## Cultivating the Physicians of the Future through Targeted Funding Initiatives:
### A Roadmap to Measurably Expand Graduate Medical Education (GME) in Indiana

The Robert Wood Johnson Foundation recently released its 2016 County Health Rankings & Roadmaps report, which shows that multiple counties throughout Indiana took steps backward in vital health factors. A variety of factors play a role in defining a region's overall health and well-being, but a significant factor is lack of affordable and accessible health care. Since the announcement and approval of the Governors Healthy Indiana plan "HIP 2.0"[1], more than 390,000 citizens have enrolled and are now insured. However, physician distribution to serve existing and newly insured Hoosiers is clustered in specific Indiana cities, mainly away from rural and urban, underserved areas. Couple this with demographic shifts, such as the aging rural physician workforce and the growth in the rural elderly and near-elderly population, and the increased demand for primary care services is apparent statewide.

According to "County Health Rankings, 2016: Indiana Health Gaps Report", the ratio of population to primary care physicians in the 'best counties' is 1,214:1, while in the 'worst counties', the ratio is 4,622:1. The difference is even more staggering when it comes to mental health providers (MHPs). The ratio of population to MHPs in the 'best counties' is 611:1, while in the 'worst counties', the ratio is 4,590:1. The federal Health Resources and Services Administration (HRSA) designates localities with ratios of population to primary care practitioners greater than 2000:1 as Primary Care Health Professional Shortage Areas. In communities with poor access to primary care, the population—which has high proportions of uninsured, poor, and minority people—has higher death and disease rates and greater health disparities than in communities where access to primary care is better[2]. Communities with primary care access issues, have higher rates of emergency department visits and hospitalizations as a result.

### Indiana's" Good News and Bad News" Situation…

Ultimately, Indiana is in a "good news and bad news" situation. The state has strong medical schools (Undergraduate Medical Education, or UME) and students who graduate from Indiana's medical schools that wish to remain in the state to practice medicine (good news), but the state has significantly fewer teaching hospitals and training sites, especially in rural and urban-underserved Indiana (bad news) in which to provide future career pathways to the medical students and graduates. Without expanding the post-graduate residency training opportunities (Graduate Medical Education, or GME) within the state, access to appropriate primary care services will suffer. With a lack of access to quality healthcare services, Hoosiers may be required to seek care in locations out of state or worst case scenario, forgo care. **The ability to 'grow your own medical staff' is critical to ensuring that Hoosiers statewide have access to high quality care.**

The Indiana University School of Medicine (IUSM) is now one of the largest medical schools in the nation, with 1,456 medical students, graduating 364 annually. Marian University's new College of Osteopathic Medicine, which began enrolling students in 2013 and now educates 600 medical students, will graduate its first class of approximately 150 physicians next spring. **Between the two schools, next year Indiana will graduate 514 medical school graduates.** Medical students will be applying for a medical residency,

[1] HIP 2.0 is the new Healthy Indiana Plan. It is an affordable health-insurance program for uninsured adult Hoosiers. Through the State of Indiana, HIP 2.0 pays for medical costs for members. It also provides incentives for members to take better care of their health.

[2] National Association of Community Health Centers and Robert Graham Center. Access granted: the primary care payoff. Washington (DC): National Association of Community Health Centers and Robert Graham Center; 2007.

or GME position, a journey which may take them out of their regions and potentially, the state, because Indiana lacks well-distributed residency programs. The only path to become a practicing physician in the United States is to complete three to five years of post-graduate residency training after medical school.

Increases in undergraduate medical education (medical school) will not meet state workforce needs without increases in residency graduate medical education. There are currently only 387 first-year post graduate medical residency positions (PGY-1)[3] available in Indiana. **Because there will be significantly fewer first-year positions than medical school graduates each year in Indiana, the number of graduates who can remain in Indiana for residency training is limited.** This in turn decreases the likelihood that these physicians will establish practices in Indiana, since physicians are most likely to practice in the state where they complete residency training. An important aspect of GME is the impact the training program has on residents' decisions about where to practice medicine after graduation from residency training. Supporting and incentivizing rural and underserved areas to establish primary care residency programs is crucial to addressing not only shortage issues, but also maldistribution issues. Physicians are poorly distributed geographically in relation to population needs and have become increasingly specialized, while primary care remains under-resourced.

Much of the existing GME in Indiana is concentrated in a small number of hospitals and accredited sponsors. Across Indiana, there are approximately 24 teaching hospitals[4] that train a total of more than 1,500 resident physicians, of which more than two-thirds are training within central Indiana, where the greatest concentration of teaching hospitals exists. Results of a 2014 Indiana Family Medicine Residencies Exit Survey, conducted by the Bowen Research Center, Department of Family Medicine IUSM, reported of the respondents who chose Indiana as their primary practice location, a majority planned to practice in the central Indiana region, followed by South Bend and Terre Haute.

**Ultimately, strengthening the recruitment and retention of primary care providers through regional pipeline efforts, such as developing GME programs in rural and urban-underserved areas in Indiana, will increase access to care for at-risk populations and provide a broader array of services to patients in regions of need throughout Indiana.**

## Background

**The state of Indiana recognizes the need to increase the number of primary care providers and select specialty shortages in underserved areas of the state.** This recognition has prompted discussions at the legislative level regarding the allocation of increased financial support for GME. In 2015, House Enrolled Act 1323 was introduced and the Indiana Graduate Medical Education Board[5] was created to lead the initiatives outlined in the bill. In early 2016, Tripp Umbach[6] was selected to work with the Board to develop a roadmap to measurably expand GME throughout the state. The following specialties within primary care and select specialty shortages were identified by the Board as priorities for this initiative: Emergency

[3] 2016 NRMP Main Residency Match®: Match Rates by Specialty and State.

[4] Center for Medicare and Medicaid Services (CMS), 2014.

[5] Board Members Include: Tim Putnam, DHA, MBA (Board Chair), Steven Becker, MD, James Buchanan, MD, Mark Cantieri, DO, Paul Evans, DO, Paul Haut, MD, Tricia Hern, MD, Bryan Mills, Peter Nalin, MD, Donald Sefcik, DO, MBA, and Beth Wrobel.

[6] Tripp Umbach is an established national leader in research and strategic planning for allopathic and osteopathic academic medical centers, health systems, new and expanding medical schools, and communities that wish to develop and expand GME. In the past 10 years, Tripp Umbach has developed plans and implemented more than 20 medical education programs throughout the United States.

Medicine, Family Medicine, General Surgery, Obstetrics and Gynecology, Outpatient Community-Based Internal Medicine, Community-based General Pediatrics, and Psychiatry.

### Allocation of Funds Strategy

Sustainable state funding, combined with matching financial support from communities and local hospitals, will lessen the discrepancy between the number of new medical school graduates and the number of first year GME residency positions available in Indiana, thereby increasing the number of physicians who will provide needed health care services to Hoosiers.

It is recommended that the state of Indiana allocate funds toward assessing, developing, and expanding residency training programs. The most effective allocation of the current FY2016/2017 $5.6 million in funding provided for GME expansion by the state of Indiana is to provide funding to organizations that plan to create new residency training positions in underserved regions of the state.

**Specifically, state funding should be used to support the following:**

- **Statewide Educational Sessions:** The intent of the educational workshop session(s) is to increase knowledge of basic GME elements, awareness of need and funding opportunities.
    - **Funding Strategy:** Allocate **$100,000** for statewide educational sessions. The Board will collectively agree to disseminate funds as appropriate toward the planning and facilitation of educational sessions.
- **Feasibility Study Grant:** The intent of this grant is to encourage communities to explore opportunities for GME expansion so that residency programs are developed in regions that are in greatest need of additional physicians. Specifically, funding will be allocated to organizations that will study the opportunities, challenges, costs, and benefits of developing primary care and select specialty shortages residency programs.
    - **Funding Strategy:** Allocate **$1.0 million** toward feasibility study grants. Each applicant will be eligible for up to $75,000 in funding to be used to conduct a GME feasibility study. Eligible applicants include organizations or consortium groups that want to explore the feasibility of developing new primary care or select shortage specialty residency programs. The required funding match by applicants is 30%. The Board will develop a grant application that will be publicly available. The Board will establish associated requirements and funding priorities. Any unused funds will become available for other grants, per Board review and approval.
- **Program Development Grant:** The intent of this grant is to support efforts to develop new residency programs. The program development/start-up phase of GME development is typically the most difficult challenge faced by entities that would like to develop new residency programs. For accreditation purposes, administrative staff and Program Director(s)[7] must be hired prior to recruiting residents. Hospitals are not eligible for federal GME reimbursement until the first

[7] Program directors and coordinators have tremendous responsibility for developing, overseeing, and improving residency or fellowship programs, implementing changes based on the current accreditation requirements, and preparing for accreditation site visits and review by the ACGME Review Committees. (Source: http://www.acgme.org/Program-Directors-and-Coordinators/Program-Directors-Virtual-Handbook)

resident starts training. Funding for organizations to address this challenge will enable new residency programs to be developed in regions of the state where physicians are most needed and that otherwise would not have physician training programs due to lack of financial support.

  - **Funding Strategy:** Allocate **$2.0 million** toward program development grants. Each institution developing a new primary care or select shortage specialty residency program will be eligible for up to $500,000. Applicants must be committed to hiring a Program Director, and appropriate verification of such action will be required. The required funding match by applicants is 30%. The Board will develop a grant application that will be publicly available. The Board will establish associated requirements and funding priorities.

- **New and Expanded Residency Position Grant:** The intent of this funding is to provide support for sponsoring institutions/existing GME programs that intend to expand new residency positions beyond their federally funded cap[8] and to sponsoring institutions establishing a new GME program(s). The Board will prioritize the allocation of funds toward GME positions among specialties, geographies, and training sites that best respond to regional needs and shortages areas.

  - **Funding Strategy:** Allocate **$2.5 million** toward new and expanded residency position grants. Each applicant will be eligible for $45,000 per training year for each **new** residency position. For example, if an applicant is applying for funding to support one new residency position in an existing Family Medicine residency program, the applicant may apply for $45,000 of funding for each year of the training program, or $135,000 (i.e., Family Medicine residency programs are three years in length). Applicants must commit to ensuring that all residents supported by this funding are able to complete training at the program.

**Note:** The maximum number of awards is contingent on the number of qualified residency positions projected to be filled and the amount of appropriation available. Depending on the number of qualified applications submitted, the Board may limit the number of grants awarded to applicants.

**Prioritization of Awarded Grants:**

Prioritization of funding applications will be given to regions with physician shortages and a low ratio of GME positions per population. Ultimately, priority is associated with new or existing programs that increase the number of new first-year positions in residency programs that prepare physicians for entry into primary care or select shortage specialty practices. Specifically, priority will be given to organizations:

- ✓ that plan to develop new programs in rural and urban-underserved areas of Indiana;
- ✓ involved in collaborative consortium efforts;
- ✓ that include Federally Qualified Health Centers (FQHCs), Community Health Centers (CHCs), and Rural Health Clinics (RHCs) in planning efforts; and

[8] Medicare limited funding for graduate medical education (GME) to the number of residents a hospital trained in 1996. Congress capped the number of FTEs that a hospital may count at the number that the hospital trained during its most recent cost reporting period that ended on or before Dec. 31, 1996. These caps went into effect in the 1998 cost reporting year.

- ✓ that include regional workforce agencies, such as the Area Health Education Center (AHEC) network (The mission of the Indiana AHEC Network is to improve health by recruiting, educating and retaining healthcare professionals for underserved communities in Indiana.), in planning efforts.

Development and expansion of physician training programs will not happen without local hospital and community engagement. To encourage Indiana medical school graduates to choose primary care residency programs, the quantity and quality of the community-oriented outpatient training experiences should be leveraged and enhanced. Community-based programs that are affiliated with the statewide AHEC network, regional medical center(s), and a "hub" of ambulatory sites such as Federally Qualified Health Centers (FQHCs) will help achieve the goal of producing more primary care physicians for the state of Indiana.

## Conclusion

Commitment is evident and leadership is excited for what the future holds. Indiana must devise an efficient system that encourages and incentivizes participation in post graduate medical education training within rural and underserved areas of Indiana. Although significant challenges exist, state policymakers can act immediately to measurably improve Hoosier's health care access. **Indiana has the potential to expand GME and more effectively shape a workforce planning approach to meet the states' health care needs.** State funding will be the foundational element that ignites outcomes. Ongoing state support will ensure long-term success.

| | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|
| Statewide Educational Sessions | $100,000 | - | - | - | - | - | - | - |
| Feasibility Planning Grants | $375,000 | $600,000 | $150,000 | - | - | - | - | - |
| Program Development Grants | $1,000,000 | $1,000,000 | $2,000,000 | $3,000,000 | $1,000,000 | - | - | - |
| New Residency Position Grants ($45K/resident) | - | $2,520,000 | $1,800,000 | $4,860,000 | $8,640,000 | $11,520,000 | $14,040,000 | $15,660,000 |
| Total Funding | $1,475,000 | $4,120,000 | $3,950,000 | $7,860,000 | $9,460,000 | $11,520,000 | $14,040,000 | $15,660,000 |
| First Year Residency Positions (PGY1) | 0 | 18 | 40 | 68 | 80 | 104 | 104 | 104 |
| Total New Residency Positions (all training years) | 0 | 18 | 58 | 126 | 190 | 256 | 312 | 348 |

Assuming that $45,000 per resident is to be invested annually by the state of Indiana (with the remaining funding from CMS, hospital contributions, local foundations, etc.) for funded residency positions through 2024 and **beyond**, the state of will **create and sustain** new and expanded residency programs in areas of the greatest need of physicians. The total cost to the state would be $15.7 million annually, in 2024 when all projected 348 residency positions (training in all years) are in place. **By 2024, $15.7 million of state funding to support 348 residency positions will generate $407M in annual economic impacts for the state of Indiana. The investment in graduate medical education will provide a return on investment of $26 for every dollar provided by the state.**

## Appendix A: HR Bill 1323 Focus Area -- The costs per resident (i.e., Per Resident Annual Operating Cost):

| Programs | Number of Additional Residents at Maturity | Annual Operating Cost | Per Resident Annual Operating Cost (new programs include institutional sponsorship costs) |
|---|---|---|---|
| Existing Program 1 (2 new Family Medicine PGY1 positions for each of 3 years) | 6 | $ 990,000 | $ 165,000 |
| Existing Program 2 (2 new Family Medicine PGY1 positions for each of 3 years) | 6 | $ 990,000 | $ 165,000 |
| Existing Program 3 (2 new Family Medicine PGY1 positions for each of 3 years) | 6 | $ 990,000 | $ 165,000 |
| Existing Program 4 (2 new Internal Medicine PGY1 positions for each of 3 years) | 6 | $ 864,000 | $ 144,000 |
| Existing Program 5 (2 new Internal Medicine PGY1 positions for each of 3 years) | 6 | $ 864,000 | $ 144,000 |
| Existing Program 6 (2 new Psychiatry PGY1 positions for each of 4 years) | 8 | $ 1,072,000 | $ 134,000 |
| Existing Program 7 (2 new Family Medicine PGY1 positions for each of 3 years) | 6 | $ 990,000 | $ 165,000 |
| Existing Program 8 (2 new Family Medicine PGY1 positions for each of 3 years) | 6 | $ 990,000 | $ 165,000 |
| Existing Program 9 (2 new Internal Medicine PGY1 positions for each of 3 years) | 6 | $ 864,000 | $ 144,000 |
| Existing Program 10 (2 new Psychiatry PGY1 positions for each of 4 years) | 8 | $ 1,072,000 | $ 134,000 |
| New Program 1 (6 new Family Medicine PGY1 positions for each of 3 years, starting in 2018) | 18 | $ 3,095,000 | $ 171,944 |
| New Program 2 (6 new Internal Medicine PGY1 positions for each of 3 years, starting in 2018) | 18 | $ 2,717,000 | $ 150,944 |
| New Program 3 (4 new Family Medicine PGY1 positions for each of 3 years, starting in 2019) | 12 | $ 2,063,333 | $ 171,944 |
| New Program 4 (4 new Family Medicine PGY1 positions for each of 3 years, starting in 2019) | 12 | $ 2,063,333 | $ 171,944 |
| New Program 5 (4 new Psychiatry PGY1 positions for each of 4 years, starting in 2020) | 16 | $ 2,269,000 | $ 141,813 |
| New Program 6 (4 new OB/GYN PGY1 positions for each of 4 years, starting in 2020) | 16 | $ 2,691,333 | $ 168,208 |
| New Program 7 (6 new Psychiatry PGY1 positions for each of 4 years, starting in 2020) | 24 | $ 3,403,500 | $ 141,813 |
| New Program 8 (6 new OB/GYN PGY1 positions for each of 4 years, starting in 2020) | 24 | $ 4,037,000 | $ 168,208 |
| New Program 9 (4 new Family Medicine PGY1 positions for each of 3 years, starting in 2020) | 12 | $ 2,063,333 | $ 171,944 |
| New Program 10 (4 new Internal Medicine PGY1 positions for each of 3 years, starting in 2020) | 12 | $ 1,811,333 | $ 150,944 |
| New Program 11 (6 new Emergency Medicine PGY1 positions for each of 3 years, starting in 2022) | 18 | $ 2,671,500 | $ 148,417 |
| New Program 12 (6 new Emergency Medicine PGY1 positions for each of 3 years, starting in 2022) | 18 | $ 2,671,500 | $ 148,417 |
| New Program 13 (6 new Family Medicine PGY1 positions for each of 3 years, starting in 2022) | 18 | $ 3,095,000 | $ 171,944 |
| New Program 14 (6 new Internal Medicine PGY1 positions for each of 3 years, starting in 2022) | 18 | $ 2,717,000 | $ 150,944 |
| New Program 15 (6 new Psychiatry PGY1 positions for each of 4 years, starting in 2021) | 24 | $ 3,403,500 | $ 141,813 |
| New Program 16 (6 new OB/GYN PGY1 positions for each of 4 years, starting in 2021) | 24 | $ 4,037,000 | $ 168,208 |

# ECONOMIC AND SOCIETAL IMPACT OF GME

Graduate Medical Education is a critical resource of the future of health care in the United States. Studies have shown that increases in the primary health care delivery model are tied to better health outcomes in patients, lower costs for health providers, and greater equity in health. In order to increase the primary care delivery model in Indiana, physicians must be trained in primary care disciplines and select shortage specialities such as Family Practice, General Community-based Internal Medicine, and Pediatric care and Psychiatry. Indiana, in particular can increase its primary care physician pool by expanding and developing new post-graduate residency positions in rural and underserved regions statewide through the support of state funding.

Throughout the country, as more students are trained in primary care fields, their impacts on the communities in which they serve can be felt in a multitude of ways.

## ECONOMIC VALUE OF GME TO A COMMUNITY

**Each resident who becomes a primary care physician in an underserved area generates up to $3.6M in health care cost savings.**

**Each physician's practice within the community on average creates an additional 6-7 jobs**

**It is estimated that each resident (i.e., physician in training) in a community-based residency program generates $200,000 in annual economic benefits to their community while in their program**

**Each physician's practice on average generates $300,000 in regional tax revenue**

**Residents and new physicians represent fresh dollars in the local economy.**

## BY 2025

**$15.7 MILLION** of annual state funding to support **348 RESIDENCY POSITIONS** will generate **$407 MILLION** in annual economic impacts for the state of Indiana

**THE INVESTMENT IN GRADUATE MEDICAL EDUCATION WILL PROVIDE A RETURN ON INVESTMENT OF $26** for every dollar provided by the state

**An investment of $45,000 per new residency position by the state of Indiana (with remaining funding coming from CMS, hospital contributions, local foundations, etc.) will create and sustain new and expanded residency programs in areas of the state in greatest need of physicians.**

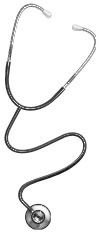
## DIRECT BENEFITS OF GME TO HOSPITALS AND THEIR COMMUNITIES

Hospitals with residency programs are stronger financially, provide significantly more free care, have higher quality scores, and offer a broader range of services than similarly-sized hospitals without residency programs.

**MORE DOCTORS:** Residency programs can lead to the recruitment of additional sub-specialty physicians who not only train medical students, but also provide sub-specialty clinical services which were not available in the community prior to the formation of the residency program.

**COST-SAVINGS TO TAXPAYERS:** The typical hospital with a residency program in Internal Medicine saves approximately $3 million each year in uncompensated care.

**STRONG HOSPITALS:** Hospitals save $75,000 on average in recruitment costs for every resident they hire – allowing these dollars to be invested in patient care and community health programs. Hospitals with primary care residency programs have lower utilization of emergency departments as a result of clinics that are staffed by residents.



**PATIENT CARE QUALITY:** Outpatient services provided by residency programs include school-based programs, screenings, community-based education programs, nursing home support, medical home health care support, emergency department follow-up and support for public health departments.

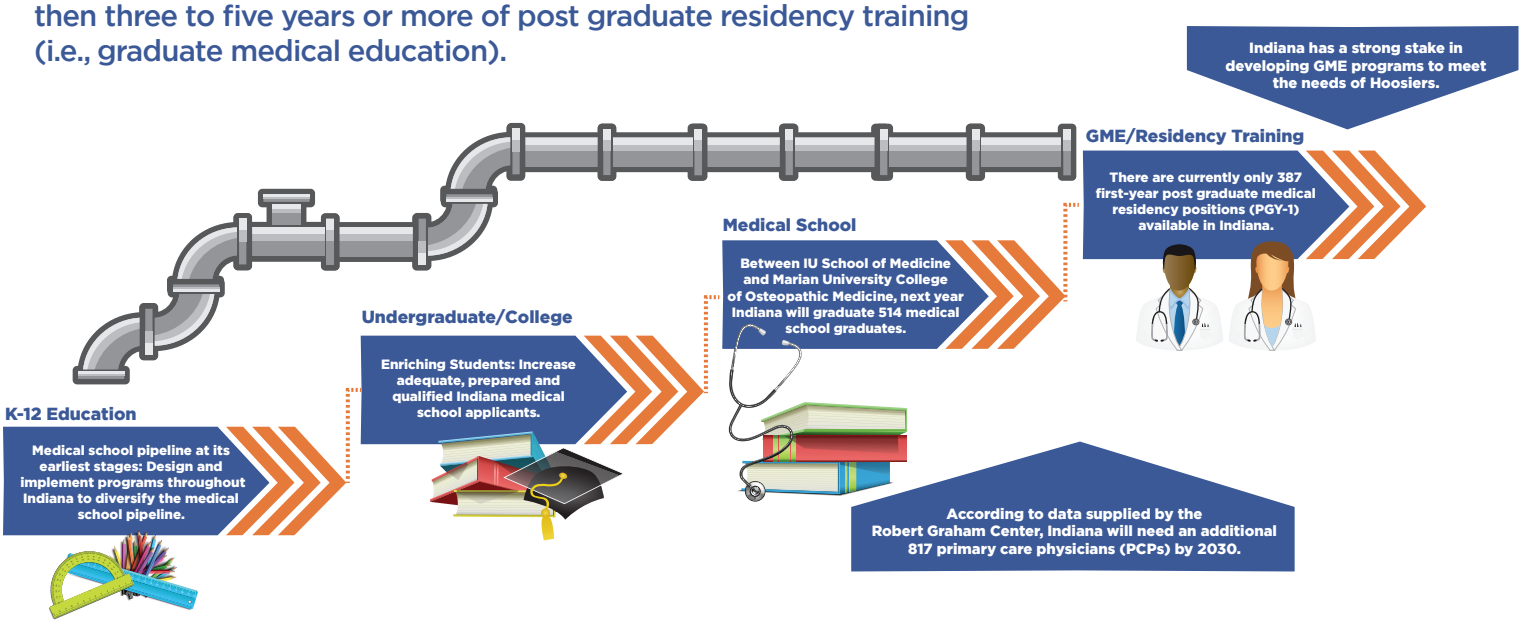
**PARTNER BENEFITS:** Academic medical centers benefit from funding associated with primary care access-related research.

**RESIDENT BENEFITS**: Residents who remain in the community have a strong working knowledge of the local and regional healthcare environment and are better able to direct the care for their patients.

**Prepared by: Tripp Umbach**

# GRADUATE MEDICAL EDUCATION 101 – "DEVELOP PIPELINE, GROW YOUR OWN"

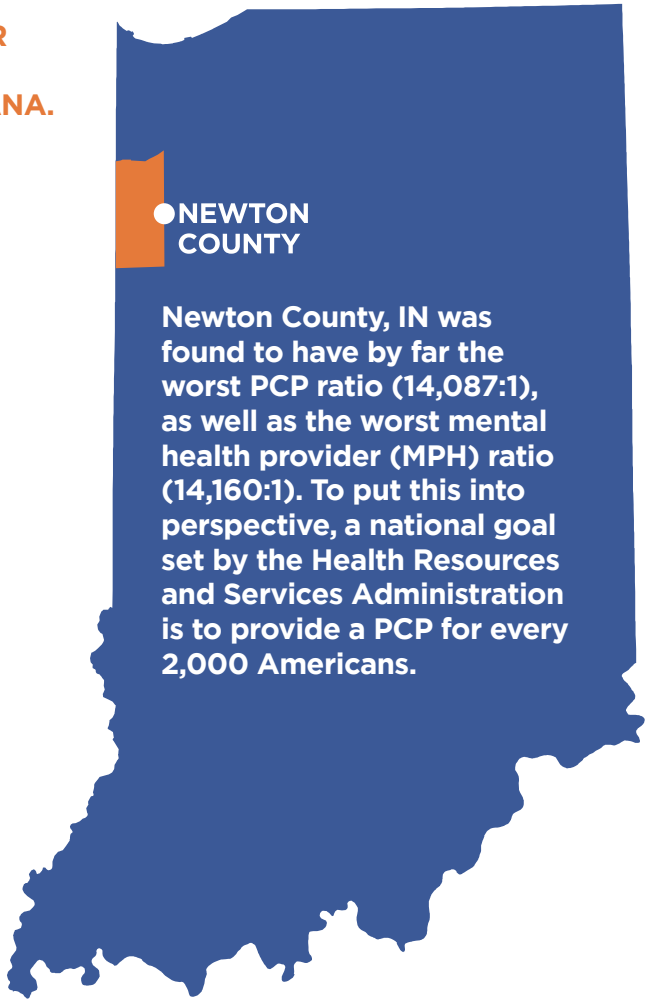
The most common path to becoming a practicing physician in the United States is to complete four years of undergraduate college, four years of medical school (i.e., undergraduate medical education) and then three to five years or more of post graduate residency training (i.e., graduate medical education).




## THE MOST EFFECTIVE WAY TO INCREASE THE NUMBER OF PRIMARY CARE PHYSICIANS PRACTICING IN OUR COMMUNITIES IS TO TRAIN THEM RIGHT HERE IN INDIANA.

The perfect storm has arrived in Indiana. Indiana has have accomplished increasing the number of medical school graduates, but we must provide residency positions to meet the needs of our current and future graduates, and we must provide those graduates with geographic options.

Medical education anchored in communities, nourished and funded through significant federal, state and local community support, and meaningfully connected to regional institutions, community-based centers, and local physicians in practice has great potential to address both present and future needs for physicians who provide care to our populations. Maintaining strong ties to the community improves clinical outcomes. As hospitals become responsible for health outcomes, strong community partnerships through medical education will become increasingly critical.



## SUPPORT AND INCENTIVIZE THE ABILITY TO "GROW YOUR OWN" MEDICAL STAFF

**It is important to remember that growing the number of medical students does not necessarily lead to more physicians remaining in a region to practice.** Nationally, there is a 50% chance that a person who completes medical school and residency in the same region will remain to practice. However, when a person only completes medical school in a region their chance of remaining to practice in the area drops to approximately 20%. Workforce studies indicate that when a young person graduates from high school, college, medical school and completes a residency in the same region, his or her chances to stay in the region to practice medicine increases to over 70%.

## DEFINITIONS

**Newly Accredited Programs:** Programs achieving Initial Accreditation during the academic year following review of their application for accreditation.

**Participating Site:** an organization providing educational experience or educational assignments/rotations for residents in a program.

**Post-graduate Year (PGY-1):** Any graduate medical education position available to physicians immediately after their completion of medical school. These positions are also referred to as entry-level positions.

**Resident:** any physician in an accredited graduate medical education program, including interns, residents, and fellows.

**Sponsoring Institution:** The organization or entity that assumes the ultimate financial and academic responsibility for a program.

**Pipeline Specialty:** Pipeline specialties are those specialties that lead to initial board certification. The net output of physicians over time for the GME system into clinical practice is determined by the number of positions available in pipeline specialties.