

AAIM Perspectives

AAIM is the largest academically focused specialty organization representing departments of internal medicine at medical schools and teaching hospitals in the United States and Canada. As a consortium of five organizations, AAIM represents department chairs and chiefs; clerkship, residency, and fellowship program directors; division chiefs; and academic and business administrators as well as other faculty and staff in departments of internal medicine and their divisions.

The Costs of Training Internal Medicine Residents in the United States



Ron Ben-Ari, MD,^a Richard J. Robbins, MD,^{b,c} Sailaja Pindiprolu, MD,^d Allan Goldman, MD,^e
Polly E. Parsons, MD^f

^aKeck School of Medicine of the University of Southern California, Los Angeles; ^bDepartment of Medicine, Houston Methodist Hospital, Houston, Tex; ^cWeill Cornell Medical College, New York, NY; ^dMedStar Washington Hospital Center, Washington, DC; ^eUniversity of South Florida College of Medicine, Tampa; ^fUniversity of Vermont College of Medicine, Burlington.

Departments of medicine train approximately 30% of the 115,000 residents and fellows in the United States.¹ Yet, departments have few reliable external sources of funding for graduate medical education and are handicapped in negotiations with teaching hospitals (the recipients of state and federal graduate medical education funding) in part because of uncertainty of the actual costs of training.^{2,3} Moreover, several government advisory committees are recommending cuts to graduate medical education funding.⁴

In fiscal year 2012, the Centers for Medicare & Medicaid Services (CMS), the major payer explicitly covering graduate medical education costs, spent \$10.1 billion (\$9.3 billion by Medicare and \$0.8 billion by Medicaid) in support of graduate medical education.^{4,5} Other federal agencies that contribute smaller amounts include the Department of Veterans Affairs, Department of Defense, Health Resources and Services Administration, and National Institutes of Health. The government's formula for graduate medical education support via the CMS was established by Congress in

the 1980s and consists of direct medical education and indirect medical education payments to teaching hospitals. Direct medical education payments (~\$2.7 billion annually) cover Medicare's share of costs directly related to running graduate medical education programs (eg, trainee salaries, fringe benefits, faculty supervision/teaching time, administrative costs, facilities overhead, and malpractice insurance). These costs are influenced significantly by program and institutional requirements of the Accreditation Council for Graduate Medical Education (ACGME) and the fair market values of faculty salaries, among other things. Indirect medical education payments (~\$7.5 billion annually) were established to reimburse teaching hospitals for the perceived increased complexity of patient care that resulted in longer lengths of stay, additional testing, need for more advanced diagnostic and therapeutic modalities, and a higher case mix index.⁴

In 2001, Nasca et al² estimated the annual minimum instructional and program-specific administrative costs of training internal medicine residents using the 1998 ACGME requirements. They demonstrated that the minimum instructional and program-specific administrative costs per resident (fixed and variable combined) were inversely proportional to program size with the per-resident costs in larger programs (126 residents in their model) being approximately 25% lower than in smaller programs (21 residents). Furthermore, the model by Nasca et al² demonstrated that the per-resident minimum instructional and program-specific

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Requests for reprints should be addressed to Ron Ben-Ari, MD, Keck School of Medicine of the University of Southern California, 2020 Zonal Ave, IRD Building Room 632, Los Angeles, CA 90033.

E-mail address: rbenari@med.usc.edu

administrative costs in outpatient intensive programs were approximately 8% higher than in inpatient intensive programs. Overall, they calculated that the total per-resident minimum instructional and program-specific administrative costs (excluding resident salary and benefits) ranged from \$26,197 (large, inpatient intensive programs) to \$58,025 (small, outpatient intensive programs) annually. In a subsequent similar analysis, Zeidel et al³ estimated that the annual per-resident cost to departments of medicine for training internal medicine residents in 2003 (excluding resident salary and benefits) was \$35,164.

However, a number of recent influences on training have affected these earlier cost estimates. Nuckols and Escarce⁶ estimated the additional costs of duty hour requirements to be approximately \$1 billion for additional personnel costs. This added expense occurs at a time when the 2010 National Commission on Fiscal Responsibility and Reform and the Medicare Payment Advisory Commission (MedPAC) have recommended that indirect medical education payments to teaching hospitals can be reduced by approximately one half because the relevant differences between teaching and nonteaching hospitals have narrowed significantly. Steinman⁴ argued that the recommended cuts to indirect medical education would have a significantly negative impact on graduate medical education funding because all 2007 sources of local and federal government funding resulted in an estimated \$104,717 per-resident payment in direct medical education despite his estimate that direct medical education costs per resident should have been \$130,000. Therefore, the current indirect medical education offset may be critical as a cross-subsidy to make up the approximately \$25,000 shortfall per resident. Furthermore, since 1998, the ACGME has increased the ambulatory requirement of internal medicine training, increased the level of required associate program director and core faculty support, and implemented the next accreditation system requiring increased administrative and faculty time not accounted for in the direct medical education payment per resident estimated. These factors prompted the Global Issues Subcommittee of the Accreditation Committee of the Alliance for Academic Internal Medicine (AAIM) to update and estimate the actual direct costs of training an internal medicine resident in 2013.

METHODS

Background and Data Sources

In 2012-2013, the Global Issues Subcommittee reviewed published analyses of costs of training residents in internal medicine and other disciplines and embarked on an effort to update the model of costs published in 2001 by Nasca et al.² The Nasca group used 1998 ACGME program requirements and defined different program types by percent of ambulatory training time (outpatient intensive, traditional, inpatient intensive) and sizes (21, 42, 84, and 126 total residents) to estimate the minimum instructional and program-specific administrative costs of educating internal medicine residents. Our group sought to estimate actual rather than minimum costs of training and updated the model by Nasca et al by incorporating current ACGME program requirements,⁷ survey data from the Association of Program Directors in Internal Medicine (APDIM),⁸ American Association of Medical Colleges (AAMC) salary data,^{9,10} internal nonvalidated survey data of the AAIM Accreditation Committee membership, and the subcommittee's collective experience. The subcommittee was composed of program directors, vice chairs, and chairs of internal medicine from across the country and represented university and community teaching hospitals and various sized programs (39-169 residents). Our analysis enabled us to create an updated model of fixed and variable direct costs associated with meeting ACGME requirements of teaching and administration in 2013, as well as typical added costs associated with the administration of internal medicine programs.

Estimation of Fixed Costs

The administrative fixed costs of internal medicine training programs independent of type or size includes: (1) 5% department chair time; (2) 50% program director time; (3) 1 program administrator full time equivalent; (4) 1 secretary full-time equivalent; (5) 2 chief residents; (6) time required for 1 faculty member to attend the minimum number of required conference hours; (7) development costs of program director, program administrator, and chief residents; (8) faculty development; (9) evaluation management database; and (10) ACGME fees (**Table 1**).

PERSPECTIVES VIEWPOINTS

- The cost of training internal medicine residents in the United States has increased largely secondary to duty hour limits and new accreditation requirements.
- The costs exceed previously published estimates and the average per resident outlay of federal graduate medical education support by \$51,737 to \$79,999 per year.
- New models of graduate medical education funding should address the actual costs of training to adequately meet national physician workforce needs.

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