Session Objectives

After this session, participants will be able to:

- Describe the elements of successful observation strategies
- Identify opportunities to improve patient flow in your hospital through the use of Observation Units and Clinical Decisions Units
OBJECTIVES:

- Understand the difference between observation status and observation medicine
- Gain insight into the operational principles and goals of observation medicine
- Identify opportunities to improve patient flow in your hospital through the use of Observation Units and Clinical Decisions Units

Observation Status

*Outpatient designation in which patients are physically located in the hospital but are financially treated as if they are outpatients*

- Patients may be billed a higher level from the ED and/or billed hourly by the hospital
- Reimbursement for services varies widely based primarily on payer type
- Patients are charged a la carte for procedures and may be exposed to more out of pocket expenses
- Presents problems for patients as there is still a requirement for 3 inpatient days to qualify for CMS payment for SNF
2-Midnight Rule

- Designed to establish better definition around observation status as hospitals struggle to comply with recovery audits
- Is hotly debated as it does not solve many of the current issues related to the move towards observation medicine such as:
  - Increased patient responsibility in the form of co-pays and other costs
  - Eligibility requirements for long term care reimbursement (Medicare ACO Waiver)

The future is uncertain

Observation Medicine

Management of patients with relatively straightforward admission diagnoses

- Admissions mainly for diagnostic work-ups
- Disease course is relatively well-defined or knowable

Primary goal-to reduce inpatient length of stay by:

- Streamlining care pathways
- Reducing variation
- Better aligning treatment capacity with patient demand
**Hospital Settings in Which Observation Services are Provided**

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type 1</td>
<td>Protocol driven, observation unit</td>
<td>Highest level of evidence for favorable outcomes; Care typically directed by ED</td>
</tr>
<tr>
<td>Type 2</td>
<td>Discretionary care, observation unit</td>
<td>Care directed by a variety of specialists; Unit typically based in ED</td>
</tr>
<tr>
<td>Type 3</td>
<td>Protocol driven, bed in any location</td>
<td>Often called a “virtual observation unit”</td>
</tr>
<tr>
<td>Type 4</td>
<td>Discretionary care, bed in any location</td>
<td>Most common practice; Unstructured care; Poor alignment of resources with patients’ needs</td>
</tr>
</tbody>
</table>


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**Three Study Groups**

<table>
<thead>
<tr>
<th></th>
<th>Emory/Grady*, 2010</th>
<th>Georgia, 2010</th>
<th>US, 2009-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>ED Visits - Number</td>
<td>185,901</td>
<td>4,194,602</td>
<td>133,957,000</td>
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<tr>
<td>Observation Visits</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>7,199</td>
<td>101,593</td>
<td>1,392,000</td>
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<tr>
<td>Average (hrs) LOS</td>
<td>17.2</td>
<td>27.6</td>
<td>22.3</td>
</tr>
<tr>
<td>Visits &gt; 24 hrs</td>
<td>10.4%</td>
<td>44.4%</td>
<td>29.0%</td>
</tr>
<tr>
<td>Visits &gt; 36 hrs</td>
<td>.1</td>
<td>24.7</td>
<td>14.9</td>
</tr>
<tr>
<td>Visits &gt; 48Hrs</td>
<td>.1</td>
<td>7.2</td>
<td>6.9</td>
</tr>
<tr>
<td>Visits &gt; 72hrs</td>
<td>0.0</td>
<td>1.6</td>
<td>.9</td>
</tr>
<tr>
<td>Rate of inpatient admission</td>
<td>13.1%</td>
<td>15.8%</td>
<td>23.2%</td>
</tr>
</tbody>
</table>


*Emory/Grady - Type 1 Observation Units*
3 Considerations in Optimizing Your Observation Unit

1. A defined treatment location
2. Matching capacity and demand
3. Standard approach to care

Observation Unit Location

Type 1 Inpatient Observation Unit
A discrete location with a defined number of rooms dedicated for observation patients.

In or near the ED
There is a blurred line between Observation Units and Clinical Decision Units.

Observation
Better differentiated (would-be admissions), very clear, algorithmic workups and well-defined treatment endpoints.
Examples:
✓ Chest Pain
✓ TIA
✓ COPD
✓ CHF

CDU
Shorter stay, managed by ED, undifferentiated and straightforward conditions that should go home soon.
Examples:
✓ Abdominal pain
✓ Chest pain rule-out
Matching Capacity and Demand

Involves understanding
Inclusion/Exclusion patient
populations, admission rates, and
LOS

This data will provide the foundation
for occupancy analyses

Standard approaches to care

Dedicated physician
group overseeing the unit

Standardized
diagnostic and
treatment pathways
for different patient populations

Well-defined patient population with
inclusion/exclusion criteria

Standardized
patient flow
Standard approaches to care:
Dedicated Physician Group

- There should be a single physician group overseeing the unit and admitting to the unit, a “closed” unit.
- In many fee-for-service cultures, this is very difficult to accomplish.
- This group should be responsible for:
  - The admission and disposition of every patient
  - Establishing protocols
  - Performance improvement and accountability
- Consults should be minimized, if not eliminated.

Standard approaches to care
A Well-Defined Patient Population
A Well-Defined Patient Population

Clinical Decision Unit
Condition Guidelines

Emory Midtown Hospital
Emory University Hospital
Grady Memorial Hospital
(Grady conditions are bulleted)

Index of CDU protocols (GMH italicized)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABDOMINAL INJURY</td>
<td>3</td>
</tr>
<tr>
<td>ABDOMINAL PAIN</td>
<td>4</td>
</tr>
<tr>
<td>ACUTE HEART FAILURE</td>
<td>5</td>
</tr>
<tr>
<td>ALLERGIC REACTION</td>
<td>6</td>
</tr>
<tr>
<td>ASTHMA</td>
<td>7</td>
</tr>
<tr>
<td>ATRIAL FIBRILLATION – ACUTE ONSET</td>
<td>8</td>
</tr>
<tr>
<td>BACK PAIN</td>
<td>9</td>
</tr>
<tr>
<td>CELLULITIS</td>
<td>10</td>
</tr>
<tr>
<td>CHEST INJURY</td>
<td>11</td>
</tr>
<tr>
<td>CHEST PAIN – POSSIBLE ACS</td>
<td>12</td>
</tr>
<tr>
<td>COPD EXACERBATION</td>
<td>13</td>
</tr>
<tr>
<td>DEEP VEIN THROMBOSIS</td>
<td>14</td>
</tr>
<tr>
<td>DEHYDRATION OR VOMITING</td>
<td>15</td>
</tr>
<tr>
<td>DIGITAL TOXICITY</td>
<td>16</td>
</tr>
<tr>
<td>ELECTROLYTE ABNORMALITY</td>
<td>17</td>
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<tr>
<td>GASTROINTESTINAL BLEED</td>
<td>18</td>
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<tr>
<td>HEADACHE</td>
<td>19</td>
</tr>
<tr>
<td>HEAD INJURY</td>
<td>20</td>
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<tr>
<td>HYPEREMESIS GRAVIDARUM</td>
<td>21</td>
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<tr>
<td>HYPERSENSITIVITY</td>
<td>22</td>
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<tr>
<td>HYPOGLYCEMIA</td>
<td>23</td>
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<tr>
<td>HYPERGLYCEMIA</td>
<td>24</td>
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<tr>
<td>PNEUMONIA</td>
<td>25</td>
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<tr>
<td>PYELOPHLEBITIS</td>
<td>26</td>
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<tr>
<td>RENAL COLIC</td>
<td>27</td>
</tr>
<tr>
<td>SEIZURES</td>
<td>28</td>
</tr>
<tr>
<td>SOCIAL ADMISSIONS</td>
<td>29</td>
</tr>
<tr>
<td>SUPRAVENTRICULAR TACHYCARDIA</td>
<td>30</td>
</tr>
<tr>
<td>SYNCOPE</td>
<td>31</td>
</tr>
<tr>
<td>TRANSFUSION OF BLOOD AND BLOOD PRODUCTS</td>
<td>32</td>
</tr>
<tr>
<td>TRANSIENT ISCHEMIC ATTACK</td>
<td>33</td>
</tr>
<tr>
<td>VAGINAL BLEEDING</td>
<td>34</td>
</tr>
<tr>
<td>VERTIGO</td>
<td>35</td>
</tr>
<tr>
<td></td>
<td>36</td>
</tr>
</tbody>
</table>

INCLUSION CRITERIA
• Cooperative patient with stable vital signs (RR>8 or <24, SBP>100, P>60 or <110)
• No Peritoneal Signs
• Negative initial imaging studies (i.e. CT)
• Pertinent lab results acceptable (e.g., Hbg)
• Surgery consult documented

CDU INTERVENTIONS
• NPO initially, advance per physician
• Repeat Hct q 4-6 hours (if pertinent to patient’s management)
• Serial abdominal examinations (e.g. q 4 hours)
• If indicated by physician, serial ultrasounds
• Immediate reevaluation of ED physician or surgeon if patient develops:
  - Significant vomiting
  - Increasing abdominal pain
  - Increased tenderness
  - Worsening vital signs:
    Decreased BP, increased HR, fever

EXCLUSION CRITERIA
• Uncooperative patient, patients requiring restraints
• Impending alcohol withdrawal syndrome
• ETOH estimated >200mg/dl at transfer
• Pregnancy >20 weeks
• Abnormal vital signs (above)
• CT scan not done or significant acute abnormality

DISCHARGE CRITERIA
Patient is ambulatory
• Serial abdominal exams essentially negative
• Repeat labs reviewed and stable (Specifically any Hb drop?)
• Vital signs reviewed and stable
• Patient able to tolerate PO
• Appropriate follow-up established
• Surgery agrees with disposition

© Jerson, Crane, Nolan
### A Well-Defined Patient Population: Diagnostic Exclusion Criteria

<table>
<thead>
<tr>
<th>General</th>
<th>Cardiac</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Total Care patients</td>
<td>- STEMI/NSTEMI</td>
</tr>
<tr>
<td>- Symptomatic anemia</td>
<td>- Rising Indeterminate or positive troponins</td>
</tr>
<tr>
<td>- Any patient who requires 1:1 monitoring and/or restraints (dementia/suicidal)</td>
<td>- Recent episode of V tach of V fib</td>
</tr>
<tr>
<td>- Patients with possible airway compromise</td>
<td>- Persistent chest pressure in high risk CAD patient</td>
</tr>
<tr>
<td>- Patients requiring ICU or clear multi-day stay</td>
<td>- Symptomatic 2nd / 3rd degree heart block</td>
</tr>
<tr>
<td>- &gt;20 week pregnancy with abdominal/pelvic complaints</td>
<td></td>
</tr>
<tr>
<td>- Overdoses requiring cardiac monitoring</td>
<td>Neuro</td>
</tr>
<tr>
<td>- Uncorrected hyperkalemia (K&gt;6) or hypokalemia (K&lt;2.5)</td>
<td>- Persistent stroke symptoms or onset within 6 hours</td>
</tr>
<tr>
<td>- Patients needing trauma evaluation or observation secondary to trauma</td>
<td>- Uncontrollable Seizures</td>
</tr>
<tr>
<td>- Shock from any source (septic, anaphylactic, cardiogenic, neurogenic)</td>
<td>Pulmonary</td>
</tr>
<tr>
<td></td>
<td>- Patient in moderate to severe respiratory distress</td>
</tr>
<tr>
<td></td>
<td>- PNA with PORT score above 90</td>
</tr>
<tr>
<td></td>
<td>- PE that is associated with either hypoxemia and is either saddle or bilateral burden</td>
</tr>
<tr>
<td></td>
<td>- Either spontaneous or traumatic pneumothorax</td>
</tr>
<tr>
<td></td>
<td>ID</td>
</tr>
<tr>
<td></td>
<td>- Impending sepsis (specifically elderly with urosepsis)</td>
</tr>
<tr>
<td></td>
<td>- Concern for or diagnosis of bacterial meningitis</td>
</tr>
</tbody>
</table>

### A Well-Defined Patient Population: General Exclusions from the CDU

- **PATIENTS WITH INCOMPLETE CHART**
- **HIGH SEVERITY OF ILLNESS**
- **HIGH INTENSITY OF SERVICE**
- **PATIENTS FOR WHOM INPATIENT ADMISSION IS CLEARLY NEEDED**
- **AGE LESS THAN 15 YEARS OLD**
- **OBSTETRIC PATIENTS OVER 20 WEEKS PREGNANT**
- **PATIENTS AT RISK OF SELF HARM**
- **ANTICIPATED CDU LENGTH OF STAY LESS THAN 4 HOURS OR OVER 24 HOURS**
- **PATIENTS WITH (1) AN ACUTE GAIT DISTURBANCE, (2) “RULE OUT HIP FRACTURE,” OR (3) OVER AGE 65 WITH BACK PAIN**
Standard Approaches to Care
Standardized Diagnostic and Treatment Pathways

- Diagnostic, Treatment, and Medication components
- Customized for each different condition
- Coordinated with physicians, nurses and pharmacy
- Minimize or eliminate consults in favor of diagnostic and treatment pathways defined by specialty leadership

Observation Protocols by Condition

1. Insulin Drip
2. GI Bleed
3. Renal Colic
4. Abdominal Pain
5. Vertigo
6. Allergic Reaction
7. Headache
8. Back Pain
9. TIA
10. Cellulitis
11. A fib
12. Pneumonia
13. DVT/PE
14. Heart Failure
15. Pyelonephritis
16. Chest Pain
17. Hypertensive Urgency
18. Hypertensive Urgency
19. Asthma
20. Metabolic Dehydration
21. Routine Medications
22. Pain Management
23. Warfarin
24. Potassium Replacement
25. Magnesium Replacement
26. Basal Bolus Insulin
27. Syncope
Anatomy of the Observation Protocols

### Non-Medication Orders
- Prompt for medication reconciliation
- Vital Signs
- Activity
- Intake/Output
- Labs
- Diet
- Consults
- Alert physician if:
  - SBP < 110
  - HR > 100
  - Dizziness
  - Chest Pain

### Medications
- Medication name
- Dose
- Strength
- Route (IV, PO, SC, etc.)
- Frequency
- Prompts for standard orders:
  - Potassium replacement
  - Magnesium replacement
  - Routine medications

### Radiology
- Type of test/plain films
- Indication, as needed
- Contrast vs. no contrast

---

Observation Protocol for Chest Pain- Non-Medication Orders

<table>
<thead>
<tr>
<th>Non-Medication Orders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
</tr>
<tr>
<td>2.</td>
</tr>
<tr>
<td>3.</td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<td>6.</td>
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<td>9.</td>
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<td>10.</td>
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<tr>
<td>11.</td>
</tr>
<tr>
<td>12.</td>
</tr>
<tr>
<td>13.</td>
</tr>
</tbody>
</table>
  - SBP < 110
  - HR > 100
  - Complaints of dizziness
  - Complaints of chest pain |

- IV Fluid
  - Rate: ml/hr
  - L/min

- O2
  - %

- Bed rest
- May participate in PT/OT as tolerated

- EKG STAT
- EKG with serial cardiac enzymes as needed for chest pain

- CBC
- D-dime
- Chem 7
- Lipid panel
- PT/INR
- CKMB/Troponin @ 6 hours
- Hepatic panel
- CKMB/Troponin @ 12 hours
- Lipase

- Clear Liquid
- 2 gram sodium
- Low calorie
- Purée
- Other

- Case Management
- Cardiology
Observation Protocol for Chest Pain - Radiology

Radiology

14. □ CXR Indication: □ PA/Lat □ Portable

15. □ 2D Echocardiogram, Indication:

16. □ Stress test type:

17. □ CT chest angio (r/o PE)

18. □ Venous Doppler:

Observation Protocol for Chest Pain- Medications

<table>
<thead>
<tr>
<th>Medication</th>
<th>Dose</th>
<th>Strength</th>
<th>Route</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>81 mg</td>
<td>PO</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Simvastatin</td>
<td>40 mg</td>
<td>PO</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Metoprolol</td>
<td>5 mg</td>
<td>PO</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Metoprolol</td>
<td>10 mg</td>
<td>IM</td>
<td>Every 12 hours</td>
<td></td>
</tr>
<tr>
<td>Metoprolol</td>
<td>20 mg</td>
<td>SC</td>
<td>Every 12 hours</td>
<td></td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>0.4 mg</td>
<td>SL</td>
<td>Apply to chestwall</td>
<td></td>
</tr>
<tr>
<td>Metoprolol</td>
<td>2 mg</td>
<td>IM</td>
<td>Every 20 minutes x 2 for unrelied chest pain</td>
<td></td>
</tr>
<tr>
<td>Nitroglycerin</td>
<td>5 mg</td>
<td>PO</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Metoprolol</td>
<td>20 mg</td>
<td>PO</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Metoprolol</td>
<td>25 mg</td>
<td>PO</td>
<td>Daily</td>
<td></td>
</tr>
</tbody>
</table>

Protocol (Complete Standard Order):

36. Metoprolol replacement
37. Nitroglycerin replacement
38. CTPE replacement
Examples of Observation Protocols

3. How do we select a stress test with imaging?

Based on the above, here is the breakdown of what is available and where –

Emory University Hospital CDU – 7/2011

- Emory University Hospital CDU Weekdays, 7AM-5PM
  - Male any age, or Female >55; ptg renal failure:
    - BMI <30, no known CAD =
      - Lexiscan technecium SPECT
      - Dobutamine stress echo
      - Exercise stress echo – if able to exercise
      - Coronary CTA (EUH only)
    - BMI > 30, known CAD, or no available SPECT isotopes =
      - [Lexiscan Rubidium PET – on hold]
      - Lexiscan technecium SPECT
  - Female <55:
    - Dobutamine echo
    - Exercise Stress echo
    - Adenosine MRI
  - Severe Asthma / COPD; renal failure:
    - Dobutamine echo
    - Dobutamine SPECT (rest / stress sestimibi)
    - [Lexiscan Rubidium PET – on hold]
Evidence Based Pathways

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Summary: Optimizing Your Observation Unit

1. A defined treatment location
2. Matching capacity and demand
3. Standard approaches to care, including...

- A dedicated physician group overseeing the unit
- Well defined patient population with inclusion/exclusion criteria
- Standardized diagnostic and treatment pathways for different patient populations
- Standardized patient flow