Quality Improvement and Safety: *Tapping into Hospital-wide Projects*

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No Conflicts of Interest to Report

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Objectives

- Describe why it is important to engage trainees in hospital-wide quality and patient safety initiatives.
- Recognize the importance of implementing a structured educational framework for basic quality and safety core competencies.
- Integrate ideas and employ tools from examples provided on process improvement, quality and safety into your unique work environment.

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Top Ten Reasons

Hospital

- Hospitals become safer places
- Bottom up approaches work best
- Residents are on the front-line of the hospital
- Improved patient outcomes and employee engagement
- Prevent near misses from becoming sentinel events

Resident

- Learn and practice team-based skills
- Knowledge gain
- Collaboration and communication
- Doable with almost immediate return
- Benefit from doing the right thing for the patients and families

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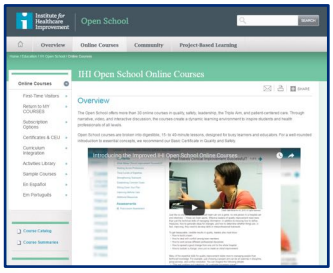
Getting Started: *A Framework for Meaningful Work*



To: ACCM <ACCM@jhmi.edu>
Subject: IHI Open School Learning Opportunities

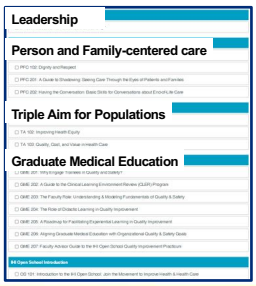
Hi ACCM,

As one of our Education and Patient- and Family-Centered Care strategic initiatives, all members of ACCM can access these essential training tools on safety, improvement, patient experience, leadership, etc. and also enter the IHI educational community of more than 250,000 learners.

Please find the instructions on how to log on to IHI Open School attached along with the course descriptions. Feel free to let me know if you have any questions.

Happy learning!

Getting Started: *A Framework for Meaningful Work*



Getting Started:
A Framework for Meaningful Work

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QI 103: Testing and Measuring Changes with PDSA Cycles

In this course, we'll take you through basic concepts you need to know to run successful PDSA (Plan-Do-Study-Act) cycles in a clinical setting.

First, we'll teach you how to plan and conduct small-scale tests of change. We'll discuss how you can establish a helpful set of measures and how to design a data collection plan that facilitates rapid learning, using techniques such as sampling.

Next, we'll focus on studying the data you've collected, and we'll explain why a run chart is such a valuable tool at this stage of the process.

Finally, we'll show you how to act on your learning, possibly by increasing the size or scope of your next test cycle.

Estimated Time of Completion: 1 hour 15 minutes

Lessons

Lesson 1: How to Define Measures and Collect Data

Lesson 2: How to Use Data for Improvement

Lesson 3: How to Build Your Degree of Belief over Time

Course Objectives

After completing this course, you will be able to:

1. Describe how to establish and track measures of improvement during the "plan" and "do" phase of PDSA.
2. Explain how to learn from data during the "study" phase of PDSA.
3. Explain how to increase the size and scope of subsequent test cycles based on what you're learning during the "act" phase of PDSA.

PS 103: Human Factors and Safety

This course is an introduction to the field of human factors: how to incorporate knowledge of human behavior in the design of safe systems.

You'll explore case studies to analyze the human factors issues involved in health care situations. And you'll learn how to use human factors principles to design safer systems of care -- including the most effective strategies to prevent errors and mitigate their effects.

Finally, you'll learn how technology can reduce errors -- even as, in some cases, it can introduce new opportunities for errors.

Estimated Time of Completion: 1 hour

Lessons

Lesson 1: Understanding the Science of Human Factors

Lesson 2: Changes Based on Human Factors Design Principles

Lesson 3: Using Technology to Mitigate the Impact of Error

Course Objectives

After completing this course, you will be able to:

1. Explain how human factors principles apply to health care.
2. Describe how changes to processes can mitigate the effects of factors that contribute to error.
3. Define simplification, standardization, constraints, forcing functions, and redundancies.
4. Discuss the risks and benefits of using technology to improve patient safety.

Getting Started:
A Framework for Meaningful Work

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PS 104: Teamwork and Communication in a Culture of Safety

Effective teamwork and communication are critical parts of the design of safe systems. In this course, you'll learn what makes an effective team through case studies from health care and elsewhere. You'll analyze the effects of individual behavior for promoting teamwork, communication, and a culture safety. Finally, you'll learn several essential communication tools, such as briefings, SBAR, and critical language.

Estimated Time of Completion: 1 hour 15 minutes

Lessons

Lesson 1: Why Are Teamwork and Communication Important?

Lesson 2: How Can You Contribute to a Culture of Safety?

Lesson 3: Basic Tools and Techniques for Effective Communication

Course Objectives

After completing this course, you will be able to:

1. Explain why effective teamwork is essential for promoting patient safety.
2. Define a culture of safety and discuss the features of a strong safety culture.
3. Identify four behaviors anyone can use to promote teamwork, communication, and a culture of safety.
4. Use structured communication techniques to improve communication within health care.

TA 103: Quality, Cost, and Value in Health Care

This course will provide you with an overview of value in health care. We'll start by distinguishing between cost and value, and understanding how both of these concepts relate to quality. We'll introduce you to the growing problem of health care spending, as well as the health care practitioner's role in managing these costs. Finally, we'll explain how to identify and overcome barriers to providing high-value, cost-effective care.

Estimated Time of Completion: 45 minutes

Lessons

Lesson 1: Quality, Cost, and Value in Health Care

Course Objectives

After completing this course, you will be able to:

1. Explain the potential harm of low-value tests and procedures.
2. Distinguish between cost and value in health care.
3. Define resource stewardship in health care.
4. Describe the ethical case for resource stewardship in health care.
5. Identify common barriers to resource stewardship and enablers of inappropriate resource use.

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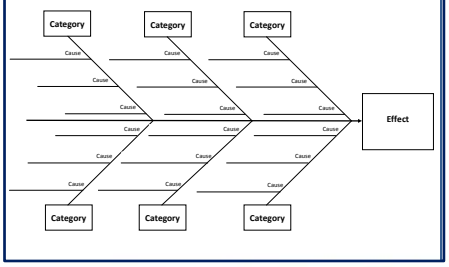
IHI OPEN SCHOOL for health professionals

CAUSE AND EFFECT DIAGRAM

Name: _____ University/Organization Name: _____

Project Title: _____ Health System Sponsor Name: _____

Team Members: _____



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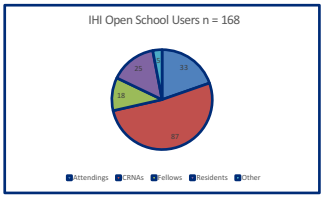

Getting Started:
Tracking Progress

Quick Stats

2,082 Courses Completed

1,853.75 Credit Hours Collected

Certificates Earned:

- **71** Basic Certificate in Quality & Safety
- **42** Faculty Development - IHI Open School
- **73** Patient Safety - IHI Open School
- **79** Quality Improvement - IHI Open School

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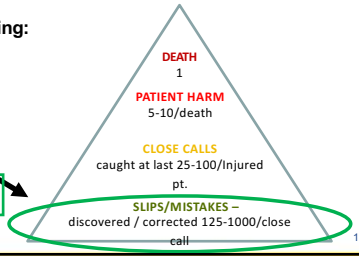
The Value of High Performance Teams

Pyramid of Errors in Health Care

Opportunities for learning:

- **Complexity**
- **Interconnected**
- **Tight coupling**
- **Randomness**

HP Teams as an Intervention



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Practical Example

Anesthesia Fellowship Initiative

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Why are we doing this?

The ACGME and You:

- As part of the ACGME program requirements for Graduate Medical Education in the area of Systems-based Practice Competency trainees
- "*Must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal heath care." "Trainees must work in inter-professional teams to enhance patient safety and improve patient care quality and participate in identifying system errors and implementing potential system solutions.*"

Learner benefit:

- Gain practical experience in quality improvement, which is valued by educational systems and future employers.
- Work closely with faculty members with quality improvement knowledge and skills.
- Improve care in an area of interest.
- Leadership competencies.
- Operational efficiencies.

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Quality and Patient Safety Project Report

Project Title:

Team Members:

What are we trying to accomplish?

Background: Why this topic is important to improve our processes-of-care and ultimately our patients' outcomes. You can reference the real-world case scenario to highlight the importance to patient quality and safety as well as cite literature on the topic. (1 page)

Aim Statement: A clear statement that includes the problem to be addressed that clearly justifies the need for improvement or a new process of care tool you are intending to evaluate.

Interventions or changes to be tested: Identify what interventions in care or items you intend to test/implement/ or evaluate.

How do we know that a change is an improvement?

Outcomes or factors to be measured: Choose/identify/ and define each variables you intend to measure or processes to be evaluated. Determine how you will measure it (is it something already collected in our electronic health system databases? Do you need an evaluation form with a series of questions to evaluate success of your improvement (i.e., turn-around time for blood product ordering or laboratory testing % success in identifying and documenting comorbid illness in preoperative evaluations, etc)?

Practicum Summary Report at Project Completion

Project Title:

Staff Mentor:

Team Members:

Aim of Project:

Planned changes that were tested/ evaluated:

What were your predictions?

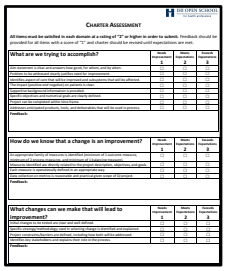
What were your results? (Use of graphics)

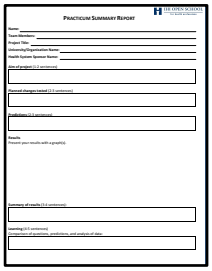
Summary of results:

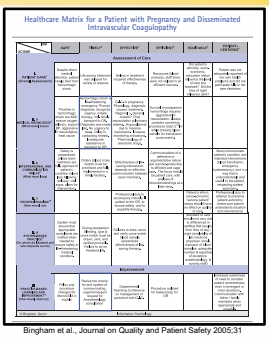
Impact on processes-of-care or the health system:

Conclusion/s:

Reflections/Discussions: (discuss the factors that promoted the success of the project and that were barriers to success. What did you learn from doing this project? What are your reflections on the role of the team?)







Bingham et al., Journal on Quality and Patient Safety 2005;31

Healthcare Matrix

Linking all six competencies (ACGME) with IOM aims for improvement with the goal to make readily apparent the linkage between competencies and outcomes.

Fellow Team Projects

- **Operating Room Hand-offs**
- **OSA Management**
- **Massive Transfusion Protocol**
- **Jehovah Witness Perioperative Flow Plan**
- **Reduction in Phlebotomy Volume in CVICU**

Surgical Fellow Team Project

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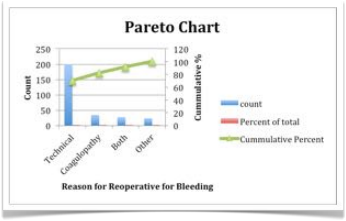
Reason for Reoperation for Bleeding



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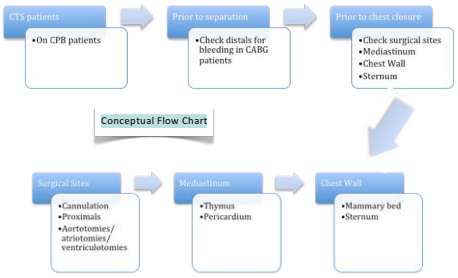
Prior to Sternal Wires:

☑ Surgical Sites
- ☐ Cannulation sites
- ☐ Proximals/ distals
- ☐ Aortotomies/ atriotomies/ ventriculotomies

☑ Mediastinum
- ☐ Thymus
- ☐ Pericardium

☑ Chest Wall
- ☐ Mammary bed

☑ Sternum



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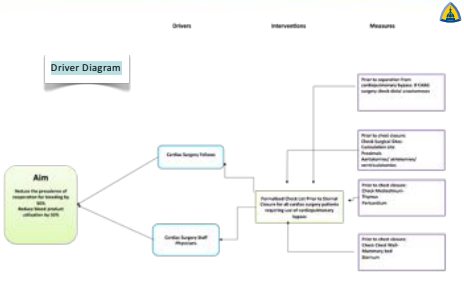

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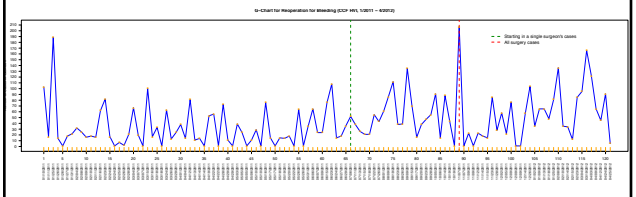
G Chart for Reoperation for Bleeding



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CARDIOTHORACIC SURGICAL EDUCATION AND TRAINING

Process improvement in cardiac surgery: Development and implementation of a reoperation for bleeding checklist

Gabriel Loor, MD,[a] Alessandro Vivacqua, MD,[a] Joseph F. Sabik III, MD,[a] Liang Li, PhD,[b] Eric D. Hixson, PhD, MBA,[c] Eugene H. Blackstone, MD,[a,b] and Colleen G. Koch, MD, MS, MBA[d,e]

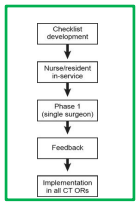
Objective: High-performing health care organizations differentiate themselves by focusing on continuous process improvement initiatives aimed at enhancing patient outcomes. Reoperation for bleeding is an event associated with considerable morbidity risk. Hence, our primary objective was to develop and implement a formal operative checklist to reduce technical reasons for postoperative bleeding.

Methods: From January 1, 2011, through June 30, 2012, 5812 cardiac surgical procedures were performed at Cleveland Clinic (Cleveland, OH). A multidisciplinary team developed a simple, easy-to-perform hemostasis checklist based on the most common sites of bleeding. An extensive educational in-service was performed before limited, then universal, checklist implementation. Geometric charts were used to track the number of cases between consecutive reoperations for bleeding. We compared these before (phase 0) and after the first limited implementation phase (phase 1) and the universal implementation phase (phase 2) of the checklist.

Results: The average number of cases between consecutive reoperations for bleeding increased from 32 in phase 0 to 53 in both phase 1 ($P = .002$) and phase 2 ($P = .01$).

Conclusions: A substantial reduction in reoperation for bleeding cases followed implementation of a formalized hemostasis checklist. Our findings underscore the important influence of memory aids that focus attention on surgical techniques to improve patient outcomes in a complex, operative work environment. (J Thorac Cardiovasc Surg 2013;146:1028-32)

Journal of Thoracic and Cardiovascular Surgery 2013;146:1028



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Process Improvement in Thoracic Donor Organ Procurement: Implementation of a Donor Assessment Checklist

Gabriel Loor, MD, Sara J. Shumway, MD, Kenneth R. McCurry, MD, Suresh Keshavamurthy, MD, Syed Hussain, MD, Garry D. Weide, DO, John R. Spratt, MD, Mazin Al Salihi, MD, PhD, and Colleen G. Koch, MD, MS

Division of Cardiothoracic Surgery, University of Minnesota Medical Center Minneapolis, Minnesota; Heart and Vascular Institute, Department of Thoracic and Cardiovascular Surgery, Cleveland Clinic, Cleveland, Ohio; and Division of Cardiothoracic Surgery, Department of Surgery, Emory University School of Medicine, Atlanta, Georgia

Annals of Thoracic Surgery in press 2016

BEFORE SKIN INCISION

- ❑ Consent for donation
- ❑ Blood type x's 2 (match)
- ❑ Brain death note x's 2
- ❑ Serologies
- ❑ Supplies

Lung

- ❑ CXR/ CT
- ❑ Bronch
- ❑ Vent (FiO2 100%, PEEP 5), ABG
- ❑ Limit IV fluids

Heart

- ❑ Echo
- ❑ Cath
- ❑ ECG
- ❑ Pressors

BEFORE RETRIEVAL

Lungs

- ❑ Nodules
- ❑ Selective ABG for singles
- ❑ Atelectasis, recoil
- ❑ Contusions, consolidation, edema

Heart

- ❑ Pericardial effusion
- ❑ Contractility (RV, LV)
- ❑ Coronary calcification
- ❑ Aortic calcification

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