

High Reliability Organizations



SECOND

EDITION

A Healthcare Handbook
for Patient Safety & Quality

Cynthia A. Oster | Jane S. Braaten

Foreword by Jane Barnsteiner

STUDENT WORKBOOK

HIGH RELIABILITY ORGANIZATIONS

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ISBN: 9781646480135
PDF ISBN: 9781646480142

First Printing, 2020

Publisher: Dustin Sullivan
Acquisitions Editor: Emily Hatch
Interior Design/Page Layout: Becky Batchelor

Managing Editor: Carla Hall
Copy Editor: Gill Editorial Services
Proofreader: Todd Lothery

ACKNOWLEDGMENTS

The authors wish to thank Noreen Bernard, Kristen Oster, and Kathryn Palermo for contributing their expertise and clinical experiences to make this workbook relevant to both instructor and student.

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INTRODUCTION

ABOUT THE STUDENT WORKBOOK

As a student in a healthcare profession, you have probably heard of the concept of high reliability as a means to reduce harm, enhance quality, and improve outcomes. Patient safety and quality are of increasing importance to consumers, payers, providers, and organizations. As a large majority of the workforce, nurses are on the front lines of the delivery and provision of safe and effective care. The quest for high reliability must permeate an organization by way of leadership commitment, a culture of safety, continuous quality improvement, and every person's focus within the organization. This student workbook is designed as a companion to the primary textbook, *High Reliability Organizations: A Healthcare Handbook for Patient Safety & Quality* (2nd ed.), which explains how high reliability contributes to organizational quality and safety, recommends quality and safety activities based on high reliability principles, and integrates high reliability principles into healthcare practice.

PURPOSE AND STRUCTURE

The purpose of this workbook is to provide learning activities that relate to each chapter in the book. These learning activities introduce students to high reliability, explain the concepts of high reliability and high reliability organizations (HROs), provide examples of what the concepts would look like in everyday practice, and describe the information and tools nurses and other healthcare providers need for the organization to become an HRO. The first 26 chapters provide one accompanying learning activity, whereas the last five chapters provide context for the summative or final learning activity.

Every learning activity reflects the content of its accompanying chapter. Students should read the chapter and supplemental materials and, if specified, focus on certain sections within the chapter prior to completing an exercise. Students may complete all these learning activities, but some instructors may choose only one or two from each chapter that meet the objectives of a particular course. Each learning activity begins with objectives, contains accompanying resource material or additional external resources, and has learning activity exercise-specific instructions.

Nurses represent the majority of healthcare workers and are on the front lines of delivery and provision of safe and effective care. As a result, nurses are ideally situated to drive the mission to achieve high reliability in healthcare. It is our hope that the student workbook will prepare you to apply HRO principles to patient safety and quality problems in your place of practice because we all benefit from a safer healthcare environment.

PART

1

HIGH RELIABILITY: THE TIME IS NOW

Course objective: Explain how high reliability contributes to organizational quality and safety. (*analyzing*)

THE NEED FOR A PARADIGM SHIFT IN HEALTHCARE QUALITY AND SAFETY THINKING

In this chapter, you will learn about high reliability as part of a paradigm shift in science and a social shift in thinking. You will also learn about internal and external challenges facing healthcare and why a high reliability model is needed to address these challenges.

Chapter objective: Discuss the influence of high reliability on the paradigm shift in healthcare quality and safety thinking.

Learning Activity 1.1: Compare and Contrast External/Internal Drivers Shaping the Healthcare Quality and Safety Paradigm Shift

Chapter learning activity objectives:

- 1.1 Compare external and internal drivers of quality and safety in the current healthcare system. (*analyzing*)
- 1.2 Discuss high reliability theory in the shifting paradigm. (*understanding*)
- 1.3 Explain application of high reliability theory in healthcare. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 1.
- Read Chassin, M. R., & Loeb, J. M. (2013). High reliability health care: Getting there from here. *The Milbank Quarterly*, 91(3), pp. 459–490.

Instructions for learning activity exercises:

- 1.1 Create a table for internal and external drivers. Discuss how these drivers affect quality and patient safety at both the system and the unit level.

External Drivers	Definition	Example	Macro Impact on Healthcare System	Micro Impact on Healthcare Facility (unit)

Internal Drivers	Definition	Example	Macro Impact on Healthcare System	Micro Impact on Healthcare Facility

- 1.2 Compare and contrast “old” thinking versus “new” thinking in quality and patient safety. Include limitations/possibilities in the discussion.
- 1.3 Present an article from the literature using at least one principle of high reliability in a healthcare setting. Include the following in the discussion: Identify the high reliability principle, define the high reliability principle, and explain how the high reliability principle was applied in the article.

CHAPTER

2

CURRENT PATIENT SAFETY DRIVERS

In this chapter, you will learn about the emergence of high reliability organizations in healthcare as an effective strategy to redesign healthcare delivery organizations by emphasizing drivers for patient safety. You will also learn about drivers for patient safety that relate less to the individual and more to shared accountability across the system of care.

Chapter objective: Summarize safety drivers affecting healthcare delivery systems and explore how high reliability organizations contribute to patient safety.

Learning Activity 2.1: Differentiate Individual and System Factors Within Patient Harm Events Through Application of High Reliability Principles to Discover Solutions and Explore Barriers

Learning activity objectives:

- 2.1 Describe the multiple layers and perspectives of patient harm in a high reliability organization. (*understanding*)
- 2.2 Explain the interconnection of high reliability and safety culture. (*applying*)

2.3 Appraise current solutions for improving safety in high reliability organizations. (*analyzing*)

2.4 Consider historical and current barriers to highly reliable solutions. (*evaluating*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 2.
- View the video *Josie's Story* at <http://www.ihl.org/education/IHIOpenSchool/resources/Pages/Activities/WhatHappenedtoJosieKing.aspx>
- Consider individual and system factors that led to the error in the video *Josie's Story*.
- Read Reason, J. (2000). Human error: Models and management. *British Medical Journal*, 320(7237), pp. 768–770.

Instructions for learning activity exercises:

2.1 Define and give two example of latent and active failures that lead to patient harm.

Definition	Examples From Your Experience
Latent failures (blunt end)	
Active failures (sharp end)	

2.2 Describe the Swiss cheese model of error.

Discuss latent factors and how they may contribute to error.

Discuss the impact of strong and weak barriers that allow or prevent harm.

Discuss system controls and individual controls that might strengthen barriers (block the holes in the Swiss cheese).

2.3 Find two definitions of a safety culture: Discuss solutions and barriers to achieving a safety culture based on the definitions in your current context.

Discuss two individual factors as antidotes to patient harm.

Discuss two system factors as antidotes to patient harm.

2.4 Present an adverse event (from experience or the literature) that led to harm.

Apply one principle of HRO that might have prevented the outcome.

Discuss barriers to the principle identified.

CHAPTER

3

CURRENT QUALITY DRIVERS

In this chapter, you will learn about current quality drivers for patient and healthcare outcomes. You will also learn about high reliability as a framework for developing and sustaining a culture within healthcare organizations to provide care that minimizes errors and embraces current best evidence to achieve exceptional performance in quality, safety, and cost effectiveness.

Chapter objective: Explain current evidence-based quality drivers in the context of high reliability.

Learning Activity 3.1: Discover How Evidence-Based Practice Aligns With High Reliability Principles to Inform Drivers of Quality

Learning activity objectives:

- 3.1 Describe four key drivers of current quality indicators.
(*remembering*)
- 3.2 Discuss the interrelationships between the drivers.
(*understanding*)

3.3 Identify two key quality nursing indicators and improvement ideas based on high reliability principles. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 3.
- Read Makic, M. B. F., & Granger, B. B. (2019). Deimplementation in clinical practice. What are we waiting for? *AACN Advanced Critical Care*, 30(3), pp. 282–286.
- Read Oster, C. A., & Deakins, S. (2018). Practical application of high-reliability principles in healthcare to optimize quality. *Journal of Nursing Administration*, 48(1), pp. 50–55.

Instructions for learning activity exercises:

3.1 Select an evidence-based practice model from the literature or your organization. Provide a short rationale for model selection and a brief overview.

Evidence-based practice model:				
Rationale for selection:				
Brief overview:				
Key focus/emphasis	Key concepts	Steps/stages	Strengths	Limitations

3.2 Identify one Nursing Quality Indicator and one Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) item. Include evidence from the literature supporting the quality indicator and HCAHPS item and a national benchmark for each.

Nursing Quality Indicator:		
Indicator definition/description	Supporting evidence/sources	National benchmark/benchmark source

HCAHPS Item:		
Item definition/description	Supporting evidence/sources	National benchmark/benchmark source

- 3.3 Apply the steps of an evidence-based practice model aligned with principles of high reliability to change practice.

EBP Model:	
Steps:	High reliability principle alignment:

ORGANIZATIONAL CULTURE AND THE JOURNEY TO HRO

In this chapter, you will learn about organizational culture. You will also learn about how organizational culture can be measured and changed by leaders skilled in assessing, creating, and embedding an organizational culture that supports high reliability.

Chapter objective: Examine a large organization's culture assessment of readiness for high reliability.

Learning Activity 4.1: Compare and Contrast Drivers of Organizational Culture and Discuss Practical Application of High Reliability Concepts That Change Organizational Culture

Learning activity objectives:

- 4.1 Discuss the definition, drivers, and measurement of organizational culture. (*understanding*)

- 4.2 Examine culture in a familiar organization. (*understanding*)
- 4.3 Discuss examples of visible artifacts of culture within a highly reliable organization and challenges to organizational culture change. (*applying*)
- 4.4 Examine the features of a safety culture in a recognized organization. (*applying*)
- 4.5 Examine characteristics and challenges of high reliability in a familiar organization. (*analyzing*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 4.
- Read Bellot, J. (2011). Defining and assessing organizational culture. *College of Nursing Faculty Papers & Presentations*. Paper 34. <https://jdc.jefferson.edu/nursfp/34>
- Read *Leading a culture of safety: A blueprint for success*. https://www.osha.gov/shpguidelines/docs/Leading_a_Culture_of_Safety-A_Blueprint_for_Success.pdf

Instructions for learning activity exercises:

- 4.1 Define and observe deep-seated assumptions and beliefs, espoused values, and artifacts of culture within your own organization.

- **Assumptions and beliefs:** What are the driving forces behind your organization? This could be religious affiliation, for profit, or not for profit. These assumptions and beliefs may be hidden, but they drive the values and artifacts of your culture.

My organization believes that ...

- **Espoused values:** What is the written vision or mission statement of your organization?

Our vision or mission statement is written as ...

- **Artifacts:** The visible manifestations of the values and beliefs of the system. This can include policies, art in the hospital, work environment, standard behaviors, expectations of leaders, reward systems, and more.

Our values are made visible by ...

- 4.2 Discuss the application to an organization when high reliability principles are the guiding beliefs and assumptions. Brainstorm from the chapter and readings how these beliefs might be made visible to change culture.

HRO Belief and Assumption Zero Harm	Espoused Value	Visible Artifact of the Value in Everyday Practice	How Can Leaders Assist to Embed This Belief Into Culture? (practical daily actions)
Anticipation of error	Preoccupation with failure		
Anticipation of error	Reluctance to simplify		
Anticipation of error	Sensitivity to operations		
Containment of error	Deference to expertise		
Containment of error	Resilience		

4.3 For an online discussion:

Does your organization measure safety culture?

Describe the tool used and why it was chosen.

What are the most current results?

What is the best and lowest performing category?

How would you go about improving the scores?

What barriers and challenges do you see to improving scores?

4.4 Explore an organization that has been recognized nationally for being a top performer (IBM Watson's top 100 hospitals, Malcolm Baldrige National Quality Award, Thomson Reuters Top 100 Hospitals, and so on).

Examine how a culture of safety has been established within the organization that you have selected.

Identify three specific ways that the leadership within the organization has demonstrated a commitment to safety.

Using the organization that you selected as a top performer, discuss how their commitment to safety has enabled and enhanced their success.

4.5 Using the worksheet that follows, assess your organization for high reliability characteristics.

Preoccupation With Failure	Yes/No
We conduct a huddle or prebriefing at the start of the shift to identify and mitigate high-risk issues.	
We always conduct a failure mode effect analysis (FMEA) before a new procedure or process is implemented to identify potential problems.	
Our rate of reported near misses or close calls is higher than our rate of reported patient events with harm.	
We publicly reward and acknowledge staff who report close calls or near misses.	
Reluctance to Simplify	
We use an analysis process such as asking "why" five times to get to the root or system causes of adverse events.	
We insist on strong interventions such as forced functions and cognitive aides to fix problems related to human factors.	
We never end an investigation satisfied with the explanation of, "It was just human error."	
Sensitivity to Operations	
We have few workarounds because our processes have been tested within the context of our work area.	
We always report equipment that is difficult to operate or understand as a safety issue.	
Policies and protocols that we need are immediately accessible, available, and easily understood.	
Our supervisors constantly observe processes to ensure that they are working as intended.	

Deference to Expertise	
When a process fails, we have the authority to correct it at the front line.	
Everyone in the hospital is encouraged to talk openly about unsafe situations.	
Resilience	
All of us stop procedures when we feel uncomfortable about a patient safety issue even if we have a busy schedule.	
We often simulate worst-case scenarios to be prepared.	
Employees who have been involved in an error share their experience openly in staff meetings to prevent recurrence.	
We receive constant assessment and training on how to deal with emergent situations.	

Scoring: One point for “Yes” and zero points for “No” responses

Score > 17 = Highly reliable

Score 10–16 = On your way to reliability

Score < 9 = Probably not as reliable as you desire

Highly reliable (Score > 17): You have a strong safety culture that supports reliability by proactively identifying issues before they reach a patient. When an event occurs, you do not simplify by placing blame on individuals but instead search for system issues that led individuals toward the error-producing situation. Technological solutions and cognitive aides based on human factors science are most often employed as the best way to prevent error.

On your way to reliability (Score 10–16): Your culture is definitely on its way. You could improve by encouraging strong interventions that do not allow humans to make mistakes rather than relying on humans to reliably prevent mistakes. You realize that educating staff and working harder are most often employed as responses to error but still struggle with how to employ more rigorous means of interventions to sustain improvements.

Probably not as reliable as you desire (Score < 9): Your organization could benefit from searching out opportunities for improvement through a dedicated approach to identifying near misses and close calls. This can start out as a small effort such as beginning a daily safety huddle. The huddle can ask questions that review prior events and anticipate events for the day. Transparency and actively searching out areas of risk that exist within the system that put our patients at risk is a great start.

CHAPTER

5

SAFETY LEADERSHIP: COMMITMENT TO HIGH RELIABILITY ORGANIZING

In this chapter, you will learn about the vital role of leadership in creating a high reliability organization (HRO). You will also learn about safety leadership style and associated safety leadership actions in a high reliability organizing framework to create the fearless workplace.

Chapter objective: Explain and discuss the vital role of leadership in a high reliability organization.

Learning Activity 5.1: Compare and Contrast Characteristics of Safety Leadership Styles and Safety Leadership Actions Within a High Reliability Organizing Framework

Learning activity objectives:

- 5.1 Describe the influence of different safety leadership styles and safety leadership actions on high reliability organizational quality and safety. (*understanding*)
- 5.2 Summarize high reliability organizing as a framework for high reliability safety leadership. (*understanding*)
- 5.3 Explain leadership strategies to build a high reliability “fearless workplace.” (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 5.
- Read Edmondson, A. (2019). *The fearless organization: Creating psychological safety in the workplace for learning, innovation, and growth*. Hoboken, NJ: Wiley.
- Consider various safety leadership styles and their influence on safety leadership actions.
- Consider the role of psychological safety in a high reliability organization.

Instructions for learning activity exercises:

- 5.1 Interview a local leader at your facility using the following questions and record your answers. Be prepared to share with your colleagues.

Interview Questions	Response Notes
What events in your life have had the most positive impact on your leadership and strategic thinking development? What has had the most negative impact?	
What other events, programs, or education have had the most impact on your leadership and patient safety thinking?	
What is your most important core belief that guides the way you lead?	
How do you factor in culture, diversity, or other differences into your leadership?	
How do you adapt your leadership to accommodate different age groups?	

Interview Questions	Response Notes
What strategies have you used to develop a deeper sense of ownership in your followers' work and in their organization?	
How do you inspire others to achieve more than they expected?	
When you have had a significant setback at work, how did you respond? What did you learn from that setback?	
What are some of the methods you have used to foster safety thinking among peers, followers, and other leaders?	
When you look for the best candidate for a leadership role, what do you consider the most important characteristics?	

Describe the influence of the local leader's leadership style along with safety leadership actions on organizational quality and safety.

Leadership Style	Supporting Notes From Interview
Description	
Attributes	
Behaviors	

Leadership Style	Supporting Notes From Interview
Safety leadership actions	

- 5.2 Go to the following link and complete the leadership assessment: <https://www.mindtools.com/pages/article/leadership-style-quiz.htm>

Based on your leadership style, discuss how you would use high reliability organizing as a framework for your high reliability safety leadership style. Include specific strategies for each of the five high reliability principles that may assist you as a leader to move in the direction toward high reliability.

Leadership style description:

High Reliability Organizing Framework	Leadership Strategies
Leadership preoccupation with failure	
Leadership reluctance to simplify	
Leadership sensitivity to operations	
Leadership commitment to resilience	

High Reliability Organizing Framework	Leadership Strategies
Leadership deference to expertise	

- 5.3 As a high reliability organizing leader, apply Edmondson's (2019) three-phase leadership strategy to build a fearless organization. Include psychological safety, healthy work environment, and fearless workplace in your discussion.

Leadership Strategy Phase	Leadership Strategies
Phase I: Setting the stage	
Phase II: Inviting participation	
Phase III: Responding appropriately	

PART

2

HRO CONCEPTS AND APPLICATION TO PRACTICE: PREOCCUPATION WITH FAILURE

Course objective: Recommend quality and safety activities based on high reliability principles. (*evaluating*)

CHAPTER

6

ANTICIPATION OF FAILURE: FAILURE MODE AND EFFECTS ANALYSIS

In this chapter, you will learn about anticipation of failure in a high reliability organization. You will also learn about the purpose, potential uses, and challenges of completing a Failure Mode and Effects Analysis (FMEA).

Chapter objective: Explain and discuss the vital role of anticipation of failure in a high reliability organization.

Learning Activity 6.1: Discuss the Importance of the FMEA Process Within a High Reliability Organization

Learning activity objectives:

- 6.1 Describe the use of the FMEA as a cornerstone of high reliability. (*understanding*)
- 6.2 Discuss various applications of the FMEA in health-care. (*understanding*)
- 6.3 Apply concepts of the FMEA to explore potential failures within practice. (*applying*)

6.4 Discuss the importance of psychological safety within an FMEA. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 6.
- Search the literature and find and read one article that uses FMEA as an improvement method.
- Review *Guidance for performing failure mode and effects analysis with performance improvement projects* at <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Downloads/GuidanceForFMEA.pdf>
- Read Pidgeon, N. (2010). Systems thinking, culture of reliability and safety. *Civil Engineering and Environmental Systems*, 27(3), pp. 211–217. Retrieved from <https://www.icesi.edu.co/blogs/pslunes122/files/2012/08/Systems-thinking-culture-of-reliability-and-safety1.pdf>
- Think about the concept of safety imagination and how safety imagination is a key process for high reliability.

Instructions for learning activity exercises:

- 6.1 List at least four possible opportunities to use FMEA within your practice setting. Discuss why you believe the process is right for an FMEA, including the high-risk nature of the process and the potential for failures. Who would you involve?
- 6.2 Within your facility, find applications of the FMEA process and list the process examined, failures found, and solutions suggested. If your facility has not completed an FMEA, use the article as your source.

Process Examined	Main Failure Modes	Solutions Suggested	Positive Impact of the FMEA on the Process

- 6.3 Practice brainstorming failure modes: Select a common process and select one step in the process. List all the ways that the step could fail, the effect of the failure, and the reason for the failure.

Human failures:

- Skill-based: Lapse, slips
- Rule-based: Not following or applying a rule correctly
- Knowledge-based: Guessing when entering an unfamiliar area

System failures:

- Poor design
- Flawed equipment
- Cumbersome procedures
- Poor oversight

How Could This Step Fail?	What Would Happen to the Patient or System if the Step Failed?	Why Would This Step Fail? (Describe the human or system reason.)

- 6.4 Discuss the importance of psychological safety when brainstorming failure modes within a group.

ACTING ON CLOSE CALLS, NEAR MISSES, AND UNSAFE CONDITIONS: THE BASIS OF HIGH RELIABILITY

In this chapter, you will learn about why reporting close calls, near misses, and unsafe conditions is the best opportunity to anticipate and fix failures before harm is caused to a patient or the system.

Chapter objective: Discuss how the identification and mitigation of near misses, close calls, and unsafe conditions promotes high reliability.

Learning Activity 7.1: Evaluate the Importance of Near Misses, Close Calls, and Unsafe Conditions to High Reliability

Learning activity objectives:

- 7.1 Define near miss, close call, and unsafe condition. (*remembering*)
- 7.2 Describe the significance of workarounds. (*understanding*)
- 7.3 Describe normalization of deviance and the significance to safety. (*applying*)
- 7.4 Describe the importance of identifying near misses and close calls to improve safety. (*understanding*)
- 7.5 Discuss barriers to reporting and acting on near misses and close calls within the current environment. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 7.
- Read Hewitt, T. A., & Chreim, S. (2015). Fix and forget or fix and report: A qualitative study of tensions at the front line of incident reporting. *BMJ Quality & Safety*, 24(5), pp. 303–310. doi.org/10.1136/bmjqs-2014-003279
- Read Paparella, S. F. (2018). First- and second-order problem-solving: When rework and workarounds become an opportunity for improving safety. *Journal of Emergency Nursing*, 44(6), pp. 652–654. doi:10.1016/j.jen.2018.07.008
- Watch the video by Mike Mullane describing normalization of deviance and the *Challenger*: <https://www.youtube.com/watch?v=CdTjEoqT6Mc>

Instructions for learning activity exercises:

- 7.1 Ask three coworkers to identify a recent near miss, close call, or unsafe condition that they think might lead to patient harm in the near future.
Ask if they have reported the issue through a formal reporting system. Why or why not?
What was done to remedy the situation?
Ask if they are currently aware of “workarounds” to get things done.
Do they consider the “workaround” an issue worth reporting?
- 7.2 Define a workaround and significance to patient safety. Identify common workarounds and the reason they exist.
- 7.3 Define “normalization of deviance” and discuss how workarounds and normalization of deviance are related. In the next table, identify “normalized deviance” instances in either your personal or your professional life.

Normalized Deviance	Why Does This Exist?

- 7.4 Discuss barriers and facilitators to reporting near misses, close calls, or unsafe conditions.
- 7.5 Discuss three strategies to make reporting events easier and useful to improve patient safety.

PART
3

**HRO CONCEPTS AND
APPLICATION TO
PRACTICE: RELUCTANCE
TO SIMPLIFY**

Course objective: Recommend quality and safety activities based on high reliability principles. (*evaluating*)

HUMAN FACTORS ENGINEERING TO ANTICIPATE AND PREVENT ERROR

In this chapter, you will learn about the scope and practice of human factors engineering (HFE). You will also learn about the value of partnering with trained HFE practitioners in their efforts to improve patient safety as well as the safety of those on the front lines of healthcare.

Chapter objective: Explore the value of human factors engineering to improve the safety of patients and clinicians.

Learning Activity 8.1: Explain Human Factors Engineering (HFE): The Science and Practice of Designing Work Systems to Fit the Needs, Limitations, and Capabilities of Humans

Learning activity objectives:

- 8.1 Identify error-prone processes within an organization. (*understanding*)

- 8.2 Develop a process map. (*applying*)
- 8.3 Discuss how practitioners of HFE think about work systems. (*understanding*)
- 8.4 Explain how the design of the work system can make it easier for errors to occur and harder to recover from. (*applying*)
- 8.5 Explain how practitioners of HFE approach redesigning the work system to reduce opportunities for error and to facilitate recovery from error. (*analyzing*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 8.
- Read Holden, R. J., Carayon, P., Gurses, A. P., Hoonakker, P., Hundt, A. S., Ozok, A. A., & Rivera-Rodriguez, A. J. (2013). SEIPS 2.0: A human factors framework for studying and improving the work of healthcare professionals and patients. *Ergonomics*, 56(11), pp. 1669–1686.
- Read Marriott, R. D. (2018). Process mapping—The foundation for effective quality improvement. *Current Problems in Pediatric and Adolescent Health Care*, 48(7), pp. 177–181.

Instructions for learning activity exercises:

- 8.1 Identify an error-prone process for improvement at your organization.
- 8.2 Form a group to map out the current process targeted for improvement.
- 8.3 Identify characteristics of work system elements (persons, tools/technology, tasks, physical environment, and organizational environment) that make it easier/harder for errors to happen. Include learning from error in your discussion.

Work System Element Characteristics (persons, tools/technology, tasks, physical environment, organizational environment)	Easier for Errors to Happen? Why?	Harder for Errors to Happen? Why?	Learning From Error Why?

- 8.4 Brainstorm corrective actions that target/leverage these characteristics and do not rely heavily on things like training, instructions for use, and warnings to work.

Work Element Characteristic	Corrective Action

- 8.5 Discuss the types of human errors that most commonly occur. Give examples and a possible solution from a human factor's perspective.

Type of Error	Definition	Example	HFE Solution
Skill-based error			
Rule-based error			
Knowledge-based error			

CHAPTER

9

ROOT CAUSE ANALYSIS: A TOOL FOR HIGH RELIABILITY IN A COMPLEX ENVIRONMENT

In this chapter, you will learn about the background, processes, and challenges of using root cause analysis (RCA) as a tool to advance safety in a high reliability organization. You will also learn the steps in an effective RCA.

Chapter objective: Explore the challenges of using RCA as a tool to advance safety in a high reliability organization.

Learning Activity 9.1: Discuss Use of RCA as a Tool for Embedding the High Reliability Principle “Reluctance to Simplify” Into a Safety Event Investigation

Learning activity objectives:

- 9.1 Discuss the significance of using RCA as a tool to discover system issues. (*understanding*)

- 9.2 Apply the “Five Why” questioning technique to a familiar problem. (*applying*)
- 9.3 Discuss common problems that may lessen RCA effectiveness. (*understanding*)
- 9.4 Explain how bias occurs and how to avoid bias during the RCA process. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 9.
- Read *RCA² Improving root cause analyses and actions to prevent harm*: <https://www.med.unc.edu/ihqi/files/2018/07/RCA2-National-Patient-Safety-Foundation.pdf>

Instructions for learning activity exercises:

- 9.1 Read the case examples regarding the errors in the first few pages of the chapter. Identify the active errors and latent errors in the mistake.

	Active Error (human error)	Latent Error (system issues)
Medication error: Antibiotic given too quickly		
Ordering error: Two patients received radiology tests that were incorrect		
Medication error: Gave insulin instead of antibiotic		

- 9.2 Discuss the impact to high reliability when system issues are identified and corrected rather than correcting the individual only.

Reflect on a time in your career when an individual was blamed/disciplined for an event. How did that affect the overall culture of safety?

Did the error recur?

- 9.3 Identify a safety issue:

Practice asking “Five Whys” to get to the root cause.

The first “why” addresses the most proximate to the error, usually a clinician. The last “why” question should be at the system level.

Why?	
Why?	
Why?	
Why?	
Why?	

- 9.4 List three strategies to ensure RCA is effective to prevent future error.

JUST CULTURE AND THE IMPACT ON HIGH RELIABILITY

In this chapter, you will learn about Just Culture. You will also learn about the challenges of Just Culture in practice due to outcome bias, misapplication of the assumptions, and application of the Just Culture algorithm without a clear commitment to the tenets of the culture change needed to learn from errors.

Chapter objective: Discover the history, theory, and challenges of implementing Just Culture in practice.

Learning Activity 10.1: Examine the Features and Challenges of a Just Culture Within a Highly Reliable Safety Program and the Current Healthcare Environment

Learning activity objectives:

- 10.1 Compare and contrast a Just Culture versus a blameless culture versus a punitive culture. (*analyzing*)
- 10.2 Apply Just Culture principles to examples. (*applying*)

- 10.3 Discuss the impact of second victim syndrome. (*understanding*)
- 10.4 Describe the differences between a retributive Just Culture and a restorative Just Culture. (*understanding*)
- 10.5 Discuss challenges to a Just Culture. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 10.
- Watch the video *Annie's Story*: <https://youtu.be/zeldVu-3DpM>
- Find and read an article on second victim syndrome. Option: Ozeke, O., Ozeke, V., Coskun, O., & Budakoglu, I. I. (2019). Second victims in health care: Current perspectives. *Advances in Medical Education and Practice*, 10, pp. 593–603. Retrieved from <https://doi.org/10.2147/AMEP.S185912>
- Read the *Restorative Just Culture checklist*: <https://safetydifferently.com/restorative-just-culture-checklist/restorativejustculturechecklist-2/>
- Read *Reckless homicide at Vanderbilt? A Just Culture analysis*: <https://www.linkedin.com/pulse/reckless-homicide-vanderbilt-just-culture-analysis-david-marx/>

Instructions for learning activity exercises:

- 10.1 Discuss the differences between a blameless culture, a punitive culture, and a Just Culture and the effects to patient safety for each type of culture.
- 10.2 Define the three types of errors that can occur, and give examples from your experience.

Type of Error	Definition	Example in Practice	How Is This Normally Dealt With?	How Could It Be Dealt With to Promote a Just Culture?
Human error				
Risky behavior				
Reckless behavior				

10.3 Interview a manager within your organization. Find the following:

- Current Just Culture algorithm used in the facility
- How the manager was trained to use the algorithm
- Example of how the algorithm has been used to promote positive learning
- If there is a second victim program or a support system for those involved in errors
- Any difficulties in applying the Just Culture process, especially when the outcome of the error was serious

10.4 Discuss the impact of involvement in an error with the healthcare provider.

Describe second victim syndrome and the effect on the individual and the healthcare system.

Discuss how a restorative Just Culture can assist in healing the individual involved in the error and can affect system safety and healing.

10.5 Discuss challenges to Just Culture and outcome bias when the outcome is catastrophic.

Reflect on the Vanderbilt case above or another case involving litigation or media coverage.

How does the outcome bias affect the application of Just Culture?

CASE STUDY

The hospital has a new program aimed at reducing surgical site infections. The responsibility for administering antibiotics has been put in the hands of the anesthesia provider in the operating room to guarantee infusion within one hour of incision. If the patient needs a special antibiotic protocol requiring more than one antibiotic, the process is started in the pre-op area.

Kathy is an experienced pre-op nurse. A full schedule coupled with a sick call has made for a busy morning. In reviewing the schedule and her assignment, she sees that Mr. Wright is scheduled for a new procedure and will need three antibiotics before surgery. After her initial assessment, Kathy hangs the first antibiotic, Vancomycin 1 GM, and signs the medication administration sheet. She returns in 90 minutes and hangs the second antibiotic, Gentamycin 80 mg.

The CRNA who is new to the service stops in the pre-op area to read the chart of the patient. The CRNA takes the paper record to the conference room. Kathy returns to the bedside and checks her order on the CPOE for the final antibiotic and hangs the Ancef, 1 GM. The paper MAR is with the chart, so she makes a mental note to sign the MAR before the patient goes to the OR. The antibiotic infusion is finished, but Kathy forgets to go back to the chart because her usual practice is to sign the MAR when she hangs the medication.

An orderly comes to pick up the patient for the OR. Upon entering the OR, the CRNA notices that two of the three antibiotics have been administered and proceeds to hang Ancef prior to the procedure. The patient receives the duplicate dose before the presurgical nurse (Kathy) remembers she did not sign the MAR and calls into the room. The patient had no adverse outcome.

Questions for Discussion

1. Is this error an example of human error, negligence, recklessness, or an intentional rule violation? Support your answer with your rationale.
2. How should the unit manager approach Kathy when beginning her investigation into the situation?
3. What type of investigation would be the most effective in this situation?
4. What type of action is warranted based on the type of behavior that was displayed?

PART
4

**HRO CONCEPTS AND
APPLICATION TO
PRACTICE: SENSITIVITY
TO OPERATIONS**

Course objective: Recommend quality and safety activities based on high reliability principles. (*evaluating*)

CHAPTER

11

ALARM SAFETY: WORKING SOLUTIONS

In this chapter, you will learn about improvements directed toward alarm safety in response to harm related to alarm fatigue, increased technology, and regulatory guidance. You will also learn about interventions based on high reliability principles as a strategy for sustainable alarm safety.

Chapter objective: Explore the high-risk nature of clinical alarm management and the challenges of identifying and containing the risk to prevent adverse events.

Learning Activity 11.1: Appraise the Concept of Alarm Fatigue and the Possibilities for Improvement When Applying High Reliability Principles to Clinical Alarm Safety

Learning activity objectives:

- 11.1 Consider the implications of alarm fatigue within the clinical environment. (*understanding*)
- 11.2 Apply concepts of failure mode effects analysis (FMEA) to appraise clinical alarms within a practice environment. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 11.
- Read *Alarm fatigue: A concept analysis*: <https://www.himss.org/resources/alarm-fatigue-concept-analysis>
- Read Hravnak, M., Pellathy, T., Chen, L., Dubrawski, A., Wertz, A., Clermont, G., & Pinsky, M. R. (2018). A call to alarms: Current state and future directions in the battle against alarm fatigue. *Journal of Electrocardiology*, 51(6S), pp. S44–S48. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6263784/pdf/nihms-1502834.pdf>

Instructions for learning activity exercises:

- 11.1 Define alarm fatigue, give examples, and discuss the implications for patient safety and high reliability.

Include examples of actionable versus nonactionable alarms and the implication for alarm fatigue.

Describe how healthcare organizations are improving the safety of clinical alarms.

Discuss how these organizations used data to track progress.

Finally, discuss how high reliability principles and improvement concepts were used in the improvement efforts.

- Include preoccupation with failure, attention to detail, and deference to expertise.
 - Include standardization and situational awareness.
- 11.2 Perform an assessment of clinical alarms or noise distraction in your area of experience within a failure mode effect analysis format (FMEA).

Alarm	Expected Response	How Could Response Fail?	What Would Happen to a Patient Due to a Failure?	Why Would This Response Fail?

Alarm	Expected Response	How Could Response Fail?	What Would Happen to a Patient Due to a Failure?	Why Would This Response Fail?

INNOVATIVE TECHNOLOGY, STANDARDIZATION, AND THE IMPACT ON HIGH RELIABILITY

In this chapter, you will learn how new and innovative technology, automation, standardization, and forcing functions are effective approaches to making a process highly reliable. You will also learn that successful integration of technologies requires a systematic approach, an understanding of the learning health system, and a commitment to patient safety as a foundational value to achieve highly reliable performance.

Chapter objective: Examine how technology can be used to effectively hardwire processes and improve results.

Learning Activity 12.1: Apply Knowledge of Effective Interventions for High Reliability to Analyze Technological Advances in Your Practice

Learning activity objectives:

- 12.1 Discuss technology and its impact on high reliability in your environment. (*understanding*)
- 12.2 Analyze current safety interventions from your experience and place them in the Institute for Safe Medication Practices (ISMP) hierarchy of interventions. (*analyzing*)
- 12.3 Discuss the significance of workarounds, including why workarounds occur and how to mitigate them. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 12.
- Read *Education is “predictably disappointing” and should never be relied upon alone to improve safety* at <https://www.ismp.org/resources/education-predictably-disappointing-and-should-never-be-relied-upon-alone-improve-safety>
- Read *Human factors engineering* at <https://psnet.ahrq.gov/primer/human-factors-engineering>

Instructions for learning activity exercises:

- 12.1 Assess your work environment. List examples of how technology is used and what impact it has on patient safety and high reliability. Consider the following in the discussion:
 - How does the technology improve workflow?
 - How does the technology improve communication?
 - How does the technology improve patient safety?
 - Do end users see the value of the technology?
 - Are there any unexpected consequences that were found after implementation?
- 12.2 Use the ISMP hierarchy and list examples of each level of the hierarchy in relation to your practice and prevention of high-risk events. List the pros and cons and safety effectiveness of each level.

	Example in Practice	Pros	Cons	How Does This Improve Individual Safety?	How Does This Improve System Safety?	Will This Prevent the Error From Recurring?
Education and information						
Rules and policies						
Checklists and double-check systems						
Standardization and protocols						
Automation and computerization						
Forcing functions and constraints						

12.3 The goal of high reliability strategies is to make it easier to do the right thing and harder to do the wrong thing. Workarounds are commonly created because it is difficult to do the right thing. Discuss workarounds to various practices, why they were created, and how to mitigate them.

Safety Technology	Workaround	Why Does It Exist?	How Can It Be Fixed?

TIERED SAFETY HUDDLES

In this chapter, you will learn about the concept of a tiered safety huddle as a strategy to maintain an awareness of operational conditions in a high reliability organization. You will also learn about how tiered safety huddles used to ensure problems from the front line of care are escalated to higher levels within the organization for awareness, system accountability, and resolution of the problem.

Chapter objective: Examine the tiered safety huddle as a vehicle to increase organization and system situational awareness.

Learning Activity 13.1: Describe the Value of the Tiered Huddle in Healthcare as an Effective Tool to Promote High Reliability in a Complex Organization

Learning activity objectives:

- 13.1 Describe the purpose and the value of a tiered huddle to patient safety and quality. (*understanding*)
- 13.2 Examine how a tiered huddle contributes to the principles of high reliability within a complex healthcare environment. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 13.
- Visit Today's Hospitalist website: <https://www.todayshospitalist.com/tiered-safety-huddles-target-zero-harm/>
- Read World Health Organization Course 3: https://www.who.int/patientsafety/education/curriculum/course3_handout.pdf

Instructions for learning activity exercises:

- 13.1 Assess your current work environment or interview a clinician in a healthcare work environment.
Ask:

Questions	Response Notes
How are problems surfaced by those at the front line of care?	
How often do those from the front line bring up issues?	
Is there a formal mechanism to ensure these issues are recorded and escalated to those who can resolve the problems?	
Are your senior leaders aware of the daily challenges at the front line of care?	
Are they made aware of these challenges on a daily basis?	
What is the senior leader's role and response to resolve daily challenges?	
How does the resolution make it back to the front line?	
How do issues that involve the "system"—such as complex processes and procedures, equipment issues, and contract issues—get resolved?	
How are problems surfaced by those at the front line of care?	
How often do those from the front line bring up issues?	

13.2 Search the literature to consider healthcare as a complex system. Discuss the following:

Define a complex system.

List characteristics of healthcare systems that contribute to complexity.

Discuss how a tiered huddle contributes to all principles of high reliability.

How does a tiered huddle provide a mechanism to handle aspects of complexity?

PART

5

HRO CONCEPTS AND APPLICATION TO PRACTICE: DEFERENCE TO EXPERTISE

Course objective: Recommend quality and safety activities based on high reliability principles. (*evaluating*)

INTERPROFESSIONAL COLLABORATION

In this chapter, you will learn about how an increased focus on quality, safety, and efficiency in healthcare has placed greater attention on understanding the complexity of healthcare teams. You will also learn about interprofessional collaboration and teamwork in the context of high reliability organizations (HROs).

Chapter objective: Illustrate interprofessional collaboration and teamwork in the context of high reliability organizations (HROs).

Learning Activity 14.1: Describe and Explain an Interprofessional Team in the Context of High Reliability Organizations (HROs)

Learning activity objectives:

- 14.1 Describe interprofessional collaboration in the context of high reliability organizations. (*understanding*)
- 14.2 Explain teamwork in the context of high reliability organizations. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 14.
- Read Rosen, M. A., DiazGranados, D., Dietz, A. S., Benishe, L. E., Pronovost, P. J., & Weaver, S. J. (2018). Teamwork in healthcare: Key discoveries enabling safer, high quality care. *American Psychologist*, 73(4), pp. 433–450.
- Consider characteristics of effective interprofessional teams.
- Consider evidence-based tools that support teams in assessing the current state to best identify short-term goals for improving team function.

Instructions for learning activity exercises:

- 14.1 Describe the characteristics of an interprofessional collaborative team in your organization. Include an assessment of the strengths and weaknesses of the team using one evidence-based tool.

Interprofessional Team Name:	
Team characteristics	
Characteristic	Description
Team assessment	
Evidence-based assessment tool:	
Strengths	Weaknesses

- 14.2 Based on your assessment, make recommendations on how to strengthen the performance of the interprofessional collaborative team in the context of a high reliability organization. Include one team training strategy and rationale for use.

Weakness	Recommendation for Improvement (include team training strategy with rationale)	High Reliability Context (link to high reliability principles)

CHAPTER

15

NURSES CREATE RELIABLE CARE BY ENHANCING ENGAGEMENT

In this chapter, you will learn about healthcare organizations' focus on improving the patient experience given public data reporting, pay for performance, consumer awareness and demand for value, and the tightly coupled relationships between patient experience, patient safety, and quality of care. You will also learn about drivers and measurements of patient experience and partnering with patients to understand patient needs.

Chapter objective: Explore how partnership and collaboration with patients contributes to the achievement of a consistent, highly reliable patient experience.

Learning Activity 15.1: Compare and Contrast Assessment, Measurement, and Key Interventions to Improve Patient Experience in a Highly Reliable Organization

Learning activity objectives:

- 15.1 Examine how patient experience is measured and the importance and effect of measurement. (*applying*)
- 15.2 Appraise and examine hospital systems public patient experience measures. (*applying*)
- 15.3 Evaluate the current Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). (*understanding*)
- 15.4 Analyze various patient experience improvement practices and discuss the reliability of these efforts to achieve and sustain a positive patient experience. (*analyzing*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 15.
- Visit CMS.gov to explore HCAHPS: <https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/HospitalQualityInits/HospitalHCAHPS>
- Visit and explore the Hospital Compare website: <https://www.medicare.gov/hospitalcompare/search.html>

Instructions for learning activity exercises:

- 15.1 Describe how patient experience is measured and improved within your practice environment, or interview a clinician within a practice environment.
- 15.2 Visit and compare three hospitals within your state on the Hospital Compare website.
Which hospital scores highest in patient experience?
Which category of score is the highest? Lowest?
How does public reporting affect consumer choice?
How does this affect hospital finances?
- 15.3 Discuss the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS).
How is this survey used to measure patient experience?
Is this a reliable and valid tool for measurement?
What are the challenges in measurement of patient experience with this tool?
- 15.4 Discuss how standardization of the patient experience occurs in a highly reliable organization.
Search the literature for examples of patient experience tools that have been successfully standardized and are considered industry best practices.
Discuss how patients were involved in creating these tools.
Describe how these practices ensure high reliability.

CHAPTER

16

PEDIATRIC PATIENT SAFETY: UTILIZING SAFETY COACHING AS A STRATEGY TOWARD ZERO HARM

In this chapter, you will learn about the difficulty of sustaining successful culture change. You will also learn that taking culture change to the front line through peer safety coaches is an effective intervention to reinforce and sustain zero harm culture.

Chapter objective: Describe implementation of a safety coach program that improved and created a platform for sustainability of HRO principles within a pediatric environment.

Learning Activity 16.1 Examine the Role of Safety Coaches as a Vehicle for Successful Change Management and Sustainability of HRO Principles

Learning activity objectives:

- 16.1 Describe factors that influence change and challenges to change initiatives. (*applying*)

- 16.2 Describe the role of the patient safety coach and why it is needed for high reliability and sustained culture change. (*remembering*)
- 16.3 Examine challenges with peer coaching and suggest solutions. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 16.
- Read Caporale-Berkowitz, N., & Friedman, S. D. (2018). How peer coaching can make work less lonely. *Harvard Business Review*. Retrieved from <https://hbr.org/2018/10/how-peer-coaching-can-make-work-less-lonely>
- Watch the video *Peer To Peer Coaching*: <https://www.ahrq.gov/hai/cusp/videos/07d-peer-2-peer-coach/index.html>
- Read Kotter, J. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review*, March–April 1995 at https://oupub.etsu.edu/125/newbudgetprocess/documents/leading_change_why_transformation_efforts_fail.pdf

Instructions for learning activity exercises:

- 16.1 Describe a recent initiative that succeeded or failed within your organization. Correlate the success or failure to characteristics within a change model.
- What was the initiative?
- Who led the initiative?
- How was the initiative received at the front line?
- What tactics were used to spread the initiative and sustain the progress? Was a change model used? Which one?
- Did the tactics succeed? Why?
- Review the Kotter (1995) article. What failure factors from the article were evident in a failure or mitigated in a success? What could have been done differently?
- 16.2 Examine the role of the safety coach and how safety coaches can create sustainability of a zero harm initiative.
- Find and discuss a definition of a healthcare patient safety coach.
- What are the challenges with giving feedback to peers?
- Which is more successful: positive or negative feedback?
- What kind of training do safety coaches need?
- How can the role be supported to sustain gains in patient safety and quality?
- Describe the benefits to a safety coach program within an organization to achieve a culture change to high reliability. How is coaching from a peer different from coaching from a supervisor?

16.3 Practice safety coaching using the following example or your own example to reinforce a desired safety behavior:

	What Did You Observe?	What Is the Expectation?	How Would You Coach?
Hand hygiene: Staff member does not practice hand hygiene.			
Prevention of falls: Staff member leaves the room and does not set the bed alarm.			
Protecting confidentiality: You hear staff members talking about a patient in the elevator.			
Effective communication: You witness a peer using a repeat-back to clarify an order.			
Asking questions: You hear a peer clarifying an unclear order.			

PART
6

**HRO CONCEPTS AND
APPLICATION TO
PRACTICE: RESILIENCE**

Course objective: Recommend quality and safety activities based on high reliability principles. (*evaluating*)

CHAPTER

17

RESILIENCE: A PATH TO HRO

In this chapter, you will learn about the concept of resilience. You will also learn resilience-building strategies in the context of high reliability.

Chapter objective: Examine personal and organizational resilience-building strategies in the context of high reliability organizations (HROs).

Learning Activity 17.1: Resilience: Comparing Personal and Organizational Resilience in the Context of High Reliability

Learning activity objectives:

- 17.1 Describe the concept of resilience. (*understanding*)
- 17.2 Compare personal and organizational resilience building strategies in the context of high reliability. (*analyzing*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 17.

- Review Duke University Health System. (n.d.). Duke Center for Healthcare Safety and Quality. Retrieved from <https://www.hsq.dukehealth.org/>

Instructions for learning activity exercises:

- 17.1 Describe the concept of resilience and identify three personal resilience strategies. Complete one resilience tool offered at <https://www.hsq.dukehealth.org/tools/>

Describe the concept of resilience.

Describe the resilience tool offered by Duke Center for Healthcare Safety and Quality that you completed.

What did you learn about your personal resiliency?

Based on the outcome of the resilience tool, name three personal resilience strategies. Be prepared to discuss.

1.

2.

3.

- 17.2 Explain three resilience-building strategies at your organization in the context of high reliability.

Organization Resilience-Building Strategy	High Reliability Context

CHAPTER

18

DESIGNING RESILIENCE INTO THE WORK ENVIRONMENT

In this chapter, you will learn about a social-ecological perspective of resilience. You will also learn to relate this perspective to high reliability, design a resilient work environment, and associate individual and work environment resilience with clinician well-being.

Chapter objective: Discover a social-ecological perspective of resilience to support clinician well-being.

Learning Activity 18.1: Apply a Social-Ecological Perspective of Resilience to Support Clinician Well-Being in the Work Environment

Learning activity objectives:

- 18.1 Describe resilience and how it relates to high reliability. (*understanding*)
- 18.2 Discuss opportunities for designing a resilient work environment. (*understanding*)

18.3 Associate individual and work environment resilience with clinician well-being. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 18.
- Read National Academies of Sciences, Engineering, and Medicine. (2019). *Taking action against clinician burnout: A systems approach to professional well-being*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25521>

Instructions for learning activity exercises:

18.1 Describe resilience in your organization in the context of high reliability.

Resilience in my organization is:

18.2 Discuss three strategies to design a more resilient work environment in your organization. Include tactics to facilitate clinician well-being.

Work Environment Resilience Strategy	Tactics to Facilitate Clinician Well-Being

18.3 Give three examples of how individual and work environment resilience affect clinician well-being within a social-ecological perspective of resilience.

Social-Ecological Perspective	Individual Resilience	Workplace Environment Resilience	Clinician Well-Being Influence
Individual			
Team resilience			
Organization resilience			
Society external environment			

BUILDING HIGH RELIABILITY THROUGH SIMULATION

In this chapter, you will learn about healthcare simulation and blend simulation with the concepts of high reliability to create a view of simulation that improves the safety of high-risk processes. You will also learn about the benefits of employing simulation as an advanced quality improvement and patient safety tool.

Chapter objective: Describe the emergence of simulation in schools, hospitals, and healthcare organizations as an advanced quality improvement and patient safety tool.

Learning Activity 19.1: Explore Opportunities to Use Simulation to Improve Safety and Reliability of Risk- Prone Processes

Learning activity objectives:

- 19.1 Compare and contrast traditional simulation and simulation designed for high reliability. (*analyzing*)
- 19.2 Apply simulation to a high-risk process to improve the safety of the process. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 19.
- Find one peer-reviewed research article that applies simulation to a clinical safety or quality problem.
- Explore the website Clinical Simulation in Nursing at <https://www.nursingsimulation.org/> for simulation articles and resources.

Instructions for learning activity exercises:

- 19.1 Describe the difference between traditional simulation such as experienced for learning competencies and simulation to improve safety of a high-risk process.

List some high-risk processes from your experience that might benefit from a simulation exercise.

How have these processes been practiced or simulated in your organization?

Were the practice sessions realistic?

Did the practice identify areas for improvement in teamwork, communication, or critical thinking?

Did the practice identify potential failures that might occur in the process?

Did participants in the practice session feel psychologically safe to speak up?

Did debriefing occur after the practice session?

Pick one of the high-risk processes that you currently practice or drill in your facility. Redesign the practice or drill to create a simulation that identifies safety issues within the process and increases the safety of the process.

Describe how simulation could be combined with an FMEA to identify failure modes.

- 19.2 Present your research article:

What was the practice problem that the simulation addressed?

Describe the method used for simulation.

What were the objectives and outcomes of the simulation?

Identify a high reliability principle that the simulation addressed or could have addressed.

BUILDING RESILIENCE THROUGH TEAM TRAINING: RAPID RESPONSE AND IN-HOSPITAL CARDIAC ARREST EVENTS

In this chapter, you will assess and evaluate the role resilience plays through team training events. You will practice with an in-depth example of a healthcare emergency where multiple team members manage the emergency.

Chapter objective: Explain and evaluate how the high reliability principle of resilience improves team response to a cardiac event.

Learning Activity 20.1: Evaluate Rapid Response and In-Hospital Cardiac Arrest Event Team Performance

Learning activity objectives:

- 20.1 Evaluate rapid response and in-hospital cardiac arrest event team performance. (*evaluating*)

20.2 Explain team resilience gap analysis. (*analyzing*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 20.
- Read Spitzer, C. R., Evans, K., Buehler, J., Ali, N. A., & Besecker, B. Y. (2019). Code blue pit crew model: A novel approach to in-hospital cardiac arrest resuscitation. *Resuscitation*, 143, pp. 158–164.

Instructions for learning activity exercises:

20.1 Prepare an in-hospital cardiac arrest event team debrief using the Post Code Pause structured format. Include team resilience gap analysis in your discussion.

20.2 Prepare a rapid response event team debrief using the “What’s Right?” structured format. Include team resilience gap analysis in your discussion.

The team leader will ask:

- Identify two things that went well in this RRT.
- Identify anything we can do to improve our RRT.

Each team member will be encouraged to share thoughts and new ideas.

Date: _____ Age of Patient _____ Type of Alert: _____

**Names of all staff members involved in post resuscitation pause

****After the Event, everyone pauses for 10 seconds of silence to either remember the life of the person or celebrate the success of the Code Blue**

What did the team do well?

What intervention(s) do you wish had or had not been offered?

How is your satisfaction with the equipment and medications available?

Where can we grow and improve?

How did we support the family (if they are present)?

How are you doing after the code?

What do you need to be able to be successful for returning to work right now?

Additional comments or concerns:

RESILIENCE QUALITIES TO CONSIDER DURING GAP ANALYSIS

Indicator	Present	Absent	Follow-Up	Outcome Date
Are red-flag events or near misses reported?				
Is reporting of red-flag events rewarded?				
Is reporting of red-flag events punished?				
Have suggestions for workflow come from the workforce level?				
Do team meetings allow time for open discussion of everyday processes?				
Is the workflow regularly observed and evaluated by others?				
Does this process allow variation, or is variation open to safety issues?				
Have there been action-based mock drills?				
Are preprocess briefings used regularly?				
Are postevent debriefings used regularly?				
Is crew resource management training used with supervisors, and are the results monitored by leadership?				
Are stressful events (with or without outcome errors) reviewed?				
Are predictable workforce stressors identified and mitigated?				
After error mitigation, is the goal to return to steady state?				
Are the values of safety supported on every level of the workforce?				
Is data about safety, productivity, or processes well known and understood at all levels of the workforce?				

CHAPTER 21

SUSTAINING THE CULTURE OF SAFETY: STRATEGIES TO MAINTAIN THE GAINS

In this chapter, you will learn how resilient organizations can sustain a culture of safety by creating an organizational culture of personal and professional accountability.

Chapter objective: Explore a framework for change with strategies to sustain and maintain the gains within a culture of safety.

Learning Activity 21.1: Sustaining a Culture of Safety in a Resilient Organization

Learning activity objectives:

- 21.1 Discuss organizational vulnerabilities, related performance, and adherence to regulations and policies across the care continuum as a rationale for sustaining a culture of safety. (*understanding*)
- 21.2 Apply a framework for change to sustain and maintain a culture of safety. (*applying*)
- 21.3 Explain strategies to maintain the gains within a culture of safety in a resilient organization. (*analyzing*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 21.
- Read Black, J. S. (2014). *It starts with one: Changing individuals changes organizations* (3rd ed.). Upper Saddle River, NJ: Pearson Education, Inc.

Instructions for learning activity exercises:

- 21.1 Discuss steps in developing culture change to support individual professional accountability and healthcare system performance.
- 21.2 Apply an evidence-based change model of your choice to a problem at your organization. Include barriers to change and mitigation strategies.

Change Model	Barriers to Change	Barrier Mitigation Strategies

- 21.3 Name three strategies you could use after an evidence-based change to maintain and sustain gains in a culture of safety.

Strategy	Tactics

PART

7

ASSIMILATION INTO PRACTICE ACROSS THE CONTINUUM

Course objective: Integrate high reliability principles into healthcare practice. (*creating*)

APPLICATION OF HRO STRATEGIES TO IMPROVE PAIN MANAGEMENT AND OPIOID SAFETY: THE CNS ROLE

In this chapter, you will learn about how an advanced practice registered nurse can lead application of high reliability strategies to improve patient safety.

Chapter objective: Analyze the role of the advanced practice nurse in high reliability organizations.

Learning Activity 22.1: Examine Clinical Nurse Specialist Leadership of Clinical Improvement Teams in High Reliability Organizations

Learning activity objectives:

- 22.1 Discuss the value of the advanced practice registered nurse (APRN) in a high reliability organization. (*understanding*)

22.2 Explain the leadership role of the clinical nurse specialist in quality improvement. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 22.
- Read Finkelman, A. (2013). The clinical nurse specialist: Leadership in quality improvement. *Clinical Nurse Specialist*, 27(1), pp. 31–35.

Instructions for learning activity exercises:

22.1 Identify a clinical quality improvement team led by an APRN at your organization and attend one meeting.

Clinical quality improvement team meeting:

Date:

Time:

APRN leader:

APRN leader role: (CNS, NP, CNM, CRNA)

22.2 Discuss how the APRN role uniquely leads and contributes to the quality improvement team. Include sources of evidence and linkage to high reliability principles.

APRN Contribution to QI Team	APRN Core Competencies	Link to High Reliability

AMBULATORY CARE: THE FRONTIER FOR HIGH RELIABILITY

In this chapter, you will learn about how high reliability principles can be used to address key quality and safety challenges in ambulatory care. You will learn about the scope of ambulatory services as well as some of the unique complexities and challenges of this specialty.

Chapter objective: Discover how the principles of high reliability can mitigate quality and safety challenges in the ambulatory care setting.

Learning Activity 23.1: Integration of High Reliability Principles to Address Quality and Safety Challenges in Ambulatory Care

Learning activity objectives:

- 23.1 Discuss the scope of ambulatory services and the varied ambulatory settings. (*understanding*)
- 23.2 Explain complexities and challenges of ambulatory care. (*understanding*)

- 23.3 Articulate how each of the principles of high reliability can be used to mitigate quality and safety challenges in the ambulatory care space. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 23.
- Read Organisation for Economic Co-operation and Development. (2018). *The economics of patient safety in primary and ambulatory care*. Paris, France: OECD Publishing. Retrieved from <https://www.oecd.org/health/health-systems/The-Economics-of-Patient-Safety-in-Primary-and-Ambulatory-Care-April2018.pdf>

Instructions for learning activity exercises:

- 23.1 Choose an ambulatory care setting in your organization. Include the rationale for your choice.
- 23.2 Identify at least three complexities and challenges of the chosen ambulatory care setting.
- 23.3 Create a table integrating high reliability principles that can mitigate complexities and challenges of the chosen ambulatory care setting.

Ambulatory Care Setting:

Rationale:

Complexities	Unique Safety Challenges	High Reliability Solution

APPLYING HIGH RELIABILITY PRINCIPLES ACROSS A LARGE HEALTHCARE SYSTEM TO REDUCE PATIENT FALLS

In this chapter, you will learn about how high reliability principles can be used in large multihospital systems to improve patient safety. You will also learn how nurse-led initiatives, empowerment, and innovation advance the culture of patient safety.

Chapter objective: Explain how to leverage high reliability principles to improve patient safety.

Learning Activity 24.1: Apply High Reliability Tenets to Solve Health System Quality and Safety Challenges

Learning activity objectives:

- 24.1 Use high reliability organization characteristics to design a nursing practice change that improves a quality/safety measure. (*applying*)
- 24.2 Select a nurse-led quality/safety improvement opportunity where application of HR could make a positive impact. (*applying*)
- 24.3 Design a project plan using HR principles to improve the quality/safety opportunity. (*creating*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 24.
- Identify a clinical quality improvement opportunity that could be affected by a nursing practice change.
- Read Oster, C. A., & Deakins, S. (2018). Practical application of high-reliability principles in health-care to optimize quality and safety outcomes. *Journal of Nursing Administration*, 48(1), pp. 50–55.

Instructions for learning activity exercises:

- 24.1 Identify a quality/safety improvement opportunity where nurses can make an impact through nursing practice changes through the use of HR principles.
- 24.2 Using knowledge of HR principles, explain which HR principles are relevant in solving the problem and why. Be prepared to discuss the link between nurse empowerment over practice and HR principles with your classmates.

Quality/Safety Improvement Need	Principle 1	Principle 2	Principle 3	Principle 4	Principle 5
	Preoccupation With Failure	Reluctance to Simplify	Sensitivity to Operations	Commitment to Resilience	Deference to Expertise

- 24.3 Design a nursing project plan using HR principles to improve the quality/safety opportunity. There are nine sections to complete for this activity. The nine-step project plan included in this workbook may help you frame your project plan.
- Describe the quality/safety project.
 - Identify the project deliverables.
 - List the baseline measures related to the project.
 - Complete the project plan charter form.
 - List steps or approaches/ideas on how you, as the team leader, would ensure integration of the HR principles into the solution(s).
 - Describe any risks or threats to the project.
 - Briefly describe a communication plan for the project.
 - Briefly describe a training plan for the project.
 - Briefly describe how you would evaluate the project's success.

NINE-STEP PROJECT PLAN TEMPLATE

Potential Project Name/Title		Date	
Requested by		Charter Prepared by	
Background & Business Need: State the business problem/issue to solve or what opportunity exists to improve a business function. What is the current state? Narrative background with drivers for the project.			
Project Scope Statement: Summarize the purpose and the intent of the project and describe what the customer (or you) envisions will be delivered.			
Project Objectives/Deliverables: Outline the high-level objectives for the project. What will exist when the project is complete? Include the benefits of the project, including how the project will benefit the customers or stakeholders.			
Boundaries: What will <u>not</u> be included in this project?			
Assumptions: What assumptions were made when conceiving this project?			
External Dependencies: Note any major external (to the project) dependencies the project must rely upon for success, such as specific technologies, third-party vendors, development partners, or other business relationships. Also identify any other related projects or initiatives.			
Project Risks: List any known risks for the project that could impact the success of the project or should be considered when planning. Include risk of change management. Does the value of this project ultimately depend on people changing their work or behavior? Identify risks facing this project or organization if the people side of the project is poorly manned.			
Key Stakeholders: List the key stakeholders for the project. Stakeholders are individuals, groups, or organizations that are actively involved in a project, are affected by its outcome, or can influence its outcome. Indicate their role or interest in the project. These stakeholders (or representatives) MAY be invited to participate in a project kickoff session but do not necessarily need to be on the project team. Whose day-to-day work will be impacted by raw processes (systems, tools, job roles, organization structure, etc.) as an outcome or deliverable of this project?			
Stakeholder/Stakeholder Group		Role in Project or Impacted by This Project	
Required Resources: Identify the known resources that management is willing to commit to the project at this time. Human resources includes key individuals, teams, organizations, subcontractors or vendors, and support functions. This is not the place for the detailed team staff roster for individual names. Identify critical skill sets that team members must have. Other resources could include funding, computers, other equipment, physical facilities such as buildings and rooms, hardware devices, software tools, and training. What level of change management involvement is expected for this project? (e.g., separate change management team, change management representation on the core team or individual team).			
Requested Timeline/Milestones: Include end and start dates and key milestones.			

THE SYNTHESIS AMONG MAGNET RECOGNITION PROGRAM® MODEL COMPONENTS AND HIGH RELIABILITY ORGANIZATION PRINCIPLES

In this chapter, you will learn about how the Magnet® model component characteristics provide the foundation for synergistic relationships with high reliability organization (HRO) principles. You will also learn about the synergy of Magnet components and high reliability principles.

Chapter objective: Discover how high reliability principles can be related to the components of the Magnet model.

Learning Activity 25.1: Explain the Synergistic Relationship Between the Magnet Model Components and the Principles of High Reliability

Learning activity objectives:

- 25.1 Describe the Magnet Recognition Program® components. (*understanding*)
- 25.2 Discuss the synergy of high reliability principles with Magnet Recognition Program components. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 25.
- Read American Nurses Credentialing Center. (n.d.). ANCC Magnet Recognition Program®. Retrieved from <https://www.nursingworld.org/organizational-programs/magnet/>

Instructions for learning activity exercises:

- 25.1 Discuss the five components and component characteristics of the Magnet model.

Magnet Component	Description

- 25.2 Describe the synergy of high reliability principles and Magnet Recognition Program components and include examples of synergy.

Magnet Recognition Component/Description	Example of Magnet Component From Organization	High Reliability Principle	Description of Synergy

CHAPTER 26

ACHIEVING HRO: THE ROLE OF THE BEDSIDE SCIENTIST IN RESEARCH

In this chapter, you will learn about the culture of inquiry in a high reliability organization and the role of the bedside scientist in research. You will also learn about barriers to research, overcoming barriers, and creating research infrastructure supporting the clinical/bedside nurse in the conduct of research in a highly reliable organization.

Chapter objective: Explain a culture of inquiry in a high reliability organization.

Learning Activity 26.1: Discover the Role of the Bedside Scientist in a High Reliability Organization

Learning activity objectives:

- 26.1 Describe the role of the bedside scientist in a high reliability organization. (*understanding*)
- 26.2 Discuss research barriers and strategies to overcome the barriers. (*understanding*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 26.
- Read Ghaferi, A., Myers, C., Sutcliffe, K., & Pronovost, P. (2016). The next wave of hospital innovation to make patients safer. *Harvard Business Review*. Retrieved from <https://hbr.org/2016/08/the-next-wave-of-hospital-innovation-to-make-patients-safer>
- Read Hain, D. J., & Kear, T. M. (2015). Using evidence-based practice to move beyond doing things the way we have always done them. *Nephrology Nursing Journal*, 42(1), pp. 11–21.

Instructions for learning activity exercises:

- 26.1 Identify an opportunity for improvement or innovation at your organization and conduct a literature search on the topic.

Opportunity for improvement or innovation at your organization:

Conduct a brief literature review on the selected topic.

Include three or four peer-reviewed sources of evidence.

Source (author, title, year)	Purpose of Study	Method (including setting and sample)	Key Findings and Implications	Limitations of Study

- 26.2 Describe how a bedside scientist would advance the opportunity for improvement or innovation in a highly reliable organization.

Describe the role of the bedside scientist to advance the improvement or innovation idea:

Frontline bedside scientist:

Advanced practice nurse bedside scientist:

Doctorally prepared bedside scientist:

Attend a patient safety, evidence-based practice, quality improvement, or research meeting related to an improvement or innovation topic to gain insight into the role of the bedside scientist.

Meeting title:

Date:

Time:

Reflection: (what occurred during the meeting integrating high reliability concepts)

PART

8

TRANSLATION INTO PRACTICE

Course objective: Integrate high reliability principles into healthcare practice. (*creating*)

SUMMATIVE ASSESSMENT: TRANSLATION INTO PRACTICE

In Part 8, Chapters 27 to 32, you will learn about how staff at the front line of care identified problems in their specialty area and created an improvement project employing high reliability principles. You will also learn how an evidence-based practice project is implemented to incorporate high reliability principles, evidence-based practice, and change management.

Section objective: Examine how high reliability principles are translated into practice.

Summative Learning Activity 27.1: Translate Evidence-Based Practice, Change Management, and High Reliability Principles to Practice

Summative learning activity objectives:

- 27.1 Identify an evidence-based practice model and a change model. (*understanding*)
- 27.2 Identify characteristics of evidence-based practice process, change management, and high reliability principles in one of the provided examples. (*understanding*)
- 27.3 Apply characteristics of evidence-based practice process, change management, and high reliability principles to a student-selected clinical practice problem. (*applying*)

Prior to completion of the learning activity, you should do the following:

- Read Chapter 27–32.

Instructions for summative learning activity exercises:

- 27.1 Identify an evidence-based practice model and a change management model. Choose one chapter from the assigned readings. Using selected EBP and change management models, identify steps of the EBP process and change management process described in the chapter. The EBP Worksheet in the appendices of this workbook may be useful for you to complete this exercise. Answer the following questions to evaluate the translation-into-practice example:

How did the project use data to identify the need for change or define the problem?

How was literature used to explain the rationale for the intervention?

Is the intervention based on a theory?

How did the authors obtain buy-in from stakeholders?

Was there any evidence of resistance to change?

How was resistance to change addressed?

How was data collected and analyzed?

Was a tool used for data collection?

Is there a plan for sustainability?

- 27.2 Identify characteristics and use of high reliability principles within the aforementioned translation-into-practice example. High Reliability Organizations: A Quick Guide for Frontline Application, located in the appendices of this workbook, may be a useful tool for completing this exercise.
- 27.3 Identify a problem from your own practice and integrate evidence-based practice steps, change management principles, and high reliability principles to create a sustainable practice change.

Create a basic proposal to describe your plan. Include the following:

- Background and significance of the problem
- Problem statement
- Objectives and aims of the project; intervention description
- Methodology
- Proposed intervention
- Setting and participants
- Proposed outcome measures and evaluation
- Data collection plan
- Data analysis plan

Include a description of a tool or method of high reliability and a description of a principle of change management.

SUPPLEMENTAL STUDENT RESOURCES AND READINGS

PART 1

CHAPTER 1

Hollnagel, E. (2014). *Safety I and safety II: The past and future of safety management*. Boca Raton, FL: CRC.

Veazie, S., Peterson, K., & Bourne, D. (2019). Evidence brief: Implementation of high reliability organization principles. Washington, DC: Evidence Synthesis Program, Health Services Research and Development Service, Office of Research and Development, Department of Veterans Affairs. VA ESP Project #09-199. Retrieved from <https://www.hsrd.research.va.gov/publications/esp/reports.cfm>

CHAPTER 2

Armstrong, G., & Sherwood, G. (2020). Patient safety. In J. F. Giddens (Ed.), *Concepts for nursing practice* (pp. 434–442). St. Louis, MO: Elsevier.

Barnsteiner, J. (2017). Safety. In G. Sherwood & J. Barnsteiner (Eds.), *Quality and safety in nursing: A competency approach to improving outcomes* (pp. 149–170). Hoboken, NJ: Wiley-Blackwell.

Sherwood, G. (2017). Driving forces for quality and safety: Changing mindsets to improve healthcare. In G. Sherwood & J. Barnsteiner (Eds.), *Quality and safety in nursing: A competency approach to improving outcomes* (pp. 3–21). Hoboken, NJ: Wiley-Blackwell.

CHAPTER 3

Al-Amin, M., Schiaffino, M. K., Park, S., & Harman, J. (2018). Sustained hospital performance on consumer assessment of healthcare providers and system survey measures. What are the determinants? *Foundation of the American College of Healthcare Executives*, 36(1), pp. 15–28. doi:10.1097/JHM-D-16-00006

CHAPTER 4

Chassin, M. R., & Loeb, J. M. (2013). High-reliability health care: Getting there from here. *The Milbank Quarterly*, 91(3), pp. 459–490.

Schein, E. H. (2017). *Organizational culture and leadership* (5th ed.). San Francisco, CA: Jossey-Bass.

CHAPTER 5

Ford, J. L. (2018). Revisiting high-reliability organizing: Obstacles to safety and resilience. *Corporate Communications: An International Journal*, 23(2), pp. 197–211.

Weick, K. E., & Sutcliffe, K. M. (2015). *Managing the unexpected: Sustaining performance in a complex world* (3rd ed.). Hoboken, NJ: John Wiley & Sons, Inc.

PART 2

CHAPTER 6

Centers for Medicare & Medicaid Services. (n.d). *Guidance for performing failure mode and effects analysis with performance improvement projects*. Retrieved from <https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/QAPI/Downloads/GuidanceForFMEA.pdf>

CHAPTER 7

The Joint Commission. (2018). *Developing a reporting culture: Learning from close calls and hazardous conditions*. Retrieved from https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/sentinel-event/sea_60_reporting_culture_final.pdf?db=web&hash=5AB072026CAAF4711FCDC343701B0159

PART 3

CHAPTER 8

Dekker, S. (2011). *Patient safety: A human factors approach*. Boca Raton, FL: CRC Press.

Marriott, R. D. (2018). Process mapping—The foundation for effective quality improvement. *Current Problems in Pediatric and Adolescent Health Care*, 48(7), pp. 177–181.

CHAPTER 9

National Patient Safety Foundation. (2015). *RCA²: Improving root cause analyses and actions to prevent harm*. Retrieved from <http://www.ihf.org/resources/Pages/Tools/RCA2-Improving-Root-Cause-Analyses-and-Actions-to-Prevent-Harm.aspx>

Reason, J. T. (1997). *Managing the risks of organizational accidents*. Farnham, UK: Ashgate Publishing Company.

CHAPTER 10

Marx, D. (2009). *Whack a mole: The price we pay for expecting perfection*. Plano, TX: By Your Side Studios.

Dekker, S. (2013). *Second victim: Error, guilt, trauma and resilience*. Boca Raton, FL: Chapman and Hall/CRC.

Dekker, S. (2016). *Just Culture: Restoring trust and accountability in your organization* (3rd ed.). Boca Raton, FL: CRC Press.

PART 4

CHAPTER 11

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APPENDICES

Appendix A:

EBP Worksheet

Appendix B:

High Reliability Organizations:
A Quick Guide for Frontline Application

Appendix A: EBP Worksheet

Project Title		
Name (Stakeholders)	Unit	Title

Unit Manager's Name and Work	
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<p>Problem Identified: What is a problem you see at your work? NDNQI, such as PI, Fall, CAUTI? What is your current number? How are you able to obtain that?</p>

<p>Patient Outcome: What is the patient outcome expected to improve? How are you going to measure?</p>

<p>Process Outcome: What is the process outcome to assess effectiveness of your project? How are you going to measure?</p>

PICO Concepts for Developing a Purpose Statement

Patient Population

Clinical Problem or Condition (include numbers to support, such as fall rate or CAUTI rate)

Interventions

What do you want to implement?

How do you want to implement?

Comparison

Anticipated Outcomes (Process Outcome and Patient Outcome)

Patient Outcome

Process Outcome

Next Steps

Your Work Plan/Next Steps

■

■

■

Appendix B: High Reliability Organizations: A Quick Guide for Frontline Application

Objectives for the user of this guide:

- Understand the concept of high reliability organizations (HROs) and their application to patient safety.
- Explain the five principles of HROs as described by Weick and Sutcliffe.
- Apply the principles to your work area by discussing key questions.
- Use a guide to identify a process in your work area that requires high reliability.
- Use a guide to analyze and improve the process by using high reliability techniques.

What Are High Reliability Organizations (HROs)?

High reliability organizations are those that are high-risk, dynamic, turbulent, and potentially hazardous, yet operate nearly error-free. Examples include aviation, nuclear engineering, defense operations, and acute care hospitals.

How do high reliability organizations stay error free?

- HROs recognize that small things that go wrong are often early warning signs of trouble. The warning signs are the “red flags” that provide insight into the health of the whole system.
- HROs value near misses as indicators of early trouble and are acted on to prevent future failure. Near misses are not seen as an indicator of system success.
- HROs are innovative and creative, and they value input from all corners of the organization.
- HROs recognize the value of preparing for the unexpected and the unknown. Failures rarely occur if they are expected.

The five principles of HROs follow:

- **Preoccupation with failure:** HROs are preoccupied with all failures, especially small ones. Small things that go wrong are often early warning signals of deepening trouble and give insight into the health of the whole system. But we have a tendency to ignore or overlook our failures (which suggest we are not competent) and focus on our successes (which suggest we are competent).
- **Reluctance to simplify:** HROs restrain their temptation to simplify through diverse checks and balances, adversarial reviews, and the cultivation of multiple perspectives.
- **Sensitivity to operations:** HROs make strong responses to weak signals (indications that something might be amiss). Everyone values organizing to maintain situational awareness.
- **Commitment to resilience:** HROs pay close attention to their capability to improvise and act—without knowing in advance what will happen.

- **Deference to expertise:** HROs shift decisions away from formal authority toward expertise and experience. Decision-making migrates to experts at all levels of the hierarchy during high tempo times.

HIGH RELIABILITY ORGANIZATION CHARACTERISTICS*

PREOCCUPATION WITH FAILURE

What is preoccupation with failure?

Preoccupation with failure is a determined mind-set to continually watch the system for subtle signs or weak signals of failure. An analogy is the prevention of forest fires: Look for and put out the spark before the fire. Systems with high reliability worry persistently that small errors are rooted in routine work and that unexpected events and limitations of foresight may intensify these errors.

Why is preoccupation with failure important to high reliability?

High reliability means that the expected outcome occurs every time. For example, the outcome of a pilot landing a passenger airplane safely is expected every time. Due to unexpected events and hidden failures, a plane landing successfully once does not mean that it will land successfully in the future. Adverse events in the hospital follow the same course. Adverse events occur in routine and previously successful procedures and processes due to events that were not anticipated and a buildup of hidden or weak failures.

Although success is desirable, it can breed overconfidence and cause blind spots. High reliability organizations do not ignore successful operations as resistant to failure. High reliability organizations take successful operations and continue to look for and correct unanticipated failures before they occur.

Why is preoccupation with failure challenging to healthcare organizations?

Hospitals need for consumers, staff, and payers to see high-quality care to remain financially viable. Bad news or signs of failure can be perceived as a sign of incompetence or lack of quality. However, adverse events to patients can be prevented when organizations consider “bad news” such as early identification of signs of failure as “good news” because it leads to correction of the problem prior to a total breakdown.

What are some hospital examples of preoccupation with failure?

- Calling the RRT for a subtle sign of clinical deterioration and moving the patient to the ICU prior to a resuscitation
- Reporting near misses and digging deeper to find out why they occur and how the problem could be corrected prior to reaching a patient

* Weick, K., & Sutcliffe, K. (2015). *Managing the unexpected: Sustained performance in a complex world* (3rd ed.). Hoboken, NJ: Jossey-Bass.

- Conducting Failure Mode Effects Analysis (FMEA) prior to and after implementation of new equipment or processes to determine latent or weak failures in the system

Is your unit/work area preoccupied with failure? Ask:

- Are we rewarded when we report mistakes, near misses? Is it easy to report a near miss?
- What near misses were reported here, and did we change anything because of the near miss? Why or why not?

RELUCTANCE TO SIMPLIFY

What is reluctance to simplify?

Failures seldom occur without early warning signs. Early warning signs of problems are easily missed when the focus is on quick solutions based on a narrow or predetermined viewpoint. More often, the solution is found within the full context or the details of a situation. Reluctance to simplify means that problems are solved by asking more questions from diverse viewpoints to paint a richer picture of the problem. Solutions are generated by refusing to categorize the problem until it is fully described.

Why is reluctance to simplify important to high reliability?

High reliability organizations work to become experts at handling unexpected events. Unexpected events come from diverse pathways. Diversity is needed to fully explore the range of these unexpected events. For example, if nursing were the only discipline consulted about a patient care problem, the range of possible solutions would be limited to nursing viewpoints and interventions. This would be simplifying the problem by categorizing it to nursing and ignoring the diversity needed from other disciplines. Problems seldom arise from just one cause, so it is ineffective to try to solve problems with just one discipline or viewpoint.

Why is reluctance to simplify challenging to healthcare organizations?

To simplify means to label or categorize to make a situation actionable. Simplification drives organization life, especially healthcare. Actions in the hospital are based on using metrics and impressions to place a situation into a known category. Reluctance to simplify is difficult, especially in healthcare, because it calls for us to suspend our beliefs and hierarchies to obtain deeper information. That deeper information is often sought in the form of multidisciplinary collaboration in which all disciplines and viewpoints are heard. True multidisciplinary collaboration remains a healthcare challenge.

What are some hospital examples of reluctance to simplify?

- A multidisciplinary group convened to address a system problem
- Root cause analysis that looks at all aspects of a system problem
- Using data as a jumping-off point to examine issues further—for example, using focus groups to dig deeper into low scores on a Patient Safety Survey

- Multidisciplinary patient care rounds with emphasis on all disciplines' participation and involvement in problem-solving

Does your work unit exhibit a reluctance to simplify? Ask:

- Is staff rewarded for asking questions, questioning the status quo, and questioning authority?
- Are people encouraged to bring up difficult problems that have the potential to stop a process or procedure?

SENSITIVITY TO OPERATIONS

What is sensitivity to operations?

Sensitivity to operations means that the organization responds and detects flaws in the system as it exists. In other words, the organization is “responsive to the messy reality” inside the system. Organizations striving for high reliability examine current processes and how real-time staff behaviors are shaped by these processes. For example, when a protocol deviation is noted, the HRO seeks to find out why the protocol was not followed rather than force a protocol that does not rationally work within the context.

Why is sensitivity to operations important to high reliability?

Sensitivity to operations concerns attention paid to how the work *is* done in real time rather than how it *should* be done. Policies, procedures, and protocols can work wonderfully on paper, but the success of these interventions is in the implementation at the work site. For example, workarounds are a symptom of an ineffective process. As workarounds persist, they become normalized, causing the system or process to become more vulnerable to failure. Sensitivity to operations detects workarounds as a symptom of impending failure to prevent this vulnerability.

Why is sensitivity to operations challenging to healthcare organizations?

Analysis of past events is the norm in the healthcare organization. Events are analyzed in terms of what should have been done dependent on existing rules or protocols. This analysis is an example of *hindsight bias*. Hindsight bias occurs when we already know the outcome and fall back on blaming the problem on user error or “this person did not follow the protocol.” Hindsight bias is not helpful because it does not consider the context and why the person did a certain action. Digging deeper into the “why” is often difficult, but digging deeper unearths system causes of error that direct staff nearer to the error. Correcting these system causes is not as easy as correcting the individual, but it will lead to longer-lasting error prevention.

What are some hospital examples of sensitivity to operations?

- Examining why medications were not scanned as defined per protocol
- Examining why a rapid response team was not called when the patient met the criteria

Is your work area sensitive to operations? Ask:

- Do people doing different jobs come into enough contact with each other during the day to have a big picture of how processes are working?
- Do supervisors constantly monitor workload and throughput to ensure that resources are available for busy times or emergencies?

COMMITMENT TO RESILIENCE

What is commitment to resilience?

The Merriam Webster Dictionary defines resilience as “the ability to recover from or adjust easily to misfortune or change.” The current climate of healthcare and patient care is one of change and unexpected events. Organizations that commit to resilience create an environment with resources to quickly shift gears when a change occurs so they can problem-solve, learn, and disseminate the learning and prevent further failure.

Characteristics include:

- Plan for redistributing staff for emergencies
- Ability to improvise and be creative
- Ability to form ad-hoc teams of experts

Why is commitment to resilience important to high reliability?

High reliability organizations realize that change and failures are sometimes inevitable. However, catastrophic failure can occur if organizations are not able to shift gears to constrain the damage.

Why is commitment to resilience challenging to healthcare organizations?

A main tenet of resilience is to have resources ready for surprises. Generally, organizations such as hospitals have a historic and financial mind-set of preparation for the known rather than the unknown. Preparing for the unknown requires training and preparation for emergencies and a healthy appreciation that bad things do and will happen in situations that have previously been routine.

What are some hospital examples of commitment to resilience?

- Command Center used as a vehicle for hospital collaboration for emergent events
- Immediate healthcare team collaboration or conference for changes in patient condition
- Rapid response team activation for changes in patient condition
- Debriefing of staff after unusual or rare patient care events
- Mock code blue training

Is your work area committed to resilience? Ask:

- What was the last unexpected event that occurred here? Did we have the immediate resources to problem-solve and do what was needed for the patient? Why or why not?
- What did we learn from that event? Is the learning still in practice here?

DEFERENCE TO EXPERTISE

What is deference to expertise?

Deference to expertise means that the organization allows decisions to come from people or teams from all corners of the system. Those closest to the problem are empowered to speak up and call attention to the problem and are empowered to make decisions that affect their work.

Why is deference to expertise important to high reliability?

Deference to authority, as is common in most healthcare operations, is the norm for low-risk, routine operations. However, unexpected situations often arise that the person in authority may not be in a position to recognize. Weak signals of failure are often noted by lower ranking members of the team, thus shifting the level of needed authority to those who are closest to the problem. High reliability depends on those closest to the problem to have the authority and support to speak up, make decisions, and stop a process to preserve patient safety.

Why is deference to expertise challenging to healthcare organizations?

Healthcare organizations typically and historically function in a top-down, hierarchical model, with those at the highest levels easily heard and those at the lowest levels silent. There is also a natural fear of appearing personally incompetent when acknowledging failure. Fear of reporting and structural and cultural hierarchy are two top challenges to deference to expertise.

What are some hospital examples of deference to expertise?

- Multidisciplinary timeouts prior to procedures with the ability for anyone to ask questions in a supportive environment before the start
- Multidisciplinary rounds with input from all providers and support for questions asked
- Executive rounding on nursing units for feedback
- Protocols that allow discretion and summoning of resources at the point of care: stroke protocol, RRT protocol

Does your work area defer to expertise? Ask:

- Do staff who do the work ask to be involved in decisions that affect their work?
- Do staff in this area value expertise over hierarchical rank or authority?
- Is there respect for the nature of the different jobs that people do here?

