Measurement 101: Why Metrics Are an Integral Part of Improvement & How to Incorporate Them Into Your PIP Reporting Strategies

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Oregon Pediatric Improvement Partnership

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Complete Your Pre-Survey In Your Packet

Pre-survey:

Today we are going to be talking metrics, how they are an integral component of your performance improvement projects (PIP), and how you can incorporate them into your reporting.

This anonymous survey will help us understand your baseline understanding and use of metrics.

1. The PIP reporting template has a section focused on clarifying the outcome measures and data collection plan. How often do you complete each component of that section (Baseline, baseline data, improvement target, improvement date, benchmark, national standard, frequency of data collection)?
   
   _______ Never     _______ Sometimes     _______ Usually     _______ Always

2. The PIP reporting template asks you to identify process and balance measures for your efforts. How would you rate your knowledge about what a process and balance measure is?

   _______ Not very knowledgeable     _______ Somewhat knowledgeable     _______ Knowledgeable     _______ Very Knowledgeable

3. The last page of the PIP reporting template notes that you can attach documents that describe your improvement plan and the related metrics. Please indicate whether you have created and provided the following in previous reports:

   - Run Charts   ___ No  ___ Yes
   - Driver Diagram   ___ No  ___ Yes
   - Measurement Plan   ___ No  ___ Yes
Agenda

• Background on OPIP and our experience with quality measurement and improvement
• Setting the Context: Why and how are metrics an integral component of improvement efforts?
• Key factors to consider in designing a measurement plan as part of your performance improvement project
  – General parameters
  – Types of metrics to consider, importance of a “family” or set of metrics
  – Operationalizing metrics
  – Reporting metrics
• Pulling it all together – value of driver diagrams/logic models to ensure alignment of efforts with the aim
• Example of how this would be applied for a PIP focused on the Adolescent Well-Visit Measure (AWV)
• Applying what was discussed today:
  – **Small Table Exercise to Specify Metrics Related to Your QI Efforts Focused on Opioid Safety: Reducing Prescribing of High Morphine Equivalent Doses**
• Complete the Evaluation Survey

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Oregon Pediatric Improvement Partnership (OPIP)

- OPIP supports a meaningful, **long-term collaboration of stakeholders** invested in child health care quality, with the common purpose of improving the health of the children and youth of Oregon.

- **OPIP staff and projects focus on building health and improving outcomes for children and youth by:**
  1) Collaborating in **quality measurement and improvement** activities;
  2) Supporting **evidence-guided quality activities**;
  3) Incorporating the **patient and family voice** into quality efforts; and
  4) Informing **policies that support optimal health** and development

- OPIP uses a **population based approach** – starting with the child/family
  - Work with the multiple kinds of providers who serve children

- Primarily contract and grant funded
  - TA Bank provider for CCOs
  - External quality review-like organization, facilitated a PIP with 8 MCOs

- Based out of Oregon Health & Science University (OHSU), Pediatrics Department

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My Primary Objective- To Be Helpful

I know there is a wide range of experience in the room!

• For some of you this may be the first time you have heard these things
• For others, this is a helpful review of concepts you already know and work with regularly
• Please ask questions as you have them, and let me know as you have topics you would like to discuss as we go- the intention here is for me to be helpful! Let me know how best to accomplish that
Metrics Are an Integral Part of Improvement

- Measurement is a critical piece of improvement, as it allows you as a quality improvement (QI) team to:
  - Understand **current** performance = Your **Baseline** Rate
  - Set goals for your **future** performance = Your **Improvement** Target
  - Monitor the effects of the changes you are making (your interventions) = **Interim** Data Collection (e.g. Quarterly data Collection, **Frequency** of Data Collection)

Words in *Blue* Map to PIP *Progress Reports*
What are we trying to accomplish?

How will we know that a change is an improvement?

What changes can we make that will result in improvement?

Aim Statement

Measurement is a critical part of this process as you can’t know WHAT and IF you are going to improve if you don’t track it

The Model for Improvement was developed by Associates in Process Improvement.

© 2004 Institute for Healthcare Improvement
OHA PIP Progress Report

PIP Title: _____________________________________________  CCO: ________________

QI Lead: ________________________________  QI Contact email: _______

Measurement Year __ □ Quarter 1 □ Quarter 2 □ Quarter 3 □ Quarter 4

Team Sponsors (Key Personnel at Participating Organizations supporting the project):

What are we trying to accomplish?

AIM Statement (description of desired improvement should be time-specific, measurable and include the target population):

Target Population (description of the specific population targeted by the project):

Problem Statement: (description of the reasons for selecting this project – why is this project important, what data/analyses support prioritizing members).
Key Strategies OPIP Uses When Working with Partners to Create Effective Aim Statements

- Three components of an effective aim statement: **what, how much, by when**

- State the aim clearly

- Include **numerical goals** that are clearly tied to the **population** and **outcome** of focus

- Avoid aim drift

- Be prepared to refocus the aim
Measures Are a Critical Part of a “SMART” Aim Statement

• Specific

• Measureable
  • Achievable
  • Realistic

• Time-Specific

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Example: Immunizations

**Initial AIM:**
- Reduce the number of ALERT sheets received by the office by 50% within 12 months.

**Second phase AIM:**
- Increase 2-year-old immunization rates by 4% by June of 2010.
Developmental Screening

• To improve developmental disability and autism screening in pediatric practices, in accordance with AAP policy statements and Bright Futures guidelines.

• To improve physician understanding and utilization of standardized developmental screening tools.

• To educate pediatric physicians in proper documentation, coding, and billing.

• To improve provider knowledge of, and referral to, community resources, particularly Early Intervention.
Within 9 months of developmental screening implementation:

- ASQ will be routinely administered to 75% of 9, 18, and 24 month olds.
- MCHAT will be routinely administered to 75% of 18 and 24 month olds.
**How will we know that a change is an improvement?**

**Measurement and data collection plan for expected outcome measures:**

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Peeling the Onion of an Improvement Project
Key Questions for Designing Improvement Strategies With Associated Metrics

Current Outcomes (Baseline Rates)

- What are the processes or activities that have impact on the outcomes? (DRIVERS)
- How are these processes currently being implemented? Is implementation stable and reliable?
- What interventions on the process will have an impact on the outcome? (PROCESS MEASURES)
- If this intervention is implemented, what impact will it have on other parts of the systems? (BALANCING Measures)

Desired Outcomes (Target Rates)
Importance of Measurement Plan As You Design and Improvement Plan: Some Keys to Consider

- Each part of your improvement plan should be measured and assessed relative to the outcome.
- Value of “family” or set of metrics that provide information on the system as a whole, and the impact, or unintended impact, of improvement efforts. Three most common types of metrics:
  - Outcome
  - Process
  - Balancing
- Indicator vs Measure
  - Indicator is a count
  - Measure has numerator and denominator
    - Numerator: Did it happen
    - Denominator: Total it should have happened to
Types of Metrics to Gauge Improvement

• **Outcome**
  – Measure the results and system performance
  – The end results of your improvement project
  – Your target state

• **Process**
  – The individual workings of the system; the things you do
  – Capture the changes your QI efforts make to the inputs or steps (DRIVERS) that contribute to the outcomes
  – Sound process metrics ensure that the activities directly contribute to the outcomes
    • The WHO and the WHAT of your AIM Statement

• **Balance**
  – Assess other part of the systems that are related
  – Ensures that if changes are made to one part of the system, it doesn’t cause intended problems in another part of the system
Important Factors to Consider as You Operationalize Metrics

Get into the details

• Operational definition – define each part, including scoring
• HOW data will be collected
• Sampling – who is measured and how do you identify them
• Reporting – how it will be visually shown

Value and importance of metrics that can give a sense of scale

• Counts (indicators)
  o Often count a numerator – what happened, but not what should have happened, so it can sometimes be difficult to gauge impact on outcome

• Proportions or Percentages (measures)
  o Numerator – Who got it: Indicator of focus
  o Denominator – Who should have received it: Population or Volume
Important Factors to Consider As You Operationalize Metrics

• Examination and plotting data over time
  o Pre/Post – Only show Baseline and Follow-up and no relation to when improvement efforts began
  o Run charts with annotations of when interventions implemented

• Tool for You:
  [http://www.ihi.org/resources/Pages/Tools/RunChart.aspx](http://www.ihi.org/resources/Pages/Tools/RunChart.aspx)
Run Chart Anatomy

- **Individual measures**
- **Center line = median**

**Time-Ordered Data**

Source: Richard Scoville, PhD

**Observed Data Value**
- (e.g., Readmission Rate)

Annotate change 1 tested

Annotate change 2 tested

Time Order (e.g., Month)
How to Create a Baseline and Monitor Changes

Baseline

Extend the median into the future - this makes improvement visible

Interventions began

Virtual learning community

Changed payment

Introduced protocol

Pulling It All Together

Aligning Efforts and Metrics to the Aim: Using Driver Diagrams and Logic Models in Planning and Implementation
Tools That Can Help You Design Improvement Efforts that Aligned with the Aim and Sound Metrics

1. Driver Diagrams
2. Logic Model
Tool #1: Driver Diagrams

– Visual display of the improvement efforts
– Causal pathway from improvement efforts to the AIM, requires you to think of the connection
– The primary drivers, sometimes referred to as “key drivers,” are the system components or factors which contribute directly to achieving the aim.
  • Secondary drivers are actions, interventions necessary to achieve the primary drivers.
  • Secondary drivers should be used to identify changes that can be tested in order to affect the primary drivers.
– Each driver should be able to be measured, and most drivers should align with specific process measures.

Source: https://innovation.cms.gov/files/x/hciatwoaimsdrvrs.pdf
WIC Immunization Referral Process

Secondary Drivers
- Training/education for WIC staff clerks on immunization-related issues
- Training/education for additional WIC staff members on immunization-related issues (backup)
- Current immunization status available during a child's WIC visits
- Recordkeeping on immunization referrals

Primary Drivers
- WIC staff confidence and competence dealing with immunization-related issues
- Caregiver's response to WIC staff recommendations on immunizations
- WIC office systems provide timely information on immunization status and actions

Aim
By June 30, 2011, increase by 50% the proportion of WIC infants receiving recommended immunizations during their WIC service visits

Source: https://innovation.cms.gov/files/x/hciatwoaimsdrvrs.pdf
AIM:
That all pediatric Practices that use a Care Coordinator use a validated developmental screening tool 100% of the time at the 9, 18, & 24/30 month WCC by 1/1/2014

Key Drivers

Use a validated developmental screening tool at the appropriate ages (PEDS Test or ASQ & M-CHAT)

Interventions

Continue online training & certification for PEDS Test. Training of office staff on use of M-CHAT and Ages and Stages.

Choose a screening tool/mix of screening tools as agreed upon by all clinicians.

Develop Policy & Procedure for implementation of tools

Create a work flow for implementing the screening in the practice (who gives it to the pt, who scores it, etc.)

Create a referral process for positive screenings

If positive screen – refer to care coordinator to develop a patient centered care plan involving clinician, care coordinator, and family. Follow referral process through.

Use of EMR to monitor well visit compliance

Use of EMR to document % of compliance completed at WCC. Structure a report into EMR, or random sampling. Office to remind families for scheduled WCC- phone calls, post cards, etc.

Contact payers to find out reimbursement rates. Make sure if certain codes, documentation is needed that WCC form in EMR is structured the appropriate way. Consent form to patient’s parents/guardian if form is not reimbursed, they are responsible?

Develop a reimbursement schedule including billing and coding
Transforming Adolescent Care Learning Collaborative Key Driver Diagram

**SMART AIM**

From June 2015 through February 2016, physician practices will increase the attendance at and the quality of adolescent well child visits (WCV) by:

**Specific aims:**
1. Maintaining and improving attendance at adolescent preventative well child visits by 10%
2. Increasing practice self-selected areas (injury, obesity, mental health, reproductive health, etc. screenings) around WCV components by 25%

**GLOBAL AIM**

To empower adolescents to be actively engaged in their preventative health care and equip them with the knowledge and skills for a healthy transition into adulthood

**KEY DRIVERS**

- Improve office reminder systems and outreach
- Incentivize Participation
- Encourage teen-centered care
- Leverage missed opportunities
- Raise awareness of importance of adol. WCV

**INTERVENTIONS**

- Implement texting systems – patient and caregivers
- Utilize annual reminder mailers (emails, patient portals, birthday cards)
- Interact with patients and families through charting portals
- Utilize prompts on phone calls when scheduling visits for adolescents
- Utilize social networking
  - Interact regularly through Facebook, Twitter, Mobile Applications, and Practice Website
- Physician resources
- Improve relationship with reimbursement providers
- Motivate parents of younger adolescents
- Motivate late adolescents
  - Host raffles
  - Provision of gift cards for completing WCVs
- Provide age-appropriate materials suited to the needs of the adolescent population
- Create an adolescent friendly waiting area and exam rooms
- Foster a trusting relationship with the adolescent population in a culturally appropriate fashion
- Utilize scripts when discussing uncomfortable topics
- Use acute care to increase WCV attendance
  - Convert minor illness to WCV when possible
  - Use chart flags/alerts to remind patients to schedule WCV before leaving the office
  - Use and convert sports physicals to WCVs
- Describe the difference between sports physicals and the WCV
  - WCV + sports physical + comprehensive care
  - Sports physical = clearance for sports
- Communicate the importance of immunization schedule
- Describe requirements for middle school, college and certain careers
- Inform adolescents about rights to confidentiality
- Discuss confidentiality policies with parents present
- Promote additional components of the WCV
  - Academic and personal development to prepare for college and beyond
  - Mental health surveillance and treatment when appropriate
  - Risk reduction regarding nutrition and weight management, safe driving, smoking and drug/alcohol avoidance, reproductive health
  - Secure work permits

Tool #2: Logic Models

• Logic models illustrate how your specific activities are intended to produce particular results (your aim).

• Key Parts:
  1. Inputs – resources invested
  2. Outputs - Specific activities
  3. Outcomes – Results of each activity

• Visual diagram forces you to ensure that the boxes are connected and that the activities are directly linked to the proposed outcome

• Online resources:
  ✓ http://www.uwex.edu/ces/pdande/evaluation/evallogicmodelworksheets.html

Do not copy or reproduce without proper citation.
Inputs:
What do you invest?
Staff? Training? Resources?

Outputs
Activities:
• Specific things you do
• Conduct trainings
• Curriculum
• Facilitated Meetings

Participation:
Examples:
• Number of participants
• WHO you reached

Outcomes
Short
Mid-term
Long

Free template for you to use:
http://fyi.uwex.edu/programdevelopment/logic-models/bibliography/
Keys to Using These Models: Identify Specific Strategies Used to Achieve the Aim

• **Remember:** The aim clarifies *what, how much, by when* relative to the outcome

• In designing your improvement plan you are identifying
  1. Specific interventions you will implement
  2. For each of those activities, **metrics** that will help you gauge the impact of those activities
     ✓ What was implemented?
     ✓ For whom?
     ✓ Relationship of the activity to the aim the specific WHAT, HOW MUCH, and BY WHEN
Metrics Demonstrating Intervention Effectiveness

Beyond outcome and process metrics noted, consider metrics of the specific intervention

1) Quantitative metrics
   - Quantify your intervention
   - Involve numerical counts
     *Example: Number of clinics trained*

2) Qualitative metrics
   - Often is the “story” behind the numbers
   - Interviews, and observing and recording behaviors
   - Feedback from participants of impact. E.g. What are providers, families, and patients saying?
     *Example: Feedback obtained from attendees about the training about their perceptions of the impact the training will have; Notes from your improvement specialist site visit and their interviews with the clinic staff*
Fictitious Example of a PIP
Focused on Adolescent Well-Visit

From A Driver Diagram to Metrics
Fictitious Example of a CCO’s PIP Driver Diagram

By January 2018, we will increase the AWV rate from 20% to 35% of continuously enrolled youth 12-21 receiving a well-child visit.

**Primary Drivers**

- Primary Care Provider Provision of High-Quality Adolescent Well-Child Care
- Convenient Access to Care at a SBHC
- Adolescent Knowledge about Well-Visits

**Interventions to Address Drivers**

- Trainings to clinics on Bright Futures aligned well-visits
- Training to SBHCs on well-visits, SBHC outreach to youth in school to access
- Member education about importance of well-visits
By January 2018, we will increase the AWV rate from 20% to 35% of continuously enrolled youth 12-21 receiving a well-child visit.
How will we know that a change is an improvement?

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- Baseline Data: Rate for 16 Calendar Year
- Improvement Target: 35% by January 2017
- Benchmark: State Benchmark – 62.0%
- National Standard: National NCQA Rates
- Frequency of Data Collection:
  - Monthly Tracking of Well-Visits, Annotated Run Chart By Improvement Interventions. The LINE on the chart would show your well-visit rate, looking back across the year.
    - Annotate charts to note when the interventions were implemented
      1. Training of clinics
      2. SBHC clinic engagement
      3. Member mailing
Process measures – are the steps/parts in the system performing as planned
Balance measures – are the interventions causing problems in other areas
Related measures – are there other outcomes that will contribute to the interpretation of the outcome results

<table>
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<th>Improvement Target and target date</th>
<th>Frequency of data collection</th>
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<tr>
<td>-- Clinic Level Screening Rates</td>
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<td>Balancing Measures</td>
<td>Indicator of Success With Primary Driver</td>
<td>Goal</td>
<td>Frequency of data collection</td>
</tr>
<tr>
<td>-- Other Access Measures for Those Clinics, E.g. Well-Child Rates for Young Kids</td>
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<td></td>
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<tr>
<td>-- Time to Third Appoints</td>
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<table>
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<th>Related Measures/Assessments of Interest</th>
<th>Indicator of Success With Primary Driver</th>
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<td>-- Adolescent SBIRT Metrics for the Clinics, Given Part of Quality AWV</td>
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By January 2018, we will increase the AWV rate from 20% to 35% of continuously enrolled youth 12-21 receiving a well-child visit.
### Examples of Metrics to Gauge Improvement Interventions

**Primary Drivers**

- **Primary Care Provider Provision of High-Quality Adolescent Well-Child Care**

**Interventions to Address Drivers**

- **Trainings to clinics on Bright Futures aligned well-visits**

- Number of clinics trained (Quantitative)
- Number of adolescent members 12-21 attributed to the clinics
- Monthly/Quarterly reporting of AWV rates for clinics. Annotated run chart of well-visit rates that notes when training occurred (Outcome)
- Assessment of well-child rates for young children in same clinic (Balance)
- Monthly site visit, report from clinics about barriers (Qualitative)
**Trainings to clinics on Bright Futures aligned well-visits**

- Number of clinics trained (Quantitative)
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- Monthly/Quarterly reporting of AWV rates for clinics. Annotated run chart of well-visit rates that notes when training occurred (Outcome)
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**Examples of Metrics to Gauge Improvement Interventions**

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<td>Training to SBHCS on well-visits, SBHC outreach to youth in school</td>
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- **Convenient Access to Care at a SBHC**

- **Examples of Metrics**
  - Number of SBHC engaged (Quantitative)
  - Number of adolescent clients in zip code for the school
  - Monthly/Quarterly reporting of increase in AWV by SBHC.
  - Annotated run chart (Outcome)
  - Assessment of well-child care rates in primary care clinics in region (Balance)

*Do not copy or reproduce without proper citation.*
By January 2018, we will increase the adolescent well-visit rate by 5%.

Examples of **Metrics** to Gauge Improvement Interventions:

- Number of adolescents to whom a mailing was sent (Process)
- Proportion adolescents who received the education information (not returned)
- For adolescents who received a mailing, tracking on access of well-child care (Outcome)

Adolescent Knowledge about Well-Visits

Member education about importance of well-visits

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Enough talking.....
let’s apply these models to your work

Exercise to Specify Metrics Related to Your QI Efforts Focused on Opioid Safety:
Reducing Prescribing of High Morphine Equivalent Doses
Step 1: Map Out Your Aim, Primary Drivers and Your Interventions Related to Your QI Efforts Focused on Opioid Safety: Reducing Prescribing of High Morphine Equivalent Doses

What, how much, by when

What is your baseline?
What is your target?

Primary Drivers You Have Identified to Prescribing of High Morphine Equivalent Doses

INTERVENTIONS WITHIN YOUR PIP

Do not copy or reproduce without proper citation.
Clarifying Measurement Plan

• Each part of your improvement plan should be measured and assessed relative to the outcome.

• Value of “family” or set of metrics that provide information on the system as a whole and the impact, or unintended impact, of improvement efforts. Three most common types of metrics:
  – Outcome
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  – Balancing
Key to Designing Improvement Strategies With Associated Metrics

Current Outcomes (Baseline Rates)

- What are the processes or activities that have impact on the outcomes? (DRIVERS)
- How are these processes currently being implemented? Is implementation stable and reliable?
- What interventions on the process will have an impact on the outcome? (PROCESS MEASURES)
- If this intervention is implemented, what impact will it have on other parts of the systems? (BALANCING Measures)

Desired Outcomes (Target Rates)
Small Table Debrief

• What went well?
• What was tricky or hard to figure out? Where could we support you more?
• Sharing your brainstorming related to your opioid prescribing PIP:
  – Examples of outcome measures?
  – Examples of process measures?
  – Examples of balance measures?
Complete Your Evaluation Survey – THANK YOU!

QHOC - EVALUATION SURVEY OF OPIP PRESENTATION

Thank you for attending the OPIP Presentation at the QHOC title Metrics 101 – Way to Integrate Measures Into Your Performance Improvement Project. Please share your feedback, which we will use to help plan future events.

1. Please assess the overall value of the presentation to ensuring that metrics are a component of your performance improvement project reporting.
   ____ Very valuable
   ____ Valuable
   ____ Neutral
   ____ Limited value
   ____ Not valuable

2. Please rate your knowledge of the difference between outcome, process and balance measures.
   ____ Not very knowledgeable    ____ Somewhat knowledgeable    ____ Knowledgeable    ____ Very Knowledgeable

3. As a result of my participation in this presentation, I plan to (select all that apply):
   ____ Use driver diagram or logic model to map out my performance improvement project
   ____ Identify a family or set of metrics to gauge my PIP efforts that includes an outcome, process and balance measure
   ____ Display data collected in a visual format such as an annotated run chart
   ____ Collect qualitative and quantitative information about the interventions we collect
   ____ Other (please specify)