

Physicians in Training as Quality Managers: Survival Strategy for Academic Health Centers

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Abstract

Being responsible for medical education places academic health centers at a disadvantage in competing for managed care contracts. Although many suggestions have been made for changing medical education to produce physicians who are better prepared for the managed care environment, few studies have shown how physicians in training can actually contribute to the competitiveness of an academic health center. We present three examples of engaging trainees in projects with a population-based perspective that demonstrate how quality improvement for the academic health center can be operationalized and even led by physicians in training. In addition to gaining experience in a managed care skill that is increasingly important for future employment, physicians in training can simultaneously improve the quality of care delivered through the academic health center.

(*Am J Man Care* 1997;3:1851-1856)

Numerous challenges face the academic health center (AHC) in the era of managed care, challenges great enough that the very existence of the AHC is threatened.^{1,3} The medical education programs, once regarded as a marker of quality of the AHC, now may be viewed as an unnecessary burden on AHCs in the race for managed care contracts. These threats concern not only those whose employment depends on AHCs, but also policy makers and government officials who perceive threats to a health-care system once the envy of the rest of the world. (*The New York Times*, May 20, 1997.)

Much thought has been given to making medical education more compatible with the goals of managed care.^{4,6} However, these suggestions focus more on producing physicians who are more relevant to the new medical marketplace than on how engaging learners can be useful to the AHC's goal of attracting managed care contracts. In this article we describe a model whereby learners in AHCs enhance the competitiveness of the AHC in the new medical marketplace through active participation and leadership in quality improvement activities.

New Roles for Physicians in Training

The availability and willingness of trainees to comply with the service demands of the AHC have traditionally made their presence in the clinical setting advantageous. However, these advantages are now countered by several trends. First, sentiment for reducing or eliminating subsidies for resident education is growing.² Second, it is increasingly recognized that physicians in training require more space and support personnel and are less clinically productive than fully trained physicians.^{7,8} Third, a dwindling hospital census and changing rules regarding trainee supervision diminishes the need for trainees as academic physician extenders in the hospital setting. As an example, federal regulations mandate reimbursement of attending physicians based on documentation of the clinical service by the attending physician, not by the physician in training.⁹ As a result, the physician in training can no longer serve as scribe for the attending physician. With a diminishing value of physicians in training to the AHC in their current roles, the AHC should explore different roles for trainees. We propose that one new role should be in contributing manpower and analytic skills to the goal of quality improvement.

While quality in healthcare was once nearly synonymous with technological expertise that focused on the care of individual patients, its definition now relates to the health characteristics of a population

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served through a primary care delivery system. The best known example of such quality characteristics is from the National Committee of Quality Assurance, whose Health Plan Employer Data and Information Set (HEDIS) criteria measure use of commonly used technologies and screening maneuvers.¹⁰ Reporting requirements for such quality measures have proved onerous for both the managed care organization and the individual physician. Stories of managed care auditors parading through physician's offices, one after another, repeating an audit process for each managed care contract are common. It should then be no surprise that measuring quality under the newer paradigm can be expensive. In the British system where wide and diverse efforts to obtain data on every aspect of productivity, quality, and cost-effectiveness have been in place for many years, the cost of collecting these data has been estimated to subtract as much as 10% of the budget from clinical services.¹¹ In the US healthcare system, quality improvement has now grown to be a major industry, and consultants are poised to offer quality improvement services at the right price.

The pool of learners at an AHC represents an untapped resource for improving quality. Not only does the relative availability of trainees make for a ready army of data collectors, but their proven quantitative skills make them appropriate for the role of data analysts. Combined with the scientists already available at AHCs who are skilled at data analysis, physicians in training only need redirection using the principles of quality improvement. Perhaps even more important than their potential role in data collection and analysis is their positioning in the clinical setting to serve in intervention design and implementation. Thus physicians in training should be able to serve at many different points of the quality improvement cycle. We illustrate these suggestions by describing our experience in involving physicians in training with quality improvement projects at a teaching community health center affiliated with an AHC.

Lessons From a Teaching Community Health Center

Reynolds Health Center is a community health center in Winston-Salem, North Carolina, administered by the Forsyth County government and subsidized by county taxes. The health center remains the principal venue for providing indigent healthcare to Forsyth County residents. Attending physicians from the neighboring medical school staff the clinic through a contractual arrangement with the county. The payer mix of patients in the clinic is approximately 40%

Medicaid, 16% Medicare, 4% private insurance, and 40% self-pay. No managed care patients are currently in the practice, and the penetration of managed care in the county area is fairly low at 37%. However, the clinic's responsibility for the mandatory primary care case management program for Medicaid patients involves gatekeeping for emergency department visits and outside referrals and is evolving rapidly at the insistence of the state government to a program with even more aggressive utilization controls.

The Adult Medicine Clinic is staffed by seven attending physicians, four physician assistants, and 35 resident physicians in internal medicine. Resident physicians have their own continuity clinic 1 to 2 days per week during their 3-year residency. Attending physicians provide direct care to their own patients during the mornings, and resident physicians have their continuity clinics in the afternoon. An average of one to two fourth-year medical students per month use the Adult Medicine Clinic as a clinical site for their elective community medicine block rotation.

Recognizing the need for improvement in documenting quality improvement efforts in the clinic and the need for better education of physicians in training in managed care principles, we implemented a quality improvement program that primarily involved physicians in training. The idea of engaging physicians in training as the agents of quality improvement arose because there was little support from either the county or medical school administration for quality improvement exercises. Anticipated benefits included an increase in resident ownership of the practice and encouragement of a better attitude toward the idea of group practice.

One to two first-year resident physicians who rotated through the clinic during a month-long ambulatory skills block rotation participated in quality improvement projects. The clinic director led seminars on quality improvement twice monthly, during which recently published articles on quality improvement were introduced and discussed. While HEDIS criteria served as the targets for the quality domains studied, addressing issues of quality that were important to the clinic and to the residents in training were considered important to accomplishing "buy-in." The clinic director and staff ultimately chose the projects for that month's rotation.

Because this was the initial organized effort at quality improvement in the clinic and because there were no support staff or easily available computerized lists of patients, strategies were specific to local circumstances. First, we sought only clinic-level data because obtaining provider-specific data was more labor inten-

sive and because we were attempting to build a sense of teamwork in this mission of quality improvement. Second, rather than target the entire population served by the clinic, we studied only active clinic patients. Thus active charts of patients who were actually being seen in the clinic served as the target population for quality improvement projects. Depending on the project, either all active charts in sequence or every third chart was chosen to ensure that an adequate number of charts were reviewed.

After residents discussed how the project would be conducted, two half-day sessions were chosen for data collection. The final project(s) were completed by the end of the 1-month rotation, and in most cases, the results of the project were presented by the residents

at the weekly clinic staff meeting. Subsequent feedback to other physicians in training was accomplished using the material reviewed in developing the project and data collected during the project. Use of a multimedia computer for feedback stimulated interest in the feedback component. The projects completed by the resident physicians for the most recent year are described in Table 1. Example #1 in Table 2 illustrates in more detail the process of engaging resident physicians through a discussion of the cervical cancer screening project.

As part of their community medicine block rotation, fourth-year medical students were obligated to perform a community medicine project that focused on a public health or population-based issue.¹² Many

Table 1. Population-Based Projects By Physicians in Training

Goals and Methods	
Quality Improvement Projects (Resident Physicians)	
Emergency department utilization for asthma	Determine the rate of emergency department utilization for patients with asthma in the previous year through chart review and phone survey
Adequacy of chart documentation	Determine the prevalence of adequate problem list and medication flow sheets through chart review
Appropriateness and costs of out-of-clinic referrals	Assess how long the annual allotment for referrals for indigent care will last
Retinal screening in diabetes	Determine the rate of ophthalmologic referral for diabetic patients in the previous year through chart review
Pneumococcal immunization	Determine the rate of immunization of patients aged 65 years through chart review
Cervical cancer screening	Determine the rate of documented Pap smear through chart review
Community Medicine Projects (Fourth-Year Medical Students)	
Spanish translation services	Explore strategies for improving translation services with local agencies and universities
Potential impact of new co-pay on the practice	Compare co-pay strategies at North Carolina community health centers
Appropriate emergency department utilization	Explore patient understanding of after-hours service through phone survey
Patient satisfaction with walk-in clinic	Explore patient satisfaction with care and waiting time through clinic survey
Patient satisfaction with outside referrals	Explore patient satisfaction with out-of-clinic cardiovascular testing through phone survey
Alternative medicine use	Explore home remedy use through clinic survey
Patient attitudes toward continuity of care	Explore patient views of provider teams and of hospital roles of primary care providers through clinic survey
Practice Consultancy (Resident Physicians)	
Physician use of warfarin registry	Refine the best method of monitoring care of patients taking warfarin
Waiting time for clinic appointments	Develop a methodology for monitoring patient waiting time

students considered these projects to have little meaning beyond the requirement to satisfy the course director and regarded them as an unnecessary last obstacle to receiving their medical degree. At the same time, problems with dwindling resources and poor support systems at the community health center argued for attention to clinic population issues that could be addressed through such projects. By proposing to students that their community medicine project could be useful to the clinic and, as a result, to the surrounding population, we hoped these projects would be more meaningful to the clinic and to the students. Although

the students were encouraged to choose the subject for their project, matching their interest with a need in the clinic was attractive and fairly easy.

The topics for the community medicine projects were less well defined than those for the quality improvement projects and, as a result, more often arose from the needs identified by the staff or the student in the course of daily clinical care. Because the project mandated consideration of a population perspective, a patient survey was usually part of the project. Because of resource constraints, the target population was once again active clinic patients. When patients registered for

Table 2. Examples of Quality Improvement Projects by Physicians in Training

Example #1

Quality Improvement Project: Cervical Cancer Screening

As with all the quality improvement projects conducted by resident physicians, required background reading materials emphasized the need for physician involvement in quality management activities and focused on Health Plan Employer Data and Information Set (HEDIS) criteria. The handbook from the US Preventive Services Task Force provided, in our opinion, the most concise and objective review on topics such as cervical cancer screening. A mandatory visit to the HEDIS web site provided information on performance for cervical cancer screening in managed care organizations. A discussion of general and theoretical means of measuring cervical cancer screening practices in the community using principles of clinical epidemiology was followed by a discussion of the most practical means of obtaining meaningful data on cervical cancer screening practice within our particular practice setting. A brief discussion of past quality improvement projects touched on appropriate strategies for chart selection, calculating the appropriate interval for determining the presence of a documented Pap smear, and resolving problems with chart documentation. An abstracting form was developed by group consensus. Data collection took place over two designated half-day sessions using active charts collected from the previous 2 to 3 days' clinic load. Important points of feedback to other physicians in training were decided by group consensus. An interactive computer program developed within several weeks of data collection included salient teaching points and comparison of the practice performance with data from other provider organizations.

Example #2

Community Medicine Project: Continuity of Patient Care

The presence of multiple part-time providers in the practice supported by an inadequate appointment system led the clinic staff to consider implementing a team-based approach in hopes that the availability of care might be worth the compromise in the ability of the patient to see the same provider every visit. At the same time, the need for better care coordination of hospitalized patients prompted the idea that better patient tracking might occur through a process of daily social hospital rounds by an assigned provider. Because patients' views on these changes in the system of care might influence decision making, a medical student conducted a clinic survey. After reviewing articles on the increasing prevalence of provider teams in the US healthcare system, the student prepared a one-page survey tool, a process that interested clinic providers and strengthened the survey methodology. One hundred fifty patients completed the survey form during the 1-week survey period. The medical student tabulated and analyzed the results by age group. The survey results were presented at a staff meeting and supported changes in clinic policy to further implement provider teams and include hospital rounds as part of the clinic's responsibilities.

Example #3

Practice Consultancy: Anticoagulation Registry

An anticoagulation registry that had been in place in the practice for several years had fallen into disuse over the preceding year because of staff turnover, lack of nursing interest, and poor participation on the part of providers. To determine whether the registry could and should be continued, we asked one resident physician to serve as a practice consultant for this clinical policy problem. The practice consultant first reviewed several recent articles on anticoagulation services and consulted with a health services researcher who was involved in ongoing clinical trials of anticoagulation services. The practice consultant then explored the registry using whatever meaningful quantitative analyses might prove useful for decision making. The written and oral report at the clinic staff meeting included insightful data and suggestions that ultimately led to the decision to maintain the service but transfer the responsibility of the anticoagulation services to the pharmacy staff.

a clinic appointment, they were handed a survey form to fill out while waiting for the appointment. One week was long enough to accumulate enough surveys to ascertain meaningful results. The topics for the medical students' community medicine projects performed during the same time period as the residents' quality improvement projects are shown in Table 1 and described in more detail in Example #2 (Table 2).

Example #3 in Table 2 illustrates an idea that arose from an already well-identified practice problem that required a different strategy than the usual HEDIS-driven quality improvement project. Rather than having the attending physician devise an analytic strategy to be performed by the physician in training, the resident physician was given license to pursue the problem with whatever quantitative analyses he or she deemed warranted. The overwhelming success of the findings and recommendations from these projects and their impact on practice policy made it clear that this approach to engaging physicians in training was complementary and synergistic with the other two types of projects described here.

... DISCUSSION ...

Long before the advent of managed care, concerns were raised that physicians in training received inadequate exposure to the principles of population-based medicine. Past efforts to incorporate public health concepts into medical school curricula and promote the concept of community-oriented primary care went largely ignored by AHCs.¹³⁻¹⁵ The arrival of managed care has finally forced the issue.

Because academic medicine has not promoted enough of a population perspective,^{16,17} many managed care organizations avoid contracting with AHCs. The AHCs' mission of medical research and education are seemingly too much at odds with managed care organizations' focus on cost-effective management of populations.¹⁸ Whether AHCs can succeed (or survive) in the new US healthcare system probably depends on whether the intellectual talent already present at the AHC can be reoriented more toward the principles of population-based healthcare.

Our example of involving physicians in training in the process of quality improvement at a community health center illustrates how a teaching institution can engage trainees to focus on population issues. Not only was quality awareness at our institution improved by such an arrangement, but it was done at a negligible cost to the institution. Although it would be difficult to offer direct proof, it can be argued that these efforts in quality improvement strengthened the

competitiveness of the teaching clinic. These projects will be cited as evidence to managed care organizations that quality improvement is a major focus of the clinic.

The responsibilities of physicians in training in these projects focused largely on measurement design, data collection and interpretation, and, to a lesser degree, feedback and intervention design. Exploring whether and how physicians in training could be engaged in other components of the quality improvement cycle or other components of quality or resource management is attractive but remains to be fully explored. Our experience with using physicians in training as practice consultants perhaps best illustrates their potential to lead efforts in quality improvement. As another example, Gomez et al¹⁹ have shown that trainees can contribute meaningfully to utilization review activities. The most important potential role for physicians in training may be in intervention design and implementation. Because residency training emphasizes literature review and evidence-based medicine, physicians in training may be better able to identify potential interventions for quality improvement than senior clinicians. In addition, their presence in the clinical setting may be better accepted than an external quality improvement consultant who is distant from clinical care.

Comparison of the community medicine projects by medical students and the quality improvement projects by resident physicians reveals little difference between the two types of projects. Whether the subject of the project is framed in terms of community health or quality improvement, the focus is on a population perspective of healthcare. As the healthcare system evolves into different models of managed care, it seems likely that, whatever the changes, the responsibility of the physician to both the population and the individual patient will remain.²⁰

Meaningful contributions from these two levels of learners raise the issue of whether all levels of trainees can participate in quality improvement. The growing emphasis on population concepts and our model of using physicians in training to help with quality improvement activities argue that medical education should perhaps focus first on treating populations and then incrementally move toward treating individual patients. Such an inversion of the system of medical education from one in which students first learn basic sciences with population issues as an afterthought may foster attitudes and skills more compatible with the needs of today's healthcare industry.

The question should not be whether physicians in training can contribute to quality improvement in car-

ing for patient populations. The healthcare market now demands it.^{21,22} Although quality improvement is already a mandatory part of a physician in training's curriculum, difficulties in operationalizing this new curricular element are apparent.²³⁻²⁶ Our examples of engaging physicians in training as active participants in the quality improvement process offer a model for AHCs in providing the required educational experience and increasing the value to the AHC of the care offered by physicians in training.

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