

TURNING QUALITY WORK INTO SCHOLARLY WORK

Danielle S. Walsh, MD, FACS, FAAP

Associate Professor of Surgery, East Carolina University

Director of Surgical Quality, James and Connie Maynard Children's Hospital

Jed Castillo, MD

General Surgery Resident

Vidant Medical Center



OBJECTIVES

- Walk through planning stages of quality projects with an eye towards future presentation and publication
- Differentiate between Research and Quality improvement
- Discuss the types of scholarly products that can come from QI work
- Review the SQUIRE format for publishing QI
- Introduce other QI related efforts for career advancement

THE PROBLEM

- Hospital payments are tied to quality.
- Vidant quality data reveals that infections after colorectal operations are high.
- The Vidant Operating Room Committee assessed the problem.

Surgical Site Infections (SSI) after Colon Surgeries

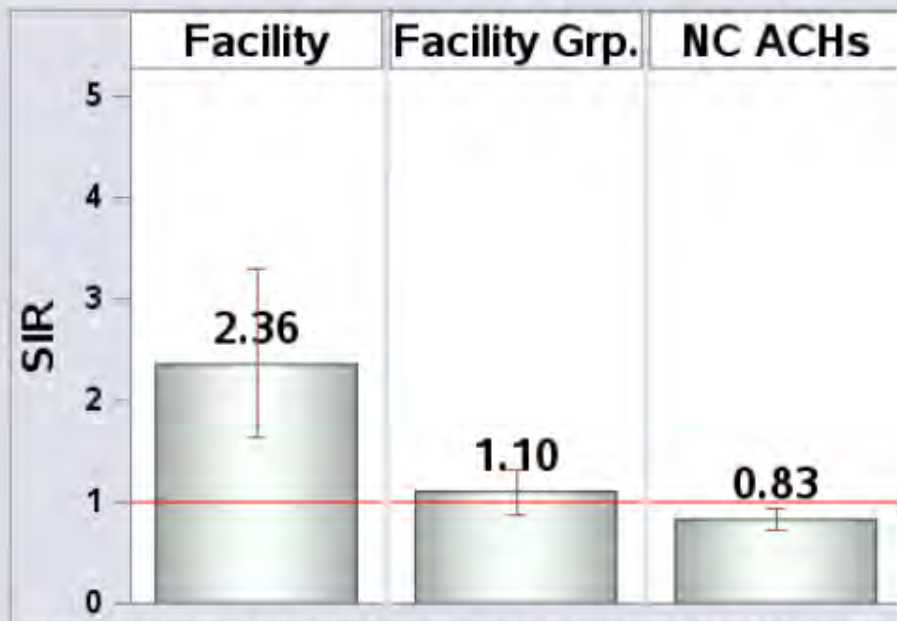


Figure 6: SIRs and 95% Confidence Intervals, Jan-Dec 2017.

Table 6. Number of Observed and Predicted SSI Infections (colon surgeries), Jan-Dec 2017.

Unit Type	Observed Infections	Predicted Infections	How Does This Facility Compare to the National Experience?
Facility-wide inpatient	31	13	Worse

Note: SIR=Standardized Infection Ratio. SIR is calculated by #Observed/#Predicted.

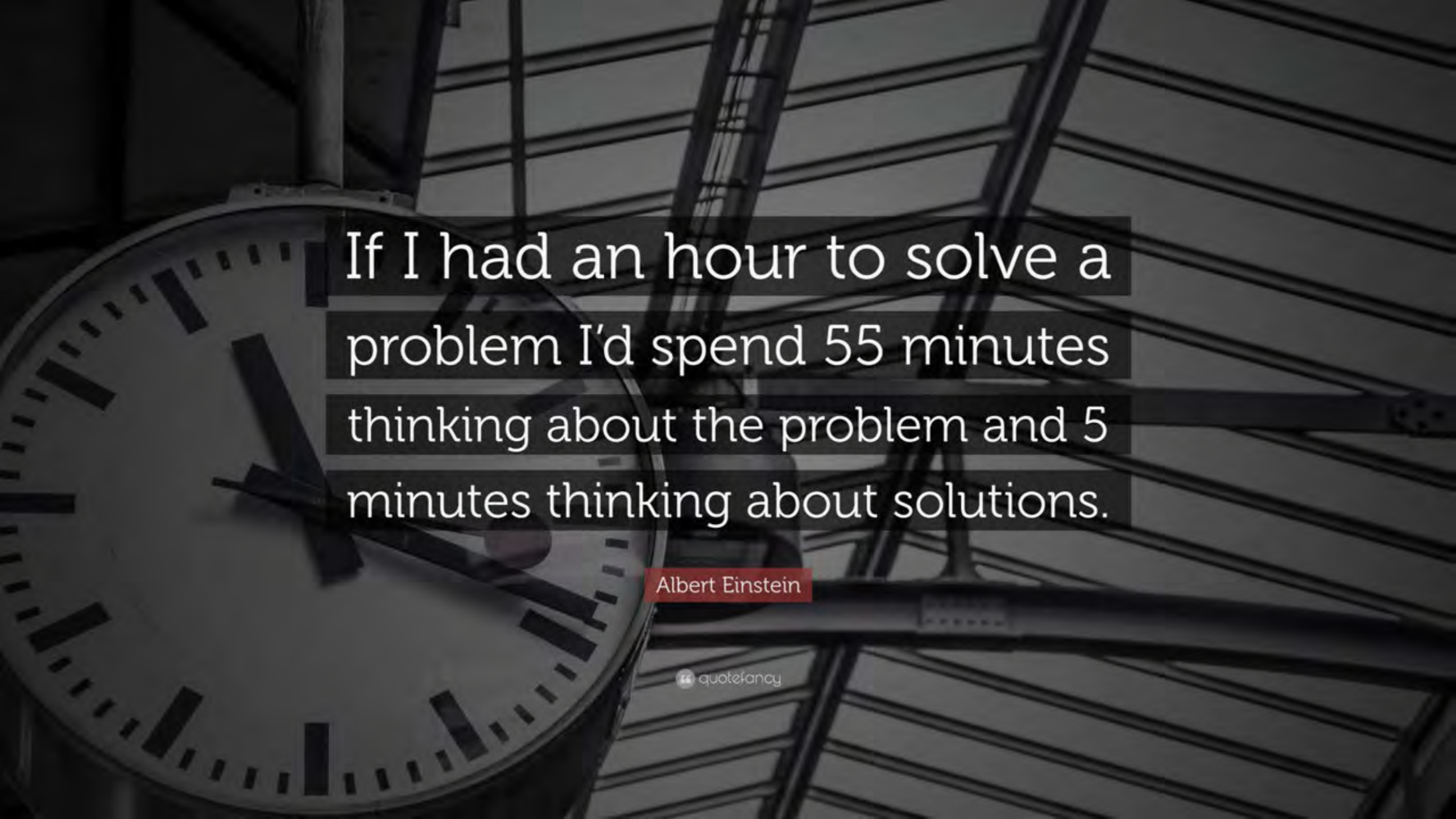
Note: Infections from deep incisional and/or organ space.

Note: Red line represents the NHSN baseline experience, 2015.

How Does This Facility Compare to the National Experience?

× **Worse!** More infections than predicted by the national baseline experience

OBSERVED TO EXPECTED RATIO (O/E)

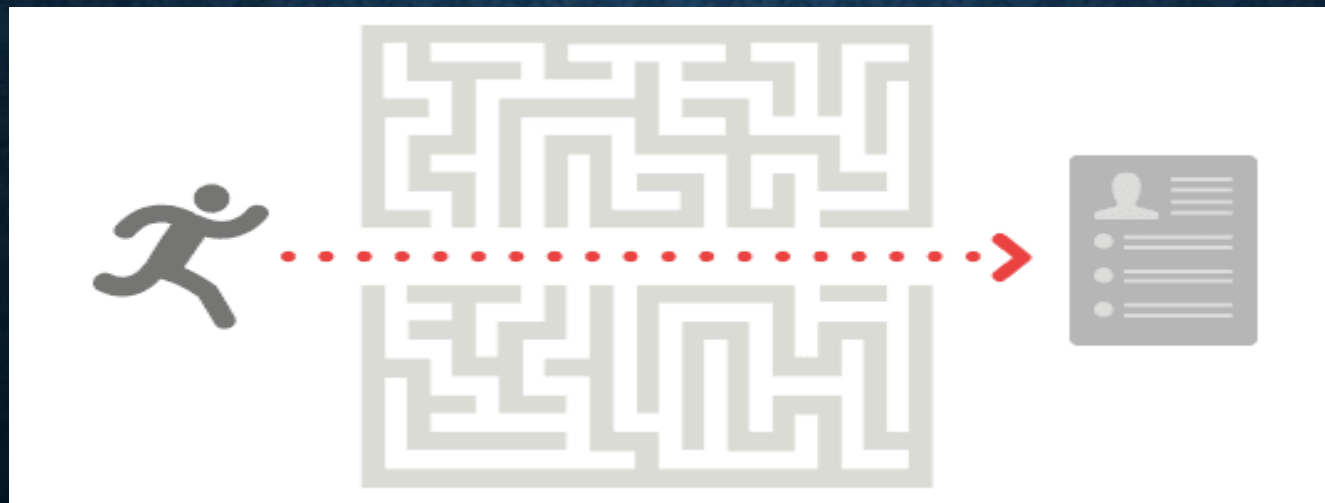


If I had an hour to solve a problem I'd spend 55 minutes thinking about the problem and 5 minutes thinking about solutions.

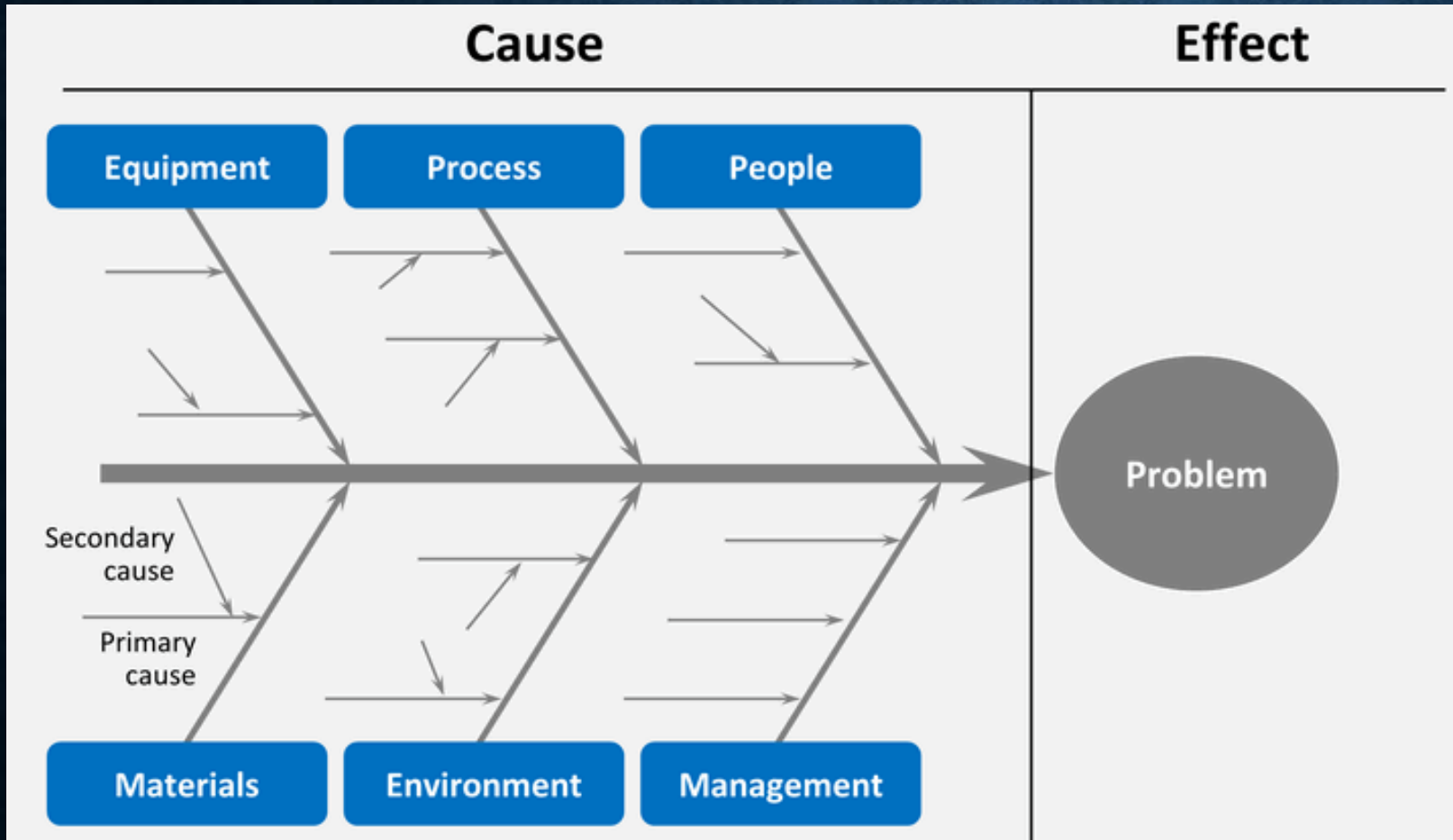
Albert Einstein

PLAN

- Integrate quality projects into your everyday work/workflow
 - The Operating Room Committee
- Build your team, including stakeholders
 - Surgeons, Nurses, Anesthesia, Sterile Processing, OR Administration, EMR experts, Quality Department



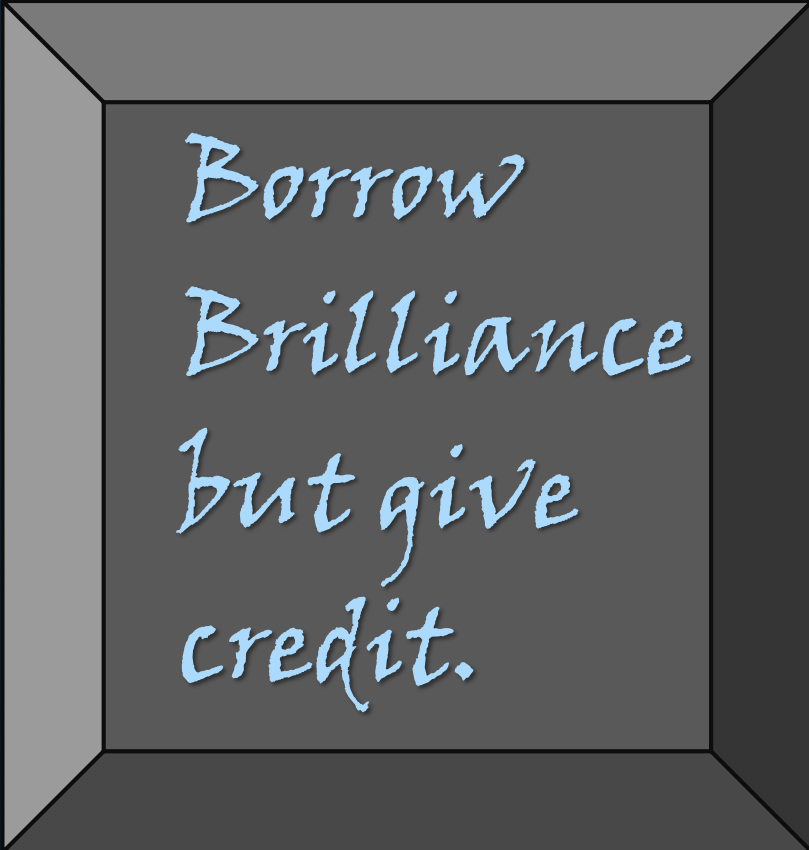
- Identify the gap between current and desired
- Keep a record of the process
- Utilize visual tools - future graphics



DEFINE THE GAP

BACKGROUND

- Run background literature search
- Note strategies used, especially data collection and presentation
- Identify differences from other publications
- Develop your reference list



*Borrow
Brilliance
but give
credit.*

DEFINE THE PROJECT(S)

Define your goal,
objective,
outcomes

- **Goal** – Better reimbursement due to higher quality metrics
- **Strategy** – Identify opportunities for lowering infections
- **Objective** – Lower the O/E ratio of colorectal infections
- **Tactics** – actual changes, PDSA Cycles

SMART GOALS

- Specific
- Measurable
- Achievable
- Relevant
- Time Constrained

Break larger projects
into smaller ones



THREE TACTICS

Case/OR Log Information

[Redacted]

General Information


Date: 4/28/2018
Location: VMC OR MAIN
Patient class: Inpatient

Time: 1505
Room: OR 16
Case classification: Elective

Panel Information

Panel 1
Surgeon
[Redacted]

Procedure: RE-EXPLORATION OF ABDOMEN
Laterality: N/A
Wound Class: Clean Contaminated
Incision Closure



DOCUMENT CASE TYPE, WOUND CLASS AND CLOSURE



RIGHT DRUG, RIGHT TIME, REDOSE



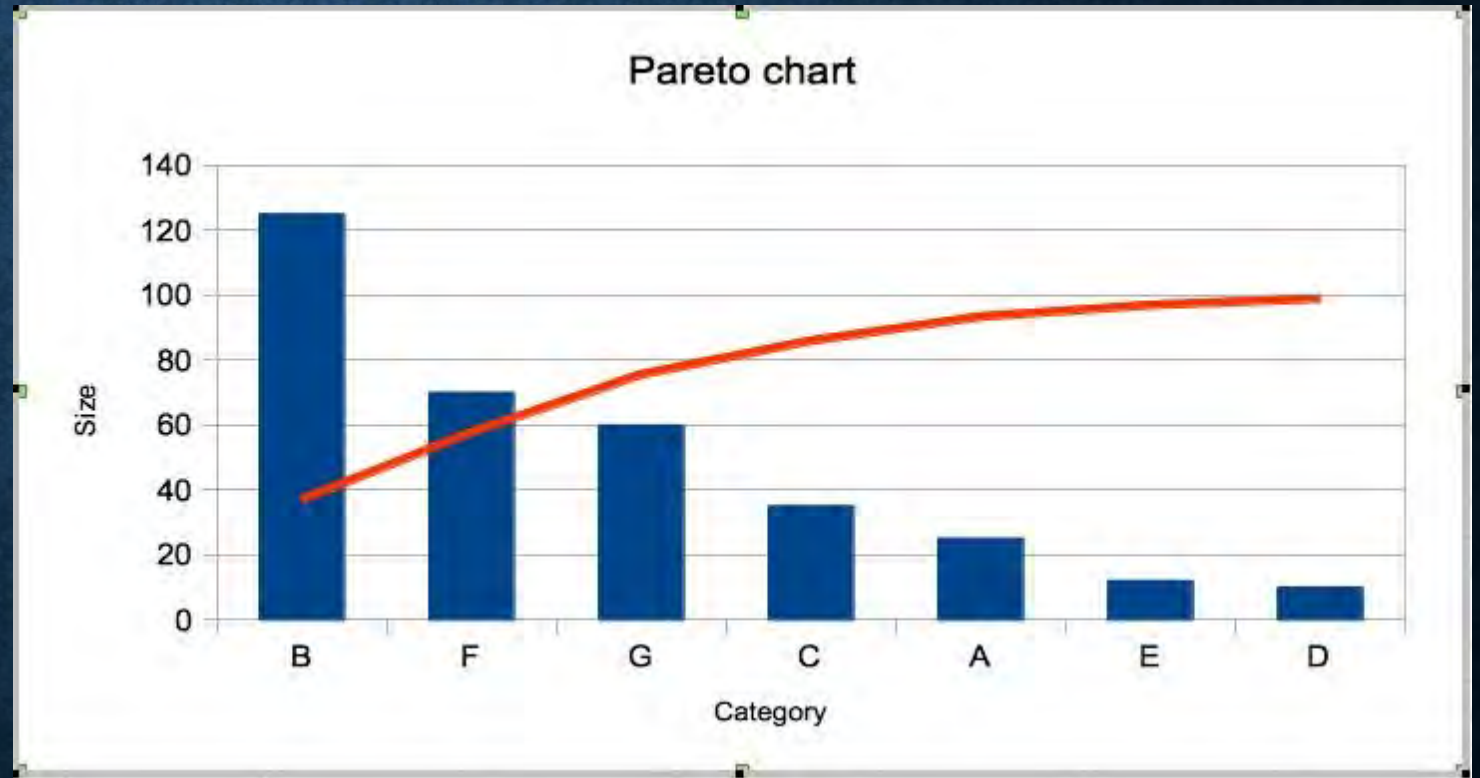
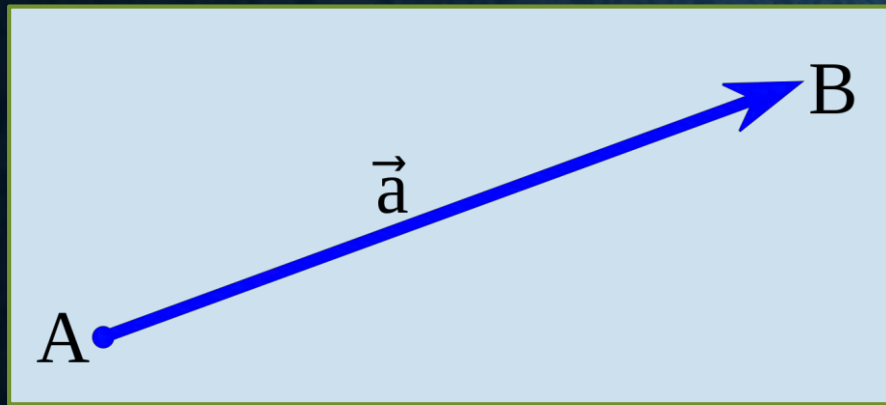
CLEAN INSTRUMENT CLOSING TRAY

IT'S ALL ABOUT DATA

- Database information
- Measurements
- Checklists
- Time
- Patients touched
- Dollars spent, saved, made
- Accuracy of entry
- Patient satisfaction
- Employee satisfaction
- Reputation
- Forecasting data
- Balancing/unintended data



MORE IS BETTER



THE PROJECT PLAN INCLUSIONS

- Write up your project plan(s), ideally with references
- Divide credit roles
 - Project Team
 - Roles and responsibilities
 - Authorship responsibilities
- Plan for academic products
 - Carrot for effort



Research

V S

Quality Improvement

- Develop or contribute to knowledge
- Rigid controlled protocol
- Future patient benefit
- Subject risk
- Answers a specific question
- Investigators obliged to share results

- To assess and improve a system
- Adaptive, iterative design
- May not benefit patients
- No increased risk (perhaps privacy)
- Improves problem
- Infrequently reported

FOUR QUESTION QUALITY TEST

http://www.ecu.edu/cs-acad/oric/irb/FAQs.cfm	True	False
The PRIMARY purpose of the proposed activity or project is to learn about or learn from existing care to IMPROVE what is done here at the local institution with regard to patient outcomes, efficiency, cost, patient/staff satisfaction, etc.	<input type="checkbox"/>	<input type="checkbox"/>
The activity or project would be carried out even if there was <u>no</u> possibility of publication in a journal or presentation at an academic meeting. (**Please note that answering “True” to this statement does not preclude publication of a quality activity.)	<input type="checkbox"/>	<input type="checkbox"/>
The activity or project falls under well-accepted care practices/guidelines.	<input type="checkbox"/>	<input type="checkbox"/>
The activity or project involves no more than minimal risk procedures meaning the probability and magnitude of harm or discomfort anticipated are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.	<input type="checkbox"/>	<input type="checkbox"/>

REGULATORY PREPARATION

- IRB – some publications require this in writing
 - Full – Full board review of risk to participants, selection, consent, etc.
 - Expedited – Faster approval for low risk of harm
 - Exempt – Research, but exempt from IRB review (eg, educational research, benign behavioral research, etc.)
- CITI training – Human research ethics
- Good Clinical Practice training – international standards
- Social/Behavioral Research training



EXECUTE THE PROJECT



SCHOLARLY PRODUCTS

Presentations

Publications

Grant Funding

Teaching

Team
Committee

Leadership

Professional
Organizations

Certifications

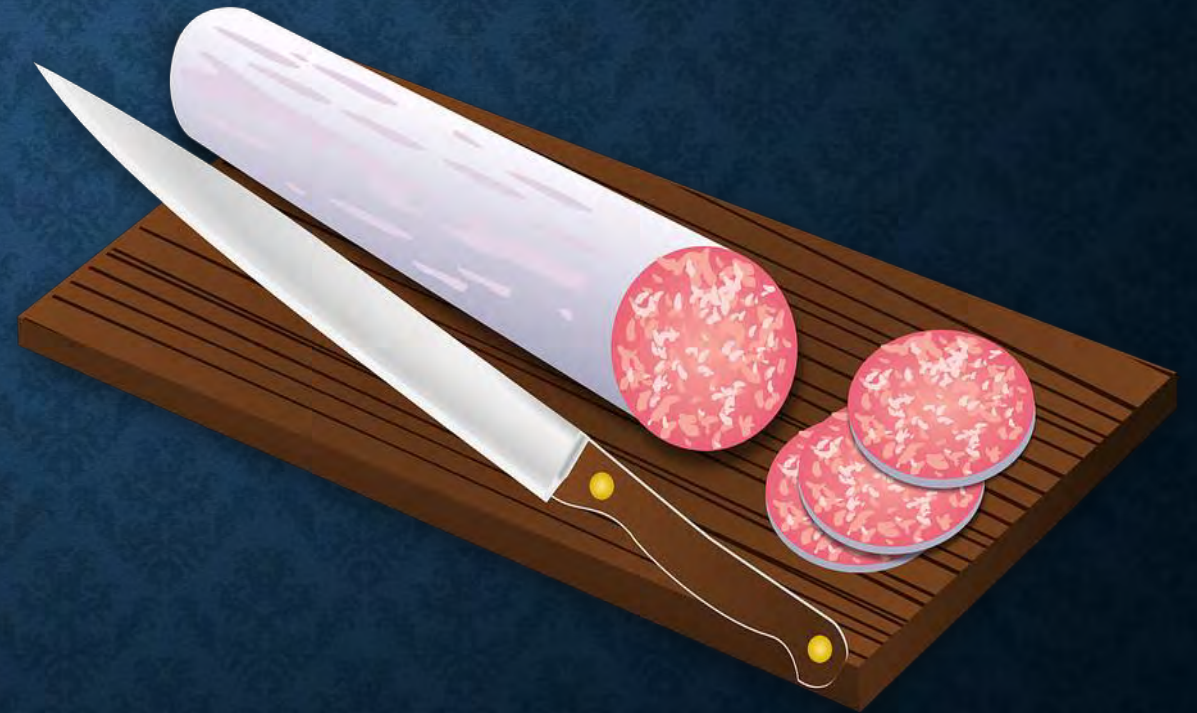
Advanced
Degrees

Social Media

Awards

SUBMIT TO CONFERENCES

- Good start - abstract submissions to conferences
- Thinner slices for meetings
 - Poster vs Oral
- Thicker for publications



CONFERENCE CONSIDERATIONS

- Local/Institutional – ECU, ECU/Vidant, GME
- Regional – state societies, general and by specialty
- National/International
 - specialty (surgery, nursing, hospital based)
 - topic (quality, IT, education)
 - author type (faculty, student, resident)
- Watch out for duplication rules
- Tailor the abstract to the audience



PRESENTATION FAILS

- I know this is a busy slide, but....”
- Small font
- Overdone background/graphics
- Be very, very careful with videos
- Read all the slides



CHOOSE A HOME FOR WRITTEN PROJECT

Quality Improvement and Implementation Science

[American Journal of Medical Quality](#)

[BMJ Quality & Safety](#)

[BMJ Quality Improvement Reports](#)

[Implementation Science](#)

[Joint Commission Journal on Quality and Patient Safety](#)

[Journal for Healthcare Quality](#)

[Journal of Clinical Outcomes Management](#)

Health Policy, Research, and Management

[BMC Family Practice](#)

[Health Affairs](#)

[Health Care Management Review](#)

[Health Care: The Journal of Delivery Science and Innovation](#)

[Health Services Research](#)

[International Journal for Quality in Health Care](#)

[Journal of Evaluation in Clinical Practice](#)

[Medical Decision Making](#)

[Quality Management in Health Care](#)

[Journal of Healthcare Risk Management](#)

Nursing

[American Journal of Nursing](#)

[Journal of Nursing Care Quality](#)

[Journal of Pediatric Nursing](#)

Medicine

[Journal of the American Medical Association](#)

[The New England Journal of Medicine](#)

[The BMJ](#)

[The Lancet](#)

[Academic Medicine](#)

[Journal of Graduate Medical Education](#)

Specialty Practice

[Quality in Primary Care](#)

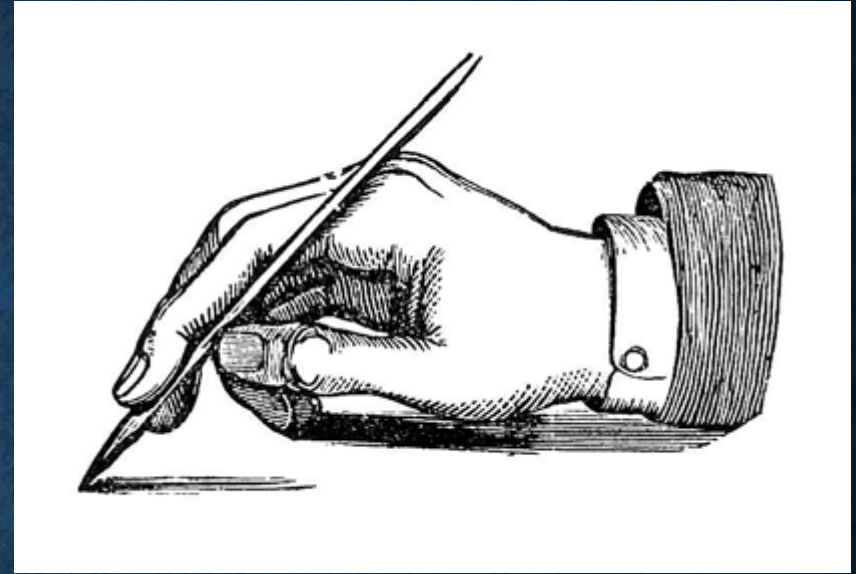
[For further help and suggestions:](#)

[Yale Journals for Publication](#)

[IHI Where to Submit QI](#)

WRITING! GREAT! WHERE DO WE START?

- Increased QI submissions
- *Inconsistency* in reporting format
- Framework to approaching and presenting QI initiatives.
- Helps with planning, organizing, reporting
- SQUIRE guidelines - Developed in 2008, updated in 2015



www.squire-statement.org

SQUIRE 2.0 FOUR QUESTIONS

Why did you start?

- Intro, Background, Specific Aim

What did you do?

- Methods, Interventions

What did you find?

- Results, Analyses

What does it mean?

- Summary, Limitations, Conclusions

TITLE AND ABSTRACT

1.
TITLE

Indicate that the manuscript concerns an **initiative** to improve healthcare (broadly defined to include the quality, safety, effectiveness, patient-centeredness, timeliness, cost, efficiency, and equity of healthcare)

2.
ABSTRACT

- a. Provide adequate information to aid in searching and indexing
- b. Summarize all key information from various sections of the text using the abstract format of the intended publication or a structured summary such as: background, local **problem**, methods, interventions, results, conclusions

WHY DID YOU START? INTRODUCTION

Nature and significance of the local **problem**

Summary of what is currently known about the **problem**, including relevant previous studies

Informal or formal frameworks, models, concepts, and/or **theories** used to explain the **problem**, any reasons or **assumptions** that were used to develop the **intervention(s)**, and reasons why the **intervention(s)** was expected to work

Purpose of the project and of this report

3. PROBLEM
DESCRIPTION

4. AVAILABLE
KNOWLEDGE

5. RATIONALE

6. SPECIFIC
AIMS

NC HEALTHCARE-ASSOCIATED INFECTIONS REPORT

JANUARY 1 – DECEMBER 31, 2017: VIDANT MEDICAL CENTER

Surgical Site Infections (SSI) after Colon Surgeries

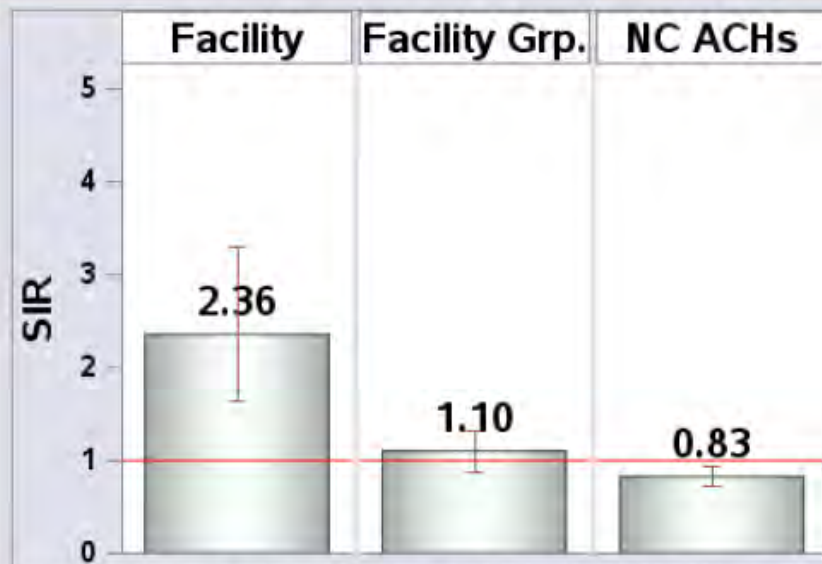


Figure 6: SIRs and 95% Confidence Intervals, Jan-Dec 2017.

Table 6. Number of Observed and Predicted SSI Infections (colon surgeries), Jan-Dec 2017.

Unit Type	Observed Infections	Predicted Infections	How Does This Facility Compare to the National Experience?
Facility-wide inpatient	31	13	Worse

Note: SIR=Standardized Infection Ratio. SIR is calculated by #Observed/#Predicted.

Note: Infections from deep incisional and/or organ space.

Note: Red line represents the NHSN baseline experience, 2015.

How Does This Facility Compare to the National Experience?

× **Worse:** More infections than predicted by the national baseline experience

Refer to HAI in N.C. Reference Report for further explanation of presented statistics (epi.publichealth.nc.gov/cd/hai/figures/hai_may2016_reference.pdf).

Data as of April 5, 2018.

N.C. Division of Public Health, SHARPPS Program

Generated: April 11, 2018

N.C. HAI 2017 Q4 Report

NOT ONLY CLINICAL DEFICIENCY, BUT SYSTEMIC

- Estimated \$18,000 cost per infection
- 2017 Observed : Predicted Infections was 31:13, resulting in 18 observed infections over the predicted.
- That equals roughly **\$324,000** in missed cost savings from 2017.
- Thought process and evaluation can be applied to other institutions to help bring overall cost of healthcare.

SO WHY DID WE START?

What's the problem?

Colorectal SSIs are significantly high for VMC..

Why is it relevant?

This is both a patient safety and systems-based problem, leading to increased healthcare costs and decreased reimbursement.

What do we know?

Accurate data entry, peri-operative antibiotic use, and a dedicated wound closure tray have been shown to improve SSI O/E ratio.

What is the rationale?

VMC had inaccurate documentation, did not always follow antibiotic guidelines, and did not utilize a dedicated wound closure tray. Changes to these three factors may improve outcomes.

WHAT IS THE SPECIFIC AIM OF THE PROJECT?

Use SMART method to define

- Specific: All colorectal operations at VMC
- Measurable: O/E ratio per NHSN database
- Achievable: Yes
- Relevance: Directly related to CMS reimbursement
- Time-constrained: One year

“Improve O/E ratio for all colorectal operations to improve our CMS reimbursement within one year.”

PITFALLS WRITING THE INTRODUCTION

- Too long
- Too much review on importance
- Too little review on evidence gap
- Specific project aim not clearly articulated

WHAT DID YOU DO? METHODS

7. CONTEXT

8. INTERVENTIONS

Contextual elements considered important at the outset of introducing the [intervention\(s\)](#)

- a. Description of the [intervention\(s\)](#) in sufficient detail that others could reproduce it
- b. Specifics of the team involved in the work

- a. Approach chosen for assessing the impact of the [intervention\(s\)](#)
- b. Approach used to establish whether the observed outcomes were due to the [intervention](#)

9. STUDY OF THE INTERVENTIONS

WHAT DID YOU DO? METHODS

10. MEASURES



- a. Measures chosen for studying **processes** and outcomes of the **intervention(s)**, including rationale for choosing them, their operational definitions, and their validity and reliability
- b. Description of the approach to the ongoing assessment of contextual elements that contributed to the success, failure, efficiency, and cost
- c. Methods employed for assessing completeness and accuracy of data

WHAT DID YOU DO? METHODS

11. ANALYSIS

- a. Qualitative and quantitative methods used to draw **inferences** from the data
- b. Methods for understanding variation within the data, including the effects of time as a variable

12. ETHICS

Ethical aspects of implementing and studying the **intervention(s)** and how they were addressed, including, but not limited to, formal ethics review and potential conflict(s) of interest

UNDERSTANDING OUR DATA - DESCRIBE RISK FACTORS INFLUENCING THE O/E RATIO

- Wound Class
- Closure Technique
- Emergency status
- ASA
- Height/Weight
- Trauma
- Scope
- Diabetes
- Outpatient
- Duration
- General Anesthesia

**Frequently
UNDERCLASSIFIED**



NC Healthcare-Associated Infections Report

January 1 – December 31, 2017: Vidant Medical Center

Surgical Site Infections (SSI) after Colon Surgeries

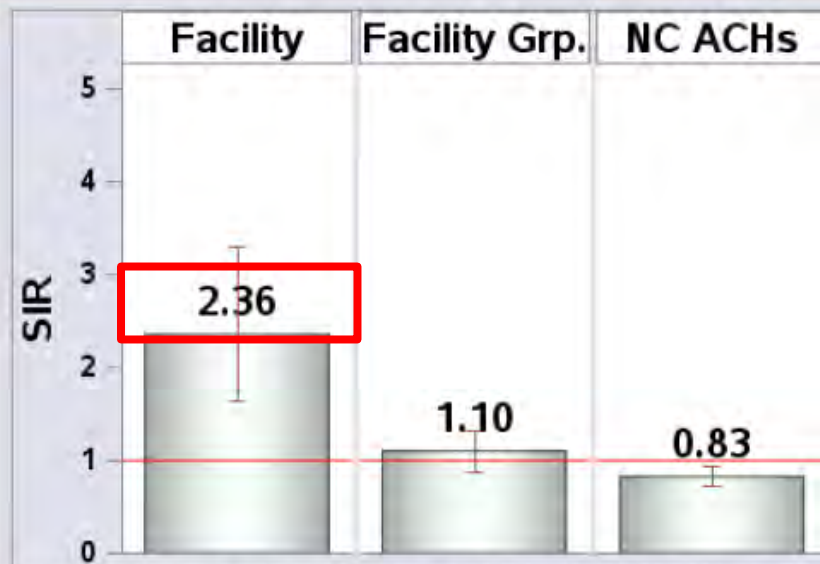


Figure 6: SIRs and 95% Confidence Intervals, Jan-Dec 2017.

Table 6. Number of Observed and Predicted SSI Infections (colon surgeries), Jan-Dec 2017.

Unit Type	Observed Infections	Predicted Infections	How Does This Facility Compare to the National Experience?
Facility-wide inpatient	31	13	Worse

Note: SIR=Standardized Infection Ratio. SIR is calculated by #Observed/#Predicted.

Note: Infections from deep incisional and/or organ space.

Note: Red line represents the NHSN baseline experience, 2015.

How Does This Facility Compare to the National Experience?

× **Worse:** More infections than predicted by the national baseline experience

Refer to HAI in N.C. Reference Report for further explanation of presented statistics (epi.publichealth.nc.gov/cd/hai/figures/hai_may2016_reference.pdf).

Data as of April 5, 2018.


N.C. Division of Public Health, SHARPPS Program

Generated: April 11, 2018

N.C. HAI 2017 Q4 Report

DOCUMENT, DOCUMENT, DOCUMENT

- OR nurse primarily responsible for inputting details
- Incumbent on surgical team to ensure accuracy
- Department-wide education on class definitions



Form Approved
OMB No. 0920-0666
Exp. Date: 01/31/2021
www.cdc.gov/nhsn

Denominator for Procedure

Page 1 of 2 *required for saving

Facility ID	Procedure #:
*Patient ID:	Social Security #:
Secondary ID:	Medicare #:
Patient Name, Last:	First: Middle:
*Gender: F M Other	*Date of Birth:
Ethnicity (Specify):	Race (Specify):
Event Type: PROC	*NHSN Procedure Code:
*Date of Procedure:	ICD-10-PCS or CPT Procedure Code:
Procedure Details	
*Outpatient: Yes No	*Duration: _____ Hours _____ Minutes
*Wound Class: C CC CO D	*General Anesthesia: Yes No
ASA Score: 1 2 3 4 5	*Emergency: Yes No
*Trauma: Yes No *Scope: Yes No	*Diabetes Mellitus: Yes No
*Height: _____ feet _____ inches	*Closure Technique: Primary Other than primary
(choose one) _____ meters	Surgeon Code: _____
*Weight: _____ lbs/kg (circle one)	

SURGICAL DEBRIEF

- Instituted standardized protocol at end of every case
- Keeps all members of team clear of surgical details
- Posters placed in every room to ensure information available
- Can incorporate graphic into publication

Debrief

- Pre and Post op diagnosis
- Procedure Performed
 - Site of Procedure
 - Laterality
- Specimens identified and labeled
- Wound Class
- Incision closure documented
- Counts are correct
- Key concerns for recovery and management of this patient
- Equipment problems
- Preference card changes

Classification of Surgical Wounds

Type of wound	Features
Clean	1. No hollow viscus entered 2. Primary wound closure 3. No inflammation 4. No breaks in septic technique 5. Elective procedure
Clean Contaminated	1. Hollow viscus entered but controlled 2. No inflammation 3. Primary wound closure 4. Minor break in aseptic technique 5. Mechanical drain used 6. Bowel preparation preop
Contaminated	1. Uncontrolled spillage from viscus 2. Inflammation apparent 3. Major break in aseptic technique
Dirty	1. Untreated, uncontrolled spillage from viscus 2. Pus in operative wound 3. Open suppurative wound, severe inflammation

WRITING UP METHODS - SO WHAT DID WE DO?

Context?

- Small city, 900-bed regional referral center, affiliated with academic institution
- All colorectal surgical cases, elective and emergent
- The team - Surgeons, residents, APPs, nursing, and anesthesia

Interventions?

- “Debriefing” protocol
- Enforced peri-operative antibiotic protocol
- Created dedicated wound closure tray

WRITING UP METHODS - SO WHAT DID WE DO?

Describe Approach to Interventions

- Education for all
- Creation of posters
- Attention antibiotics in “time-out”
- Addition of debriefing
- New process - Creation of new tray – system change involving sterile processing, OR circulating, surgeon, billing codes, etc.

SO WHAT DID WE DO?

Measures? Describe what and how it is collected!

- All data abstracted per usual by quality groups
- Sampling nursing documentation for completion
- Plan to track and ensure Debriefs completed
- Review antibiotic administration
- Consider potential unintended measures/consequences of changes

SO WHAT DID WE DO?

Analysis?

- Reanalyze 2018 data
- PDSA cycles as data become available
 - Debrief needs further enforcing/support
 - Possible documentation review on monitors
- Future PDSA considerations
 - Role of irrigation
 - Role of bowel prep
 - Role of wound protectors

Ethical considerations?

- In this case, none.



PITFALLS WRITING METHODS

- Superficial description of, or general lack of attention to, context
- No theory supporting intervention reported
- Many intervention steps reduced to single intervention
- No consideration for potential harms in addition to benefits
- Single measure used to track project impact

WHAT DID YOU FIND?

13. RESULTS

- a. Initial steps of the **intervention(s)** and their evolution over time (e.g., time-line diagram, flow chart, or table), including modifications made to the intervention during the project
- b. Details of the **process** measures and outcome
- c. Contextual elements that interacted with the **intervention(s)**
- d. Observed associations between outcomes, interventions, and relevant contextual elements
- e. Unintended consequences such as unexpected benefits, **problems**, failures, or costs associated with the **intervention(s)**.
- f. Details about missing data

NC HEALTHCARE-ASSOCIATED INFECTIONS REPORT

JANUARY 1 – SEPTEMBER 30, 2018: VIDANT MEDICAL CENTER

Surgical Site Infections (SSI) after Colon Surgeries

Table 6. Number of Observed and Predicted SSI Infections (colon surgeries), Jan-Sept 2018.

Unit Type	Observed Infections	Predicted Infections	How Does This Facility Compare to the National Experience?
Facility-wide inpatient	14	8.2	Same

Note: SIR=Standardized Infection Ratio. SIR is calculated by #Observed/#Predicted.

Note: Infections from deep incisional and/or organ space.

Note: Red line represents the NHSN baseline experience, 2015.

How Does This Facility Compare to the National Experience?

= Same: About the same number of infections as predicted by the national baseline experience

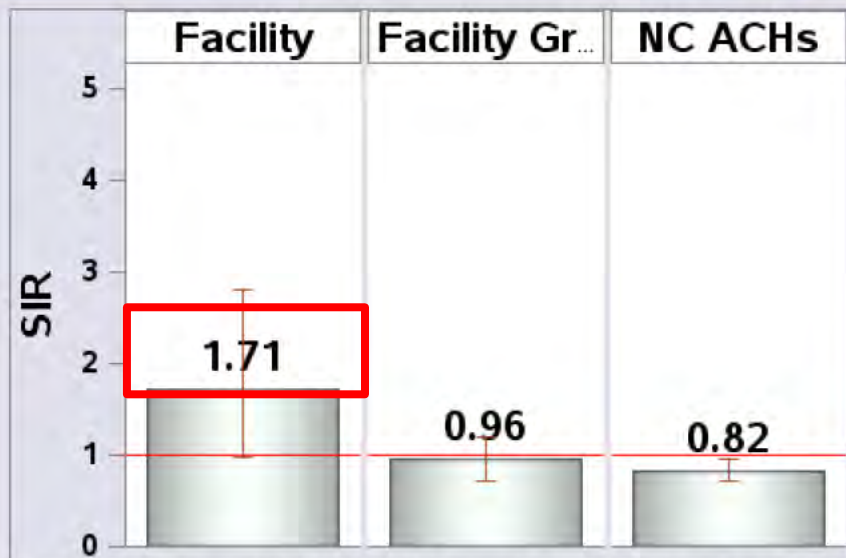


Figure 6: SIRs and 95% Confidence Intervals, Jan-Sept 2018

Ventilator-Associated Events (VAE)

Refer to HAI in N.C. Reference Report for further explanation of presented statistics
(epi.publichealth.nc.gov/cd/hai/figures/hai_qtrly_report_reference_document_2018.pdf).

Data as of December 6, 2018.

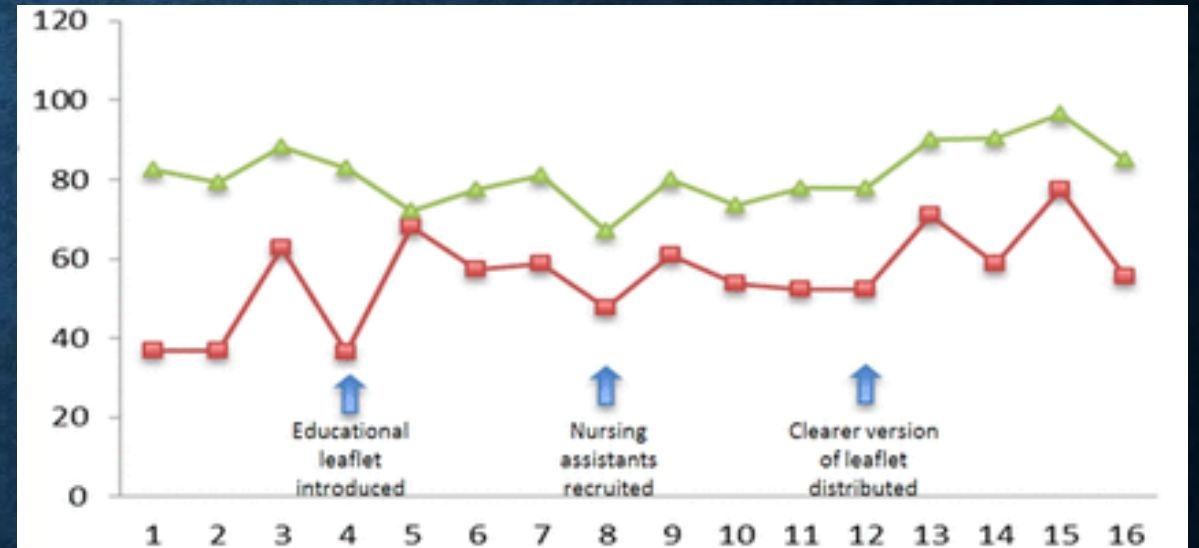
N.C. Division of Public Health, SHARPPS Program

Generated: December 7, 2018

N.C. HAI 2018 Q3 Report

SO WHAT DID WE FIND?

- Still early in process, but so far promising
- Documentation has improved O/E ratio and reported metrics
- Antibiotics administration to be evaluated
- Wound closure tray just implemented in late November 2018



PITFALLS IN REPORTING DATA

- Not enough data to warrant publication
- Data aggregated as simple before-after design
- Graphs difficult to read
- Errors in statistical analysis

WHAT DOES IT MEAN? DISCUSSION

14. SUMMARY

- a. Key findings, including relevance to the **rationale** and specific aims
- b. Particular strengths of the project

15. INTERPRETATION

- a. Nature of the association between the **intervention(s)** and the outcomes
- b. Comparison of results with findings from other publications
- c. Impact of the project on people and **systems**
- d. Reasons for any differences between observed and anticipated outcomes, including influence of **context**
- e. Costs and strategic trade-offs, including **opportunity costs**

WHAT DOES IT MEAN? DISCUSSION

16. LIMITATIONS

- a. Limits to the **generalizability** of the work
- b. Factors that might have limited **internal validity** such as confounding, bias, or imprecision in the design, methods, measurement, or analysis
- c. Efforts made to minimize and adjust for limitations

17. CONCLUSION

- a. Usefulness of the work
- b. Sustainability
- c. Potential for spread to other **contexts**
- d. Implications for practice and for further study in the field
- e. Suggested next steps

SO WHAT DOES IT MEAN?

Summary

- Our true facility O/E ratio was at least partially falsely elevated

Interpretation

- Raised awareness of importance of documentation and involving all members of team
- Evaluate impact on system through morbidity and cost benefit

SO WHAT DOES IT MEAN?

Limitations

- Inability to assess impact of each of three initial individual interventions
- Potential confounding of other patient variables with this year compared to prior

Conclusions

- Significant cost benefits both locally and to healthcare system in general
- Can be generalized and implemented across institutions
- Could use this approach to other procedural areas, such as Endoscopy, IR, Cath lab

PITFALLS IN DISCUSSION AND CONCLUSION

- Discussion limited to implications for local institution or setting
- Results repeated without analysis or deeper reflection
- Reflections omitted
- Lessons and context effects omitted
- Listing of limitations, as if all of equal importance, without thoughtful consideration of potential effects
- Overgeneralize from study site to all settings

18. FUNDING

Sources of funding that supported this work. Role, if any, of the funding organization in the design, implementation, interpretation, and reporting

- Grants - Largest is AHRQ
- Local foundations, quality consortiums, faculty vs students, professional memberships
- Success with smaller projects builds credibility
- Add successful grants to CV



Agency for Healthcare Research and Quality
Advancing Excellence in Health Care



RELATED PUBLICATIONS

- Process of the project
- Culture, policy, management changes
- Review paper/metanalysis on the topic of the project
- Book Chapter
- Guidelines on the topic
 - Manuscript
 - AHRQ Database
- Editorials/letters
- Long-term follow up

FURTHER THE SCHOLARLY PORTFOLIO

Teaching QI – mentor others, make a name!

- Formal vs Informal
- Courses, conferences
- Judge

Committee Service

- Project team and related institutional committees
- Report on CV and annual productivity
- Network

Leadership

- Within the QI team
- Titles that go with efforts

PROFESSIONAL ORGANIZATIONS

- Volunteer for committees
 - Contact committee chairs
- Attend conferences, even if not presenting
 - Approach leaders – business cards
 - Offer to moderate
- Journal benefits
- Opportunities for grants, awards



QUALITY PROFESSIONAL ORGANIZATIONS

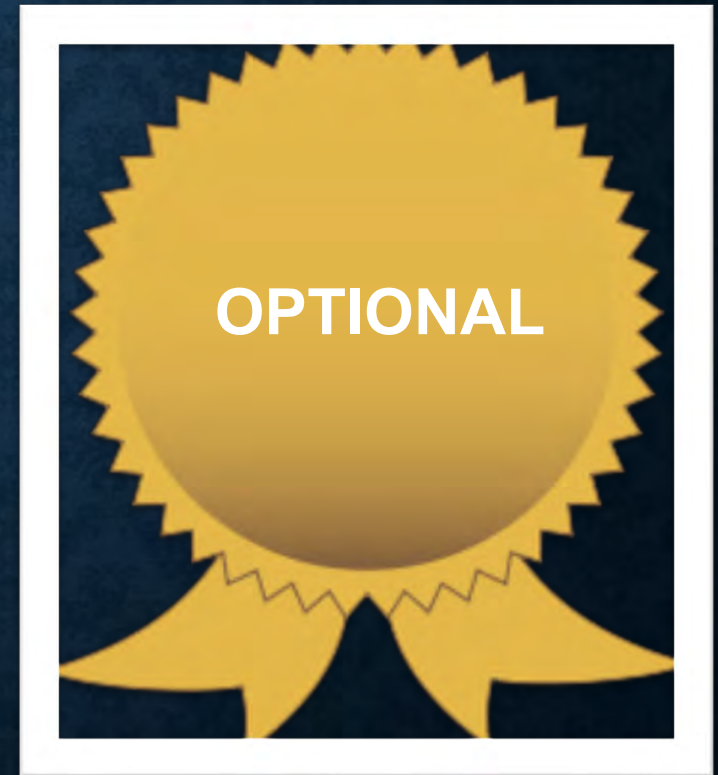
- Institute for Healthcare Improvement
- National Association for Healthcare Quality
- American Board of Quality Assurance and Utilization Review Physicians
- American Institute of Healthcare Quality
- Center for Improvement in Healthcare Quality



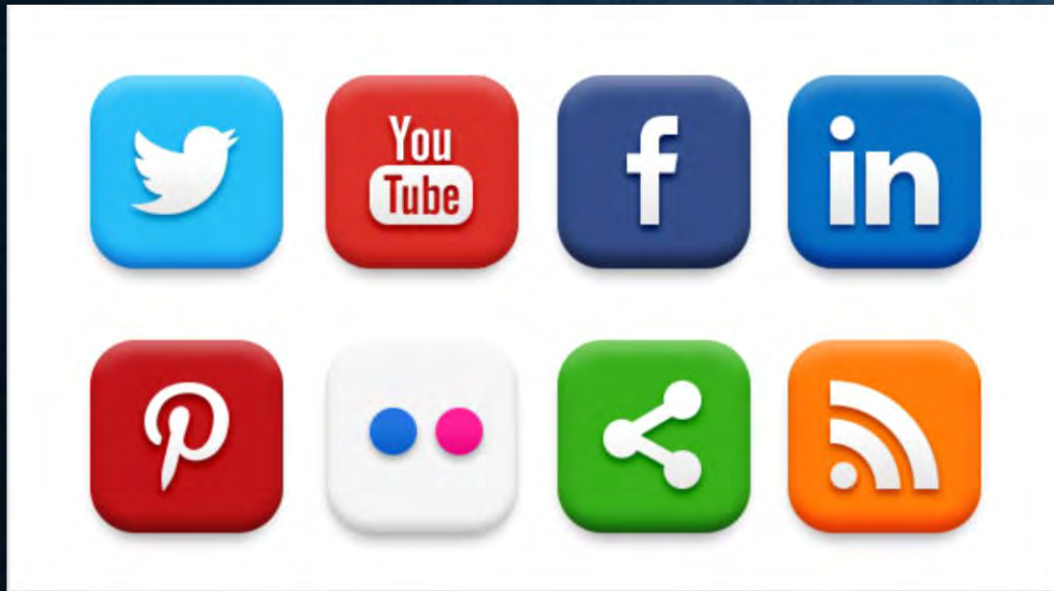
join

CERTIFICATIONS

- Exam Based Certification
 - Certified Professional in Healthcare Quality
 - Certificate of Health Care Quality and Management
- Course Completion Certificates
 - Open School Basic Certificate (IHI)
 - Certificate of Healthcare Quality (AIHQ)
- Certify by Technique
 - Six Sigma – Green, Black, Master
- Masters Degrees
 - Online vs In person, with a capstone
 - 1-2 years



PROMOTION TO PROPAGATE



- Use your social media – caution: watch for embargos
 - Youtube videos
 - Twitter – pictogram/single slide, tag organizations, #topic
 - Facebook – your page, as above
- Inform superiors, making your success their success
- Apply for awards
- Connect - Pursue collaborations, ask for mentorship

SUMMARY

- Incorporate quality work into your workflow
- Planning for scholarly work is essential
- Smaller projects get you to conferences
- Bigger projects and data for publications
- Utilize standard reporting formats, such as SQUIRE
- Create a body of work with multiple products
- Consider grants, certifications, and other aspects of academic advancement
- Promote your successes!