

Integrating Pediatric Hospitalists in the Academic Health Science Center: Practice and Perceptions in a Canadian Center

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BACKGROUND: The integration of hospitalists in academic settings has been identified as a challenge to the hospitalist movement. The Division of Pediatric Medicine, Hospital for Sick Children, Toronto, was established in 1981, providing a rich resource to examine this field in the academic context and inform academic program development.

OBJECTIVES: To explore the characteristics, practice, perceptions, and contributions of pediatric hospital medicine in an academic health science center (AHSC).

METHODS: A cross-sectional survey of physicians attending on the pediatric medicine inpatient unit (PMIU) (n = 20).

RESULTS: Clinical activity included attending on the PMIU, consultation and comanagement outside the PMIU, and outpatient care of “hospital intense” patients. There was a high level of engagement in research, education, and quality improvement activities. Perceived advantages to a career as a hospitalist included: working in a team; generalist approach to care; stability relative to community practice; intellectually stimulating and rewarding work; and growing area for scholarship. Perceived disadvantages to a career as a hospitalist included: burnout; recognition and respect; and lack of long-term relationships with patients. Themes regarding barriers to establishing a career as a hospitalist in an AHSC were as follows: burnout; time and skills to develop an academic niche; balance between clinical and academic priorities; and system for career advancement.

CONCLUSIONS: The contributions of pediatric hospitalists to the academic mission were diverse. Fellowship training, faculty development, and balance between time allocated to direct patient care and academic pursuits should be defined. This will help ensure career development, viability, and realization of excellence in the academic context. *Journal of Hospital Medicine* 2010;5:228–233. © 2010 Society of Hospital Medicine.

KEYWORDS: academic health science center, career development, hospitalist.

The successful integration of hospitalists in academic health science centers (AHSCs) has been identified as one of the most challenging areas for the hospitalist movement.^{1,2} This has been based on a concern that many hospitalists lack academic and research skills, lack mentorship, and may have little time to develop academic careers because of the significant time they spend in clinical care.

A recent survey highlighted that the pediatric hospitalist workforce is in its infancy and additional perspectives, such as from hospitalists themselves, are essential for a more complete picture of the current state of pediatric hospital medicine.³ Hospitalists have had a long history in Canada.⁴ The Hospital for Sick Children, Toronto, Canada, has had a Division of Pediatric Medicine since 1981, with hospitalists, as we now know them, from inception. This provided a rich resource to explore pediatric hospital medicine in the academic context and from hospitalists themselves. The objective of this survey was to explore the characteristics, practice, and perceptions of pediatric hospital medicine in an AHSC. Locally, we hoped the results would inform the divi-

sion on program development, training, and faculty career development. Externally, the findings could contribute to a body of knowledge on the evolving role of pediatric hospitalists and provide insight into opportunities for better integration into AHSCs.

Methods

Study Design

This was a cross-sectional survey of pediatricians who attend on the pediatric medicine inpatient unit at the Hospital for Sick Children, Toronto. The study protocol was approved by Quality and Risk Management at The Hospital for Sick Children.

Setting

The Hospital for Sick Children is a tertiary care children's hospital affiliated with the University of Toronto, Toronto, Canada. The total hospital bed capacity including intensive care unit beds and subspecialty beds is 320. It is the only

free-standing pediatric hospital for the greater Toronto area with a catchment population of 5 million people.

A formal division for general pediatrics, Pediatric Medicine, has been in existence since 1981 with hospital-based pediatricians (who now are known as hospitalists) who attend on the inpatient unit. The pediatric medicine inpatient unit (PMIU) has a 60-bed capacity on 3 units. At all times, the PMIU is staffed by 4 to 6 inpatient attendings from a total of 20 full-time and major part-time pediatricians. According to Wachter's staging of hospital care, the PMIU is at stage IV of IV in development (mandatory care by hospitalist).⁵ All attending pediatricians are members of the Division of Pediatric Medicine. Pediatric subspecialists do not attend on the PMIU. Physicians attend for a minimum of 4 weeks at a time. General pediatric house staff including fellows, residents (postgraduate year [PGY] 1, PGY3) and medical students are supervised by the attending pediatricians. Other inpatient clinical services provided include an inpatient general medical consultation team, a complex care team for inpatients with chronic complex conditions, and a consultative and collaborative role with the team of interventional radiologists. An outpatient pediatric consultation program exists for hospital follow-up, general pediatric consultation, and specialized generalist care for specific populations of children.

In addition to the clinical program, research and education programs exist within the division. The division has had an academic general pediatric fellowship program since 1992, with the majority of most recent graduates obtaining academic hospitalist faculty positions. A formal research group and infrastructure for clinical, outcomes-based research within the division, known as the Pediatric Outcomes Research Team (PORT), exists.

Study Population

All pediatricians who attend on the PMIU and in the Division of Pediatric Medicine, Hospital for Sick Children in 2007 were eligible for recruitment including the 2 eligible study authors.

Survey Instrument

We constructed a 43-item structured questionnaire that asked about and explored training and employment characteristics; clinical roles and nonclinical roles (teaching, quality, research, leadership); and perceptions of hospital medicine and a career in this field. Several items were modeled after questions administered to program directors in a survey reported by Freed et al.³ The questionnaire was designed to be completed by the respondent on paper.

Questionnaire Administration

From September to December 2007, eligible pediatricians were sent a letter explaining the study and the questionnaire through interhospital mail by the research coordinator. Questionnaires were deidentified and assigned a unique

TABLE 1. Training and Employment Characteristics of Faculty

Training after medical schools, median years (range)	4.8 (4–6)
Fellowship trained, number (%)	7 (39)
Fellowship duration, median years (range)	2.7 (1–5)
Graduate studies, number (%)	7 (39)
Clinical epidemiology	5
Education	2
Duration since first academic appointment	
Median, years (range)	5.5 (0–30)
Mean, years (standard deviation)	9.9 (10.4)
>5 years, number (%)	9 (50)
Academic rank, number (%)	
Lecturer	2 (11)
Assistant professor	10 (56)
Associate professor	4 (22)
Full professor	1 (6)

identification number. Only the research coordinator had access to the list that linked the unique identification numbers with names. Confidentiality of responses and anonymity of responses was explicitly stated in the letter explaining the study to pediatricians. Nonrespondents were contacted by the research assistant at 3-week intervals with personal reminders.

Data Analysis

During the analysis phase, responses remained deidentified. Descriptive statistics using means, medians, and proportions were calculated for survey items. For open-ended questions, answers from respondents were summarized into key concepts or themes by the 3 study authors. Excerpts from responses were abstracted to highlight themes.

Results

Eighteen of 20 (90%) faculty responded to the questionnaire. The results are presented by the domains of the questionnaire, as follows.

Training and Employment Characteristics

Due to the requirements of the Royal College of Physicians and Surgeons of Canada, all faculty had a minimum of 4 years of pediatric specialty training leading to certification (Table 1). Seven of 18 (39%) had fellowship and graduate training. Nine of 18 (50%) had been on faculty for greater than 5 years.

Hospitalists: Impact and Definition

Seventeen of 18 (94%) faculty felt that hospitalists reduce cost, increase patient satisfaction, and increase quality of care. Three of 18 (17%) felt that hospitalism adversely affects the primary care physician–patient relationship. All felt that hospitalists can contribute to the academic mission of an AHSC.

Most (17/18) felt that the Society of Hospital Medicine definition of a hospitalist is useful but 13 of 18 (72%) felt

TABLE 2. Faculty Activities Outside of Clinical Care

Area of Activity	n = 18 [number (%)]
QI	
Participates in QI activity	12 (67)
Participants who lead in QI activity	4 (33)
Education	
Teaching	
Medical students	
Inpatient unit	18 (100)
Small group sessions	10 (56)
Lectures	15 (83)
Residents	
Inpatient unit	17 (94)
Lectures	12 (67)
EBM critical appraisal course	5 (28)
General pediatric fellows	7 (39)
CME	11 (61)
Curriculum or program development	9 (50)
Research	
Holds appointment with research institute	12 (66)
Peer review publication in past 12 months	13 (72)
Currently holds research grant	12 (66)
Presented abstract at 2007 PAS meeting	10 (56)

Abbreviations: CME, continuing medical education; EBM, evidence-based medicine; PAS, Pediatric Academic Societies; QI, quality improvement.

that it was important to develop an international consensus-based definition.

Clinical Roles

All faculty attended on the PMIU. Other clinical activities included: 13 of 18 (72%) inpatient general medical consultation, 9 of 18 (50%) interventional radiology clinical team, 8 of 18 (44%) attended in the pediatric consultation clinic.

The median number of weeks attending on the PMIU was 16 (range, 4–40 weeks).

Nine of 18 (50%) provided leadership in clinical programs or the care of specific populations of children. This included leadership in healthcare systems: director of PMIU, director of inpatient general medical consultation, interventional radiology comanagement team; and leadership in patient populations: children with chronic complex conditions, cyclic vomiting, cancer/genetic syndromes, obesity, child abuse and neglect, failure to thrive, and vascular tumors.

Nonclinical and Academic Roles

Sixteen (89%) considered their job to include activities in addition to their role of providing patient care (Table 2). This included primary activity in clinical research, education, quality improvement and health policy.

Hospitalist Medicine as a Career: Perceptions

Fifteen (83%) felt that it was important to establish an annual minimum time allocation to practicing hospital medicine. A median of 11 weeks per year (range, 8–16 weeks)

was felt to be the minimum time that should be allocated to practicing hospital medicine. The major themes related to the need to establish a minimum time for clinical practice in hospital medicine were as follows: maintenance of skills, knowledge, and competency; ensuring quality of care; and efficiency of care. One respondent explained that the main reason to have a minimum time for clinical practice was “to keep up clinical skills of acute patients, stay aware of and keep up to date of available facilities in the hospital.”

Thirteen (72%) felt that it was important to establish an annual maximum time allocation to practicing hospital medicine. A median of 32 weeks per year (range, 20–36 weeks) was felt to be the maximum time that should be allocated to practicing hospital medicine. The major themes related to the need to establish a maximum time for clinical practice in hospital medicine were: burnout, balance in career, and desire to develop academic career and to complete nonclinical activities. As this respondent described: “I think hospital medicine can be very emotionally difficult and is sustainable if provided time off to pursue other goals such as research, education, creative professional service.”

Thirteen (72%) intended to continue their career as a hospitalist and 5 (28%) were unsure. Eleven (61%) felt that a job as a hospitalist was a viable long term career, 6 (33%) were unsure, and 1 (5%) felt that it was not viable. When asked what the barriers to establishing hospital medicine as a long-term career, the major themes that emerged were as follows: burnout, establishing a nonclinical or academic niche, and the system for career advancement in an academic center. This respondent explained: “As long as you have another niche (education for me) that helps provide respite, as well as [you need an] opportunity to have protected time for academic endeavours that are necessary to survive in an academic health science centre.”

Another respondent described burnout as a barrier: “long hours, emotionally draining with very complex patients, feeling stretched—clinical care and teaching and research and admin.”

Perceived advantages to a career as a hospitalist included: working in a team, generalist approach to care, stability relative to community practice, intellectually stimulating and rewarding work, growing area and opportunities for scholarship. One respondent outlined the perceived advantages to a generalist approach: “diversity of work, become a generalist specialist, teamwork, develop broad perspective on health.”

Others described the perceived advantages over community practice: “exciting, interesting, job stability, salary” and “no worries about administration of the business of community office, stable income, holiday leave.”

Perceived disadvantages to a career as a hospitalist included: burnout, recognition and respect, and lack of long-term relationships with patients. One respondent explained: “as an emerging field, we have a lot of growing to do. Although our work (both clinical and academic) seem fundamental to the mission of the hospital and university,

we may not feel we receive the respect, support, resources, funding allocated to other areas.”

Another response to disadvantages of a career as a hospitalist was, “burnout, risk of being seen as a perpetual resident.”

Discussion

Freed et al.³ recently conducted a survey of U.S. pediatric hospitalist program directors from a diverse range of settings (ie, teaching vs. nonteaching, free-standing vs. hospital system, children's hospitals vs. non-children's hospitals).³ These investigators found that the majority of programs had employed hospitalists for less than 5 years (compared with our program, 30 years); employed 1 to 5 hospitalists (compared with our program, 20); and 25% of programs indicated their hospitalists averaged greater than 5 years on the job (compared with our program, average 10 years on the job). Maniscalco et al.⁶ conducted a survey in 2007 of hospitalists in a similarly diverse range of settings, found that the mean number of years on the job was 6 and found similar clinical and teaching roles. They also found that the need for advanced training in administration, research, education, and quality improvement was high. Further, we were able to examine academic roles and perceptions of hospital medicine as a career in an AHSC at an individual level. This survey, however, was limited by sampling from a single institution.

Almost all faculty identified an area of focus in addition to clinical care. Educational activities occurred at all levels: undergraduate, residency, fellowship, and continuing medical education. Faculty were engaged in research activities. Hospitalists provide care on all inpatient units as a consultant specialist in general medical care. For example, we have designed a collaborative model of care with the interventional radiology team to comanage children who require image-guided interventions, such as gastrostomy, chest tube, and central venous line insertions.⁷ One further area that deserves mention is the leadership of hospitalists in outpatient care of children, especially “hospital intense” populations, in collaboration with their primary care provider. These groups of children are often medically and socially complex, require repeated and intense hospital resources (including diagnostic testing, subspecialty consultation, and hospitalization), and require generalist care to manage them from a family centered perspective.

A significant proportion of the faculty in this survey acquired advanced academic training. The formal training of hospitalist physicians is in its infancy. A recent work documenting the domains of training for academic general pediatric fellowship in leadership, education, and research seems to be most appropriate for the nonclinical foundation for pediatric academic hospitalists.⁸

Few studies have examined academic hospitalists' perceptions on the minimum and maximum time per year suitable for clinical service. This undoubtedly will vary depending on the institution, program and financial structure,

patient load and complexity, call requirements, academic commitments, and stage of development. Faculty surveyed in this study felt a range of 11 to 32 weeks of clinical inpatient attending per year was ideal. This is consistent with the expert panel recommendations of the Society of Hospital Medicine. What may be equally important to determine is the maximum number of continuous weeks attending on the PMIU.

There have been 3 full-time faculty who have left the division (all to community hospital-based generalist practices with academic affiliations) and 1 who has changed from a full-time to a part-time role in the division. Most faculty surveyed intended to continue their career as a hospitalist. They identified several positive and satisfying aspects to the career, including relationships with peers, stable salary, numerous opportunities for scholarly work in a young field, and generalist care. Hoff et al.⁹ described a national US survey of hospitalists in all adult medicine settings that examined personal characteristics, and work-related attitudes. Similarly, they found that hospital medicine was a source of positive social and professional work experiences related to interactions with peers, patients and families, and coworkers. In the current study, perceived disadvantages to a hospitalist career were burnout, lack of recognition and respect, and lack of long-term relationships with patients. Hoff et al.⁹ noted that 37% were “burnt out” or at risk of burnout, which is less than in the fields of critical care medicine and emergency medicine.

The identified barriers to establishing a career were related to development of an academic focus, balance between clinical and nonclinical time, and the system for career advancement. Few other studies have examined these career issues for hospitalists in the academic setting. Several authors have discussed career issues for clinician-educators in the US,^{10,11} including metrics for promotion and recognition by institutions. Alternate methods have been proposed for promotion, aside from research and education, such as creative professional activity or clinical excellence.¹² The developing field of hospital medicine faces similar challenges as individual hospitalists and the specialty itself works to align with the academic mission.^{13–15}

The division and hospitalist program have evolved over more than 2 decades to fulfill strategic goals and respond to changing external factors (Table 3). Contextual factors that have supported this evolution and that may be unique to our academic environment merit mention. First, the departments' physicians work in a within a single-payer universal healthcare system that in some ways is similar to a single-payer health maintenance organization. The ultimate governance is provided by the provincial Ministry of Health, which is funded through taxation. Second, through an alternative funding plan (AFP) with the provincial government, block funding is providing in lieu of fee for service clinical care that funds physician salaries for clinical work, research, education, and administrative activities.¹⁶ Third, the department has a career development compensation program

TABLE 3. Evolution of Program: Pressure Points and Change

Date	Area	Pressure Point	Change
1981	Clinical education research	Department priority for academic generalism	Creation of "Division of General Pediatrics" (now "Pediatric Medicine"); full-time hospital-based pediatricians attending on inpatient unit
1991	Education	Division priority to foster academic generalism and train future generation of academic generalists	Creation of academic general pediatrics fellowship program
1992	Research	Division priority to foster clinical, outcomes-based research	Creation of formal divisional research infrastructure with foundation support for an epidemiologic, outcomes-based research platform; pediatric outcomes research team (PORT)
1995	Clinical care	Province-wide reduction in resident duty hours; division priority to raise the bar for clinical and teaching excellence in hospitalist- and community-based pediatrics; need for a financially viable and cost-effective model for staffing attending pediatricians on inpatient unit	Reorganization of inpatient unit; higher proportion of attending pediatricians who are full-time, hospital-based; creation of a staff-only hospitalist unit ¹⁹ ; creation of a section of community pediatrics (2001)
1996	Clinical care education faculty development	Need to limit attending hospitalists after-hours clinical care to ensure balance and academic productivity; need for a system of after-hours physician coverage for inpatient care that is sustainable and financially viable; need for funding sources for academic general pediatrics fellowship	Creation of a "clinical departmental fellowship" program to fund after hours clinical coverage with qualified pediatricians seeking additional fellowship training ²⁰
1998	Faculty career development	Need to value and reward all academic contributions, such as the hospitalist role, through an explicit job activity profile within the department ¹⁶	Implementation of a career development and compensation program with the "clinician specialist" role whose primary contributions are to excellence in clinical care
1999	Clinical care	Expansion of hospital interventional radiology program and need for high quality collaborative care	Comanagement model with hospitalist-radiologist team ⁷
2006-8	Clinical care research	Division and institution priority to provide high-quality care for children with complex care health issues and foster a research program ²¹	Creation of formalized hospitalist complex care program with inpatient and outpatient care ²² ; research support for complex care
2007	Clinical care	Refinement of inpatient unit organization to improve efficiency of care; increase number of trainees ²³	Reorganization of inpatient units to geographic allocation of patients by attending physician; addition of trainees to staff-only hospitalist unit

(CDCP) that has an explicit job activity profile which is aligned with the role of hospitalists—the clinician-specialist profile—who have a predominate commitment to provide, advance, and promote excellence in clinical care with contributions to education and/or research.¹⁶ The compensation and evaluation process for hospitalists is the same as other members in the department. While further refinement of this system is ongoing, this program has demonstrated a support for all roles (ie, clinical, education, and research).¹⁷

Furthermore, several divisional factors have contributed to the viability of hospitalism within our generalist division. First, hospitalists were integrated into, rather than segregated from the division. Second, hospitalists have the opportunity to engage in diverse clinical activities. Wachter and Goldman¹⁸ advocate for hospitalist participation in outpatient care to provide variety and to cement their relationship with their generalist division. Third, a fellowship training program was established in 1992 that integrated principles of academic general pediatrics and hospitalism. Fourth, career development in education, research, and, more recently, quality improvement is fostered.

In summary, the faculty of an established pediatric hospitalist program have diverse and unique clinical, leadership, and scholarly contributions to the academic mission of the department. In order to further promote integration, several

issues should be addressed, including optimal training, time allocated to nonclinical activities, systems for career development and promotion of hospitalist faculty, and mentorship. Finally, it is important that leaders in pediatric hospital medicine and general pediatrics engage the larger academic community to strengthen the role and contributions of hospitalists in AHSCs.

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