Patient Safety Movement Foundation Presents

APSS (Special Interest Group)

Metrics Integrity

December 13th, 2018

Ariana Longley, MPH, Chief Operating Officer, PSMF

Expert Presenters:
Robin Betts, MBA-HM, RN, CPHQ
Vice President Quality, Clinical Effectiveness & Regulatory Services
Kaiser Foundation Health Plan & Hospitals, Northern California
Agenda

• 10 Minutes: Introduction to Patient Safety Movement Foundation and Actionable Patient Safety Solutions (APSS)

• 40 Minutes: Patient Safety Movement Foundation’s Expert Presentation led by
  – Robin Betts

• 10 Minutes: Q & A
Fostering New Efforts and Building On Existing Patient Safety Programs Through Commitments to ZERO
Who Can Take Action?

• Hospitals & Healthcare Organizations
  – Make a *Commitment*

• Partners
  – Sign the *Commitment to Action* letter

• Healthcare Technology Companies
  – Sign the *Open Data Pledge*

• Patient & Family Advocates
  – Share their *Patient Story*, Utilize Resources
Actionable Patient Safety Solutions (APSS)

1. **Culture of Safety**
2. **Healthcare Associated Infections**
   - 2A Hand Hygiene
   - 2B Catheter-Associated Urinary Tract Infections (CAUTI)
   - 2C Surgical Site Infections (SSI)
   - 2D Ventilator-Associated Pneumonia (VAP)
   - 2E Clostridium Difficile Infection (CDI)
   - 2F Central Line Associated Blood Stream Infections (CLABS)
3. **Medications**
   - 3A Medication Errors
   - 3B Antimicrobial Stewardship
   - 3C Improve Prevention of Insulin-Induced Hypoglycemia
   - 3D Pediatric Adverse Drug Events (PADEs)
   - 3E Standardizing and Safeguarding Acute Medication Administration
4. **Failure to Rescue: Monitoring for Opioid-induced Respiratory Depression**
5. **Anemia & Transfusions**
6. **Hand-off Communications**
7. **Neonatal Safety**
   - 7A Suboptimal Neonatal Oxygen Targeting
   - 7B Failure to Detect Critical Congenital Heart Disease (CCHD) in Newborns
8. **Airway Safety**
   - 8A Safer Airway Management
   - 8B Unplanned Extubation
9. **Sepsis**
   - 9A Early Detection & Treatment of Sepsis
   - 9B Early Detection & Treatment of Sepsis (HIC)
   - 9C Early Detection & Treatment of Sepsis (LMIC)
10. **Prevention & Resuscitation of In-Hospital Cardiac Arrest**
11. **Obstetric Safety**
   - 11A Postpartum Hemorrhage (PPH)
   - 11B Pre-eclampsia
   - 11C Reducing Unnecessary C-Sections
12. **Embolic Events**
   - 12A Venous Thromboembolism
   - 12B Air Embolism
13. **Collaborative Care Planning in Mental Health**
14. **Falls & Fall Prevention**
15. **Nasogastric Feeding Tube and Drainage Tube Placement and Verification**
16. **Person & Family Engagement**
Impact to Date

Hospitals Committed to ZERO

- 2013: 63
- 2014: 100
- 2015: 515
- 2016: 1,624
- 2017: 3,526
- 2018: 4,598
Impact to Date

Lives Saved Annually by Committed Hospitals

*Numbers are based on self-reported data provided by hospitals
Expert Presenter:
Robin Betts, MBA-HM, RN, CPHQ
Vice President, Quality, Clinical Effectiveness & Regulatory Services, Kaiser Foundation Health Plan & Hospitals, Northern California

Topic: Metrics Integrity
The Work of Metrics Integrity

Presented by: ROBIN BETTS, RN, CPHQ
VP Quality, Clinical Effectiveness & Regulatory Services
Kaiser Permanente Northern California Region
Patient Safety Movement Foundation Board Member
The Performance Gap

No standard methodology to calculate mortality associated with preventable death

PSMF has no approach to validate the integrity of reported “Commitment” data

Measurement Validation Monitoring

Roadmap
# PSMF Metric Integrity Workgroup Charter

## Objective
- Drives the Patient Safety Movement Foundation’s overall goal to reduce preventable death to 0 by 2020 by providing metric validation and integrity as the foundation publicly shares results.

## Scope

<table>
<thead>
<tr>
<th>Area</th>
<th>Role</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop an approach to validate the integrity of reported “Commitment” data</td>
<td>Develop Recommend Execute</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Produce a document that outlines the approach to validation that guides the on-going process ensuring consistency and standardization</td>
<td>Develop</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop or adapt methodologies for calculating mortality associated with reductions in preventable death</td>
<td>Develop Recommend Execute</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Produce a Policy/Procedure/or Guideline that outlines the specifications of measuring mortality of preventable death</td>
<td>Develop</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Make recommendations regarding the sharing of metric specifications and methodologies</td>
<td>Recommend</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop or adapt methodologies for calculating preventable harm</td>
<td>Develop Recommend Execute</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Source</td>
<td>Methodology</td>
<td>Comments</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Catholic Health Initiatives</td>
<td>Our method is driven by the EMR. 1. We pull a listing of patients deceased at discharge for our continuous oximetry monitored floors. 2. We review each case and remove hospice and comfort care from the list. 3. We review for rapid response and codes for data tracking, but these DO NOT affect the death count. 4. These numbers are compared to the baseline for each of the monitored floors. 5. The reduction variance is our lives saved.</td>
<td>Harm specific focus  Requires manual chart review  Does reflect Lives Saved</td>
</tr>
</tbody>
</table>
| Hospital Quality Institute                  | **Hypothetical scenario:**  

CLABSI Rate per 1,000 device days 2013= (10/10,000)*1000 = 1.0  
CLABSI Rate per 1,000 device days 2014= (6.0/12,000)*1000 = 0.5  
Estimated number of 2014 infection with rate of 2013 = (1.0 + 10,000)/1000 = 12.0  
Number of lives saved in 2014 = 6 - 12 = -6.0  

CA had a CLABSI Rate of 1.0 (10 infections and 10,000 device days) per 1,000 device days in 2013 and Rate of 0.5 (6 infections and 12,000 device days) in 2014.  

To calculate lives saved, we need to calculate infections in 2014 with rate of 2013 (1.0). This calculation will provide equal denominators, so numerators can be compared accurately. Infections/numerator would have been 12 (Numerator= 1.0x 12,000/1000). The difference between two numerators (numerator calculated based on 2013 rate and actual numerator of 2014) is number of lives saved (Lives saved = 6 - 12 = -6). If denominators or number of device days are the same, we can simply subtract numerators and calculate number of lives saved. | Harm specific metric  This really reflects “Lives spared harm” not mortality (validated by two PS data analysts) |
| Medicare patient safety monitoring system (CMS) | • Full medical records set to 2 clinical data abstraction centers and screened for type of adverse event using MedQuest  
• Administrative data used to identify specific post discharge events: readmit, 30day postoperative mortality  
• No Assessment of preventability or severity | Does not attribute to preventability |
Board Approval

Multiple Methods

APSS/Commitment Specific

Generalized Methodology

APSS/Commitment Specific

Board Decision
Foundational Guidelines

- Develop standard measurement methods for each APSS using the measurement criteria grid
- Establish an approval process

<table>
<thead>
<tr>
<th>Score 1</th>
<th>Score 2</th>
<th>Score 3</th>
<th>Score 4</th>
<th>Score 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSMF Priority or APPS Link</td>
<td>Not on Radar/No associated Commitments</td>
<td>APSS under consideration</td>
<td>APSS under current development</td>
<td>Directly related to PSMF APSS already defined</td>
</tr>
<tr>
<td>National Approved Measure</td>
<td>Not on national agenda</td>
<td>Generic Registry approved</td>
<td>National Registry approved</td>
<td>NOF approved or used in CMS/TJC measures</td>
</tr>
<tr>
<td>National Benchmarks Available</td>
<td>No Benchmark</td>
<td>Local benchmark</td>
<td>Benchmark without risk adjustment</td>
<td>Risk adjusted, not reproducible benchmark</td>
</tr>
<tr>
<td>Paper vs Electronic (Ease of capture)</td>
<td>Collected on paper requiring chart review and manually tabulated, local only</td>
<td>Collected on paper requiring chart review and manually tabulated, to system level</td>
<td>Collected on paper, entered in DB and measure electronically calculated</td>
<td>Only portion of measure requires manual review</td>
</tr>
<tr>
<td>Process and Outcomes science link (does the measure link to evidence-based harm reduction?)</td>
<td>Measure without scientific link to patient safety outcome</td>
<td>Measure with weak scientific link to patient safety outcomes</td>
<td>Measure with moderate scientific link patient safety outcomes</td>
<td>Validated patient outcome or process measure with definitive link related to safety</td>
</tr>
<tr>
<td>Actionable – (Does the measure directly reflect the desired harm reduction?)</td>
<td>No evidence to improve</td>
<td>Evidence is indirect but possible related</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Likelihood of detection and occurrence</td>
<td>Detection not possible at any point (0 of 10 times)</td>
<td>Low likelihood of detection (2 of 10 times)</td>
<td>Moderate likelihood of detections (5 of 10 times)</td>
<td>Error likely to be detected (7 of 10 times)</td>
</tr>
</tbody>
</table>
Metric Development and Approval Process

1. APSS Developed
2. Topic Workgroup develops measurement proposal
3. Meets measurement criteria? (YES/NO)
   - YES: Submit to Metric Integrity workgroup
   - NO: Feedback and recommendations sent back to APSS workgroup

4. Approved? (YES/NO)
   - YES: Notify workgroup of approval and embed in APSS
   - NO: Metric integrity reviews proposed methodology

5. Publish final APSS document
# APSS Completed to Date

## APSS Metric Specifications – 2015 - 2018

<table>
<thead>
<tr>
<th>Category</th>
<th>Specifics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Culture of Safety</td>
<td>7A Neonatal Safety</td>
</tr>
<tr>
<td>2A Hand Hygiene</td>
<td>7B Critical Congenital Heart Disease</td>
</tr>
<tr>
<td>2B CAUTI</td>
<td>8B Unplanned Extubations</td>
</tr>
<tr>
<td>2C SSI</td>
<td>9 Sepsis</td>
</tr>
<tr>
<td>2D VAP</td>
<td>10 Cardiac Arrest Resuscitation</td>
</tr>
<tr>
<td>2E CDI</td>
<td>11A Postpartum Hemorrhage</td>
</tr>
<tr>
<td>2F CLABSI</td>
<td>11B Severe Hypertension</td>
</tr>
<tr>
<td>3A Medication Errors</td>
<td>11C Unnecessary C-section</td>
</tr>
<tr>
<td>3B Antimicrobial Stewardship</td>
<td>12A VTE</td>
</tr>
<tr>
<td>4 Opioid Induced Resp Depression</td>
<td>14 Falls</td>
</tr>
<tr>
<td>5 Patient Blood Management</td>
<td>16 Person and Family Engagement</td>
</tr>
</tbody>
</table>
Sample Actionable Patient Safety Solution

Executive Summary Checklist

Medication errors (including wrong drug, dose, patient, route of administration and documentation) are major causes of inpatient morbidity and mortality.

- Create a multidisciplinary team, including physicians, nurses, pharmacists, and information technology personnel to lead the project.
- Implement systematic protocols for medication administration, including checklists for writing and filling prescriptions, drug administration, and patient transitions of care, as well as other quality assurance tools. These tools will include:
  - Installing the latest safety technology to prevent medication errors, such as the BD Inteliport™ Medication Management System and First Databank FDB MedKnowledge™ drug library system or other drug dosing solutions such as Monarch Medical Technologies solution for calculating IV & SubQ insulin doses.
  - Use barcoding for drug identification in the medication administration process.
  - Check patient’s allergy profile before prescribing medication.
  - Ensure appropriate training and safe operation of automated infusion technologies.
  - Distinguish “look-alike, sound-alike” medications by labeling, package design, and storage.
- Implement technology that to standardize Computerized Physician Order Entry (CPOE), reporting systems and quality assurance reports to audit compliance.
- Clinical Decision Support Systems (CDSS) should be implemented where possible (Kane-Gill et al, 2017).
- Practice the Six Patient Rights on Medications: right patient, drug, dose, route, time of administration and documentation. All care providers should use this simple checklist.
- Review monitoring/reporting results at medical staff meetings and educational sessions as a part of Continuous Quality Improvement (CQI).
Metric Specifications and Formula

Adverse Drug Event
Adverse drug event (ADE) with harm to patient (Category E or higher on NCC-MERP classification) that is preventable (i.e., not an unknown first-time reaction to a medication).

Outcome Measure Formula:

Numerator: Number of reported adverse drug events with harm (as defined above) – by class or medication
Denominator: Number of doses administered (by medication or class of medications)

* Rate is typically displayed as ADE with harm/1000 doses given

Metric Recommendations:

Indirect Impact (preventable rate):
All patients benefit from efforts such as CPOE, medication reconciliation (upon admission and discharge from the hospital), monitoring of drugs with therapeutic indexed levels (e.g., digoxin, phenytoin, warfarin), conversion of IV to PO meds once patient can tolerate oral liquids, and antibiotic stewardship.

Direct Impact (non-preventable rate):
All patients prescribed medications

Lives Spared Harm:

\[ \text{Lives Spared Harm} = (\text{ADE Rate baseline} - \text{ADE Rate measurement}) \times \text{Doses or Adjusted Patient Days baseline} \]

Lives Saved:

\[ \text{Lives Saved} = \text{Lives Spared Harm} \times \text{Mortality Rate} \]
Measurement Considerations

Notes:

Top Medication Classes/Triggers:

1. Opioids
2. Sedatives/Hypnotics (including propofol)
3. Anticoagulants
4. Antimicrobials (including antivirals and antifungals)
5. Anti-diabetic medications (including insulin, and other injectable and oral medications)
6. Injectable medications

Initial/Baseline measurement will show ability to capture ADE information, since most are voluntarily reported. Over time, decreases in this rate can show lives spared harm. To ensure that reductions are not due to decreased reporting, a control measure should also be measured.

Control Rate Calculation:

Numerator: Number of ALL reported errors and adverse drug reactions (including harm and NOT causing harm or “near misses”)

Denominator: Number of doses administered over time period

Control ADE rate should be consistent or increase, with corresponding decrease in ADE with harm
Data Collection Tips and Mortality

Data Collection:
ADE reporting information is dependent on volunteer reporting and accuracy of people verifying reports (preferably from pharmacy and a medication errors reporting program, MERP).

Medication usage information is usually collected from billing information rather than medication orders (more accurate if patient received the dose or not).

If medication usage information is not available, denominator could be per 1000 patient days. This can track over time, especially for all ADE reporting, however, will not adjust ADE rate for high or low utilization medications.

Scales:
- The Adverse Drug Reaction Probability Scale (Naranjo) determines the causality of an ADR or how likely is the drug the true cause of the ADE (NLM, 2015).

Mortality (will be calculated by the Patient Safety Movement Foundation):
The PSMF, when available, will use the mortality rates associated with Hospital Acquired Conditions targeted in the Partnership for Patients (PfP) grant funded Hospital Engagement Networks (HEN). The program targeted 10 hospital acquired conditions to reduce medical harm and costs of care. “At the outset of the Partnership for Patients initiative, HHS agencies contributed their expertise to developing a measurement strategy by which to track national progress in patient safety—both in general and specifically related to the preventable HACs being addressed by the PfP. In conjunction with CMS’s overall leadership of the PfP, AHRQ has helped coordinate development and use of the national measurement strategy. The results using this national measurement strategy have been referred to as the “AHRQ National Scorecard,” which provides summary data on the national HAC rate (AHRQ, 2015). Adverse drug events was included in this work with published metric specifications. This is the most current and comprehensive study to date. Based on these data the estimated additional inpatient mortality for Adverse Drug Events is 0.020 (20 per 1000 events).
Mortality Measurement

- Where possible, we align with HEN HAC rate publication from 2014 reflecting improvement through 2013

### Exhibit 1. Excess Cost and Mortality Estimated in 2011 (at the Launch of PfP), by Hospital-Acquired Condition

<table>
<thead>
<tr>
<th>PfP Hospital Acquired Condition</th>
<th>Estimated Additional Cost* per HAC</th>
<th>Estimated Additional Inpatient Mortality per HAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse Drug Events</td>
<td>$5,000</td>
<td>.020</td>
</tr>
<tr>
<td>Catheter-Associated Urinary Tract Infections</td>
<td>$1,000</td>
<td>.023</td>
</tr>
<tr>
<td>Central Line-Associated Bloodstream Infections</td>
<td>$17,000</td>
<td>.185</td>
</tr>
<tr>
<td>Falls</td>
<td>$7,234</td>
<td>.055</td>
</tr>
<tr>
<td>Obstetric Adverse Events</td>
<td>$3,000</td>
<td>.0015</td>
</tr>
<tr>
<td>Pressure Ulcers</td>
<td>$17,000</td>
<td>.072</td>
</tr>
<tr>
<td>Surgical Site Infections</td>
<td>$21,000</td>
<td>.028</td>
</tr>
<tr>
<td>Ventilator-Associated Pneumonia</td>
<td>$21,000</td>
<td>.144</td>
</tr>
<tr>
<td>Postoperative Venous Thromboembolism</td>
<td>$8,000</td>
<td>.104</td>
</tr>
</tbody>
</table>
Measurement Strategy
Measurement Tips – Types of Metric?

There are three main types of metric—outcome, balance, and process—all of which are important to a robust measurement strategy.

<table>
<thead>
<tr>
<th>Type</th>
<th>Definition</th>
<th>Example</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **Outcome** | Gauges progress towards the ultimate clinical, financial, or operational goal of the project. | • Number of falls resulting in serious injury or death per 1000 patients  
• Percent of appointments schedule within 10 days | • Outcome metrics often have several direct and indirect drivers, as well as unexplainable or random variation.  
• Project tests or pilots should be designed to empirically estimate the correlation between outcome metrics and process metrics. |
| **Process** | Measures whether certain actions or steps in a process are performed as planned or expected. | • Percent of providers who washed their hands before entering a patient room  
• Percent of patients with intentional rounding completed on schedule | • In the short-term, managers will have more direct control or influence over process metrics. However, they will lose focus over time if the intervention is too burdensome or inadequately hardwired through a robust sustainability plan. |
| **Balancing** | Measures whether the changes designed to improve one aspect of the organization are causing new problems in other aspects. | • Readmissions related to decreases in average length of stay  
• Staff morale decline related to new technology or workflows | • Work closely with all stakeholders to closely manage the magnitude and implications of any impact.  
• An unfavorable change in a balancing metric won’t automatically disqualify a project if handled appropriately. |
Constructing Quality Measures

• Ratios
  – Numerator (cases may or may not be contained within the denominator)
  – Denominator (best available proxy for the true population at risk because the population cannot be enumerated)
    • Example: *Adverse Drug events*
      – Number of patients that experienced a medication error (numerator) per 1000 adjusted patient days (denominator).
        » Not all patients receive medications
        » Adjusted patient days serves as a best proxy for the entire population

• Proportions/Percentages
  – Numerator (subset of people in the denominator)
  – Denominator (inclusive of the entire population)
    • Example: *Post-op respiratory failure after surgery*
      – Number of patients that experienced post-op respiratory failure (numerator) of all surgical patients (denominator)
        » Direct subset of all surgical patients
Let’s Talk Pie – Measurement Specifications

• Numerator (How much of the pie?)
  – Measure focus
• Denominator (The entire pie)
  – Defines the population being measured
• Denominator Exclusions (what ingredients removed)
  – Members of the population that should be removed

• Example: 30-day Mortality
  – Numerator: patients who died within 30 days of admission
  – Denominator: all inpatient admissions
  – Denominator Exclusions:
    • Patients admitted or discharged in hospice or comfort care
    • Patients discharged “Against Medical Advice”
Applying Measurement Throughout the Project Lifecycle

Project measurement will evolve throughout the project lifecycle, beginning with a rough estimate of the project impacts as part of a project charter or business case and ending with a plan to monitor and sustain the improvements driven by the project.

<table>
<thead>
<tr>
<th>Pipeline</th>
<th>Assess</th>
<th>Design</th>
<th>Test</th>
<th>Spread</th>
<th>Sustain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Create AIM statement &amp; identify KPIs impacted</td>
<td>Formulate impact estimates &amp; baselines</td>
<td>Design Test and Create Measurement Strategy</td>
<td>Utilize pilot results to refine impact estimates</td>
<td>Create Control Plan</td>
<td>Execute Control Plan to monitor improvements</td>
</tr>
<tr>
<td>Create an AIM statement and identify project outcome metrics and targets</td>
<td>Refine outcome metrics and begin collecting baseline performance to report in Current State Assessment</td>
<td>Complete a Measurement Strategy based on the proposed solution</td>
<td>Analyze outcomes of testing at pilot site(s) and extrapolate results for full spread</td>
<td>Create a Control Plan to: Identify how metrics will be monitored over time including: Frequency Alert Flags Actions Action Owners</td>
<td>Control Plan is followed to monitor project metrics over time and ensure sustained improvements</td>
</tr>
<tr>
<td>Identify which KPIs the project may impact in a measurable and meaningful way</td>
<td>Refine project goals and use Metric Driver Model to estimate the magnitude of potential improvement</td>
<td>Design your pilot/test to: • Shift process metrics • Determine correlation between process and outcome metrics • Monitor balancing metrics</td>
<td>Make any necessary adjustments to Measurement Strategy</td>
<td>Action owners take any necessary corrective actions if the project metrics fall ‘out-of-control’</td>
<td></td>
</tr>
<tr>
<td>Note these items into Symphony when creating project record</td>
<td>Report preliminary KPI impact estimates in Symphony if possible</td>
<td>Document metrics and targets in Symphony</td>
<td>Use pilot outcomes to justify project progression to Spread Phase, Design iteration or project discontinuation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Impact Certainty**

Confidence in estimated project impact increases throughout lifecycle

| Target KPIs identified (i.e. what type of project is it? Quality, Experience, etc.). Impact on KPIs and outcome metrics estimated, within a large confidence range. | Impact on KPIs and outcome metrics estimated, within a large confidence range: +/- 100% | Confidence range narrows once a solution is designed: +/- 50% | Piloting of the solution further narrows confidence range: +/- 25% | As the solution is spread, impact on KPIs should be more or less known: +/- 5% | Focus moves from estimating impact to measuring, monitoring, & reporting it. |
Outcomes Measurement Throughout the Project Lifecycle

**Measurement Strategy**

**Timing:** To be completed before the Test phase once a well-understood solution has been developed. Some objectives, outcome metrics and targets may be defined earlier.

**Instructions:** Fill out the included tables for all defined metrics:

<table>
<thead>
<tr>
<th>Field</th>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metric Name</td>
<td>What is the name of the metric.</td>
</tr>
<tr>
<td>Definition</td>
<td>How is the metric calculated (e.g. daily average of 65+ patients admitted to NCAL medical centers)? Be specific by including any equations, exclusions, adjustments and timeframes (e.g., monthly, daily, YTD, rolling 12 months).</td>
</tr>
<tr>
<td>Type</td>
<td>Is it an Outcome, Process, or Balancing metric?</td>
</tr>
<tr>
<td>Source</td>
<td>What is the data source? Be very specific by including the email or URL for the source of truth.</td>
</tr>
<tr>
<td>Frequency</td>
<td>How often will the metric be calculated (e.g. weekly, monthly, quarterly)? Include the day of the week or month.</td>
</tr>
<tr>
<td>Collector</td>
<td>Who is responsible for collecting, charting and reporting the metric to the project team?</td>
</tr>
<tr>
<td>Baseline</td>
<td>What level of performance will you be comparing against after the test or implementation? Be explicit if it covers multiple reporting periods (e.g., average of the past 12 months)</td>
</tr>
<tr>
<td>Target</td>
<td>What level of performance would indicate that the project was successful?</td>
</tr>
<tr>
<td>Target Date</td>
<td>By what date do you expect to reach the target performance?</td>
</tr>
</tbody>
</table>
### What Makes an Effective Metric?

When selecting metrics, project teams should consider the following:

<table>
<thead>
<tr>
<th>Metrics should be:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to Understand – Stakeholders will struggle to impact metrics they don’t understand</td>
<td></td>
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<tr>
<td>Easy to Measure – Use existing, easily accessible, timely data whenever possible</td>
<td></td>
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<tr>
<td>Meaningful – Metrics should relate to our mission, values and/or strategy</td>
<td></td>
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<tr>
<td>Actionable – Metrics that don’t help us make better decisions are of little value</td>
<td></td>
</tr>
<tr>
<td>Consistent – Metric definitions should not change over time unless absolutely necessary</td>
<td></td>
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<tr>
<td>Frequently Updated – Weekly or monthly updates are best for managing performance, identifying opportunities</td>
<td></td>
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<tr>
<td>Minimal Lag – Time spent waiting for results could be used to improve the solution or accelerate decisions</td>
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<tr>
<td>Manageable Unexplained Variation – “Noise” makes it difficult to assess the project impact, even when it is large</td>
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</tr>
<tr>
<td>Quantifiable Drivers – It is helpful to drill down to see which components are driving variation</td>
<td></td>
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<tr>
<td>Comparable Across and Beyond KP – Use metrics and data available across KP or industry to allow comparison</td>
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<tr>
<td>Forecastable – Metrics that can’t be forecast due to variable external components present a challenge</td>
<td></td>
</tr>
<tr>
<td>Normalized for Population Size – if necessary</td>
<td></td>
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<tr>
<td>Risk Adjusted - if necessary</td>
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</tbody>
</table>
Measurement Tips – What Makes an Effective Goal?

When selecting project goals, managers should consider the following features of a SMART goal:

<table>
<thead>
<tr>
<th>Goals should be SMART:</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Specific</td>
<td>Does the goal clearly and precisely state what the project or program will improve?</td>
</tr>
<tr>
<td>Measurable</td>
<td>How will you objectively and quantifiably demonstrate that the project resulted in improvement? What is the baseline and how much do you expect it to change?</td>
</tr>
<tr>
<td>Achievable</td>
<td>Is it realistic for the project to achieve the improvements within its span of control/influence?</td>
</tr>
<tr>
<td>Relevant</td>
<td>Do the stakeholders agree that the goal is appropriate for the project and the organization’s broader strategy, mission and values?</td>
</tr>
<tr>
<td>Time Bound</td>
<td>Within what time period will the improvement be made?</td>
</tr>
</tbody>
</table>

Why SMART goals?

- Commits to a clear scope of improvement with start and end date.
- Improves team understanding of what is being done, why, and when.
- Limits the project focus (reminds the team what is NOT being done).
- Informs sponsors so they can clear barriers or ask for collaboration.
CLABSI SMART GOAL

Implement the central line bundle to reduce hospital CLABSI rates.

S.M.A.R.T.

Reduce CLABSI by 25% from 1.0 standardized infection ratio (SIR) to 0.75 SIR by December 31st 2019.
Visual Management

To really make an impact, incorporate measures into daily management system.
Summary

- PSMF is committed to helping organizations understand how they can measure the impact of implementing the APSS
- Measurement takes thought and strategy
  - Development
  - Aligning with goals
  - Making them visible to staff
Save the Dates!

7th Annual World Patient Safety, Science & Technology Summit
January 18-19, 2019
Hyatt Regency Huntington Beach Resort and Spa, Huntington Beach, CA
Registration is still open!
www.patientsafetymovement.org/summit

Next Quarterly Webinar
Engineering the Future of Healthcare: Fundamentals of Human Factors and Ergonomics
Wednesday, March 13, 2019

- **Kristen Miller**, DrPH, CPPS, Scientific Director, National Center for Human Factors in Healthcare, MedStar Health
- **Sacha Burn**, MS, AEP, EDAC, Human Factors Specialist, National Center for Human Factors in Healthcare, MedStar Health
Thank you!