GME Innovations Grant Program at the University of Michigan Health System—Fostering Changes in Education and Clinical Care

LISA M. COLLETTI, MD
JOSEPH C. KOLARS, MD
JAMES O. WOOLLISCROFT, MD

Abstract

Background Changes in graduate medical education (GME) have resulted in curricula, goals and objectives, and assessment methods becoming more formal, yet there is little financial support for the educational research required to develop better teaching approaches and assessment tools.

Objective We sought to encourage the development of new educational tools and assessment methods to improve the overall conduct of GME at the University of Michigan.

Intervention The University of Michigan Health System has recently established a new educational grant that is designed to foster innovative educational research in GME. We describe the experience with a new and robust internal educational grant, including the source of funding, mechanisms for reviewing and assessing the proposals, the types of proposals that have currently

been funded, and the effect and results of these studies on GME at the University of Michigan Health System.

Outcomes Projects funded by the grant have changed the curriculum in the involved programs, and many have resulted in sustained changes, including new methodologies in the simulation center, the development of an “academy” of faculty physicians with significant teaching expertise, and the creation of web-based teaching and assessment tools for “just in time” learning, and have been disseminated at national meetings and in peer-reviewed journals.

Conclusions The GME Innovations Grant Program at the University of Michigan Health System has been successful to date, funding 11 proposals during the course of 6 years. Some of these proposals have resulted in permanent changes and additions to residency training programs.

Introduction

With the advent of the Outcome Project (teaching and assessment organized around the 6 competencies) and common standards for resident duty hours, training requirements and methods for resident education changed significantly. Although residents still work long hours and see many patients, in many specialties, some of the continuity of care has been lost, and the total number of patients that residents see and evaluate during their training has decreased. Because of these changes, our curricula, goals and objectives, and assessment methods are changing and are becoming more formal. However, there is little financial support for the

educational research that is required to develop new tools. Reed et al¹ demonstrated that most educational research is not funded and that the studies that do receive support are substantially underfunded. Other investigations have shown that funded educational research projects are more productive and of higher overall quality than nonfunded efforts.^{2,3}

The University of Michigan (UM) recognized the relationship between funding and improved educational research and development and established the Graduate Medical Education (GME) Innovations Grant Program in 2006 to better support the development of new educational tools, techniques, and curricula. The aim of that funding project was to help create new educational methodologies to facilitate new educational methods that are necessary to support continued educational rigor as our residency training processes continue to change.

Intervention

Source of Funds

Studies have shown that a significant amount of educational research is funded with clinical revenues; alternative, more reliable sources of funding allow for more

All authors are at the University of Michigan Health System. **Lisa M. Colletti, MD**, is Associate Dean and Director for Graduate Medical Education; **Joseph C. Kolars, MD**, is Executive Associate Dean for Education and Global Outreach; and **James O. Woolliscroft, MD**, is Dean of the Medical School.

Funding: The authors report no external funding source for this study.

Corresponding author: Lisa M. Colletti, MD, 2600 Green Road, Suite 150B, Ann Arbor, MI 48105-5791, 734.936.8033, colletti@umich.edu

Received October 23, 2012; revision received January 9, 2013; accepted April 1, 2013.

DOI: <http://dx.doi.org/10.4300/JGME-D-12-00317.1>

consistent efforts in the development of educational research projects and programs.⁴ A consistent funding source allows more clinicians to become involved in educational research and improves the quality of educational efforts.⁵ The leadership at UM recognized these facts and felt that it was important to establish a reliable source of funding to support educational research and overall educational development.

From 1995 to 2000, UM did not fare well in Centers for Medicare & Medicaid Services (CMS) audits of the GME cost reports, returning \$5 million to \$10 million per year, primarily because of poor record keeping related to residents' educational rotation schedules. To help protect the institution, \$10 million was encumbered to respond appropriately to the audits and to pay back the necessary funds related to the audits. Because of this situation, the institutional leadership emphasized the need to have accurate record keeping regarding resident rotation schedules and provided web-based tools to improve that process. That plan was exceedingly successful, and the institution now does very well in CMS audits, and it is unusual for the institution to return funds. Because the institution recognized the need to support educational efforts, the previously encumbered \$10 million is now retained as funds functioning as an endowment, and \$3 million of that money was used to initiate the GME Innovations Grant Program (interest from those funds is used to sustain the program). That has allowed the institution to support innovative ideas to enhance educational efforts at our institution.

Grant Requirements and the Grant Evaluation Process

Grant proposals can be submitted on a yearly basis. The program is open to all faculty members at UM; grants must be focused on GME. Grant dollars may not be used for programmatic needs, such as additional trainees; funding the cost of compliance with accreditation and work hour standards; or supplementing or substituting for other funding sources to cover routine expenses. Priority is given to funding 2 to 3 highly innovative projects over several smaller, less creative proposals. Funding may be requested for up to 3 years; however, each additional year of funding is based on a competing renewal application that is evaluated with all of the other proposals submitted for that year.

Proposals are evaluated by a committee chaired by the associate dean for GME; committee members include program directors, department chairs, and the executive associate dean for Education and Global Outreach. The recommendations of that committee are reviewed by the medical school dean and the executive associate dean for Education and Global Outreach for final approval. In the

What was known

Lack of funding is a barrier to local innovation to produce better tools and approaches for teaching and assessment in graduate medical education.

What is new

An institutional innovation grants program provides sustainable funding for projects to improve graduate medical education.

Limitations

Single institution intervention, and lack of objective measurement of the effect of projects on education and care.

Bottom line

Funding through an institutional grant produced innovative interventions across a range of programs and specialties.

evaluation and scoring of the proposals, innovation is the most important aspect. Other important considerations include a multidisciplinary approach and transferability to other programs.

All funded proposals are required to submit a yearly progress report; continued funding is contingent on adequate progress being made toward the proposals' outlined goals.

Outcomes

Experience During the First 2 Years of Funding

During the initial round of grant evaluations in 2006, 3 projects were funded. All 3 grants made excellent progress and continued to receive funding on a competitive renewal basis for the full 3 years allowed (TABLE). A grant to the internal medicine program resulted in the development of an academy of faculty with expertise in patient safety and quality and has resulted in a sustained curriculum in that area. All internal medicine residents now are involved in a quality improvement project at some point during their training. Similarly, a grant to the general surgery program also resulted in a well-defined curriculum for laparoscopic skill development in the UM simulation center, which was permanently incorporated into the surgery residency program, and residents are required to complete that program before performing laparoscopic cases in the operating room. The educational innovation has increased faculty satisfaction. A grant to family medicine was used to develop a website for "just in time" learning for many of the program's off-site and elective rotations, and that has also become a permanent part of the family medicine residency program's curriculum.

During the second round of grant applications, both competing renewal applications and new applications were evaluated. The 3 initial projects described above were

TABLE **SUMMARY OF THE GRANTS FUNDED DURING THE FIRST 2 YEARS OF THE GRADUATE MEDICAL EDUCATION INNOVATIONS GRANTS FUND**

Specialty	Title	Amount of Funding, \$
Internal medicine	Competency-based education in patient safety and quality improvement; a longitudinal, mentored, web-enabled, outcomes-oriented approach for internal medicine residents	230,000/y × 3 y
General surgery	Systematic development of a comprehensive competency-based curriculum and assessment framework for surgical training	150,000/y × 3 y
Family medicine	Development of an interactive web-based core curriculum	100,000/y × 3 y
Emergency medicine	A graduate medical education scholars program	52,000/y × 3 y
Pediatrics	Enhancing quality through resident initiatives in collaborative, patient-centered care	140,000/y × 3 y

successful at obtaining another year of funding, and 2 new projects from the emergency medicine and pediatrics departments received support during 2007 (TABLE). Both of those projects also did well in the competitive renewal process and received funding for 3 years. The emergency medicine project developed a 3-track curriculum for trainees who were interested in academic careers. The tracks focused on 3 different areas pertinent to individuals interested in academic careers: research, education, and administration/finance. That program has been very successful and has been permanently incorporated into the emergency medicine program and is now being offered to trainees in all programs at UM. The pediatric project focused on the development of a curriculum in family-centered care. Again, the project was very successful and has been permanently incorporated into the pediatrics training program.

Continued Success of the Program

Since 2006, 11 projects have been funded. In addition to the 5 initiatives described above, proposals have come from orthopedics, urology, interventional angiography, obstetrics and gynecology, plastic surgery, and a collaborative project between the Department of Medical Education and the School of Engineering. Of those projects, 5 received 3 full years of funding and have been completed, 1 project is in its third funding year, 2 projects only required 2 years of funding to be completed, 1 project is currently in its second year of funding, 1 project received funding for 1 year and was terminated, and 1 project was never initiated. The principal investigator leaving the institution was the reason for 1 project never being initiated, as well as for the project that was terminated after 1 year.

Conclusion

Overall Success and Effect of the Program

The GME Innovations Grant Program has been feasible and acceptable. We continue to receive innovative projects

for evaluation and potential funding. All of the funded projects have changed the curriculum in the involved programs, and many have resulted in sustained changes. This has included new methodologies in the Clinical Simulation Center, the development of an “academy” of faculty physicians who have significant expertise in teaching in a certain area of medicine, and the creation of web-based teaching and assessment tools for “just in time” learning. The results of these projects have been disseminated by presentations at national meetings as well as publication in peer-reviewed journals.

The Future of the GME Innovations Grant Program

The leadership at UM plans to continue to fund this program. In the evaluative process for these grants, increased emphasis is being placed on proposals being highly innovative. We want our educational investigators to truly redefine and recreate GME. We are also performing a more rigorous evaluation of the outcomes for those projects, with particular emphasis on resident educational outcomes. For institutions with limited funding, alternatives to consider would be to give protected time to educational investigators to conduct these types of projects. A significant portion of the funds provided by the GME Innovations Grant Program is used to fund faculty time. Alternatively, soliciting donations and endowments to fund this type of initiative could be another potential source of revenue.

References

- 1 Reed DA, Kern DE, Levine RB, Wright SM. Cost and funding for published medical education studies. *JAMA*. 2005;294(9):1052–1057.
- 2 El-Sawi NI, Sharp GF, Gruppen LD. A small grants program improves medical education research productivity. *Acad Med*. 2009;84(suppl 10):5105–5108.
- 3 Reed DA, Cook DA, Beckman TJ, Levine RB, Kern DE, Wright SM. Association between funding and quality of published medical education research. *JAMA*. 2007;298(9):1002–1009.
- 4 Dodd GD III. Financing research and education: current challenges and future solutions—a summary of the 2009 Intersociety Conference. *J Am Coll Radiol*. 2010;7(9):684–689.
- 5 Tavakol M, Murphy R, Rahemei-Medesh M, Torabi S. The involvement of clinicians in medical education research. *Qual Prim Care*. 2008;16(5):335–340.