



Unit 10: Measuring Patient Safety

Comp 7: Quality Improvement

Component 12/Unit 10

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1

Objectives

At the end of this segment, the student will be able to:

- To explain the attributes of an effective reporting system
- To examine the importance of standardized and structured health information
- To discuss how Hit can facilitate data collection and reporting for improving quality and patient safety



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Version 1.0/Fall 2010

2

Exercise

Please answer each question with a score of 1 to 5. 1 is below average, 3 is average and 5 is above average.

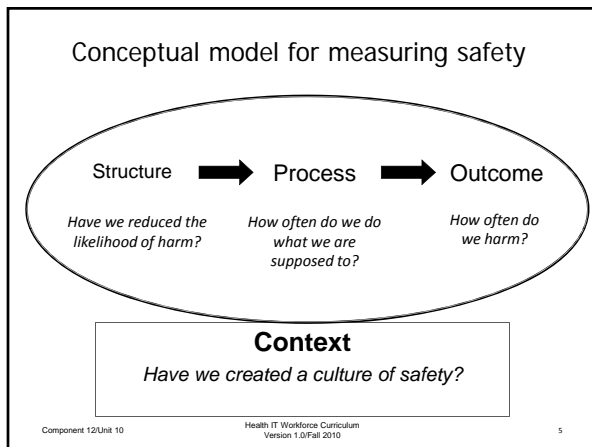
- How smart am I?
- How hard do I work?
- How kind am I?
- How tall am I?
- How good is the quality of care you provide?

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Version 1.0/Fall 2010


3





Examples

- Structure measures: do you have a smoking cessation program
- Process measure: % of patients who receive smoking cessation education or time spent with patients
- Outcome measure; % of patients who quite smoking



Component 12/Unit 10 Health IT Workforce Curriculum Version 1.0/Fall 2010 6

What can be measured as a valid rate?

- Rate requires
 - Numerator- event
 - Denominator- those at risk for event
 - Surveillance for events and those at risk
- Minimal Error
 - Random error
 - Systematic error

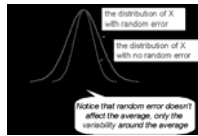
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Version 1.0/Fall 2010

7

Potential Biases

- Selection bias
 - example identifying sepsis patients
- Measurement bias
 - Definition of event –
 - Definition of those at risk
 - Surveillance
 - Missing data
- Analytic bias



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Version 1.0/Fall 2010

8

Sources Variation in Safety measures

- True variation in Safety
- Variation in data quality/definition/methods of collection
- Variation in case mix
- Variation historical rates
- Chance



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Version 1.0/Fall 2010

9

How to measure Medication safety

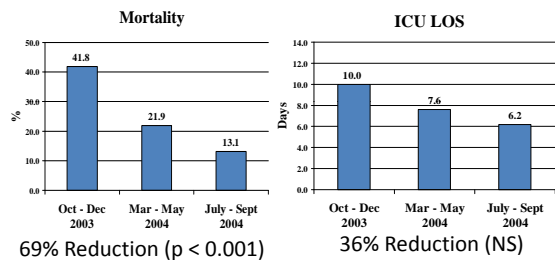
STUDY	NUMBER STUDIED	NUMERATOR	DENOMINATOR	ASSESSED BY	RATE OF EVENTS
Leape, et al. NEJM 1991	30,195 records	Disabling adverse events	Per record reviewed/ admission	Physician Reviewer	3.7 per 100 admissions
Lesar, Briceland JAMA 1990	289,411 medication orders/1 yr.	Prescribing errors	Number of Orders written	Physicians	3.13 errors for each 1000 orders
Lesar, Briceland Stein JAMA 1997	1 year of prescribing errors detected and averted by pharmacist	Prescribing errors	Per medication orders written	Pharmacists, retrospectively evaluated by a physician and 2 pharmacists	3.99 errors per 1000 orders
Cullen, et al. Crit Care Medicine 1997	4031 adult admissions over 6 months.	Adverse drug events	Number of patient days	Self report by nurse and pharmacists, daily review of all charts by nurse investigators.	19 events per 1000 ICU patient days

Component 12/Unit 10

Health IT Workforce Curriculum
Version 1.0/Fall 2010

10

Improving Sepsis Care (n= 19 ICUs)

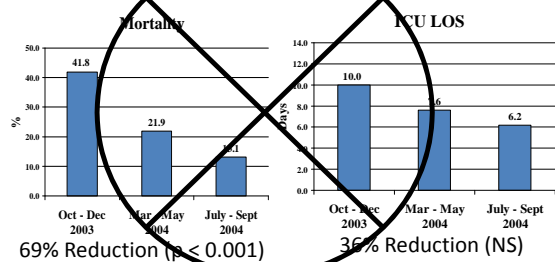


Component 12/Unit 10

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11

Improving Sepsis Care (n= 19 ICUs)



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12

It is Ok to have non-rate measures

Self reported measures are generally not valid as rates

A common mistake is interpreting a non-rate measure as a valid rate

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13

How to get more valid data

- Structure data entry or data collection forms- clarify who what when where and how
- Pilot test entry to see if staff understand
- Train and evaluate competency
- Evaluate data quality (look at data)
 - Missing data, outliers, repeat values
- Ask if the consumer of the data believes it is valid and useful

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14

Quality Report

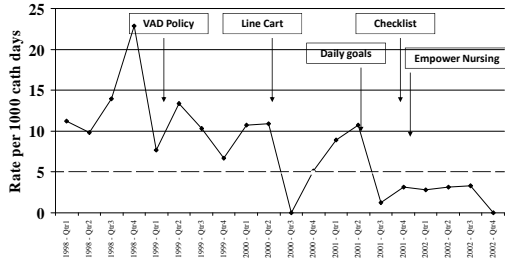
- Generally present data over time in annotated run chart
- Clearly label x and y axis (usually time period)
- Select time period so that you have about 25 observations per time period
- Ask users of the data for feedback on making it more useful.

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Version 1.0/Fall 2010

15

Impact on Catheter-Related Bloodstream Infections(BSI)



Component 12/Unit #7

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16
