COMMENTARY

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Graduate Medical Education's Tower of Babel

Discussions about using public funds to support graduate medical education (GME) have used conflicting financial terms and measures. The resulting confusion makes it difficult for policy makers to determine how best to address priorities for GME funding.

GME discussions often confuse three financial questions: 1) What does a resident cost? 2) What is a resident's economic value? 3) What does it cost to *educate* a resident? Different analytical techniques are needed for each question.

WHAT DOES A RESIDENT COST?

This is a relatively easy question to answer. The Medicare cost report contains a support center (ie, a cost center that does not earn revenue), usually called Intern and Resident (I&R) Services. Both direct and indirect costs are included in this support center. Direct costs are the salaries and fringes of interns and residents, the salaries and fringes (and related expenses, such as supplies) of the institution's GME office, and items such as scrubs and communication devices for the residents. Indirect costs include items that are allocated to the I&R support center, such as housekeeping, laundry, and plant maintenance.

The average full cost of a resident can be computed by dividing the I&R support center's total costs (including the indirect costs allocated to it) by the number of full-time-equivalent (FTE) residents. Unfortunately, there are no published data on how this average varies across academic medical centers.

The revenues received from Medicare's direct medical education (DME) payments and from billing for clinical services provided by residents have nothing to do with this cost. Although one study suggested that the "true cost" of a resident should include the revenue that he or she generates from providing clinical services,[1] this is incorrect. No reasonable accountant would incorporate revenues into a cost computation.

Nor do indirect medical education (IME) payments have anything to do with the cost of a resident. They are artifacts of an era when resident-to-bed ratios were used as surrogates for illness severity in academic medical centers. With the refinement of diagnosis-related-group classifications, payments for indirect medical education are no longer needed. Although a recent proposal suggested retaining them by changing their name from indirect medical education to a "transformation fund,"[2] their continuation (regardless of what they are called) is difficult to justify.

WHAT IS A RESIDENT'S ECONOMIC VALUE?

The decision to hire a resident when no Medicare payments are available to support the position is what accountants call an "alternative-choice decision." In making this decision, the incremental cost of the additional resident is subtracted from the revenues that he or she is expected to generate. The result is the resident's economic value, or what accountants call "contribution margin."

The incremental costs used in this analysis should be the resident's salary and fringes only. The addition of one more resident would not add to the costs of either the GME office or the institution's various support centers (such as plant maintenance). So, if the incremental costs of an additional resident were, say, $50,000, and if he or she generates more revenue than that via patient billing, there would be a positive contribution margin.

There is evidence to suggest that at least some academic medical centers view residents as having a positive economic value even when there are no Medicare payments to help cover their costs. For example, the number of US residency positions increased by 17.5% (17,000 slots) between 1997 and 2012, despite a cap on the number of Medicare-funded slots.[2] This increase suggests that, for at least some institutions, residents have a positive economic value even without Medicare payments.

WHAT DOES IT COST TO EDUCATE A RESIDENT?

Answering this question requires combining several rather sophisticated cost analyses. First, not all of a resident's time is related to education. Many residents argue that by

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Requests for reprints should be addressed to David W. Young, MA, DBA, 6234 Lexington Ridge Drive, Lexington, MA 02421.

E-mail address: David@DavidYoung.org

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the time they reach their third year (and perhaps earlier), they are providing a considerable amount of patient care but not receiving much more education than would an attending physician providing similar patient care. Thus, some portion of their cost is more appropriately attributed to patient care rather than to GME.

Second, some portion of an attending physician's time is spent teaching residents. The key question here is, how much more quickly could an attending make rounds or see patients in clinic if he or she were not teaching residents? If an attending could go, say, 20% faster without residents, then 20% of his or her cost is appropriately part of the cost of educating residents.

This latter issue relates to what accountants call "joint costs." For example, a cattle ranch cost accountant must determine how much of the cost of feeding a cow is in the steak and how much is in the leather belt. There is no perfect approach to distributing joint costs, but the accounting profession has developed techniques to allow a rough approximation. In GME, the issue could be addressed by estimating an attending physician's speed in rounding with and without residents. This figure likely will vary among departments and perhaps among the divisions in a given department.

Health policy analysts have "punted" on the joint-cost issue. In its August 1999 report, for example, the Medicare Payment Advisory Commission stated that "[t]he direct and indirect costs associated with training programs are indistinguishable; both represent costs of providing patient care. Therefore, the distinction between these costs is not a valid guide for making payments to hospitals."[3] More recently, the Institute of Medicine's 2014 report concluded "education, research, and patient care are 'inextricably intertwined.'"[2]

These assertions reflect a troubling lack of understanding of some basic cost-accounting principles. As such, they serve to perpetuate the myth that the cost of educating a resident cannot be assessed in any reasonable way.

Third, the I&R support center costs are allocated to individual departments, such as surgery and medicine, usually based on the number of full-time-equivalent residents in each. However, each department has its own GME activities, usually involving a part-time program director and often one or more nonphysician assistants who work with the GME program. In addition, the department's chair usually spends some time on GME issues, and there are regular educational activities (such as grand rounds) attended by a variety of individuals. The costs of these activities also are part of the cost of educating a resident.

In short, to answer the question of what it costs to educate a resident, one must go well beyond computing a resident's full cost. At the institution level, there are a variety of costs, such as those for the GME office, that are included in the I&R support center. At the department level, GME costs include the department's "fair share" of the I&R support center's costs plus the costs related to the time of its program director, staff, attending physicians, and chair. From the resulting total, we must deduct the costs associated with the time a resident spends providing patient care.

Not only do these matters complicate the computation of the cost of educating a resident, but they also vary considerably across departments. In one study, the departmental costs for GME in an academic medical center ranged from $87,000 in pathology to $1.6 million in surgery.[4] Moreover, when a "micro-costing" approach was used, the differences in a department's cost of educating a resident changed considerably from what was shown on the Medicare cost report. The changes ranged from an increase of $1.2 million in OB-GYN to a decrease of $0.5 million in medicine.[4]

In summary, although it is relatively easy to compute the full cost of a resident, and not too difficult to assess a resident's economic value, much more work is needed to address the question of what it costs to *educate* a resident. Moreover, even if we can arrive at a reasonable answer, a lingering question is, who should pay this cost? Similarly, how might GME funding be used to create incentives for residents to enter areas, such as geriatrics and family medicine, where there will be considerable demand in the next 10 to 15 years, but where a physician's compensation is comparatively low. Unfortunately, the 2014 Institute of Medicine report on the future of GME was relatively silent on these questions.[2]

Before these and similar policy questions can be addressed appropriately, we need to be certain that we are asking (and answering) the right financial questions. In particular, we need to pay more attention than we have to date to the issues of joint costs and micro-costing methodologies in determining the cost of educating a resident. Until we do so, we will remain ignorant about the true cost of GME and, therefore, will be making poorly informed public-funding decisions.

David W. Young, DBA[a,b]
[a]*Professor Emeritus, Questrom School of Management at Boston University, Boston, Mass*
[b]*President and CEO, The Crimson Group, Inc., Cambridge, Mass*

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