

Minnesota Adverse Health Events Measurement Training

Dana Soderlund, MPH, Epidemiologist
Betsy Jeppesen, Vice President, Program Integrity

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Objectives

You will learn to:

- Identify the process of setting up measurement plans
- Identify considerations in developing a measurement plan, including elements that strengthen the measurement, pitfalls to avoid, and limitations to measurement plans
- Evaluate the success of an action plan based on measurement results
- Recognize next steps when the outcome is not as expected



Outline

- Purpose of measurement
 - Define the problem
 - Define what to measure to show success
- Steps for creating measures
- Data collection methods
 - Define population
 - Sampling methodology and size
 - Determine frequency and duration
- Interpreting results



Purpose of measurement:

- Measurement for quality improvement
 - Provides a baseline
 - Used to evaluate the impact of changes or programs
 - Used to determine which changes result in improvements
 - Facilitates communication
 - Supports quality improvement efforts



How is measurement used for adverse events?

- Measurement for AHE
- Elements that need to be entered in the registry
 - Measurement Strategy
 - Define what will be measured for the CAP
 - Define how effectiveness will be monitored over time
 - Measurement methodology
 - Duration
 - Frequency
 - Sample size
 - Goal
 - Threshold
 - Identify one measure of success



Step 1: Define the problem and identify the changes

- RCA Process
 - Identify the problems
 - Determine interventions



Step 2: Define what to measure to show success

- Determine type of measures to use (structure, process, and outcome)
- Define the numerator and denominator
- Establish a goal
- Set a threshold
- Select a measure of success



Step 2: Define what to measure to show success

- Determine type of measures to use (structural, process, outcome)
 - Three types of measures
 - Structural
 - Process
 - Outcomes
 - Which measures should be used for AHE reporting and monitoring?



Process measures vs. outcome measures

- Structural measure examples
- Process measure examples
 - improvement in a process measure will eventually impact the outcome
- Outcome measure examples
 - Does the change being made help to achieve the desired outcome?



Examples of Measures

- Clinical outcomes
- Resident/family satisfaction
- Functional status/activities of daily living
- Process efficiency/effectiveness
- Administrative measures
- Resource consumption



Step 2: Define what to measure to show success

- Example 1
 - RCA found fall risk assessment was not completed on admission. CAP is to increase completion.
 - Process Measure: assure risk assessment completed upon admission for patients admitted to the unit
 - Outcome Measure: fall rate for patients admitted to the unit



Step 2: Define what to measure to show success

- Example 2
 - RCA found a lack of clarity about the ability and expectation of staff to remove a certain brace that is rarely used to do skin inspections. CAP is to develop a policy to address skin inspection for patients with this particular brace.
 - Process Measure: assure skin inspections are completed for patients with any device
 - Outcome Measure: pressure ulcer rate for patients with any type of brace



Step 2: Define what to measure to show success

- Define the numerator and denominator

- Numerator:

- All events that you are interested in measuring
 - Number of pressure ulcers
 - Number of patients with risk assessment at admission

- Denominator:

- All the patients who are eligible to be in numerator
 - All patients at high for pressure ulcers
 - All admissions

Proportion = $\frac{\text{Numerator}}{\text{Denominator}}$ = $\frac{10 \text{ patients with PU}}{100 \text{ patients in facility}}$



Step 2: Define what to measure to show success

- Example 1

- RCA found fall risk assessment was not completed on admission. CAP is to increase completion.

- Process Measure:

- Numerator:

- Denominator:



Step 2: Define what to measure to show success

- Establish a goal

- A goal is a clear statement of:

- Intended improvement
 - How success should be measured

- Components of a well written goal:

- What are you hoping to achieve
 - Target
 - Measurement
 - Timeframe to achieve goal

- S.M.A.R.T. Goals



Developing a data collection plan

- **Why** are we collecting the data?
- **What** data will we collect?
- **Where** will the data come from?
- **How** will the data be collected?
- **Who** will collect the data?
- **When** will the data be collected?



Step 2: Define what to measure to show success

- Set a threshold
- Select a measure of success



Step 2: Define what to measure to show success

- Registry requirements for MOS



Case Studies: Exercise

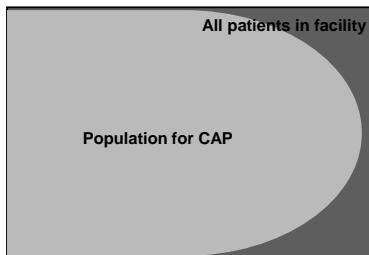


Step 3: Determine data collection methods

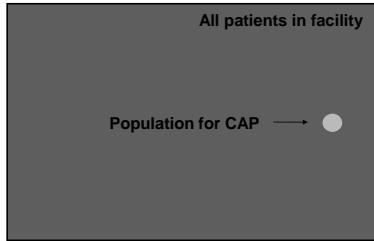
- Define population
- Determine sampling methodology and size



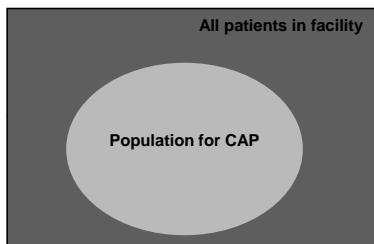
Population



Population



Population



Step 3: Determine data collection methods

- Define population
 - Population for process measures
 - Population for outcome measures



Step 3: Determine data collection methods

- Define population: Example 1
 - RCA found fall risk assessment was not completed on admission. CAP is to increase completion.
 - Population for Process Measure:
 - Population for Outcome Measure:



Step 3: Determine data collection methods

- Define population: Example 2
 - RCA found a bed alarm was not used. CAP to increase use of alarms for all high-risk patients by creating reminders and prompts.
 - Population for Process Measure:
 - Population for Outcome Measure:



Step 3: Determine data collection methods

- Define population: Example 3
 - RCA found fall risk assessments not consistently conducted on a particular unit. CAP is to increase use of admission assessments. Rolled out to all staff on all units.
 - Population for Process Measure:
 - Population for Outcome Measure:



Step 3: Determine data collection methods

- Define population: Example 4
 - RCA found a lack of clarity about the ability and expectation of staff to remove a certain brace that is rarely used to do skin inspections. CAP is to develop a policy to address skin inspection for patients with this particular brace.
 - Population for Process Measure:
 - Population for Outcome Measure:



Step 3: Determine data collection methods

- Determine sampling methodology and size
 - Will you collect data on the entire population?
 - If the population is large
 - Is it FEASIBLE to collect data on all patients?
 - Is it NECESSARY to collect data on all patients?
 - If the population is small
 - Is there enough data?
 - Does the population need to be redefined?



Step 3: Determine data collection methods

- Determine sampling methodology and size
 - Will you collect data on the entire population?
 - Consider measurement needs and alignment with goal of CAP
 - How the population is defined impacts the conclusions you can make
 - Alternative methodologies for measuring very rare events or outcomes



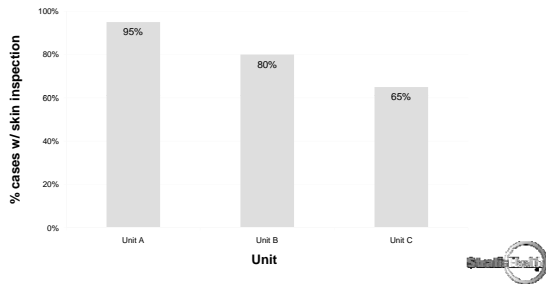
Step 3: Determine data collection methods

- Determine sampling methodology and size
 - Sample size
 - Collect enough records to be useful
 - 30 - 40 records usually can give a good picture
 - When measuring for improvement, more records may not make a difference



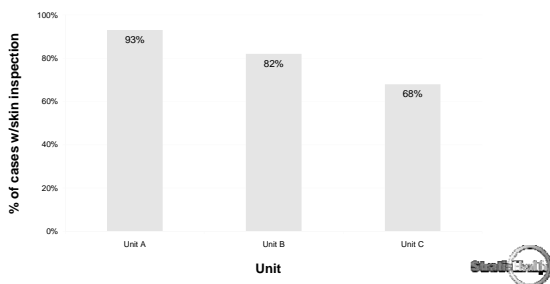
Hospital A

Skin inspections by unit Oct-Dec 2009
Total patients: 105 (35 per unit)



Hospital A

Skin inspections by unit: Oct-Dec 2009
Total patients: 300 (100 per unit)



Step 3: Determine data collection methods

- Determine sampling methodology and size
 - Random sample versus convenience sample
 - Watch for unintentional bias in your sampling strategy
 - Sampling methodologies
 - Random sampling
 - Stratified sampling
 - Systematic sampling
 - Convenience sampling
 - Quota sampling



Stratification

- Stratification: Separation of data according to selected identifiers
- Objective of stratification: Discover patterns and achieve better understanding of process variation



Things to consider

- Time of day
- Day of week
- Site of care
- Care providers
- Procedures
- Patient characteristics

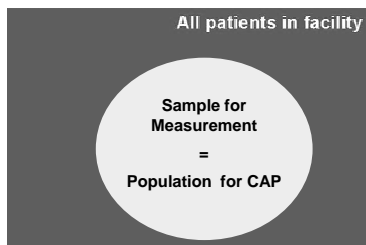


Step 3: Determine data collection methods

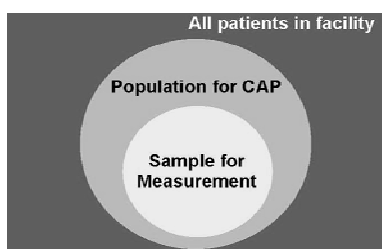
- Determine sampling methodology and size
 - Sampling pitfall scenarios



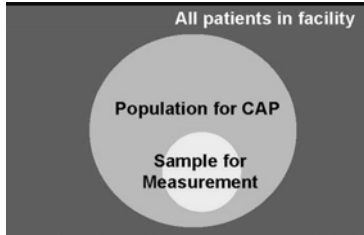
Ideal sampling scenario



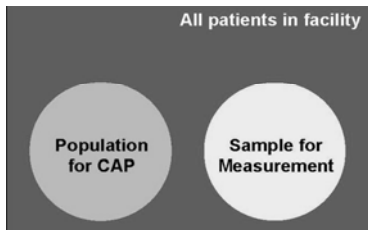
Ideal sampling scenario



Sampling pitfall scenario



Sampling pitfall scenario

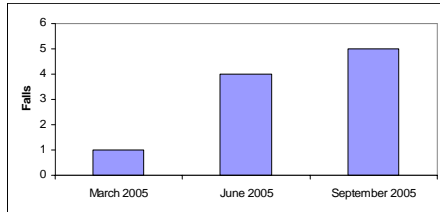


Step 4: Define frequency and duration of measurement

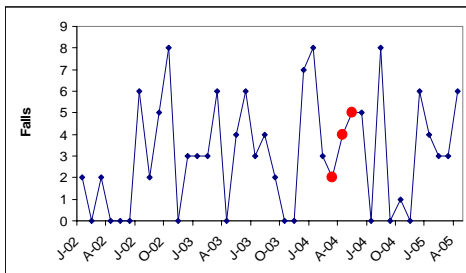
- **Frequency:** how often data are collected for a measure, such as daily, weekly, monthly, quarterly, or annually
- **Duration:** the timeframe over which the data will be collected, such as the total number of weeks, months, or quarters



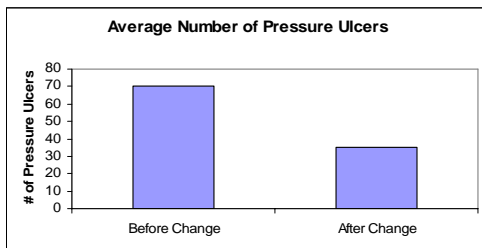
Monthly bar chart: Are things getting worse?



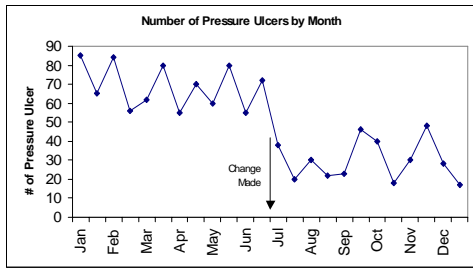
Example: Variation



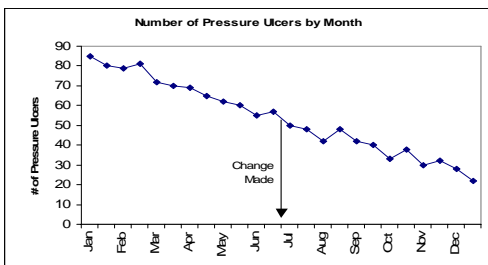
Useful?



Yes.



No.



Case Studies: Exercise



Step 5: Draw conclusions

- Analysis scenarios
- When do you know you have been successful (and can stop measurement)?
- When do you need to review/start over (suggestion about starting with measuring process again)?



Questions?

Dana Soderlund

952-854-3306

dsoderlund@stratishealth.org

Betsy Jeppesen

952-853-8510

bjepesen@stratishealth.org



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