APM Perspectives

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Strategies for Residency Programs that Improve Medicine Departments and Teaching Hospitals

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An internal medicine residency program can be leveraged as a strategic advantage to a department of medicine and teaching hospital in the core mission areas of patient care, education, research, and community service. A prerequisite for success is congruent strategies and action plans of the residency program, department of internal medicine, and institution. To accomplish this end, it is critical to have an appropriate level of trust, support, and most importantly, ongoing dialogue.[1,2] This commentary presents strategic recommendations for maximizing the value of a residency program and translating that value to its department of internal medicine and host institution. These recommendations comprise a toolkit of strategic initiatives that will ideally spur creative discussion among residency program stakeholders. Each recommendation (Table) is framed by concrete examples of how implemented strategies can lead to win-win outcomes. These examples were primarily generated through direct communication with a national cross-section of residency program leadership and active faculty.

The impact of these strategic recommendations is largely dependent on the effectiveness of implementation agents and the quality of their action plans. Throughout this article, the most appropriate leadership agent to spearhead an effort will be identified; however, the specific individual depends on the organization of the institution and departmental capabilities. While residency program leadership will generally be involved, other key areas, such as quality improvement, human resources, and research support, must be engaged and committed to ensure success.

STRATEGIC RECOMMENDATIONS FOR PATIENT CARE

Involve and Empower Residents to Participate in Organizational and Educational Decision-making Processes

Residents play an intimate role in patient care and are positioned to identify and solve common organizational problems that undermine the quality of care and increase the cost of care.[1] Resident input can be valuable in recognizing problems, proposing potential solutions, pointing out pitfalls, and creating buy-in. Input can be acquired through committee leadership positions, systems-based research opportunities, and operational initiatives.

At the Evanston Northwestern Healthcare internal medicine residency program, residents partner with pharmaceutical and nursing leadership through joint rounding on patients and monthly meetings for feedback, dialogue, and quality improvement ideas. Residents also serve as members of hospital-wide committees, including the Pharmacy and Therapeutics Committee and the Physician Advisory Committee for the Electronic Medical Record.

Structured systems-based research projects and a grand rounds presentations series have successfully generated positive organizational change. At Nassau University Medical Center in East Meadow, NY, the internal medicine residency program established a Performance Improvement Committee, led by residents

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and assisted by residency program leadership and the medical director. This committee helps interested residents develop publishable research projects that influence the quality of patient care at the medical center. Also, when a project identifies a tangible opportunity for improvement, the committee determines appropriate interventions. For example, residents helped devise an operational initiative to ensure all asthma admissions receive adequate peak flow assessments. As of this article's submission, more than 25 residents were participating in 10 projects.

At Temple University Hospital and Health System, a resident, under the supervision of a faculty advisor, completed a quality improvement project that improved radiology service operations. The project successfully created and implemented a new operational system for emergency chest radiographs that reduced the time from order placement to viewing availability from the previous average of 90 minutes to only 30 minutes. At Evanston Northwestern Healthcare, residents are organized into teams that present projects at a special grand rounds series each year devoted to the identification of systems issues and suggestions for improvements. Topics include the overuse of acid suppression medications, the formation of a chest pain observation unit, and improvements in the quality of the outpatient visit summaries given to patients through the electronic medical record.

PERSPECTIVES VIEWPOINTS

- Strategies for including residency programs as agents for departmental and institutional improvement and change.
- Strategic recommendations in 4 core mission areas are provided.
- Each recommendation is supplemented by concrete examples of successfully implemented strategies.

Promote the Improved Quality of Patient Care Inherent to the Teaching Hospital Environment

Not only do internal medicine residency programs generally provide 24-hour hospital coverage of patients, they also have been shown to produce substantial improvement in quality outcomes. Considerable research examines and compares quality measurement between teaching and nonteaching hospitals. In a review of 23 studies that compare the relative quality between teaching and nonteaching hospitals (in which a "major" teaching hospital is defined by a resident-to-bed ratio of >0.27), there is a statistically significant quality advantage with regard to process (such as percent of patients discharged on beta-blocker post myocardial infarction and patients undergoing emergent angioplasty when indicated) and outcome measures (such as risk-adjusted mortality).[2]

While the difference cannot solely be attributed to the residency program environment, the increased intensity of care and multiple independent assessments of each patient case may have contributed to improved processes and outcomes. It is important that quality improvement leaders inform hospital administrators and boards of directors of this competitive advantage. Hospital or departmental leadership may even choose to make patients and their families aware of what it means to be cared for by residents and the advantages of both 24-hour coverage by physicians (ie, residents and fellows) and several independent analyses of the clinical case. Some institutions have considered developing literature to be given to patients and families at admission.

Notably, in the past 20 years, only one study is available through a PubMed search that specifically examined the association of resident coverage with cost, length of stay, and profitability. This 2001 study concluded that resident coverage was associated with no difference in length of stay and significantly higher costs, but also a higher profitability of $1091 on average per patient stay.[3] Further research that specifically measures the comparative impact of resident coverage

Table Summary of Strategic Recommendations

Patient care	Involve and empower residents in organizational and educational decision-making processes.
	Promote the improved quality of patient care inherent to the teaching hospital environment.
	Directly market attending positions to current residents and residency program graduates.
Education	Aggressively promote an academic and evidence-based culture in the department of internal medicine.
	Cultivate and reward productive department teaching attendings.
	Measure the quality impact and financial productivity of the residency program.
Research	Create a programmatic infrastructure to drive resident research productivity.
	Enable residents to internally and externally disseminate research.
Community service	Institutionalize residency program involvement in community service activities.
	Develop an innovative care model to provide access for your local medically underserved population.

on patient care outcomes would help clarify the quality and financial contributions.

Directly Market Attending Positions to Current Residents and Residency Program Graduates

Graduates from internal medicine residency programs are a prime resource for new physician hiring. Departmental leadership already know these individuals from their residency years, making the recruitment process more focused, less costly, and more likely to add valuable human capital to the organization. Also, given the resident's familiarity with the system and culture of the hospital and department, he or she is better able to become a productive clinician in a shorter time frame. Human resources and appropriate leadership must identify department, hospital, and medical group needs at least 1 year in advance of graduation to effectively target and market to this pool of young internists and hospitalists who are in high demand. Human resource literature continually supports the assertion that the best talent must be sought out early. It also is known that developing relationships, sowing the seed of interest early, and capitalizing on the first-mover advantage can be instrumental in securing new, high-quality hires.[4]

Familiarity with the institution and department as well as mentor relationships with faculty often lead residency graduates to return to join the program's faculty in subspecialty areas after completing fellowship training at other institutions. These relationships with talented subspecialists can be especially advantageous in certain limited-supply subspecialty areas.

STRATEGIC RECOMMENDATIONS FOR EDUCATION

Aggressively Promote an Academic and Evidence-Based Culture in Departments of Internal Medicine

Academic and evidence-based culture can be promoted in a department and residency program by several means. The dissemination of up-to-date knowledge is achieved through daily didactic and patient case-centered conferences, such as morning report. Teaching attendings are challenged by residents to know the current clinical evidence and treatment options. The academic and evidence-based culture becomes pervasive not only among attending physicians, but with all clinical providers through their regular interaction with curious and teachable residents.

Evidence-based medicine resources, such as MD Consult and UpToDate®, are usually readily available for residents and, therefore, also are enjoyed by clinical faculty and staff. A residency program creates many teaching opportunities within each departmental division through resident rotations and noon conference presentations. This academic focus attracts top-quality clinicians and researchers interested in discovery, teaching, and evidence-based patient care.

As an example, monthly Morbidity and Mortality conferences often are led by resident teams that incorporate clinical faculty into presentation discussions at the departmental grand rounds. These discussions help promote quality care as well as invoke a thorough examination of the evidence supporting current clinical practices and standards of care.

Cultivate and Reward Productive Department Faculty

Departmental leadership must systematically recognize, reward, and develop key clinical faculty who demonstrate an active interest in resident education, beyond the program director, associate program directors, and chief residents. Faculty development helps attract and retain top clinicians and researchers as well as creates a culture that places an emphasis on continuous learning and evidence-based, high-quality clinical practice. Ongoing faculty training to develop better teachers, mentors, and curricular innovators will add value to the department and its host institution. Development opportunities for faculty will improve retention, reduce turnover costs and minimize the lead time required to build clinical practices and develop research programs.

The Medical College of Wisconsin developed a 2-year, one-half-day-per-month program that aligns faculty development needs with institutional priorities. The program requires the completion of projects that address departmental and hospital-wide needs. In 15 years, more than 115 faculty members have completed the program, and 88% of all educational projects were implemented and sustained at least 1 year following the individual program graduation date.[5]

Developing new or using existing measures to assign a value for each of the activities required to train residents, such as physical diagnosis rounds, office precepting, teaching attending, and morning reports, has been highly effective in establishing a more equitable system of financial reimbursement.[6] At Southern Illinois School of Medicine, the surgical faculty is rewarded financially through an academic performance incentive program. This program standardizes each of the educational activities and honors into credits that are translated to a commensurate financial value. For example, performing the duties of a student advisor for one student per year is worth 2.0 credits, while a faculty member that receives the annual teaching award earns 15.0 credits. This program helped counteract negative

perceptions about rewards assigned to teaching and research activities and encouraged future academic productivity.[7]

Measure the Quality Impact and Financial Productivity of the Residency Program

Although teaching hospitals receive $6 billion annually from Medicare for residency training in all specialties, departments of internal medicine and their faculty receive limited direct compensation through this mechanism. Departments of internal medicine and their subspecialty divisions comprise 30% of the 106,000 US residency and fellowship slots. Therefore, it is critical for internal medicine department and residency program leadership to quantify the value of services invested to ensure highly skilled future practicing physicians, especially because quality of care issues remain at the forefront of provider and public discourse on health care reform issues. These figures can be used to attain and justify hospital investment in the department and as leverage in external discussions by hospital administrators. In 2005, Zeidel et al, working in conjunction with the Association of Professors of Medicine and The Hunter Group/Navigant Consulting, Inc, placed the educational costs to train a resident and fellow at $34,000 and $17,500 per year, respectively.[8]

In addition, key metrics should be tracked to better quantify the financial impact of the residency program. These metrics may help promote the value of the teaching program beyond the commonly accepted benefits of enhanced prestige, increased patient referrals, and improved quality.[9] One initial possibility is to measure the contribution margin from all teaching service patients over defined intervals at 2 distinct time periods. Another key metric to track is the rate of professional staff turnover and the satisfaction of those intricately involved in the teaching program versus individuals minimally or not involved in educational activities.

STRATEGIC RECOMMENDATIONS FOR RESEARCH

Create a Programmatic Infrastructure to Drive Resident Research Productivity

Although the Accreditation Council for Graduate Medical Education regulations require internal medicine residents to "participate in a scholarly activity," only about 20% of residents conduct hypothesis-driven research.[10] Resident involvement can improve the productivity of research-focused attendings and further the research mission of the teaching hospital, a major marketing advantage for teaching institutions over nonteaching institutions. Some large academic institutions, such as University of Chicago Pritzker School of Medicine, even offer a formal research track option to residents.

Henry J. Schultz, MD, proposes that the key elements of a productive residency research program include a programmatic infrastructure with a residency research director (RRD), defined individual research goals and expectations, dedicated time for resident research, a research curriculum, faculty mentors, and an opportunity to present at meetings.[11] Residents and educators also must understand that successful research requires more than a 1- or 2-month elective; integrating research into the 3-year residency continuum is more effective.[11] However, simply increasing time for research without the necessary supportive programmatic elements has not been associated with increased productivity.[12]

The purpose of a RRD is to ensure not only a "match-making of interests" between resident and researcher, but also longitudinal guidance and support. RRDs can help each resident define a research area of interest and develop goals; navigate institutional resources and obstacles, such as institutional review board approval; and actively explore opportunities for research presentation and publication. RRD and resident discussions should occur at several points throughout each academic year, especially before and after a designated research block. The effective utilization of a RRD is proven to substantially increase the number of publications and regional and national presentations.[13]

Enable Residents to Internally and Externally Disseminate Research

Because the majority of resident research is not grant-supported, departments of internal medicine should develop a budget for resident scholarship that includes discretionary funds for statistical support, poster production, and travel. Options to control the cost for the department include setting a cap on the maximum amount of funds available or on the number of presentations subsidized. Other possibilities to help defray costs include local and regional meetings for which travel costs are subsidized, such as the American College of Physicians chapter meetings. In addition, promoting local research day events and structuring grand rounds devoted to resident research provide internal awareness of ongoing projects and opportunities for synergies and collaboration. For the institution, these presentations and publications serve to enhance the department's recognition and reputation. For the resident, these achievements are attractive to fellowship programs as they demonstrate the ability to perform significant research while meeting considerable clinical responsibility.

STRATEGIC RECOMMENDATIONS FOR COMMUNITY SERVICE

Institutionalize Residency Program Involvement in Community Service Activities

Residents organize and participate in volunteer activities that substantially improve the image of the institution among the local community, such as health fairs, youth mentoring, and disease prevention education. The most productive programs tend to use a single significant annual service opportunity that galvanizes the entire residency program and maximizes the time and efforts of busy faculty, staff, and residents. For example, the Yale-New Haven Medical Center Primary Care Internal Medicine residency program holds an annual community health fair in Waterbury, Connecticut that focuses on prevention and screening to provide a much-needed service for the community and generates positive publicity for the medical center. Each year, a resident takes a primary leadership role as the lead coordinator for the event. Institutionalizing the community service opportunity ensures the activity is meaningful in scope and impact, is easily reproducible logistically and financially, and progressively creates an internal and external brand for the program, department, and hospital.

Develop an Innovative Care Model to Provide Access for the Local Medically Underserved Population

Residency programs typically provide a safety net to patients who cannot gain access to a private physician, either through lack of availability or inadequate insurance. In 2004, the members of the Association of American Medical Colleges Council of Teaching Hospitals and Health Systems, while comprising only 6% of the nation's hospitals, provided 44% of charity care and accounted for 26% of Medicaid discharges in the United States.[14] Resident clinic directors have an opportunity to work with hospital, departmental, and local community leadership to support or create an innovative care model for the medically disadvantaged population. The "resident clinic" has traditionally been a source of charity and low-income care and an opportunity to meet the outpatient needs of the underserved population cared for by its teaching hospital. This commitment to the underserved is highly valued not only by the patients served, but by the entire community. It is thus a source of visible goodwill for and positive publicity from the institution.

Residency programs can provide clinical as well as administrative support to deliver comprehensive and coordinated community-based primary care and key specialty services. For example, Montefiore Medical Center's Social Medicine and Primary Care Internal Medicine residency programs have been instrumental, along with the pediatrics and obstetrics-gynecology programs, in providing care to one of the poorest districts in the country through their outreach to the Comprehensive Health Care Center of Montefiore, located in Bronx, NY. Montefiore medical residents are involved in more than 40% of annual clinic visits. More than 95% of patients have incomes below 200% of federal poverty guidelines, nearly 20% are uninsured, and more than 60% are covered by Medicaid. The Montefiore comprehensive primary care program, along with targeted specialty services including dental, ophthalmology, audiology, dermatology, and mental health care, provides high-quality "health care in the community," in contrast to the common experience of many low-income patients who must travel outside their community for many of their health needs. The Comprehensive Health Care Center model has also created opportunities for local community members to participate in clinic advisory board meetings and employment options for talented individuals who have a vested interest in serving their community.

CONCLUSION

Residency programs are under-recognized and underutilized as strategic engines for quality improvement, research productivity, and community outreach. While residency programs are often not traditionally viewed as strategic assets, institutions and departments have an opportunity to increase the value of their respective entities and residency programs through prioritization and support for these recommendations. Collaboration among all 3 stakeholders will help create the early successes and generate momentum in each of the core mission areas. As with any strategic imperative, congruent organizational objectives and a steadfast commitment provide a foundation while adept and dynamic leadership drives desired results.[15]

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