Behind the Numbers in EM

Jody Crane, MD, MBA, FACEP
Chief Medical Officer, TeamHealth
Jody_crane@TeamHealth.com

EDDA, 2019
Without data you're just another person with an opinion.

W. Edwards Deming
You can’t fatten a pig by weighing it
Outline

- The Power Metrics and Tracking Data over Time
- Benchmarks
- Use Cases for Data

© 2019, Crane
Begin with the End in Mind

“To begin with the end in mind means to start with a clear understanding of your destination. It means to know where you are going so that you better understand where you are now and so that the steps you take are always in the right direction”
The Power Metrics

1. Door to Doc
2. LWOBS
3. Discharged LOS
4. Admitted LOS
5. Boarding
6. Provider Productivity
7. Patient Satisfaction

Target (US)

- Door to Doc: 30 minutes
- LWOBS: <2%
- Discharged LOS: <150 minutes
- Admitted LOS: <240 minutes
- Boarding: Zero
- Provider Productivity: 1.8-2.2 patients per hour
- Patient Satisfaction: >90 %tile
## Start Small…Build as You Need/Can

### PERFORMANCE INDICATOR

<table>
<thead>
<tr>
<th>PERFORMANCE INDICATOR</th>
<th>2011 Targets</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul</th>
<th>Aug</th>
<th>Sep</th>
<th>Oct</th>
</tr>
</thead>
<tbody>
<tr>
<td>VOLUMES:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Emergency Department - Admitted Patients</td>
<td>1,619</td>
<td>1,216</td>
<td>1,175</td>
<td>1,056</td>
<td>1,134</td>
<td>1,144</td>
<td>1,129</td>
<td>1,086</td>
<td>1,232</td>
<td>1,222</td>
<td>1,122</td>
<td>1,186</td>
</tr>
<tr>
<td>2) Emergency Department - Treated and Released Patients</td>
<td>4,045</td>
<td>4,176</td>
<td>4,061</td>
<td>3,855</td>
<td>4,025</td>
<td>4,089</td>
<td>4,268</td>
<td>4,325</td>
<td>4,402</td>
<td>4,363</td>
<td>4,414</td>
<td>4,042</td>
</tr>
<tr>
<td>3) Total ED Visits</td>
<td>5,665</td>
<td>5,382</td>
<td>5,236</td>
<td>4,911</td>
<td>5,159</td>
<td>5,213</td>
<td>5,397</td>
<td>5,411</td>
<td>5,654</td>
<td>5,636</td>
<td>5,228</td>
<td></td>
</tr>
<tr>
<td>4) ED Admission Rate</td>
<td>27%</td>
<td>23%</td>
<td>22%</td>
<td>22%</td>
<td>22%</td>
<td>22%</td>
<td>21%</td>
<td>20%</td>
<td>22%</td>
<td>22%</td>
<td>20%</td>
<td>23%</td>
</tr>
<tr>
<td>E.D. THROUGHPUT:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Average Time - ED Treated and Admitted (Kelly M.)</td>
<td>4.40</td>
<td>4.57</td>
<td>5.35</td>
<td>5.16</td>
<td>5.35</td>
<td>5.38</td>
<td>5.32</td>
<td>5.18</td>
<td>5.22</td>
<td>5.11</td>
<td>5.08</td>
<td>4.57</td>
</tr>
<tr>
<td>7) Average Time - arrival to start triage (all patients) (Kelly M.)</td>
<td>10 min</td>
<td>12</td>
<td>17</td>
<td>16</td>
<td>16</td>
<td>20</td>
<td>18</td>
<td>18</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>8) Average Time - door to doctor (all patients) (Kelly M.)</td>
<td>30 min</td>
<td>50</td>
<td>66</td>
<td>64</td>
<td>72</td>
<td>71</td>
<td>66</td>
<td>54</td>
<td>52</td>
<td>52</td>
<td>54</td>
<td>49</td>
</tr>
<tr>
<td>8) Average Time - from doctor completion to patient departure (admitted) (Kelly M.)</td>
<td>40 min</td>
<td>99</td>
<td>118</td>
<td>110</td>
<td>117</td>
<td>123</td>
<td>124</td>
<td>120</td>
<td>132</td>
<td>128</td>
<td>122</td>
<td>118</td>
</tr>
<tr>
<td>10) Average Time - from doctor completion to patient departure (T&amp;R) (Kelly M.)</td>
<td>20 min</td>
<td>17</td>
<td>26</td>
<td>25</td>
<td>26</td>
<td>26</td>
<td>25</td>
<td>26</td>
<td>25</td>
<td>23</td>
<td>23</td>
<td>24</td>
</tr>
</tbody>
</table>

© 2019, Crane
## AHS Dashboard

<table>
<thead>
<tr>
<th>PERFORMANCE INDICATOR</th>
<th>2011 Target</th>
<th>2010 Average</th>
<th>YTD Average</th>
<th>10/2</th>
<th>10/9</th>
<th>10/16</th>
<th>10/23</th>
<th>10/30</th>
<th>11/6</th>
<th>11/13</th>
<th>11/</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>VOLUMES:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Total ED Visits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Emergency Department - T&amp;R Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Emergency Department - Admitted Patients</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Total Inpatient Admissions - All</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) Average Inpatient Daily Census - All</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Physician staffing hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) Nurse Scheduled staffing hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) Actual Nurse Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Daily staffed bed hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tier 1 ED Metrics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Door to Doc</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Overall LOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) T&amp;R LOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) % Meeting 4-hour T&amp;R LOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5) T&amp;A LOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) % Meeting 8-hour T&amp;A LOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7) LWBBS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) ED physician Complete to Departure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9) Patient Satisfaction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Calculated Productivities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1) Physician Patients per Hour</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2) Nurse Patients per Hour</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3) Nurse worked vs scheduled %</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4) Bed Patients per Hour</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

© 2019, Crane
Mean vs Median

- **Mean** – Average. Represents the entirety of the data. The presence of outliers, however, can skew the perception of the most likely experience.
- **Median** – Middle number. Often used to represent the more accurate reflection of acute experience when a data set has a skewed distribution (ie tail).

Which should you use…?
- It depends on what you are trying to communicate!

- Operations calculations/modeling/simulation – use averages
- Dashboards and public reporting – medians more accurately represent the likely experience, BUT can blind you to the tail.
Distribution of Actual ED Triage Times.

Distribution of Observed Triage Times (n=777)

- Mean = 5
- Median = 3
- Mode = 2

Average = 5.06
Std.Dev. = 4.97

© 2019, Crane
Creating Patient Value as Indicated by Press Ganey Scores
Jan 2004-Jun 2008

© 2019, Crane
The Results:

**ED to Floor Detail weekly Median**

DEPT_ABBREVIATION = ALL

- Baseline
- Bed Center Open
- No Mtg Zone

Median time in Minutes

+3 sigma
Target: 41.5
-3 sigma
Peds ED LWOBS vs Door to Doc

R² = 0.8634
Outline

- The Power Metrics and Tracking Data over Time
- Benchmarks
- Use Cases for Data
Star Ratings Distribution – Jan 2019

*N/A = 18.5%
You can now view Department of Defense hospital performance data using our interactive datasets and downloadable databases.

Find a hospital

A field with an asterisk (*) is required.

* Location
Example: 45802 or Lima, OH or Ohio

ZIP code or City, State or State

Hospital name (optional)

Full or Partial Hospital Name

Search
<table>
<thead>
<tr>
<th>Measure</th>
<th>Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Door to Doc</td>
<td>23 min</td>
</tr>
<tr>
<td>LWOBS</td>
<td>2%</td>
</tr>
<tr>
<td>Door to EKG</td>
<td>7 min</td>
</tr>
<tr>
<td>Door to Pain Meds Fx</td>
<td>49 min</td>
</tr>
<tr>
<td>CT for CVA, ICH &lt; 45min</td>
<td>72%</td>
</tr>
<tr>
<td>Discharged LOS</td>
<td>148 min</td>
</tr>
<tr>
<td>Admitted LOS</td>
<td>277 min</td>
</tr>
<tr>
<td>Dispo to Depart Admitted</td>
<td>102 min</td>
</tr>
</tbody>
</table>
This is the only Absolute

everything is relative
# Star Groups Weighting

## Table 2. Star Ratings Weighting by Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Star Ratings Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>22%</td>
</tr>
<tr>
<td>Safety of Care</td>
<td>22%</td>
</tr>
<tr>
<td>Readmission</td>
<td>22%</td>
</tr>
<tr>
<td>Patient Experience</td>
<td>22%</td>
</tr>
<tr>
<td>Effectiveness of Care</td>
<td>4%</td>
</tr>
<tr>
<td>Timeliness of Care</td>
<td>4%</td>
</tr>
<tr>
<td>Efficient Use of Medical Imaging</td>
<td>4%</td>
</tr>
</tbody>
</table>
Key Milestones in the ED Visit

Pre-Arrival to Door
- Recognized Need
- Care Choice
- Transport Method
- Departure
- Diagnostics
- Arrival

Door to Doc
- Arrival
- Triage Start
- Triage End
- Bed Placement
- 1st Nurse Eval
- 1st Doc Eval

Doc to Dispo
- 1st Doc Eval
- 1st Order
- Nurse Execute
- Rad TAT
- Lab TAT
- Last Result
- Dispo

Dispo to Depart
- Dispo T&R
- Depart T&R
- Dispo T&A
- Clean Bed Assign
- Ready to Move
- Depart T&A

© 2019, Crane
Key Milestones in the ED Visit – ED Nursing Dependent

Pre-Arrival to Door
- Recognized Need
- Care Choice
- Transport Method
- Departure
- Diagnostics
- Arrival

Door to Doc
- Arrival
- Triage Start
- Triage End
- Bed Placement
- 1st Nurse Eval
- 1st Doc Eval

Doc to Dispo
- 1st Doc Eval
- 1st Order
- Nurse Execute
- Rad TAT
- Lab TAT
- Last Result
- Dispo

Dispo to Depart
- DispoT&R
- Depart T&R
- Dispo T&A
- Clean Bed Assign
- Ready to Move
- Depart T&A

© 2019, Crane
Key Milestones in the ED Visit – ED Physician Dependent

Pre-Arrival to Door
- Recognized Need
- Care Choice
- Transport Method
- Departure
- Diagnostics
- Arrival

Door to Doc
- Arrival
- Triage Start
- Triage End
- Bed Placement
- 1st Nurse Eval
- 1st Doc Eval

Doc to Dispo
- 1st Doc Eval
- 1st Order
- Nurse Execute
- Rad TAT
- Lab TAT
- Last Result
- Dispo

Dispo to Depart
- DispoT&R
- Depart T&R
- Dispo T&A
- Clean Bed Assign
- Ready to Move
- Depart T&A

© 2019, Crane
Key Milestones in the ED Visit – Hospital Dependent

**Pre-Arrival to Door**
- Recognized Need
- Care Choice
- Transport Method
- Departure
- Diagnostics
- Arrival

**Door to Doc**
- Arrival
- Triage Start
- Triage End
- Bed Placement
- 1st Nurse Eval
- 1st Doc Eval

**Doc to Dispo**
- 1st Doc Eval
- 1st Order
- Nurse Execute
- Rad TAT
- Lab TAT
- Last Result
- Dispo

**Dispo to Depart**
- Dispo T&R
- Depart T&R
- Dispo T&A
- Clean Bed Assign
- Ready to Move
- Depart T&A

© 2019, Crane
Benchmarks are Scarce

**Nursing**
- No source for ideal productivity
- Most recommendations are from nurse advocate organizations
- Growing evidence that lower nurse staffing results in increased morbidity, mortality, and cost

**Physician**
- No source for ideal productivity
- ACEP, SAEM, AAEM all have position statements
- Other studies are largely inaccurate, outdated

Recommended Benchmarking Sources: ACEP; Premier; EDBA; VHA
Using Data to Measure Provider Performance

<table>
<thead>
<tr>
<th>Productivity (Pts/hr)</th>
<th>High</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician</td>
<td>2.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Nursing</td>
<td>0.8</td>
<td>0.5</td>
</tr>
</tbody>
</table>

- **Nursing Intervals**
  - Dispo to departure for T&R most common, but…
  - Order to execute shortest, bed to nurse ok

- **Physician Intervals**
  - Bed to doc shortest, but…
  - Last result to disposition is best, but…
## EDBA 2017 Summary Staffing Data

<table>
<thead>
<tr>
<th>ED Type</th>
<th>Patients Seen per Staffed Hour Nursing</th>
<th>Patients Seen per Staffed Hour Tech + Clerk</th>
<th>Patients Seen per Staffed Hour Physician</th>
<th>Patients Seen per Staffed Hour Physician + APP</th>
</tr>
</thead>
<tbody>
<tr>
<td>All EDs</td>
<td>0.59</td>
<td>1.52</td>
<td>2.60</td>
<td>2.06</td>
</tr>
<tr>
<td>Adult</td>
<td>0.55</td>
<td>1.18</td>
<td>2.74</td>
<td>2.17</td>
</tr>
<tr>
<td>Pediatric</td>
<td>0.64</td>
<td>1.65</td>
<td>2.48</td>
<td>2.07</td>
</tr>
<tr>
<td>Over 120K</td>
<td>0.73</td>
<td>1.37</td>
<td>3.13</td>
<td>2.57</td>
</tr>
<tr>
<td>100-120K</td>
<td>0.59</td>
<td>1.06</td>
<td>3.06</td>
<td>2.25</td>
</tr>
<tr>
<td>80-100K</td>
<td>0.56</td>
<td>1.14</td>
<td>2.81</td>
<td>2.17</td>
</tr>
<tr>
<td>60-80K</td>
<td>0.58</td>
<td>1.16</td>
<td>3.05</td>
<td>2.34</td>
</tr>
<tr>
<td>40-60K</td>
<td>0.63</td>
<td>1.51</td>
<td>3.04</td>
<td>2.29</td>
</tr>
<tr>
<td>20-40K</td>
<td>0.62</td>
<td>1.71</td>
<td>2.76</td>
<td>2.15</td>
</tr>
<tr>
<td>Under 20K</td>
<td>0.51</td>
<td>1.84</td>
<td>1.43</td>
<td>1.31</td>
</tr>
</tbody>
</table>

Graph 19. ED Staffing Ratios.
Main ED Docs – Target Pts/hr

10 pts/hr

4 docs

Waiting

© 2019, Crane

- Target Service Rate = (10 pts/hr / 4) = 2.5 pts/hr
  - 2.5 pts/hr / 80% (desired util)
    - = 3.12 pts/hr
  - 60 min / 3.12 = 19.2 min

This is the amount of time you can spend on each patient.
## Doc to Dispo Interval - Goals

<table>
<thead>
<tr>
<th></th>
<th>&lt;30k Visits</th>
<th>30k-60k Visits</th>
<th>60k-90k Visits</th>
<th>&gt;90K Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doc to Dispo T&amp;R</td>
<td>1.5 hours</td>
<td>2 hours</td>
<td>2.5 hours</td>
<td>3 hours</td>
</tr>
<tr>
<td>Doc to Dispo T&amp;A</td>
<td>2 hours</td>
<td>2.5 hours</td>
<td>3 hours</td>
<td>3.5 hours</td>
</tr>
</tbody>
</table>

**Caution!**

© 2019, Crane
Doc to Dispo Interval - Goals

<table>
<thead>
<tr>
<th></th>
<th>&lt;30k Visits</th>
<th>30k-60k Visits</th>
<th>60k-90k Visits</th>
<th>&gt;90K Visits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doc to Dispo T&amp;R</td>
<td>1.5 hours</td>
<td>2 hours</td>
<td>2.5 hours</td>
<td>3 hours</td>
</tr>
<tr>
<td>Doc to Dispo T&amp;A</td>
<td>2 hours</td>
<td>2.5 hours</td>
<td>3 hours</td>
<td>3.5 hours</td>
</tr>
</tbody>
</table>

The **RIGHT** answer depends on your arrival rate and the number of treatment spaces in your ED!

25 beds / 10 pts/hr = 2.5 hours

2.5 hours * .80 = 2 hours
## Suggested Ancillary TAT

<table>
<thead>
<tr>
<th>Service</th>
<th>TAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAD TAT Plain Films*</td>
<td>30 min</td>
</tr>
<tr>
<td>RAD TAT Non-con CT**</td>
<td>45 min</td>
</tr>
<tr>
<td>RAD TAT IV CT**</td>
<td>60 min</td>
</tr>
<tr>
<td>RAD TAT PO/IV CT**</td>
<td>120 min***</td>
</tr>
</tbody>
</table>

*TAT = Order to Viewable in Pax

**TAT = Order to Rad Read Available

***Highly variable depending on techn

<table>
<thead>
<tr>
<th>Service</th>
<th>TAT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lab TAT CBC</td>
<td>30 min</td>
</tr>
<tr>
<td>Lab TAT CMP</td>
<td>45 min</td>
</tr>
<tr>
<td>Lab TAT Trop</td>
<td>45 min</td>
</tr>
<tr>
<td>Lab TAT Urine Micro</td>
<td>30 min</td>
</tr>
</tbody>
</table>

*TAT = Order to Results

© 2019, Crane
POC Testing?

- I-Stat - 3 min
  (H/H, Chem 8, CKMB, Trop I, BNP, PT/INR, ABG, Lactate)
- Biosite - 10 min
  Myoglobin, CKMB, Trop I, BNP, D-dimer
- Clinitech - 2 min
  U/A, UPT
- Piccolo - 12 min
  BMP, CMP, Electrolytes
- Chempaq
  POC CBC with diff!
  Rapid strep, mono, influenza...

Caution!
# Benchmarks

<table>
<thead>
<tr>
<th>Process</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispo to Departure</td>
<td>1 hour*</td>
</tr>
<tr>
<td>Dispo to Bed Assignment</td>
<td>15 min</td>
</tr>
<tr>
<td>Bed Assignment to Departure</td>
<td>45 min</td>
</tr>
</tbody>
</table>

*Varies Significantly Relative to Teaching Pathways*
Boarding Hours Calculations

1. Obtain your monthly boarding hours
2. Determine your staffing of holds (ie 2:1, 3:1, 4:1) – I usually assume this is 4:1
3. Divide monthly by 4 to get weekly, divide this by your patient to nurse ratio (usually 4 again)
4. This is your number of nursing hours per week staffing boarders.
   a. Divide this by 12 to get number of shifts weekly
   b. Divide this by 40 to get number of FTEs
5. Next, get your budget of nurses (How many total FTEs do I have?)
6. Divide 4(b) by this number to get % of your nurse staffing dedicated to boarders
7. Extra credit – break this out by ICU (1.5:1) and Non-ICU (4:1)

© 2019, Crane
Real Time Demand Capacity Matching
Outline

- The Power Metrics and Tracking Data over Time
- Benchmarks
- Use Cases for Data
Pick the Right Project

WHAT DO MY FARTS SMELL LIKE

Conclusion

THEY SMELL YUMMY!

CABBAGE
SALT
SAND

© 2019, Crane
Establish a Sense of Urgency
Study/Check in PDSA Cycles

1. **Plan**
   - Identify the problem and develop the plan for improvement.

2. **Do**
   - Implement the plan on a test basis.

3. **Study/Check**
   - Assess the plan; is it working?

4. **Act**
   - Institutionalize improvement; continue the cycle.

© 2019, Crane
BLAME

The Secret to Success is Knowing Who to Blame for Your Failures.
SH ED CT Abd/Pelvis TAT

Avg 142min

Avg 99min
SH ED CT Abd/Pelvis TAT

Avg 152 min

Avg 144 min
If You’re Not Changing, Don’t Meet

“IF YOU DO NOT CHANGE DIRECTION, YOU MAY END UP WHERE YOU ARE HEADING.”
quoteswave.com

- Lao Tzu
Accountability

ACCOUNTABILITY BREEDS RESPONSE-ABILITY.

~STEVEN COVEY
Working Harder or Working Smarter:
The Effects of Public Relative Performance Feedback on
Processing Time Variability and Worker Productivity

Hummy Song
Harvard University

Anita L. Tucker
Brandeis University

Karen L. Murrell and David R. Vinson
Kaiser Permanente

Abstract

In many service settings, it is difficult to completely standardize processes to reduce
processing time variability due to inherent variability in customer needs and service rates.
We examine public relative performance feedback (RPF) as one possible lever for
reducing processing time variability and improving flow in these settings. We use three
years of patient-level data from two emergency departments, one of which changed from
privately to publicly disclosing RPF to physicians. We find that, on average, public RPF
is associated with a 5% decrease in patient length of stay (LOS) and a significant
decrease in LOS variability across physicians. This productivity increase is significantly
greater for low-productivity physicians and is not significantly different for high-
productivity physicians, which suggests the reduction in the mean and variability of LOS
stems from physicians working smarter via a diffusion of best practices. Additional
analyses concerning the impact of public RPF on care intensity and quality suggest the
improvement in productivity and reduction in LOS variability are attained without
sacrificing service quality.
Once You Have Achieved Success…

- Diffuse praise to the lowest level possible, giving from the highest level possible
- Look for the next target
In Summary, Use Data To…

- Select the right target
- Establish a sense of urgency
- Inspire change
- Hold people accountable
- Celebrate!
Problems cannot be solved by the same level of thinking that created them

-Einstein
What are You Thinking About?