HOSPITALISTS IN CHILDREN'S HOSPITALS: WHAT WE KNOW NOW AND WHAT WE NEED TO KNOW

Gary L. Freed, MD, MPH, Rebecca L. Uren, MHSA

The concept of hospitalists was made popular in 1996 by Robert Wachter, who defined them as physicians who spend at least 25% of their time serving as the physician of record for inpatients, during which time they accept handoffs of hospitalized patients from primary care providers (PCPs), returning the patients to their PCPs at the time of hospital discharge.[1] More recently, the hospitalists' professional association, the Society of Hospital Medicine (SHM), defined the hospitalist as a physician whose primary focus is the general medical care of hospitalized patients and whose responsibilities also include teaching, research, and leadership related to hospital care.[2]

We have conducted a review to synthesize the existing knowledge surrounding the topic of hospitalists, especially as it relates to pediatric providers. Most of the literature available focuses on research that examines the potential benefit of using a hospitalist program. This report provides an overview of over 100 articles pertaining to hospitalists published since the year 2000. The articles were classified as research—data studies, research—opinion surveys, literature reviews, case studies, and commentaries. A link is provided to a comprehensive review matrix for details on each of the individual articles (http://www.abp.org/jpeds/hospitalist/hospitalist2006.pdf).

BACKGROUND/OVERVIEW

In the past 10 years, the use of hospitalists has grown in both the adult and pediatric setting as a response to pressure to deliver cost-effective, high-quality care.[3] There were approximately 8000 hospitalists (adult and pediatric) in the United States in 2004.[4] The hypothesized advantages of using hospitalists include that patients may receive better care because hospitalists specialize in handling acute or chronic illness and have become proficient in navigating the hospitals' administrative procedures and are available "real time" to monitor patients.[5-7] Additionally, PCPs may experience less interruption in office hours, more profitability, and improved lifestyle once relieved of hospital duties.[5,8]

The hypothesized disadvantages of using hospitalists include concerns about discontinuity of care and patient satisfaction, the possibility that there are other effects such as cost shifting from the inpatient to outpatient setting, that PCPs may feel threatened by being limited to outpatient practice, incentives paid to hospitalists to reduce lengths of stay (LOS), and concerns about resident autonomy when using hospitalists as educators.[8-11]

Hospitalist Core Competencies/Training

A number of articles discuss the potential need for hospitalist-specific training in core competencies because these skills are not traditionally taught in residency programs.[12-16] A survey of hospitalists about residency training found that training programs may need to be modified to address gaps in medical consultation, communication skills, continuum-of-care competency and end-of-life issues.[15] Flanders and Wachter note that hospitalist residency tracks, fellowships, and continuing education programs are beginning to address these issues.[12]

Less than 30% of pediatric academic department chairs surveyed believed that hospitalists require training not currently provided in residency.[16] Narang found that "most pediatric residency programs are designed to provide inpatient exposure, but some are developing pediatric hospitalist tracks or fellowships that would focus on skills in health economics, quality assurance/improvement, palliative care, communication skills, as well as augmenting clinical skills in acute/subacute care of children in an inpatient setting."[14]

AAP	American Academy of Pediatrics	PCP	Primary care provider
LOS	Length of stay	SHM	Society of Hospital Medicine

From the Child Health Evaluation and Research (CHEAR) Unit, Division of General Pediatrics, University of Michigan, Ann Arbor, Michigan.

Supported by a grant from the American Board of Pediatrics Foundation.

Submitted for publication November 28, 2005; last revision received December 19, 2005; accepted December 20, 2005.

Reprint requests: Gary L. Freed, MD, MPH, University of Michigan, Division of General Pediatrics, 300 N Ingalls, Room 6C27, Ann Arbor, MI 48109-0456. E-mail: gfreed@med.umich.edu

J Pediatr 2006;148:296-9

0022-3476/$ - see front matter

10.1016/j.jpeds.2005.12.048

Pediatric Hospitalists

More than 30 of the articles reviewed related specifically to pediatrics. Although there are fewer rigorous research studies in the pediatric setting, the available studies reflect findings common to the internal medicine studies. Authors posit that more pediatric-specific studies must be performed because children's diseases are different, LOS are shorter, the cost of hospitalization is lower, and the structure and finance of pediatric primary care is different.[5,17]

In 2002, there were approximately 600 pediatric hospitalists.[14] The pediatric hospitalist primarily works in the pediatric ward, the newborn nursery or the neonatal intensive care unit, pediatric intensive care unit, and special care nurseries.[18] Carlson et al suggest that the newborn nursery is particularly good for hospitalists because "although there may be an ongoing relationship between the PCP and family, no relationship has developed between the newborn infant and PCP."[18] Furthermore, "unlike pediatric residents who rotate monthly, hospitalists become familiar with protocols, procedures, newborn medicine literature, and the infants with extended stays as well as their families. Pediatric hospitalists can also fill the need for 24 hour coverage and frequently attend several deliveries in a shift (making them more experienced than a typical PCP)."[18]

In 1999, the American Academy of Pediatrics (AAP) recognized pediatric hospitalists by creating a Provisional Section on Hospital Care—a forum for pediatricians who have chosen to concentrate on inpatient care.[5] In 2005, the AAP also issued a policy statement providing 6 guiding principles for the development of pediatric hospitalist programs:[2]

1) Pediatric hospitalist programs should be voluntary, and physicians should retain the option to admit/manage their own patients;
2) Pediatric hospitalist programs should be designed to meet the unique needs of the community;
3) Hospitalists should be board certified in pediatrics or have equivalent qualifications;
4) Pediatric hospitalist programs should include appropriate outpatient follow-up;
5) Pediatric hospitalist programs should provide for timely/complete communication between the hospitalist and the outpatient physician; and
6) Pediatric hospitalist programs should include data collection and outcome assessment to monitor performance.

RESEARCH—DATA STUDIES

There is a growing body of literature supporting the use of hospitalists, with most studies touting improved efficiency (reductions in LOS and total cost of care) without adversely impacting outcomes, quality of care, or satisfaction.[3,8,17,19]

Impact on Costs and LOS

The hospitalist model has been shown to be effective in a variety of settings, with most studies demonstrating that patients treated by hospitalists have lower total costs and reduced LOS.[3,8] Wachter and Goldman found that 15 of the 19 studies reviewed reported an average 13.4% decrease in hospital costs and a 16.6% decrease in LOS with the use of hospitalists.[3] Studies by Auerbach et al [9] and Meltzer et al [20] found that hospitalist care was associated with LOS and cost reductions that only became statistically significant in the second year of the hospitalist's experience, which suggests a "practice makes perfect" relationship.[21] Most studies only evaluate periods <2 years, so caution should be used when interpreting the long-term impact of the hospitalist model.[8]

Only 1 recently published study failed to support the economic benefit of hospitalists. Smith et al found the mean charge by PCPs was significantly lower than that of critical care hospitalists and family physician hospitalists.[22] However, the study focused only on pneumonia, and the critical care hospitalists were all members of a health maintenance organization-mandated team.

Kaboli et al compared outcomes of patients on a general medicine hospitalist service with those of patients on a traditional inpatient service.[23] They found patients treated by hospitalists had shorter LOS and lower overall costs than patients treated by non-hospitalists, but had higher costs per day. This suggests hospitalists may increase the intensity of care in a shorter period.

Published studies about the clinical impact of pediatric hospitalists also report mixed results. For example, Landrigan et al report that a study at Southern California Children's Hospital found no difference in costs, LOS, or outcomes in patients with pediatric asthma/bronchiolitis who were cared for by hospitalists compared with those treated by community pediatricians.[17] Conversely, in a study at Cincinnati Children's Hospital, LOS decreased by 0.3 days (11%), hospitalization charges decreased by $282 (9%), and the readmission rates increased (2%) after the introduction of hospitalists.[24] Landrigan et al found that the implementation of a pediatric hospitalist program within a staff model health maintenance organization significantly decreased LOS (12%; 0.3 days), reduced costs (16%; $217), and improved parental ratings of care without affecting outcomes.[17]

Impact on Quality and Clinical Outcomes

Published studies related to clinical outcomes also report mixed results and typically only examine mortality and readmission rates. Most only examine single hospitals, small numbers of hospitalists, and the initial years of the programs.[4] In most studies, hospitalists appear to have less of an impact on quality and outcomes than on cost and LOS.[8] Further, most studies fail to find any statistically significant differences in readmission or mortality rates.[3,8] However, both Meltzer and Auerbach found improvements in outcomes increased with time, suggesting that experience is a factor in the quality improvement.[9,20]

Baudendistel and Wachter also report that the impact of hospitalists on readmission rates is mixed, with 7 studies finding no change, 2 studies finding a reduction, and 1 study