VA Central Office
Hospitalist Field Advisory Committee
Medical Surgical Services
Patient Care Services
Veterans Health Administration
VHA Hospitalist Resource Guide

November 2007
Executive Summary

*Hospitalist Field Advisory Committee (FAC): VHA Hospitalist Resource Guide*

The purpose of this resource guide is to provide information on the function of hospitalists in VHA to VA Central Office (VACO), Chiefs of Medicine, Chiefs of Staff, Hospitalist leaders, physicians, administrators, and other interested parties. The guide is meant to be descriptive and not proscriptive. This executive summary outlines the report of the Hospitalist Field Advisory Committee (FAC) based upon survey work, interviews and our combined experience with the field of hospital medicine.

**Definition of a hospitalist by the Society of Hospital Medicine (SHM):** a physician who spends all or the majority of his/her clinical, administrative, educational, or research activities in the care of hospitalized patients, including physicians who are part of a formal hospitalist program or physicians who would consider themselves hospitalists based upon their proportion of inpatient medicine service.

In general, the development of hospitalist programs and the structure of hospitalist models of care in VA have been driven by local needs. Those needs can vary by size of VAMC, patient volume, availability of resident physicians, and other local issues.

**Figure 1. Survey of 118 VHA Hospitals: Hospitalist Program Growth (1995-2008)**

I. **Hospitalist Clinical Responsibilities** include, but are not limited to:
- Direct inpatient care
- Supervision of inpatient care by housestaff and students
- Collaborative care with mid-level providers
- Perform procedures (e.g., paracentesis, thoracentesis, central lines)
- Peri-operative consultations and co-management of patients on other services. (e.g., general surgery, orthopedics, otolaryngology, psychiatry)
• Care of patients in Intensive Care Units
• Inpatient quality improvement and patient safety (e.g., “100,000 Lives/5 Million Lives” campaign, rapid response teams)
• Hospital committees (e.g., Pharmacy and Therapeutics, Flow Improvement and Inpatient Initiative (FIX), Emergency Department)
• Care of patients in nursing home/skilled care units
• Outpatient, urgent care, emergency room care, and peri-operative clinics

II. Hospitalist Program Models of care in VHA include, but are not limited to:
• Full-time hospitalist services with or without 24/7 inpatient medicine coverage.
• Part-time hospitalist services with mixed inpatient/outpatient responsibilities. (e.g., primary care providers serving as a hospitalist for 1-3 months a year)
• Almost all are VHA employed. VAMCs may have part-time hospitalists from their academic affiliate and/or fee-based providers.

III. Work-load and Salary of VHA Hospitalists can be determined in several ways, with considerable variation across VHA. Metrics include, but not limited to: fixed salary, weekly hours, Relative Value Units (RVUs), number of days worked in the year, annual number of admissions, average daily census and quality of care.

IV. Administrative Duties of Hospitalists and Hospitalist Section Chiefs are variable by VAMC. These duties include, but are not limited to scheduling, evaluations, committee participation, clinical initiatives, and communication between various inpatient clinical services.

V. Quality and Efficiency of inpatient medical and other services that depend upon Hospitalist involvement have been described in the literature. The precise impact of Hospitalists in VHA has not been well established, nor have areas of specific need been addressed.

VI. Medical Education has been a key element of inpatient medical services at academically affiliated VAMC for decades. The precise role of hospitalists in medical education is locally driven, but can include direct teaching responsibilities, residency program leadership and coverage of “non-teaching” services in response to residency work hour restrictions. Medical education includes students, residents, and fellows in training.

VII. Research has been an important focus of VHA and is supported through a number of governmental and non-governmental agencies and foundations. The establishment of a research network of VHA Hospitalists will be facilitated by the FAC list serve, although not a central role of the FAC.
I. Hospitalist Clinical Responsibilities:

Hospitalists in VA Medical Centers (VAMCs) are responsible for the care of hospitalized patients in multiple locations including medical, surgical and psychiatric wards plus intensive care units (ICUs), nursing homes, and rehabilitation units. Some hospitalists also care for ambulatory patients in emergency departments (EDs) and outpatient clinics. The most common location for Hospitalists is providing acute care on general medical wards. Hospitalists fulfill multiple responsibilities depending on the needs of their local VAMC with direct patient care being one of the primary responsibilities. Supervision of residents (housestaff) is a common responsibility for Hospitalists at academically affiliated VAMCs. Hospitalists may also work collaboratively with mid-level providers including physician’s assistants (PAs) and nurse practitioners (NPs), as defined by state laws and facility policies.

As inpatient care providers, Hospitalists serve as the “attending physicians” and are responsible for a wide range of duties to ensure safe, efficient, high quality care. This includes, but not limited to, initial evaluation and documentation of the admission history and physical, formulation of the plan of care, entry of admission orders and medication reconciliation. Daily care of patients also entails rounds, documentation of progress notes, input of orders, regular interaction with nursing, coordination of consultations and care and facilitation of diagnostic studies and therapeutic procedures. Hospitalists also perform bedside procedures including paracentesis, thoracentesis, lumbar puncture, joint aspiration and central line placement. Other vital roles include communication with patients and their families, patient education, discharge planning and communication with outpatient providers, arranging follow up, preparing discharge instructions, medication reconciliation and discharge summaries, and ensuring communication during hand-offs of care.

An emerging role for Hospitalists is providing consultation services for other hospitalized patients, which is quite variable across hospitals. One area is in the peri-operative management of surgical patients. This can include pre-operative evaluation, post-operative co-management, and/or any form of peri-operative consultation to evaluate and manage acute or chronic medical problems. This can be referred to as surgical “co-management” although only one service remains the service of record.

Hospitalists also provide consultation through the evaluation of medically ill patients on psychiatry units. Hospitalists may also be qualified to care for patients in ICUs, typically with Pulmonary-Critical Care and/or Cardiology consultation. This responsibility is more common in smaller VAMCs with limited subspecialty consultation availability. It is also found in larger VAMCs with an “open” ICU, with subspecialty consultants available for co-management. VAMCs with “closed” ICUs typically have an ICU Team providing direct care for ICU patients and Hospitalists are not attending physicians of record when their patients require ICU care.
Other locations of care that employ the Hospitalist model in VHA include nursing home, rehabilitation, and specialty units (e.g., spinal cord injury). These providers often have additional duties including outpatient care which limits the use of the term “Hospitalist” to define their roles. Another common practice in VHA is for a Hospitalist to perform more than one duty. For example, Hospitalists may rotate in outpatient clinics or provide ED/urgent care services when not assigned to inpatient duties.

Hospitalists are also frequently involved in clinical leadership duties within the VAMC. Examples include participation in and leadership of hospital committees, patient safety efforts, quality and performance improvement, inpatient flow initiatives and peer review. Hospitalists are well-suited to fill administrative leadership positions within a VAMC due to their extensive interactions with all services related to inpatient care.

When developing a Hospitalist Program at a VAMC, it is important to define the expected duties and responsibilities of the Hospitalists. Privileges should be granted to allow the Hospitalist to provide general inpatient medical care, perform routine bedside procedures, provide medical consultative services, and ICU care when appropriate. Some hospitalists may also have additional skills (e.g., exercise stress testing) or have sub-specialty certification (e.g., nephrology, infectious disease). A Hospitalist Program should have well-defined roles and responsibilities, and include, but not be limited to:

- Defining patients appropriate for Hospitalist care, typically general medicine patients and ICU patients when appropriate.
- Defining the consultative role the Hospitalist will provide other hospitalized patients (e.g., surgery, psychiatry).
- Providing direct care of medically ill surgical and psychiatric patients when consultation alone is insufficient or these services are unable to provide the appropriate level of care.
- Defining the supervisory role the Hospitalist will provide for medical residents while providing patient care at academically affiliated VAMCs.
- Defining the collaborative and/or supervisory role the Hospitalist will provide for mid-level providers in compliance with state laws and facility policies.
- Defining the organization of the Hospitalist Program, including leadership, care team membership when housestaff or mid-levels are involved, and how coverage is provided for inpatients on the Hospitalist Service during off-tour hours.
- Defining how patients are assigned to the Hospitalist Service when they are determined to need hospitalization to ensure patients are appropriately assigned to the correct level of care and treating specialty.
- Outlining coordination of inpatient transfers from other VHA or non-VHA facilities.

Hospitalist Programs must have a collaborative relationship with other medical subspecialties within the VAMC. Having a Hospitalist leader to facilitate cooperation and communication is advised. Depending upon the facility organizational structure, a Hospitalist “Section” may be appropriate with a “Section Chief.” Support for the Hospitalist Program from the Chief of the Medicine (COM) and Chief of Staff (COS) is vitally important. The COM should provide guidance and supervision for the Hospitalist Leader. The COS should support the Hospitalist Program and recognize Hospitalists’
importance to the functioning of the medical center due to their involvement with medical and non-medical hospitalized patients.

A Hospitalist Program will require minimal administrative support. Administrative support can typically be provided by existing staff and will facilitate time keeping, mandatory training, proficiency reporting, scheduling and hiring of new staff. Space requirements for a Hospitalist Program are minimal. Hospitalists should be provided individual office space to perform administrative and other duties. Hospitalists providing direct patient care can perform their duties using computers in common areas; however, a dedicated computer workstation with printer for each provider is recommended. Other necessary equipment includes a pager, necessary keys to access locked areas, computer access with VA Outlook account, access to online and printed medical references, lab coats and ID badge.

Credentialing and training of hospitalists currently is under internal medicine training. There is no sub-specialty training or board certification for hospitalists, but this may change in the future. The American Board of Internal Medicine (ABIM) does allow hospitalists to choose inpatient re-certification modules as part of re-certification.

II. Hospitalist Program Models:

There are multiple models utilized by Hospitalist Programs in VHA with most VHA Hospitalists being staff physicians on full-time status; fee-basis physicians (e.g., moonlighters) also provide Hospitalist coverage when needed. Academically affiliated VAMCs may employ a part-time Hospitalist in conjunction with their affiliates.

Since hospitalized patients require 24-hour physician coverage, this can be achieved by a number of different arrangements. Large Hospitalist programs can often provide 24-hour on-site staff physician coverage, which occurs in 11% of VAMCs overall and in 14% with hospitalist programs. Off-site Hospitalists can provide after hours coverage as well. However, other providers would need to be available to respond to emergencies. Housestaff can provide 24-hour coverage, but still require in-house staff physician presence for back-up and/or consultation; Residency Review Committee rules for supervision must be followed. Inpatient coverage can also be provided by non-Hospitalist physicians after hours. This responsibility most often is fulfilled by ED physicians. Non-Hospitalists can also be utilized to cover weekend days and holidays. This role is often filled by primary care physicians and fee-based physicians. Work-hours can vary considerably and Hospitalist programs frequently utilize a compressed work schedule such as 12-hour shifts to provide 24-hour continuous coverage.

Hospitalist programs that include mid-level providers add another dimension to the Hospitalist model. Local state laws and facility policies will dictate the collaborative relationship these providers have in caring for hospitalized patients.

VAMCs developing a Hospitalist Program will need to clearly define staffing and coverage. Full-time staff physician Hospitalists are recommended as they can form
relationships with other inpatient team members including nurses, pharmacists, case managers/social workers, consultants, social workers, dieticians and therapists who are integral to the care of hospitalized patients. They are consistently aware of changes occurring in the inpatient realm, serve as excellent supervising physicians for housestaff and provide a good role model for residents considering a career in Hospitalist Medicine. 24/7 coverage by a Hospitalist Program is ideal to provide a consistent level of care, allow appropriate resident supervision and avoid unnecessary prolongation of a patient’s hospitalization. If unable to provide a full time staff physician model with 24/7 coverage, other arrangements can provide a consistent level of care.

III. Hospitalist Workload

Estimating the number of full-time equivalent (FTE) physicians required for a hospitalist program is a complex task. Many factors influence the decision process such as labor laws, Title 38 requirements, academic vs. non-academic institution, participation of other medical staff on-call coverage, the participation of residents and the presence of mid-level providers in the program. Because of these complexities, this document is only able to provide some examples and factors to consider and is not prescriptive.

In the private sector, models have been developed to calculate FTE effort for Hospitalists and include information such as:

- Number of acute medical admissions per year.
- Number of consults or co-managed patients.
- Number of hours worked which is influenced by 24/7 coverage as compared to normal 8 hour work days.
- Time required to evaluate and assess patients as the attending of record versus as a consultant.
- Time spent in other non-clinical duties such as administration, research, committees, teaching and other responsibilities.
- Average length of stay (LOS) of patients.
- Hospitalist involvement in the ICU.

In addition to the above factors, a number of factors should be considered that may be unique to VHA, such as:

- Number of hours worked per week: A private practice Hospitalists may work 40 – 80 hours a week while in the VHA tour of duty is 80 hours per pay period.
- Variations in ancillary and support services will impact the number of patient encounters per day, both positively and negatively.
- Sub-specialty consultant support may be greater in the private setting; thus, allowing the Hospitalist to efficiently manage a higher daily census.
- The total number of days worked annually by a Hospitalist in VHA is typically 216 compared with 225-250 in private practice models considering the vacation, sick leave, in lieu of days and authorized absence package offered VHA.
- Seasonal migration of veterans to particular areas affecting admission and consult rates.
All the above points should be taken into consideration before a model can be accurately interpreted in designing a Hospitalist program. Below is an example of a popular model that has been utilized to plan staffing in the private sector. The Hospitalist FAC will periodically update this section as more relevant data is assessed from VAs.

The **Watcher Model (UC-San Francisco)** requires the following information:

- Total number of admission and consults
- Average LOS
- Assumes each Hospitalist has a census of 10 patients per day

This model calculates the number of patients seen per day based on the total annual admissions and LOS and then calculates the number of FTE’s needed. For example:

\[
\begin{align*}
\text{Number of Admissions} &= 3000 \\
\text{Average LOS of stay} &= 4.8 \text{ days}
\end{align*}
\]

- Average census per day is \(3000 \times 4.8/365\) = 40 patients per day
- If the census by each Hospitalist is 10 per person then the FTE required is 4 FTE
- An additional 1 FTE is needed to cover holidays and weekends

At this point, it is very difficult to extrapolate this model to each unique VAMC and local constraints and opportunities. However, it does give a rough estimate for staffing needs of a Hospitalist program. Hospitalist schedules can vary dramatically between institutions based upon availability of services and a pool of fee-based physicians. Preventing physician burnout should be considered, a common phenomenon with Hospitalists.

**Shift work**

There are different working schedules depending upon the number of physicians and factors as discussed earlier. Shift work could be in blocks of time with the longer a block, the greater continuity of care provided by a single individual. For example, a shift of 8 hours work requires three shifts per 24 hours. If these shifts are scheduled in one block of 10 shifts per two-pay period, then a single provider will work 10 days straight and have 4 days off. Depending upon the length, a single provider will have continuity of care in 75-80 percent of the time whereas this will decrease with a smaller blocks. The shift can be a combination of long and short shifts and the blocks could be arranged in such a manner that the weekends are divided equally among all providers. In another example the shift could be equally divided in 12-hour shifts or ten 14-hour shifts based on the need and particular situation. In case of providers working independently and in shifts, support services such as social services may also need to adjust their schedules to address social and other issues in a timely fashion. Many programs nationwide have adopted a shift-based system with some hospitalists covering at night and some covering during the day.
Traditionally night shifts have been difficult to staff. According to the Society of Hospital Medicine (SHM) less than 25% of Hospitalists were willing to work nights. The addition of special pay as an incentive could be utilized as a shift difference to attract providers. In some cases fee-based physicians could provide night coverage.

**Average daily census**

Academic teaching services typically carry 10-24 patients per day (RRC restrictions of 24 patients per team with one senior and two interns). An attending-only service (“non-teaching”): 10-18 patients per day with mid-level collaboration and 8-12 for an individual Hospitalist. Average daily census and annual admission numbers may be dependent upon local attribution of patients to providers. These values will be periodically revised as more data become available.

**Quality of Care**

With the emergence of performance-based care, possible VHA measures include readmission rate, patient satisfaction, disease-specific measures (e.g., ACE Inhibitors for CHF, beta-blockers for acute myocardial infarction, timely antibiotics for pneumonia), ratio of “observation” to “acute” status, ICU transfer after admission to floor and the use of Rapid-Response Teams or other national quality initiatives.

**Relative Value Units (RVUs)**

No estimates of RVUs are currently available for VA inpatient physician productivity. Computerized Patient Record System (CPRS) and the Decision Support System (DSS) could be used to determine RVUs for inpatient services. The SHM annual productivity survey reports a mean of 2,328 RVUs (median 3,213).

**IV. Administrative Duties:**

**A. Section Chief**

If a Hospitalist Section Chief is designated, he/she can have a wide range of administrative duties that complement clinical responsibilities. Not all VAMCs will have enough hospitalists to warrant a formal Section Chief, and will work directly with the COM or other appropriate program chief.

1. **Schedules**—He/she will make call and work schedules including approval of leave so there is always adequate coverage in the hospital for backup in case of emergency or illness of assigned hospitalists.

2. **After Hours Responsibility**—He/She will be available for issues that need discussion on weekdays after usual tour of duty, weekends, and holidays. In the Section Chief’s absence, a designee will be named to take this duty.

3. **Scholarly Activity**—In keeping with the education mission of VHA, the Section Chief will ensure there is scholarly activity in the form of conferences, research and/or quality improvement. In academically affiliated VAMCs with medical residents and students, the Section Chief will ensure teaching activities are occurring daily as part of medical rounds.
4. **Section Committee Representation**—He/She will ensure Hospitalists sit on key committees of the hospital, such as Pharmacy and Therapeutics, Compliance and Business Integrity and Hospital Revenue committees. *Ad hoc* committees directly relating to acute inpatient care (e.g., FIX Initiative for inpatient flow) may also have a Hospitalist representation.

5. **Performance Appraisals**—He/She will perform end of year Hospitalist performance appraisals. This may be done in the form of report of performance pay measures and/or by other instruments developed for this purpose. He/she will also re-evaluate each Hospitalist’s individual pay every two years as mandated by the Performance Pay Bill.

6. **Medical Service Representation**—He/She will attend all Medical Service meetings and represent the Hospitalist section at that time.

7. **Labor Mapping**—He/she will be responsible for review of each Hospitalist’s RVUs and ensure work assignments are fair and as equally distributed as possible.

8. **Completion of VA Action Items and Congressional Inquiries**—He/She will assign VA action items and Congressional inquiries (unless completing them individually) and meet the deadline assigned to each by the Chief of Medicine.

9. **Recruitment**—He/She is responsible for identifying needs of the Hospitalist section regarding physicians or mid-level provider FTEs and will be involved in advertising, performing problem based interview sessions, and hiring applicants.

10. **Completion of Medical Records**—He/She is ultimately responsible for completion of all medical records for the Hospitalist section. Counseling and appropriate disciplinary action must be used for hospitalists not completing medical records in a timely fashion.

**B. Hospitalist physicians**

In addition to their clinical duties, hospitalists in VHA can have a myriad of other responsibilities.

1. **Joint Commission Requirements**—Hospitalists may serve as stewards for VHA in meeting the Joint Commission's (JCAHO) priority focus goals. They will participate in individual tracer sessions and attend JCAHO preparedness sessions.

2. **Completion of Performance Appraisals**—Hospitalists may perform evaluations of mid-level practitioners they are supervising, if applicable. Hospitalists will perform evaluations of medical residents and students on teaching services.

3. **Committee Participation**—Hospitalists may be expected to serve in a variety of committees in the hospital, and should be expected to vie for chairperson status in many instances. Committees of the hospital that need to involve hospitalists should include Compliance and Business Integrity, Pharmacy and Therapeutics, Hospital Revenue Committee, Hospital Nutrition Committee, Ethics Committee, CPRS Committee, etc.

4. **Disaster Preparedness**—Hospitalists may serve as key members of VAMCs’ Disaster Preparedness activities. This also may include direct participation with the Emergency Operations Committee for the city or county in which the VAMC resides.
5. **Clinical Champions**--Hospitalists may serve as clinical champions for clinical performance measures such as CHF, community acquired pneumonia, MRSA initiative, etc.

6. **Service to Service Agreements**--Hospitalists may meet with other hospital services such as general surgery, orthopedics, psychiatry, and neurology, and develop service to service agreements designating what admitting diagnoses should go to which service for admission and continued care.

7. **Hospital Flow Measures**--Hospitalists may serve as stewards for the VA National Goals for inpatient flow. This includes being leaders and teachers to other services as to education regarding initiatives such as discharge appointment times.

8. **Peer Review**--Hospitalists may be assigned time to perform peer review of other members of the Hospitalist section regarding issues such as DVT prophylaxis, timely use of antibiotics in pneumonia, administration of pneumonia or influenza vaccinations, daily weights in congestive heart failure patients, and appropriate antibiotic and laboratory usage.

9. **Medication Reconciliation**--Hospitalists may be leaders in developing and educating other services regarding measures to reconcile inpatient and outpatient medications.

V. **Quality and Efficiency**:

The conceptual basis for the quality and efficiency benefits of Hospitalists builds on the theory of coordination of work. Patient care requires multiple interconnected tasks that depend upon one another for performance. Such tasks must be performed by different individuals with different specializations. At the most complex level, tasks are simultaneous or mutually interdependent. Physicians and nurses caring for the same patients are mutually and reciprocally interdependent. Actions, decisions and observations of nurses affect the work of physicians and vice versa. Because of this interdependent relationship, coordination of work between Hospitalists and nurses can lead to high performance. An example of inter-dependence is Rapid Response Teams, which proactively identify decompensating patients before the occurrence of a major adverse event. Because many of the tasks are inter-connected and performed by different people, coordination is critical for performance.

Three related factors account for why hospitalists may improve coordination of care and patient outcomes.

1. **Hospitalists are specialists in inpatient care**. Because of this specialization, they become increasingly familiar with the type of work in the hospital. This includes acute patient care as well as distinctive routines and communication patterns of the institution. Non-hospitalists typically spend the majority of their time caring for outpatients, precluding them from developing as much expertise in the acute care environment.
2. **Hospitalist availability.** Because Hospitalists practice primarily in the hospital, they can visit patients more frequently and are more available to discuss patient care with nurses.

3. **Hospitalists are more likely to develop relationships** with other clinicians fostering communication and teamwork and, in turn, coordination.

These factors, *specialization, availability, and relationships* form the conceptual framework that describes how Hospitalists may improve quality and efficiency of care.

### Table 1 Summary of Selected Prior Hospitalist Studies

<table>
<thead>
<tr>
<th>Author</th>
<th>Outcome</th>
<th>LOS/Costs</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wachter, <em>et. al</em> 14 (1998)</td>
<td>No mortality or re-admission difference</td>
<td>Costs ↓ 10% LOS ↓ 12%</td>
<td>adjusted; quasi-randomized; university-based</td>
</tr>
<tr>
<td>Diamond, <em>et. al.</em> 10 (1998)</td>
<td>Re-admission ↓ 54%</td>
<td>Costs ↓ 12% LOS ↓ 17%</td>
<td>not adjusted; historical controls; community-based</td>
</tr>
<tr>
<td>Bellet &amp; Whitaker 9 (2000)</td>
<td>No mortality difference; Higher re-admissions</td>
<td>Charges ↓ 9% LOS ↓ 11%</td>
<td>adjusted; historical controls; university pediatrics service</td>
</tr>
<tr>
<td>Kearns, <em>et. al.</em> 7 (2001)</td>
<td>No mortality or re-admission difference</td>
<td>No Cost/LOS difference</td>
<td>unadjusted; no concurrent controls; community-based</td>
</tr>
<tr>
<td>Tingle &amp; Lambert 8 (2001)</td>
<td>No mortality or re-admission difference</td>
<td>No Cost/LOS difference</td>
<td>not adjusted; concurrent controls; family practice program; community-based</td>
</tr>
<tr>
<td>Meltzer, <em>et. al.</em> 15 (2002)</td>
<td>Mortality R.R. 0.65 (95%CI 0.44-0.96)</td>
<td>Costs ↓ 9% LOS ↓ 12%</td>
<td>adjusted; quasi-random; university-based; difference in 2nd year only</td>
</tr>
<tr>
<td>Auerbach, <em>et. al.</em> 16 (2002)</td>
<td>Mortality H.R. 0.71 (95% CI 0.54-0.93)</td>
<td>Costs ↓ 12% LOS ↓ 13%</td>
<td>adjusted; community physician controls; difference after 2nd year</td>
</tr>
<tr>
<td>Kaboli, <em>et. al.</em> 5 (2004)</td>
<td>No mortality or re-admission difference</td>
<td>Nursing costs ↓ 19% Lab costs ↓ 13% LOS ↓ 15%</td>
<td>unadjusted; university hospital in 1st year of program</td>
</tr>
</tbody>
</table>

Since the term “Hospitalist” was coined in 1996, several studies have attributed improvements in quality and efficiency to this new specialty, similar to the impact of emergency medicine on emergency departments (ED).
More than 20 observational studies of the effect of Hospitalists on clinical outcomes and resource utilization have been published; eight are highlighted in Table 1. Of prior studies, three-quarters reported significant decreases in costs (mean, 13.4%) and LOS (mean, 16.6%); two found no decreases in costs or LOS. While a potential concern of reducing LOS is premature discharge leading to hospital readmission, all but two studies found no differences in readmission associated with Hospitalists; one study in pediatric patients found an increase in hospital readmission while another found a 54% reduction in readmission. In addition to improvement efficiency, two randomized studies found reductions in hospital mortality of 35% and 29% by the 2nd year. Disease-specific process improvements for pneumonia and CHF have also been reported, as well as surgical co-management services.

The recently completed Multi-Center Trial of Hospitalists in six academic medical centers enrolled 31,013 patients to hospitalist and non-hospitalist services over two years. Unexpectedly, no differences between hospitalists and non-hospitalists were observed in 30-day mortality (7.8% vs. 7.1%; p=.34), LOS (5.3 vs. 5.4 days; p=.21), total costs ($9,801 vs. $10,202; p=.25), 30-day re-admission (9.4 vs. 10.0%), 30-day ED visit rates (6.3% vs. 6.4%), satisfaction, or health-related quality of life. Surprisingly, differences in LOS and costs previously reported at three of the six sites were not observed in the Multi-Center Trial.

The lack of difference in quality or efficiency in the Multi-Center Trial may reflect prior publication bias or secular changes. For example, sites implemented case-management, scrutinized non-hospitalist physicians assigned to inpatient service, and hired less-experienced hospitalists during the trial. Despite being a “negative” study, the Multi-Center Trial generated new questions and insights into how specific organizational factors (e.g., presence of housestaff, mid-level providers, practice guidelines, physician experience) may interact to influence clinical outcomes. The negative findings may also represent an effect of hospitalists on a system-level through associated systems improvement that was not observed with only two years of observation of programs of various ages.

The measurement of quality and efficiency of inpatient general medical care in VHA has, in general, been limited to a few specific disease-states (e.g., CHF, AMI, and COPD). Overall efficiency has not been reported recently and general measures of inpatient quality are lacking. However, Hospitalists have an opportunity to help define these inpatient quality metrics and apply those metrics previously validated and/or mandated. One specific area where Hospitalist involvement may be critical is in the Flow Improvement Inpatient Initiative (FIX) to improve inpatient throughput. The FAC will incorporate these metrics into future updates of this handbook.

Limitations of the Hospitalist Model:
It is important to realize that there is no “one-size-fits-all” Hospitalist model. Any hospitalist program should be designed to meet the meets of the facility and not be mandated. In fact, the model may not work in some facilities. One of the primary concerns about the evolution of hospitalists was the potential impact on discontinuity. If your facility has seamless continuity of outpatient to inpatient care and back (e.g., a
traditional primary care model providing both inpatient and outpatient care), then a hospitalist model may add a degree of discontinuity. The majority of VAMCs do not operate on this model and it is becoming less common in the private sector.

From the patient’s perspective, surveys have shown the most important factor for patients is that they have a doctor who is competent and available to them in the hospital. Satisfaction with hospitalists has been shown to be equivalent to non-hospitalists and when patients are asked, they are less concerned about having “their” doctor take care of them in the hospital.

VI. Medical Education

Up to two-thirds of education of medical trainees occurs in the inpatient setting. Hospitalists in academic centers are increasingly playing a critical role as teachers and leaders in medical education.\textsuperscript{19, 20} More than half of Internal Medicine programs utilize Hospitalists as part of their resident education.

In general, the educational experience of trainees with Hospitalist is at least as good as and often superior to traditional attending models. Hospitalist education of trainees is associated with greater housestaff satisfaction, greater availability of faculty, better use of evidence based medicine, more emphasis on cost-effective care and better feedback. Studies of medical student education found that Hospitalist outperformed non-Hospitalist faculty in effectiveness as clinical teachers.\textsuperscript{21, 22} The ACGME-mandated core general competencies emphasize a spectrum of non-clinical skills in areas such as effective team work, communication and systems-based learning. These skills are rarely represented in current curricula, but are a key feature of recently developed Hospitalist core competencies. Hospitalists are ideally situated for training housestaff in these overlooked areas. Finally, the 80-hour resident work week restriction has been challenging to implement for academic centers. The addition of Hospitalist staff on a non-teaching service can reduce the burden on stressed housestaff teams, allow more time for resident teaching and provide more opportunities for trainees to interact with teaching faculty.

Hospitalist educator programs should be sensitive to the issues of resident autonomy, exposure to different styles of practice, and financial challenges. The greater presence of Hospitalists on inpatient teams may lead to loss of resident autonomy or decreased exposure of trainees to various styles of practice, sub-specialists or clinician investigators, although neither has been seen in studies to date. Both issues may be less of a concern at VA hospitals. Trainees anecdotally report a greater sense of autonomy in patient care on VA rotations and they typically spend the majority of their time at non-VA institutions gaining exposure to other practice styles. One approach has been to enhance trainee exposure to sub-specialist teaching through dedicated conferences and morning reports as well as an added subspecialty rotation. Traditionally, reimbursement for educational activities has been challenging for academic centers and ultimately the viability of hospitalist educator programs will
depend on a complex variety of factors that affect reimbursement. This may be less of an issue at VAMCs.

Hospitalist educators may have additional training in education such as a chief resident year or advanced training programs in medical education such as fellowships, masters programs or short-term intensive courses. A typical Hospitalist educator position is 80% clinical time, with 20% time set aside for teaching. In reality, academic hospitalists are expected to do the bulk of their teaching concomitant with clinical activities. Hospitalist educators are ideally suited for roles such as residency program director or clerkship director. These positions must include greater amounts of protected time for administrative work and dedicated teaching activities. Additional activities can include mentoring students, doing curriculum development and conducting educational research such as program or curriculum evaluation. Burnout is a particular concern for hospitalist educators given the heavy demand of clinical duties coupled with the pressure to be academically productive. There are limited opportunities and minimal funding for educational research and relatively few venues at which educational work can be peer evaluated and published. Having advanced training in medical education and research, protected time, adequate resources and appropriate mentorship may improve hospitalist educators chances of academic success and career satisfaction.

There are number of Hospitalist fellowship opportunities, with programs listed on the SHM website. These programs have different requirements and in general allow the trainee to target their fellowship in their area of interest, such as research, quality improvement, clinical care, or medical education. No VA Hospitalists fellowships are available currently.

VII. Research and Quality Improvement:

There is an important overlap between research and patient care, especially in the domain of quality improvement (QI) and implementation research. The Quality Enhancement Research Initiative (QUERI) supports QI and implementation research to improve the care of hospitalized patients. Hospitalists have an important role in participating in research and informing the research agenda to help ensure studies are relevant to the care of hospitalized veterans. VHA has a strong tradition of supporting VHA investigators through a number of mechanisms. In addition to QUERI, the Health Services Research and Development (HSR&D) Service supports hospital-based research. Other sources of VHA funding include the Cooperative Studies Program, Rehabilitation Services, Medical Research, the National Center for Patient Safety and various VISN initiatives. External funding for Hospitalists also comes from the National Institutes of Health (NIH), The Agency for Healthcare Research and Quality (AHRQ) and a variety of non-governmental foundations and granting institutions. Hospitalists may seek a more traditional research role as a principal investigator or play a more collaborative role as a co-investigator on other grants.
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