A Model Longitudinal Observation Medicine Curriculum for an Emergency Medicine Residency

Writing committee: Matthew Wheatley, MD, Christopher Baugh, MD, MBA, Anwar Osborne, MD, MPM, Carol Clark, MD, Philip Shayne, MD, and Michael Ross, MD

Abstract

The role of observation services for emergency department patients has increased in recent years. Driven by changing health care practices and evolving payer policies, many hospitals in the United States currently have or are developing an observation unit (OU) and emergency physicians are most often expected to manage patients in this setting. Yet, few residency programs dedicate a portion of their clinical curriculum to observation medicine. This knowledge set should be integrated into the core training curriculum of emergency physicians. Presented here is a model observation medicine longitudinal training curriculum, which can be integrated into an emergency medicine (EM) residency. It was developed by a consensus of content experts representing the observation medicine interest group and observation medicine section, respectively, from EM's two major specialty societies: the Society for Academic Emergency Medicine (SAEM) and the American College of Emergency Physicians (ACEP). The curriculum consists of didactic, clinical, and self-directed elements. It is longitudinal, with learning objectives for each year of training, focusing initially on the basic principles of observation medicine and appropriate observation patient selection; moving to the management of various observation appropriate conditions; and then incorporating further concepts of OU management, billing, and administration. This curriculum is flexible and designed to be used in both academic and community EM training programs within the United States. Additionally, scholarly opportunities, such as elective rotations and fellowship training, are explored.

The role of observation services for emergency department (ED) patients has increased in the recent years. The practice of outpatient observation for certain conditions has been present for decades.

Recent trends show an increase in the proportion of patients managed as outpatients under observation relative to inpatient status. This shift may be in an effort to reduce inpatient admissions, the largest contributor to health care costs, or avoid overpayment penalties.

Hospitals are responding to the increase in observation volume by creating dedicated units to treat patients under observation status. Between 2003 and 2011, the percentage of hospitals that reported having an observation unit (OU) increased from 19% to 36%, with the majority of OUs being managed by the ED.

To date, little has been published about the state of observation medicine education in emergency medicine (EM) residency training programs. In 2002, Mace and Shah published the results of a telephone survey of residency programs. One-third of the programs had an observation medicine textbook or lecture series and only 10% of programs had a dedicated observation medicine rotation. The authors concluded that education in observation medicine was “lagging behind” but that expansion of resources to improve this education would “involve minimal expense and could be easily accomplished.” There have been no further assessments of observation medicine education published since this
DEFINITIONS AND EXPLANATION OF TERMS

Before discussing the curriculum, terms specific to observation medicine must be defined. “Observation services” are defined by Medicare and other payers as outpatient care that is distinct from the ED visit, which is specifically to determine the need for inpatient admission.11 This service can be provided in any hospital bed and requires a physician’s order to start the observation visit. These are cognitive, rather than procedural, services and can be performed by an attending physician, a resident physician, or an advanced practice provider under the supervision of an attending physician.

“Observation patients” are patients who qualify for observation services. They are patients who require diagnostics or therapeutics beyond the length of a typical ED visit (5 hours), but are unlikely to require more than 24 hours of additional care.12 In recent decades, there has been a shift of hospital-based care from inpatient care to observation care. In 2010, observation care represented 6.6% of all ED patients staying in the hospital.13 This trend may well continue since it is estimated that 12% to 25% of ED patients who stay in the hospital bed and require a physician makes the transition from observation to inpatient care.14 While their stays in the ED may be comparable to observation patients, the issues surrounding the care of boarded patients are different and go beyond the scope of this paper.

“Observation units” are dedicated physical spaces where observation services are rendered to observation patients. As mentioned, observation care can be provided in any hospital bed. Ross et al.13 described four different settings for observation services (Table 1) and outlined operational advantages to protocol-driven care in a dedicated unit (Type 1). The Institute of Medicine report on hospital-based emergency care recommends the OU as a means of improving hospital operations.15 The ACEP Policy Statement on Emergency Department Observation Services states “Observation of appropriate ED patients in a dedicated ED observation area, instead of a general inpatient bed or an acute care ED bed is a ‘best practice’ that requires a commitment of staff and hospital resources.”16

“Observation medicine” is the specialized body of knowledge and skills relevant to care of observation patients. It includes understanding the relevant clinical pathophysiology best managed in an observation setting, optimal management protocols, smooth transitions of care, recognition of the potential risks, and outcomes associated with observation care and developing the administrative skills relevant to running an OU. This knowledge is supplemental to but distinct from the initial ED care. To date, there have been nine prospective randomized trials, which have compared ED OU care to inpatient care for conditions such as asthma, chest pain, syncope, atrial fibrillation, and transient ischemic attack.17–25 These studies have all favored OU care with improved outcomes such as decrease in diagnostic uncertainty, lower inpatient admission rates, lower cost and length of stay, improved patient satisfaction and quality of life, as well as comparable or better clinical outcomes. In addition, there is a growing body of health services data that illustrates the potential impacts of avoided inpatient admissions and reductions on overall health care cost.13,14,26–32

THE CASE FOR AN OBSERVATION MEDICINE CURRICULUM

There is a clear need and desire for development of a specific residency training curriculum for observation medicine. Eighty-five percent of residency directors believe that observation medicine is an important part of EM.10 Despite the growth of observation services, there is a paucity of literature regarding specific training curricula in this area. This has prompted investigators to call for “clarity in clinical practice.”4 While any specialty can run OUs or manage observation patients, EM as a specialty has a unique relationship with

<table>
<thead>
<tr>
<th>Type 1</th>
<th>Dedicated OU; protocol-driven care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 2</td>
<td>Dedicated OU; discretionary care</td>
</tr>
<tr>
<td>Type 3</td>
<td>Bed in any location; protocol-driven care</td>
</tr>
<tr>
<td>Type 4</td>
<td>Bed in any location; discretionary care</td>
</tr>
</tbody>
</table>

OU= observation unit.

*Source: Ross et al.13
observation medicine. Most observation patients originate in the ED and most observation medicine literature includes emergency patients, is based in an ED setting, and is published by EM journals. Furthermore, there are distinct operational and cost advantages to having an OU managed by emergency physicians.

The successful integration of observation medicine into residency training requires a thoughtful curriculum for EM residents. Described below, is a flexible model for integrating observation medicine into EM residency based on expert consensus, experience in implementation into a training program and iterative revisions. This curriculum outlines specific objectives, methods of learning, and possible assessment methods. While the authors have positive evaluations and excellent success with program graduates becoming OU directors, this curriculum was developed organically over years and has not been formally assessed as an intervention.

COMPETENCY-BASED CURRICULUM

The observation medicine curriculum was initially framed in the language of the Accreditation Council for Graduate Medical Education (ACGME) core competencies (Table 2). The new EM Milestones provide a much more granular opportunity to both use an observation medicine curriculum to assess a resident’s progress through training and to map the curriculum to a resident’s level of training. As the resident progresses through residency, his or her knowledge of observation medicine and responsibilities in the OU should progress as well. The Milestones illustrate how the observation medicine curriculum spans the duration of residency training and is congruent with other domains of resident progression. The Patient Care 6 subcompetency (Reassessment and Observation, Table 3) is clearly and directly applicable to OM but other EM Milestones (Table 4) can also be used to track a resident’s performance. Specific assessment metrics are discussed below.

METHODS OF LEARNING

There are many methods of learning mentioned in the medical education literature. In 2012, a committee comprised of members of the Council of Emergency Medicine Residency Directors (CORD) and the Clerkship Directors in Emergency Medicine (CDEM) identified six primary instructional modalities in EM (Table 5). The three methods that are most easily applied to an observation medicine curriculum are didactics, asynchronous learning, and longitudinal learning through clinical teaching/apprenticeship. Each of these has a role in developing competency in observation medicine.

DIDACTIC PRESENTATIONS

A list of didactic topics specific to each year of training can be found in the Data Supplement S1 (available as supporting information in the online version of this paper). The size, duration, and other needs of the residency program may dictate the specifics of how observation medicine topics are incorporated into the residency curriculum. Didactics can be given in a large lecture format to the entire residency or as a small group discussion with an individual class or individual residents on an observation medicine rotation. The first approach may work for topics with applications across different levels of training such as management of low-risk chest pain or acute decompensated heart failure, whereas small group sessions are better for discussions of observation billing or OU design and staffing. An alternative to the traditional lecture format is to have didactic mate-

---

**Table 2**

Longitudinal Observation Medicine Education Based on ACGME Core Competencies

<table>
<thead>
<tr>
<th>Patient care (PC)</th>
<th>Residents should be able to provide compassionate and effective care for observation patients. The resident should provide appropriate care for the patient including proper use of the ED OU for patient and protocol selection. Once the patient has been evaluated in the OU, the resident should then be able to disposition the patient to and from that setting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical knowledge (MK)</td>
<td>Resident should understand proper patient selection for observation. They should develop a thorough understanding of protocol-driven care in an OU setting including inclusion and exclusion criteria, diagnostic testing, therapeutic interventions, and the evidence behind the care being given.</td>
</tr>
<tr>
<td>Interpersonal communications (IC)</td>
<td>The resident should be able to effectively communicate with the patient, primary care physicians, and consultants regarding the care and evaluation of an OU patient. The resident should also effectively communicate with other members of the observation team so that effective transition of care occurs.</td>
</tr>
<tr>
<td>Practice-based learning and improvement (PBL)</td>
<td>The resident should be able to appropriately modify practice in the care of the observation patient based on developing skills of self-assessment, quality improvement, and literature review.</td>
</tr>
<tr>
<td>Professionalism (P)</td>
<td>The resident should be able to care for the ED OU patient throughout his or her stay with professionalism. This includes respect for the patient and consideration of his or her possible emotional and cultural needs. The resident will also be compliant with recordkeeping, completion of notes, and orders in a timely manner.</td>
</tr>
<tr>
<td>System-based practice (SBP)</td>
<td>The resident will develop proficiency in the progressive and appropriate use of the ED OU as it fits into the health care system. The resident will understand his or her role as a steward of scarce resources; as hospitals become capacity constrained, the OU plays an important role to reduce unnecessary inpatient admissions.</td>
</tr>
</tbody>
</table>

OU = observation unit.
rational available on an online learning management system such as Blackboard or Moodle. Online tools allow trainees to review the lectures prior to the didactic sessions, allowing the instructor to go further in depth in a particular issue than time would otherwise allow.

**SELF-DIRECTED LEARNING**

Self-directed, or asynchronous, learning is a requirement of EM residency education and fits well into a model observation medicine curriculum. The source material can be textbooks, journal articles, lectures, or other resources which are available online through institutional or professional society websites or blogs. This allows the instructors to use a “flipped classroom” approach where small group sessions are dedicated to discussion and interpretation rather than primary communication of information. This can be supplementary to the didactic and clinical instruction or a formal requirement of the rotation. This technique is important for upper-level residents who are interested in observation medicine for a quality improvement or research project. Additional resources are provided in Data Supplement S2 (available as supporting information in the online version of this paper).

**LONGITUDINAL LEARNING**

The knowledge component of observation medicine can be initially taught through resident didactics and self-directed readings. However, deeper understanding of medical knowledge and the skills of patient care and systems-based practice are best learned in the clinical setting. Similar to the development of clinical skills in EM, clinical experience of managing OU patients allows the residents to develop their observation medicine clinical skills throughout their residency. For programs with access to an OU, this can occur through two mechanisms: a dedicated observation medicine rotation or scheduled ED shifts throughout residency training involving OU rounds prior to reporting to the acute care area of the ED. At this point, there are no published data to guide which approach is most effective. In the authors’ experience, each has advantages and can be successful. The overall needs of a program may dictate which particular approach is most useful. A dedicated rotation has the advantage of a focused time period of clinical service for residents. Alternatively, a split shift between the OU and ED could correspond to an attending’s shift and start in the OU prior to starting the ED shift. This allows the resident to experience OU care throughout his or her residency and may potentially mirror what they will be asked to do at their clinical sites after they complete training.

**LONGITUDINAL CURRICULUM**

**PGY-1**

An observation medicine curriculum should progress from internship to practice (Table 6). Residents in the postgraduate year 1 (PGY-1) year should begin to learn...
<table>
<thead>
<tr>
<th>EM Subcompetency</th>
<th>Level</th>
<th>PGY level</th>
<th>Assessment Method</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>2) PC2 Hx &amp; PE</td>
<td>4</td>
<td>2, 3</td>
<td>Global rating</td>
<td>Synthesizes essential data necessary for the correct management of patients using all potential sources of data.</td>
</tr>
<tr>
<td>3) PC3: Studies</td>
<td>1</td>
<td>1</td>
<td>Checklist</td>
<td>Determines necessity and urgency of diagnostic studies.</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>Checklist</td>
<td>Orders appropriate diagnostic studies.</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>2, 3</td>
<td>Global rating</td>
<td>Interprets results of a diagnostic study, recognizing limitations and risks, seeking interpretative assistance when appropriate. Reviews risks, benefits, contraindications, and alternatives to a diagnostic study or procedure.</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>3, fellow</td>
<td>Global rating scale</td>
<td>Uses diagnostic testing based on the pretest probability of disease and the likelihood of test results altering management.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3, 4, fellow</td>
<td>Global rating scale</td>
<td>Practices cost-effective ordering of diagnostic studies.</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>1</td>
<td>Global rating scale</td>
<td>Determines which patients will require observation in the ED. Evaluates effectiveness of therapies and treatments provided during observation. Monitors a patient’s clinical status at timely intervals during their stay in the ED.</td>
</tr>
<tr>
<td>6) PC6: Obs and Reassess</td>
<td>3, 2, 3</td>
<td>Global rating scale</td>
<td>Recognizes the need for patient reevaluation.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>5, fellow</td>
<td>End of rotation evaluation</td>
<td>Considers additional diagnoses and therapies for a patient who is under observation and changes plans accordingly.</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>4, fellow</td>
<td>End of rotation evaluation</td>
<td>Works within the institution to develop hospital systems that enhance safe patient disposition and maximizes resource utilization.</td>
</tr>
<tr>
<td>7) PC7: Dispo</td>
<td>5</td>
<td>4, fellow</td>
<td>Global ratings scales</td>
<td>Appropriately uses system resources to improve both patient care and medical knowledge. Identifies situations when the breakdown in teamwork of communication may contribute to medical error.</td>
</tr>
<tr>
<td></td>
<td>16) SBP1: PI</td>
<td>3, 2, 3</td>
<td>End-of-rotation evaluation</td>
<td>Participates in processes and logistics to improve patient flow and decrease turnaround times (e.g., rapid triage, bedside registration, Fast Tracks, bedside testing, rapid treatment units, standard protocols, and observation units). Coordinates system resources to optimize a patient’s care for complicated medical situations.</td>
</tr>
<tr>
<td></td>
<td>17) SBP2: Strategies</td>
<td>4, 2, 3</td>
<td>End-of-rotation evaluation</td>
<td>Creates departmental flow metrics from benchmarks, best practices and dash boards. Develops internal and external departmental solutions to process and operational problems. Addresses the differing customer needs of patients, hospital medical staff, EMS, and the community. Uses decision support systems in HER (as applicable in institution). Recommends systems re-design for improved computerized processes.</td>
</tr>
<tr>
<td>18) SBP3: Tech</td>
<td>4</td>
<td>2, 3</td>
<td>Checklist</td>
<td>Participates in a process improvement plan to optimize ED practice.</td>
</tr>
<tr>
<td>19) PBLI: PI</td>
<td>4</td>
<td>4, fellow</td>
<td>End-of-rotation evaluation</td>
<td>Develops alternate care plans when patients’ personal decisions/beliefs preclude the use of commonly accepted practices.</td>
</tr>
<tr>
<td>20) PROF1: Ethical principles</td>
<td>3</td>
<td>2</td>
<td>Checklist evaluation</td>
<td>Develops and applies a consistent and appropriate approach to evaluating appropriate care, possible barriers and strategies to intervene that consistently prioritizes the patient’s best interests in all relationships and situations.</td>
</tr>
</tbody>
</table>

(Continued)
the basic principles of observation medicine as well as appropriate patient selection for the OU. PGY-1 residents typically do not continue to deliver care for patients during an OU stay. The authors recommend 2 to 3 hours of dedicated didactic sessions during this year, which should focus on the definition and purpose of observation services, payer policies influencing observation care, the different types of settings in which observation services can be delivered and the clinical science supporting protocol-driven care (see Data Supplement S1).14,29,30,37 Self-directed learning can focus on observation medicine textbooks, relevant articles, and the history of observation medicine.14,37 Clinically, PGY-1 residents should develop a firm grasp on the available protocols across different conditions, as well as understand how to apply inclusion and exclusion criteria to identify patients best suited for OU care.

Observation principles should be reinforced continuously on every shift while the resident is rotating in the ED. Attending physicians should supervise first-year residents in selecting patients for observation, arranging appropriate transfer of care, and placing orders (or selecting protocols) for the observation setting. The resident should understand the scope of care available in the OU, such as access to diagnostic tests. To further solidify the understanding of protocols, the residents should follow up on their own patients placed in the OU. If a unit is not present and patients are admitted to the hospital in observation status, bedside discussion of care in that setting would similarly take place. Assessment methods congruent with this curriculum would include checklists and global rating of live performances incorporated into end-of-shift evaluations, as well as chart audits from patients admitted to the OU. Attending physicians should assess the degree of mastery of these aspects of observation care via direct interaction with the PGY-1 resident while discussing the patient’s

Table 4 (continued)

<table>
<thead>
<tr>
<th>EM Subcompetency</th>
<th>Level</th>
<th>PGY level</th>
<th>Assessment Method</th>
<th>Milestone</th>
</tr>
</thead>
<tbody>
<tr>
<td>22) ICS1: Interpersonal skills</td>
<td>3</td>
<td>2</td>
<td>Checklist evaluation</td>
<td>Manages the expectations of those who receive care in the ED and uses communication methods that minimize the potential for stress, conflict, and misunderstanding. Effectively communicates with vulnerable populations, including both patients at risk and their families.</td>
</tr>
<tr>
<td>23) ICS2: Team management</td>
<td>2</td>
<td>2</td>
<td>End-of-rotation evaluation</td>
<td>Recommends changes in team performance as necessary for optimal efficiency.</td>
</tr>
</tbody>
</table>

Table 5

Learning Modalities in Emergency Medicine*

<table>
<thead>
<tr>
<th>Teaching Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web 2.0</td>
<td>Knowledge is user-generated and available in an environment where learners can change content.</td>
</tr>
<tr>
<td>Web-based asynchronous learning</td>
<td>Knowledge is created by educators and available to learners through an online educational model.</td>
</tr>
<tr>
<td>Longitudinal curricula</td>
<td>Training is integrated over a long period of time.</td>
</tr>
<tr>
<td>Simulation-based curricula</td>
<td>Learners attempt to complete desired behavior in an artificial setting.</td>
</tr>
<tr>
<td>Didactic presentations</td>
<td>Traditional lectures for learners.</td>
</tr>
<tr>
<td>Group learning</td>
<td>Learners work exercises in small groups.</td>
</tr>
</tbody>
</table>

*Source: Deiorio et al.35

Table 6

PGY-1 Curriculum

Resident should be able to:
- Obtain knowledge of observation-appropriate diagnoses as well as the inclusion/exclusion criteria (PC, MK)
- Attend introductory observation medicine lectures
- Review OU manual including protocols
- Participate in direct patient care and selection of the observation patient (PC, MK, SBL)
- Attend introductory rounds in OU
- Select patients appropriate for observation care while on ED clinical shifts
- Gather appropriate information regarding patient risks and OU-specific requirements of history for the patient
- Follow up individual cases sent to the OU (PC, MK, PBL, SBP)
- Review cases with observation medicine faculty
- Receive directed feedback from OU director on problem cases, patient- or staff-initiated concerns
- Participate in morbidity and mortality quality reviews regarding OU patients (PC, PBL, SPB, P, IC)
- Begin to identify areas of interest in observation medicine research topics (PBL, SBP, MK)
- Review core observation medicine literature
- Explore interest groups, section websites

IC = interpersonal communications; MK = medical knowledge; OU = observation unit; P = professionalism; PBL = practice-based learning and improvement; PC = patient care; SBP = system-based practice.
initial disposition and observation of communication of that plan to the patient.

PGY-2
During the PGY-2 year (Table 7), the goals of their clinical education should transition from patient selection to understanding of the active management of patients in the OU. Didactics during this year can focus on indications for diagnostic testing, ongoing medical therapy, and disposition algorithms for patients in the various protocols (see Data Supplement S1). This can include discussions on stress test modalities, indications for echocardiogram, antibiotic selection, or therapy for heart failure patients.38–41 This activity will be enhanced through self-directed learning such as the core articles or ACEP’s observation medicine website (http://www.acep.org/content.aspx?id=30260), which includes sample protocols from five different institutions.

Clinically, the PGY-2 year is an ideal time to start residents rounding on patients in the OU. The goal here is to build experiential knowledge of how a patient’s progress through an OU protocol affects their disposition. In this setting, residents learn the skills of integrating data from a focused interim history and physical examination with longitudinal data such as subjective complaints, vital sign trends, serial labs, and diagnostic testing. They will learn to use these data to make timely final disposition decisions without needing other testing or consultant recommendations.

As mentioned, OU rounds can be part of a dedicated rotation or integrated into a clinical ED shift. In the authors’ experience, one out of every four or five shifts during ED rotations should include OU rounds. For dedicated rotations, residents should attend three to four OU rounds per week. The authors recommend a PGY-2 resident be assigned three to four patients per shift at the early in the academic year. This can expand as they gain more experience managing OU patients. Similar to inpatient rounds, the resident should arrive prior to rounds with sufficient time to review each patient’s history and diagnostic data, perform an interim examination, and formulate a disposition plan. OU rounds typically occur early in the day. If a resident has a split OU/ED shift, they should begin their shift in the OU prior to moving to the acute care side of the ED. Residents on dedicated observation medicine rotations can move to didactics following OU rounds. In addition to OU rounds, these residents can be exposed to other clinical opportunities such as observing a stress test or attending a transient ischemic attack follow-up clinic.41,42 Although these experiences appear to be amenable to an asynchronous format, the authors believe that dedicating 2–4 weeks for these activities are in the resident’s best interest in terms of scheduling.

A dedicated OU rotation lends itself to end of rotation evaluations and checklist of live performance. The resident’s ability to synthesize clinical data, develop a disposition plan on their OU shifts will play a large role in their summative rotation evaluation. Attending physicians rating resident performance should focus on the resident’s ability to arrive at a correct and timely disposition for their patients. Best practice suggests that 15–18 hours is the optimal length of stay for observation patients.14 This concept should be reinforced in didactics and should be evident in practice. Residents should recognize that patients requiring further diagnostics or therapies beyond this time frame should be considered for hospital admission, whereas patients who have improved over this time frame or have a negative workup can be discharged home.

PGY-3/4
In the final years (PGY-3/4), the resident’s educational focus progresses from how to manage patients in the unit to how to manage the unit itself (Table 8). Didactics at this stage can focus on observation coding and billing (http://www.acep.org/Clinical—Practice-Management/Observation—Physician-Coding-FAQ/), OU design and staffing, how to create protocols, and how to use visit

---

<table>
<thead>
<tr>
<th>Resident should be able to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue to develop the skills for choosing the appropriate care and selection of the ED OU patient including appropriate protocol and testing selection (PC, MK)</td>
</tr>
<tr>
<td>Continue study of observation medicine related key topics (MK, PBL, SBP)</td>
</tr>
<tr>
<td>Attend didactic lectures on key observation medicine topics</td>
</tr>
<tr>
<td>Continue review of observation medicine literature</td>
</tr>
<tr>
<td>Follow up on individual cases</td>
</tr>
<tr>
<td>Engage in one-on-one meetings and case reviews with observation medicine faculty (MK, PBL)</td>
</tr>
<tr>
<td>Continue peer review and case-by-case feedback of difficult or inappropriate observation patients, mortality and morbidity, return visits audits (PC, MK, PBL, SBP)</td>
</tr>
<tr>
<td>Further learn and develop the skills needed to successfully manage an OU (PC, MK, SBP, PBL, P)</td>
</tr>
<tr>
<td>Participate in peer review audits, return visit audits, observation complaint reviews</td>
</tr>
<tr>
<td>Begin hands-on management shifts alongside observation medicine faculty</td>
</tr>
<tr>
<td>Increase participation and exposure to observation medicine through websites, interest groups at regional/national meetings (SBP)</td>
</tr>
<tr>
<td>Begin or continue research related scholarly project regarding observation medicine (PC, MK, SBP, PBL)</td>
</tr>
</tbody>
</table>

IC = interpersonal communications; MK = medical knowledge; OU = observation unit; P = professionalism; PBL = practice-based learning and improvement; PC = patient care; SBP = system-based practice.
volume and quality data to optimize care in the unit.29

There is an opportunity for these senior residents to participate in the training of nurses and advanced practice providers who work in the unit as well as attending monthly OU or ED operational meetings. Self-directed learning at this stage should focus on current health service research as well as the economics of running an OU.26,27,30 Clinically, PGY-3/4 residents can continue to round in the OU, as this will further build upon the experience gained in the PGY-2 curriculum.

Similar to the ED, senior residents should be expected to manage more patients than their junior counterparts. By the end of their third year, residents should be able to manage eight to 10 OU patients. There should be opportunities for senior residents to lead rounds and facilitate presentations from junior residents or advanced practice providers. If routine dedicated OU shifts are not possible, administrative topics can be incorporated into an administrative month or an observation medicine elective rotation. Senior residents are also good candidates to present didactic talks to junior residents on observation-related topics. Senior residents will have more varied responsibilities in an OU and the assessment methods depend on their level of involvement. PGY-4 residents may have fellow-level elective opportunities that allow for higher-level milestone achievement.

### OBSERVATION MEDICINE ROTATIONS FOR NON-EM TRAINEES

Because OU management involves close coordination with other specialties and some institutions have OUs that are run by other specialties, it is natural that a clinical rotation could be available to trainees from other disciplines. Specifically, this could include internal medicine, family medicine, and possibly neurology. It would be best to offer this to residents at the PGY-2 level or higher, with the focus on principles of observation medicine, patient selection, and management in the OU.

### OBSERVATION MEDICINE POSTGRADUATE FELLOWSHIP

EM residency graduates who are interested in becoming content experts in observation medicine may pursue postresidency training at appropriately qualified programs. This could be 1 year of additional training or extend to 2 years with the addition of a master’s-level training curriculum (masters of business administration, hospital administration, or public health). Core fellowship training areas would include clinical, administrative, education, research, health policy, and public health. The objective of a fellowship would be to prepare the graduate to serve as an OU director, develop an observation medicine curriculum, design and conduct meaningful research in areas relevant to observation medicine, and become recognized regionally or nationally within this field. While many graduates may be asked to fill the role of OU director, the fellowship should focus on preparing the fellow to be a leader in the field through scholarly activity. Supervised management of an OU, design and implementation of a research project, and resident lectures would be included. To achieve this, fellowship programs should have appropriately qualified and recognized observation medicine faculty, a fellowship didactic curriculum, an established observation medicine program with Type 1 units, and administrative and educational support for fellowship training. A number of level 5 milestones may make excellent fellowship objectives as well as assessment methods.

### ASSESSMENT

Trainee assessment is based on core competencies and involves several methods. Table 4 presents these as a grand rubric from which specific metrics can be selected to make resident and rotation specific assessment tools. For example, an intern should be primarily assessed on best practices of patient care. These competencies may be assessed through direct observation of clinical care. For PGY-2 residents who are directly involved in observation medicine patient care, direct observation of clinical care (checklist and global ratings) and chart reviews are appropriate assessment tools. Chart review allows the teacher to review a case with the learner, using the chart for details, to probe for understanding on the part...
of the learner. For example, during a discussion about a patient with chest pain, it would be appropriate to query the resident on the rationale in choosing specific tests and the impact of pretest probability on the predictive value of results. Through these discussions, the faculty may obtain a clear sense of the resident’s competency and knowledge base.

For senior residents who are helping to manage an OU, direct observation of clinical performance and chart review would also be appropriate. Assessment would also include other metrics, such as patient outcomes and multisource feedback from nursing, advanced-practice providers, and patients on communication skills or understanding of systems-based practice issues.

Objective assessment of EM trainees can be accomplished through the rubric of ACGME EM Milestones. Subcompetency PC6 (Table 3) specifically tracks learner progression on ED observation and reassessment, which can include time spent in an ED OU. According to this timeline, first-year residents should be able to recognize the need to reevaluate certain patients. As the residents progress through the PGY-2 and PGY-3 years, they should be able to reassess their patients at timely intervals and ensure the effectiveness of the therapies they have ordered. Graduating residents should be able to alter their treatment plans for patients under observation based on information from diagnostic studies and responses to therapies (level 4 competency). Trainees involved in creation of clinical protocols are performing above the level of most practicing physicians (level 5).

**ESSENTIAL RESOURCES**

Two essential resources for this curriculum are an OU and academic faculty with experience or interest in observation medicine. Ideally, residents would rotate in a Type 1 ED-based OU. If such a unit is not available in the ED, an inpatient Type 1 unit may be used as a surrogate. If neither is available, then outside rotations at a hospital with a Type 1 OU may be considered. Finally, if none of these are options then the program may choose to focus on the didactic skills alone, supplemented with rotations in other departments that may have the resources needed to provide this training (i.e., internal medicine for observation patients managed by inpatient teams, cardiology for stress imaging training).

Core EM faculty with skills and interests in teaching observation medicine are essential to planning and implementing this curriculum. Clinical faculty should be adept at the educational requirements of resident training. Didactic lectures, reading lists, and relevant high-impact papers should be readily available when needed for bedside teaching or following formal didactic sessions. Services that support the operations of the OU, such as cardiology, nuclear medicine, radiology, clinical pathology, and neurology should also be engaged for focused training relevant to observation medicine.

**DISCUSSION**

Observation medicine is part of the clinical practice of EM. Given the current expansion of observation services and proliferation of OUs, EM residents can expect to work in a hospital with an OU and need the skills and knowledge to manage these patients when they enter clinical practice. Despite the clear need that the concepts and clinical skills of observation medicine be part of EM residency training, few programs have a dedicated curriculum.

One reason for this may be that no standardized curriculum exists. The management principles of observation medicine are well defined and can be taught to EM residents through clinical experience, didactic instruction, and self-study. As more training programs adopt this curriculum, research on outcomes may refine these recommendations.

The goal of this curriculum is that it is usable for different types of training programs: urban versus rural, academic versus community centers, and sites with and without a dedicated OU. Because many U.S. hospitals do not yet have an OU, the curriculum should not be overly rigid, but rather give a general framework of resources for program directors to begin to build an observation medicine curriculum.

Training in observation medicine is a valuable educational experience, allowing the resident to fully understand the progression and evaluation of the disease process. Observation medicine encourages residents to follow the clinical course of patients, learn about the natural course of disease processes, and better understand the outcomes of care. As residents begin to use OU protocols, they are exposed to diagnostic studies typically considered out of scope during the normal course of an ED visit, such as cardiac stress testing. EM residency should provide a resident with the knowledge and skills to easily transition into working as an attending physician in an OU. Dedicated training in observation medicine will provide a more rounded education and be beneficial to residents as they transition to practice.

**CONCLUSION**

Observation medicine has developed because of the growing needs of ED patients who will need further management to determine if they need inpatient admission. Multiple studies have shown that protocol-driven care in a dedicated (Type 1) observation unit is the most efficient way to care for these patients. Observation medicine is within the scope of practice of emergency medicine. To prepare physicians for this clinical skill, formal training in the appropriate setting may be integrated into emergency medicine residency education. At sites that already have an observation unit, residency leadership can easily integrate a curriculum into resident education. Such a curriculum should include didactic, clinical, and self-directed learning experiences similar to other topics integral to emergency medicine. Observation medicine education in residency will prepare trainees to care for patients in observation units as well as for potential leadership in observation unit management.

**References**


4. Feng Z, Wright B, Mor V. Sharp rise in Medicare enrollees being held in hospitals for observation raises concerns about causes and consequences. Health Aff 2012;31:1251–9.


29. Baugh CW, Venkatesh AK, Bohan JS. Emergency department observation units: a clinical and finan-

Supporting Information

The following supporting information is available in the online version of this paper:

Data Supplement S1. Suggested didactic topics for observation medicine curriculum.

Data Supplement S2. Suggested reading list for observation medicine curriculum.

VIRTUAL ISSUES

"Virtual Issues" are now a key feature of Academic Emergency Medicine’s home page. A virtual issue is basically just a collection of articles on a given topic. The idea is that a reader will go there to look for a particular issue, but then will see our other offerings on that topic, as well, increasing our full-text download numbers and helping insure the broadest dissemination of our authors' work.

We now have five "virtual issues" online. Go to the journal’s home page on the Wiley Online Library (WOL) platform - "Find Issues" on the left-hand side and click on the feature. In addition to the initial geriatrics one, the following are up and running on: ultrasound, toxicology, injury prevention, statistics and research methodology. Again, consult the “Find Issues” area and click on the desired issue. They can also be accessed from the "Virtual Issues" module, right column, on the journal's home page.


STAY TUNED FOR UPDATES AS MORE VIRTUAL ISSUES ARE ADDED. IF YOU WOULD LIKE TO COMPOSE ONE, PLS CONTACT DAVE CONE, MD, or SANDI ARJONA.