Homegrown = Home-Served: The Power of Local Training

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In this issue of the *Journal of Graduate Medical Education*, Koehler and colleagues¹ add to the mounting evidence that connects local training with local practice. Their findings, that nearly half of residency graduates of a single, large teaching institution in Michigan continue to practice in the state following graduation, echo previous suggestions that training locally breeds local service.² Even more compelling is their quantification of the amplifying power that multiple layers of local training may have on retention within the state.

The authors discovered that some 80% of their graduates with a history of graduating from medical school in Michigan, in addition to completing graduate medical education (GME) at their institution, remained in Michigan. Retention in Michigan increased to 88% when completion of a bachelor's degree was added to the mix. Intuitive? Perhaps. But it is an important reminder of the power of local training in this era of competing estimates of workforce shortage.^{3–6} Michigan was unique among US states in witnessing a population decline between the 2000 and 2010 censuses. Its medical school admissions capacity, however, expanded by more than 30% between 2005 and 2010,⁷ with a nearly 50% increase in allopathic and osteopathic medical school enrollment between 2002 and 2014.⁸

Many have suggested that such public investments come with the expectation of public returns,⁹ and that recipient institutions have accountability to the societal funder. Social accountability in medical education (as defined by The Network: Towards Unity for Health), can be boiled down to a simple notion: public investment in training should be matched with public expectations that training will produce the right providers capable of delivering the right services in the right places. Michigan citizens funding medical school expansion amid rising Medicaid costs and Detroit's bankruptcy¹⁰ might roughly translate this definition into "graduates performing the services that Michigan's aging and increasingly insured citizens need in the places

that these services are most needed within the state."

For starters, state legislators might settle for graduates who provide clinical services in the state in which they trained. Knowing the considerable costs of growing medical school capacity relative to GME, these same legislators may take heart in the compounding effects that local GME training appears to have, particularly when paired with home state undergraduate and medical school graduation, on the provision of local service. Without undermining the importance of staying in state, however, Michiganders and their elected officials could ask even more of their training institutions.

A recent study¹¹ revealed that only 5% of all recent GME graduates work in rural areas—areas where 20% of the US population and 25% of Michigan's population reside.¹² In that same study, 25% of recent GME alumni ultimately practiced in primary care disciplines, far short of the 40% recommended by the Council on Graduate Medical Education, which advises the principal funding source for GME, the US Congress.¹³ The rapidly expanding primary care safety net, exemplified by the federally qualified health centers that served some 600 000 Michiganders in 2015, is perpetually short of physicians.^{14,15}

The GME programs whose graduates not only remain in state, but also provide care for these and other vulnerable and underserved populations, might be worthy of particular attention by state planners who are increasingly engaging in GME expansion. They would be wise to heed evidence revealing the value of exposure during training to community health centers, rural health clinics, and critical access hospitals on retention of graduates in these underserved settings.¹⁶ They might find further evidence emerging from rural training tracks and the Teaching Health Center Graduate Medical Education program revealing successful retention in health centers and rural clinics equally worthy of attention and support.^{17–19}

Such evidence, paired with this study by Koehler and colleagues, reminds us how important the final stage in a long training pipeline is to a physician's

FIGURE

GME Sponsoring Institutions and Health Professional Shortage Areas, Michigan

eventual location. In a recent national comprehensive study of family physicians, Fagan and colleagues²⁰ revealed that 56% of GME graduates ultimately practice within 100 miles of their training program. Koehler and colleagues were not able to comment on the potential of their Grand Rapids training location to also alleviate the more vexing problem of maldistribution. However, maps of Michigan's health professional shortage areas, which reveal Grand Rapids to be surrounded by counties designated as such areas, hint at potential relief and merit further study (FIGURE). These maps might similarly suggest value in diversifying Michigan's GME base and growing physician education programs in areas such as Midland, Traverse City, or Marquette.

Recent evidence of the "imprinting" effects that GME may have on downstream costs and behavior of trainees only strengthens the case for training in places like Grand Rapids relative to the traditional academic health center hubs. One recent study²¹ found that American Board of Internal Medicine candidates who trained in low-intensity hospital referral regions (HRRs) were associated with more appropriately conservative treatments, compared to colleagues who trained in high-intensity HRRs. Another²² found that training in HRRs with lower Medicare spending per beneficiary was associated

with lower total spending than training in HRRs with higher Medicare spending, even after controlling for spending levels in the physician's practice HRR and patient characteristics.

Finally, additional data relevant to the discourse on the value of GME include the extreme variation in GME outcomes across sponsoring institutions,^{11,23} and the differences between the US approach to physician education relative to peer nations. Despite federal investment in GME totaling \$16 billion yearly,²⁴ the United States has eschewed the prospective planning approach of other nations, exemplified by national and regional medical education planning bodies such as Health Education England²⁵ and Health Workforce Australia.²⁶ While these organizations assist to allocate public resources for specialty training positions according to regional need, the United States defers to its teaching hospitals to determine whether and what types of GME to provide.^{8,27} Some would say that this creates a GME system that is most responsive to the free market, while others have labeled this approach "anencephalic."²⁷ There is evidence to suggest that this may lead to GME that favors a hospital's immediate patient care needs and financial interests over public need.²⁸

There are powerful voices calling for GME expansion nationally, and these voices simultaneously

call for greater coordination and transparency of outcomes for this sizable public investment.²⁹ In this context, it is encouraging to see groups like Grand Rapids Medical Education Partners evaluating and reporting on training outcomes of interest to the region that supports and needs their homegrown best.

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