

# Chapter 20

## Quality Improvement and Patient Safety Resources

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### Overview

Pediatric hematology/oncology/hematopoietic stem cell transplant patients are highly susceptible to preventable harm. They usually have central venous catheters exposing them to infectious or thrombotic complications, receive toxic medications, are highly susceptible to healthcare-acquired infection, and are at high risk of home medication errors and nonadherence. The Institute of Medicine defines patient safety as the prevention of harm to patients, and workers in healthcare delivery systems have an obligation to prevent harm through cultivation of a culture of safety that prevents errors and learns from the errors that do occur.

The goal of this chapter is to provide a useful reference of resources to assist individuals and organizations in its quality improvement and safety efforts. It provides a concise summary of selected patient safety and quality manuscripts and books.

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## Quality Improvement Resources

### *Books*

Crossing the Quality Chasm: A New Health System for the 21st Century. 2001. 1st Edition. Institute of Medicine Committee on Quality of Health Care in America (Author).

- *A follow-up to the Institute of Medicine (IOM) patient safety report, To Err is Human: Building a Safer Health System, Crossing the Quality Chasm encourages and advocates for a redesign of the healthcare system.*

The Improvement Guide: A Practical Approach to Enhancing Organizational Performance. 2009. 2nd Edition. Gerald J. Langley, Ronald D. Moen, Kevin M. Nolan, Thomas W. Nolan, Clifford L. Norman, and Lloyd P. Provost (Authors).

- *The Improvement Guide offers an integrated approach to process improvement with step-by-step instruction on the Model for Improvement. The book provides a practical set of examples and applications for the implementation and acceleration of improvement.*

Quality Improvement Through Planned Experimentation. 2012. 3rd Edition. Ronald M. Moen, Thomas W. Nolan, Lloyd P. Provost (Authors).

- *This book discusses the principles and methodologies for planned experimentation to improve processes and systems. The book incorporates case studies sequentially to provide the reader the knowledge needed to test and implement improvement strategies.*

A Lean Guide to Transforming Healthcare: How to Implement Lean Principles in Hospitals, Medical Offices, Clinics, and Other Healthcare Organizations. 2006. 1st Edition. Thomas Zidel (Author).

- *A Lean Guide to Transforming Healthcare provides a practical review of the concepts of Lean and Six Sigma.*

Basics of Health Care Performance Improvement: A Lean Six Sigma Approach. 2011. 1st Edition. Donald Lighter (Author).

- *Basics of Health Care Performance Improvement provides an overview of the principles and procedures of Lean Six Sigma. In addition, the book provides in-depth information on planning and implementing a "Define-Measure-Analyze-Improve-Control" initiative to reduce errors and improve performance.*

The Lean Six Sigma Pocket Toolbook: A Quick Reference Guide to 100 Tools for Improving Quality and Speed. 2004. 1st Edition. Michael L. George, John Maxey, David Rowlands and, Mark Price (Authors).

- *Through summaries and examples, the Lean Six Sigma Pocket Toolbook assists the reader to determine which quality improvement tool is best suited for specific purposes.*

Lean Hospitals: Improving Quality, Patient Safety, and Employee Engagement. 2011. 2nd Edition. Mark Graban (Author).

- *Lean Hospitals: Improving Quality, Patient Safety, and Employee Engagement explains how to use the Lean philosophy and management system to improve safety, quality, access, and morale while reducing costs in healthcare delivery.*

Lean Six Sigma for Hospitals: Simple Steps to Fast, Affordable, and Flawless Healthcare. 2011. 1st Edition. Jay Arthur.

- *The purpose of Lean Six Sigma for Hospitals is to provide simple steps to help hospitals get faster, better, and cheaper in 5 days.*

Why Hospitals Should Fly: The Ultimate Flight Plan to Patient Safety and Quality Care.

2008. 1st Edition. John J. Nance (Author).

- *Written as a novel, touches upon all the tenets of quality and safety in hospitals.*

Beyond Heroes: A Lean Management System for Healthcare. 2014. 1st Edition. Kim Barnas (Author).

- *Beyond Heroes outlines the leadership system necessary to achieve improvements in healthcare and explores the essential components of the lean system.*

### ***Manuscripts and White Papers***

Mueller BU. Quality and Safety in Pediatric Hematology/Oncology. Pediatric Blood and Cancer. 2014;61(6):966-9.

- *This review describes healthcare gaps and opportunities for improved health-care quality and safety in pediatric hematology/oncology patients.*

Scoville R, Little K. Comparing Lean and Quality Improvement. Institute for Healthcare Improvement white paper. 2014.

- *This IHI white paper details Lean and the IHI approach to quality improvement, including the basic concepts and principles of each approach, and for what purposes each approach is the most appropriate.*

Resar R, Griffin FA, Haraden C, Nolan TW. Using Care Bundles to Improve Health Care Quality. Institute for Healthcare Improvement Innovation Series white paper. 2012.

- *This white paper reviews the theory, design, and outcomes associated with the development and use of bundled care.*

Going Lean in Health Care. Institute for Healthcare Improvement Innovation Series white paper. 2005.

- *Lean management principles have been used effectively in manufacturing companies for decades; this white paper reviews the mechanisms Lean principles can be applied into healthcare.*

Margolis P, Provost LP, Schoettker PJ, Britto MT. Quality improvement, clinical research, and quality improvement research—opportunities for integration. *Pediatric Clinics of North America*. 2009;56(4):831-41.

- *This article describes opportunities to integrate quality improvement and clinical research.*

Campbell M, Fitzpatrick M, Fitzpatrick R, Haines A, Kinmonth AL, Sandercock P, Spiegelhalter D, Tyrer P. Framework for design and evaluation of complex interventions to improve health. *British Medical Journal*. 2000; 321: 694-696.

- *This article describes the importance and practicality of a phased approach to the development and evaluation of complex interventions in healthcare.*

## Organizational Patient Safety Resources

### **Books**

To Err is Human: Building a Safer Health System. 2000. 1st Edition. Institute of Medicine Committee on Quality of Health Care in America (Author).

- *Through this report, the Institute of Medicine presents a comprehensive strategy to reduce medical errors.*

Patient Safety. 2010. 1st Edition. Charles Vincent (Author).

- *Patient Safety reviews the evidence behind the issues directly related to patient safety issues and provides practical guidance on implementing safer practices.*

Error Reduction in Health Care: A Systems Approach to Improving Patient Safety. 2011. 2nd Edition. Patrice L Spath (Author).

- *Error Reduction in Healthcare provides case series examples of incidences associated with patient safety and provides mechanisms to provide improved care.*

Safe Patients, Smart Hospitals: How One Doctor's Checklist Can Help Us Change Health Care from the Inside Out. 2011. 1st Edition. Peter Pronovost and Eric Vohr (Authors).

- *Written by a leader in patient safety who revolutionized bloodstream infection prevention by creating a simple checklist.*

### ***Manuscripts and White Papers***

Gandhi TK, Berwick DM, Shojania KG. Patient Safety at the Crossroads. JAMA. 2016;315(17):1829-30.

- *The report makes recommendations necessary to achieve total systems safety. This viewpoint focuses on the mechanisms and recommendations for healthcare leaders to maintain a safety culture.*

Birk S. Lists that work: The healthcare leader's role in implementation. Healthcare Executive. 2013;28(2):28-37.

- *The article reviews the experiences of several organizations in implementing checklists to improve patient safety.*

Sadler BL, Joseph A, Keller A, Rostenberg B. Using evidence-based environmental design to enhance safety and quality. IHI Innovation Series white paper. Institute for Healthcare Improvement; 2009.

- *This paper shows healthcare leaders how evidence-based environmental design interventions can measurably enhance the care they provide.*

Botwinick L, Bisognano M, Haraden C. Leadership guide to patient safety. IHI Innovation Series white paper. Institute for Healthcare Improvement; 2006.

- *The IHI White Paper presents eight steps recommended to follow to achieve high reliability in the healthcare organization.*

Gandhi TK, Berwick DM, Shojania KG. Patient safety at the crossroads. Journal of the American Medical Association. 2016;315(17):1829-1830.

- *The authors reevaluate the status of patient safety 15 years after "To Err Is Human" was published and proposes a course for future patient safety work.*

## **Medical Errors**

### ***Manuscripts and White Papers***

Leape LL. Reporting of adverse events. New England Journal of Medicine. 2002;347(20):1633-1638.

- *The article reviews medical error reporting and explores options for improved reporting systems.*

Federico F. An overview of error-reduction options. *Nursing Management IT Solutions*. 2010 Sep:14-16.

- *This article provides a brief overview of low-tech approaches to decrease medication administration errors.*

Hannisdal E, Arianson H, Braut GS, Schlichting E, Vinnem JE. A risk analysis of cancer care in Norway: the top 16 patient safety hazards. *The Joint Commission Journal on Quality and Patient Safety*. 2013 Nov;39(11):511-6.

- *Through retrospective analysis and interviews with key personnel, the Norwegian Board of Health Supervision reviewed the top hazards associated with cancer care in their country.*

Kullberg A, Larsen J, Sharp L. ‘Why is there another person’s name on my infusion bag?’ Patient safety in chemotherapy care - a review of the literature. *European Journal of Oncology Nursing*. 2013;17(2):228–35.

- *This review article identified and discussed evidence-based practices to improve the safety of chemotherapy administration.*

## Human Factors

### *Books*

Human Error. 1990. 2nd Edition. James Reason (Author).

- *Considered the “Bible” of error theory, Human Error reviews the framework for understanding error.*

Human Error in Medicine. 1994. 2nd Edition. Marilyn Sue Bogner (Author).

- *Human error reviews many aspects of healthcare topics and provides solutions through improved healthcare delivery system design.*

Human Factors and Ergonomics in Health Care and Patient Safety. 2012. 2nd Edition. Pascale Carayon (Editor).

- *This book discusses the contributions of human factors and ergonomics to the improvement of patient safety and quality. The book argues that in order to take the next steps in quality of care and patient safety, of care, collaboration between human factor professionals and healthcare providers must occur.*

The Checklist Manifesto: How to Get Things Right. 2011. Reprint Edition. Atul Gawande (Author).

- *Through examples, the Checklist Manifesto demonstrates how the use of checklists can improve care.*

## Measurement of Improvement

### *Books*

The Health Care Data Guide: Learning from Data for Improvement. 2011. 1st Edition. Lloyd p. Provost and Sandra K. Murray (Authors).

- *The Health Care Data Guide provides a practical step-by-step guide to statistical process control (SPC), including Shewhart charts, run charts, frequency plots, scatter diagrams, and Pareto analysis.*

Measuring Quality Improvement in Healthcare. 2001. 1st Edition. Robert C. Lloyd and Raymond G. Carey (Authors).

- *This book addresses the effectiveness of quality improvement efforts and covers practical applications of the tools and techniques of statistical process control (SPC), including run charts and control charts.*

Improving Healthcare with Control Charts: Basic and Advanced SPC Methods and Case Studies. 2003. 1st Edition. Raymond G. Carey and Larry V. Stake (Authors).

- *Improving Healthcare with Control Charts provides a comprehensive review of statistical process control (SPC). In addition, the authors utilize case studies to demonstrate applicability of SPC in the healthcare setting.*

### *Manuscripts and White Papers*

Berwick DM. Controlling Variation in Health Care: A Consultation from Walter Shewhart. Medical Care. 1991;29(12):1212–25.

## Sustainability

### *Books*

Managing the Unexpected: Sustained Performance in a Complex World. 2015. 3rd Edition. Karl E. Weick and Kathleen M. Sutcliffe (Authors).

- *Explaining the need for hospitals to become high-reliability organizations.*

### *Manuscripts and White Papers*

Scoville R, Little K, Rakover J, Luther K, Mate K. Sustaining Improvement. Institute for Healthcare Improvement White Paper. 2016.

- *This white paper presents the framework of healthcare delivery systems that can be used to sustain improvements in the safety, effectiveness, and efficiency of patient care.*

Nolan T, Resar R, Haraden C, Griffin FA. Improving the Reliability of Health Care. Institute for Healthcare Improvement Innovation Series white paper. 2004.

- *This white paper describes the principles and strategies used to evaluate, calculate, and improve the reliability of complex systems.*

## Spread

### *Manuscripts and White Papers*

Massoud MR, Nielsen GA, Nolan K, Schall MW, Sevin C. A Framework for Spread: From Local Improvements to System-Wide Change. Institute for Healthcare Improvement White Paper. 2016.

- *This white paper delineates the steps successful organizations have taken to spread successful improvement. These include mechanisms to prepare for spread, establish an aim for spread, and develop a spread plan.*

## Leadership

### *Books*

Leading Change. 2012. 1st Edition. John P. Kotter (Author).

- *In this business manual, John P. Kotter provides an eight-step framework to manage change with positive results.*

ADKAR: A Model for Change in Business, Government and our Community. 2006. 1st Edition. Jeffrey M. Hiatt (Author)

- *The ADKAR model (Awareness, Desire, Knowledge, Ability, Reinforcement) has emerged as a holistic approach that brings together the collection of change management work into a simple, results-oriented model. This model ties together all aspects of change management including readiness assessments, sponsorship, communications, coaching, training, and resistance management.*