The Nuts and Bolts of Setting Up an ED Observation Unit

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Disclosure of Commercial Relationships:

<table>
<thead>
<tr>
<th>Nature of Relationship</th>
<th>Name of Commercial Entity</th>
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</thead>
<tbody>
<tr>
<td>Advisory Board</td>
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<td>Consultant</td>
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<td>Employee</td>
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<td>Board Member</td>
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<td>Other Relationships</td>
<td>CMS Technical Advisory Panel: AMI, HF, pneumonia</td>
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<td></td>
<td>Past CMS APC Advisory Panelist Chair – Visits and Observation Subcommittee</td>
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<tr>
<td></td>
<td>Co-chair, Mission Lifeline Atlanta, AHA</td>
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Key components

- Making the case
- Physical design
- Protocols, guidelines, and order-sets
- Critical metrics – utilization, quality, economic
- Staffing – physician, APP, nurse, tech/sec
- Ancillary support
- Financial analysis

How many observation units are there?

CDC / NHAMCS ED 2007 survey data

Wiler J, Ginde A, Ross M; Acad Emerg Med 2011

- ED disposions:
  - 15% = “Stay”: Admit to hospital or EDOU
  - 2% = EDOU
  - 2% = <48hr hosp. (“Short stay”)
  - 11% = >48 hr hosp.

4/15 = 26% of people who “stay”

13 % IP “admit”
The Setting

- Retrospective observational cohort study
- Setting: Type 4 (No type 1 obs unit) – 566 bed Academic Medical Center (U. Wisc)
- Time frame: 36 months
- Population: Hospitalized patients – 43,853 patients
  - 10.4% for “observation”
    - Mean LOS = 33.3 hours (17% over 48 hours)
      » Medical patients = 41.1 hours
      » More medical, elderly, and female patients
    - Hospital Margin = LOSS of $331 per case
- Conclusion: “. . . observation status” – Are they missing something???
3 Study Groups:

- Blue: Local operations data (Complete enumeration)
- Red: CDC: NCHS: NHAMCS (ED sample survey)
- Green: AHRQ: HCUP: National ED Survey (Claims)

### U.S. Savings Potential from Type 1 Units:

- **Observation patients** - $950 Million / year
  - 38% shorter stays
  - 44% lower admit rates
- **Short Inpatients** - $8.5 Billion / year
  - 11.7% of all admissions
  - Savings potential – ED visits vs ED admissions:
    - Avoided ED visits = $2.3-3.4 Billion/yr
    - Avoided ED admits = $5.5-8.5 Billion/yr
    - Relative savings = 2.4-2.5 times greater
  (avoided: admits vs ED visits)
### Condition / Year / Author

1. **Syncope** / 14 / Sun *
   - N: 124
   - Primary Outcome: ↓ admissions and LOS
2. **Chest Pain** / 10 / Miller *
   - N: 110
   - Primary Outcome: ↓ Cost (stress MRI)
3. **Atrial Fib** / 08 / Decker
   - N: 153
   - Primary Outcome: ↑ conversion to sinus
4. **TIA** / 07 / Ross
   - N: 149
   - Primary Outcome: ↓ LOS and cost
5. **Syncope** / 04 / Shen
   - N: 103
   - Primary Outcome: ↑ established diagnosis, ↓ admissions
6. **Asthma** / 97 / McDermot
   - N: 222
   - Primary Outcome: ↓ admissions, no relapse ↑
7. **Chest Pain** / 98 / Farkouh
   - N: 424
   - Primary Outcome: No difference cardiac events
8. **Chest Pain** / 97 / Roberts
   - N: 165
   - Primary Outcome: ↓ LOS and cost
9. **Chest Pain** / 96 / Gomez
   - N: 100
   - Primary Outcome: ↓ LOS and cost

*Added since published after this review*

### Making the case for a Type 1 Setting

- **Hospital - economic:**
  - Cost reduction = $1.5 – 2.0K / case
  - Revenue enhancement = $3K / case
  - Soft economics:
    - Risk reduction – re-admissions, RAC
    - Decrease ED overcrowding and diversion (1 admit / diversion hour)
- **Organizational goals and objectives:**
  - Locate yours - an OU fits in!
- **Quality:**
  - Patient satisfaction
  - Less patient financial risk (shorter stays, less SNF risk, faster admit)
  - Lower risk of inappropriate discharge
  - Standardized care – quality compliance
Physical design

• Location –
  – Proximate to the ED
  – Remote from the ED

• Function
  – Pure OU
  – Hybrid OU – shared with:
    • Boarders?
    • Scheduled procedure patients

• Features
  – Outpatient room building code -24 / overnight rule?
  – Cardiac monitoring
  – Privacy, TV, telephone, soft bed
  – Square feet?

Physical design - # beds: SIMPLE

• Percent ED census – simple, fairly good
  – ~ 1 patient/bed/day
  – Benchmark data:
    • 28% ED – IP admit rate / 8% OU admit rate
    • Adjust up or down by proportions:
      – 32% ED – IP admit rate / 9% obs
      – 11% ED-IP admit rate / 3% obs
    • From this determine patients / day => # beds
Protocols, guidelines, and order-sets

• Protocols / guidelines:
  – General and for the unit
  – Condition specific

• Guideline development:
  – Discovery
  – Design
  – Do
  – Data

• Protocols / Order sets – derived from guidelines

The burning question on rounds:

“WHY IS THIS PATIENT STILL HERE?”

WRONG ANSWERS:
1. Because they haven’t hit 24 hours yet.
2. We are keeping them until the ------.
   – morning, lunch, end of the game, etc.
3. I don’t know, why are they here in the first place?
4. Other ideas?
Emory Protocols

Observation Medicine Resources

Android App

iBook

Download from the Google Play Store

Download from the iTunes Bookstore

www.obsprotocols.org

all resources are free/CDU manual is for ipad or ipad mini only/ iphone app is coming soon/ feel free to email or ask any of your obs friends (Mike Ross, Matthew Wheatley, Anwar Osborne)

Critical metrics – utilization, quality

• Utilization – data source?
  – Electronic
  – Paper?
• Critical metrics:
  – Patient identifier
    • Gender and age (DOB)
  – Condition – reason for observation
  – Times:
    • ED arrival
    • OU arrival
      – OU admit order – boarding report?
    • OU departure
      – Departure order – D2D report?
  – Disposition
    • Admit / Discharge
Critical Metrics:

- **Volumes** – 0.9 – 1.1 pt/bed/day
  - Can not use 24/LOS due to variations in census by day and hour
- **LOS** – 15-18 hours
- **Percent discharge** – 70-90%
  - Under 70% - observing patients that should be admitted from the ED?
  - Over 90% - observing patients that should be discharged from the ED?

### Three EHC CDUs – CY 2016

<table>
<thead>
<tr>
<th>Rank</th>
<th>Protocol Category</th>
<th>#</th>
<th>% Census</th>
<th>ED LOS</th>
<th>CDU LOS</th>
<th>ED+CDU LOS</th>
<th>Admit Rate</th>
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<tbody>
<tr>
<td>1</td>
<td>Chest Pain</td>
<td>3229</td>
<td>36%</td>
<td>4.8</td>
<td>16.4</td>
<td>21.3</td>
<td>11%</td>
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<tr>
<td>2</td>
<td>Other</td>
<td>829</td>
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<td>5.4</td>
<td>15.0</td>
<td>20.4</td>
<td>17%</td>
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<tr>
<td>3</td>
<td>TIA</td>
<td>688</td>
<td>8%</td>
<td>4.9</td>
<td>17.0</td>
<td>22.1</td>
<td>14%</td>
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<tr>
<td>4</td>
<td>*Psych Obs</td>
<td>675</td>
<td>8%</td>
<td>6.0</td>
<td>24.0</td>
<td>23.9</td>
<td>3%</td>
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<tr>
<td>5</td>
<td>Abd pain</td>
<td>498</td>
<td>6%</td>
<td>6.5</td>
<td>14.9</td>
<td>21.8</td>
<td>27%</td>
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<tr>
<td>6</td>
<td>Syncope</td>
<td>463</td>
<td>5%</td>
<td>4.7</td>
<td>17.0</td>
<td>21.7</td>
<td>12%</td>
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<tr>
<td>7</td>
<td>Dehydration/vomiting</td>
<td>414</td>
<td>5%</td>
<td>6.2</td>
<td>15.8</td>
<td>21.9</td>
<td>17%</td>
</tr>
<tr>
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<td>Cellulitis</td>
<td>227</td>
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<td>6.1</td>
<td>16.4</td>
<td>22.4</td>
<td>19%</td>
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<tr>
<td>9</td>
<td>Vertigo</td>
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<td>4.5</td>
<td>15.8</td>
<td>20.3</td>
<td>9%</td>
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<td>10</td>
<td>CHF</td>
<td>166</td>
<td>2%</td>
<td>5.6</td>
<td>16.6</td>
<td>22.2</td>
<td>31%</td>
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<tr>
<td>11</td>
<td>Transfusion of blood</td>
<td>135</td>
<td>2%</td>
<td>5.2</td>
<td>15.4</td>
<td>20.6</td>
<td>7%</td>
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<tr>
<td>12</td>
<td>Asthma</td>
<td>129</td>
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<td>5.5</td>
<td>18.3</td>
<td>23.8</td>
<td>30%</td>
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<td>13</td>
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<td>23%</td>
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<td>15</td>
<td>Electrolyte abnormality</td>
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<td>16</td>
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<td>23.1</td>
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<td>18</td>
<td>COPD exacerbation</td>
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<td>17.9</td>
<td>23.9</td>
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<td>19</td>
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<td>15.2</td>
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<td>15.0</td>
<td>21.2</td>
<td>7%</td>
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<td>22</td>
<td>Allergic ran</td>
<td>47</td>
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<td>3.9</td>
<td>11.1</td>
<td>15.1</td>
<td>2%</td>
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<tr>
<td>23</td>
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<td>42</td>
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<td>17%</td>
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<td>24</td>
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<td>41</td>
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<td>5.9</td>
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<td>20.8</td>
<td>20%</td>
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<td>25</td>
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<td>26</td>
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<td>11.7</td>
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<td>27</td>
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<td>20.7</td>
<td>12%</td>
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<td>29</td>
<td>Hypoglycemia</td>
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<td>0%</td>
<td>4.4</td>
<td>15.0</td>
<td>19.4</td>
<td>0%</td>
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<td>30</td>
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<td>33</td>
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<td>4.3</td>
<td>5.9</td>
<td>11.7</td>
<td>12%</td>
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</tbody>
</table>
EDOU LOS patterns

Mean EDOU LOS (hours)

EDOU Arrival Hour

Hospital C EDOU LOS
Hospital B EDOU LOS
Hospital A EDOU LOS

EDOU Utilization

- 3 High volume Type 1 EDOUs
  - 2004 – 2014
  - 2.25 Million ED visits
  - 157,721 EDOU visits

- Utilization =
  - 0.9 pt/bed/day
Critical Metrics
Advanced Utilization and Quality

- Ancillary testing –
  - Stress imaging, MRI, echo, etc
  - Allows tracking of LOS by test to detect delays
- ED boarding time: OU order to OU arrival
- D2D (discharge to departure) time: admit/discharge delays
- Recidivism –
  - What timeframe - 7, 14, or 30 day?
  - What type - ED, Obs, Inpatient?
  - How many visits? – 1, 2, 3+?
- Major outcomes:
  - ICU admissions
  - Death

Staffing – Physician

- One physician model - Rounds before shift:
  - Morning – heavy (~6min/patient if with an APP)
  - Afternoon – light, lowest census
  - Midnights – verbal sign out
Staffing – Leadership

• Physician – develop protocols, educate faculty, maintain utilization and quality, interface with other departments, monitor finance, run monthly meetings.
• APP – assist physician director with other APPs and unit monitors and operations.
• Nursing director – train staff, maintain staffing, implement protocols.

Staffing – APP

• Benchmark estimates – 45-60 minutes/patient
• Staff:
  – heavy in the morning
  – Light in afternoon
  – Brief heavy in late afternoon / early evening
• Dual function roles?
  – Administrative duties (call backs)
  – Fast track
  – Triage
  – Main ED
Staffing – Nursing, tech, sec

- RN – benchmark data:
  - 4-5 patient / nurse
  - May maximize use of nurse in afternoon with hybrid model (scheduled procedure patients)

Ancillary support

- Cardiac imaging
  - Stress lab
  - cCTA
  - Echo
- MRI
- Consultants –
  - Cardiology
  - Neurology
Financial analysis - Professional

• Meet with your coding company to clarify observation coding and rules
• Physician CPT code accounting
  – CDU census = 2day + 1day code volumes
    • Do not count 99217
  – 99217 volume = [99218+99219+99220] volumes
  – Case mix distribution (2-day and 1-day cases)

Two scenarios – 1 vs 2 days

**ONE DAY SCENARIO:**
- ED → Obs → D/C
- One day “combo” codes (initial E/M + d/c)
- 99234, 35, 36

**TWO DAY SCENARIO:**
- ED → Obs → D/C
- Initial E/M
- 99218, 19, 20
- Obs discharge code - 99217
Billing observation professional services:  
“One Physician” model

- The observation code is billed **instead of** the emergency code
- Added “observation work” is covered by the **discharge** codes (do not need to repeat the initial H&P)

<table>
<thead>
<tr>
<th>Emergency level of care (Not billed)</th>
<th>Observation “level of care”: (Billed)</th>
<th>Observation Care covers two days**</th>
<th>Observation Care all on the same day*</th>
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<tr>
<td>99283 low</td>
<td>99218 + 99217</td>
<td>99234</td>
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</tr>
<tr>
<td>99284 medium</td>
<td>99219 + 99217</td>
<td>99235</td>
<td></td>
</tr>
<tr>
<td>99285 high</td>
<td>99220 + 99217</td>
<td>99236</td>
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Billing observation professional services:  
CPT documentation requirements

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<td>99283</td>
<td>EPF</td>
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<td>3.32</td>
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<td>99284</td>
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<td>4.90</td>
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<td>Emergency level 5</td>
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<tr>
<td>99285</td>
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<td>3.77</td>
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<td>Obs + Same Day discharge - Low</td>
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<td>99235</td>
<td>C</td>
<td>2.60</td>
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<td>Obs + Same Day discharge - High</td>
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<tr>
<td>99236</td>
<td>C</td>
<td>3.56</td>
<td>5.25</td>
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<td>Observation Initial Day - Low</td>
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<td>99218</td>
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<td>0.76</td>
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<td>Observation Initial Day - Mod</td>
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<tr>
<td>99219</td>
<td>C</td>
<td>1.39</td>
<td>2.06</td>
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<td>Observation Initial Day - High</td>
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<tr>
<td>99220</td>
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<td>2.97</td>
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<td>99225</td>
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<tr>
<td>Obs Subsequent Day - High</td>
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<td>99226</td>
<td>D</td>
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<td>Observation Discharge Day</td>
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<tr>
<td>99217</td>
<td>+</td>
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D = Detailed   C = Comprehensive   PF= Problem Focused   EPF = Expanded Problem Focused; 
Obs=Observation; L=Low, M=Moderate, H=High, wRVU=Work RVUs, tRVUs=Total RVU.
Doctor (CPT):
Financial analysis - Professional

- Meet with your coding company to clarify observation coding and rules
- Physician CPT code accounting
  - CDU census = 2day + 1day code volumes
    - Do not count 99217
  - 99217 volume = [99218+99219+99220] volumes
  - Case mix distribution (2-day and 1-day cases)

Going Macro: Emory Healthcare
The “24/85” Goal

- Decrease variations in observation care – within and between hospitals.
- EHC - avoid filling inpatient beds with outpatients:
  - High Volume: 12% to 30% of all patients staying in our hospitals.
    - Over one third use inpatient beds.
  - Observation patients – by disposition:
    - 88% are discharged (target group)
    - 12% are admitted
- The “24/85” goal for discharged observation patients:
  - Discharged 85% of observation patients in <24 hours
  - Managed 85% in an observation unit
    - Where length of stays and costs are lowest.
    - This opens inpatient beds and is better for patients.