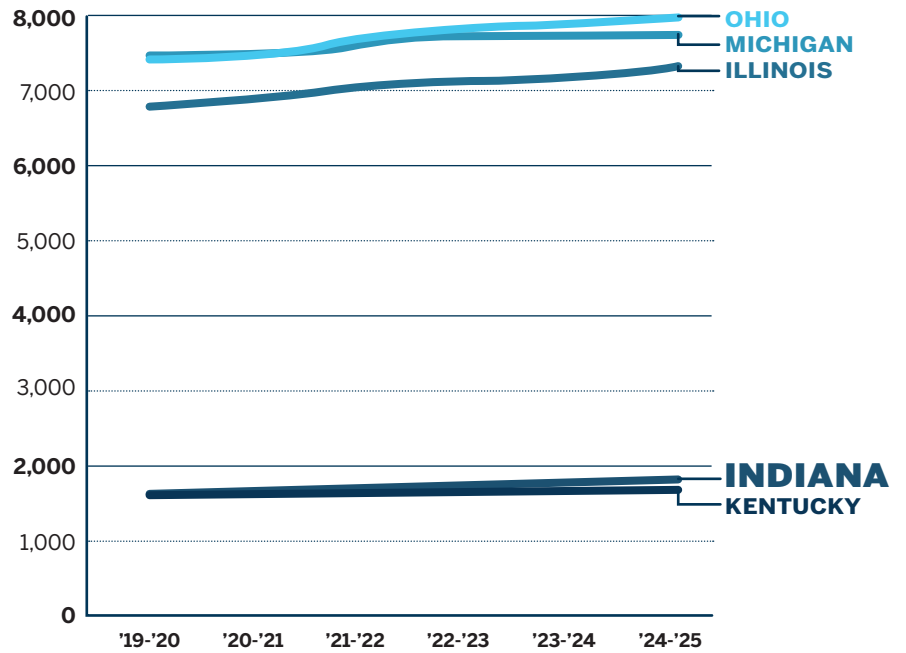
RESIDENTS PER 100,000 PEOPLE



Source: ACGME Data Resource Book, [ACGME Data Resource Book](#) U.S. Census, State Population Totals and Components of Change: 2020-2024, State Population Totals: 2020-2024

TOTAL NUMBER OF MEDICAL RESIDENTS

BY ACADEMIC YEAR AND STATE



Source: ACGME Data Resource Book, [ACGME Data Resource Book](#)

RESIDENT CAPACITY AND ENROLLMENT

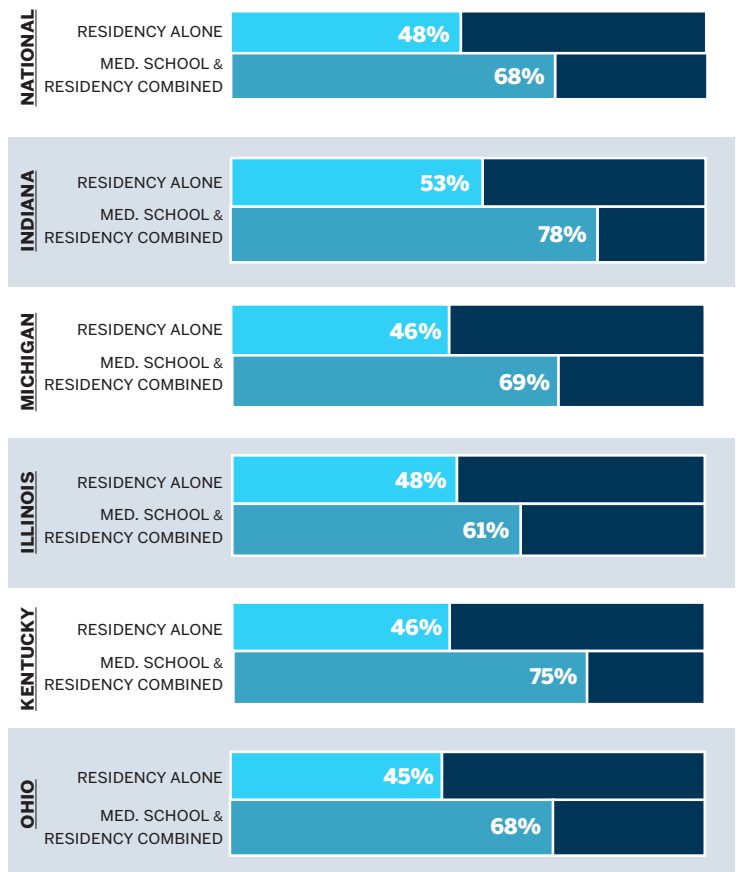
The number of medical residents has increased over the last five years, both nationally and within the Midwest. Comparing growth rates, Indiana has experienced an increase of about 14% in medical residents since 2019, which is more growth than its bordering states and the nation overall. Despite this growth, when looking at enrollment in the context of population size, Indiana fares much worse than other states in the Midwest and the national average. Indiana only has about 25 residents for every 100,000 Hoosiers, which is much lower than bordering states.

RETENTION OF RESIDENTS

Research suggests that physicians stay where they train (medical residency). Nationally, 48% of all residents stayed to practice in the location where they completed their residency. Indiana is leading the way in retaining medical residents into practice. More than 53% of Indiana medical residents stay and practice in the state. This is higher than the national average and all neighboring states. When we look at GME and Medical Student Retention combined, Indiana retains 77.5% of physicians. It is important to look at retention of both medical students and those who have completed graduate medical education to ensure that the entire medical education pipeline is secure. Nationally, about 68% of physicians across both phases of the pipeline are retained in the location where they complete their medical education. Indiana's retention rate is significantly higher than the national average and all our bordering states at 77.5%.

PHYSICIAN RETENTION (2023)

FROM RESIDENCY PROGRAMS AND MED. SCHOOL



Source: AAMC U.S. Physician Workforce Data Dashboard, <https://www.aamc.org/data-reports/report/us-physician-workforce-data-dashboard>



EXISTING INITIATIVES IN NEIGHBORING STATES

Nearly every state has some type of physician workforce shortage (example: shortages of certain specialties or within certain communities). Widespread shortages mean that, to some extent, states are competing to recruit and retain physicians to serve their residents. Many states have implemented strategies to strengthen their physician workforce by improving recruitment and retention. These strategies include loan repayment programs, scholarships, and other efforts aimed at incentivizing physician recruitment and retention. Keeping a finger on the pulse of state-level initiatives and incentive programs in neighboring states can help inform related efforts in Indiana.

LOAN REPAYMENT PROGRAMS AND SCHOLARSHIPS



Ohio offers several loan repayment programs to assist with the recruitment and retention of physicians, including the [Ohio Physician Loan Repayment Program](#) and the [Ohio Substance Disorder Professional Loan Repayment Program](#). Both programs have a goal of increasing access for underserved communities. They also have similar requirements that providers must commit to practice for two years in a shortage area, accept Medicare and Medicaid, and see patients regardless of ability to pay.

Additionally, Ohio offers the [Choose Ohio First Scholarship](#) for students who enter science, technology, engineering, and mathematics (STEM) disciplines. This scholarship aims to strengthen Ohio’s pipeline of STEM workers, including physicians. This scholarship is only for Ohio residents pursuing a certificate, associate, bachelor’s, or graduate degree in a STEM discipline.

PROGRAM NAME	AMOUNT	REQUIREMENTS
Ohio Physician Loan Repayment Program	\$25,000 annually (\$35,000 annually for a second commitment)	<ul style="list-style-type: none"> ■ Primary care physician ■ Practice location in HPSA ■ Accept Medicaid, accept assignment of Medicaid, accommodate clients regardless of ability to pay
Ohio Substance Disorder Professional Loan Repayment Program	\$25,000 annually (40 hours) OR \$12,500 annually (20-39 hours)	<ul style="list-style-type: none"> ■ Physician ■ Practice location in HPSA or high burdened SUD area ■ Accept Medicaid, accept assignment of Medicaid, accommodate clients regardless of ability to pay
Choose Ohio first scholarship program	\$4,324 average scholarship for a four-year college or university OR \$2,226 average for a two-year college* (*2021-22 academic year)	<ul style="list-style-type: none"> ■ Ohio resident ■ Enrolled in a STEM education program ■ Enrolled at an Ohio college or university



Kentucky has several loan repayment programs for physicians, including the [Kentucky State Loan Repayment Program](#) (KSLRP) and the [Healthcare Worker Loan Relief Program of the Commonwealth](#) (HWLRPC). Both programs were designed to support recruitment and retention of health care providers, including physicians. The table below includes more information.

Looking at scholarships, Kentucky offers the [Osteopathic Medicine Scholarship](#), which supports students pursuing a degree at the Kentucky College of Osteopathic Medicine at the University of Pikeville. This scholarship is only open to Kentucky residents who agree to practice in Kentucky for one year for every year the scholarship was awarded.

PROGRAM NAME	AMOUNT	REQUIREMENTS
<p>Kentucky State Loan Repayment Program</p> <hr/> <p><i>This is a 50/50 match funded program, meaning every federal dollar must have a 1:1 match from a sponsor, such as an employer or foundation.</i></p>	<p>\$20,000-\$50,000 annually</p>	<ul style="list-style-type: none"> ■ Primary care physician ■ Minimum of 40 hours for 2 years or 20-29 hours for 3 years ■ Work at an eligible site
<p>Healthcare Worker Loan Repayment Loan Relief Program of the Commonwealth</p>	<p>\$25,000 max annually</p>	<ul style="list-style-type: none"> ■ Fully licensed in Kentucky ■ Work at an eligible site in a HPSA ■ Practice 24-40 hours a week <hr/> <p><i>There is an initial two year commitment with opportunity for additional commitments up to six years total.</i></p>
<p>Osteopathic Medicine Scholarship Program</p>	<p>Scholarship awarded will equal the difference between the in-state tuition for medical schools at selected public universities and the cost of tuition at an osteopathic school of medicine.</p>	<ul style="list-style-type: none"> ■ Kentucky resident ■ Enrolled at Kentucky College of Osteopathic Medicine at the University of Pikeville ■ 1 year of practice in Kentucky for every year scholarship awarded ■ Sign promissory note as evidence of scholarship award





Michigan has one state loan repayment program — [Michigan State Loan Repayment Program](#) — to support the recruitment and retention of health care providers, including physicians.

PROGRAM NAME	AMOUNT	REQUIREMENTS
Michigan State Loan Repayment Program	\$20,000 annually	<ul style="list-style-type: none"> ■ 40 hours a week for 45 weeks a year ■ HPSA eligible not-for-profit site ■ 2-year commitment



Illinois has one loan repayment program, the [Illinois National Health Service Corps State Loan Repayment Program](#), which aims to support retention and recruitment of physicians.

Additionally, Illinois has the [Medical Student Scholarship Program](#) which aims to increase the supply of primary care physicians by reducing the financial burden of education for medical students.

PROGRAM NAME	AMOUNT	REQUIREMENTS
Illinois National Health Service Corps State Loan Repayment Program	\$25,000 annually	<ul style="list-style-type: none"> ■ 2 years of service in a HPSA ■ Licensed primary care physician
Medical Student Scholarship Program	\$950 monthly for 1 year	<ul style="list-style-type: none"> ■ Illinois resident ■ Enrolled or accepted to an Illinois medical school ■ Pursuing primary care specialty ■ Complete primary care post-graduate training in a shortage area



Indiana offers the [Indiana State Loan Repayment Program](#) (IN-SLRP) to assist with the recruitment and retention of physicians. Indiana’s loan repayment amount is smaller than all contiguous states, except Michigan, which also offers \$20,000 annually. Indiana has similar eligibility requirements for loan repayment programs as its contiguous state, except Kentucky. Kentucky’s State Loan Repayment is a 50/50 match funded program, meaning every federal dollar must have a 1:1 match from a sponsor, such as an employer or foundation, while Indiana’s IN-SLRP has no matching requirement.

Indiana offers the [Indiana Primary Care Shortage Area Scholarship](#) for students enrolled at Marion University College of Osteopathic Medicine who agree to provide primary care services in Indiana. This scholarship is similar to the scholarships that Kentucky and Illinois offer to medical students. Indiana offers smaller loan repayment amounts overall than the contiguous states, but eligibility standards remain consistent across the five states.

PROGRAM NAME	AMOUNT	REQUIREMENTS
<p>Indiana State Loan Repayment Program</p>	<p>\$20,000 annually, up to \$80,000 max</p>	<ul style="list-style-type: none"> ■ Practice in primary care, mental, or dental healthcare ■ 2 or 4 years of service in a HPSA
<p>Indiana Primary Care Shortage Area Scholarship Indiana Primary Care Shortage Area Scholarship</p>	<p>\$15,000 per year</p>	<ul style="list-style-type: none"> ■ Enrolled in Marian University Wood College of Osteopathic Medicine ■ Agree to practice primary care in IN post graduation



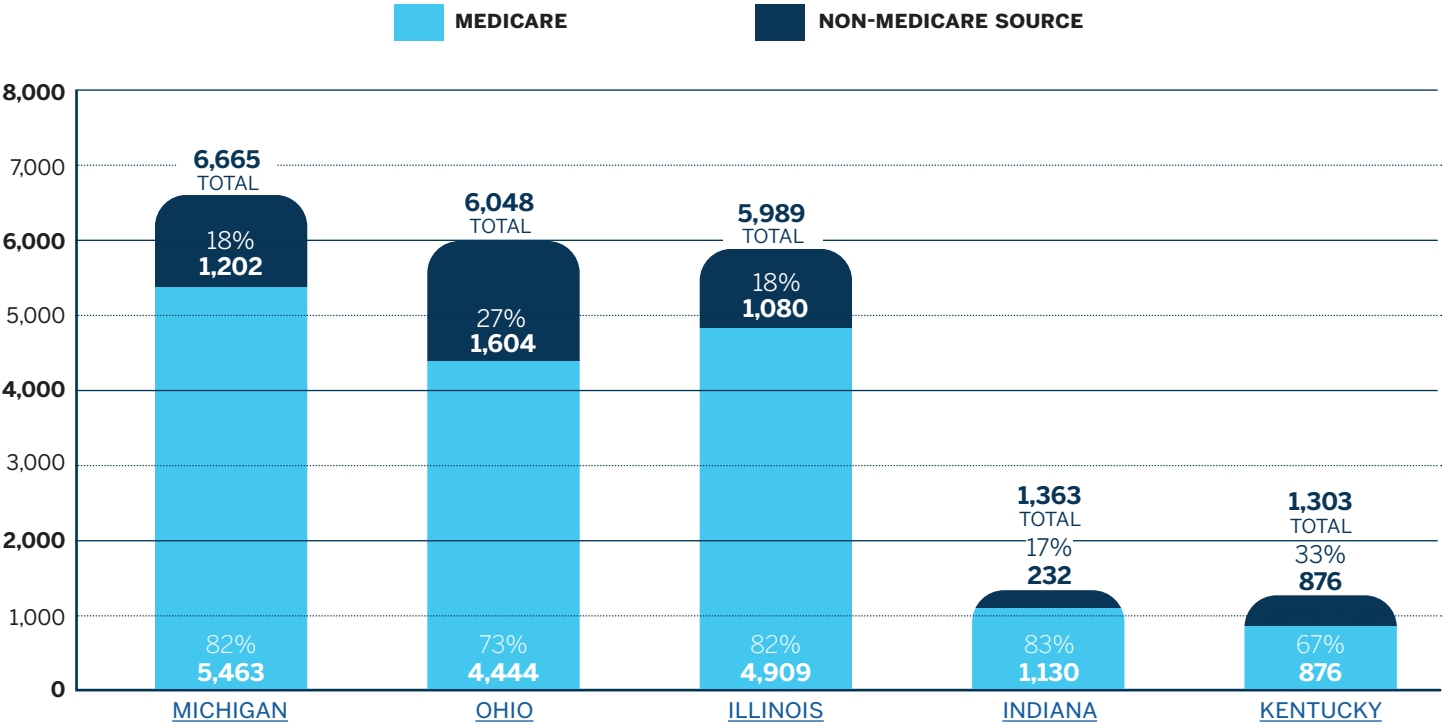
MEDICAL EDUCATION APPROPRIATIONS

FEDERAL APPROPRIATIONS

The federal government is the largest contributor to GME. Total GME funding exceeds [\\$15 billion per year](#). Federal funding of GME is complicated and spread across many agencies. The Centers for Medicaid and Medicare Services (CMS) funds approximately two-thirds of GME funding, while additional funds come from the [Department of Health and Human Services](#), [Department of Veterans Affairs](#), and [Department of Defense](#).

Based on an analysis of Medicare cost report data for FY 2020, AAMC found that 83% of Indiana’s residency slots were Medicare-supported slots. Similarly, Illinois, Ohio, and Michigan all have about 80% of their slots funded through Medicare. Kentucky has a significantly lower percentage of Medicare-supported slots at 68%.

GME SLOTS BY FUNDING MECHANISM
BY STATE



STATE APPROPRIATIONS

With the creation of the Graduate Medical Education Board in 2015 and an associated general assembly appropriation, Indiana sought to fund residency programs throughout the state as part of the state’s budget. Since 2019, Indiana has annually invested an average of \$5.1 million a year to support GME.

In addition to the GME board, Indiana established the Medical Education Board in 2007 to assist with recruiting and retaining family medicine physicians in the state. The Medical Education Board has a \$2.4 million annual budget, with \$1 million dedicated to family medicine residencies in [medically underserved areas](#).

Appropriations from contiguous states were not readily available. Indiana appears to be unique in creating a [state-funded structure for residency programs](#).

FUTURE CONSIDERATIONS

Indiana has made significant investments to support the education, training, and development of physicians in the state. While there are currently many levers and mechanisms in place to support this workforce, there are several important considerations for future physician workforce planning.

- Indiana has fewer medical students in relation to its population than bordering states but higher medical student retention rates. **ARE THERE OPPORTUNITIES TO INCREASE ENROLLMENT?**
- Indiana has significantly fewer medical residents than all bordering states but much higher levels of retention of residents. **HOW MIGHT INDIANA FILL ITS CURRENT GME SLOTS AND INCREASE THE NUMBER AVAILABLE SO IT CAN STRENGTHEN ITS PIPELINE?**
- Indiana’s state loan repayment program has similar eligibility requirements to bordering states but lower award amounts. **HOW CAN THE STATE SUPPORT PHYSICIAN RECRUITMENT AND RETENTION THROUGH INCENTIVE PROGRAMS?**

