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Editorial

Continued evolution of hospital medicine



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On August 15, 1996 in the *New England Journal of Medicine*, R.M. Wachter and L. Goldman anticipated the rapid growth of a new group of physicians and coined the term “hospitalist”. These inpatient internal medicine specialists were dedicated to managing hospitalized patients [1]. Hospitalists are now defined as physicians whose primary professional focus includes clinical care, teaching, research and/or administration for hospitalized patients. In 1997 John Nelson and Wintrop Whitcomb founded the Society of Hospital Medicine. The mission of the Society of Hospital Medicine is to promote exceptional care for hospitalized patients [2]. This goal will be achieved through the following objectives:

1. Promoting high quality and high value health care for every hospitalized patient;
2. Advancing the state of the art in hospital medicine through education and research;
3. Improving hospitals and the health care community through innovation, collaboration and patient centered care;
4. Supporting and nurturing a vibrant, diverse and multidisciplinary membership to ensure the long-term health of hospital medicine;

Since the Society's founding, the number of hospitalists in the United States has grown approximately to 50,000, which makes them larger than any subspecialty of internal medicine except for general internal medicine at 110,000 and family medicine at 125,000 [3,4]. Now approximately 75% of U.S. hospitals, including all major academic medical centers, have hospitalists. They have become like Emergency Medicine Physicians. Hospitals cannot function without them. The field's rapid growth has been contributed to by the evolution of clinical practice over the past two decades.

Over the past 23 years, hospital medicine has evolved with respect to the environment in which hospitalists work. The community setting was the original site where hospitalists practiced and flourished since it allowed primary care physicians and in some cases specialists to focus on their outpatient practices. Academic medical centers were more of a challenge with respect to integration into entrenched specialty services and the traditional teaching model. Departments of Medicine created Divisions of Hospital Medicine. These Divisions became either an academic program recruiting health service researchers with emphasis on

the implementation of quality and safety related initiatives or pure clinician educators focused on teaching. Some divisions have academic and non-academic models related to teaching and non-teaching services (non-housestaff supported services). The demands for more efficient throughput on the inpatient services has escalated substantially in the past 5 years. Length of stay, hospital acquired complications, readmissions and patient satisfaction scores have all affected inpatient care. Layered on these factors are the work schedules of the inpatient healthcare providers that influence care delivery. These include nursing (three twelve-hour shifts per week), resident work hours restrictions coupled with mandatory education which reduces inpatient clinical time, hospitalist 7 on 7 off schedules and certain specialists continuing to staffing clinical inpatient services in the classic model of doing the office plus the hospital.

Even more challenging has been the Accreditation Council for Graduate Medical Education (ACGME) recommendations that Internal Medicine services are capped at 10 patients per team. This has a major impact on the need for the expansion of non-housestaff supported services. The challenge for all of the above is the economic model necessary to support hospital medicine since reimbursement does not cover the cost of employed hospitalist or advanced practice providers and Departments of Medicine do not have the economic bandwidth to support such costs. This leaves Hospitals to provide the financial support for programs. Some Hospital Medicine Divisions have adopted the rent-a-hospitalist model as source of revenue. For example, the department of Orthopedics or Neurosurgery rent a hospitalist from the Division of Hospital Medicine. The arrangements are for co-management or actual attending directed services with the above specialties. The major problem with this model is that the Division of Hospital Medicine must have a pool of physician that rotate through these specialties. This in my view mimics the residency model of delivering care by rotating providers who have inconsistent and varied interest in caring for the specialty population. The above surgical services prefer the same group of physicians to provide commitment and familiarity with their patient population and most important trust in the care of their patients. This preference for the same group of providers is at odds with what the Division of Hospital Medicine can provide, thus setting up both parties for disagreement and potential failure.

At Thomas Jefferson University Hospitals in Philadelphia we have

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evolved a new model for hospital medicine. There is the traditional academic Division of Hospital Medicine, which provides teaching, research in education and quality improvement and inpatient clinical services. There are six teaching hospitalist services and one non-housestaff supported service.

In addition to the classic model, we created hospitalist programs in Neurologic Surgery, Medical Oncology (Solid Tumor and Bone Marrow transplantation), Neurology, Advanced Interventional Gastroenterology, Preadmission Testing and Ophthalmology. These hospitalists are imbedded in each of the above departments, and report for academic issues to the respective Department Chair and for clinical services to the Hospital's Chief Medical Officer. In addition, a Hospital Medicine Council co-chaired by the Chief Medical and Nursing Officers and with representation of all hospitalist programs meets monthly, addresses clinical, educational, financial, and governance issues. This provides standardization of services across all programs.

In order to understand this model, I will review two services that exemplify this approach to hospitalist on the inpatient services.

The model redesign began with Neurologic Surgery. A group of 15 hospitalist staff 24/7 the inpatient service as consultants for the Stroke Unit and co-managers for neurosurgery patient at the free-standing Jefferson Hospital for Neurosciences. A second group of hospitalist provides 24/7 co-management for a 21-bed spine unit and a separate inpatient service managed by neurosurgery hospitalists without advanced practice providers. All neurosurgery patient scheduled for elective surgery have their preoperative evaluation by a team of neurosurgery-hospitalist with a subsequent transition of care to their colleagues on the inpatient services. The neuro-hospitalist have increased the inpatient Case Mix Index (CMI) of neurosurgery patients that has affected length of stay (LOS) and readmissions. A prospective quality improvement project was completed assessing preoperative functional and frailty indices on patients undergoing spine surgery. This project has yielded a predictive model for postoperative complications. The group has standardized care on their services and published an electronic book on medical management of the neurosurgery patient. This model demonstrates that a consistent group of hospitalists imbedded in a Neurosurgery Department can provide clinical services and participate in scholarly work that improves the care of neurosurgery patients.

The second example is the neurology hospitalist model. In this case, the neurology hospitalists are neurologist imbedded in the neurology department. Their focus is managing an inpatient neurology service with the support by neurology residents and medical students. These physicians predominantly provide inpatient care but also have a small component of time allocated to outpatient neurology practice. This

provides professional fulfilment for these physicians. This model allows the Department of Neurology to increase outpatient access for neurology specialty expertise such as movement disorders, seizures, multiple sclerosis and dementia. Prior to initiation of this program all neurology faculty rotated on the inpatient service reducing outpatient access but, more importantly, provided inconsistent care by physicians whose expertise had become limited for managing this patient population. This old model resulted in prolonged length of stay and readmissions, which our new model is now affecting.

This variation on the traditional hospital medicine model is not new. There non-internal medicine hospitalist in the United States which include the following: family medicine, pediatrics, obstetrics, acute care surgery. These models fulfil the definition of hospitalist devoting clinical care in the inpatient setting. What makes our evolving model unique are three keypoints: decentralization of care that allows the placement of dedicated hospitalist embedded into specialty services; flexibility for the hospital when the Accreditation Council for Graduated Medical Education (ACGME) changes resident work hours and the size of inpatient services that affects the delivery of inpatient care; standardization for hospitalists across the continuum of care in the hospital that fosters the professional growth and development of this physician group.

Our model continues to evolve at Thomas Jefferson University Hospital with the Chief Medical Officer becoming a major partner in directing the inpatient care of patients on all services. Over the next 5 years outcome measures will prove that this model will be effective and efficient for inpatient care.

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Geno J. Merli^{a,*}, Catriona McDonald Harrop^b
^a *Medicine and Surgery, Jefferson Vascular Center, Sidney Kimmel Medical College, Thomas Jefferson University Hospitals, Philadelphia, PA 19107, United States of America*

^b *Medicine and Neurologic Surgery, Vickie and Jack Farber Institute for Neurosciences, Sidney Kimmel Medical College, Thomas Jefferson University Hospitals, Philadelphia, PA 19107, United States of America*
 E-mail address: geno.merli@jefferson.edu (G.J. Merli).

* Corresponding author.