The Hospitalist Movement and the Future of Academic General Internal Medicine

The field of academic general internal medicine has enjoyed a long and distinguished history of health care, education, and research in the hospital. Increasingly, however, its attention is focused on the outpatient setting. The reasons for this trend correspond roughly to the three legs of the academic stool.[1] First, as economic and technological change narrowed the gate to hospitalization over the past decade, we found ourselves caring for more and sicker patients in our outpatient practices. At the same time, many academic medical centers embarked on a strategic path of growing their primary care bases,[2] leaving divisions of general internal medicine scurrying to increase their ambulatory clinical capacity. Second, we have recognized that the training of those students and housestaff destined to practice general internal medicine (and many medical specialties) needs to be based primarily on ambulatory care.[3] Finally, the research agenda of general internal medicine has increasingly focused on ambulatory disorders and preventive practices long neglected by academia.[4] As a result of those forces, many academic divisions of general internal medicine have, to a large extent, changed into divisions of primary care.

Even as the field of general internal medicine was changing, the structure of inpatient care in academic and community teaching hospitals also evolved. The most striking change has been the emergence of an academic hospitalist model,[5] in which certain faculty (usually, but not always general internists) focus a substantial amount of their time and energy on the care of inpatients. The growth of this new model was a natural answer to the swelling demands of the ambulatory care environment and the pressures to move increasingly ill patients through hospitalizations quickly and effectively. Recent studies have supported the hypothesis of this model,[5] that care provided by hospitalists may be more efficient than that provided by community-based primary care physicians,[6] or by academic physicians who attend less often or are less intensely involved in the process of inpatient care.[7]

Studies comparing hospitalist care with nonhospitalist care are challenging. Comparing patients with similar diagnoses cared for at different hospitals (one with a hospitalist program and another without) risks substantial bias because of difficult-to-measure differences in case mix and because of the challenge of isolating the hospitalist program as the only difference in care. Before-and-after studies in single hospitals are probably less likely to be affected by major changes in patient population but are more likely to be confounded by major secular trends, because in the current market few hospitals can afford to develop a hospitalist program while leaving all other aspects of their delivery system unchanged.

In this issue, Stein and colleagues report on the results of a natural experiment at the Rhode Island Hospital.[8] Their inpatient medical service, like many around the nation, is actually three services in one. One is a teaching service staffed by hospital-based generalists who attend at least 3 months per year, thus fitting the generally accepted definition of "hospitalist."[9] The second is a teaching service in which housestaff are involved but the attending physicians of record are private physicians whose primary job is their ambulatory practice. The third is a nonteaching service in which the private physicians care for patients without housestaff and students. Patients were not allocated randomly to the three services; rather, the admitting service was chosen by one of the involved physicians. The exceptions were patients lacking primary physicians and those cared for by faculty generalists, all of whom went to the general medicine (hospitalist) teaching service.

In trying to determine the resource consumption associated with these three models of care, the authors wisely chose to focus on one common diagnosis, community-acquired pneumonia. Although this choice decreased the study's numbers and thus its power, it had two key advantages. First, it eliminated one potential source of major differences in resource use, which was the possibility that admission diagnoses were highly skewed across services. Second, it allowed the measurement of case severity using one of the best single-disease severity adjusters, the pneumonia severity-of-illness index (PSI), published by Fine and his colleagues in 1995,[10] and later refined and validated under the Pneumonia Patient Outcomes Research Team (PORT) project.[11]

Stein and colleagues found that the average length of stay for patients on the hospitalist teaching service was more than 1 day shorter than that of the patients cared for on the other two services, despite the fact that the hospitalists' patients were sicker (as judged by the PSI) and less likely to be insured. Although the difference in insurance status could have biased the results toward shorter lengths of stay for the hospitalists' patients if hospital utilization reviewers pushed for early discharge of uninsured patients, in our experience the absence of insurance usually leads to longer lengths of stay by making placement and outpatient follow-up more challenging. Patients on the hospitalist teaching service were, however, significantly younger than those on the other two services. Although the potential contribution of age to severity and outcomes is partially accounted for in the PSI,[10] further analysis adjusting for age would have been helpful. Interestingly, in terms of charges, patients on the nonteaching service had fewer laboratory tests and x-rays, which counterbalanced their longer lengths of stay. Stays on the private teaching service were both lengthier and more expensive. The state of the art of measuring the quality of care received by hospitalized patients is in its infancy, but there were not differences in readmission rates, transfers to the intensive care unit, or inpatient mortality between services,

which reassures us that shorter stays were not associated with demonstrably worse outcomes.

How can we interpret these results? Perhaps the cleanest comparison is between the hospitalist teaching service and the private teaching service, as the use of housestaff was constant. This comparison provides more support for the thesis that hospitalist care is more efficient and at least of similar quality when compared with inpatient care supervised by primary care physicians. More difficult to interpret is the comparison between the hospitalist teaching service and the nonteaching service, which demonstrated that the patients on the hospitalist teaching service had shorter lengths of stay but equivalent charges. A plausible explanation for these findings is that the hospitalists helped expedite the inpatient stay, perhaps by being aware of guidelines demonstrating that relatively short lengths of stay are appropriate for clinically stable patients with community-acquired pneumonia.[12] Conversely, housestaff may have been left to their own devices when it came to laboratory and radiography studies, and their more expensive test-ordering behavior[13] nullified some of the efficiency advantages of shorter hospitalizations.

In the end, the study of Stein and colleagues does not help us identify the mechanisms by which hospitalists achieve their improvement in efficiency over nonhospitalist physicians. Perhaps the "practice makes perfect" argument, well established for the surgical and medical treatment of many disorders,[14–16] holds true for hospital care as well. The average hospitalist will care for 20 to 40 cases of community-acquired pneumonia in the hospital each year, many times more than the average primary care physician. Perhaps the advantage is in narrowing the knowledge base, as hospitalists will have an easier time keeping up with new literature or guidelines related to inpatient medicine than primary care physicians who must also keep up with the expanding knowledge base about outpatient medicine. A recent study that reviewed 151 articles published in three major medical journals found that 51% of the articles were relevant to outpatient providers, 33% to inpatient providers, and only 9% were truly relevant to both.[17] Finally, the most decisive and indisputable advantage may be in availability. During the hospital day, the hospitalist can return to see a deteriorating patient or arrange a discharge, respond to an abnormal laboratory result, meet with a family, or speak with a consultant. Such accessibility is nearly impossible for the busy, ambulatory physician, whose patients are scheduled every 12 to 20 minutes throughout the day. Interestingly, this advantage may be partially neutralized in teaching settings because housestaff also are generally available during the day.

Further research is needed to disentangle these potential effects and better understand what attributes of hospitalists or their practices lead to reduced lengths of stay. Despite our limited understanding, it appears that the hospitalist movement is here to stay, as dozens of academic centers (and hundreds of hospitals around the country) already have embraced the model, or are in the process of doing so. The model has much to offer academic medicine. It carries the potential to improve the outcomes and efficiency of inpatient care, the teaching of hospital medicine,[7] and the quality of inpatient-based clinical research. Moreover, Park Nicollet Medical Group found improved outpatient satisfaction under a hospitalist model, presumably because it freed ambulatory physicians to be more readily available to their patients.[18]

As academic hospitalist groups grow, some will achieve critical mass and develop distinct clinical, educational, and research agendas focused on the inpatient setting and its interfaces. At the University of California, San Francisco, the hospitalist group now includes 12 faculty at the university and sister community-based teaching hospital, 10 of whom are generalists. As of this year, trainees include one hospitalist fellow and five residents in a dedicated hospitalist track.[19] There is a large and growing research agenda related to the hospitalist movement and the practice of hospital medicine. All the faculty are members of a new specialty society, the National Association of Inpatient Physicians, which currently numbers nearly 1,000 paid members, about half of whom are general internists by training.

The growth and success of academic hospitalist groups are beginning to expose a fundamental tension within the field of general internal medicine, at both the national and local level. Will generalists-hospitalists remain welcome and comfortable in academic divisions of general internal medicine and in the Society of General Internal Medicine, or will they move off to build or focus on their own specialized divisions and organizations? The answer is not entirely clear, but what is certain is that the worlds of academic general internal medicine and academic hospital medicine are becoming more complex and divergent. Keeping both ambulatory and hospital-based academic generalists under one tent will require vision, commitment, and flexibility on the part of hospitalists, primary care physicians, and the leaders of our field.—**Robert M. Wachter, MD, Scott Flanders, MD,** *Department of Medicine, University of California, San Francisco, Calif.*

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REFLECTIONS

Recovery (for JCB)

When they told you that you had to travel through the tunnel
before you could ever seek the sky again,
I was somewhere not with you.

When you returned home
having been penetrated by an invisible cure,
there was another then before me
to hold what was left of your hair
back from your face
as poison came spilling out of your mouth,
and I was remarkably oblivious
to the fact that you were alive
and dying.

Even when you did make it through—
and you did—
you would lie in darkness
as dawn came to me
hours before you.

Then, when the miles were closed
and your time and mine came together,
when we looked up to the stars
and saw the goat dancing with the lion,
I saw the affliction of my past
and was rescued from all that was not you.

But now my memory is a hollow myth
that shines nothing upon creation,
for I will have never been there for your rebirth,
so I can only imagine
what it would have been like to see you
kick away the ashes,
and fly phoenix-like toward the light.

ROB KIRKPATRICK
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