Establishing the First Residency Program in a New Sponsoring Institution: Addressing Regional Physician Workforce Needs

Roger W. Bush, MD
Richard F. LeBlond, MD
Robert D. Ficalora, MD

There is no road map for starting graduate medical education (GME) at an institution new to resident education, especially in a rural, sparsely populated region. This Perspective describes the key steps we followed from 2012 to 2016, and the considerations we learned from our initial experience of starting an internal medicine residency.

How Can New Residency Programs Address Regional Workforce Needs?

Thoughtful observers dispute the adequacy of residency positions, and whether a sufficient number of physicians are being trained to meet the nation's health care needs.[1,2] However, there is little controversy that our current workforce is misaligned geographically and by specialty.[3] According to the Institute of Medicine,[4] "under the current terms of GME financing, there is a striking absence of transparency and accountability for producing the types of physicians that today's health care system requires."

The 20th century saw American medicine evolving from generalist to specialist care, and from community- to hospital-based physicians.[5] The focus on subspecialization in many GME programs limits the training of generalist physicians for careers in underserved communities, especially in rural and frontier areas. Retraining and redistributing the present physician workforce is impractical. In 2011, Medicare cost reports from teaching hospitals found large state-level differences in Medicare-sponsored residents per 100 000 population (1.63 in Montana to 77.13 in New York); total Medicare GME payments ($1.64 million in Wyoming to $2 billion in New York); payments per person ($1.94 in Montana to $103.63 in New York); and average funding per resident ($63,811 in Louisiana to $155,135 in Connecticut).[3] Proposals to address these imbalances are conceptually straightforward, but politically arduous.[2]

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Primary care and community-based training models represent a small minority of GME positions; yet primary care physicians generally perform better in domains of value, hospitalization rates, and patient-centeredness.[6–8] Physicians in frontier regions, such as Montana, are aged (average age 55 to 60),[9] as are their patients. Attracting and retaining health care professionals in these communities will require purposeful training and positive role models with sustainable and rewarding careers. Montana's first family medicine residency, established in 1996, has placed more than 70% of its graduates in the region.

Competence is context specific.[10] Experience during training becomes imprinted and affects clinical behavior for decades.[11] Creating programs to train physicians where they are needed will require establishing innovative programs in interested (but unprepared) sponsoring organizations. Therefore, rapid cycle improvement and innovation in GME may need to precede geographic and specialty redistribution. Care in rural, underserved, and hard-to-serve settings is often particularly fragmented and poorly coordinated. For team-based, interprofessional collaboration to be modeled, it must first be established.

Imperatives to reduce cost and improve access will lead institutions to consider filling specialist and subspecialist gaps with skilled generalists. Even in urban, integrated delivery systems, the choice of delegation of care, from generalists to consultants, shows early and wastefully low-threshold referral as the norm.[12] Preparation of generalist physicians for service in sparsely populated, underserved regions requires a higher standard of responsible self-reliance and collaboration than most role models or residency continuity practices provide.

Building a New Sponsoring Institution

Institutional Culture

Health care delivery systems new to GME will be unaccustomed to the regulatory environment, and will likely lack administrative and management experience

with GME and experienced individuals who can serve as program directors, as required by the Accreditation Council for Graduate Medical Education (ACGME). The Centers for Medicare & Medicaid Services (CMS) policy restricting new funding to sponsoring organizations without any previous GME experience selects for these deficits. Introduction of GME into established institutions will almost certainly be disruptive. Major tensions can arise from conflicts with firmly established beliefs, behaviors, structures, processes, and artifacts. The cultural transformation to a learning health system (all teach, all learn, all improve) will benefit patients and provide a context to resolve these issues.[13,14] Targets for cultural interventions include the following:

- Medical staff and physician leadership
- Senior health system executives
- Midlevel managers
- Nurses, nursing managers, and nursing culture itself
- Schedulers and coders for trainee encounters

State and Local Government

It is essential to understand local medical licensing policies through timely collaboration with medical licensing boards, legislative staff, legislators, and lobbyists outside the sponsoring institution. Awareness of current immigration law requirements of the Department of Homeland Security and the State Department are necessary if international medical graduates are to be recruited. Expertise in managing the process for H-1B visas and J-1 waivers will be significantly different for physicians in training than for physicians entering independent practice. Processes allowing resident physician authorization for prescription of medications, durable medical equipment, home care, and nursing home admission must be established. A rural environment also adds to the complexity.

Resources

Financing a new residency requires large up-front commitments of operating capital for the years necessary to fully establish the new care models. Single program sponsors lack economies of scale, and multiple training sites require additional coordination and resources. Family medicine has been much more community based, with numerous examples of sponsorship by public health departments, federally qualified health centers, teaching health centers, and state budget line items. We have found the strategies and tactics used in family medicine program development difficult to transfer when starting an internal medicine program.

GME consultants do not reliably appreciate local context or GME regulatory details and can be prohibitively expensive. Experience and competency in GME administration within an existing residency program are necessary and mandated by the ACGME, yet are insufficient to start a new program. We have not identified a comprehensive resource for starting new internal medicine residencies in new hospital-based sponsoring organizations. The Alliance for Academic Internal Medicine publishes *The Toolkit Series: A Textbook for Internal Medicine Education Programs*. Although this textbook is directed at sustaining and improving existing internal medicine residency programs, it is a useful compendium of advice and experience by expert faculty and staff.[15]

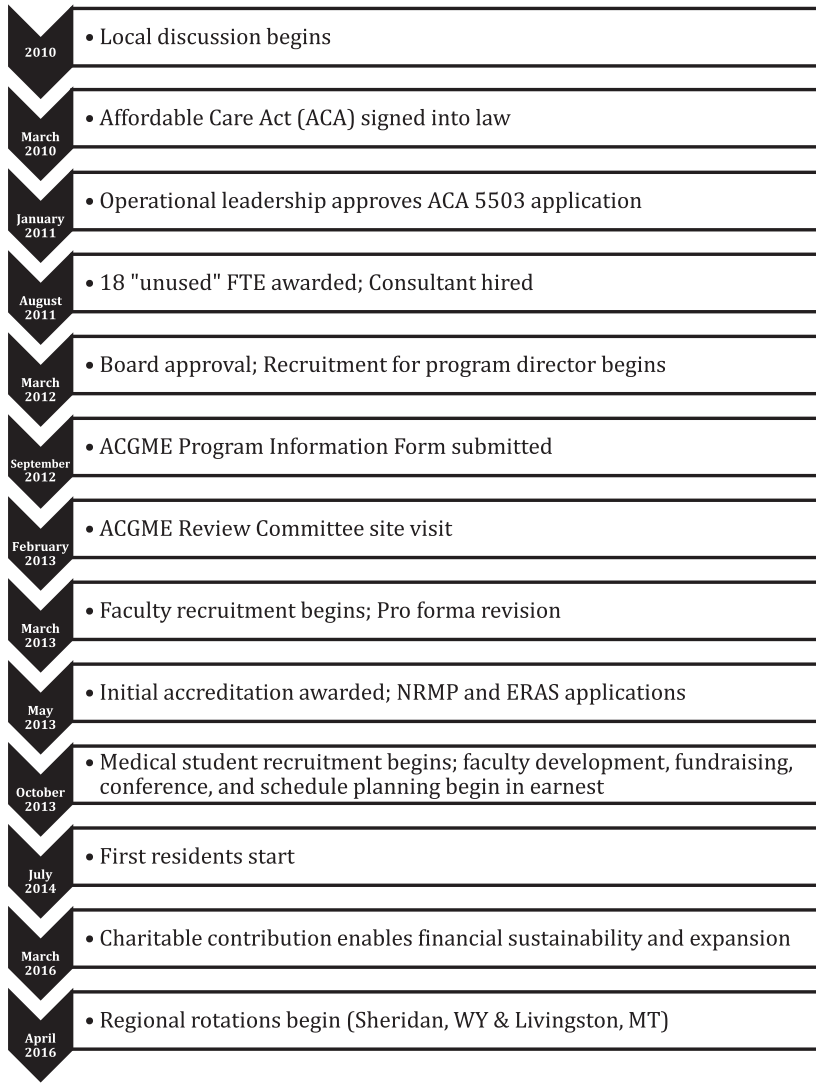
The first GME program at our institution, an internal medicine residency, received initial funding via section 5503 of the Affordable Care Act (ACA 5503), which provided a 1-time redistribution of unused funds resulting from unfilled residencies and closed hospitals. These funds do not provide startup costs, and are disbursed several years after program implementation. We also received generous subsequent support for expansion of our resident complement and rural training to improve access to and quality of care in the upper Midwest from the Leona M. and Harry B. Helmsley Charitable Trust and its Rural Healthcare Program.

The lead time for our efforts, from contemplation to stable financial footing, was more than 5 years (FIGURE). "Virgin hospitals" need to envision and implement all GME plans within a 5-year time frame for CMS funding, as no incremental approach is allowed. This high bar impedes entry for many small community hospitals.

Although ACA 5503 funds are no longer available, and private funding for primary care training is unusual, other funding sources exist (TABLE). Potential partners to assist program development include the US Health Resources & Services Administration, the US Department of Veterans Affairs, CMS, and public and private philanthropy.

Infrastructure

There is a major difference between adding a residency program to an existing GME setting and establishing the "pioneer" program. Both institutional and program-specific ACGME accreditation requirements must be met. A GME office, a GME committee, and program evaluation committees must be established from scratch. Clerical and administrative support for issues relating to accountability, capability, fiscal



FIGURE

Billings Clinic Internal Medicine Residency Timeline and Essential Steps

Abbreviations: ACGME, Accreditation Council for Graduate Medical Education; NRMP, National Resident Matching Program; ERAS, Electronic Residency Application Service.

responsibility, and compliance of the sponsoring institution needs to be identified, or hired and trained.

Medical Staff

A medical staff culture of professionalism, teaching, and learning cannot be taken for granted. Local practitioners are unlikely to be familiar with competency-based clinical training or with modern educational approaches to learning, collaboration, reflection, feedback, and evaluation.[16] Experienced clinicians will not necessarily have the preparation as faculty members to provide academic assessments and learner feedback. A culture of safety must be supported using the principles of Just Culture[17] with clear chains of command, procedure and policy handbooks, and a TeamSTEPPS approach to communication.[18] It is also challenging to avoid a drift toward valuing service over education.

Strategies to ease the transition from full-time clinician to clinician-educator include the following:

- Consistent, cogent, and affirmative messaging with an inspiring narrative
- Explicit faculty schedules
- Explicit faculty compensation policies
- Support for work-life balance
- Faculty development, both formal and "just in time"
- Engagement with program leadership and core faculty

TABLE
Potential Funding Sources for New Residencies

Funding Source	Pros	Cons
Centers for Medicare & Medicaid Services	▪ Familiar ▪ Largest source (Medicare $9.7 billion, Medicaid $3.9 billion in FY 2012) ▪ Compiled experience ▪ Integration of evaluation systems with cost reports ▪ Federal multiplier of up to 40:1 for state Medicaid GME contributions	▪ Political uncertainty ▪ Bureaucratic complexity ▪ Unrelated to workforce needs, quality, safety, and outcomes ▪ New funds available only to organizations new to GME ▪ Does not fund training in critical access hospitals
Department of Veterans Affairs	▪ Politically popular ▪ 1500 FTE expansion ($1.4 billion in 2012)	▪ Funding limited to VA facilities ▪ Bureaucracy
Health Resources & Services Administration	▪ Enables children's hospitals, national health services corps, area health education centers, teaching health centers, and Title VII primary care programs ($0.5 billion in 2012) ▪ Allows community-based training	▪ Restricted to specific settings and purpose
Department of Defense	▪ Integrated delivery system	▪ Limited to military medical system ▪ Primary mission is to combat readiness, rather than Triple Aim ▪ Politically uncertain
State governments	▪ Generous expansions	▪ Uneven geographic distribution
Private sources (foundations, philanthropy)	▪ Alignment of mission	▪ Opportunity cost of grant development ▪ Risk of mission creep ▪ Distraction from learning due to fundraising efforts
Integrated delivery systems (Kaiser Permanente, Group Health Cooperative, foundations)	▪ Learning health system approach: training embedded in care delivery system	▪ May limit training to covered lives ▪ Duality of academic and operational duties
Pharmaceutical and device manufacturers	▪ Venture capital approach ▪ Potential reduction in bureaucracy	▪ Inurement: training linked to product and return on investment ▪ Funding reliability linked to company performance
Health insurance companies	▪ All-payer concept ▪ Long-chain integration	▪ Inurement: may limit training to covered lives
Patient care revenues	▪ Scalable	▪ Invites service over education
Institutional direct support	▪ Local control	▪ Excludes funding other needs, risking intramural resentment

Abbreviations: FY, fiscal year; GME, graduate medical education; FTE, full-time equivalent; VA, Department of Veterans Affairs.

Recruitment

Institutions new to GME will typically be unfamiliar with GME networks and unprepared to recruit, equip, and support their new faculty. The institution must be willing and able to commit financial resources from operating revenue to recruit and support the nascent educational team for the years required to realize a financial return on this investment in human capital.[19] Program directors, clinician-educators, program administrators, and residency candidates must be recruited, developed, and retained. In building a residency team, physician staffing consultants and advertising platforms, while useful, are no substitute for personal relationships, societies of professional medical educators, and word of mouth. Physicians wishing to grow beyond their current professional settings and to be motivated to practice

collaboratively in a training environment are excellent faculty recruitment prospects.

Innovation and Accommodation

Care delivery adapted to the needs and context of the target patient population can improve care, health, and value.[20] A team-based, interprofessional learning environment best suited for resident training is a departure from usual practice. Internists frequently work in isolated "social silos" (even when other professionals work in the practice[21,22]) and will benefit from acquiring "teaming skills."

Breaking through the safety, quality, service, and value barriers in health care delivery will require end-to-end system redesign. New GME settings provide both innovation platforms and the workforce pipeline for this transformation.[23,24] Much hope is being placed in telecommunications technologies, and while these are technically feasible, there is yet little evidence of clinical benefit. Further research is needed, and the challenge of carrying out randomized trials of telemedicine applications is daunting. Policy makers should be cautious about recommending increased use of, and investment in, unevaluated technologies.[25]

Managing and staffing a teaching ambulatory practice is significantly different than a traditional production-based clinic. Appropriate resident teaching space and workload is imperative. Designing an ambulatory experience that projects a joyful and viable career path requires skills not expected in traditional hospital management.

The relationships and benefits of a physician-led team are satisfying to patients and their caregivers, yet come at the cost of increased dynamic complexity and unpredictability for administrative staff. Like the electronic health record, implementation of a residency is a "disruptive innovation," revealing weaknesses in institutional structure and processes and necessitating timely solutions.[26] The addition of residency rotations, recruitment schedules, and educational activities greatly complicate administrative processes. Managers may react negatively to residents and faculty, who may be perceived as the cause of such added complexity.

Appointment scheduling for patients must be modified to include consistent messaging and team scripting. Therefore, a dedicated telephone center for scheduling student, resident, and faculty appointments is highly desirable. Phone personnel should be prepared to explain what a resident is, and be able to calmly deal with patients' questions, while educating on the new model and reassuring them about supervision and competence. The intermittent presence of multiple providers (faculty members and residents) in the ambulatory setting introduces additional scheduling complexities. Any new provider attracts challenging patients, such as those seeking opioids, disability, and tests denied elsewhere. While there is good learning in the care of such patients, it can easily be overdone.

It is essential to develop the standardization of layout and stocking for outpatient examination rooms, patient workflow, electronic health record documentation workflow, faculty supervision of visits and documentation review, and attestation for billing. Residents must be designated as the primary care providers in the electronic health record.

Physicians have difficulty deconstructing tasks in which they are proficient. This, combined with the absence of senior resident supervisors ("near peers") in the initial 1 to 2 years of a program, presents a particular challenge in role modeling resident tasks and roles. Ideally, team norms will be established before residents arrive. Geographic colocation of inpatient units is desirable as a means to reduce unnecessary travel and develop interprofessional relationships. Creation of space proximate to high census medical inpatient units for resident-student teamwork presents another challenge, yet it is critical to facilitating education, communication with nursing, and patient care.

Summary

Realignment of the geographic and specialty output of the physician workforce pipeline to meet the needs of society will require new residency programs in new sponsoring institutions. Our experiences in doing so have revealed the following challenges and opportunities.

De novo residency design presents fewer obstacles to innovation than redesign of existing programs. The authors' experiences in the inception and implementation of the ACGME Educational Innovations Project pilot[27] afforded a network of advisors and a menu of GME innovations. The residency's impact on the Billings Clinic care model propelled the spread and implementation of interprofessional team care (rather than 1 physician to 1 nurse), primary care medical home implementation, and focus on a population with multiple complex, interacting chronic illnesses with social determinants of illness.

Cultural factors are complex and can have unanticipated impact. Don't attempt a de novo program without in-depth awareness of the local cultural context and informed, committed senior executives.

Medical staff behaviors ranged from enthusiastic support to active opposition. With time, the recruitment asset of a residency program, the presence of bright and eager junior physicians, and community engagement with the social mission (bringing general internists to the region) converted some and disarmed most opponents.

A duality exists between (1) the operational and accreditation imperative for experienced and qualified program leadership, and (2) integrating local knowledge and relationships with medical staff, hospital administration, and community leaders. Managing this duality necessitates close collaboration between externally recruited program leadership and local medical and administrative leadership.

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All authors are with Internal Medicine Residency, Billings Clinic (BC) and Department of Medicine, University of Washington School of Medicine (UW). **Roger W. Bush, MD,** is founding Program Director, BC, and Clinical Professor, UW; **Richard F. LeBlond, MD,** is Assistant Program Director, BC, and Clinical Professor, UW; and **Robert D. Ficalora, MD,** is Program Director, BC, and Associate Clinical Professor, UW.

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Corresponding author: Roger W. Bush, MD, 3841 Cascadia Avenue South, Seattle, WA 98118, rbush2@u.washington.edu