Known by different names around the globe, observation units have become a new area of focus for maturing emergency medicine systems. Driven partly by inpatient capacity constraints creating access block for ED patients and the realization that emergency physicians can safely and cost-effectively provide advanced diagnostics and management for a number of diagnoses, the goals of observation units are quite simple. Namely, many observation units exist to expedite diagnostics for low-risk patients that, once risk-stratified, can be managed safely in ambulatory settings to accelerate management of low-risk patient populations that, when managed aggressively, will not require longer inpatient management; and, in partnership with inpatient physicians, to more effectively allocate inpatient beds for higher acuity patient populations.

The Case for Observation Units
The value of many observation units is rooted in their ability to reduce length of stay for a number of common conditions. Figure 1 illustrates that observation units have been responsible for lowering total patient length of stay from 20% to as much as 65% for a number of common presenting complaints when compared to total length of stay when inpatient management is required (Greenberg, Roberts, Roberts, et al, Ross).

In addition to lowering overall length of stay for patients with a number of medical conditions, observation units, when properly implemented, have also been shown to reduce the overall 30-day cost of care for patients. A study by Jagminas, et al demonstrated a reduction in the cost of care for chest pain patients in an observation unit of nearly 20% compared to inpatient hospitalization, while another study by...
Ross showed cost-of-care reductions approaching 45% for TIA patients (Jagminas, Ross).

While reductions in length of stay and total cost of care are valuable metrics, the value of observation units is dependent upon their quality outcomes and patient acceptance of the emerging clinical practice. Studies evaluating quality outcomes for both medical and trauma cases have demonstrated no variation in outcomes when compared to traditional inpatient management (Madsen, Ross). Similarly, assessments of patient satisfaction in observation units in the United States and Singapore both demonstrated overall patient satisfaction with the observation unit setting (Rydman, Ng).

Planning for an Observation Unit

The development of a successful observation unit begins with identification of the appropriate patient population. Diagnoses appropriate to an observation unit are those that can be safely and efficiently managed with accelerated diagnostics and treatment. In the United States, the typical length of stay is less than 24 hours. In other models around the globe, the length of stay may be up to 72 hours. While a number of organizations such as the Agency for Healthcare Research and Quality have published guidelines detailing recommended diagnoses for inclusion in an observation unit, the selection of appropriate presenting complaints will be dependent upon the available resources and standards of care of each individual health system. For example, systems able to provide daily MRI capability and/or carotid ultrasonography may opt to include patients presenting with TIA systems. Conversely, systems without advanced abdominal imaging capabilities such as CT may find the observation unit the ideal location for serial abdominal exams for patients with medical or traumatic abdominal complaints.

An additional consideration when planning for a clinical decision unit is the governance model to be selected; specifically, who will be responsible for medical and nursing leadership of the department. Early evidence has shown that observation units operated exclusively by emergency medicine tend to yield lower lengths of stay for chest pain patients (Somekh, et al). This lower length of stay easily translates to lower total cost of care and higher capacity of any planned unit.

A final important consideration is the technology required to support an observation unit and its proximity to the actual department. While these decisions will vary based on patients targeted for inclusion, projected volumes and available resources, a number of options exist. For example, observation units with a large proportion of chest pain patients may opt for an in-department cardiac treadmill versus leveraging nearby stress testing or CT diagnostics. Similarly, observation units caring for a significant amount of TIA patients may elect to position the unit in close proximity to a CT scanner.

Observation Unit Design

The actual design of an observation unit is relatively simple and based upon the anticipated patient population to be cared for, projected volumes and cultural norms for healthcare delivery within a particular system.

The first consideration is location of the observation unit within the larger clinical enterprise. If the unit will be operated by emergency medicine, it is recommended that the observation unit be positioned adjacent to the main emergency department. Anecdotal evidence from multiple sites around the globe has shown that physical separation from the emergency department presents use of the observation unit as a general emergency department treatment area during periods of surge. While this may seem like a logical operational model, high-performing observation units will experience unnecessary increases in length of stay and operational costs as a result of this decision. Figure 2 represents the location of the observation unit.
tion unit in close proximity to both the main emergency department and dedicated diagnostic imaging for the emergency department. Figure 3 demonstrates an observation unit located adjacent to, but separate from, the main emergency department. In this model, the two clinical areas are separated by a set of doors to distinguish their functions. In both models, the observation unit is physically separated from the main emergency department flow.

Within the observation unit itself, there are two design standards that are typically employed across the globe. The first is an “open” model. In the open model, patient treatment stations are typically separated by curtains or other moveable objects such as privacy screens. The open model allows for a higher capacity unit in a smaller space. While typically desirable for institutions with more constrained facilities’ budgets, these designs lack the privacy and infection control expectations commonly seen in some health systems. The lack of patient privacy during treatment and discussions with health providers is often cited as a point of dissatisfaction for patients in many parts of the world (Moore, Chaudhury, van de Glind).

A benefit of the open design model is the ability of staff to visualize all patients with relative ease from most vantage points within the observation unit and, in particular, from the work stations. Another benefit is the ability to use the open model to cohort groups of patients as illustrated by the clusters of three, five and six bed pods within the unit. These clusters can be arranged to align with nurse staffing ratios, expected volumes based on presenting complaints such as chest pain or asthma, by gender, or even to separate special populations such as pediatrics or patients with infection control considerations.

The second common design model for observation units is the private room model, as demonstrated in Figure 4. In the private room model, each patient is provided their own room for the duration of their stay in the observation unit.
unit. Patient rooms are commonly designed with uniform standards, technology and equipment so that any patient in the observation unit can be cared for in any room. The private room model is considered beneficial for increasing patient privacy, providing dedicated and comfortable accommodations for family members and to reduce noise levels which are typically much higher in open unit designs. The private room model is also considered to be advantageous for promoting infection control, particularly when contact or respiratory precautions are indicated (Hamel, et al.). Taking infection control measures one step further, some observation units are designed to include one or more reverse isolation rooms for respiratory precautions.

When designing private room models, it is important that situational awareness is maintained in order for the staff to safely monitor all patients and monitoring equipment. This is often accomplished through the “racetrack” design where patient rooms are positioned in a rectangle around a central area that includes staff workspaces that are positioned to face the patient rooms. The image shown illustrates a staff workstation facing private patient rooms. In this design, the observation unit staff can visualize patients from their work stations.

Conclusion
Observation units provide the opportunity for emergency departments to efficiently and safely care for patients requiring extended diagnostics or treatment in a cost-effective manner. Further, observation units have been proven to reduce overall length of stay for a number of presenting complaints and provide an effective solution to address access block stemming from potentially avoidable admissions. Design evidence points to the benefits of private room design in observation units from infection control, patient privacy and patient satisfaction perspectives. Regardless, designing the proper observation unit requires careful attention to diagnostic needs, governance models and evidence-based design solutions tailored to the unique aspects of individual health systems and available resources.

REFERENCES


