The Impact of Graduate Medical Education on Physician Maldistribution

March 20, 2019
Speakers

Ted Epperly, MD
Erin Fraher, PhD, MPP
Joe Gravel, MD
A Copernican Revolution in Graduate Medical Education: Putting Patients’ Health Care Needs at the Center of GME Discussions

Erin P. Fraher, PhD MPP
The Robert Graham Center Primary Care Forum
The Impact of Graduate Medical Education on Physician Distribution
March 20, 2019
Four key steps to reforming GME system to improve access to care

- **Foment a Copernican Revolution**
  Reframe GME policy to put patients at center, not physicians

- **Align GME Funding with Population Health Needs**
  Address rural population’s “essential health care services”

- **Promote generalist training and practice**
  Encourage broad scope of practice and team-based care

- **Embrace our roles as “data agitators”**
  - Use data to drive GME investments and accountability
  - Learn from state “policy laboratories”
Putting patients and populations at the center of GME discussions

The Copernican revolution starts with different question. Not how many physicians do we need? But instead: what essential health care services are needed in rural areas?

- Primary Care
- Behavioral health and substance abuse/opioid use disorders
- Obstetrics and prenatal care
- General surgery, trauma and procedural care
- Long-term and home health care

And acknowledges the interdependence of different physician specialties...

Source: National Geographic Society
https://goo.gl/images/j6Lh4G
“For the one-quarter of Americans who live outside metropolitan areas, general surgeons are the essential ingredient that keeps full-service medical care within reach. Without general surgeons as backup, family practitioners can't deliver babies, emergency rooms can't take trauma cases, and most internists won't do complicated procedures such as colonoscopies.”

Washington Post, January 1, 2009
Lack of rural obstetric services in rural counties associated with adverse birth outcomes

“From 2004 to 2014, 9 percent of all rural counties lost access to hospital obstetric services, and more than half of all rural counties in this country are now without a single local hospital where women can get prenatal care and deliver babies.”¹

“In rural US counties not adjacent to urban areas, loss of hospital-based obstetric services, compared with counties with continual services, was associated with increases in out-of-hospital and preterm births”²

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² Kozhimannil, KB et al. “Association between Loss of Hospital-Based Obstetric Services and Birth Outcomes in Rural Counties in the United States”. JAMA. 2018;319(12):1239-1247
Increased focus on social determinants of health and payment incentives are shifting care upstream to outpatient, community and home settings

- Shift from fee-for-service to value-based payments and fines that penalize hospitals for readmissions are shifting care from inpatient to ambulatory and community-based settings
- Medicare Advantage plans, Medicaid and Department of Veteran Affairs increasingly referring more patients for home health and community-based services
- But most GME funding goes to hospitals

These shifts require investing in community-based teams of health care providers

- Need to enhance GME training in community-based settings
- Encourage GME training in team-based models of care that include “traditional” health professionals as well as community health workers, community paramedics, the clergy, medical lawyers and other community-based workers
- Promote integrated behavioral health and primary care delivery models with new team structures and new roles.

**Example**: social workers who serve as:

- **Behavioral health specialists**: provide interventions for mental, behavioral health and substance abuse disorders
- **Care Managers**: coordinate, monitor and assess treatment plans
- **Referral role**: connect patients to community resources, transportation, food etc.

Meanwhile, news of physician shortages dominate the headlines

Doctor shortage, increased demand could crash health care system
By Jena Beauchene, CNN
updated 5:57 PM EST, Wed October 2, 2013

Some doctors worry patients who can't get in to see primary care providers.

Doctor shortage could exceed 121K by 2030, report says
Dive Brief:
- Warnings of a worsening physician shortage continue, with new analysis

Lots of New Patients, Too Few Doctors
By Daniel Ofri, M.D.
JANUARY 10, 2014, 11:53 AM

Worse than ever: Physician shortage could hit 120K by 2030
by Joanne Finnegan | Apr 12, 2018 10:30am
The real issue is maldistribution:
We are a nation of haves and have nots

Projected shortage/surplus for all visits, 2030

Source: Fraher et al. Cecil G. Sheps Center, UNC-CH https://www2.shepscenter.unc.edu/workforce
Will geographic distribution improve? Not likely without GME reform

- Highlights need for “distributional fairness” of federal GME funds (~$14.5 billion)
- Redistribution of existing Medicare GME funds unlikely so need methodology to target new funds to needed populations and geographies

What if we actually used workforce data to determine where to target GME?

- Findings suggest expanding GME in states with:
  - Poor health outcomes and high health care utilization (Arkansas, Mississippi and Alabama)
  - Large, growing populations (Texas and California)
  - Aging populations (Florida)
  - Rural states with low resident/population numbers (Idaho, Wyoming, Montana, Alaska and Nevada)
- And expanding GME in generalist specialties, like Family Medicine
Family Physicians have broad scopes of practice and can adjust services to meet rural health care needs.
“Plasticity” of workforce depends on numerous individual-, practice- and system-level factors

- Professional’s training (initial and ongoing)
- Density/availability of other providers with similar/competing scopes of practice
- Patient population
- Payment model
- Model of care and referral patterns
- Personal preferences and demographic characteristics
- Regulation
- Hospital executives, practice managers and HR decisions about deployment
- Local geography

States are “policy laboratories” for GME innovation

- States actively engaged in GME reform to address concerns about:
  - physician maldistribution by specialty, geography, setting
  - having enough GME slots to match medical school expansions
  - fragility of Teaching Health Center funds
- Have voiced strong desire to move toward system that better aligns funding with population health needs but...
- Note that training institutions benefit from lack of transparency and vigorously oppose increasing accountability
- Despite challenges, increasing number of strong state models exist
- Need to diffuse lessons learned and challenges to inform policy efforts at state and federal level
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Program on Health Workforce Research and Policy
http://www.healthworkforce.unc.edu
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Robert Graham Center – Primary Care Forum

March 20, 2019

Ted Epperly, MD
CEO / DIO | Family Medicine Residency of Idaho
Past President and Board Chair America | American Academy of Family Physicians
ACGME | Past Board of Directors
COGME | Council Member
Idaho State Board of Education | GME Coordinator
IDAHO

- 43rd State
- 1.7 Million People
- 183,000 Square Miles
- Geologic Wonder
- Frank Church Wilderness Area
The Problem
Active Physicians per 100,000 Population

Sources: July 1, 2016, population estimates are from the U.S. Census Bureau (released December 2016). Physician data are from the 2017 AMA Physician Masterfile (December 31, 2016).
Note: Physicians whose school type was unavailable (n = 36) are excluded.
Residents and Fellows on Duty as of December 31, 2016

Sources: July 1, 2016, population estimates are from the U.S. Census Bureau (released December 31, 2016). Resident physician data are from the National GME Census in GME Track® as of August 2017.
Family Medicine Residency of Idaho (FMRI)

- 1974 (4-4-4) 12 FM Residents
- 501(c)3 Teaching Health Center (2011)
- Four Family Medicine Residencies (Boise, Nampa, Caldwell, Twin Falls)
- Four Fellowships (SM, HIV, Geriatrics, OB)
- 69 Family Medicine Residents in Program
  - 36 – Boise
  - 18 – Nampa
  - 9 – Caldwell
  - 6 – Twin Falls
- 9 Locations
- 35,000 Patients
- 125,000 Visits / year
- $38M Annual Budget
The Family Medicine Residency of Idaho (FMRI) Training Sites

- **FMRI Rural Rotation Sites (40)**
- **FMRI Residency Programs (Boise, Nampa, Caldwell, Twin Falls/Jerome)**
- **FMRI Fellowships (Sports Medicine, Geriatrics, Obstetrics, HIV/Viral Hepatitis)**
55% of Graduates have practiced in Idaho;
52% of Graduates currently practice in Idaho
47% of graduates that have practiced in Idaho have practiced in Idaho’s Rural, Underserved or Primary Care Health Professional Shortage Areas
Percentage of Physicians retained from Graduate Medical Education (GME) 2016

Source: AMA Physician Masterfile (December 31, 2016).
Percentage Change in Number of Residents and Fellows in ACGME-accredited programs, 2006-2016

Family Medicine/ Primary Care is a Team Sport

**Team**
- Physician(s)
- NP / PA(s)
- RN/LPN/MA(s)
- CHW(s)

**Telehealth** — Connect to FM/PC Practice Platform

**Outcomes**
- Population Health
- Quality
- Increased Satisfaction
- Decreased Burnout
Programs Specialties and Locations in Idaho (2017)
Program and Fellowship Locations (2028)

- 12 Family Medicine
- 3 Internal Medicine
- 3 Psychiatry
- 1 General Surgery
- 1 ER
- 1 Pediatrics
## Ten Year Growth in Graduate Medical Education Programs, Residents and Fellows, and Cost to Idaho’s Legislature

<table>
<thead>
<tr>
<th></th>
<th>2017</th>
<th>2028</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GME Residency Programs</strong></td>
<td>9</td>
<td>21*</td>
<td>233%</td>
</tr>
<tr>
<td><strong>GME Fellowship Programs</strong></td>
<td>4</td>
<td>9</td>
<td>225%</td>
</tr>
<tr>
<td><strong>Residents and Fellows Training in Idaho/year</strong></td>
<td>141</td>
<td>356</td>
<td>252%</td>
</tr>
<tr>
<td><strong>Number of Graduates Each Year from Idaho’s GME Programs</strong></td>
<td>52</td>
<td>124</td>
<td>237%</td>
</tr>
<tr>
<td><strong>GME Residents per 100,000 Citizens in Idaho</strong></td>
<td>6.7 (National Average is 28.1)</td>
<td>17.7 (Assuming Idaho’s Populations grows to 2 Million People by 2028)</td>
<td>276%</td>
</tr>
<tr>
<td><strong>State Support of GME and Additional Healthcare Programs in Idaho</strong></td>
<td>$5,138,700/year</td>
<td>$16,349,000/year</td>
<td>318%</td>
</tr>
</tbody>
</table>

* The Nampa combined Family Medicine/Psychiatry program is being counted as both a family medicine and psychiatry program as it is producing physicians that will be Board Certified in Family Medicine and Psychiatry.

The state’s investment in additional healthcare providers is matched 2-to-1 by the programs and sponsors. Each physician will generate $1.9 Million per year in economic impact and 12 jobs —total impact to Idaho will be $1.9 Billion and 12,000 new jobs—and quality healthcare for citizens throughout Idaho. Return on investment (ROI) 15.9 to 1
This graph illustrates the growth in funding which would allow for 1,440 additional providers to be trained over the 10 year period shown.
ACGME and COGME

• Both actively working on sustainable GME in medically underserved areas and populations
Summary

• Reshape our thinking – “Copernican Revolution”

• “States are the laboratories of our Nation” - Innovation

• Teams are Important!

• Continue to dial this in!
Impact of GME on Physician Maldistribution- Lawrence, MA

Robert Graham Center Primary Care Forum

Joseph W Gravel Jr MD
Chair, Family Medicine & Community Health
Senior VP & Chief Medical Officer
Greater Lawrence Family Health Center
Lawrence, Massachusetts
Boston Medical-Industrial Complex

Teaching Health Center - Lawrence
Where I Practice
Greater Lawrence Family Health Center prior to 1994

- 10,000 patients, 100+ employees
- 3 primary care sites – all small, not very attractive
- Infant mortality ~17/1000 live births
- Clinicians assigned through the National Health Service Corps (NHSC) -they came, burned out and left.
- Usually unable to accept new patients
- Lack of available specialist services for Spanish-speaking Medicaid patients lacking transportation
Greater Lawrence Family Health Center - 2019

- 62,000+ patients
- 2nd largest FQHC in Massachusetts
- 600+ employees (3rd largest in city)
- 270,000 visits/12,000 hospital/790 deliveries
- 73 FPs, 21 NPs, several specialists (OB, Psych)
- 6 neighborhood sites, 2 SBHCs, 16 shelters
- Infant Mortality 6/1000 live births
- Many clinicians with 10-20 years tenure
- Many innovative programs
- FPs provide High risk maternity services/ C-sections, HIV, Hepatitis C, Sports Medicine, Integrative Medicine, Opioid addiction treatment, Group medical visits, Homeless program
What changed?

We started a residency in 1994 (first Teaching Health Center in USA)
GLFHC/Lawrence FMR Collaboration

- GLFHC (a Community Health Center) is the residency’s sponsoring organization for accreditation - not the hospital
- Lawrence General Hospital is a supporting partner
- Residents, faculty and staff all employed by Greater Lawrence Family Health Center
- Academic affiliations with University of Massachusetts Medical School and Tufts University School of Medicine
- **Medicare funding: Hospital passes through most (~90%) of the Medicare GME to the CHC - but at their whim**
- **THC funding: Health Center gets 100% directly**
- HRSA funding- Not eligible for Teaching Health Center funding to support all residents- **expansion only**
- **2011- THC funding allowed expansion from 8 residents/year to 10 residents/year- 1,280,000 additional patient visits over next 40 years**
Specialty Maldistribution -> Geographic Maldistribution

2018 NRMP Resident Match Positions Offered-
Massachusetts- **1368**
- Anesthesiology 131
- Psychiatry 81 (only 5.9%)
- Emergency Medicine 66
- Radiology 52
- Internal Medicine 486 (approx. 10% will enter primary care)- 49
- Neurology 45
- Family Medicine 44 (only **3.2% of residency positions offered**)
- Pathology 39
- Pediatrics 84 (approx. 40% will enter primary care)- 33
- Orthopedics 26
- Dermatology 19

(9.2% primary care – higher performing, lower cost health systems = 40-50% primary care)
Family Physician Production 1994-2019
Current Score: 184-0

• Greater Lawrence Family Health Center = 184 (this June: 191)
• Massachusetts General Hospital (Boston) +
  Brigham & Women’s Hospital (Boston) +
  Beth Israel Deaconess Medical Center (Boston) +
  Tufts Medical Center (Boston) +
  Baystate Medical Center (Springfield) +
  Lahey Medical Center (Burlington) = 0
LFMR Graduate Outcomes: Location of Practice

• 99% are doing Primary Care (183/184)
• 80% work in underserved areas (147/184)
• 54% work in FQHCs (compared to 9% nationally) (100/184)
• 45% still in Massachusetts (83/184)
• 32% currently work in FQHCs in Massachusetts (58/184)
• 28% worked at GLFHC in present or past (52/184)
• 18% currently work in Lawrence, MA (34/184)
• 17% currently work in rural areas (31/184)
• 14% (of 22 years) of graduates –currently at GLFHC (26/184)
LFMR Graduates in Massachusetts
LFMR Graduates in New England
LFMR Graduates in the US
LFMR Graduates Worldwide
Swiss Army Knives Look The Same on the Outside—But All “Primary Care” is Not the Same Scope of Practice
LFMR Graduate Outcomes: Scope of Practice
Why THC graduates have superior exposure in training

• Specialist maldistribution & access- Broader scope of FM helps mitigate these issues-> residents learn to handle most things without referral
• Patients are sicker & more complex- inpatient & ambulatory clinic
• Maternity care- volumes and higher risk (diabetes, malnutrition, obesity, SUD)
• Lack of access & limited Medicaid coverage for behavioral health- poverty’s extremely high disease burden of anxiety, depression, serious psychiatric disease: residents address these issues (with support) daily
• Substance use disorder – all residents obtain Medically Assisted Opioid Treatment certification
• Homelessness, other social determinants of health addressed (70% of patients have food insecurity)
• Cost effectiveness required – pharmacy, testing, imaging- and 10% still “self-pay”
### Procedures Required for Demonstrated Competency of ALL Residents for Graduation

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Required # (total for all residents/[% R4s complete])</th>
<th>Responsible Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>EKG Interpretation</td>
<td>5 (198) [85%]</td>
<td>Anthony Valdini</td>
</tr>
<tr>
<td>Cryosurgery</td>
<td>5 (95) [71%]</td>
<td>Cara Marshall</td>
</tr>
<tr>
<td>Skin Biopsy</td>
<td>5 (114) [57%]</td>
<td>Cara Marshall</td>
</tr>
<tr>
<td>I &amp; D Abscess</td>
<td>3 (82) [85%]</td>
<td>Vince Waite</td>
</tr>
<tr>
<td>Wet Mount/KOH</td>
<td>5 (174) [100%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>Pap Smear</td>
<td>5 (265) [100%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>Anoscopy</td>
<td>2 (19) [43%]</td>
<td>Vince Waite</td>
</tr>
<tr>
<td>IUD Insertion</td>
<td>2 (162) [100%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>IUD Removal</td>
<td>2 (59) [85%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>Contraceptive Implant Insertion</td>
<td>2 (513) [100%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>Contraceptive Implant Removal</td>
<td>2 (145) [100%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>Endometrial Biopsy</td>
<td>2 (94) [100%]</td>
<td>Julie Johnson</td>
</tr>
<tr>
<td>Simple Laceration Repair</td>
<td>3 (152) [100%]</td>
<td>Vince Waite</td>
</tr>
<tr>
<td>Normal Vaginal Delivery</td>
<td>60 (1705) [100%]</td>
<td>Andrew Smith</td>
</tr>
<tr>
<td>EFM Interpretation</td>
<td>5 (40) [57%]</td>
<td>Andrew Smith</td>
</tr>
<tr>
<td>Amniotomy</td>
<td>1 (276) [100%]</td>
<td>Andrew Smith</td>
</tr>
<tr>
<td>Fetal Scalp Electrode</td>
<td>1 (66) [71%]</td>
<td>Andrew Smith</td>
</tr>
<tr>
<td>IUPC Placement</td>
<td>1 (45) [100%]</td>
<td>Andrew Smith</td>
</tr>
<tr>
<td>Vaginal Laceration (1st/2nd Degree)/Episiotomy Repair</td>
<td>5 (398) [100%]</td>
<td>Andrew Smith</td>
</tr>
<tr>
<td>Large Joint Aspiration/Injection</td>
<td>5 (at least 1 knee, 1 shoulder) (326) [100%]</td>
<td>Warren Bodine</td>
</tr>
<tr>
<td>Neonatal Resuscitation</td>
<td>10 (283) [100%]</td>
<td>Keith Nokes</td>
</tr>
</tbody>
</table>
LFMR Graduate Outcomes: Procedural Practice
Objective Outcomes - Standardized Exams (More Robust Patient Experience -> Higher Test Scores)

2018 ITE Exam Results

![Bar Chart]

American Board of Family Medicine Certification Exam Results - 5 Year Average

- LFMR average is 611.
- (Passing is 380.)
- Residency has one of highest 5 year averages in the US
Why We Teach Spanish

- Lawrence - 74% Spanish-speaking
- 45 million Spanish-speakers as first or second language in US
- The Hispanic Population is projected to nearly triple by 2050, from 46.7 million in 2008 to 132.8 million in 2050.
- In that year, Hispanic residents will represent 30 percent of the nation’s total population.
- 10-day intensive program at Dartmouth (Rassias)
- Spanish teacher/translator
- Individualized one-on-one teaching
- Paired with bilingual medical assistant
- Majority of daily patient interactions are in Spanish
- International language elective encouraged and funded
- **Spanish Language not required to apply; all residents graduate proficient**
Areas of Concentration- Generalists with Additional Skills

- Addiction Medicine
- Surgical Maternity Care
- Behavioral Health
- Global Health
- Integrative Medicine
- HIV
- Academic/Faculty Development
- Health Systems Leadership
- Sports Medicine
- Women's Health

Increases Physician Satisfaction, Helps Mitigate Specialist Maldistribution
Teaching Health Centers Are Magnets for Primary Care Workforce (& Residents -> “Community-Based Faculty”)

Aid Recruitment to Underserved Areas & Retention Through Part-Time Teaching Opportunities
Lawrence Family Medicine Residency Class of 2023

Corrine Ainsworth
University of Massachusetts

Kathleen “Katy” Anthony
Vanderbilt University School of Medicine

Alaina Aristide
Icahn School of Medicine at Mt Sinai

Miguel Joaquin
Michigan State University College of Human Medicine

Denise Lobo
University of Florida College of Medicine

Patrick O’Neil
University of Maryland

Patrick Salemme
Jacobs School of Medicine at University of Buffalo

Wesley “Alex” Spacht
University of Chicago Pritzker School of Medicine

Angela Sterling
University of Central Florida College of Medicine

Thu “Tina” Tran
University of Texas Southwestern Medical School

Rebecca Weiner
Rutgers New Jersey Medical School

Beverly Williams
University of New Mexico School of Medicine
THANK YOU