

Opening the “Black Box” of GME Costs and Benefits: A Conceptual Model and a Call for Systematic Studies

BARBARA WYNN, MA

At the heart of the current debate on financing graduate medical education (GME) is a seemingly simple question, how much does it cost hospitals and other health care providers to participate in GME? The answer has important implications for both the number and types of residency programs offered and the level of federal support needed to meet future physician workforce needs. Yet the question itself is not well understood, and information needed to answer it is lacking. Despite the importance that the net costs of operating individual residency training programs might have for the decisions sponsoring institutions make about operating these programs, the Institute of Medicine’s (IOM) recent report, *Graduate Medical Education That Meets the Nation’s Health Care Needs*, concludes that there is little understanding of the bottom-line financial impact of programs in various specialties, and that the costs and benefits of providing resident education are a “black box.”¹ As a step toward opening up this “black box,” the IOM report recommended data collection and detailed reporting on the use of Medicare GME funds.¹

Medicare Funding for GME

Medicare is the primary source of federal support for GME. Medicare funding flows to teaching hospitals through direct GME (DGME) payments for the direct costs of operating residency training programs (such as resident salaries, teaching physician compensation, and costs of maintaining the GME office), and through indirect medical education (IME) payments for additional costs of teaching hospitals that are not otherwise captured by the prospective payment system for inpatient services.² Both DGME and IME payments are formula-driven and do not account for any potential differences in the financial impact of different specialty programs on teaching hospitals. A key policy issue is whether Medicare support for GME should be restructured to differentiate between programs that are less costly to operate, or are self-sustaining, and those that are more costly.^{2,3} Presently, there are insufficient studies documenting the net costs of operating different types of

residency training programs, and we lack the cost information to accurately target federal residency training support to achieve physician workforce objectives. Currently there is little empirical data to inform the debate over the appropriate level of federal funding, how it is allocated across specialties, and how funds are distributed. The IOM report envisions that a new GME policy council, housed within the US Department of Health and Human Services, would be responsible for prioritizing the GME fund allocations across identified domains, such as specialty and subspecialty programs, geographic areas, and types of sponsoring institutions.¹ This requires empirical data on actual costs to structure equitable payments and provide incentives for programs that meet future physician workforce needs.

In this issue of the *Journal of Graduate Medical Education*, a study by Iannuzzi et al⁴ is an important contribution to the question of how an internal medicine residency program affects a hospital system’s costs of caring for inpatients. Findings for the resident-hospitalist team relative to the midlevel practitioner-hospitalist team performance on length of stay and direct patient care costs are notable and should encourage other teaching hospitals to undertake similar analyses. However, such analyses address just 1, albeit important, aspect of the financial impact question. Perhaps most important for internal residency programs, an assessment of financial impact should include consideration of the impact that residents have on attending physician productivity and clinical revenues, particularly in ambulatory clinics. In addition to the added benefits arising from Medicare support of resident education, which the authors discussed, there are indirect benefits that are more difficult to measure but which are important to the overall economics of operating GME programs, such as having a pipeline for internal medicine fellowships and referrals from physicians practicing in the community after completing their resident training.

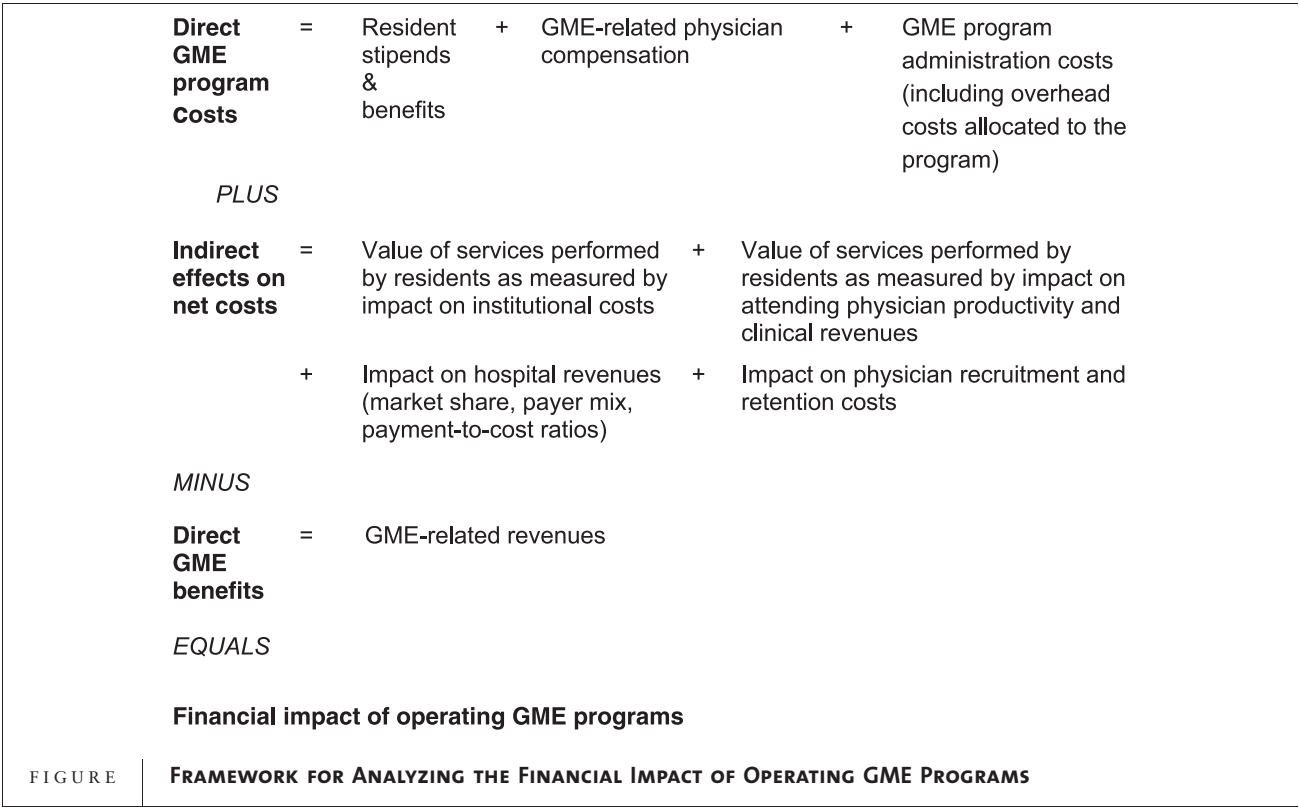
A Conceptual Model

Conceptually, an assessment of the financial impact of operating residency training programs should consider the costs and financial benefits of operating a residency program.^{4,5} The impact likely differs across different

Barbara Wynn, MA, is Senior Health Policy Researcher, RAND Corporation.

Corresponding author: Barbara Wynn, MA, RAND Corporation, 1200 South Hayes Street, Arlington, VA 22202-5050, wynn@rand.org

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Abbreviation: GME, graduate medical education.

specialty programs, different program sizes, and different types of sponsoring institutions (see the FIGURE for a conceptual model, and the online supplemental material for a detailed chart of the projected impact of the model across several specialties and subspecialties). For example, academic health centers have higher cost structures than community-based teaching hospitals. Direct GME costs are likely to be higher for smaller specialty programs with relatively high faculty compensation and malpractice costs. At the same time, the value of the services provided by residents in these programs, including on-call services and teaching of junior residents and medical students, as well as patient care services, may offset these higher costs.⁴

With respect to indirect costs, the higher patient care costs of teaching hospitals relative to those of nonteaching hospitals are well documented in published reports, but the current IME adjustment is at least 50% above the empirically justified level.^{2,6} The literature on the effect of residents on ambulatory costs is more limited; it suggests that residents increase infrastructure costs and reduce attending physician productivity. Interviews conducted by RAND researchers identified attending physician patient care revenues and the share of outpatient clinic costs and other practice expenses covered by the faculty practice plan as key differences in the financial impact of training programs in different specialties. For example, primary care

residency programs are disadvantaged relative to other specialties because attending physician revenues are lower and a higher proportion of training occurs in ambulatory clinics.⁴

The findings by Iannuzzi et al⁴ challenge 1 of the assumptions underlying the Medicare IME adjustment, namely, that the additional tests and procedures ordered by residents and staffing inefficiencies in teaching institutions help explain the higher costs in teaching hospitals relative to those in nonteaching hospitals.⁷ Although these results are relevant to the current debate on the appropriate level of Medicare IME funding, it is important to distinguish between a finding within the same institution that the costs for resident-house staff patients were lower than those for midlevel practitioner-house staff patients, and a finding across institutions that teaching hospitals have higher inpatient costs than nonteaching hospitals. A central issue in the present debate on GME funding revolves around whether the current IME adjustment should continue at its current levels, be reduced to the empirically justified level, or be eliminated altogether on the grounds that these higher infrastructure costs are not educational costs but inefficiencies that do not warrant Medicare subsidies. Comparable studies of surgical programs and in other institutions are needed to substantiate the study finding that a resident-hospitalist staffing model is more economical than a

midlevel practitioner-hospitalist model. If the findings of the study by Iannuzzi et al⁴ were to hold across other specialties, the rationale for maintaining an IME adjustment, particularly at current levels, would be further weakened. This would provide additional support for the IOM recommendation to reduce IME funding by 50% over a 5-year period, to make it more consistent with current estimates of the indirect teaching effect on costs. The money saved from a 50% reduction in IME payments would be channeled into the transformation fund proposed by the IOM to promote GME performance and innovation so that there would be no overall reduction in Medicare GME funding, but a reallocation to enhance accountability of these funds in meeting the nation's physician workforce needs.¹

References

- 1 Institute of Medicine. *Graduate Medical Education That Meets the Nation's Health Needs*. Washington, DC: National Academies Press; 2014.
- 2 Medicare Payment Advisory Commission. *Report to the Congress: Aligning Incentives in Medicare*. Washington, DC: Medicare Payment Advisory Commission; 2010.
- 3 Wynn B, Smalley R, Cordasco K. *Does It Cost More to Train Residents or to Replace Them? A Look at the Costs and Benefits of Operating Graduate Medical Education Programs*. Santa Monica, CA: RAND Corp; 2013.
- 4 Iannuzzi MC, Iannuzzi JC, Holtsbery A, Knoch SJ. Comparing hospitalist-resident to hospitalist-midlevel practitioner team performance on length of stay and direct patient care cost. *J Grad Med Educ*. 2015;7(1):65–69.
- 5 Medicare Payment Advisory Commission. *Report to the Congress: Improving Incentives in the Medicare Program*. Washington, DC: Medicare Payment Advisory Commission; 2009.
- 6 Nguyen NX, Sheingold SH. Indirect medical education and disproportionate share adjustments to Medicare inpatient payment rates. *Medicare Medicaid Res Rev*. 2011;1(4).
- 7 US House of Representatives. *Report of the Committee on Ways and Means on H.R. 1900*. Report No. 98-25 Part 1, 98th Congress, 1st Session. Washington, DC: US Govt Printing Office.

Erratum

This corrects a spelling error and omission of an author name in the References for Wynn B. Opening the “black box” of GME costs and benefits: a conceptual model and a call for systematic studies. *J Grad Med Educ.* 2015;7(1):125–127. On page 127, line 2, “Iannuzzi” is the proper spelling of this name. On page 127

under References, the fourth entry omitted an author. The correct citation is as follows: Iannuzzi MC, Iannuzzi JC, Holtsberry A, Wright SM, Knohl SJ. Comparing hospitalist-resident to hospitalist-midlevel practitioner team performance on length of stay and direct patient care cost. *J Grad Med Educ.* 2015;7(1):65–69.