University of Colorado **Anschutz**

Farley Health Policy Center

Reforming Graduate Medical Education to Create the Physician Workforce America Needs:

21 Billion Reasons not to Change

A collaborative effort between:

CU Anschutz Farley Health Policy Center: The Farley Health Policy Center develops and translates evidence to advance policies and integrate systems that improve health, equity, and well-being. With an interprofessional team of primary care and behavioral health providers, economists, and public health and policy professionals, the Farley Health Policy Center has expertise in finance and payment policy, workforce development, system transformation to integrate care, community-based prevention and well-being, and social policy to address disparities.

The GME Initiative (now GME/Transformation): GME Transformation (GME/T) advances the social mission of medical education by reforming GME funding, accreditation, and governance to build a sustainable physician workforce that meets the evolving needs of patients and communities.

[Please note, this is a draft material and not yet final]

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Executive Summary

Background

The need for an appropriately sized, distributed, and prepared physician workforce is increasingly urgent. More than a decade after the Institute of Medicine (IOM; now the National Academy of Medicine) called for strategic, accountable workforce planning in its 2014 seminal report entitled "Graduate Medical Education That Meets the Nation's Health Needs," many of its core recommendations remain unimplemented.[i] Since that time, primary care match rates have stagnated, physician attrition has increased, and an aging population has accelerated demand for care as baby boomers enter Medicare in record numbers.[ii] Meanwhile, the physician workforce remains heavily subspecialized and geographically concentrated in urban and suburban areas, resulting in persistent access gaps, particularly in rural and underserved communities.[iii] Graduate medical education (GME), the period of residency and fellowship training after medical school, heavily shapes physician workforce outcomes. In its current form, GME financing and market-driven forces continue to shape workforce production in ways that fall short of public need, perpetuating shortages and inequities in access to care.

Calls for GME reform are not new. The 2014 IOM report remains the most comprehensive summary of the structural shortcomings in GME and the policy changes required to address them. While the report catalyzed substantial discussion and stakeholder engagement, efforts to implement its recommendations at the federal and state levels have stalled, leaving the core structure of GME financing and governance largely unchanged.

Summary of Recommendations from "Graduate Medical Education That Meets the Nation's Health Needs" (2014, IOM)

Modernize Medicare GME Financing
- *Maintain total Medicare GME support at current spending levels adjusted for inflation.*
- *Phase out the existing DGME/IME payment system in favor of a performance- and outcomes-oriented method that better aligns public funds with workforce goals.*
- *Redirect a portion of current GME funds to demonstration projects that realign incentives toward production of a physician workforce that meets national health needs.*

Build a National GME Policy and Financing Infrastructure
- *Establish a new GME Policy Council within HHS to manage operational aspects of GME payments, oversee a proposed transformation fund, and strengthen data collection and transparency.*
- *Create a Graduate Medical Education Transformation Fund to finance new training slots, support innovation pilots, and develop performance metrics.*

Increase Transparency and Accountability
- *Require better reporting on how GME funds are used and what outcomes they achieve.*
- *Tie public investments in GME to measurable goals (e.g., workforce distribution, competency outcomes, value).*

Address Structural Barriers
- *Improve governance and strategic planning for national workforce needs.*
- *Encourage innovation in training structures, locations, and program design to produce a workforce equipped for emerging health system needs.*

Phase-In and Long Transition
- *Implement recommended changes via a gradual, long-term (10-year) transition period to mitigate negative impacts on sponsoring institutions* and honor existing commitments to trainees.*

* Sponsoring institutions are the entities that bear ultimate accreditation responsibility for the governance, resources, and oversight of their GME programs. While the majority of teaching hospitals serve as sponsoring institutions, the two are not synonymous.

In the current system, Medicare GME payments consist of Direct GME payments (DGME; meant to cover the direct costs of training like salaries and benefits) and Indirect Medical Education payments (IME; meant to offset the higher theoretical costs of care provided by residents).

Public investment through CMS accounts for more than $15 billion annually in IME, approximately double the amount allocated to DGME.[iv] [v] Given the magnitude of this public investment, several concerns persist regarding the size of IME payments relative to the actual costs of residency training; their limited transparency in how funds are spent; and the substantial variation in IME payments across institutions.[vi] The persistent misalignment between public investment, workforce outcomes, and population health needs underscores the necessity of renewed analysis and policy action.

This study aimed to advance evidence-informed policy recommendations to support effective advocacy and legislative action to reform GME financing and@ governance. To do so, the study team examined the barriers to implementing the 2014 IOM recommendations by speaking with nearly 70 key informants and reviewing over 200 articles. Through iterative rounds of structured discussion, the authors sought consensus from 37 experts on the policy changes needed to enable meaningful GME reform.

Themes for GME Policy Reform

The themes below provide a vision to guide GME reform, while the ensuing policy recommendations detail critical next steps to generate meaningful change.

Theme 1 — Three foundational ingredients are needed to reform GME: Vision, oversight, and accountability.
For there to be any substantial forward movement for GME workforce reform, there must be a federal entity responsible for understanding what is needed; planning effective solutions; developing how they will be implemented, and most importantly, measuring their impact. This entity should have the ability to enact a vision, conduct central planning, elicit bottom-up information, and provide bidirectional oversight and accountability for the American public.

Theme 2 — Secure, sufficient, and sustained funding is essential for thriving GME programs.
A vision for secure, sufficient, and sustained GME funding requires equitable payment across geographies, populations, and specialties, with funding beyond initial development to support long-term GME infrastructure and maintenance.

Theme 3 — Metrics aligned with a national vision for GME are crucial.
Federal GME funding for resident physician training must be informed by metrics that capture regional workforce needs to ensure publicly funded GME produces an equitably distributed physician workforce that is sufficiently prepared to meet the needs of diverse populations.

Policy Recommendations for GME Reform

To guide GME reform efforts, we propose the following policy recommendations, which are intended to be specific and actionable even in our current political climate. The most fundamental reform goal should be creating a coherent and coordinated GME system that is better equipped to produce a workforce that meets the nation's health care needs with greater value for taxpayers.[vii]

Policy recommendation 1: Fund the National Health Care Workforce Commission (NHWC) with a GME subcommittee.

Utilizing the framework from the ACA, the National Health Care Workforce Commission should be funded and empowered to ensure its ability to develop and implement a national health workforce vision. A GME subcommittee should be developed to provide accountability and oversight for physician workforce needs, specifically. NHWC committee members should represent a diverse range of professional, sectoral, and demographic backgrounds. It would be required to submit regular reports to Congress on key topic areas, study GME finance and training mechanisms, and consult with federal agencies.

A funded and empowered NHWC would be responsible for advancing the following core goals and functions to support coordinated, evidence-based workforce planning:

- Set workforce development goals that are informed by community needs, seeking feedback from the local, state, regional, and national levels.
- Address both geographic and specialty shortages of physicians.
- Provide leadership to coordinate central planning across different health care professions to improve team-based care.
- Establish a policy council to address GME-specific governance and finance questions, including reform of the DGME and IME systems in a phased and collaborative approach.
- Advance policies that address, reduce, and prevent health inequities.
- Define a core set of GME-specific metrics using existing CMS data that would directly tie to the health workforce priorities outlined above.
- Maintain the authority to evaluate health workforce needs and the regulatory power necessary to enact policy change.

Policy recommendation 2: Establish equitable, cost-based, national per-resident payments (PRPs) that are paid directly to Sponsoring Institutions (SIs).

A single and sufficient PRP should be operationalized to replace the multiple funding streams that support the direct costs of GME training. In its current form, DGME dollars are not adequate to support the costs of residency training for the majority of teaching hospitals. Often, it is the teaching hospital with deeper pockets, by way of IME payments, that supplements the remaining direct costs of residency training. Instead, a single and sufficient PRP should replace the complex, fragmented, and illogical funding streams that currently support GME. To transition from the current funding model to a single, sufficient national PRP, the authors propose a phased approach, informed by a diverse set of stakeholders under the leadership of the NHWC.

PRPs should be distributed directly to SIs rather than teaching hospitals, reflecting their ultimate responsibility for physician training. Guidance to help transition non-hospital entities toward becoming SIs would be necessary. This approach would preserve hospital-based programs while enabling community-based and independent sponsors to operate and expand. This essential reform dampens the market incentives that currently favor expansion of high-revenue specialties over fields with workforce shortages. Successful implementation will require a phased transition, technical support for new sponsors, and federal oversight of the NHWC to ensure accountability for workforce outcomes.

Policy recommendation 3: Implement strategic payment reform for indirect medical education (IME) funds.

The NHWC should direct the GME subcommittee to develop guidelines ensuring that IME funds are used effectively. While concerns about the current structure of IME are broadly shared, this study's findings yield little consensus on specific policy solutions for IME as it is both widely contested and deeply entrenched. Any meaningful change to IME would require careful design, stakeholder engagement, and a multi-year transition.

Given the inability to track spending patterns, longstanding hospital reliance on these funds, and the political sensitivity of IME dollars, the authors argue that IME should remain a source of operational funding for teaching hospitals in the short term. However, IME should be renamed, as there is no reliable mechanism to ensure these funds are spent on GME. Instead, there should be a direct federal investment to support a single, adequately funded PRP sufficient to cover the true costs of residency training.

There are some critical caveats. First, physicians are only one of many professions in the health care ecosystem. Reform is needed across all disciplines and levels of the health care workforce. Second, projections of a "physician shortage" and calls to "lift the cap" are not sufficient for GME reform. While a real need for more physicians may exist (acknowledging the great variability in estimates by professional organizations and across specialties), lifting the cap without a vision, plan, and/or proper oversight will continue to yield more of the same, an ineffectively distributed physician workforce that does not address geographic or specialty shortages. Third, it is essential that we do not confine our thinking to the realm of what we have implemented or tried to implement before.

Conclusion

Ten years after the IOM's 2014 report outlined a clear framework for accountable, needs-based workforce planning, the absence of meaningful implementation remains a critical policy failure.

This report argues that the question is no longer whether reform is necessary, but how to implement it responsibly.

Strengthening governance, clarifying accountability, and aligning public investment with public purpose are essential steps toward a GME system that is transparent, equitable, and responsive to the needs of the American public. Advancing these reforms would honor both

the intent of prior national recommendations and the obligation to ensure that public funds support a physician workforce capable of meeting the needs of patients and communities across the U.S.

Scope and Purpose of this Report

The U.S. faces a growing mismatch between population health needs and the size, distribution, and preparation of its physician workforce. Longstanding disparities in access to care have only intensified through physician maldistribution, sub-specialization, and persistent shortages in rural and underserved communities. Despite repeated warnings and substantial public investment, the graduate medical education (GME) system responsible for producing America's physician workforce has not adapted sufficiently to meet changing demographic, epidemiologic, and health system demands.

Federally funded GME plays a major role by supporting a majority of physician training, yet its financing and governance structures remain largely unchanged from the model developed more than 60 years ago. As a result, GME continues to reinforce historical training patterns rather than adapting to current health delivery needs, contributing to shortages in primary care and other essential fields, geographic imbalances, and inequitable access to care. These shortcomings have become increasingly consequential as the Baby Boomer generation ages; chronic disease burden grows, and demand for coordinated, community-based care expands.

Calls for reform are not new. In 2014, the Institute of Medicine (IOM), now the National Academy of Medicine, released "Graduate Medical Education That Meets the Nation's Health Needs," a comprehensive evaluation of GME financing and governance. [i] The report provides a clear framework to align public investment with responsive workforce outcomes, issuing five recommendations that promised to transform the GME system and improve its responsiveness, transparency, and accountability. More than a decade later, however, the core recommendations of the IOM report remain largely unimplemented. While incremental changes and state-level initiatives have since emerged, they have not produced meaningful structural reform at the national level. Despite broad agreement on the problem, meaningful reform to GME has remained out of reach. Understanding the barriers to implementation provided a primary motivation for this analysis.

The purpose of this report is to advance evidence-informed policy recommendations that can inform advocacy efforts and policy initiatives to meaningfully reform GME financing and governance reform. To produce actionable and relevant recommendations, we designed a robust methodological approach to answer four key questions:

1. What reform efforts have been implemented to date at the federal level since the publication of the IOM report?
2. What barriers have prevented the implementation of the IOM report recommendations since it was released?
3. Which GME reform efforts should be prioritized moving forward?
4. What are the next steps necessary to achieve these goals?

The following methodology was designed to allow results from one phase to inform the next. Where appropriate, consultation and feedback were sought from members of the Technical Expert Panel, a group of eight national leaders with extensive GME expertise. For more details about the methodology, see Appendix A.

A Brief Methodological Overview

- **Phase 1:** Reviewed 479 peer-reviewed and non-peer reviewed publications using a rapid review methodology. Assessment for relevancy resulted in completion of 235 annotated bibliographies.
    - Results from the rapid review of the literature informed the creation of the interview guide for key informant interviews.
- **Phase 2:** Conducted 67 key informant interviews of GME leaders nationwide representing academic medicine, governmental agencies, research and policy institutes, and professional organizations.
    - Findings from the key informant interviews shaped the modified Delphi process.
- **Phase 3:** Hosted a modified Delphi process to build consensus among 37 national GME reform experts.
    - Areas of consensus included the ongoing relevancy of the IOM GME reform recommendations, additional policy priorities to address current workforce needs, and strategies for future advocacy efforts.

Findings from all three phases of this study informed the resulting themes and policy recommendations in sections three and four of this report, respectively. The policy recommendations were developed to be politically feasible while providing meaningful reform to the indiscriminate and ineffective GME system currently in place.

Background on Graduate Medical Education (GME)

Overview of GME

Graduate medical education (GME), the period of residency and fellowship training after medical school, is a $29 billion per year taxpayer-funded program.[iv] When combining all public funds in the U.S., the vast majority ($21 billion, approximately 70%) is funded by Medicare.[iv] Although there are additional sources of federal funds to support GME (below), our research and subsequent findings focus on Medicare GME funding and potential reforms to this specific program.

Table 1. Federal Funding Sources and Amounts for GME

Mandatory Funding	
Medicare GME Payments	$21.2 billion
Medicaid GME Payments	Limited data estimate Medicaid GME expenditures range from $4.7 billion to $7.4 billion (FY2023 and SFY2022) across sources
Teaching Health Centers GME Payment Program	$119.3 million
Discretionary Funding	
Veterans Affairs GME Payments	$2.04 billion
Children's Hospital GME Payments	$390 million
Department of Defense GME Payments	N/A, most recent estimates are from 2012

Adapted from the 2025 Congressional Research Service (CRS) Report, "Federal Support for Graduate Medical Education."
Sources: CRS analysis of agency data, including Centers for Medicare and Medicaid Services, Medicare hospital cost report data, and review of various agency budget justifications, as well as the Government Accountability Office (GAO) report "Health Care Workforce: Federally Funded Training Programs in Fiscal Year 2012, 13-709R, August 15, 2013."

The approach to funding GME has evolved over several decades; however, it initially began out of the necessity to formalize and standardize physician training experiences in the U.S. The American Medical Association (AMA) assembled the Council on Medical Education in the early 1900s; however, it wasn't until the 1940s when GME was bolstered by federal financial support for medical residents in training.[viii]

Since Medicare's enactment in 1965 and through present day, the Centers for Medicare and Medicaid Services (CMS) have been the largest funder of GME.[i iv] There are multiple justifications. As entitlement programs, Medicare and Medicaid's funding structure provide greater financial stability to teaching institutions. Furthermore, Medicare and Medicaid members directly benefit from an appropriately trained and distributed physician workforce. Despite the shortcomings of the system, the physician education pipeline is considered a public good, justifying public investment.[i]

Beyond GME financing, residency training programs must achieve and maintain accreditation which is overseen by the Accreditation Council for Graduate Medical Education (ACGME).

Further certification is available for specialty training through any of the 24 member boards of the American Board of Medical Specialties (ABMS).[ix] [x] According to the ACGME's *Data Resource Book*, in the 2023-24 academic year, there were 905 ACGME-accredited sponsoring institutions (SIs) which housed 13,393 residency and fellowship programs across 182 specialties and sub-specialties.[xi] [xii] Sponsoring institutions are the entities that bear ultimate accreditation responsibility for the governance, resources, and oversight of their GME programs. While the majority of teaching hospitals serve as sponsoring institutions, the two are not synonymous. The ACGME report noted that there were 162,644 active residents and fellows in training in the 2023-2024 academic year. The 2025 Association of American Medical Colleges (AAMC) report *Residents by the Numbers* estimated that there were 163,189 active resident and fellow physicians being trained in the US.[xiii]

Many stakeholders are engaged in GME accountability, governance, finance, and implementation. These stakeholders include state and federal governments, universities, teaching hospitals, community-based health centers, teaching physicians, children's hospitals, residents and fellows, and, most importantly, the public. Medicare's $21 billion per year public investment in the training of resident physicians lacks accountability and vision for delivering a sufficiently trained and accessible physician workforce that meets the needs of communities and the nation.[i]

Federal GME Structure and Financing

Approximately 70% of federal support ($21.2 billion) comes from Medicare, 20% ($5-7 billion) from Medicaid, and $2 billion from the VA.[iv] This amount has grown significantly over the years. In 2012, total CMS funding was estimated at $13.6 billion and nearly doubled to approximately $26 billion in 2023, just 11 years later.[i] [iv] Mandatory federal spending on GME is projected to continue to increase at a rate of 5.5% per year through 2028, faster than the average growth rate of the Consumer Price Index for all Urban Consumers.[vi]

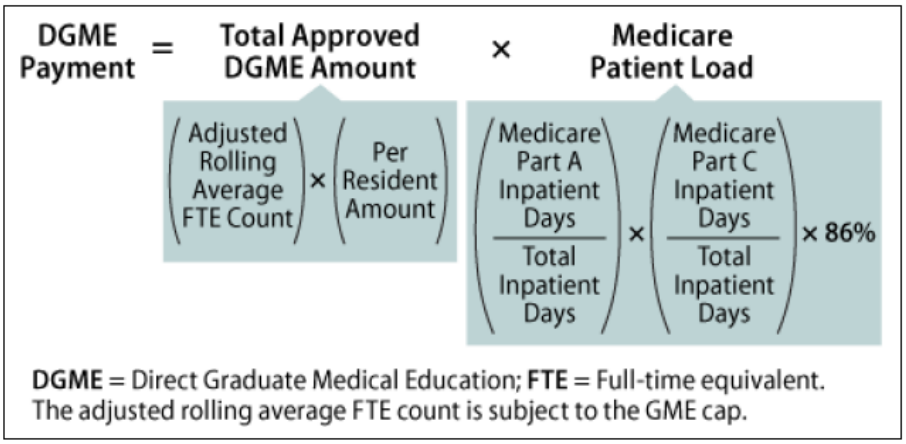
In the current system, Medicare GME payments are made up of Direct GME (DGME) and Indirect Medical Education (IME) payments. These two funding streams were established in 1983 with the implementation of the Medicare Prospective Payment System (PPS) and diagnosis-related group (DRG)-based payments. This was a change from earlier cost-based funding, establishing a new adjustment to individual teaching hospitals' inpatient rates to account for higher costs associated with training residents. DGME payments were designed to pay for resident and faculty physician salaries, as well as benefits and other direct operational costs. IME payments were designed to cover the presumably extra costs associated with patient care in teaching hospitals and clinic sites, e.g., more labs, longer hospital stays, more complex patients associated with teaching institutions. To contain costs, the Balanced Budget Act of 1997 capped the number of resident physicians that hospitals may count for DGME and IME payments.[xiv] The "cap" was set at the number of resident physicians reported on hospital cost reports from the prior year.[vi] Formulas that determine Med75icare GME payments and "caps" use resident full-time equivalents (FTEs), a standard measure that represents the number of hours worked as a full-time employee, instead of the number of individual trainees.

DGME is calculated using a base year "Per Resident Amount" (PRA) that is specific to each hospital and is updated for inflation and based on the proportion of inpatient bed days

occupied by Medicare beneficiaries. The PRA is defined by CMS and is an assigned numerical constant for a given hospital. The formula (figure 1) is described as follows:

Updated PRA x weighted average number of residents claimed x Medicare's share of bed days = total DGME for that hospital for one year.

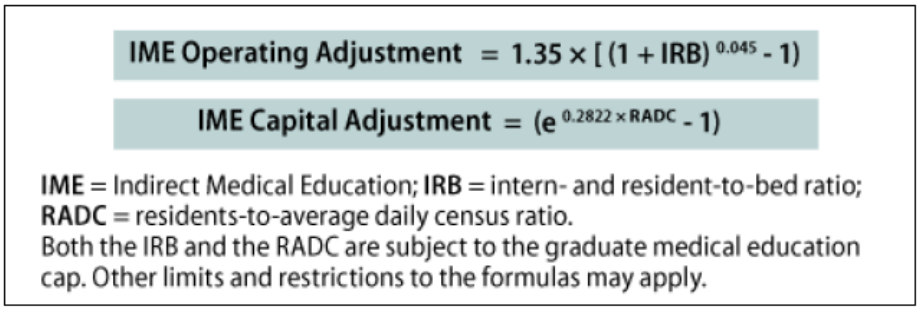
Figure 1. Medicare DGME Payment Formula



Source: CRS analysis of Title XVIII of the Social Security Act and relevant regulations.

[xv]

Figure 2. Medicare IME Operating and Capital Adjustment Formulas



Source: CRS analysis of Title XVIII and relevant regulations.

[xv]

A key feature of Medicare DGME financing is the establishment of the hospital's "base year" PRA, which determines all future DGME payments. Historically, a hospital's PRA is set the moment its first resident has completed any clinical training at the hospital, as assigned by their residency program. If the hospital failed to list the resident on its Medicare cost report because hospitals did not realize this was required (not an uncommon mistake), CMS would assign a PRA of zero, effectively locking the hospital into zero-dollar DGME reimbursement indefinitely. This technical flaw was corrected in the Consolidated Appropriations Act of 2021, which now allows hospitals to rectify missed opportunities to set an appropriate PRA.[xvi] [xvii]

Even with this fix, DGME payments remain highly variable because PRAs reflect historical hospital spending patterns, outdated geographic cost differentials, and regional norms that no longer align with modern training costs. For example, 2015 CMS cost report data show that direct training costs ranged from $56,998 to $333,565 per resident FTE.[vi] Such variation illustrates the ongoing inequities and lack of consistent rationale in DGME payment amounts.

IME, by contrast, is calculated with a percent add-on to each DRG payment from Medicare (figure 2). This add-on is unique to each hospital. DRGs classify and assign a fiscal value to commonly treated medical conditions for reimbursement. This means hospitals with more resident FTEs per hospital bed get a higher percentage add-on to their DRGs (up to over 40%). Typically, IME is roughly (and with wide variation) double the DGME payment to any given hospital.[xv]

In addition to Medicare GME, residency education is publicly supported by Medicaid dollars, the Department of Veterans Affairs (VA), and the Health Resources and Services Administration (HRSA) which administers funding for the Children's Hospitals Graduate Medical Education (CHGME) Program, the Teaching Health Center Graduate Medical Education (THCGME) Program, and the Rural Residency Planning and Development Program, individual state government payment mechanisms, and Medicaid disproportionate share hospital (DSH) payments. Medicaid GME support, which grows annually, may be attractive to states because they receive federal matching funds even if limited by upper payment limits. The VA GME system is direct and provides some infrastructure but only pays for training at VA care sites. HRSA programs are challenged by the need for frequent reauthorization, undermining predictable and sustained support for training programs. Community-based training sites receive funding from the same sources as teaching hospitals, as well as from HRSA.

Though complicated, the multiple public funding streams from federal and state agencies underscore the collective agreement that a well-trained and equitably distributed physician workforce is an investment in the health of society.

Problem Statement

We have long known that the health care workforce is unevenly distributed across the U.S. and within communities. With the nation now more than six years into the aftermath of the COVID-19 pandemic, the health workforce is exhausted with increasing burnout, reduced patient-facing hours, and career departures from medicine entirely.

In its current form, GME funding formulas and market-driven forces contribute to workforce shortages, impacting access to care and failing to meet the health care needs of the American public.[i] [xviii] The underlying failure is rooted in the lack of rational, centralized planning for GME. There is neither a national vision for the physician workforce, nor the tools necessary to enable effective workforce production. In this vacuum, the nation is left with an uncoordinated physician training system which results in oversaturation in high-paying specialties and inequitable geographic distribution of graduates, leaving regional health care shortages unaddressed.

Although CMS administers the distribution of federal GME funds to teaching hospitals, it does not systematically collect or report data linking these investments to workforce outcomes. [xiii] In

the absence of comprehensive data on GME graduates and clearly defined workforce targets, shortages in key specialties and regions persist, and accountability for workforce production remains limited. As a result, the current GME financing structure tends to advantage certain teaching hospitals while other training sites, often in high-need areas, face ongoing financial constraints despite significant local physician shortages.

One of the most significant consequences of the current GME payment structure is the uneven distribution of funds driven by Medicare patient volume. Because IME and DGME payments are tied to Medicare utilization, residency programs may receive fewer resources if a substantial share of their patients are not Medicare beneficiaries. This funding variability disproportionately affects smaller community hospitals and critical access hospitals, where limited margins can place training programs at heightened financial risk.

In addition, GME payments are made to hospitals rather than directly to residency programs, reinforcing a hospital-centric training model. This structure incentivizes training to occur primarily in the inpatient setting, even though most health care services are delivered in outpatient and community-based environments. Over time, this imbalance contributes to a relative underdevelopment of the outpatient physician workforce and limits exposure to community-based practice settings during training.

No workforce analysis is without limitations; however, estimates consistently show pan-national shortages across primary care specialties (e.g., family medicine, geriatrics, general pediatrics, general internal medicine) as well as geographic shortages in rural communities across all physician disciplines. According to some estimates, more than 44,000 additional primary care physicians will be needed by 2035, with projected shortages of more than 33,000 physicians if current training distribution patterns remain unchanged.[xix]

Collectively, these structural features reveal core deficiencies in the current GME system that require attention and progressive reform to adequately address the workforce needs of the nation.

Prior GME Reform Efforts

Since Medicare was enacted in 1965, there have been numerous legislative efforts to adjust, increase, or control federal spending on GME. Some of the most noteworthy events in the evolution of federal GME financing are outlined below.

Table 2. Legislation Impacting GME Over the Years:

- **Social Security Amendments of 1983:** Established the Medicare Inpatient Prospective Payment System (IPPS), introducing Diagnosis-Related Groups (DRGs) as the basis for hospital reimbursement. In doing so, the legislation formally separated Direct Graduate Medical Education (DGME) and Indirect Medical Education (IME) payments from base inpatient payment rates, creating add-on payments intended to account for the direct costs of residency training (DGME) and the assumed higher patient care costs associated with teaching hospitals (IME), respectively. This legislation laid the foundation for the modern, hospital-centric GME financing structure.
- **The Omnibus Budget Reconciliation Act of 1986:** Further clarified Medicare's role in financing GME by formally recognizing Direct GME payments within statute. The Act refined allowable cost categories associated with residency training and helped codify the per resident amount (PRA) methodology used to calculate DGME payments, strengthening the linkage between historical hospital costs and future Medicare GME reimbursement.
- **The Omnibus Budget Reconciliation Act of 1989:** Built upon prior GME financing provisions by further refining DGME payment calculations and reimbursement methodologies. The Act continued Medicare's incremental expansion and standardization of its GME payment policies, reinforcing hospital-based training as the dominant model for physician workforce development.
- **American Health Security Act of 1993:** DGME was modified for newly designated teaching hospitals, including setting a lower base year rate and adjusting the national average PRA. Cost of living increases were also permitted.
- **Balanced Budget Act of 1997:** The number of resident FTEs was capped, and Medicare limited reimbursement on each of those caps. Separate caps were established for DGME and IME. DGME payments were also allowed for non-hospital providers. This law also provided the ability to claim IME dollars for future resident FTEs in a non-hospital setting.
- **Medicare, Medicaid, and SCHIP Balanced Budget Refinement Act of 1999:** Floors were re-set for DGME, and allowances were made for demonstration projects. IME reductions were made, as well as voluntary resident reductions. This Act also provided for the recalculation of caps, including for primary care residencies. Rural caps were expanded and adjusted to allow for separately accredited rural training tracks and integrated rural tracks.
- **The Children's Hospitals Graduate Medical Education (CHGME) Payment Program of 1999:** Provides federal GME funding to freestanding children's hospitals that are ineligible for Medicare GME payments due to limited Medicare patient volume. Administered by the Health Resources and Services Administration (HRSA), the program supports both direct and indirect GME costs and represents a parallel federal financing mechanism designed to address pediatric workforce needs outside the Medicare payment system.
- **Medicare Prescription Drug, Improvement, and Modernization Act of 2003:** A 10-year freeze was placed on hospitals with PRAs above 140% of locally adjusted national averages, impacting DGME. Other CMS rules were also frozen.
- **Patient Protection and Affordable Care Act (ACA) of 2010:** Residency slots were redistributed, and a permanent method was created for redistributing slots from closed hospitals. The THCGME program was established in HRSA, and IME payments to

critical access hospitals were eliminated. The National Health Care Workforce Commission was authorized in this Act, but no funds have ever been appropriated.

- **Consolidated Appropriations Act (CAA) of 2021:** Funding for 1000 new Medicare-supported GME slots were included in this $2.3 trillion package. Allocation details were provided in 2022 Hospital IPPS for Acute Care Hospitals Final Rule (CMS). CAA GME provisions included authorized distribution of 1000 new Medicare funded GME positions, statutory changes to modify GME cap determination for urban and rural hospitals training residents in rural training track programs, and statutory changes to the determination of PRAs and direct and indirect GME caps of hospitals that have hosted a small number of resident rotators for a short time.
- **FY 2022 Inpatient Prospective Payment System Final Rule with Comment Period (Final Rule):** Addressing changes to Medicare GME Payments for Teaching Hospitals, authorized by the CAA of 2021. For the new Medicare funded GME positions, hospitals would be allowed to receive up to 5.0 FTE per year, and new residency positions would be awarded to qualifying hospitals based on health professional shortage area (HPSA) scores to determine need. For the increased caps for rural training programs, whenever an urban teaching hospital and a rural hospital partner establish a new rural training track (RTT) program, both entities may receive a rural track FTE regardless of criteria historically used.

Table 3. Federally mandated reports on GME finance and workforce:

Year	Organization	Type of Action	Report or Activity
1997	COGME	Workforce policy report	11th Report: *International Medical Graduates, the Physician Workforce, and GME Payment Reform*
1998	COGME	Workforce policy report	12th Report: *Minorities in Medicine*
2004	COGME	Workforce policy report	16th Report: *Physician Workforce Policy Guidelines for the United States, 2000–2020*
2007	COGME	Workforce policy report	19th Report: *Enhancing Flexibility in Graduate Medical Education*
2009–2010	MedPAC	Congressional advisory analysis	Hospital Inpatient and Outpatient Services
2010	COGME	Workforce policy report	20th Report: *Advancing Primary Care*
2013	GAO	Federal program evaluation	*Physician Workforce: Locations and Types of Graduate Training Were Largely Unchanged*
2014	Institute of Medicine (NAM)	National commission report	*Graduate Medical Education That Meets the Nation's Health Needs*
2016	U.S. House Committees	Congressional inquiry	Congressional request for stakeholder input on GME reform
2017	COGME	Workforce policy report	23rd Report: *The Role of Graduate Medical Education in a National Health Care Workforce Strategy*
2018	Congressional Budget Office	Federal budget analysis	Options for Reducing the Deficit: 2019 to 2028

2019	U.S. Senate Finance Committee	Letter requesting congressional oversight	Senate inquiry regarding waste and oversight in GME programs
2021	GAO	Federal program evaluation	*Physician Workforce: Caps on Medicare-Funded Graduate Medical Education at Teaching Hospitals*
2021	MedPAC	Congressional advisory analysis	*Chapter 6: Revising Medicare's Indirect Medical Education Payments to Better Reflect Teaching Hospitals' Costs*

Council on Graduate Medical Education (COGME), Medicare Payment Advisory Commission (MedPAC), U.S. Government Accountability Office (GAO)

Since the IOM Report

Summary of the 2014 IOM Report

In 2014, the IOM developed a report in response to a Congressional letter of inquiry to evaluate the federal GME financing and governance and the workforce it had produced (See Appendix B). Their five recommendations (Figure 3) were intended to produce a more equitable and transparent funding model to train an adequately prepared and effectively distributed physician workforce accountable to the needs of the American public.

Figure 3. 2014 IOM Report Recommendations on GME

RECOMMENDATION 1: Maintain Medicare GME support at the current aggregate amount (i.e., the total of indirect medical education and direct graduate medical education expenditures in an agreed-on base year, adjusted annually for inflation) while taking essential steps to modernize GME payment methods based on performance, to ensure program oversight and accountability, and to incentivize innovation in the content and financing of GME. The current Medicare GME payment system should be phased out.

RECOMMENDATION 2: Build a GME policy and financing infrastructure.

2a. Create a GME Policy Council in the Office of the Secretary of the U.S. Department of Health and Human Services. Council members should be appointed by the Secretary and provided with sufficient funding, staff, and technical resources to fulfill the responsibilities listed below:

- Development and oversight of a strategic plan for Medicare GME financing;
- Research and policy development regarding the sufficiency, geographic distribution, and specialty configuration of the physician workforce;
- Development of future federal policies concerning the distribution and use of Medicare GME funds;
- Convening, coordinating, and promoting collaboration between and among federal agencies and private accreditation and certification organizations; and
- Provision of annual progress reports to Congress and the Executive Branch on the state of GME.

2b. Establish a GME Center within the Centers for Medicare & Medicaid Services with the following responsibilities in accordance with and fully responsive to the ongoing guidance of the GME Policy Council:

- Management of the operational aspects of GME Medicare funding;
- Management of the GME Transformation Fund (see Recommendation 3), including solicitation and oversight of demonstrations; and
- Data collection and detailed reporting to ensure transparency in the distribution and use of Medicare GME funds.

RECOMMENDATION 3: Create one Medicare GME fund with two subsidiary funds:

3a. A GME Operational Fund to distribute ongoing support for residency training positions that are currently approved and funded.

3b. A GME Transformation Fund to finance initiatives to develop and evaluate innovative GME programs, to determine and validate appropriate GME performance measures, to pilot alternative GME payment methods, and to award new Medicare-funded GME training positions in priority disciplines and geographic areas.

RECOMMENDATION 4: Modernize Medicare GME payment methodology.

4a. Replace the separate indirect medical education and direct GME funding streams with one payment to organizations sponsoring GME programs, based on a national per-resident amount (PRA) (with a geographic adjustment).

4b. Set the PRA to equal the total value of the GME Operational Fund divided by the current number of full-time equivalent Medicare-funded training slots.

4c. Redirect the funding stream so that GME operational funds are distributed directly to GME sponsoring organizations.

4d. Implement performance-based payments using information from Transformation Fund pilot payments.

RECOMMENDATION 5: Medicaid GME funding should remain at the state's discretion. However, Congress should mandate the same level of transparency and accountability in Medicaid GME as it will require under the changes in Medicare GME herein proposed.

Response to the IOM Report

The 2014 IOM report was a landmark in the journey toward GME reform. For many, it was viewed as the guidebook on why and how we need to move forward with transforming GME financing, oversight, and accountability. Without question, the IOM report's recommendations inspired ardent conversation in the immediate years following its publication. Many of the responses from professional organizations within the medical community agreed with the report's overarching conclusions, echoing the need for financing and governance reform, the call to diversify the physician workforce, and the concerning lack of transparency and accountability for how dollars are being spent by teaching hospitals.[xx] [xxi] [xxii] Despite the many well-intended conversations and potential for meaningful reform, advocates and stakeholders struggled to execute the reforms outlined in the 2014 report.

In the 12 years since its release and with minimal reform to date, two questions have surfaced:

1) What barriers have prevented the implementation of the IOM report recommendations?
2) Are the IOM report recommendations still relevant and if so, what are their respective impact and feasibility?

Primary Barriers to Implementation

The first question was addressed through insights gathered and synthesized across all three phases of the analysis (rapid review, key informant interviews, modified Delphi process) and is summarized below.

Despite the concrete nature of the recommendations outlined in the 2014 IOM report, experts noted that additional context and framing were needed for their implementation to be effective, i.e., instruction on how the recommendations should be funded, legislated, and/or operationalized. From this vantage point, the report was viewed by many as aspirational, rather than instructional. Time and again, the most common barriers to implementation cited in this study were **vested interests across multiple stakeholders to keep the current funding system for GME unchanged.** This familiar answer was mentioned across all phases of our analysis.

Specifically, concern for decreased hospital funding among large academic medical centers prompted discord among stakeholders who noted that some hospitals may benefit significantly more than others.[xxiii] [xxiv] Key informants representing hospital associations expressed deep concern with the potential impact on the physician workforce and patient care if funding were to be transferred from their stewardship to the residency programs themselves.[xxv] Over the decades, GME dollars (especially IME) have become an expected and reliable revenue stream woven into the operating budgets of teaching hospitals. In summary, there simply has not been sufficient political will or clout among reform advocates to enact the 2014 IOM reform recommendations when facing opposition from hospital associations and influential professional organizations.

Disagreements on whether physician shortages truly exist and controversy over funding redistribution have left **some specialties feeling vilified, ultimately losing potential allies, and weakening the professional call for reform** from physician groups. A few organizations stated that the current system of financing and oversight produced high-quality physicians without a need for substantial reform. “The American public is getting a considerable bargain for their GME investment. Any system that can educate the next generation of physicians for only two percent of overall Medicare expenditures is clearly doing a very responsible job.”[xxvi] Despite this being a minority perspective, the lack of a unified voice among advocates for change has greatly undermined implementation efforts.[xxiii] [xxiv]

When considering the recommendation for transparency and accountability for how funds are spent, experts noted that **it is easy to agree with the stated goal but incredibly challenging to determine which metrics are appropriate**. Some key informants admitted distrust of any process that would determine metrics chosen in the name of accountability. With many competing interests for seemingly scarce dollars, stakeholders admitted their concern that accountability and outcomes metrics would benefit certain specialties at others’ expense. [xxv] Other key informants relayed that without tying metrics to financial repercussions, meaningful change in workforce distribution will never be accomplished. Another concern focused on which entities should bear the burden of accountability. Does the responsibility for the specialty and geographic distribution of graduates rest solely on the shoulders of teaching hospitals, or are medical schools, states, community hospitals, or even the federal government partially responsible? The undetermined details of how accountability would be assessed have made operationalizing this recommendation more challenging than it seemed at face value.

Finally, Delphi participants relayed their concern that implementation of the IOM report recommendations is a futile effort in the face of an unchanging payment system for practicing physicians. Without wholesale reform of the fee-for-service reimbursement model, any or all of the GME reforms would fall short of meaningfully improving the specialty and geographic distribution of physicians in practice.

"The IOM report is a signpost … the reality is many of their reports don't come to fruition."
– Perspective shared by a key informant (2020)

Responses in support of the IOM report recommendations have evolved beyond official statements and published editorials. Over the years, several attempts to organize advocates through summits and conferences have yielded valuable recommendations for next steps regarding GME reform. One noteworthy assembly was the 2017 National Academies of Sciences, Engineering, and Medicine (NASEM) workshop entitled "Graduate Medical Education Outcomes and Metrics" with the goal of examining opportunities and challenges in measuring and assessing GME outcomes.[xxvii] Attendees included leaders in medical education, health policy, and data infrastructure.

That same year, another attempt to capitalize on reform efforts was led by the Alliance for Academic Internal Medicine and the American College of Physicians who partnered to convene a national coalition of GME experts. Over the course of 25 months, they developed potential performance-based quality metrics for GME accountability, e.g., value of care provided, reducing health disparities, hospital readmission rates.[xxviii] While these initiatives demonstrated some forward momentum, performance-based and accountable GME metrics without overarching federal reform efforts stand in isolation and remain underutilized and unexecuted.

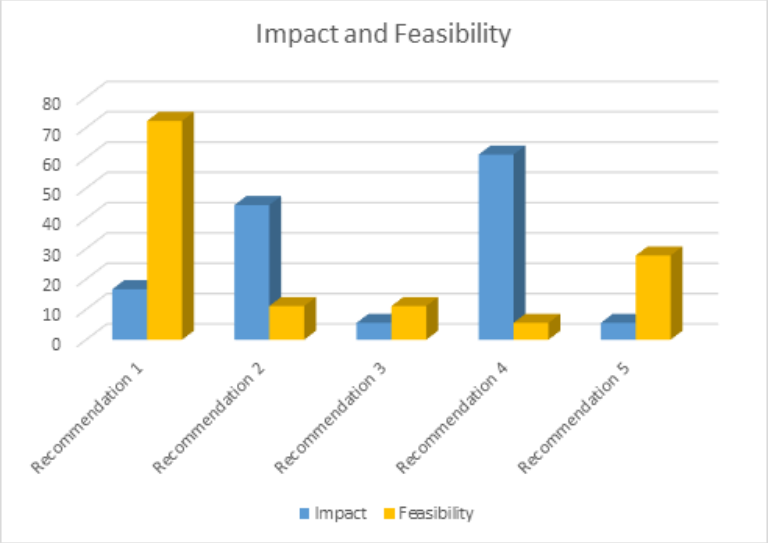
Overall, the system remains greatly unchanged despite significant time, energy, and investment from countless stakeholders. The question remains: are the IOM report recommendations for GME reform still relevant, and if so, are they feasible?

Continued Impact and Feasibility of the IOM Report Recommendations

To answer this second question, the authors conducted a modified Delphi process with 37 GME experts, completing an iterative cycle of surveys, each followed by information sharing and debate to sway other participants to reach consensus on different topics. What follows is a summary of insights gleaned from this approach with a focus on the continued relevance and feasibility of the 2014 IOM report recommendations. (See Appendix A for detailed methods.)

Delphi participants were asked to rank the IOM report recommendations regarding impact and feasibility from most to least. Figure 4 demonstrates which IOM recommendations were considered "most feasible" and "most impactful." Multiple participants ranked more than one recommendation as "most impactful" and "most feasible," so percentages will not add up to 100%.

Figure 4. Relationship Between Impact and Feasibility of the IOM Report Recommendations



Recommendation 1:
Maintain Medicare GME support at the current aggregate amount (i.e., the total of indirect medical education and direct graduate medical education expenditures in an agreed-on base year, adjusted annually for inflation) while taking essential steps to modernize GME payment methods based on performance, to ensure program oversight and accountability, and to incentivize innovation in the content and financing of GME. The current Medicare GME payment system should be phased out.

Most stakeholders described this recommendation as an "umbrella" for the IOM report's subsequent recommendations. Given the known complexity of GME funding and the policies that determine its governance, many experts offered minimal opinions on this recommendation, choosing instead to comment on the more operational Recommendations 2-5. Given the broad nature of Recommendation 1 and limited detail in how it could be achieved, this recommendation was considered the least impactful at the completion of the modified Delphi process. Recommendation 1 was also ranked the most feasible of the IOM report recommendations due to its goal of maintaining GME support at the current aggregate amount.

A vocal minority did express their opposition to this recommendation. This divergence splits along the philosophical fault line of whether GME is considered over- or under-funded. Organizations that have traditionally aligned with hospital priorities see GME funds as an essential component to their operational costs, with the idea of reorganizing and restructuring these funds to be fundamentally destructive to the necessary functioning of a teaching hospital. Furthermore, any attempt to reorganize funds while maintaining a zero-sum bottom line will simply reduce GME funds to hospitals. Although this is a minority perspective among individuals and organizations in the GME world, it is held by organizations of substantial influence.

Recommendation 2:
Build a GME policy and financing infrastructure.
2a. Create a GME Policy Council in the Office of the Secretary of the U.S. Department of Health and Human Services. Council members should be appointed by the Secretary and provided with sufficient funding, staff, and technical resources to fulfill the responsibilities listed below:

- *Development and oversight of a strategic plan for Medicare GME financing;*
- *Research and policy development regarding the sufficiency, geographic distribution, and specialty configuration of the physician workforce;*
- *Development of future federal policies concerning the distribution and use of Medicare GME funds;*
- *Convening, coordinating, and promoting collaboration between and among federal agencies and private accreditation and certification organizations; and*
- *Provision of annual progress reports to Congress and the Executive Branch on the state of GME.*

2b. Establish a GME Center within the Centers for Medicare & Medicaid Services with the following responsibilities in accordance with and fully responsive to the ongoing guidance of the GME Policy Council:

- *Management of the operational aspects of GME Medicare funding;*
- *Management of the GME Transformation Fund (see Recommendation 3), including solicitation and oversight of demonstrations; and*
- *Data collection and detailed reporting to ensure transparency in the distribution and use of Medicare GME funds.*

This recommendation was met with a substantial amount of support across organizations and professional backgrounds and felt to be highly relevant for future advocacy efforts. Experts with diverse perspectives agreed that a multi-stakeholder council to create and enforce a vision for the nation's GME was necessary and long overdue. The modified Delphi process was further used to determine how to best approach the operational details to enact this recommendation. Consensus was achieved utilizing an approach that combines national and local partnerships with bottom-up goal setting and data collection with federal, top-down enforcement.

Many national experts admitted their concerns about the details of enacting this recommendation and suggested a list of key questions that should be considered:

- Who will set workforce goals? Will there be sufficient local engagement to ensure regional needs are known?
- How will enforcement take place? Will it be punitive or take an incentives-based approach?
- What metrics will be used, and who will set them? Who will be responsible for data collection?
- Which stakeholders will be engaged and how?

Perspectives varied on where oversight should be organized and to what degree. CMS supports physician training, while no other health profession receives public dollars for their training. Considering the ubiquitous need for workforce vision and planning, GME oversight could be better served as a division within a broader workforce committee that accounts for all health professionals such as the National Health Care Workforce Commission (NHWC) that was authorized by the ACA. To date, Congress has not appropriated any funds to operationalize this body or its work.

Recommendation 2 remains popular since the NHWC already exists in statute with clear and specific goals. If a broad approach to health care workforce oversight is pursued, then experts felt an oversight committee within the U.S. Department of Health and Human Services would be appropriate. An alternative solution would be to capitalize on the annual GME reporting function of the Council on Graduate Medical Education (COGME), engage more diverse stakeholders (e.g., GME experts, residency program directors, ACGME, state workforce councils), and enable them with the authority necessary to enforce national workforce goals. COGME's limited capacity and authority in its current form as a federal advisory committee was mentioned several times by experts.

Overall, Recommendation 2 was considered a critically impactful and feasible policy recommendation and could provide a first step towards advancing other IOM report recommendations; however a thoughtful approach to design and oversight was necessary.

Recommendation 3:
Create one Medicare GME fund with two subsidiary funds:
3a. A GME Operational Fund to distribute ongoing support for residency training positions that are currently approved and funded.

3b. A GME Transformation Fund to finance initiatives to develop and evaluate innovative GME programs, to determine and validate appropriate GME performance measures, to pilot alternative GME payment methods, and to award new Medicare-funded GME training positions in priority disciplines and geographic areas.

Recommendation 3 was not considered an impactful reform effort by Delphi participants. GME experts expressed their concern that this recommendation could unintentionally hurt current residency programs, taking dollars away from programs that need continued and consistent financial support. Balancing innovation dollars with the ongoing need to support existing programs will be challenging.

Innovation funds were originally considered an opportunity to demonstrate creative strategies and alternative approaches to funding GME in the hopes that successful innovations may influence greater GME funding priorities. Given the success of innovation models such as teaching health centers (THCs) and the preponderance of traditional payment models (DGME and IME) for GME by teaching hospitals, the question was raised as to whether innovation funds are advancing their intended mission as they comprise such a small percentage of overall GME dollars. Another critique about innovation dollars is that they are not sustained, leaving programs that are launched with these dollars at the mercy of Congressional reauthorization. Part of the underlying challenge is the poor alignment between and lack of

Congressional understanding of residency application timelines versus federal appropriation cycles.

Concerns about performance measures were also raised, similar to Recommendation 2. Would metrics be developed nationally, informed locally, or a combination of both? How would data collection be funded given that many programs do not have the human or analytic resources necessary to track this information? What will be the timeframe in which results are realistically expected, given that residency initiatives take 5-10 years after implementation to observe any meaningful change?

Recommendation 4:
Modernize Medicare GME payment methodology.

4a. Replace the separate indirect medical education and direct GME funding streams with one payment to organizations sponsoring GME programs, based on a national per-resident amount (PRA) (with a geographic adjustment).

4b. Set the PRA to equal the total value of the GME Operational Fund divided by the current number of full-time equivalent Medicare-funded training slots.

4c. Redirect the funding stream so that GME operational funds are distributed directly to GME sponsoring organizations.

4d. Implement performance-based payments using information from Transformation Fund pilot payments.

Components of this recommendation continue to be considered essential to correct the geographic and specialty distribution inequities that result from our current GME system. Specifically, recommendations 4a and 4c, although contentious, were thought by many GME experts to be highly impactful and even necessary if GME is meant to be responsive to on-the-ground workforce needs.

Despite the importance of 4a, many thought it remains nearly impossible to implement. It is widely accepted that IME dollars are essentially impossible to track, despite best efforts of the 2014 IOM report committee, during which IME dollars were described as being completely "opaque." GME experts noted no accountability on the part of hospitals to report how IME dollars are being spent or to develop a system to track use of these dollars. Experts also made frequent mention that taking IME dollars away from hospitals would be close to impossible in today's political climate, given the substantial goodwill hospitals often enjoy.

What would be politically feasible are reforms to ensure residency programs are sufficiently and sustainably funded, that the dollars are trackable and transparent, and that there are accountability measures in place for use of these public dollars. Again, it was noted in the modified Delphi process that careful consideration should be taken when determining which metrics would be tracked and how performance-informed payments would be enforced.

Recommendation 5:

Medicaid GME funding should remain at the state's discretion. However, Congress should mandate the same level of transparency and accountability in Medicaid GME as it will require under the changes in Medicare GME herein proposed.

Recommendation 5 does not provide a new recommendation; rather, it is an acknowledgment of the current use of Medicaid dollars for GME. As such, no substantial feedback on this recommendation was offered during the modified Delphi process. The use of Medicaid dollars to support targeted GME efforts is considered a worthwhile endeavor given states' ability to take a localized approach to understanding their regional workforce needs and pipeline programs.

Key Themes for the Future of GME

Introducing the Themes

The key findings that emerged from all phases of this research study (rapid review, key informant interviews, modified Delphi process) were synthesized and organized into three major themes that build on the foundational work of the 2014 IOM report and provide context for more specific policy recommendations in section 4. These themes focus on GME financing and governance reform and do not address other components of GME such as curriculum development, accreditation, or operations. Emerging themes, as well as potential policy recommendations, were intentionally and repeatedly tested during the key informant interviews and modified Delphi process to produce recommendations that are specific, measurable, achievable, relevant, and time bound. The themes below provide a vision to guide GME reform, while the ensuing policy recommendations in the next section detail plausible next steps to generate meaningful change.

It should be noted that this evaluation focused on physician workforce development at the GME level. It would be remiss to ignore the impact that upstream undergraduate medical education (UME) has had on physician workforce supply and distribution. Over the years, UME has continued to expand with increased public funding from states and expansion of osteopathic schools, as well as private UME institutions. According to the Association of American Medical Colleges (AAMC), UME enrollment grew 30.2% from 2010 to 2020 representing a 21% increase in allopathic (MD) school enrollment and a 63% increase in osteopathic (DO) school enrollment during that ten-year period.[xxix] Although GME positions have expanded to a small degree, the cap on CMS-funded GME residency slots with disproportionately increasing UME positions has created a bottleneck in the physician workforce pipeline, leading to multiple UME graduates without a residency position and somewhat paradoxically, unfilled GME positions each year. In 2022, more than 10,000 applicants did not match into GME programs, and this is after 2,111 positions were filled during the Supplemental Offer and Acceptance Program (SOAP).[ii] According to the American Academy of Family Physicians (AAFP), the 2022 National Resident Matching Program (NRMP) left 465 (9.4%) of family medicine residency positions unfilled nationwide.[xxx] These data highlight the need for broader reforms in health care delivery beyond GME financing and governance if we are to address workforce shortages and maldistribution.

Calls for payment reform, improved recruitment and retention in rural communities, and strategies to reduce physician burnout were repeatedly brought forward by GME experts in our study. Additionally, the physician workforce is only one segment of the broader health care workforce, and similar challenges are being experienced among physician associates, nurse practitioners, nurses, medical assistants, and other health care professionals.

Prior reform efforts, including recommendations from the 2014 IOM report, have been met with numerous operationalization challenges as detailed in section 2. Overall, the most common implementation barrier for GME reform is the vested interests across multiple stakeholders to keep the current funding system unchanged. This seems especially true for teaching hospitals and large academic medical centers with substantial IME dollars; their concern is that reform efforts may impact patient care if hospital funding is disrupted. **To date, there has not been a**

unified stance among physicians on how best to proceed with GME reform, fracturing the impact of organized professional associations.

Lastly, the themes below are presented under the assumption that access to an adequately trained physician workforce is a public good and therefore should continue to be federally subsidized. Currently, Medicare invests $21 billion annually with the expectation of producing a well-prepared and equitably distributed physician workforce to meet the health needs of diverse communities nationwide. The onset of the COVID-19 pandemic plus the racial and social justice reckoning in the US over the past decade has shone a bright light on the inequities that disproportionately impact communities of color and rural populations. If GME – and broader health care delivery – reforms are not designed and implemented in partnership with communities to meet their needs and hold recipients accountable for use of these public funds, this system will continue to fail the American public.

Theme 1 — Three foundational ingredients are needed to reform GME: Vision, oversight, and accountability.

Meaningful reform of Medicare GME requires a nationally empowered entity with the authority to articulate a workforce vision, coordinate planning, integrate community-level data, and enforce accountability so that public investment in GME produces a physician workforce aligned with the health needs of communities nationwide. This national entity must understand and monitor what is being planned, how it will be implemented, and why it matters.

Vision: A nationally coordinated GME system should intentionally train physicians in communities with unmet health needs, support training environments that reflect future practice settings, and produce a workforce that is equitably distributed across regions and specialties. Achieving this requires a clearly articulated national vision that guides how public investment in GME aligns with the health needs of patients and communities.

Oversight: A national entity should coordinate strategic planning for the physician workforce across local, state, regional, and national levels. This planning should combine centralized coordination with information gathered directly from training programs, health systems, and communities to ensure decisions reflect real-world workforce needs. Effective oversight requires the ability to translate this bidirectional flow of information into adaptive policies and workforce planning. The entity must have the legislative and regulatory authority to ensure GME financing supports a cohesive national workforce vision.

Accountability: A national entity should hold GME funding accountable to meaningful outcomes—such as specialty distribution, geographic placement, and service to underserved communities—so that programs receiving public investment contribute to the workforce goals the system is designed to achieve. Currently, financial incentives within GME and broader workforce programs often prioritize institutional interests over national workforce goals, limiting the impact of public investments. Making workforce outcomes transparent and publicly available would represent a critical step toward realigning incentives. Additionally, a national entity could link public reporting and accountability to accreditation standards, helping shift the focus from process compliance to measurable outcomes, including workforce distribution,

diversity, and alignment with community needs. Such an approach would reinforce the principle that public funds invested in workforce training carry an obligation to serve the public interest.

Throughout the project, study participants frequently cited an entity which could fulfill the functions listed in theme 1: the National Health Care Workforce Commission (NHWC). The NHWC was established in 2010 and authorized in the ACA as a multistakeholder commission to evaluate and make recommendations on the health care workforce for the nation. Despite authorization and repeated calls to launch the NHWC, Congress failed to appropriate funds to do so. The creation of the NHWC in section 5101 of the ACA had bipartisan support and was thought by many to be one of the least politically risky aspects of the ACA. As described in statute, the legislation called for a new national, nonpartisan commission to be led by an expert panel with staff support to collect and analyze workforce data and provide recommendations to address the health care workforce problems facing the country. The NHWC did not receive mandatory funding from Congress but instead was to be funded through annual appropriations.[xxxi] After the ACA was signed into law in March 2010, the head of the Government Accountability Office (GAO) appointed the 15-member commission on September 20, 2010, to begin their work in 2011. Despite initial budget requests of $3 million, Congress did not (and still has not) appropriated necessary funds. Unable to meet and deliberate, commission members' appointments expired in 2014. For the last 16 years, the commission has been unfunded and unfilled while the health care workforce problems facing the country have worsened. [xx]

As articulated in the ACA, the NHWC was tasked with reviewing health care workforce trends and projected workforce needs and providing comprehensive, unbiased reports to Congress and the Administration about how to align federal health care workforce spending with national needs. At a high level, it was charged with developing and evaluating education and training activities; improving coordination across federal, state, and local entities; encouraging innovation in workforce planning, and establishing recommendations through coordination and partnership with federal agencies, state and local governments, Indian tribes, health care organizations, professional societies, and other relevant public-private health care partnerships where appropriate and feasible.

Another potential entity that could serve as a model to fulfill theme 1 is the Council on Graduate Medical Education (COGME), a Federal Advisory Committee with a mission closely aligned with the above characteristics but without the legislative or regulatory authority to implement or ensure accountability for its recommendations. Its scope is also limited to GME and does not consider broader health workforce trends and needs. In its current form, COGME falls short of what is needed but could provide a starting framework or a team of experts to develop the ideal entity with necessary authority, leadership, and resources.

There are some GME programs that have successfully adopted an organizational structure that is both responsive to local needs while maintaining national oversight. The THCGME program is rooted in the philosophy of training residents in communities of need with the explicit goal of retaining them where they train. The THCGME programs are required to track and report outcomes and are accountable for the funding they receive through the Health Resources and Services Administration (HRSA). This analysis noted many GME reform experts advocate for the rapid expansion of the THCGME program to demonstrate a better model for GME finance

and governance than the current system for most programs, as well as for its permanence. Guiding principles for THCGME permanence include:

- **Maintenance of a unique model of training:** The structure of the THCGME program is distinct from traditional hospital-based residency training. Community-based THCGME training opportunities are directly addressing critical primary health care workforce shortages in a variety of settings serving rural, urban, suburban, and underserved populations.
- **Accountability:** THCGME residency programs meet strict accountability requirements in which every federal dollar is used exclusively for primary care training.
- **Eligibility:** Current eligibility requirements established by the initial authorization and implementation structure should be maintained.
- **Per-resident payment:** An annual per-resident payment should be authorized and funded to fully cover, in a transparent manner, direct expenses associated with sponsoring an approved GME program and indirect expenses associated with the additional costs relating to teaching residents in such programs.
- **Sustainability and stability:** These are fundamental requirements for community-based residency training. For it to be viable and successful, the program should be permanently authorized and funded.
- **Growth:** The program should be expanded to allow additional eligible entities that are not currently funded to participate to the extent that an adequate per-resident payment can be maintained.

While the program is a strong example to consider, there are fundamental concerns with the model, namely that the funding isn't permanent and is reauthorized for short funding cycles that make it difficult to effectively run or expand a residency program. The concerns about the THCGME funding model helped shape the second theme.

Theme 2 — Secure, sufficient, and sustained GME funding is essential for thriving GME programs.

A vision for secure, sufficient, and sustained GME funding requires equitable payment across geographies, populations, and specialties, with funding beyond initial development to support long-term GME infrastructure and maintenance.

To meet the vision outlined in theme 1, federal GME funding must be secure, sufficient, and sustained. This recommendation becomes even more important since anticipated Medicaid cuts (estimated $863 billion over 10 years) passed in H.R. 1 in July 2025 are expected to substantially impact pediatric training programs.[xxxii] When HRSA dollars fall short in fully funding CHGME, children's hospitals often rely on Medicaid funding to keep programs afloat.[xxxiii]

This second theme in many ways embodies the spirit of the original IOM report recommendations as they relate to financial reform. However, results from this study determined that many of the recommendations from the IOM report are either not feasible or would generate low impact. These findings compel an alternative approach that integrates the

lessons learned since 2014 to make GME payments more equitable and effective. For details on the related policy recommendations, see section 4 of this report.

Secure
GME financing must ensure that public funds are secured and stewarded by entities directly accountable for resident education and workforce outcomes, and that those funds remain dedicated to these purposes, rather than being subsumed within hospital operating budgets and used for alternate purposes.

Historically, Medicare GME funds have been distributed to teaching hospitals with the assumption that funds would be designated across specialties to support GME training programs responsive to local workforce needs. In more explicit terms, since teaching hospitals have control of federal GME dollars, they control which residency specialties are expanded, or downsized, as well as which specialties are internally supported. This coordination between local needs and GME funding of the physician pipeline has grossly failed. Instead, there is consistent growth across procedural and high-income earning specialties.[xxxiv] Notwithstanding teaching hospitals' fiduciary obligations to their boards, they have not demonstrated the willingness to support and grow the physician residencies that their local communities need.[xxxv] Current GME financing policy is not what is in the best interest of the nation, region, or community. It is poised to support what is best for the hospital, which is often financially driven.

Drawing from models like THCGME, Medicare GME financing could be restructured to more directly and transparently support the entities responsible for resident training, with incentives to encourage community-based and non-hospital participation in GME.

The importance of moving Medicare GME funds away from hospital control was consistently emphasized in this study. Across the rapid review, key informant interviews, and the modified Delphi process, experts called for DGME funds to be removed from hospital control. National GME experts view this shift as essential to correcting physician shortages and maldistribution. If public dollars are intended to subsidize physician training, they should be aligned with the entities that are ultimately responsible for resident education – sponsoring institutions. While teaching hospitals often serve as sponsoring institutions, the two are not synonymous. There are many community-based sponsoring institutions, most notably those located in rural and underserved regions. There are critical differences between teaching hospitals and sponsoring institutions. Where teaching hospitals are the purveyors of clinical care – hiring faculty, providing benefits, issuing medical bills and collecting insurance reimbursement – sponsoring institutions are responsible for the accreditation and execution of physician education and training programs. Furthermore, unlike sponsoring institutions, teaching hospitals are beholden to governing boards and are responsible for ensuring their financial sustainability.

The proposed adjustment to funding (moving GME funds to sponsoring institutions) would benefit residency programs and make it easier to anticipate future needs, operate with financial transparency, consider expansion of class size, or design training innovations. This reorganization of payment could also benefit residents through more direct negotiations of resident salary and benefits. This could lead to competition in program quality, resident satisfaction, and ultimately, patient experience.

There is clear opposition to this redistribution of funds among influential organizations; most of this opposition stems from a desire for hospitals to hold onto IME funds which have long been integrated into teaching hospitals' operating budgets. Despite IME funds being originally intended to "offset" resident costs for the system, how hospitals use IME dollars is not publicly reported although in our key informant interviews, some administrators admit to using these funds to make their budgets whole after providing indigent and safety-net care. In its current form, hospitals have no accountability for how these dollars are spent.[i]

Sufficient
GME Funds should be equitably distributed across geographies and be sufficient to support both the costs of program start-up as well as ongoing operations.

If Medicare GME cannot adequately support operational costs, physician training programs may close. Current funding for GME rewards hospitals with higher proportions of Medicare patients, concentrating on the highest per resident amount (PRA) funds in teaching hospitals that serve urban areas. When these funds are geocoded across the nation, higher PRAs are concentrated in the Northeast and in the coastal states. Given the current GME funding structure, critical access hospitals and urban safety-net hospitals are disproportionately underfunded, placing their training programs at a greater risk of closure.[xxxvi] [xxxvii]

The range of payments for residency training is substantial. In 2015, the average Medicare payment per resident was approximately $139,000 (includes both DGME and IME), with an interquartile range of $105,761 to $182,233 per resident. Even within this range, some hospitals receive nearly $80k more per resident FTE every year, illustrating the large differences in federal support across institutions.[xxxviii] The extraordinary variation in PRA reflects the irrationality of current funding formulas, which have inadvertently frozen in place an inherently inequitable funding system that results in training program concentrations in some geographies and deserts in others. Given that the location of a physician's ultimate location of practice is highly influenced by the place of GME training, downstream physician workforce patterns mirror the concentration and desert distributions noted during residency training.

The question of the true cost of residency training has been increasingly evaluated in recent years. To aid in these projections, resident cost estimate tools are available which forecast an average of $160,000 –180,000 per resident annually. However, these figures likely require updating since the Consumer Price Index (CPI) has peaked to levels not seen in decades.[xxxix] Even still, this estimate in the cost of resident training dwarfs the DGME for many teaching hospitals in Midwestern and Western states.[xl]

Sustained
Payments to support residency programs should be consistent and ongoing without fear of substantial cuts or funding cliffs that await Congressional reauthorization.

Specific to the THCGME model, GME dollars funneled through HRSA require recurrent Congressional reauthorization, threatening the stability of these 82 programs (as of 2024). Piecemeal funding streams place precarious strain on educators and administrators, which also disincentivizes trainees from matching to programs that may lose funding before they graduate. Pediatric training programs within children's hospitals experience the same threats from funding cliffs as they too receive funding through HRSA, leaving them vulnerable to

changes in appropriations despite the ongoing need for a workforce pipeline in areas of need. The inability to sustain funds is disruptive and should be made consistent given the determination that physician training is a public good.[i]

HRSA-funded programs are not the only physician training programs that face the strain of funding cliffs. New residency programs often benefit from state-funded startup grants. The short duration of these programs can leave residencies, especially those with comparatively low Medicare bed days, at risk of facing budget cliffs before they are financially sound. These financial stakes have created incentives for teaching hospitals to gain the system. The Consolidated Appropriations Act of 2021 reinforced policies intended to support rural training programs and provided mechanisms for hospitals to update their Medicare classification (rural or urban) impacting their IME dollars.

At the time this report was published, roughly 70% of urban teaching centers have been granted rural reclassification by CMS. This is a contentious issue; critics cite rural reclassification only perpetuates inequitable distribution of federal funds, favoring financially stable urban medical centers at the expense of financially at-risk programs. Other key informants note the 30% boost to IME funds made available after reclassification does support important programs like rural training tracks. They also note there are several legislative efforts to revise the urban reclassification trend, which if successful will present another GME budget cliff destabilizing many expanded residency slots.

Theme 3 — Metrics aligned with a national vision for GME are crucial.

Federal GME funding for training resident physicians must be based on payments that are informed by metrics that matter and that produce an equitably distributed physician workforce that is trained to meet the needs of diverse populations.

Metrics-informed: The distribution of Medicare GME payments to specific residency programs directly impacts community access to health care services. Using meaningful metrics, such as long-term geographic distribution, retention, and burnout reflect community needs and can ensure effective upstream workforce planning. Close communication loops between local public health and workforce commissions, departments of labor, and state policymakers should inform central planning.

The need for GME metrics prompted a NASEM conference in 2017. The published proceedings from the following year detail the systemic constraints of codifying GME-specific metrics. Reported challenges include the limitations of relevant measures and data sets, the human capital needed to collect data, the variety of current measures already collected by various organizations, and the ability to ensure accountability through measurement (Table 5). Their ultimate recommendations include data management and oversight by an impartial, national entity that is responsible for setting and tracking health care workforce priorities.

Table 5.

NASEM (2018) Graduate Medical Education Outcomes and Metrics Framework

Level of Measurement	Metric Domain	Examples of Measures Discussed by NASEM (2018)
Graduate (Individual Trainee)	Clinical competence	Milestone attainment, clinical performance assessments, readiness for independent practice
	Quality and value of care	Patient outcomes associated with trainee care, cost-conscious care practices
	Professional development and well-being	Burnout, engagement, professionalism, lifelong learning indicators
Residency Program	Workforce production	Specialty and subspecialty mix of graduates relative to societal need
	Educational outcomes	Board certification rates, program completion rates, autonomy at graduation
	Learning environment	ACGME survey results, professionalism indicators, supervision quality
	Clinical quality	Program-level patient outcomes, safety and quality metrics linked to training sites
Teaching Institution / Sponsoring Institution	Graduate placement	Geographic distribution of graduates, retention in underserved or high-need areas
	Institutional contribution	Community service, continuity of care, scholarly and research output
	Training infrastructure	Accreditation status, resident retention and transfer rates
	Value and accountability	Alignment of institutional outcomes with public investment in GME
System / Population (State, Regional, National)	Workforce adequacy	Physician supply relative to population health needs
	Distribution	Geographic, specialty, and subspecialty distribution of physicians
	Policy-relevant outcomes	Longitudinal tracking of workforce trends, responsiveness to public health needs
	Data infrastructure	Availability, interoperability, and sustainability of workforce data systems

Adapted from Graduate Medical Education Outcomes and Metrics: Proceedings of a Workshop (2018), National Academies of Sciences, Engineering, and Medicine.

Equitable distribution of physicians: GME payments to train resident physicians must be designed to produce the physician workforce needed at the local level. The current Medicare payment models for GME have resulted in an inequitable and inefficient distribution of the

physician workforce across geography and specialty. While most health care delivery occurs in the ambulatory setting, only a minority of family medicine (4%) and internal medicine (5%) training sites are in community-based clinics.[xli] Literature demonstrates that residency training locations have a significant impact on where and how they practice.[xlii] Left to market forces, Medicare-funded GME pipelines have not produced a workforce that is equitably distributed to meet the needs of our patients. This is especially true for the Midwest, the South, and rural communities across the nation. Federal investment in GME and physician training must be purposefully designed to develop an equitable distribution of physicians that is responsive to areas of need.

The above themes, although lofty, can help guide reform efforts if considered thoughtfully and in collaboration with strategic partners. The following section outlines specific policy reform recommendations that resulted from this evaluation and provides a practical application of how the themes for GME reform may be applied.

Policy Recommendations for GME Reform

Inequities in access to high-quality health care long predate recent national crises and continue to reflect deep structural weaknesses in how health care in the U.S. is organized, financed, and delivered. These patterns have resulted in disproportionate and avoidable illness and death in communities already burdened by social, economic, and health system disadvantages.

Taken together, these realities underscore the need for a physician workforce that is both diverse and equitably distributed, trained in an educational system that is accountable and transparent in its use of public funds. GME reform cannot remain reactive or episodic. It must be intentional, data-driven, and aligned with the public interest.

Policy recommendations

To guide future GME reform efforts, the authors propose the following policy recommendations that are informed by all research phases, e.g., rapid review, key informant interviews, and modified Delphi process, and shaped by the themes detailed in Section 3. These recommendations are specific and actionable, even in the current political climate. To be sure, any meaningful reform in the GME system must address the lack of a rational and coherent vision for physician workforce reform, the absence of clear accountability for GME outcomes, and the inequities that our current opaque and outdated GME payment system creates.

Policy Recommendation 1: Fund the National Health Care Workforce Commission (NHWC) with a GME subcommittee.

Funding the NHWC as authorized under the ACA with the addition of a GME subcommittee represents a critical first step toward addressing persistent health care workforce challenges and longstanding gaps in GME accountability. Drawing on the findings of this report's multiple-methods analysis, the following subsections describe additional goals and responsibilities, governance considerations, and accountability mechanisms necessary for the NHWC to move beyond its proposed advisory functions in the ACA and meaningfully shape workforce outcomes, particularly as they relate to physician training, distribution of the health care workforce, health equity, and return on public investment. Some of these additional considerations are specific to physicians and GME, while others are applicable to the broader health care workforce. The NHWC should be granted authority to implement the following recommendations, beyond what was granted in the ACA.

Recommendations for the physician workforce

Establish the NHWC GME subcommittee

The preceding sections of this report have detailed the 21 billion dollar per year investment of Medicare funds in the GME system, along with the resulting physician workforce inequities. These unique challenges to the GME system must be addressed within the NHWC and will require a dedicated focus. Within the NHWC, a GME subcommittee should be established to address GME-specific governance and finance questions that are unique to physician training and the current public investment in GME. This includes development and implementation of this report's policy recommendations 2a, 2b, and 3. Creation of the GME subcommittee may

start by using COGME or another panel of GME policy experts during any transition period to establish a formal subcommittee within the NHWC.

Establish relevant metrics for GME accountability and workforce outcomes
The NHWC GME subcommittee should play a central role in defining a core set of GME-specific metrics tied directly to its stated priorities. Meaningful GME reform requires the development of clear, actionable metrics aligned with the core themes of this report, particularly workforce distribution, accountability for public investment, and health equity. The absence of standardized metrics has limited the ability to assess whether the GME system is achieving its intended public purpose, stymying meaningful reform.

Metric development should build on existing CMS data rather than creating parallel systems. An initial focus should be placed on financial transparency, specifically identifying where GME funds flow and how they are used. Standardized reporting of GME expenditures would establish a necessary foundation for more advanced, outcomes-oriented metrics.

Over time, workforce metrics should be developed that link GME financing to physician supply, geographic and specialty distribution, and alignment with community needs. The long-time horizon required to observe workforce and health outcomes should be noted as a central challenge which complicates accountability and has historically generated resistance from training institutions. While medical schools educate future residents, residency programs shape specialty choice, the training environment, and readiness for practice, making GME the most appropriate locus for accountability for the physician workforce pipeline.

Reinforce equitable physician geographic and specialty distribution
Goals should be established for geographic and specialty distribution, tied to local needs through collaborative goal setting. Demographics of the physician workforce to meet the health needs of patients, communities, and the nation will need to include the total number of physicians, the geographic distribution of physicians across regions and within local communities, and the specialty distribution of physicians.

Coordinate the workforce pipeline across UME and GME
Persistent misalignment between UME and GME represents a critical bottleneck in the physician workforce pipeline, as described in section 3. While medical school enrollment has expanded over the past two decades, growth in GME positions has not kept pace, resulting in inefficiencies and uncertainty for trainees and limiting the nation's ability to translate educational investments into a practicing workforce.

The NHWC should play a coordinating role in aligning UME and GME planning to ensure that expansions at one level of training are matched by capacity in the next. This includes assessing how federal and state investments in medical education interact across the continuum and identifying opportunities to reduce structural bottlenecks that undermine workforce goals. Improved coordination would help ensure that public investments in medical education yield a workforce that is appropriately sized, distributed, and trained to meet population health needs.

Recommendations for the broader health care workforce

Contextualize workforce planning within broader health care system reform
Health care workforce planning cannot occur in isolation from broader reforms in the health care delivery system. Changes in insurance coverage, payment models, delivery system integration, and the growing emphasis on value-based care all shape how, where, and by whom care is delivered. Workforce strategies that fail to account for these system-level shifts risk reinforcing outdated models of care. Accordingly, the NHWC's workforce planning function must be explicitly situated within the context of ongoing health system reform, including payment reform, delivery system redesign, and greater integration between primary care, specialty care, and public health.

As health care systems increasingly emphasize care coordination and chronic disease prevention and management, workforce planning must anticipate corresponding changes in team composition, scope of practice, and training requirements. Integration of public health in clinical care delivery, long recommended by NASEM, further underscores the need for workforce strategies that bridge historically separate domains. The NHWC should be positioned to assess how reforms in health care financing and delivery affect workforce demand and to ensure that federal workforce investments remain aligned with these evolving realities.

The rapid pace of vertical and horizontal consolidation within the health care sector raises important questions for workforce planning and training. Consolidation has reshaped employment structures, referral patterns, and care delivery models, with implications for physician autonomy, scope of practice, and the distribution of clinical training opportunities. Yet workforce planning has not kept pace with these structural changes. The NHWC should be tasked with examining how consolidation affects workforce needs, including specialty mix, geographic distribution, and training capacity.

Foster team-based care across professions
The NHWC must address how the different health care professions interact to care for individual patients and communities. Current workforce planning is siloed between the different professions in health care. These silos and fragmentation must be addressed. Workforce planning should mirror the team-based design that is the bedrock of the current health care delivery system approach.[xliii] Coordination of team-based health care delivery and workforce development must account for the complex interaction between physicians, nurse practitioners, physician associates, nurses, medical assistants, and other care team members. A truly integrated care delivery and workforce planning system would also reach beyond the exam room and include the integration of public health, mental and behavioral health, and primary care, as described by NASEM.[xliv]

Recommendations for population health

Enable adaptive change informed by local and regional needs
The goals of the NHWC should be informed by local needs, receiving feedback from the local, state, regional, and national levels. Workforce goals will by necessity need to allow for adaptive change and nimble response to both changes in the health care delivery system and the needs of communities. Historically, the practice of medicine and delivery of health care has changed more rapidly than the GME finance and governance system that produces the physician workforce. While being informed by state and local needs, workforce goals should incorporate

federal input to address gaps in key areas. To develop local and regional partnerships, the NHWC can utilize workforce planning structures already in place, such as state departments of labor, regional public health commissions, state health care workforce commissions and working groups, chambers of commerce, and other entities.

Reduce health disparities

Addressing health inequities, defined by the AAMC as "differences in health that are avoidable, systemic, measurable and unjust," should be an underlying goal that is woven into all aspects of work done by the NHWC.[xlv] Health equity goals should be addressed, including but not limited to, diversity of the health care workforce by race and ethnicity, sexual and gender identity, and align with work being done within the physician community and through professional medical organizations such as the American Medical Association, the Association of American Medical Colleges, and the American Academy of Family Physicians.

Recommendations for structural oversight

Define authority and oversight for the NHWC

Future implementation of the NHWC should prioritize establishing clearly defined authority and governance. Although the ACA established the NHWC in statute, policymakers should designate a clear administrative home, define the scope of its authority, and specify how its recommendations will inform federal workforce policy and funding decisions. These structural decisions will be essential to ensuring the Commission operates effectively and maintains credibility across federal agencies and stakeholders. The NHWC should also be empowered to move beyond a purely advisory role. Policymakers should establish mechanisms—statutory, regulatory, or through formalized federal planning processes—that enable the NHWC's analyses and recommendations to shape a cohesive national workforce strategy and financing decisions. Clear authority and defined relationships with relevant federal agencies will help prevent duplication, fragmentation, and marginalization of the NHWC's work while strengthening the overall workforce vision and planning for the nation.

Policy Recommendation 2a: Establish an equitable, cost-based, national Per-Resident Payment (PRP).

The following two recommendations (2a and 2b) relate specifically to DGME, the funds intended to support direct costs of training such as salaries and benefits. There are several reasons why Medicare GME payments require a fundamental overhaul. The funding formulas for GME are arbitrary and subject to unforeseen rules that many programs are not aware of, and once the Per Resident Amount (PRA; a numerical constant that is used in the DGME formula; see section 1) is established, DGME can only increase with the rate of market inflation.

Furthermore, DGME dollars are not adequate to support the costs of residency training on their own, further justifying the critique that DGME isn't even able to fulfill its intent in its current form.[xlvi] [xlvii] [xlviii] Often it is the affiliated teaching hospitals with deeper pockets who supplement remaining direct costs for residency training. As a system, payments for residency training are fragmented and illogical.

Instead, a single and sufficient per-resident payment (PRP) should be operationalized to replace the multiple funding streams that support the direct costs of GME training. This national PRP should fulfill the charges put forth by Theme 2: secure, sufficient, and sustained GME funding. To transition from the current funding model to a single, sufficient national PRP, a phased approach is proposed.

Phase 1: Confirm the direct costs of GME training.

Multiple studies have been conducted to evaluate the true costs of residency training. These data informed the current approach to the THCGME model, which currently provides $160,000-$180,000 per resident per year. [xlvii] A cost-based approach ensures that federal payments for GME training are indeed used for their intended purpose. This important first step of validating the direct cost of training should be the charge of the NHWC, which can provide an objective perspective, convene stakeholders, and utilize an evidence-based approach for setting a secure, sufficient, and sustained PRP. Direct costs that should be covered through the national PRP are listed in Figure 5.

Figure 5. Direct Costs of Residency Training to Be Covered Under a National Per-Resident Payment

- Labor costs
  - Salaries, stipends, and benefits for trainees, faculty, GME program staff, and attending physicians
    - Residents' salaries increase with each post graduate year of training and should be the same across specialties.
    - Resident and faculty salary levels should be adjusted for geographic variation in cost of living using a standardized, externally validated index, with guardrails to prevent discretionary inflation or exploitation.
- Fees and subsidies
  - Malpractice insurance
  - Parking, housing, or other subsidies
  - Licensing fees
  - Conference travel fees
- Program administration
  - Overhead for clinical and non-clinical space
  - Resident recruitment costs
  - ACGME accreditation fees
  - Resources to support resident orientation, retreats, and graduation
  - Credentialing of teaching faculty and residents
  - Faculty development
- Educational materials
  - Simulation equipment, software, in-training examinations, anatomy lab, etc.

(Adapted from the 2014 IOM report)

A cost-based approach has been utilized successfully for the THCGME model. The recommendation for a national PRP, however, differs from this model which bundles DGME and IME funds. With IME dollars bundled in the THCGME PRP, residency programs must

directly negotiate with local hospitals to determine where residents will complete their inpatient training. Recommendation 2a for Medicare funded GME is a national PRP to cover direct costs only, excluding IME. Experts who participated in both key informant interviews and the modified Delphi process identified previous policy attempts to move IME funds from teaching hospitals (as suggested in the 2014 IOM report) as a key barrier to implementation, severely limiting any other reform recommendations.

Furthermore, a cost-based approach to a national PRP providing sufficient funding for the direct costs of residency training differs from the 2014 IOM report recommendation of a budget-neutral redistribution of all Medicare GME funds as a single PRP. In its report, the IOM recommends applying a blunt average to total federal IME and DGME investments across all Medicare-funded slots. This approach does not consider the previously mentioned concerns of payments needing to be secure, sufficient, and sustained and is an exercise in equality at the expense of equity. Many teaching hospitals that provide needed care to the highest proportions of Medicare and Medicaid beneficiaries would be disproportionately affected.

This recommendation for a national PRP, while standardized, should have equitable variation for geographic cost of living. This variation should not exploit or underfund rural programs while rewarding urban programs in expensive cities. However, reasonable accommodation for the varying cost of living nationwide based on an externally validated index should be applied. Guardrails to prevent exploitation of the variance in cost-of-living allowance should be in place.

Once an evidence-based and appropriate national PRP has been established by the NHWC GME subcommittee with the help of stakeholders, it is the charge of this entity to provide recommendations and inform the legislative processes necessary to transfer distribution of GME payments to sponsoring institutions (SIs), the entity which holds ACGME accreditation and is legally responsible for the governance, resources, and oversight of their GME programs. It is well understood that at present, most teaching hospitals serve as SIs; however, incentives and technical support would be required to encourage more community-based SIs to fulfill the vision of the NHWC.

Phase 2: Provide a three-year window for transitional support.
It should be made clear that to achieve the reforms necessary to produce a more effective and equitably distributed physician workforce, continued federal investment in GME is needed. To support the growth of more community-based SIs, residency leaders will require education on the benefits of becoming their own SI and technical consulting on the administrative requirements to succeed. Programs that need assistance with the transition should apply for a transitional support award that would offer three years of technical assistance for financial consultation, staffing support, and administrative training. During this window, the NHWC subcommittee on GME should finalize programmatic design for rolling implementation of the standardized PRP including incentives for early adopters.

Phase 3: Exercise a rolling implementation of a new national PRP.
Programs that have been awarded transitional support should be among the first SIs to adopt the standardized PRP. Teaching hospitals who have remained sponsoring institutions should have phased-in transitions to the standardized PRP, as determined by the NHWC with collaborative stakeholder engagement. Incentive and innovation funding should be made available to programs that meet local workforce needs.

Necessary conditions for financial transition

Given the enormity of the GME system, the hospitals involved, the affiliated professional organizations, program directors, associated departments, and the sheer number of dollars involved, there is no doubt that meaningful reform requires patience and a somewhat incremental approach. Furthermore, there will be little movement if GME reform recommendations are pushed without additional federal investment. Meaningful reform likely cannot be achieved in a budget neutral fashion.

It would be unwise to employ significant reforms that could greatly disrupt patient care or alienate stakeholders such that all other reform efforts are out of reach. Reform efforts must be palatable enough for stakeholders who were previously unwilling to be at the table. During this work, study participants asked, 'Should we support or compel reform for GME funding?' Ultimately, the answer is 'both.' If there is only incentives-based change, there is unlikely to be sufficient uptake by teaching hospitals to produce the workforce needed in shortage areas and disciplines. Market forces guide the current workforce pipeline, and small incentives will not change that. Incentives should be tied to relevant metrics that demonstrate meaningful workforce outcomes such as geographic location, clinical site of practice, and post-fellowship specialty and sub-specialty. If there is only a mandated approach, the effort will fail altogether due to opposing organizations that hold substantial political influence. Ultimately, physician training is a public investment, one for which the public deserves a return on its substantial investment.

The GME subcommittee of the NHWC should consider the inclusion of the following stakeholders in the development of a national PRP: the American Hospital Association, residency leaders from disciplines facing workforce shortages, the National Governors Association, patients and community members, the National Rural Health Association, the Association of American Medical Colleges, safety net hospitals, and community health centers, among others.

Policy Recommendation 2b: Distribute GME funds directly to Sponsoring Institutions (SIs).

Medicare PRPs (described above in 2a) should be made directly to SIs rather than teaching hospitals. The goal of doing so is to improve central planning for the physician workforce with a training pipeline that can be responsive to workforce shortages and geographic needs. Distribution of Medicare funds to SIs is also logically sound since they are the entities that hold ultimate responsibility for physician training, per the ACGME.

Most teaching hospitals also serve as SIs, however there are many community-based SIs operating from community health centers, federally qualified health centers, or THCs. Teaching hospitals are responsible for health care delivery and billing while SIs are responsible for the accreditation and execution of physician education and training programs. The most commonly cited critique of teaching hospitals that also serve as SIs relates to the inherent incentive for financial stability and profitability. These market forces could easily influence the financial decisions that expand or weaken physician training programs.

Therefore, it is imperative to provide support structures and incentives to diversify and expand SIs to include more non-hospital entities. This adjustment will require legislative action by Congress with leadership and advice from the NHWC. This transition will also require a phased approach. Initially, transition time should be provided for hospitals and residency programs to make them aware of the legislative changes, once they're in place. This initial period will also be an important opportunity for non-hospital entities to receive consultation and technical support. The NHWC could conduct an analysis of PRP distributions to SIs over time, how they change, and the resulting impact on the physician workforce. Selection of uniform metrics, frequency of reporting, data management, and other policy details should be determined by the NHWC in partnership with key stakeholders.

This recommendation provides room for teaching hospitals that serve as SIs to remain unaffected while incentivizing non-hospital entities to become their own SIs. Given its similarity to the THCGME model, this approach may specifically benefit residency programs with limited hospital support who may be at risk of being cut by their affiliated teaching hospital or conversely are considering expansion. The flexibility provided through this model by moving PRPs to SIs minimizes disruption of patient care, while supporting programs that are ready to operate independently.

Medicare GME funding experts note that most residencies need healthy working relationships with their teaching hospitals. Notably, most primary care residencies would not be financially solvent through DGME alone, even if the training programs were paid directly. Most primary care residency programs are supplemented with significant hospital funding and administrative support. Even if a sufficient sum of funding is provided to adequately cover DGME costs, simply moving funds to a residency program would not solve the need for additional human resources who can manage the administrative burden while not impacting the relationship with their teaching hospitals, as both entities benefit from each other.

Any transition to community-based SIs would temper the market forces that influence the selective growth of high-earning residency specialties. Retrospective looks at GME slots spotlight the greatest growth in residency specialties among those which generate the most revenue for hospitals.[ii] Certainly, with their fiduciary responsibility, hospital boards are more likely to allocate Medicare GME slots to specialties with the highest return on their investment. With 21 billion Medicare dollars being distributed to teaching hospitals annually, however, it remains unconscionable that there is no accountability for the resulting workforce. The power to determine how many physicians are trained within each specialty lies squarely in the hands of the entity that controls DGME funds. The ongoing imbalance of physician specialty production and distribution specifically reflects the market forces of reimbursement rates for hospitals. The trend to grow higher-paying specialties at the expense of physician shortage specialties cannot be overlooked.

Policy Recommendation 3: Implement strategic payment reform for indirect medical education (IME) funds.

As described in section 1, IME payments were designed to cover the assumed extra cost of patient care associated with GME training in teaching hospitals and clinic sites. Public investment through CMS accounts for more than $15 billion dollars per year in IME, roughly

double the DGME payment amounts. For such a large sum of public investment, there are multiple concerns with IME, including the total amount of funding compared to the actual costs of residency training, transparency in the use of IME dollars, and the significant variation in these payments. Some organizations, such as MEDPAC, have also pointed out that IME does not accurately reflect the range of settings in which residents train by being a hospital-centric payment.[xlix] Collectively, these problems lead to a maldistribution of physicians by geography and specialty.

It was clear during the development of this report that there exists both controversy and concern over the current IME system, for the reasons stated above among others. It was also clear that there was no consensus on policy solutions to change IME. But there was consensus that any changes to the IME system will have a significant impact on SIs. A repeated concern that was brought up during key informant interviews and the modified Delphi process was potential disruptions to patient care because IME has been integrated into SI operating budgets for decades. Even the staunchest IME reform advocates acknowledged that changes to this system will take years to transition. To reform IME, consensus must be developed regarding the actual direct and indirect costs of training residents, how SIs would receive funds and over what time period, and the use of federal dollars to fund needed and high-priority workforce training. Such a system should be designed deliberately to ensure goals are achieved without destabilizing the existing system of physician training while it is in transition (Butkus, 2016).

Given the complexity of IME and the potential for disruptions to patient care, the work to develop policy recommendations to improve the system should come from the NHWC. Specifically, the NHWC should task the GME subcommittee with determining guidelines on how to approach IME. This coalition should include patients, GME educators, health care workforce policy experts, SI representatives, professional medical organizations, and accreditation agencies. Based on the analysis from this report, a phased framework for developing IME recommendations is detailed below:

- Phase 1: Focus on studying the current use and flow of IME funds within SIs. The NHWC should identify and build metrics for SIs to report on how IME funds are used. This will help build accountability for the actual costs of resident training and allow SIs to explicitly demonstrate the need for IME funds. Concurrently, additional study is needed to develop a consensus on the actual cost of residency training by specialty and geographic region. This will help shape a response to the highly variable and inequitable distribution of IME payments across geographies.
- Phase 2: Keep IME funding at the same level in the short term. In its current form, IME funds are blended into all hospital reimbursements by way of a percent “add-on” to Medicare DRGs. This structure significantly complicates the ability of teaching hospitals to ensure that IME funds are in fact spent on their intended purpose of supporting residencies. Leadership will be necessary from the NHWC GME subcommittee to develop consensus on the long-term structure, amount, and accountability of these funds. There is no current obligation to report on how IME funds are spent. Furthermore, current reimbursement formulas present significant challenges to track how IME is spent. Furthermore, IME funds should be renamed as there is no reasonable way to ensure that IME is actually supporting residency training programs.

Policy Precautions

Three key policy caveats are important to keep in mind when considering these policy recommendations. First, physicians are only one of many professions in the health care delivery ecosystem. Reform is needed across all members of the health care workforce, including nurses, physician associates, nurse practitioners, behavioral health providers, dentists, pharmacists, medical assistants, community health workers, and more, to ensure equitable access to the right kinds of health care professionals and expertise in communities nationwide. Second, projections of a "physician shortage" and calls to "lift the cap" are not sufficient for GME reform. While a real need for more physicians may exist – acknowledging the great variability in estimates and how they are calculated – lifting the cap without a vision, plan, and/or proper oversight will continue to yield a poorly distributed workforce. A convener is needed to gather input and engage key organizations to devise a thoughtful plan that links accountability to the public's investment in GME. Third, when it comes to policy change, it's critical that we do not confine our thinking about what is possible to the realm of what we have implemented, or attempted to implement, in the past. For example, the U.S. made the choice to subsidize GME with taxpayer dollars, but the manner of doing so wasn't intentional or planned. It wouldn't be productive or necessary to continue past actions simply because they're known and comfortable.

There are political caveats as well, challenges that are real and must be addressed tactically through strategic advocacy. These include substantial vested interests and a desire to maintain the status quo. Reallocating IME money that is already baked into operating budgets would be problematic and is often considered a political non-starter. Academic health centers and SIs must manage and balance distinct, yet interdependent, missions: clinical care versus education and training. Additionally — and especially in the current political state — stakeholders face reform fatigue and have limited bandwidth when it comes to enacting legislative or regulatory change. And lastly, GME reform must take place alongside other essential reforms, i.e., how our health care system is financed, organized, and delivered. If primary care continues to face low reimbursement in a system that disproportionately values tertiary care and procedures, recruiting more primary care doctors will remain difficult even if GME financing and governance is modernized.

Conclusion

The health and well-being of populations and communities is essential to a high-functioning, equitable society. Health needs change as the population ages, chronic disease rates increase, and disparities persist or worsen across gender, different races and ethnicities, and rural and urban communities. Health care delivery is also changing rapidly in response to rising costs, poorer health outcomes, growth of hospital networks and system consolidation, an explosion of big data, and worsening social drivers of health. Increasingly, states are becoming laboratories of innovation in health care organization, financing, and delivery, as they respond to their unique challenges and build on local strengths. However, there is little coordination between health needs at the community and state levels and care delivery innovations and health care workforce planning, much less the GME programs that produce the physician workforce.

Since the release of the 2014 IOM report, advocates have been calling for the implementation of structural changes that would improve the geographic and specialty distribution of physicians in this country. The national investment in GME must be more closely aligned with how care is delivered, as opposed to old formulas and an historic model created decades ago, to create a more robust and better distributed physician workforce.[xx]

The public investment in GME needs to be accounted for, and the U.S. cannot wait any longer for an equitably distributed physician workforce that meets the needs of its communities. This problem has been more than several decades in the making, and reform cannot wait any longer. If nothing changes, American taxpayers will continue to spend enormous sums of money without knowledge of where that money goes or how it is spent and without any accountability for how a much-needed physician workforce is trained. The time is now to reform the current GME system to create a transparent, accountable, and responsive one that better serves the nation.

Appendices

Appendix A: Methodology and Limitations

Methodology

This evaluation was conducted in three phases: a rapid literature review (July 2020-December 2020), key informant interviews (January 2021-February 2021), and a modified Delphi process (January 2021-February 2021). Results from the literature review informed the creation of the interview guide used during the key informant interviews, and findings from the key informant interviews shaped the modified Delphi process. Consensus during the Delphi process was built on the impact and feasibility of the 2014 IOM report recommendations on GME reform, additional policy priorities to reflect current workforce needs, and strategies for future advocacy efforts. Members of a Technical Expert Panel (TEP) with extensive GME expertise provided consultation and feedback throughout the project (see Acknowledgments for the list of TEP members).

Phase 1: Rapid literature review

A rapid review methodology was used to conduct both a peer-reviewed and non-peer reviewed literature review assessing the following question: What are the barriers and successes to implementation of the recommendations of the Institute of Medicine (IOM) graduate medical education (GME) report of 2014? Search terms were developed with librarian assistance from the Strauss Health Sciences Library on the University of Colorado Anschutz Medical Campus. Peer-reviewed materials were identified in the PubMed search engine. Non-peer-reviewed items were selected from Google in ".gov," ".org," and ".edu" domains using a time-stamped search.

KEYWORDS/BANK for SEARCH TERMS
GME
Graduate Medical Education
IOM REPORT
IOM GME Report
GME FUNDING
FORMULA
MEDICARE
INDIRECT GME (IME)
DIRECT GME (DGME) (DME)
PER RESIDENT AMOUNT (PRA)
TRAINING
RESIDENCY
PHYSICIAN TRAINEES
BARRIERS
RURAL
PRIMARY CARE PHYSICIANS

GME GOVERNANCE
IOM RECOMMENDATIONS
Direct vs Indirect GME

SEARCH TERMS

GME **AND** funding / Graduate Medical Education AND funding
GME **AND** funding reform / Graduate Medical Education AND funding reform

"IOM Report" **OR** GME **AND** funding / "IOM GME Report" AND funding

Medicare **OR** Medicaid **AND** GME
GME **AND** IOM **AND** accountability

GME **AND** IOM **AND** "policy recommendations"
GME AND IOM AND "policy reform"
GME AND IOM AND reform
GME and IOM AND policy

Recommendations **AND** barriers **AND** GME **OR** IOM
Implementation **AND** recommendations **AND** GME **OR** IOM

Search results yielded 479 peer reviewed and non-peer reviewed articles which were organized and distributed across the research team for evaluation. Two team-member review for potential exclusion based on title, abstract, or full text (exclusion criteria: Curriculum, Accreditation, Milestones, .com, Outside of U.S.). The resulting 235 articles were divided among the team to review and annotate. Addition of "snowball articles" were tracked for any publications that were referenced within the articles and potentially relevant. If appropriate, "expert additions" — both peer-reviewed and non-peer-reviewed — were included if they were relevant to our aims and appropriate for annotation yet were not represented in our search results. Themes from the annotated literature were deduced as a team, catalogued, and applied in the development of survey questions for key informant interviews.

R

Literature review yield:

	Peer-Reviewed Publications	Non-Peer Reviewed Publications	Total
Search engine	PubMed	Google	
Primary search yield (total)	52	703	755
Expert Additions	16	N/A	16
Snowball Additions	27	N/A	27
Exclusions	50	513	563
Annotations (final)	45	190	235

Phase 2: Key informant interviews

Using a convenience sample of established pioneers and experts on GME governance and financing reform, as well as additional informants identified via snowball sampling, a total of 67 individuals spanning academic medicine, governmental agencies, research, and policy institutes, and professional organizations were interviewed. Semi-structured interviews addressed both state- and federal-level GME reform. Questions focused on key informants' perspectives on the relevance, feasibility, impact, and barriers to implementation of the 2014 IOM report recommendations. Each interview lasted one hour and was audio recorded via Zoom for accuracy and review of results. Two team members were present at all interviews.

Thematic saturation was achieved, and specific quotes were collected from interviews and organized using a Rapid Assessment Process for coding.[l] This approach to qualitative analysis is team-based, iterative, and applies triangulation to quickly determine stakeholder perspectives. Survey questions were organized along conceptual domains identified during the rapid evidence review. Interview results, including key themes and specific quotes, were organized into matrices which were used for the iterative team-based analysis. Grounded theory was used and inductive reasoning applied to clarify emerging themes.

Key Informant Survey Guide:

FINAL PRODUCT 1 KEY INFORMANT INTERVIEW GUIDE

Date:
Interviewer(s):

Key informant name:
Organization / role:
Location (city, state):

Introduction

Thank you for taking the time to talk with us. Our purpose is to understand your experience and perspectives on graduate medical education (GME) financing and/or governance reform at the federal level.

Let us briefly introduce ourselves as your interviewers. You will have the opportunity to introduce yourselves during the interview itself.

Are you familiar with this project from the email invitation you received?

- *[If yes, move on to consent points.]*
- *[If not, share the following.]*
    - *The goal of this project is to develop a set of evidence-informed policy tools to help GME leaders educate policy makers about the need for GME financing and governance reform at the local, state, and federal levels in 2021.*
    - *As a key informant, you will be asked to comment on the recommendations from the 2014 IOM GME report, including barriers to implementation, any successes thereof, and what recommendations are still relevant and feasible and why. The insights you share with us will help inform the development of these policy products.*
    - *Our conversation today is intended to focus on the policy level and not the mechanics of residency training.*

[Confirm receipt of consent form. Read consent points below and confirm approval to proceed and to audio record via Zoom.]

Here are some things to know about how we will spend our time today:

- Participation is completely voluntary in this IRB-approved study. You do not have to answer any questions you are not comfortable answering, and we can stop at any time.
- We will not share what you tell us with anyone outside of our research team. The only individuals who will hear your answers are other researchers on the project team, including the two of us.
- We plan to summarize what all interviewees have to say in a de-identified fashion before we use that information to develop the policy products.
- This conversation should last approximately 60 minutes. Given the short time we have together today, if you think of additional details afterward, please let us know.
- We will be taking notes as we go through the interview today, so if we don't respond right away, it's because we are still writing.
- We would like to record our interview today. We will only save the audio file for later review by our research team if necessary. Are you okay to proceed with the recording?

FINAL PRODUCT 1 KEY INFORMANT INTERVIEW GUIDE

Date:
Interviewer(s):

Product 1: IOM Report

Note: *Before you start asking questions, please let the interviewee(s) know how many questions you have so they can pace themselves. Also let interviewees know that the second interviewer will type questions into the chat.*

Background/Context
We would like to begin by understanding more about you and your work in GME.

1) Please **briefly** state your name, the name of your organization, and your title. Tell us about your current role and scope of responsibilities.

2) Please **briefly** describe how you been engaged in GME throughout your career.

IOM Report Perspectives
You were previously provided a summary of the 2014 IOM Report. As evidenced by our collective experience, the IOM report didn't result in the large-scale reform in the way that we had all hoped it would when it was published.

As a reminder, the high-level recommendations from the report were to:

1. *Continue Medicare GME funding at the current level*
2. *Build GME policy and financing oversight infrastructure, including:*
    a. *A GME Policy Council in the Office of the Secretary of HHS*
    b. *A GME Center within CMS*
3. *Create one Medicare GME fund with two subsidiary funds: operations, transformation*
4. *Modernize Medicare GME payment methodology:*
    a. *Standard PRA*
    b. *Funds directly to GME sponsoring organizations*
    c. *Performance-based payments*
5. *Medicaid GME funding remains per state discretion with increased accountability and transparency*

Questions:

1) In your opinion, what have been the barriers to implementing the IOM Report recommendations? [Probe for deeper answers if needed.]

2) Which IOM report recommendations are still relevant? Why or why not?
    a. Of the relevant recommendations which are feasible? Why or not?

3) Given where we are today, what is needed to transform GME financing, governance, and accountability to meet the health needs of the American public?
    a. What steps are required to move GME reform forward?
    b. Who should lead these changes? What additional partnerships are needed?
    c. How should this work get done?
    d. When should this work take place?
    e. How can stakeholders leverage the COVID-19 pandemic to meaningfully move GME reform forward?

FINAL PRODUCT 1 KEY INFORMANT INTERVIEW GUIDE

Date:
Interviewer(s):

4) Are you familiar with the Teaching Health Center program? If yes, can you tell us about its successes/challenges? Do you support this program? Do you believe it should be permanent?

5) Anything else you'd like to add; suggest we review; also speak with, etc.?

Phase 3: Modified Delphi process

Delphi is the process of building consensus across content experts through iterative survey process. After each survey is completed, participants will then often exchange resources or personal writings to bolster their position in hopes of gaining consensus followed by repeated surveys to track consensus.

Perspectives and themes that emerged from the key informant interviews directly informed the survey questions used in the modified Delphi process. A convenience sampling frame was applied initially to identify Delphi participants, and additional suggestions were provided by the TEP. The final list of Delphi participants included clinical representation from family medicine, internal medicine, and pediatrics, program directors, workforce researchers, and GME policy experts. Thirty-seven individuals agreed to participate, however survey completion varied (survey 1: 22 participants; survey 2: 21 participants; survey 3: 18 participants)

This was a three-round Delphi process. Delphi participants were asked to participate in one 60-minute introductory Zoom session to review the process and survey. Survey questions were focused on ranking the IOM report recommendations for impact and feasibility, as well as which additional or alternative reform efforts should be prioritized in the current context. Participants were then asked to complete 3 iterative rounds of the survey over the course of 6 weeks and provide written support for their answers, with the goal of swaying fellow Delphi participants to develop consensus. Written support was provided in the form of brief written responses explaining answers and as submissions of published references. Written support was not mandatory for survey completion or participation.

Delphi Survey:

Question 1: Should primary care leaders continue to support implementation of any of the 2014 IOM GME report recommendations?
_yes/no

If you answered yes to question 1, please continue to question 2. If you answered no to question 1, please continue to question 3.
Question 2: Which recommendations from the 2014 IOM report should primary care leaders prioritize in the near future?

Please complete two rankings, one for impact (ranked in order from 1 to 5, with 1 being greatest impact) and the second for feasibility (ranked in order from A to E, with A being the most feasible or easiest to implement).

Note: You may choose a sub-answer (such as 2a, 4b) if you prefer specific choices.

___ Recommendation 1: Continue Medicare GME funding at the current level.

___ Recommendation 2: Build GME policy and financing oversight infrastructure.
2a: Create a GME Policy Council in the Office of the Secretary of the US Department of Health and Human Services.
2b: Establish a GME Center within the Centers for Medicare & Medicaid Services for operational management.

___ Recommendation 3: Create one Medicare GME fund with two subsidiary funds: operations, transformation.

___ Recommendation 4: Modernize Medicare GME payment methodology.
4a: Standard PRA
4b: Funds directly to GME sponsoring organizations
4c: Performance based payments
___ Recommendation 5: Medicaid GME funding remains at state discretion with increased accountability and transparency.

All survey takers are asked to respond to question 3.
Question 3: What are programs (e.g., teaching health centers), populations (e.g.,, rural communities), or processes (e.g.,, rulemaking changes) that should be prioritized in light of COVID-19 as it relates to GME reform? Put another way, are there more tangible or specific programs, populations, or processes that need GME reform attention right now which may not have been fully considered in 2014? (Note: This is not meant to be an exhaustive list.)

___Teaching health centers
___Rural training tracks
___Rural communities
___Regulatory and rulemaking reforms (If so, what is needed?)
___Providing CMS authority to collect workforce data through a technical legislative change
___State-level innovations
___Creating a central workforce planning or monitoring entity (or increasing the authority of an existing entity to do this work)
___Other

All survey takers are asked to respond to question 4.
Question 4: In order to develop and advance a strategic approach for GME reform, which partnerships are critical, including organizations or groups that may not have been engaged in this work in the past?

Limitations

This evaluation reflects data collected across multiple phases conducted between July 2020 and February 2021, including a rapid review of published and unpublished literature, key informant interviews, and a modified Delphi process. Given the time that has passed since data collection, expert perspectives on GME policy and workforce needs may have evolved. Findings from qualitative interviews and Delphi survey responses represent the views of participants at the time of data collection and may not reflect current consensus.

Participants for key informant interviews and the modified Delphi process were identified through a convenience sample drawn in part from professional networks affiliated with the GME Initiative (GMEI; now GME/Transformation), introducing the potential for selection bias. Although technical expert panel members reviewed and supplemented the participant list to ensure representation across key stakeholder groups, including program directors, policy researchers, government officials, and professional organizations, the sample may not fully capture the diversity of perspectives across the GME landscape.

Efforts were made to track participant characteristics, including professional backgrounds and specialty and to incorporate a range of perspectives, including intentional inclusion of general internal medicine and pediatric physicians. Despite these efforts, the sample may underrepresent certain opinions and perspectives.

Finally, Delphi processes are, by definition, a consensus of informed expert opinion. Findings from Delphi processes, though valuable, are not synonymous with empiric evidence.

Appendix B: Primary Sources and Policy Documents

Congressional Letter of Inquiry

United States Senate
WASHINGTON, DC 20510

December 21, 2011

Harvey Fineberg, MD, PhD
President
Institute of Medicine
500 Fifth Street, NW
Washington, DC 20001

Dear Dr. Fineberg:

We are writing to encourage the Institute of Medicine (IOM) to conduct an independent review of the governance and financing of our system of graduate medical education (GME). The IOM's influential 2001 report *Crossing the Quality Chasm: A New Health System for the 21st Century* recommended a summit to discuss reforming health professions education, which was held in 2002 and attended by 150 important organizations. Earlier, the IOM had convened a public hearing in 1997 to solicit views on GME from various stakeholders, including physician, nursing, hospital and medical college professional associations.

Much has happened since these events. We believe our GME system is under increasing stress, and the projections for our health care workforce are of significant concern. There is growing concern that the United States is failing to adequately match medical training with our medical needs on a national level. Changes to GME are being discussed by Congress, the Medicare Payment Advisory Commission, Accreditation Council for Graduate Medical Education, and various foundations, such as the Josiah Jr. Macy Foundation. It is time to redesign health care workforce education and training in a manner that improves access to and delivery of health care services and enables the future generation of health care professionals to actively participate in creating high quality, lower cost health care.

Specifically, we are interested in an analysis of the governance and financing of GME and potential GME reforms. Some areas deserving of particular attention are: accreditation; reimbursement policy; using GME to better predict and assure adequate workforce supply by type of provider, specialty, and demographic mix; distribution of physicians; the role of GME in the current care of the underserved; the impact of changes in GME on access to health care; and use of GME to assure a future workforce possessing the skill set to effectively address current and future health care needs. In addition, we are particularly interested in IOM's observations about the uneven distribution of GME funding across states based on need and capacity, and how to address this inequity.

We urge the IOM to move forward immediately with additional public and private sponsors to empanel a consensus committee to develop recommendations to meet the challenges

facing GME. We would hope to have recommendations from the IOM regarding suggested statutory, regulatory and accreditation changes by the third quarter of 2012. Thank you for your attention to this matter.

Sincerely,

Jeff Bingaman
United States Senator

Mark Udall
United States Senator

Jon Kyl
United States Senator

Tom Udall
United States Senator

Chuck Grassley
United States Senator

Michael F. Bennet
United States Senator

Mike Crapo
United States Senator

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