NCICLE NATIONAL COLLABORATIVE FOR IMPROVING THE CLINICAL LEARNING ENVIRONMENT

THE ROLE OF CLINICAL LEARNING ENVIRONMENTS IN

Preparing New Clinicians to Engage in Patient Safety

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THE ROLE OF CLINICAL LEARNING ENVIRONMENTS IN

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NOTE FROM THE CO-CHAIRS

Significant work has been underway nationally to improve the quality and safety of health care since the landmark report from the Institute of Medicine, *To Err is Human*.[1] Yet data from more recent studies[2,3] suggest that thousands of individuals still die each year because of medical errors. Obviously, something different has to be done to reverse this trend.

We believe that several things have to happen: (*1*) health care professions' schools need to enhance their curricula in patient safety science and help their students learn contemporary principles of patient safety science and embed these principles in their practices; (*2*) health care delivery systems need to create environments within which new and experienced clinicians can do their very best work to promote patient safety and interprofessional teamwork in delivering care; and (*3*) clinical learning environments must be created to help new clinicians—whether they are new to the profession or new to a particular health care environment—engage fully in efforts to improve the delivery of safe, effective health care.

This effort focuses on the essential role that clinical learning environments play in shaping new health care practitioners to deliver safe, quality health care.

We were privileged to be part of a committed, interprofessional group with all sorts of backgrounds and perspectives that was able to sort out these issues and come up with recommendations to help organizations establish supportive environments. We are also grateful for the many patient safety and quality leaders that provided input on concepts that helped shape this document. Our hope is that executive leaders can take this information and set of recommendations (outlined in the Appendix) to develop strategies that fit their organization and create learning environments that help new clinicians engage in patient safety.

Joanne Disch, PhD, RN, FAAN Charles M. Kilo, MD, MPH

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PREFACE

The National Collaborative for Improving the Clinical Learning Environment (NCICLE) presents this guidance document to stimulate enhanced efforts to rapidly engage new clinicians in patient safety activities. The term *new clinicians* is used in this document to define individuals transitioning from a health profession's education environment to a clinical learning environment, or CLE (eg, residents, nurses, pharmacists, etc, who are new to practice). The members of NCICLE believe that each new clinician has an individual responsibility to engage in and promote patient safety. However, they also recognize that CLEs need to equip new clinicians with the skills needed to optimize patient safety throughout their careers. This guidance document focuses primarily on the health system's responsibility to successfully engage new clinicians in patient safety during their first year of practice. In particular, it calls upon the executive leadership of health care systems to work with their clinical educators to make certain that each of their new clinicians actively participates in the health care system's patient safety activities to ensure the best possible patient care.

EXECUTIVE SUMMARY

Several key concepts are highlighted in this document:

- Engagement in patient safety is an essential part of care for any clinician, and lack of clinician engagement is an important "patient safety gap."
- To close this gap, new clinicians need to fully engage in patient safety activities during their first year of clinical practice in a new clinical environment.
- Leaders of the clinical learning environment (CLE) need to ensure that, throughout their first year, new clinicians work with other members of their patients' clinical care team to actively engage in and promote the CLE patient safety system, specifically by: (*1*) demonstrating an understanding of how the CLE provides a "culture of safety," (*2*) recognizing and reporting patient safety issues identified in the day-to-day provision of patient care, (*3*) participating in the analysis of patient safety events, and (*4*) recognizing how the CLE translates patient safety event reports into improvements.
- The CLE's leadership should ensure that each of its new clinicians is engaged in evidence-based patient safety. In doing so, leadership is responsible for ensuring that its health care system has a culture that embraces patient safety principles; an infrastructure that is adequate to support patient safety activities, including the training of new clinicians; and mechanisms for measuring and monitoring progress in successfully engaging all new clinicians in patient safety activities within their first year of clinical practice.

THE "PATIENT SAFETY GAP"

Each year, thousands of physicians, nurses, pharmacists, allied health specialists, social workers, and other health professionals are either new to the workforce (ie, *new clinicians*, who are the focus of the present document) or entering different clinical care settings. For these clinicians, each clinical care setting is their *clinical learning environment* (CLE). For purposes of this document, CLEs are defined as the settings in which health care professionals are enculturated to provide high-quality, safe, and efficient patient care. This environment is much more than a set of places and resources; it includes the people, their values, and the sense of dedication to team and community.[4] Some individuals enter the CLE with basic knowledge of the patient safety science concepts that are the foundation of error reduction and prevention.[5] Others enter the CLE with no prior introduction to those principles. Although the education of physicians, nurses, and other health professionals has progressed in recent years in this area,[6-8] at present, training in patient safety is inconsistent—both within and across the professions.[9-12] As a result, many new clinicians complete clinical training without acquiring the skills they will need to optimize patient safety throughout their clinical careers. Currently, no commonly agreed upon guidelines exist for what knowledge and skills new clinicians need to acquire as they initially engage in patient care. In addition, no commonly agreed upon guidelines currently exist as to what the responsibilities of the CLE's leadership are for setting expectations and ensuring that new clinicians engage in patient safety programs.

Studies show that health care delivery systems that lack an explicit commitment to patient safety have an increased likelihood of patient harm.[13] As CLEs, health care institutions have a dual responsibility in that they must address patient safety in a manner that serves both patients and new clinicians. Clinical learning environments that invest in building and implementing an infrastructure to inculcate new clinicians in patient safety practices are likely to recognize benefits well into the future because they will foster clinicians oriented to systems-based approaches to reducing harm and optimizing patient care.

CLINICAL LEARNING ENVIRONMENT

Clinical learning environments, or CLEs, are the settings in which health care professionals are enculturated to provide high-quality, safe, and efficient patient care.

"It is much more than a set of places and resources; it includes the people, their values, and the sense of dedication to team and community." [4(p11)]

BUILDING A SYSTEMATIC APPROACH

Over the course of their first year, new clinicians from all professions should be developing the attitudes and skills needed to fully engage in and actively contribute to the CLE's patient safety improvement efforts. This section includes a framework for developing these new clinician skills within this timeframe. This document is not designed to propose a specific curriculum or suggestions for regulatory action. Rather, leaders of hospitals, medical centers, clinics, and other CLEs should use this document as a resource for onboarding new clinicians to the concepts and practices of patient safety.

Foundational Elements

Creating a CLE in which new clinicians are purposefully prepared to engage in efforts to address patient safety requires the following foundational elements:

Leadership: A governing body that actively engages in overseeing the CLE's approach to optimizing patient safety. This body includes C-suite/organizational leaders who purposefully set strategic direction, define the organizational culture, and commit the resources needed to develop sustainable processes; patient safety leaders who have the knowledge and skills to design and implement a program of experiential learning and to serve as mentors; and clinical education leaders who are prepared to effectively teach patient safety to their new clinicians.

Culture: Expectations and actions that embrace the principles of "just culture" and a culture of safety.[14]

Infrastructure: A clearly defined structure for reporting patient safety events, tracking and trending these events across departments and service lines, prioritizing events for further analysis, conducting systems-level interprofessional patient safety event analysis, developing and implementing system-based action plans, and evaluating the efforts to succeed in implementing those action plans.

Methods and measurement: Organized approaches to addressing issues of patient safety that reflect standard methodologies of health care quality improvement, including the steps of routine measurement for purposes of ongoing evaluation.

The **Appendix** contains a sample checklist that will help leadership establish these foundational elements. Once these elements are in place, CLE leadership should use a systematic approach to engage new clinicians in patient safety. The following sections cover the role of leadership in this approach and outline a framework for engaging new clinicians in patient safety during their first year in a CLE.

Role of Leadership

The success of a systematic approach for engaging new clinicians in patient safety depends on the organizational leadership, infrastructure, and practices of the CLE. Across health care delivery systems, it is widely recognized that leaders have a responsibility to align patient care with a culture of safety.[15-17]

Leadership is contextual,[18] and for most organizations, it is a shared responsibility. Each organization typically has three groups of leaders:

- **C-Suite/organizational leaders** (eg, chief executive officer, chief nursing officer, chief medical officer, board of directors, department chairs)
- **Patient safety leaders** (eg, chief patient safety officer, medication safety officer, and other patient safety and performance improvement science professionals, as well as those accountable for leadership in those practice areas)
- **Clinical education leaders** (eg, local champions of patient safety, faculty)

Each group of leaders plays a different role in successfully influencing and engaging new clinicians in optimizing patient safety (see **Table 1**).

TABLE 1: EXAMPLES OF CLINICAL LEARNING ENVIRONMENT LEADERSHIP RESPONSIBILITIES

C-Suite/Organizational Leaders	Patient Safety Leaders	Clinical Education Leaders
Develop a clear strategy and assign measurable outcomes, responsibilities, and accountability, and demonstrate commitment to engaging new clinicians in patient safety.	As part of an interprofessional education team, design, implement, monitor, and report on progress in engaging new clinicians in patient safety.	Cultivate an environment that views learning and patient care through the lens of patient safety. Include the development and implementation of well-designed, focused opportunities for experiential learning around patient safety for **ALL** members of the clinical team, including new clinicians within each clinical unit.

The key to success is to align and coordinate efforts among leadership groups. New clinicians need to be immersed in a culture that delivers a consistent message of safety. Leadership can establish this culture by setting expectations, providing role models and tools, and instilling in every new clinician a responsibility to contribute to the organization's efforts to ensure safe, high-quality patient care.

Framework for Clinical Learning Environments to Engage New Clinicians in Patient Safety: A 1-Year Plan

Setting measurable goals and a defined timeframe can help new clinicians maintain forward momentum and help prevent these clinicians—as well as the system—from becoming overwhelmed. This section contains the framework for engaging new clinicians in patient safety over the course of 1 year, beginning shortly after individuals enter into their new CLE.

As outlined in **Figure 1**, at the end of their first year in practice, new clinicians should be able to (*1*) understand the CLE's "culture of safety," (*2*) recognize and report patient safety issues, (*3*) participate in the analysis of patient safety events, and (*4*) recognize how the CLE translates patient safety event reports into improvements. Associated with each of these skills is a set of desired behaviors, which are described in **Table 2**.

By demonstrating these skills and their associated desired behaviors, new clinicians are well positioned to engage in patient safety throughout their careers, thereby building organizations' capacity to provide the safest possible care.

As they establish a framework for engaging new clinicians in patient safety, CLEs are encouraged to design their own activities with goals that apply to the context of daily routines and patient care.[19] For example, team training is more effective when it is recurrent or continuous as part of patient care than when it occurs as a single meeting held in reaction to an adverse event.

FIGURE 1: 1-YEAR JOURNEY OF NEW CLINICIANS TO BECOMING A SAFER NEW CLINICIAN

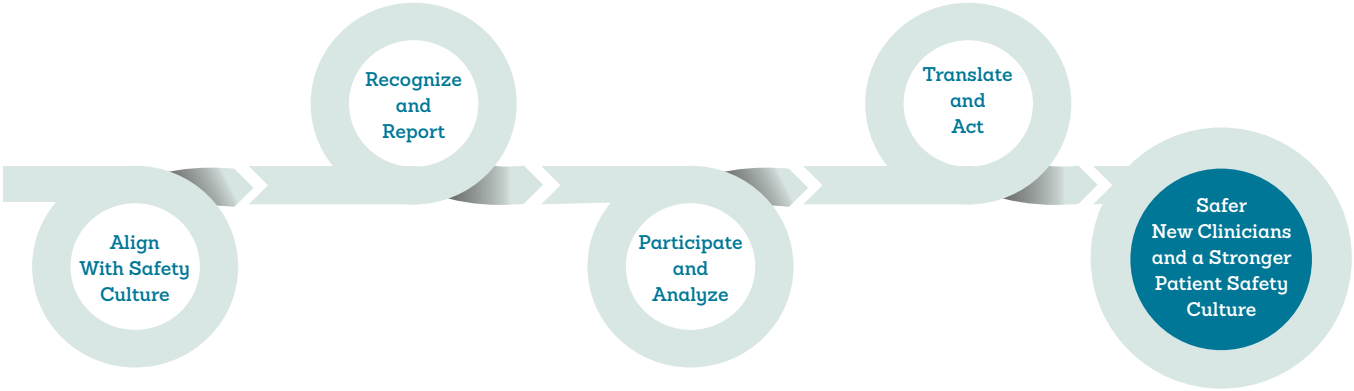


Figure 1. This figure illustrates the series of skills new clinicians need to acquire by the end of their first year in the clinical learning environment. These skills are essential for producing safer new clinicians, a stronger patient safety culture, and safer patient care.

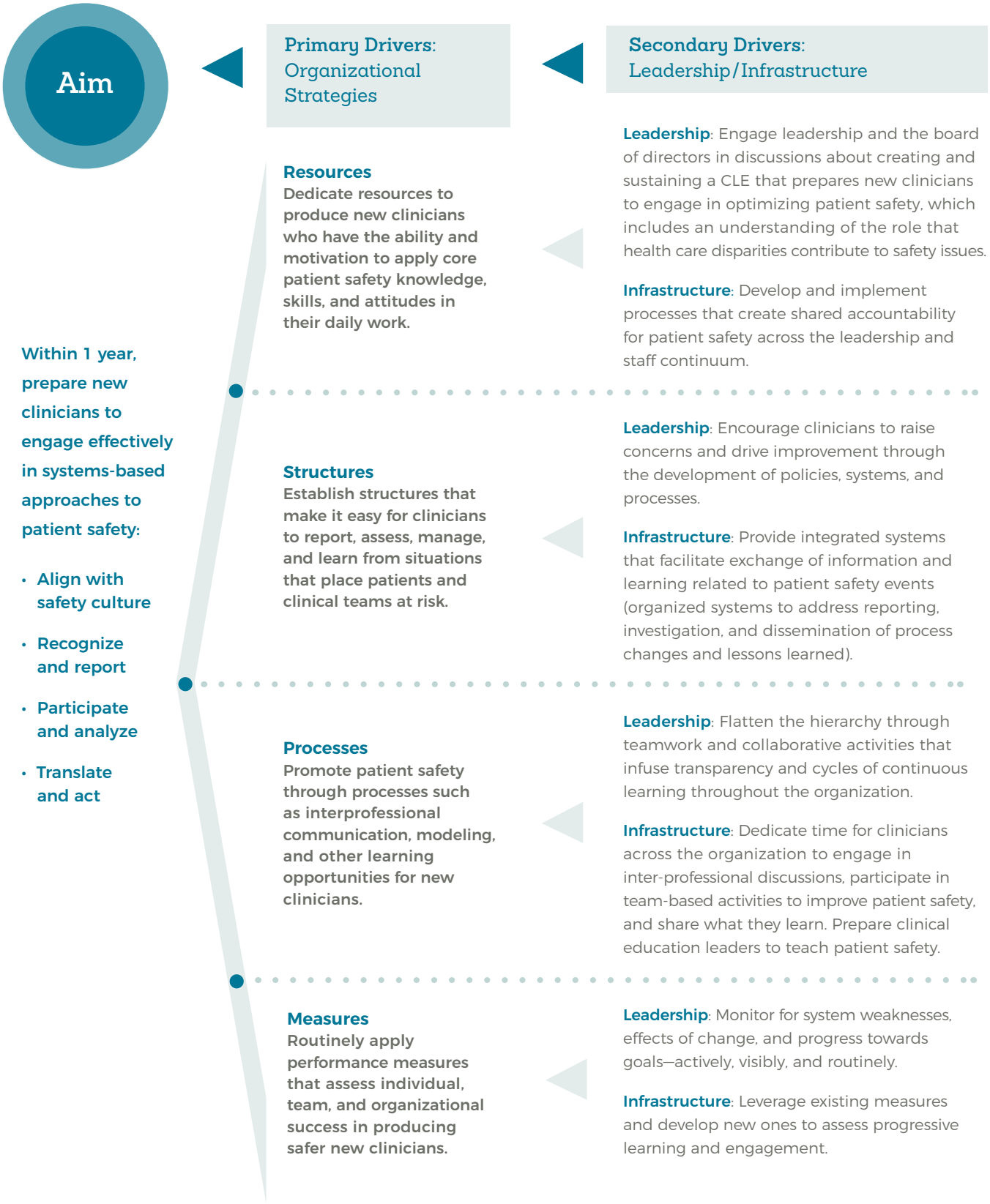
TABLE 2: DESIRED BEHAVIORS ASSOCIATED WITH NEW CLINICIAN SKILLS NEEDED FOR ENGAGING IN PATIENT SAFETY ACTIVITIES—FIRST-YEAR GOALS

New Clinician Skills	Desired Behaviors
Align With Safety Culture	• Embraces a just culture approach to learning from and reacting to the mistakes of peers, team members, and self. • Recognizes system complexities, human factors, and how engaging with the clinical learning environment (CLE) can contribute to improving patient safety. • Is aware of culture of safety surveys being conducted within the CLE and how this information is being used to make improvements.
Recognize and Report	• Identifies the full range of patient safety events (including near misses/close calls). • Recognizes reporting is a responsibility fundamental to safe patient care. • Personally reports patient safety events into the CLE's system for tracking these events.
Participate and Analyze	• Demonstrates critical-thinking skills at individual and team levels. • Regularly participates in comprehensive, facilitated, interprofessional, systems-based approaches to investigating patient safety events, and identifying improvement approaches and actions.
Translate and Act	• Receives informative feedback on patient safety events personally reported into the CLE's system. • Identifies how tracking, trending, and investigating patient safety event reports allows the CLE to identify and address vulnerabilities across units/departments. • Uses a systems- and evidence-based approach to determine how patient safety events can guide system improvement.

One way for CLE leaders to identify the systematic approach needed for engaging new clinicians in patient safety is to use a driver diagram. Like many other improvement tools, driver diagrams help leaders identify actions needed to progress toward and ultimately achieve a measurable aim.[20] Specifically, a driver diagram allows teams to visually depict high-level improvement goals as a logical set of actions and interventions, enabling them to have a shared view and even a measurement framework for monitoring progress.

The driver diagram presented in **Figure 2** expands upon the previously discussed foundational elements to depict a set of organizational strategies for engaging new clinicians in patient safety. The diagram includes four primary drivers—resources, infrastructure, processes, and measures—that CLE leaders should consider as they guide new clinicians through progressive engagement in patient safety. The secondary drivers provide guidance for leaders in setting organizational expectations and describe infrastructure considerations. When examined in totality, it is clear that leadership sets the cultural expectations and controls the resources vital to effectively engage new clinicians in patient safety.

FIGURE 2: DRIVER DIAGRAM: A CLINICAL LEARNING ENVIRONMENT (CLE) APPROACH TO ENGAGING NEW CLINICIANS IN OPTIMIZING PATIENT SAFETY



CONCLUSION

This guidance document identifies system-level drivers that yield safer new clinicians within 1 year of entering practice. It encourages leadership to embark on systemic change—using the sample checklist in the **Appendix** as a guide—to effectively engage new clinicians in patient safety and instill lifelong behaviors that will promote safe systems of care. If applied systematically and consistently, this framework has the capacity to shape clinicians from all professions into ambassadors for patient safety throughout their careers, regardless of the environment in which they practice.

ACKNOWLEDGMENTS

- The National Collaborative for Improving the Clinical Learning Environment (NCICLE): a forum for organizations committed to improving the educational experience and patient care outcomes within clinical learning environments. NCICLE seeks to simultaneously improve the quality of learning and patient care within clinical learning environments through shared learning and collaborative practice among its member organizations. To learn more about NCICLE, **visit ncicle.org**.

- Institute for Healthcare Improvement (IHI)/National Patient Safety Foundation (NPSF): The IHI and the NPSF began working together as one organization in May 2017. The newly formed entity is committed to using its combined knowledge and resources to focus and energize the patient safety agenda to build systems of safety across the continuum of care. To learn more about trainings, resources, and practical applications, **visit ihi.org/patientsafety**.

- Accreditation Council for Graduate Medical Education (ACGME): The ACGME is a private, nonprofit, professional organization responsible for the accreditation of approximately 10,000 residency and fellowship programs and approximately 800 institutions that sponsor these programs in the United States. Residency and fellowship programs educate more than 125,000 resident physicians in 150 specialties and subspecialties. The ACGME's mission is to improve health care and population health by assessing and advancing the quality of resident physicians' education through accreditation. To learn more about ACGME, **visit acgme.org**.

ACKNOWLEDGMENTS (CONTINUED)

NCICLE Patient Safety Work Group Members

Joanne Disch, PhD, RN, FAAN, Co-Chair
Clinical Professor
University of Minnesota

Charles M. Kilo, MD, MPH, Co-Chair
Chief Medical Officer
Oregon Health & Science University*
Chief Executive Officer
GreenField Health

Vineet Arora, MD, MAPP
Director of GME Clinical Learning Environment Innovation
University of Chicago

Marianne Baernholdt, PhD, MPH, RN, FAAN
Professor and Director
Langston Center for Quality, Safety and Innovation
Nursing Alumni Endowed Distinguished Professor
Virginia Commonwealth University School of Nursing

Sheri Cosme, DNP, RN-BC
Senior Operations Manager, Accreditation Program
Practice Transitions Accreditation Program and
Nursing Skills Competency Program
American Nurses Credentialing Center

Alissa Craft, DO, MBA*
Vice President, Accreditation
American Osteopathic Association

Laura Edgar, EdD, CAE
Executive Director, Milestones Development
ACGME

Karen E. Heiser, PhD
Vice President and DIO
Nationwide Children's Hospital

William H. Kose, MD, JD
Senior Vice President, Medical Affairs and
Chief Quality Officer
Blanchard Valley Health System

Douglas E. Paull, MD, MS, FACS, FCCP, CHSE
Senior Medical Officer/Deputy Director
Veterans Administration National Center for Patient Safety
Adjunct Assistant Professor Thoracic Surgery
University of Michigan

Rachel Rapaport-Kelz, MD, MSCE
Associate Professor of Surgery
Perelman School of Medicine

Anjala Tess, MD
Director of Quality Improvement and Safety, GME
Beth Israel Deaconess Medical Center

Allen J. Vaida, PharmD, FASHP
Executive Vice President
Institute for Safe Medication Practices

NCICLE Steering Committee Members (2017)

Peter B. Angood, MD, FRCS(C), FACS, MCCM, Chair
American Association for Physician Leadership

Jay Bhatt, DO
American Hospital Association

Kathy Chappell, PhD, RN, FAAN, FNAP
American Nurses Credentialing Center

Richard Hawkins, MD
American Medical Association

Heather Meissen, ACNP-BC, CCRN, FCCM
Association of Post Graduate APRN Programs

Janet A. Silvester, PharmD, MBA, FASHP
American Society of Health-System Pharmacists

Steve Singer, PhD
Accreditation Council for Continuing Medical Education

Kevin B. Weiss, MD
Accreditation Council for Graduate Medical Education

Kristen Will
Association of Postgraduate PA Programs

NCICLE Support

ACGME

Kevin B. Weiss, MD
Senior Vice President, Institutional Accreditation

Robin Wagner, RN, MHSA
Vice President, Clinical Learning Environment Review

Morgan Passiment
Director, Institutional Outreach and Collaboration

Patrick Guthrie
Assistant, Institutional Outreach and Collaboration

IHI Staff

Tejal K. Gandhi, MD, MPH, CPPS
Chief Clinical and Safety Officer

Patricia McGaffigan, RN, MS, CPPS
Vice President, Safety

Editorial Consultant

Lorri Zipperer
Zipperer Project Management

** Formerly employed at this organization.*

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NCICLE Member Organizations (2017)

Accreditation Council for Continuing Medical Education

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Institute for Healthcare Improvement/National Patient Safety Foundation

Institute for Safe Medication Practices

Liaison Committee on Medical Education

National Board of Medical Examiners

Organization of Program Director Associations

Quality and Safety Education for Nurses Initiative

The Joint Commission

Veterans Health Administration

Vizient, Inc.

GLOSSARY

Alignment with safety culture "Core values and behaviors resulting from a collective and sustained commitment by organizational leadership, managers and health care workers to emphasize safety over competing goals."[21]

Capacity-building structures Organizational procedures and processes that provide structural support over time to fully integrate the new clinician into the clinical learning environment patient safety culture. Also referred to as *infrastructure*.

Clinical learning environment Clinical learning environments, or CLEs, are the settings in which health care professionals are enculturated to provide high-quality, safe, and efficient patient care. "The CLE is much more than a set of places and resources. It also includes the people, their values, and the sense of dedication to team and community."[4(p11)]

Critical thinking abilities "Everyday [health care delivery], whether in physicians' offices or emergency departments or hospital wards, clearly involves *'reasonable reflective thinking that is focused on deciding what to believe* (meaning the **understanding** of the problem) *and/or what to do* (ie. **deciding** what to do to solve the problem)'."[22(pRA14)]

Driver diagram A visual depiction of "system components or factors which contribute directly to achieving an aim. Secondary drivers are actions, interventions, or lower-level components necessary to achieve the primary drivers."[20(p5)]

Effective communication "The exchange of information between a sender and a receiver irrespective of the medium."[23(p190)]

Expert team "A set of interdependent team members, each of whom possesses unique and expert-level knowledge, skills, and experience related to task performance, and who adapt, coordinate, and cooperate as a team, thereby producing sustainable and repeatable team functioning at superior or at least near-optimal levels of performance."[24(p440)]

Leadership The ability to "[work] with and through others to improve something."[18(p302)] Individuals in key leadership roles for assuring effective clinical learning environments include members of the C-suite, the board of trustees, directors of graduate education programs, clinical leaders and managers, and others.

Safer new clinician The safer new clinician demonstrates behaviors and an orientation to individual and system improvement to reliably provide safe care.

System orientation A consideration of "how cognition and error mechanisms apply to the practice of hospital medicine. Specifically, [an orientation to] examine … care delivery systems in terms of the systems' ability to discover, prevent, and absorb errors and for the presence of psychological precursors."[5(p1856)]

Personal and team accountability "Accountability entails the procedures and processes by which one party justifies and takes responsibility for its activities."[25(p229)]

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APPENDIX

Getting Started: Example Checklist

The following is a sample checklist that clinical learning environment (CLE) leaders can use as a guide for establishing and sustaining the foundational elements needed to engage new clinicians in patient safety.

1. Create a steering committee of individuals responsible for orientation and engagement of new clinicians. Establish charge, identify accountabilities, and seek input from other key organizational leaders.

2. Gain peer support for the CLE initiative.

3. Describe the number, types, and likely starting cycles for new clinicians over the coming year.

4. Review current orientation and continuing education experiences (eg, classes, learning exercises) and assess the extent (and adequacy) to which they cover the key concepts of safe clinical practice.

5. Identify key learning objectives and, building off of **Table 2** the National Collaborative for Improving the Clinical Learning Environment guidance document, develop a timetable with specific learning experiences for new clinicians.

6. Develop evaluation metrics against which the CLE initiative will be assessed.

7. Host learning sessions for senior leaders and middle managers about the concept, principles, rationale (business case), and core elements of a CLE.

8. Ensure that the CLE's clinical education leaders are prepared to effectively teach patient safety.

9. Establish ongoing communication mechanisms for new clinicians to provide feedback on how the learning is progressing and for the CLE to monitor that progress.