Engaging Physicians in Meaningful Practice Improvement

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Conflicts of Interest

I have nothing to disclose
Learning Objectives

At the end of the session, you should be able to:

- Propose a quality or process improvement project that is both meaningful and engaging
- Appraise various metrics and benchmarks used to identify success
- Plan actions to ensure sustainability of the project’s achievements
Do your quality improvement efforts feel like this?
Let’s go on a journey....
Why are we embarking on this journey?

- To improve patient care
- To decrease cost/improve value
- To demonstrate competency
- To improve the workplace
- To maintain certification/licensure/credentials
- Because I’ve been voluntold
What is a quality improvement project?
Definitions of Quality:

- Value formulas
- Product that satisfies needs
- Free of defects
- Fit for use
- Conforms to requirements
A simple definition:

Now, but better
First key to success: Be Curious
How to find a worthwhile project?

Start by asking:

- What is our center?
- What are our biggest pain points?
- What do our customers and consumers want?
- What brings us unhappiness?
What quadrant is your project in?

<table>
<thead>
<tr>
<th>Impact</th>
<th>Difficulty</th>
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<tbody>
<tr>
<td>Small</td>
<td>Large</td>
</tr>
<tr>
<td>Kill</td>
<td>Consider after you gain credibility.</td>
</tr>
<tr>
<td>Low priority. Consider doing for other reasons.</td>
<td>Do It Now!!!</td>
</tr>
</tbody>
</table>

80% of your effect comes from 20% of your causes.

-Vilfredo Pareto
What makes a meaningful project?

- Touches on our core values
- Clear metrics
- Clear definitions of success
- Fostering relationships/teams/collaboration
- Acknowledgement of wins
- Makes a difference
What are our core values?
The Importance of Clear Metrics
Why Process Metrics Beat Outcomes Measures

**Process**
- Assignable
- Controllable
- Standardized
- Easier to verify
- What you’re actually changing

**Outcomes**
- Ambiguous responsibility
- Complex causality
- Many roads to Rome
- Able to be manipulated
- What you hope changes
Patient Satisfaction and Pain Scores ARE NOT good metrics

- Both suffer from erroneous assumptions
  - You get happiness from healthcare
  - Pain is “wrong”/Treatment of pain is risk-free

- Satisfied patients: 1.3x more likely to die over a 4 year period while consuming 9% more healthcare dollars

Clearly defining success is essential!
Did you make a difference?
Success stories

- Reducing intraoperative ventilation volumes
- Improving prophylactic antibiotic administration
The ventilator story
General anesthesia...

- We “control” everything... even your breathing
- Big breaths may lead to lung injury
What We Know About Lung Protection

- ICU Patients have better outcomes
- Not the “normal” OR practice
  - Not proven
Our Complex System

- Limited IT infrastructure and support
- 4 Hospitals, Multiple surgery centers
- >300 Providers
  - Attendings, Residents, Anesthetists
  - Private Practice and Academic
Our Team

- Grant Lynde, MD, MBA
  Vision, Organization
- Vikas O'Reilly-Shah, MD, PhD
  Clinician Informaticist
- Lisa Cogdill, MPH
  Informatics Analyst (SQL Programmer)
- Ben Amoateng, MPH
  Data Analyst (Transforming the data)
What We Did: CDW -> Outcomes

- Giant electronic data repository
- Search the CDW using SQL
  - Pt Height -> Predicted Body Weight
  - Median tidal volume
- Mail Merge into quarterly letter
Iterations

- Attendings Only -> All Providers
- Change ventilator defaults
- PBW table on computer desktops
- Directional arrows on the letter
- Bit.ly link to department quality documents
The Letter...

- Very positive
- Future directions
- Data presented as chart
- Data definitions
- References for metrics
- Point of contact
## The Letter

<table>
<thead>
<tr>
<th></th>
<th>PEEP Compliance</th>
<th>TV8 Compliance</th>
<th>TV10 Compliance</th>
<th>T04 Compliance</th>
<th>ABX Compliance</th>
<th>Temp Compliance</th>
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<tbody>
<tr>
<td><strong>Individual Compliance</strong></td>
<td>100%↔</td>
<td>95%↑</td>
<td>100%↔</td>
<td>98%↑</td>
<td>100% ↔</td>
<td>100%↔</td>
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<td><strong>Goal</strong></td>
<td>N/A</td>
<td>90%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Individual Case Count</strong></td>
<td>98</td>
<td>98</td>
<td>98</td>
<td>89</td>
<td>91</td>
<td>121</td>
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<tr>
<td><strong>Department Average</strong></td>
<td>91%</td>
<td>86%</td>
<td>99%</td>
<td>89%</td>
<td>100%</td>
<td>100%</td>
</tr>
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Outcomes

The Letter Was Most Important
What makes a meaningful project?

- Core values – Conform to latest science
- Clear metrics – <8 cc/kg PBW Ventilation
- Clear success – Compliance >95%
- Fostering relationships – Larger team
- Acknowledgement of wins – Quarterly dashboard
- Makes a difference – Lower pneumonia rates
The Antibiotic Story
What we know...

- Antibiotics given in a timely fashion result in a 50% decrease in wound infections

- 4 Rights:
  - Drug, Dose, Time, Redose
Efforts to Decrease Wound Infections...
What We Did:

- SCIP: Must administer antibiotics no more than 60/120 minutes prior to incision

- Our documented rate: 99.9%.

- Review of Infections: Most did not receive antibiotics...
What an anesthesia record looks like
The SCIP Button
Self-Attestations Do Not Accurately Reflect Patient Care

Jay Sanford DO, Vikas O’Reilly-Shah MD PhD, Grant Lynde MD, MBA

Background
Appropriate antibiotic prophylaxis has been demonstrated to significantly reduce the incidence of postoperative wound infections. Initially incorporated into the Surgical Care Improvement Project, the proper timing of antibiotic administration is a quality measure specifically attributed to Anesthesiology practices with clearly documented improvements in compliance rates. High reported rates of compliance have resulted in this metric being removed from CMS incentive payment program. Our facility reports data to NSQIP based on hand-review of medical records. Independently, our compliance metrics utilize automated reporting examining self-attestation. We saw significant differences between the two results and wanted to better understand the discrepancy.

Methods
A total of 698 cases were reviewed for NSQIP compliance reporting. Each record was examined for dose, timing, and appropriateness of antibiotic selection.

Results
Of examined cases, 17.6% (n=128) were deemed non-compliant; despite self-attestation that antibiotics had been administered appropriately. Of these cases, 18.7% (n=25) were actually compliant; 23.6% (n=29) of cases had no antibiotics administered before incision, and 15.8% of cases (n=17) had one antibiotic administered after incision. Additionally, vancomycin administration was deemed to be inadequately timed in 27.6% (n=54) of cases. Inappropriate antibiotics were administered in 11.4% of cases (n=14), and no antibiotics were documented in 10.5% (n=13) of cases. In 5.7% of cases, antibiotics were administered excessively early.

Discussion
Self-attestation is a poor method of determining compliance rates among important metrics designed to improve best practice. It is likely that national rates of appropriate antibiotic selection, dosing, and timing are not as high as what is currently reported by practices incentivized through this metric.

Sources
Our Team...

- Me
- Joe Sharma, MD – Surgeon
- Susan Tomlin, RN, CNS
- Infectious Disease – RN and MD
- 2 Data Informaticists
- 1 Data Analyst
- Project Manager – CSSBB
- OR Pharmacy Manager
- ID Pharmacist
Other Work

- Streamlined antibiotic procurement
- Standardized antibiotic selection
- Developed algorithm
  - “Daily Ding”
  - Monthly Scorecard
Compliance

Increased

Decreased

Infections

7/16-6/17

7/17-6/18

Colorectal Infections
GYN Infections
Overall Antibiotic Compliance
Initial Antibiotic Compliance
What makes a meaningful project?

- Core values – Do no harm
- Clear metrics – Right drug, right dose, right time
- Clear success – Compliance >95%
- Fostering relationships
- Acknowledgement of wins – Monthly dashboard
- Makes a difference – Lower wound infections
Sounds great! Can we hire you?
Where we’ve failed not yet succeeded…

- Diabetes
- OR Turnover times
Diabetes

- Success: Reduce mortality and morbidity related to high blood sugar
- Metric: Treat high blood sugars

- Issues:
  - Team focus
  - Agreement on metric
  - Overly-complex algorithm
Diabetes Algorithm

- Preop Categorization
  - Type 1 Diabetes
  - Type 2 Diabetes
  - At Risk Type 1 Diabetes

- Insulin injectable
  - High Dose Steroid
  - Total Daily Dose
  - Basal Insulin Dose
  - Prandial Insulin
  - Sleep/Basal Dose

- Oral agents
  - Age
  - GFR

- Weight/Height
  - Calculated BMI

- Insulin Sensitivity (Type 2 Diabetes)

- Preop recs
  - Oral and injectable
  - PreTOS drug specific recs
  - DOS drug specific recs

- Intraop recs
  - Variable rate insulin infusion
  - Subcutaneous
  - Dosing based on insulin sensitivity, T1 vs T2 DM, and steroid use

- Postop dosing
  - Multiplier based on insulin sensitivity and weight
  - Basal and prandial needed for dosing upon return to normal PO intake

- Preop, intraop and postop doses based on endocrine consultation

- Recommendations for detection of preoperative A1C status and detection/treatment of perioperative stress hyperglycemia
OR Turnover Times

- **Success:** Decrease time between cases
- **Metric:** Time from wheels out-wheels in

**Issues:**
- Hidden agenda, Perverse incentives
- Agreement on value
- Excessively complex problem
How to create sustainability
How to create sustainability...
or, the great secret!

1. Make doing it right easier than doing it wrong
2. Provide automated feedback
3. Reject workarounds
4. Align incentives and process
5. Focus on process metrics, not outcomes
How to create sustainability… or, the great secret!

6. Empower employees
7. “No fault” reporting
8. Culture… culture… culture
9. Celebrate genuine successes
10. Strengthen teams, create trust
Sounds easy, right???
Remember... it all goes full circle
Kotter’s Model for Change

- Create sense of urgency
- Form powerful coalition
- Create a vision
- Communicate the vision
- Empower others to act on the vision
- Create short term wins
- Consolidate improvements and create more change
- Create sustainability/Change the culture