American Association of Neurological Surgeons

Institute of Medicine's Report: *Graduate Medical Education That Meets the Nation's Health Needs*

Organized Neurosurgery's Response

For More Information Contact:

Katie O. Orrico, Director
Washington Office
American Association of Neurological Surgeons/
Congress of Neurological Surgeons
725 15th Street, NW, Suite 500
Washington, DC 20005
Office: 202-446-2024
Fax: 202-628-5264
Email: korrico@neurosurgery.org

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On July 29, 2014, the Institute of Medicine (IOM) released a report, *Graduate Medical Education That Meets the Nation's Needs*, which recommends a sweeping overhaul of the current graduate medical education (GME) system. The IOM committee identified six goals for an improved GME financing system:

Goal 1: Encourage production of a physician workforce better prepared to work in, help lead, and continually improve an evolving health care delivery system that can provide better individual care, better population health, and lower cost.
Goal 2: Encourage innovation in the structures, locations, and designs of GME programs to better achieve Goal 1.
Goal 3: Provide transparency and accountability of GME programs, with respect to the stewardship of public funding and the achievement of GME goals.
Goal 4: Clarify and strengthen public policy planning and oversight of GME with respect to the use of public funds and the achievement of goals for the investment of those funds.
Goal 5: Ensure rational, efficient, and effective use of public funds for GME in order to maximize the value of this public investment.
Goal 6: Mitigate unwanted and unintended negative effects of planned transitions in GME funding methods.

Organized neurosurgery[1] congratulates the Institute of Medicine for attempting to better clarify one of the most challenging and complex issues of our time: creating a stable means of funding graduate medical education as the workforce remodels to accommodate contemporary and future health care needs. We acknowledge the IOM's report, *Graduate Medical Education that Meets the Nation's Needs*, and agree with the committee's goals of achieving stable funding for physician training and creating a health care system in which well-trained, compassionate physicians provide comprehensive care.

However, embedded in the report are a number of assumptions and recommendations with which organized neurosurgery fundamentally disagrees. Our medical schools and academic medical centers share the identical goals for GME articulated by the IOM. We fear, however, that the radical approach to transforming GME advocated in this report would unnecessarily create new layers of federal oversight and costs, thus hampering current efforts and compromising the missions of our academic health centers.

We recognize that in our present health care system, federal monetary support is essential to train physicians to care for a growing and aging population. We also recognize that increased transparency and accountability are laudable goals for any publicly funded program. However, we

[1] The term "organized neurosurgery" refers to the following neurosurgical organizations: The American Association of Neurological Surgeons, the Congress of Neurological Surgeons, the American Board of Neurological Surgery, and the Society of Neurological Surgeons.

believe that the IOM's proposals would introduce radical and disruptive change to a system of graduate medical education that is the finest in the world. In addition, the committee's assumption that our health care system does not require additional highly specialized physicians is untrue.

The best available data indicate that increasing the number of specialty physicians and surgeons available will be essential to care for our present aging population and to develop the innovations in diagnosis and treatment that prolong and improve quality of life. According to the Association of American Medical Colleges (AAMC), the United States faces a shortage of 130,000 physicians in the next decade. This deficiency is divided *equally* between primary care and specialty providers. While predicting the impact of disruptive technologies, greater population longevity, team medicine, and patient empowerment is fraught with difficulty, at present, the AAMC recommendations are our best source of data. Regardless of our ability to precisely predict the future physician shortfall with absolute clarity, reducing GME support to academic medical centers will certainly worsen it.

Specialty physician training and medical school research occur primarily at academic medical centers. Drastic reductions in payment to academic medical centers would severely hamper outstanding contemporary training and research and would also eliminate the training innovations needed to transform health care systems and promote quality. The IOM's recommendations would also reduce support for tertiary and quaternary services available almost exclusively at academic medical centers; would severely restrict training settings for many health care professionals; and would reduce access for underserved patient populations. Academic medical centers are already under assault from other aspects of health care reform, [2] so the IOM recommendations to reduce funding for teaching hospitals could not come at a worse time. If these centers go away, they cannot be restored.

We are also concerned that the IOM recommendations would vest increasing power in a federal bureaucracy ill-suited to oversee medical education and training issues, politicizing what should be important policy decisions. The Accreditation Council for Graduate Medical Education (ACGME), the American Board of Medical Specialties (ABMS), and the AAMC constantly strive to improve physician training. These professional education and certification organizations are best equipped to develop the physician workforce we need. Many of the IOM recommendations would increase the already substantial bureaucratic burden on these organizations while reducing the resources necessary to perform their core functions.

American academic medical centers provide extraordinary care to the public. While this group of institution comprises only five percent of all hospitals, they account for 37 percent of charity care delivered, 24 percent of all Medicaid inpatient days and 20 percent of all Medicare inpatient days. In addition to their clinical mission, they are committed to advancing medicine through cutting edge research. Over half of NIH extramural awards go to an AAMC hospital or member medical school. Finally, 74 percent of all residents in America train at an AAMC hospital. The 30-plus percent reduction in Medicare IME payments embedded in these IOM recommendations significantly threatens the very survival of our academic centers as well as access to care for the most vulnerable Americans.

[2] Dzau VJ, Cho A, Ellaissi W, et al. Transforming academic health centers for an uncertain future. N Engl J Med 2013;369:991-3. *See also*, The future of the academic medical center: strategies to avoid a margin meltdown.Dallas: PricewaterhouseCoopers, 2012 (http://www.pwc.com/us/en/health-industries/publications/the-future-of-academic-medical-centers.jhtml).

Organized neurosurgery stands ready to assist major stakeholders in the implementation of meaningful reform to strengthen graduate medical education in the U.S. Very positive initiatives by the ACGME and ABMS are moving in the right direction to ensure that our physician workforce is ideally trained for the future. We support these efforts to plan strategically for an efficient and effective health care system that delivers increasing quality, despite various unpredictable contingencies. In light of the length of time required to remodel the physician workforce — particularly in surgical specialties with very long training programs — we need a long-term, measured approach. We also need to provide education professional organizations — principally the ACGME — with tools (including antitrust relief) that ensure a well-trained physician workforce to meet the nation's needs fully.

To further elaborate on our views, organized neurosurgery offers the following observations and comments regarding the report and the IOM recommendations.

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GOALS	
Goal 1: Encourage production of a physician workforce better prepared to work in, help lead, and continually improve an evolving health care delivery system that can provide better individual care, better population health, and lower cost.	We agree with these goals and believe that, despite additional opportunities for improvement, our present system of graduate medical education is already a world leader in achieving them. Our GME community, including the ACGME, ABMS, and the AAMC, constantly strive to improve the training of physicians and ensure that GME in the U.S. is the role model for the world. These organizations are best equipped to develop the physician workforce described in this goal, in part through rigorous training in the ACGME's core competencies of systems-based practice and practice-based learning. For example, the ACGME's Council of Review Committee Residents (CRCR) is currently working to improve resident training in cost sensitivity and other economic indices of efficient, quality care. It is also important to note that specialists with both procedural and diagnostic expertise provide specific services that cannot practically be delegated to allied professions or community health centers. A GME solution appropriate for primary care is not likely to be appropriate for surgical specialists, and may cause disastrous unintended effects if applied arbitrarily across-the-board. Neurosurgery can, however, strongly support reforms that: (1) guide better education in

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	referring practices; (2) promote more knowledgeable and effective management of early disease stages (e.g., for back pain); (3) implement protocols across disciplines and care settings that help coordinate overall disease management; and (4) enhance interprofessional communications education (so primary care physicians can be more effective in utilizing and supporting specialists). Other countries continue to look to GME in the U.S. as the most sophisticated training and certification system in the world, largely due to our prowess in technological and specialty care. If our care coordination is poor, that does not mean we should retreat from our existing advantages in world-class specialty care.
Goal 2: Encourage innovation in the structures, locations, and designs of GME programs to better achieve Goal 1.	The ACGME and the ABMS (including the American Board of Neurological Surgeons) continue to innovate and improve our GME programs through the accreditation and certification processes. These organizations are best equipped to develop the innovations needed without disrupting a very successful process. For example, the ACGME has introduced the Next Accreditation System, which fundamentally alters the way our training programs are structured and function by encouraging and incentivizing innovation. One innovation is a system of competency-based Milestones for consistent and transparent evaluation of trainees, ensuring that they progress towards independent practice with documented ability in all the technical and professional competencies necessary for excellent, system-based care. Similarly, a new Clinical Learning Environment Review (CLER) system has created new standards for care excellence, coordination and safety in the clinical learning environment at all academic medical centers. In addition, the ABNS has implemented a robust maintenance of certification (MOC) process, which continues to evolve and to improve the engagement of diplomats with authentic lifelong learning that promotes improved care delivery. Current improvements include a new requirement

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	for evidence of procedural competence before candidates are invited to sit for the certification examination. Non-proscriptive training guidelines encourage innovation at academic institutions. Communication of "best practices" at the level of the RRC and program directors, also allows educators to share innovative strategies across programs. Neurosurgery has been a leader in this area. The specialty was an early adopter of the training Milestones methodology. Additionally, we have created a comprehensive and nationally adopted 'Matrix' curriculum for the specialty, by designing what is expected to be a comprehensive and individually trackable national online learning portal for this curriculum. Finally, neurosurgery has created the first introductory safety and professionalism boot camp courses to cover an entire specialty, nationwide. This tremendous breadth and depth of self-initiated and self-regulated education and training innovation simply could not arise in response to regulatory imperatives or mandates. Rather, it has resulted from an effective interaction with the ACGME driven by true professional incentives and improvement opportunities.
Goal 3: Provide transparency and accountability of GME programs, with respect to the stewardship of public funding and the achievement of GME goals.	We agree that transparency is a laudable goal. Accountability is also desirable but should not proscribe the use of funds for innovation within and between programs with different needs and ideas. Indeed, vesting power over graduate medical education priorities in the federal bureaucracy would likely result in decreased innovation and further politicize GME policy decisions. Academic health centers, the ACGME, and the ABMS and its member boards are providing clear and effective leadership to ensure that all graduates of U.S. GME programs have met a very high bar for educational and competency standards, which are by design increasingly accountable to the imperatives of an evolving need for systems-based care.

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	As clearly stated in the IOM report, tracking public funding for GME is complex, and methodology differs substantially between academic medical centers. We agree that how funds are spent should be tracked, disclosed and readily accessible to stakeholders and the public. Organized neurosurgery stands ready to assist in carefully studying and reforming this system.
Goal 4: Clarify and strengthen public policy planning and oversight of GME with respect to the use of public funds and the achievement of goals for the investment of those funds.	GME oversight and public policy planning should remain under the direct control of the ACGME, with open communication to and among stakeholders, including the federal government. Vesting the power to determine graduate medical education priorities in the federal bureaucracy, however, would further politicize the decisions regarding graduate medical education. Furthermore, recent events within the veterans' health system and the roll-out of the Affordable Care Act are examples of the shortcomings of the federal government's capability to manage complex health care programs. Organized neurosurgery supports strengthening GME strategic planning and oversight, and we are ready to work with stakeholder organizations to accomplish this goal. In our view, empowering the ACGME with antitrust relief is the optimal means of accomplishing this goal. The Council of Graduate Medical Education (COGME) is another potential option for collaborative, professional policy making. Although we understand the IOM's concern that COGME has the appearance of being too constituency driven, we note that its members are appointed directly by the Secretary of Health and Humans Services from among professional stakeholders, offering the possibility of bringing forward a balanced approach.
Goal 5: Ensure rational, efficient, and effective use of public funds for GME in order to maximize the value of this public investment.	We agree. The ACGME, ABMS, and the AAMC have proven to be fully capable of ensuring rational, efficient and effective use of public funds for GME in order to maximize the value of this public investment. Medicare funding of GME represents only two percent of overall Medicare expenditures and funds what is widely acknowledged to be the best-trained physician workforce in the world.

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Goal 6: Mitigate unwanted and unintended negative effects of planned transitions in GME funding methods.	We agree. However, in our opinion, there is no way to mitigate unwanted and unintended negative effects of the radical transition described in the report. The ACGME, ABMS, and the AAMC are best equipped to help identify and mitigate unwanted and unintended negative effects of any transition in GME funding methods. Organized neurosurgery supports more clearly identifying the intended functions of and values attached to GME funding streams. Proposed reforms should keep funding levels stable until clear and specific policy choices can be made at the national, institutional and program levels; thus avoiding sudden the dislocation of established training resources and related health care services for the underserved. In other words, we have to understand and have a chance to adapt to any new rules prior to what could be profound and risky disruption of the status quo (including for vital ongoing care delivery systems). Unfortunately, although the IOM states that current Medicare funding to GME should remain unchanged, for a period, all of the proposals contained in the report would be funded from the same existing pool of money. This, by definition, would decrease funds directed to ongoing graduate medical education.
RECOMMENDATIONS	
***Recommendation 1*:** Maintain Medicare graduate medical education (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 GME payment system should be phased out.	The federal government is the largest single funding source for GME. Each year the federal government contributes about $10 billion in from Medicare and approximately $2 billion from Medicaid to help pay for GME. The federal government also funds GME through contributions from the Department of Defense, the Department of Veterans Affairs, the Health Resources and Services Administration, and the National Institutes of Health. Private insurers support GME to some degree through payments they negotiate with teaching hospitals. If federal dollars are phased out, it will be essential to find other sources of revenue to support GME at academic medical centers. Of the estimated $10 billion in Medicare funds

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	spend on GME, approximately 30 percent goes for direct payments. The indirect medical education calculations are complicated and controversial. The Medicare Payment Advisory Commission (MedPAC) estimates that indirect payments may be more than $3 billion higher than actual indirect costs. Direct payments, however, do not cover the real expenses that academic medical center departments incur to train residents. It costs approximately $1.2 million to train a neurosurgical resident. Contributions from government and other payers fall well short of covering this expense. Academic medical centers have generally been able to support the expansion of residency programs since the institution of the GME financing caps in 1997 out of departmental operational funds. However, this is increasingly no longer possible, as payments to hospitals dwindle and fewer dollars are available for such cross-subsidization. In order to avoid potentially dangerous dislocation and unintended harm, we must first understand how various types of training institutions currently spend GME dollars before fundamentally altering the existing system. To do this, we should track GME dollars — across a dozen or so institutions representing different geographic regions; academic versus community programs; and various residency program sizes — in order to determine how they use GME funds. Furthermore, before tying funding to performance goals, we must carefully define those goals using measurable and agreed upon metrics that serve public interests transparently. Centralized control based on inaccurate data and poorly designed performance goals invites dishonesty, fraud, and abuse, which we can ill tolerate at a time when our imperative is empowering fundamental change and improvement. We firmly believe that the federal government should continue to fund GME. Phasing-out the current federal payment system will require

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	innovative ways to allow academic medical centers to remain viable, without Medicare support. In a system heavy with pilot programs and novel payment methodologies, current aggregate funding levels will represent a significant decrease, even before accounting for population growth and shortages in the current and future physician workforce. This is particularly true for neurological surgery, where replacing physicians with paraprofessionals is not a meaningful and viable solution to deal with a real and worsening physician shortage. Most neurosurgical centers have already maximized shifting all tasks realistically possible to mid-level providers such as physicians' assistants and nurse practitioners. Furthermore, central control will not increase efficiency or result in more effective outcomes. Most strategic planning regarding future manpower needs including that done by the ACGME. Predictions 20 to 25 years in advance are exceedingly difficult because of new disruptive technologies and other global events occurring which destabilize medical industries. Nevertheless, it is highly likely that new technologies will empower patients to manage their chronic illnesses, perhaps with some support by some mid-level providers. This will likely significantly reduce the demand for primary care physicians. By contrast, patients requiring removal of intracerebral hemorrhages, tumors, infections, and other urgent neurosurgical problems will never be manageable by any provider other than a surgeon specializing in the care of neurological disease. Organized neurosurgery nevertheless recognizes the need for creative solutions to promote sustainable GME payment methods. In our view, a larger percentage of GME funds should be used transparently for direct payments to the academic departments responsible for resident education. At present, residents and fellows in ACGME accredited programs cannot bill for their professional services. The ACGME has initiated the Milestones Project, which objectively tracks

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	residents progressing towards competent and safe independent practice. Individual Milestones are met at various points in a seven-year training program, based both on task complexity and on individual resident progress. Milestone level 4 (graduation equivalent competency) could serve as a threshold beyond which residents could bill for individual professional services already mastered during ongoing training. This innovative approach could substantially and transparently augment direct and indirect Medicare payments while providing a recognized public good. Organized neurosurgery is prepared to partner with all stakeholders to study and create a methodology to address the inherent complexities of determining and tracking granular competence in order to allow partial funding of GME based on actual services provided.
***Recommendation 2*:** Build a graduate medical education (GME) policy and financing infrastructure.	GME in the United States already has a policy-making infrastructure through the ACGME, ABMS, and the AAMC. Creating a new GME financing infrastructure should, therefore, be done with hesitation. The delivery and distribution of GME funds should be studied and overseen by the ACGME through the institutional accreditation system, promoting efficiency, reducing redundancy, and achieving the same level of transparency and accountability. Creating a new system outside of the ACGME will only lead to higher administrative costs and would shift money away from training and innovation to fund a redundant bureaucracy.
***Recommendation 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	We strongly object to the formation of the GME Policy Council. Congress already has oversight of GME financing through Medicare and Medicaid, the Department of Defense, the Department of Veterans Affairs, the Health Resources and Services Administration and the National Institutes of Health. Creating a new bureaucratic agency in the Department of Health and Human Services would be redundant and expensive and would add political pressure to an already complex funding system. The appointment process of members to such a council would also be highly political, resulting in intense lobbying by stakeholders — including physician groups, hospitals, insurers,

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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.	patients and others. The ACGME, ABMS, and the AAMC are the organizations best equipped to perform oversight functions. They are strategically focused on developing the workforce needed to care for the public now and in the future and are largely insulated from direct political influence. Organized neurosurgery is also very concerned about the potential cost of the oversight structure advocated in the IOM report. The creation of a new unfunded bureaucracy would take away resources from current GME funding under the proposed capped aggregate funding scheme. Furthermore, such a bureaucratic structure would restrict and delay responses to local and regional manpower needs and challenges. Currently, academic neurosurgical departments fund the majority of the direct non-payroll expenses of GME. This voluntary funding stream, a lifeblood of educational innovation and improvement as well as ongoing programmatic function, may well be withdrawn under a central control mechanism. Funds could be appropriated, and authority delegated, to the ACGME to meet innovation goals. Certainly the ACGME can be charged with providing regular reports to Congress and federal agencies involved in graduate medical education.
***Recommendation 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 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.	We strongly object to the formation of the GME Center for many of the reasons stated in our comments to Recommendation 2a. If mechanisms are put in place to enhance the transparency of GME funds, it is unnecessary to create an entire new bureaucratic structure within CMS. The ACGME, ABMS, and the AAMC are the organizations best equipped to develop the physician workforce of the future. Funds could be appropriated to these organizations to help meet these goals. Antitrust relief for these organizations will be required to facilitate the kind of strategic planning necessary to remodel the physician workforce of the future.
***Recommendation 3*:** Create on Medicare graduate	If overall Medicare funding for GME remains the

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medical education (GME) fund with two subsidiary funds.	same, and a portion of this funding goes to create the *GME Transformational Fund*, it will significantly reduce funding for existing positions and academic medical center missions. This negative impact will be compounded by the administrative costs associated with establishing the GME Policy Council and GME Center described in Recommendation 2. Furthermore, if funding for the Children's Hospital GME program is included in the new fund, this will further decrease the overall monies available for graduate medical education.
Recommendation 3a. A *GME Operational Fund* to distribute ongoing support for residency training positions that are currently approved and funded.	The *GME Operational Fund* should not be reduced from the level necessary to fund current residency positions. Indeed, Congress should lift the GME funding caps and increase funding for current and new residency slots.
Recommendation 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.	Innovation in GME is a key goal and value that has already been highly supported by neurological surgery. Programs like the neurosurgical boot camp courses for medical students entering their first year of residency, the Milestones system for verifying resident competency, and the Matrix curriculum all reflect our independent and spontaneous commitment to developing a systematic lifelong learning system for neurosurgeons. We, therefore, support the concept and goals of a G*ME Transformational Fund*. However, it should be recognized that fundamental GME changes would not have a major impact on health care delivery at least 5 to 10 years after implementation. If implemented, we would also be concerned about potential processes for approving new Medicare funded GME training positions. Who would determine priority disciplines and geographic areas for funding, and on what grounds? Placing such authority within the federal bureaucracy would have the potential to divorce manpower and training decisions from objective data and demonstrated need, making every medical training issue political, including choice of discipline and geographic location. Take, for example, the current push to train more primary care physicians and fewer specialists.

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	There is strong evidence that the nation faces an equal shortage of primary care and specialty physicians. It is also true that allied health professionals can perform many primary care services; thus negating the need to train a disproportionate number of primary care physicians. Despite this, policymakers have embraced this perceived shortage of primary care physicians based largely on politics, not sound policy data. It is clear that a large portion of chronic and preventive disease care has shifted from inpatient and other acute care settings to community care. At the same time, GME funding continues to be directed primarily towards academic medical centers. While organized neurosurgery can support a shift of some GME resources for primary care to more appropriate settings, it is essential that care coordination between primary care and specialists in the acute care setting must also be taught. Furthermore, support for GME in ambulatory settings must not come at a cost to funding GME for crucial specialists, like neurosurgeons, needed to staff important acute and tertiary functions such as stroke and trauma care. Ultimately, the ACGME, ABMS, and the AAMC are best equipped to define the physician workforce of the future. In order to accomplish these goals within existing organizational structures, policymakers should consider providing these organizations the tools, including antitrust relief, to ensure a well-trained physician workforce.
Recommendation 4. Modernize Medicare graduate medical education (GME) payment methodology.	How the GME payment methodology is modernized is critical to the viability of our resident training system. Our nation's academic medical centers are arguably the most important point of quality and cost-saving innovation. Attempts to redistribute Medicare funding, create new unfunded mandates, and implement cumbersome oversight, may increase the cost of training medical residents. Given the current financial strain on hospitals,

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	educational centers may pass these costs on to the medical trainees themselves. Given the length of training, loss of government-subsidized Stafford loans, residents not qualifying for student loan forbearance, and increasing average graduating medical student debt (which averages $170,000, but can exceed $400,000), we cannot afford further financial burdens on our physician trainees if we want to attract America's brightest students to this challenging and rewarding profession. Organized neurosurgery certainly supports new ideas to improve upon the current system, but we caution against radical changes that will do more harm than good.
Recommendation 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).	Of the estimated $10 billion in Medicare funds spent on GME, approximately 30 percent goes for direct payments and 70 percent goes for indirect payments. The indirect medical education calculations are complicated and controversial. For example, MedPAC estimates that indirect payment levels may exceed indirect costs by as much as $3 billion. We are nevertheless concerned that the IOM proposal may result in an overall 35 percent reduction in payments to teaching hospitals. Changes to the indirect payments will cut funding for vital care and services available almost exclusively at academic medical centers, including Level 1 trauma centers, pediatric intensive care units, and access to clinical trials. While the current system can be improved, these immediate cuts would destabilize a system that has produced high-quality physicians and is widely regarded as the best in the world. It is, therefore, imperative to carefully consider the impact of redirecting indirect funds away from tertiary care academic health centers. It is also clear that direct medical education payments fall well short of covering the actual expenses that academic medical centers and departments incur to train residents. This is particularly true in surgical subspecialties where training can be as long as six to seven years. For

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	example, it costs approximately $1.2 million to train a neurosurgical resident, and contributions from government and other payers fall well short of meeting these expenses. Organized neurosurgery strongly believes that the federal government should continue to fund GME. To this end, we encourage policymakers to eliminate Medicare's caps on GME financing. In addition, GME funding should be expanded fully to cover the entire length of training required for initial board certification, which in neurosurgery's case is seven years. In addition, we support channeling a larger percentage of GME funds directly to the academic departments responsible for resident education. We remain concerned, however, that if overall funding levels remain the same, and a portion of this funding goes to the G*ME Transformational Fund*, actual funds available for the present positions in the *GME Operational Fund* will be reduced.
Recommendation 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.	The PRA is not adequate because of the existing GME funding caps. Furthermore, if overall funding remains the same, and a portion of this funding goes to the *GME Transformational Fund*, it will significantly reduce the funds available for present positions in the *GME Operational Fund*.
Recommendation 4c. Redirect the funding stream so that GME operational funds are distributed directly to GME sponsoring organizations.	We support directing a larger percentage of GME funds to the academic departments responsible for resident education. We caution, however that the unintended consequence of this recommendation is that funding would be directed away from some of our finest academic medical centers jeopardizing their future viability.
Recommendation 4d. Implement performance-based payments using information from *Transformation Fund* pilots.	We have serious questions about the basis for performance targets and by whom these would be developed. The current accreditation and certification activities of the ACGME and ABMS serve as the appropriate standard-setting organizations, and their preeminent role should be maintained. Both organizations continually make positive performance–enhancing changes to improve training and education.

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	Furthermore, legitimate educational performance outcomes measures for neurological surgery are 12 years away from an innovation to measurement of outcomes (due to a seven-year residency plus five years in practice to achieve board certification). Intervening variable measurements (e.g., board scores or pass rates) are notoriously unreliable in terms of reflecting true value. Finally, any such performance-based payments must be in addition to the basic funding support that is necessary to sustain residency training programs effectively. While organized neurosurgery supports accountability, penalty-based performance systems are the wrong way to go.
***Recommendation 5*:** Medicaid graduate medical education (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.	We agree that transparency and accountability are important for Medicaid GME. As we pointed out in our comments regarding Medicare GME funding, accountability methods should not be overly proscriptive and should allow for innovation within and between programs with different needs and ideas. Vesting the power to determine graduate medical education priorities and policy in government bureaucracies — whether state or federal — would likely result in decreased innovation and further politicize decisions regarding GME. Our academic institutions, the ACGME and the ABMS and its member boards are providing clear and effective leadership in ensuring that all graduates of our GME programs have met a very high bar for educational and competency standards.
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"A high-value health care system embraces the entire continuum of care, not just hospital care; relies on interprofessional teams, not just doctors; emphasizes primary rather than specialty care…Although hospitals and specialists remain essential, the burden of chronic disease, the need for greater emphasis on preventive care…shift attention to highly skilled clinicians who are not physicians…" (page 5-3 and 5-4)	We embrace the efficiencies that can, hopefully, be achieved by patient empowerment and better utilization of non-physician providers. It is, therefore, likely that fewer primary care physicians will be needed than articulated in current manpower estimates. The same cannot be said for surgical specialties. For example, mid-level providers cannot operate on the human brain or spine. Increasing population longevity by improving overall health will increase, not decrease, the need for subspecialty surgeons such

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	as neurosurgeons. Advancing age increases the need for both spinal and brain surgical care.
"Advocating for increased federal GME funding would be irresponsible without evidence that the public's current level of investment is helping to produce the workforce needed in the 21st century." (page 5-4)	We fundamentally disagree with this statement. The best evidence we have clearly demonstrates a significant physician workforce shortage over the next decade, and the need for increased federal GME funding to help offset the costs of training. Academic medical centers have been able to support the expansion of residency programs since the institution of the GME financing caps in 1997 out of departmental operational funds. However, this will not be possible in the future, as payments to hospitals dwindle and fewer dollars are available for such cross-subsidization. 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.

Conclusion and Summary Recommendations

Organized neurosurgery recognizes the two-year effort it took to develop this report, and we are pleased that the IOM committee supported continued Medicare funding of GME. We are, however, disappointed that the IOM failed adequately to address the looming shortage of neurosurgeons and other specialists. In addition, we are very concerned that the report calls for cuts to GME financing and other changes that may jeopardize neurosurgical residency training programs.

Experts agree that the country faces a severe physician manpower shortage. This shortage will become even more acute as health insurance coverage is expanded to an additional 30 million Americans and baby boomers continue to reach retirement age. Overall, according to the Association of American Medical Colleges, the shortage will approximate 130,600 physicians by the year 2025 — 64,800 specialty physicians and 65,800 primary care physicians. In the U.S., there are about 3,800 practicing board certified neurosurgeons serving a population of more than 318 million people. As the population ages and more citizens face debilitating and life-threatening neurological problems such as stroke, degenerative spine disease, Parkinson's disease and trauma to the brain and spine, this supply-demand mismatch will become even more acute.

This shortage has a number of consequences that may limit patient access to neurosurgical care, including:

- Demand for neurosurgical services will increase by 20 percent over the next decade, far outpacing demand for adult primary care services. As a result, patients are already experiencing significant wait times for neurosurgical care that are likely to get worse.

- The concentration of neurosurgeons in metropolitan areas means twenty-five percent of the U.S. population lives in a county without a neurosurgeon.
- Neurosurgical coverage is essential for effective trauma care, although one-quarter of all Americas do not live within 60 minutes of a Level I adult trauma center. Even more do not live within reach of a Level I or II pediatric trauma center.
- Neurosurgeons are getting older, with forty-four percent of the current neurosurgical workforce over the age of 55. In addition, the time required to become a board certified neurosurgeon is much longer than for primary care and many other specialties – as much as 18 years from the start of medical school to board certification. Thus, replenishing the neurosurgical workforce will require a decade or more of concerted and consistent effort and funding.

An effective solution for increasing physician numbers involves not only increasing medical student class size and the number of medical schools, but also increasing the number of funded residency positions. Congress can address this problem by lifting the cap on the number of federally supported residency training positions. Unfortunately, the IOM has advocated the opposite by recommending effective cuts in GME funding, which will likely exacerbate the predicted physician shortage.

An appropriate supply of well-educated and trained physicians is essential to ensure access to quality healthcare services for all Americans. Organized neurosurgery is committed to ensuring that our patients have access to high-quality neurosurgical care, and we stand ready to help develop policies to avert the impending physician workforce crisis. To that end, we urge policymakers to pursue the following:

- Ensure a physician workforce that is of sufficient size and specialty mix and strengthen the linkage of GME funding for ACGME-approved training programs:
  - Eliminate Medicare's caps on GME financing.
  - Expand GME funding to fully cover the entire length of training required for initial board certification, which in neurosurgery's case is seven years.
  - Channel a larger percentage of GME funds to directly to the academic departments responsible for resident education.
  - Allow resident and fellows to bill for the services they render after achieving verified competence in particular skills.
  - Provide the profession with the tools, including antitrust relief, to ensure a well-trained, high-quality physician workforce.

- Maintain additional funding for children's hospital GME.

- Provide additional financial support through an all-payer fund for GME.

- Ensure that the ACGME, ABMS, and the AAMC retain their preeminent roles in overseeing resident training and education.