Observation Unit Design: Pearls & Pitfalls for Building Your Unit

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Design Matters

• Location, location, location
• Unit size calculation
• Layout
  • Rooms
  • Staffing
  • Workstations
  • Infection control
  • Support areas
  • Signage

Agenda

Contiguous
• Easy access to providers/resources
• More flexible for alternative uses
• Reduced patient transport time
• May need to settle for smaller unit
• Opportunity cost for other uses

Distant
• May be only available space
• May allow for larger space (more rooms, larger rooms, no curtains)
• May be less costly: conversion of existing space versus new construction
• More difficult to capture EM “culture”
• More efficient/less flexible staffing to ensure safety
• Longer patient transport times

Co-Locate with Relevant Resources

Closer is Better
Brigham Observation Unit

Brigham ED Expansion

Brigham ED Redesign Process

How Many Rooms Do You Need?

OU Size Calculation

- ED volume
  - Annual observation volume: 5-10% of ED volume
- EDOU LOS
  - Obs LOS ~15 hours: 1.6 patients/day; use 1.1-1.5 for calculations
  - Account for bed turnover; imperfect matching of departures to arrivals
- Efficient EDOU sizes
  - 10 beds*1.1-1.5 patients/day = 11-15 patients/day or 4k-5.5k patients/year

At 5% of volume = 80-110k visits/year ED; at 10% of volume = 40-55k visits/year

Optimal Size Matrix

Percentage of Visits Managed in EDOU

<table>
<thead>
<tr>
<th>Annual ED Visit Volume</th>
<th>5%</th>
<th>7.5%</th>
<th>10%</th>
<th>15%</th>
</tr>
</thead>
<tbody>
<tr>
<td>30K</td>
<td>4</td>
<td>6</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>40K</td>
<td>5</td>
<td>8</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>50K</td>
<td>6</td>
<td>10</td>
<td>12</td>
<td>18</td>
</tr>
<tr>
<td>60K</td>
<td>8</td>
<td>10</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>70K</td>
<td>10</td>
<td>12</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>80K</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>90K</td>
<td>10</td>
<td>18</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>100K</td>
<td>12</td>
<td>18</td>
<td>25</td>
<td>38</td>
</tr>
<tr>
<td>110K</td>
<td>15</td>
<td>20</td>
<td>28</td>
<td>40</td>
</tr>
<tr>
<td>120K</td>
<td>15</td>
<td>22</td>
<td>30</td>
<td>44</td>
</tr>
</tbody>
</table>

Assumes 1.1 patients/bed/day
OU Layout

- Anticipate areas that will draw heavy foot traffic and encourage staff to congregate

Advantages

- More patients per unit
- Less costly
- Creates flexible space

Disadvantages

- Lack of privacy
- Sound, light pollution
- Less space for providers
- Less space for equipment
- Less space for visitors
- Difficult to maintain infection control procedures

Example: Curtained Rooms

- Bed
- Variable lighting
- Bedside cart/supplies
- Easy access to telemetry/vitals if needed
- Easy access to suction/gas if needed
- Central supply carts can contain less frequently needed items (i.e., IV start supplies)
- Chair for guest, television
- Can be open (curtained) or closed rooms

Basic Needs of an OU Room

- Adult OU Room
- Pediatric OU Room
Room Requirement Guidelines

<table>
<thead>
<tr>
<th>Setting</th>
<th>Minimum Size</th>
<th>Max Beds per Room</th>
<th>Bathroom Access</th>
<th>Other Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inpatient</td>
<td>120 ft²</td>
<td>2</td>
<td>1 bathroom/room</td>
<td>Window to outside/room, 1 hand washing station/room</td>
</tr>
<tr>
<td>ED</td>
<td>120 ft² for new construction</td>
<td>2</td>
<td>Multiple-bed treatment rooms allowed, curtains to separate patients</td>
<td>1 hand washing station/room or per 3 cubicles, Work counter, Exam light, Cabinet, Medical air, Code call station</td>
</tr>
<tr>
<td>Observation</td>
<td>100 ft² for cubicle, 120 ft² for room</td>
<td>Multiple-bed treatment rooms allowed, curtains to separate patients</td>
<td>1 bathroom/8 cubicles</td>
<td>1 hand washing station/4 pts, 1 shower room/16 pts, 1 nourishment area</td>
</tr>
</tbody>
</table>

Not pictured: Care coordination, pharmacy, transport, consultants, environmental services, physical therapy, social work, and so on.

Typical Staffing Model

- 2 Nurses
- 1 Medical Assistant
- 1 Physician
- 1 Advanced Practice Clinician
- 1 Unit Secretary
- 10 beds

Workstation Design

Nursing/Consultant Workstations

MD/APP Workstations

Infection Control
Naming Conventions

• “A rose by any other name…”
  • Observation Unit—respectable history/CMS uses
  • Chest Pain Unit—lack of flexibility, older term
  • Clinical Decision Unit—accurate description
  • Rapid Diagnostic Unit—CDU on steroids
  • Short Stay Unit—everything is relative

Words Matter

“You keep using that word. I do not think it means what you think it means.”

“Admit” to ED observation

Alternate Uses for OU Space

• What else can we do with observation rooms?
  • New ED patients
  • ED boarders
  • “Hybrid unit”: Post-procedure patients
  • Palliative care
  • Flexible space for procedures, exams that need privacy (i.e., lumbar puncture, pelvic exams)
  • Others?

Legacy

“I just hope people in the future are, like, ‘What the hell are these things?’”

Brigham Observation

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Workstation Finishes

Observation and Palliative Care

- Emerging work on intersection between the emergency department setting and role of palliative care
- If a large, private space can be integrated into an observation unit, may be ideal setting for end of life care if expected to last hours, not days

OU Keys to Success

- Culture
- Geography
- Protocols

Use of Curtains