

CLER:  
Pursuing  
Excellence  
in Clinical Learning  
Environments

ACGME SUMMARY REPORT:  
The Pursuing Excellence Pathway  
Leaders Patient Safety Collaborative



ACGME

Accreditation Council for  
Graduate Medical Education

@2020 Accreditation Council for Graduate Medical Education (ACGME)

ISBN: 978-1-945365-36-2

Suggested citation: Passiment M, Wagner R, Weiss KB for the Pursuing Excellence in Clinical Learning Environments: Pathway Leaders Patient Safety Collaborative. *ACGME Summary Report: The Pursuing Excellence Pathway Leaders Patient Safety Collaborative*. Published September 30, 2020.

doi:10.35425/ACGME.0006

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# ACGME SUMMARY REPORT: The Pursuing Excellence Pathway Leaders Patient Safety Collaborative

Resident and fellow physicians train in clinical learning environments (CLEs), including hospitals, medical centers, and ambulatory care clinics, that have in place infrastructure and processes to optimize patient safety. However, graduate medical education (GME) is often disconnected from these critical practices. To address the disconnect, in 2017 the Accreditation Council of Graduate Medical Education (ACGME) Clinical Learning Environment Review (CLER) Program launched the *Pursuing Excellence Pathway Leaders Patient Safety Collaborative* (Passiment et al. 2019). The Collaborative's purpose was to convene teams from across the spectrum of ACGME Sponsoring Institutions to design and test new approaches to increasing resident and fellow engagement in improving patient safety. This report describes how nine Sponsoring Institutions collaborated to improve GME around patient safety. It includes key concepts the teams learned about and applied. It also highlights their successes and lessons learned.

## BACKGROUND

The *Pursuing Excellence Pathway Leaders Patient Safety Collaborative* is one component of a larger ACGME effort, *Pursuing Excellence in Clinical Learning Environments (Pursuing Excellence)*. The impetus for both was the Clinical Learning Environment Review (CLER) Program's *National Report of Findings 2016* (Wagner et al. 2016).

The first National Report revealed high variability between and within organizations with regard to the level and degree to which they engage resident and fellow physicians and GME leadership in optimizing patient care and learning across six key Focus Areas: patient safety; health care quality; care transitions; supervision; fatigue management, mitigation, and duty hours; and professionalism, and prompted the ACGME to consider how to support the GME community in accelerating positive change.

Recognizing that successful solutions will come from the community, the ACGME structured *Pursuing Excellence* on a model of shared learning. *Pursuing Excellence* has three main components: Pathway Innovators; Pathway Leaders; and Pathway Learners (Figure 1). Through *Pursuing Excellence*, the ACGME—in partnership with other organizations in health care quality, patient safety, and education (Appendix 1)—is

strengthening the relationships among GME and CLE leaders, promoting transformative improvements in CLEs, and sharing their successful models, approaches, and lessons learned with the broader GME and CLE community.

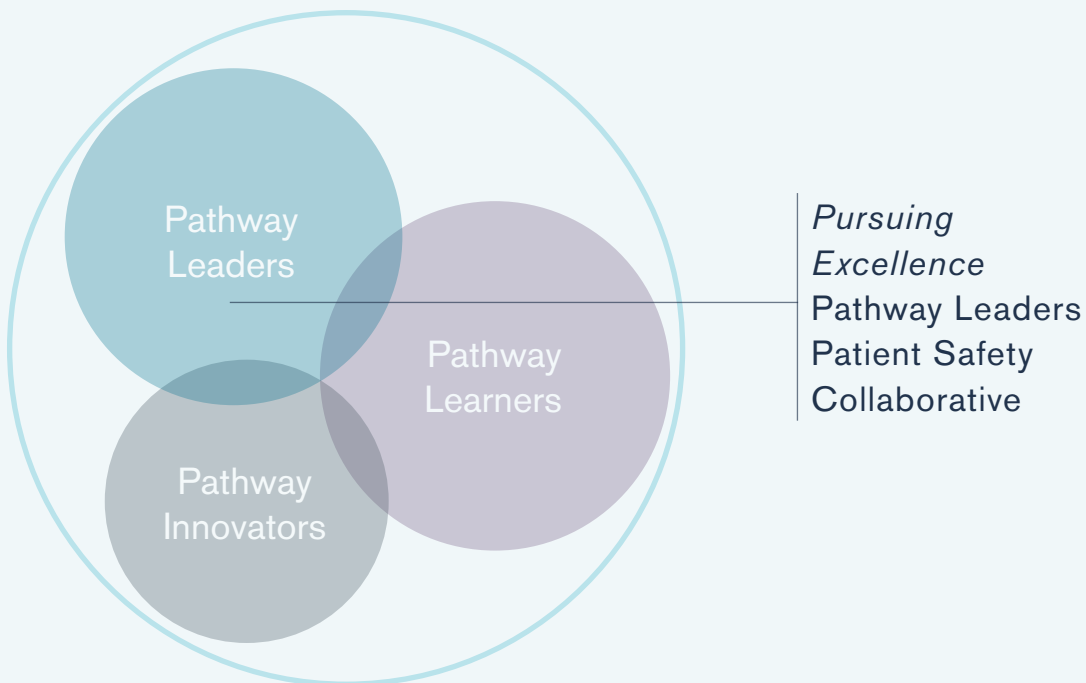
Figure 1: The Pursuing Excellence Initiative

**Three main components of the Pursuing Excellence in Clinical Learning Environments initiative**

The **Pathway Innovators** component involves a four-year Collaborative of teams from Sponsoring Institutions focused on addressing overarching themes from the *CLER National Report of Findings 2016*.

The **Pathway Leaders** component promotes advancements in one of the six CLER Focus Areas through 18-month Collaboratives comprised of teams from Sponsoring Institutions.

The **Pathway Learners** component disseminates successful approaches and lessons learned from the Pathway Innovators and Pathway Leaders to a broad audience of Sponsoring Institutions seeking to improve their clinical learning environments.



## The CLER National Reports—Key Findings in Patient Safety

The Pursuing Excellence Pathway Leaders Patient Safety Collaborative was launched in response to several key findings from the initial National Report published in 2016. Figures 2 and 3 from the report reveal that while a high proportion of the residents and fellows interviewed indicated they were aware of the clinical site’s process for reporting patient safety events, less than half submitted a report into the CLE’s system in response to experiencing an event. Figure 4 notes that few residents and fellows had reported a close call or near miss event.

Figure 2: Percentage of residents and fellows who reported knowing the clinical site’s process for reporting an adverse event, near miss/close call, or unsafe condition in patient care (n=8,616).

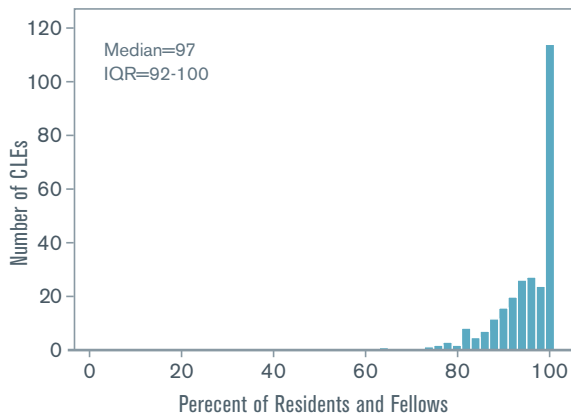


Figure 3: Percentage of residents and fellows who reported experiencing an adverse event, near miss/close call, or unsafe condition and submitted a report through the clinical site’s reporting system (n=5,768)

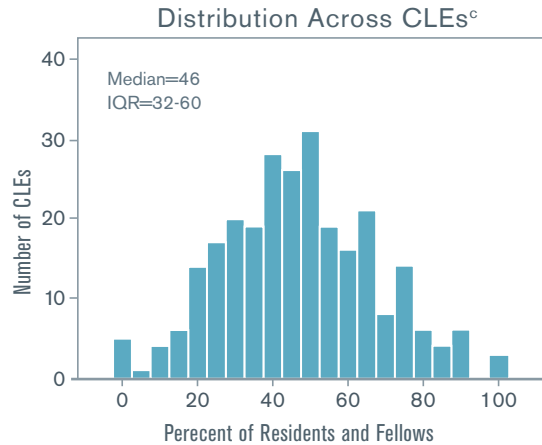


Figure 4: Percentage of residents and fellows who reported a near miss/close call event (n=8,665)

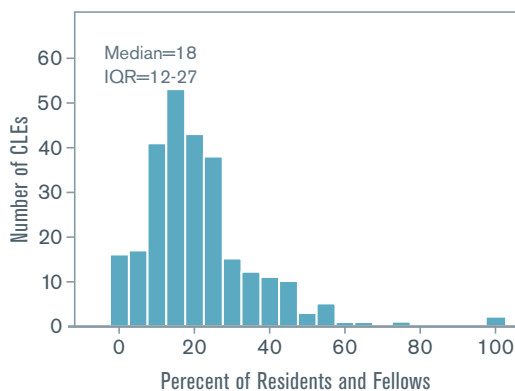


Figure 5: Percentage of residents and fellows who reported receiving feedback on the outcome of a report submitted through the clinical site’s reporting system (n=4,828)

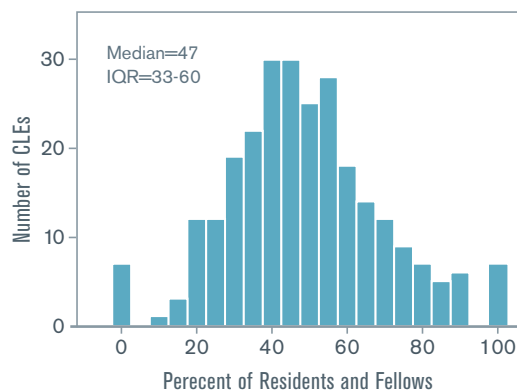
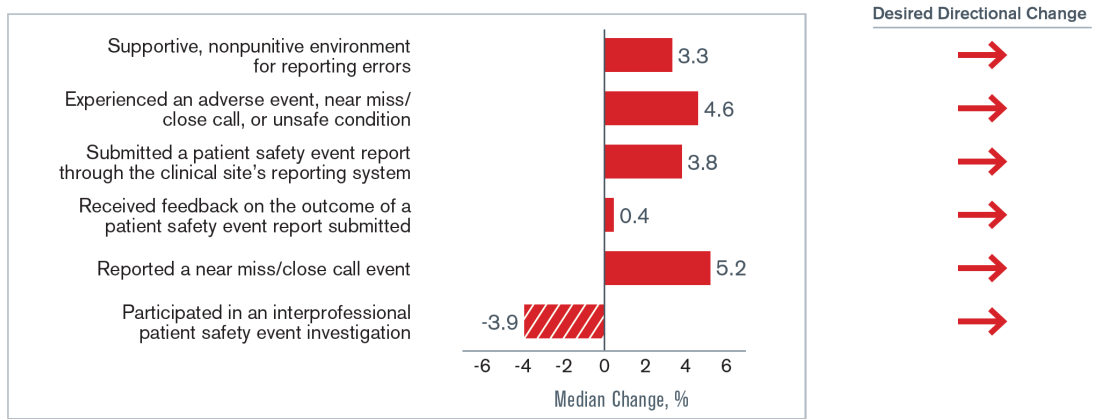


Figure 5 notes that residents and fellows who had submitted an event into the CLE’s patient safety event reporting system inconsistently received feedback on the outcome of the report.

In 2018—approximately eight months into the Pathways Leaders Patient Safety Collaborative—the CLER Program released its second National Report (Koh et al. 2018, 49-68). As seen in Figure 6, a comparison of the findings in the first and second reports noted modest progress in some key areas of patient safety. It also highlighted an opportunity for improvement with regard to involving residents and fellows in interprofessional patient safety event investigations.

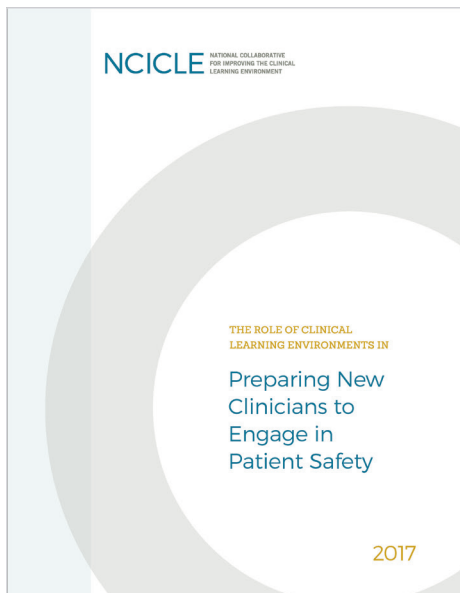
Figure 6. Median Percentage Differences on Selected Measures in Patient Safety Between Cycle 1 and Cycle 2 of Clinical Learning Environment Review Visits Based on Resident and Fellow Responses to Closed-Ended Questions in Group Interviews (Koh et al. 2018, 69-76).



These findings revealed both an educational gap for GME and a clinical performance gap for CLEs. As frontline providers, residents and fellows have an essential role in identifying and addressing issues affecting patient care. In response, the Pathway Leaders Patient Safety Collaborative sought to design, test, and disseminate new approaches to enhancing resident and fellow engagement in CLE efforts to improve patient safety. One of the key principals of the Collaborative was to start early in the residents’ and fellows’ educational program.

# THE CONCEPTUAL FRAMEWORK

The Patient Safety Leaders Collaborative was built upon a conceptual framework for engaging new clinicians in patient safety, developed by the National Collaborative for Improving the Clinical Learning Environment (NCICLE) (Disch et al. 2017). NCICLE is comprised of more than 30 member organizations committed to improving learning and patient care in CLEs. NCICLE recognized the essential role of CLEs in shaping lifelong behaviors of any clinician, new to their workforce, such as residents and fellows, and developed a framework to guide CLEs to ensure these new clinicians become proficient in efforts to optimize patient safety as quickly as possible.



In the guidance document, NCICLE emphasizes the need for CLEs to utilize a systems-approach as they develop organizational strategies for engaging new clinicians in patient safety.

NCICLE notes that culture is a particularly important foundational element in efforts to improve patient safety. The guidance document highlights the importance of a culture of safety, one that is open, fair, and learning oriented. CLEs with a culture of safety recognize system complexities and human factors, and view patient safety as a shared responsibility of the system and the individual. NCICLE notes that CLEs 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.

To onboard new clinicians to patient safety, NCICLE notes that CLEs need to ensure the infrastructure, methods, and measurements to support robust patient safety activities. These resources include dedicated time for training and learning, organized systems for reporting and analyzing patient safety events, and methods for communicating process changes and lessons learned.

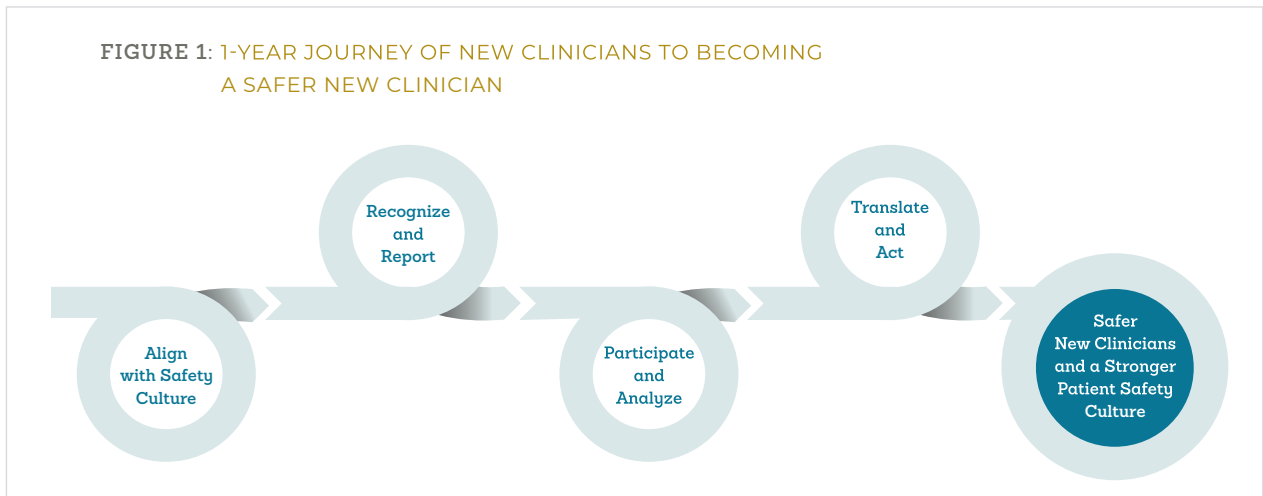
Importantly, NCICLE notes that to be successful these efforts need the support of leadership. Executive leadership, patient safety leadership, and leaders in clinical education all have essential roles in prioritizing patient safety in learning and patient care, and benefit from coordinating efforts to routinely monitor processes and outcomes, build upon successes, and address needed improvements.



# ESSENTIAL SKILLS

In its guidance document, NCICLE highlights a framework of four essential skills to introduce and foster in clinicians during their first year in practice in a new clinical learning environment. These skills include: (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 (Figure 7). NCICLE notes that these skills are best introduced early in new clinicians’ education and training, as they instill behaviors that these early learners will draw upon throughout their careers (Asch et al. 2010, 152-153) (Sirovich et al. 2015, 1640-1648). Furthermore, when new learners are integrated into the CLE’s patient safety infrastructure early in their education and training, they are able to fully participate in and contribute to improving patient safety throughout the time they are with the CLE.

Figure 7: NCICLE Framework of Essential Skills



In shaping the conceptual model for the Pathway Leaders Patient Safety Collaborative, the ACGME viewed each of the four skills outlined by NCICLE through the lens of resident and fellow physicians.

### ***Align with Safety Culture***

Resident and fellow physicians establish their views about patient safety in accordance with the CLE's culture of how patient safety is valued. The NCICLE document notes the CLE's culture establishes a basis for how individual members of the clinical care team frame their own sense of trust in how patient safety issues are identified and solved. It also influences how psychologically safe each member of the clinical care team feels about engaging in activities to improve patient safety. Ideally, residents and fellows enter a culture that is viewed as safe and committed to using a systems-based approach to identify and learn from patient safety events.

The NCICLE report highlighted the importance of involving new clinicians—such as residents and fellows—in the culture of safety surveys, as well as the importance of sharing results and information on how the survey data are used to make improvements.

### ***Recognize and Report***

The NCICLE report notes that it is essential for new clinicians such as residents and fellows to recognize patient safety event reporting as a responsibility fundamental to safe patient care. This includes helping residents and fellows to develop an understanding of the range of issues that comprise patient safety events and an understanding of how near misses and close calls provide important insight into how events with harm may be avoided, as well as educating them on how to use the CLE's central reporting system.

### ***Participate and Analyze***

The NCICLE framework highlighted the importance of involving new clinicians such as residents and fellows in patient safety event analyses that are comprehensive, facilitated, interprofessional, and systems based. NCICLE noted that through participation in essential experiences such as these, participants hone critical thinking skills at both the individual and team levels and learn to collectively identify approaches and actions to improve system processes and patient care.

### ***Translate and Act***

The NCICLE document also identified the importance of helping new clinicians understand how patient safety event reporting and analysis can lead to improvements in the CLE. Residents and fellows will benefit from learning how the CLE synthesizes the individual components of reporting events, tracking and trending data, investigating and analyzing events, and developing and implementing action plans to effect systems changes across units and departments and improve patient care.

# THE APPLICATION AND SELECTION PROCESS

In June 2017, the CLER Program requested applications from Sponsoring Institutions committed to enhancing their CLE's ability to engage residents and fellows in systems-based approaches to improving patient safety.

Each applicant institution was expected to:

- secure a commitment from GME and CLE leadership to support a foundation of a just culture that encourages trust, respect, and inclusion;
- secure a commitment from GME and CLE leadership to provide resources to develop, implement, and test the initiative in the CLE;
- commit to implementing the patient safety conceptual framework for residents and fellows;
- financially support a travel team of three to five members to participate in three two-and-a-half-day Collaborative meetings, as well as intersession calls and activities throughout the 18-month initiative; and,
- commit to sharing progress reports and aggregate and/or de-identified data with other members of the Collaborative and with the GME and local CLE communities at large.

In response, the CLER Program received 18 applications. Applications were evaluated against the following criteria:

- Organizational commitment, leadership, and team
- Significance of the proposal to the aim of the Collaborative
- Measurement and evaluation strategy

With input from representatives of the *Pursuing Excellence* partnering organizations, nine Sponsoring Institutions were selected to participate in the Collaborative.

## Participants

In September 2017, the ACGME announced the nine Sponsoring Institution teams selected for the Patient Safety Collaborative (in alphabetical order):

- Atrium Health's Carolinas Medical Center
- Duke University Hospital
- Indiana University School of Medicine
- Maimonides Medical Center
- St. Vincent's East Family Medicine
- University of Connecticut School of Medicine
- University of Kentucky College of Medicine
- University of Nevada, Reno School of Medicine
- University of Pennsylvania Health System

The teams represented a diverse set of Sponsoring Institutions, from St. Vincent's in Alabama with 21 residents in a two-program institution to Indiana University with 88 programs and 1,068 residents. (Figure 8 and Table 1).

Figure 8: Sponsoring Institutions Selected to Participate in the Pathways Leaders Patient Safety Collaborative



Table 1. Teams in the Pursuing Excellence Pathway Leaders Patient Safety Collaborative (September 2017)

Name	Location	Institution Type	Resident/ Fellow Physicians	Programs
Atrium Health's Carolinas Medical Center	Charlotte, North Carolina	Independent Academic Medical Center	295	23
Duke University Hospital	Durham, North Carolina	Academic Medical Center/Medical School	964	89
Indiana University School of Medicine	Indianapolis, Indiana	Academic Medical Center/Medical School	1068	88
Maimonides Medical Center	Brooklyn, New York	General/Teaching Hospital	431	23
St. Vincent's East	Birmingham, Alabama	General/Teaching Hospital	21	2
University of Connecticut School of Medicine	Farmington, Connecticut	Academic Medical Center/Medical School	688	67
University of Kentucky College of Medicine	Lexington, Kentucky	Academic Medical Center/Medical School	681	60
University of Nevada Reno School of Medicine	Reno, Nevada	Academic Medical Center/Medical School	135	7
University of Pennsylvania Health System	Philadelphia, Pennsylvania	Academic Medical Center/Medical School	1055	81

Following the participant announcement, the teams embarked on the 18-month Collaborative with the goal of developing, implementing, and evaluating models to optimize the acculturation of residents and fellows into the patient safety goals and practices of their CLEs.

# THE COLLABORATIVE'S APPROACH TO OPERATIONALIZING THE FRAMEWORK

The faculty members responsible for designing the Collaborative experience and mentoring the teams recognized that while the NCICLE framework provided an important foundation, the skills outlined in the framework are not bound to a specific sequence. They noted that often GME leaders introduce residents and fellows to patient safety by focusing on developing skills in recognizing and reporting events—and that the CLER National Reports indicate these efforts have been met with mixed results.

In response, the faculty members sought to encourage innovation and improvement by asking the participating teams to take a different approach to structuring their patient safety educational programming. They asked the teams to focus first on developing resident and fellow skills in patient safety event analysis. The faculty members hypothesized that by exposing residents and fellows early on to the CLE's processes for patient safety event investigation, and actively involving them in problem solving, the residents and fellows would recognize firsthand the value to both the CLE and to patients. In doing so, the residents and fellows would become inspired to engage in additional efforts to improve systems of care and patient outcomes, thereby launching them on a positive trajectory of engaging in patient safety and quality improvement throughout their careers. Engaging residents and fellows in addressing patient safety early in their education and training would also prepare them to eventually serve as mentors to junior residents and fellows.

## ***A Common Goal***

Building on NCICLE's recommendation to engage clinicians as early as possible in efforts to improve patient safety, the Collaborative teams were asked to focus on one key goal:

**Ensure all first-year residents and fellows actively participate in a real (non-simulated) CLE patient safety event analysis within their first 12 months in the program.**

- To ensure a high quality and optimal learning experience for residents and fellows, the teams were asked to follow a key set of criteria for introducing patient safety event analysis (National Patient Safety Foundation 2016) (Bagian et al. 2011):

- The experience is based on a recent (within 30 days) patient safety event.
- The residents and fellows participate in all aspects of the event analysis (including initial discovery, investigation, structured analysis with identification of root causes, and development of action plans).
- The analysis experience includes other professions and staff members relevant to the event.
- The approach to assessment is structured and robust to ensure the event analysis provides meaningful and actionable recommendations for improvement.

Setting the criteria of engaging residents and fellows in real, non-simulated, event analysis meant each team would need to identify stakeholders, partner with their CLE's Patient Safety Office, and establish new relationships across the clinical site. As such, each team was purposefully constructed to include both GME leaders and CLE patient safety leaders to facilitate these important relationships.

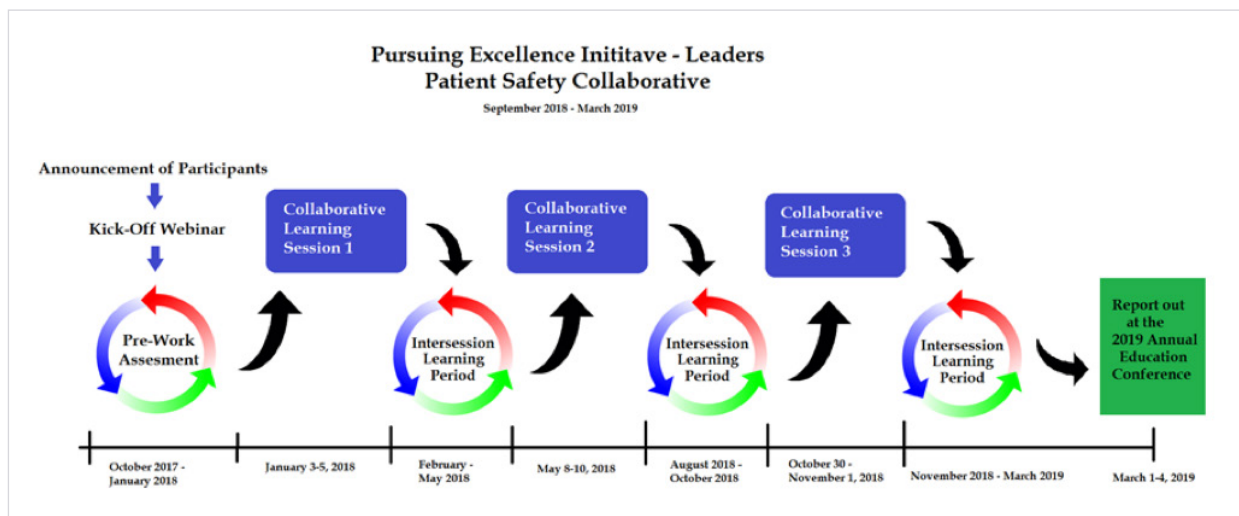
### ***Prior to Joining the Collaborative***

Before joining the Collaborative, the teams varied in how first-year residents and fellows were engaged in patient safety. Overall, they indicated that learning activities focused more on encouraging residents and fellows to report patient safety events. Engaging them in patient safety event analysis was often viewed as an activity for second- and third-year learners. In addition, the teams indicated most of their educational efforts in patient safety occurred during orientation and tended to use simulation activities; few engaged the first-year residents and fellows in real-time, real event analysis. Fewer still, engaged residents and fellows in using the results to design and implement action plans to improve care at the CLE. Many of the teams indicated their patient safety educational activities were program or specialty-specific and were often built into morbidity and mortality conferences. Few indicated they offered experiential learning opportunities that were integrated into the CLE's patient safety efforts.

# THE COLLABORATIVE MODEL

The 18-month schedule for the Pathway Leaders Patient Safety Collaborative was adapted from the work of the Institute for Health Care Improvement's Breakthrough Series (Institute for Healthcare Improvement 2003). The model included three in-person Learning Sessions, two online Learning Sessions, and regular check-in calls to discuss progress and challenges related to the goals of the Collaborative (Figure 9). These sessions and calls offered the teams facilitated review and guidance from faculty members with expertise in patient safety and graduate medical education, as well as the opportunity to share and learn from peers.

Figure 9: 18-month schedule for Pathway Leaders Patient Safety Collaborative



## Kick-Off Webinar

The Collaborative started with a kick-off webinar/teleconference held in September 2017. This initial meeting was an opportunity for the teams and faculty members to introduce themselves to one another and begin the process of developing a shared vision for the work ahead. To facilitate the work of the first in-person Learning Session, the teams were given pre-assessment work. They were asked to survey their residents and fellows to gain a baseline understanding of how they presently viewed and contributed to the CLE's efforts to foster a culture of safety, as well as their experience with patient safety event reporting, investigation of patient safety events, and involvement in improvement activities.



## ***Learning Session 1***

During the first in-person Learning Session, the teams participated in small and large group discussions that introduced the following content areas:

- Building a timeline for engaging first-year residents and fellows
- Identifying stakeholders and relationships
- Embracing a systems-based approach to patient safety
- Establishing the foundation of a culture of safety
- Reviewing principles of patient safety event analysis
- Preparing first-year learners for event investigation
- Discussing measurement and assessment

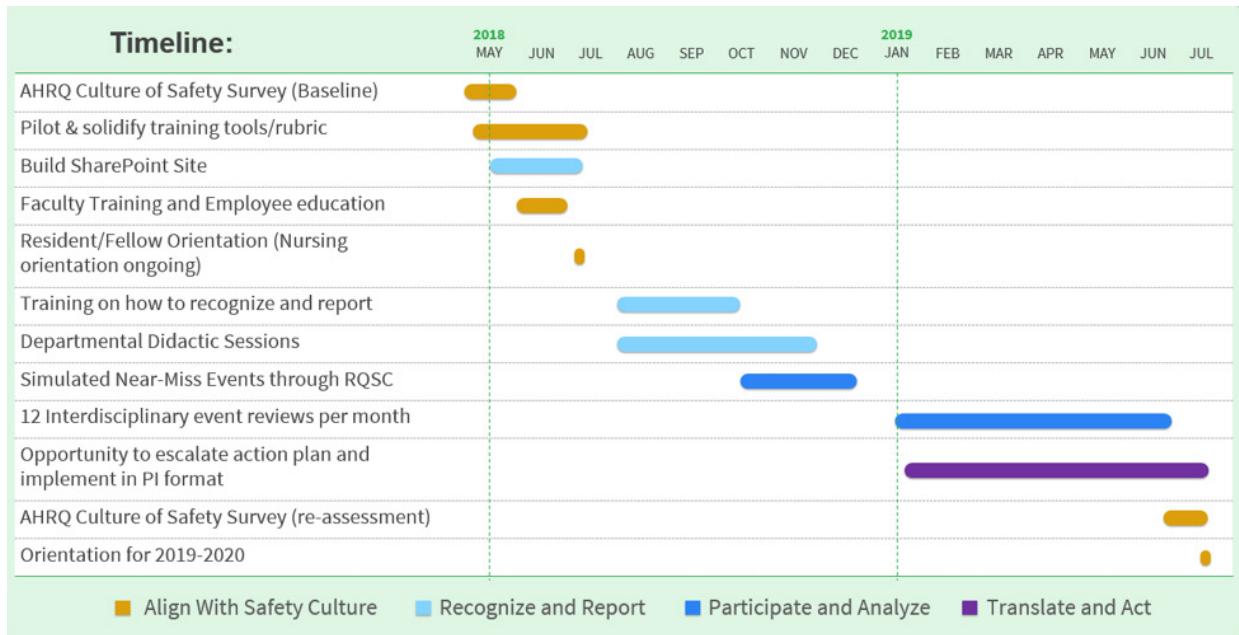
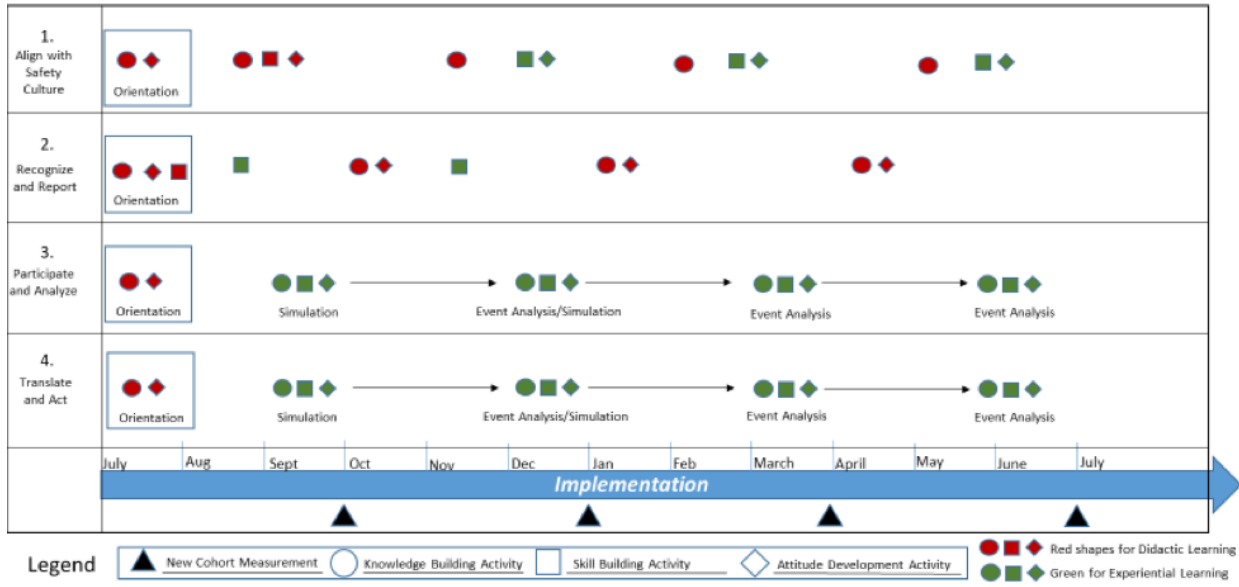
### ***Creating Timelines***

Each team worked to develop an action plan specific to its GME and CLE infrastructure. As an initial step, each team developed a timeline similar to the samples shown in Figure 10 that would ensure each first-year resident and fellow would begin the process of developing the essential skills outlined in the conceptual framework adapted from NCICLE (Appendix 2). Because each CLE had its own set of existing activities, schedules, and resources, the timeline for each team varied.

All teams were expected to engage their residents and fellows in experiential learning. Some of the teams elected to start experiential learning within the first month of the first year; others started later in the first year, building in didactic and simulated experiences prior to the experiential learning. Several of the teams with a large number of residency and fellowship programs outlined a phased approach that sequenced the roll-out and/or delegated responsibility for training to the leaders of each program.

Figure 10. Sample Timelines

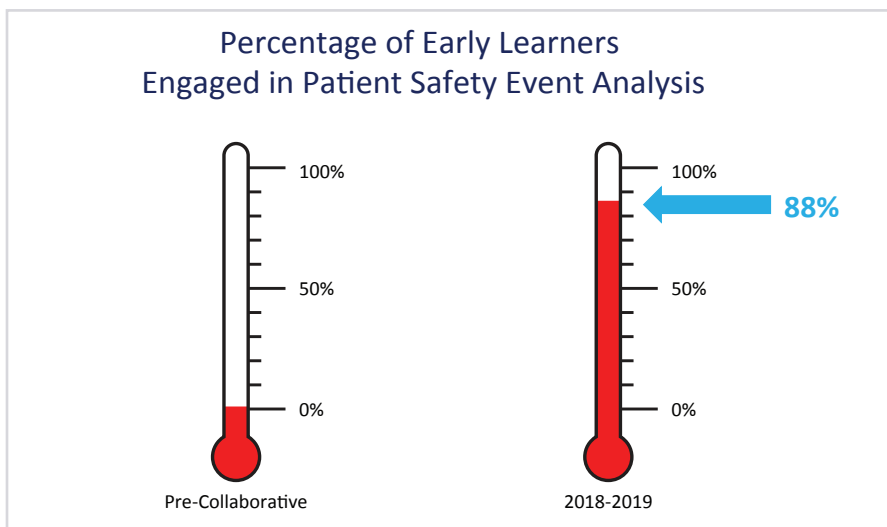
**Example Implementation Timeline**



### ***Use of Visual Analog Scales***

As a quick and easy way to track progress across the collaborative, the teams were asked to use a visual analog scale in the form of a thermometer with zero representing the start of the academic year for their new cohort of first year residents and fellows. Throughout the year, as the teams came together in the Learning Sessions, they shared their “thermometers” displaying the percentage of their new cohort they had successfully engaged in event analysis to that point. Seeing these visual displays around the room helped to stimulate conversation and provide motivation within and among the teams. Figure 11 presents a sample from one of the teams.

*Figure 11: Example of Use of Visual Analog Scale*

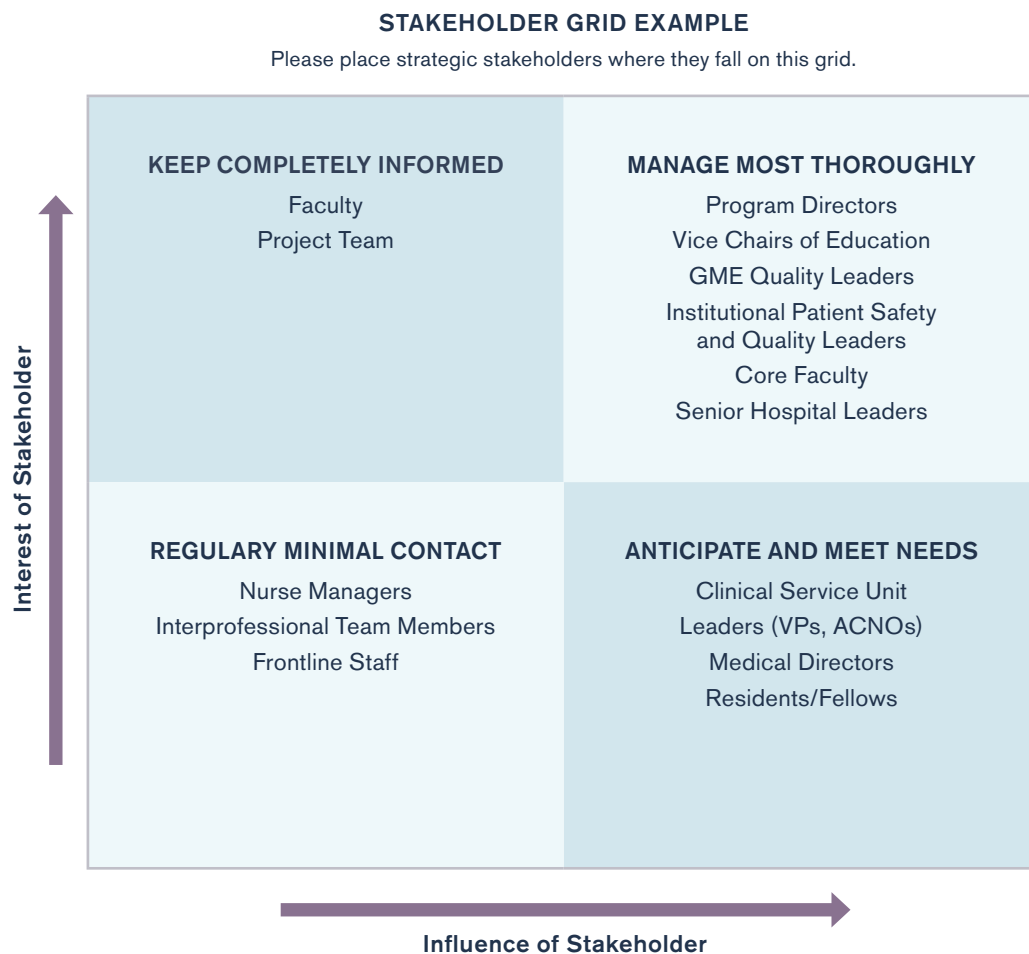


### ***Identifying Stakeholders***

The goal of engaging residents in analysis of real patient safety events meant the teams would need to reach beyond the faculty members and resources within GME. The participants were encouraged to obtain buy-in and support from multiple areas of the CLE. Key to these efforts was identifying and engaging stakeholders within both their GME community (e.g., the Graduate Medical Education Committee (GMEC), program directors, faculty members) and the CLE's executive leadership (e.g., Chief Medical Officer (CMO), Chief Nursing Officer (CNO), Chief Patient Safety/Quality Officer).

The teams were asked to broadly consider the range of stakeholders that could affect the outcome of their efforts. To do so, they completed a Stakeholder Analysis Grid, a project management tool designed to identify key individuals whose interest and influence may affect the outcome of an initiative. Each team received a blank version of the grid in Figure 12 (Mendelow 1991) and then worked to identify the key stakeholders in the organization and define the type of relationship needed (Appendix 2). The figure includes a composite of some of the various stakeholders identified by the teams.

Figure 12: Example of a completed stakeholder grid.



By working through the Stakeholder Analysis Grid and subsequently sharing these grids within the Collaborative, the teams learned from each other’s perspectives. They noted the advantages of developing relationships with stakeholders they had not initially considered.

Importantly, the teams were asked to revisit the topic of stakeholders throughout the 18 months as they defined specific aspects of their individual programs.

## Conducting a Needs Assessment

After identifying stakeholders, the teams completed a needs assessment using the grid displayed in Figure 13 (Appendix 2). This tool used the information from the stakeholder analysis grid to further define who and what they needed to achieve the goal of engaging all first-year residents and fellows in patient safety event analysis. In doing so, the teams considered the state of their CLE's culture, people, and resources. The figure below provides a composite of some of the needs identified by the teams.

Figure 13: Sample Needs Assessment Grid

Element		Current State: Who's buy-in do you have? What people and resources do you have?	Needs Assessment: Who's buy-in do you need? What people and resources do you need?
<b>Supportive Culture</b>	Hospital and GME leaders who support trainees to engage and give input	DIO, most core program PDS CEO recognizes mandate	Chief patient safety officer who oversees event reporting system and hospital case review system all Fellowship directors
<b>People</b>	People who will design a hands-on process of review buy trainees that connects back to the institution	Two departments have active PS coordinators and QI director's who are willing to wrap the process and work with PDS	Need other departments' QI directors to engage
	People who will integrate the process into an experience for trainees	DIO, several PDS engaged in redesigning their MEM	Need other PDS to engage, specifically fellowships
	People who will mentor and guide trainees through the review	Two departments' QI directors are willing to mentor and train other faculty	Need other departments to engage faculty development for those departments that need it
<b>Resources</b>	Curricular content on safety event review		Need central online modules for trainees to complete before taking on case
	Tools of analysis	Hospital has its own review tool with standardized questions	
	Event review link to hospital	Hospital has case review report that is discussed at regular safety committee meeting	
	Other: trainees are given appropriate time to get reviews done	Many departments already have presentation at MEM as part of scholarly requirement time allotted	Need to identify how other departments will assign this responsibility

## ***Intersession Webinar 1***

In between the in-person Learning Sessions, the teams received additional materials to enhance the concepts presented and prepare them for the upcoming sessions. The first intersession webinar reviewed key aspects to incorporate into an event analysis learning experience. These included developing quality causal statements, understanding the potential effectiveness of different strengths of action, providing a model for effectively assessing the learning experience, and reinforcing the importance of working with the patient safety office as part of the design and implementation of small event analysis learning experiences.

## ***Learning Session 2***

The Collaborative teams were focused on creating a high-quality event analysis experience for the first-year residents and fellows, one that would be both meaningful and inspirational. For the teams from Sponsoring Institutions with a large number of residents and fellows this posed a challenge, as few of their CLEs conducted patient safety event investigations at the volume needed to accommodate all first-year learners.

To address this challenge, the teams were encouraged to focus on analysis of non-harm patient safety events (e.g., near misses and close calls). The Collaborative's faculty members posited this approach would have several advantages. The CLEs would benefit from the additional resources brought to analyzing events that they normally did not have the capacity to investigate. The residents and fellows would benefit from an experience that was free of the intensity and strain often associated with investigating high harm events. And, importantly, both the CLE and GME would find value and meaning in addressing and solving patient safety issues before they resulted in adverse outcomes.

### ***Partnering with the Patient Safety Office and Other CLE Leadership***

Engaging residents and fellows in real patient safety event analysis meant the teams needed to partner with their CLE's Patient Safety Office. At minimum, the teams needed to obtain access to real-time patient safety event reports, design experiences that aligned with the CLE's approach to event analysis, and establish mechanisms for sharing and sustaining the resulting action plans across the CLE.

The larger goal of the Collaborative was to affect a positive change in culture across the CLEs, shifting from a culture in which GME “pushes” residents and fellows into patient safety activities, to one in which the CLE actively and enthusiastically “pulls” residents and fellows into those activities, and viewing their involvement as essential to

the organization’s mission to continually improve patient care. To accomplish this, teams had to actively work on cultivating relationships with their Patient Safety Office and other leadership across the organization, jointly designing experiences that moved beyond traditional GME activities to actions that improved patient care and resident and fellow learning.

To assist the teams in this process, the participants used a tool developed by the Collaborative’s faculty members, called the Partnership Framework (see Figure 14) (Appendix 2). This tool prompted the teams to envision what goals and measures, culture, process, and outcomes would look like at various levels of engagement—with the ultimate goal of developing true partnerships.

Figure 14: Partnership Framework

Framework to Assess Stakeholder Engagement				
Category	Independent	Consultation	Involvement	Partnership
<b>Goals and Measures</b>	<ul style="list-style-type: none"> <li>• Not aligned with organizational goals</li> <li>• Tactical</li> <li>• Developed independently</li> <li>• Implemented independently</li> <li>• Not assessed for effectiveness</li> <li>• Tend to be static</li> </ul>	<ul style="list-style-type: none"> <li>• May or may not be aligned with organizational goals</li> <li>• Tactical</li> <li>• Developed with limited input or review</li> <li>• Implemented with limited assistance</li> <li>• Not assessed for effectiveness</li> <li>• Tend to be static</li> </ul>	<ul style="list-style-type: none"> <li>• Partially aligned with organizational goals</li> <li>• Tactical/Strategic</li> <li>• Reviewed with feedback Joint implementation for targeted learners</li> <li>• Limited assessment for effectiveness</li> <li>• May or may not be static</li> </ul>	<ul style="list-style-type: none"> <li>• Aligned with organizational goals</li> <li>• Strategic</li> <li>• Developed together</li> <li>• Measures developed and implemented</li> <li>• Goals are jointly implemented with leadership support</li> <li>• Continuously assessed for effectiveness</li> <li>• Evolve over time</li> </ul>
<b>Culture</b>	<ul style="list-style-type: none"> <li>• Culture reactive</li> <li>• Executive leadership unaware</li> </ul>	<ul style="list-style-type: none"> <li>• Culture is managing</li> <li>• Executive leadership aware</li> </ul>	<ul style="list-style-type: none"> <li>• Culture proactive characterized by open discussions, +/- change management strategy</li> <li>• Executive leadership aware</li> </ul>	<ul style="list-style-type: none"> <li>• Culture generative characterized by open discussion, continuous integration, change management strategy, evolving roles &amp; continuous assessment</li> <li>• Sponsorship by executive leadership</li> <li>• Celebration of wins</li> </ul>
<b>Process</b>	<ul style="list-style-type: none"> <li>• Siloed workflow</li> <li>• Plan Defined &amp; Communicated</li> <li>• Activity oriented</li> </ul>	<ul style="list-style-type: none"> <li>• Siloed Workflow</li> <li>• Plan reviewed w/ feedback from QI office</li> <li>• Activity oriented</li> </ul>	<ul style="list-style-type: none"> <li>• Limited integration workflow</li> <li>• Plan defined w/input from QI office</li> <li>• Activity somewhat strategic</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated Workflows</li> <li>• Plan defined &amp; implemented collaboratively</li> <li>• Strategic implementation</li> </ul>
<b>Outcome</b>	Minimal Impact	Minimal Impact	Variable Impact	Maximum Impact

## ***Ensure a Robust Learner Experience***

To ensure optimal learning for residents and fellows, the faculty set criteria for an authentic event analysis experience (Figure 15). These criteria pushed the teams to move from traditional educational approaches (e.g., didactic, simulation) conducted within GME, to experiential activities aligned with the CLE's existing processes and designed to address all the components that comprise a robust patient safety event investigation.

*Figure 15. Event Analysis Criteria*

### **Criteria for Authentic Event Analysis Experience**

- The experience needed to be based on a recent (within 30 days) patient safety event.
- The residents and fellows needed to participate in all aspects of the event analysis (including initial discovery, investigation, structured analysis with identification of root causes, and development of action plans).
- The analysis experience needed to include other professions and staff relevant to the event.
- The approach to assessment needed to be structured and robust to ensure the event analysis provided meaningful recommendations for improvement.

## ***Assessing the Learner Experience***

To aid the teams in ensuring the experiences they were designing for their residents and fellows had the greatest likelihood for success, the Collaborative's faculty members introduced the concept of a "Strong String" assessment for evaluating learner experience (Bagian et al. 2011). This assessment methodology, outlined in Figure 16, allows GME educational leaders to evaluate the learner experience by assigning points according to the strength of each of the desired criteria. The stronger the individual components, the higher the score, the better chance the experience will result in meaningful learning and sustainable improvements to patient care.

In addition to assessing for the presence or absence of each of the criteria, the tool guided the user to assess the quality of the event analysis by examining the causal statements crafted by the residents and fellows for presence of cause, effect, and event; the quality of the actions proposed in response to the analysis; the degree of measurable outcomes associated with the action plans; and whether or not there was hand-off to the CLE leadership. In utilizing this type of assessment methodology, the teams learned the value of going beyond a pre-/post-test for measuring knowledge to an approach that also positioned the residents and fellows to succeed in affecting change and improving patient care.



Figure 16: “Strong String” Assessment Tool

Criteria	Total Possible Points	Points Scored
<b>Real event</b>	1.0	
(No=0 points; Yes=1 point)		
<b>Real time</b>	1.0	
(If > 30 days=0; If < 30 days=1 point)		
<b>Interprofessional team</b>	1.0	
e.g. physician, nurse, pharmacist, other healthcare professional role on patient safety event analysis team involved in chart review, interviews, and discussions; patient safety officer/manager does not count towards count; If only 1 role i.e. physicians=0 points; If 2 roles=0.5 points; If > 3 roles=1 point		
<b>Use of a cause and effect diagram</b>	1.0	
Problem statement <i>caused by</i> actions and/or conditions <i>caused by</i> . . .Not a fishbone diagram; If no diagram=0 points; If fishbone=1 point; If cause and effect diagram=2 points		
<b>Strong causal statements</b>	1.0	
Causal statements adhere to the rules of causation; None adhere=0; Some adhere to rules of causation=0.5 points; All causal statements adhere to rules of causation=1 point		
<b>Strong causal statements</b>	1.0	
Causal statements contain <i>cause, effect, and event</i> ; None of the causal statements contain all three elements=0; some of the causal statements contain all three elements=0.5 points; all of the causal statements contain all three elements=1 point		
<b>Strength of actions</b>	1.0	
All actions suggested <i>weak</i> =0 points; At least one action suggested is <i>intermediate or strong</i> =1 point		
<b>Quantifiable measurement outcome</b>	1.0	
Outcome measure includes what will be measure, how long it will be measured, and goal; No outcome measure (s)=0; Outcome measures=1		
<b>Hand-off to organization for review and action</b>	1.0	
No=0; Yes=1		
<b>TOTAL</b>	<b>10.0</b>	

## ***Intersession Webinar 2***

Following the second Learning Session, the teams were asked to begin considering how they would sustain their newly developed models for engaging residents and fellows in patient safety event analyses. The teams participated in an intersession webinar that introduced the concept of sustainability and how process, staff, and organizational factors influence the adoption of innovations into workflow (Agency for Healthcare Research and Quality 2015). They were asked to consider how they might leverage key stakeholders that have both authority and responsibility to ensure sustainability within the organization, such as the GMEC, the Medical Executive Committee, and the CLE's governing body, and were encouraged to partner with the CLE's Quality Office to link their patient safety priorities to the CLE's quality improvement efforts.

## ***Learning Session 3***

### ***Partnering with the CLE to Ensure Sustainability***

During the third and final Learning Session, the teams continued to deepen their focus on sustaining their efforts and integrating them into the CLE's infrastructure. This meant continuing to work on developing a strong partnership with the CLE's Patient Safety Office. In this session, the Collaborative's faculty members introduced the teams to the concept of counter-heroism in patient safety (Lewis et al. 2011). Counter-heroism takes the view that patient safety needs to rely on the collective vigilance of the team and the organization and not on the heroic acts of individuals. With this framing in mind, the teams were asked to consider their goal of engaging residents and fellows in patient safety as a joint responsibility of GME and CLE leadership, resulting in a push-pull relationship that would need to mature over time from one in which GME pushes to become more involved in the CLE's patient safety infrastructure to one in which the CLE actively pulls GME into its efforts as a result of the value residents and fellows bring to the process and outcomes.

### ***Engaging Faculty***

The teams also focused on the critical importance of engaging faculty members as a means of ensuring sustainability of their efforts (Anderson and Krathwohl 2001). The teams used a tool called a Clinical Value Compass (Ogrinc, Headrick, and Boex 1999) to develop new strategies for identifying and incentivizing faculty members to support resident and fellow engagement in patient safety. The Clinical Value Compass has four points of focus: (1) functional status, risk status, and well-being; (2) costs; (3)

satisfaction with health care and perceived benefit; and (4) clinical outcomes. Using this tool, the teams participated in an exercise to identify, for each of the points, how best to ensure their faculty members perceive value in optimizing resident and fellow involvement in addressing patient safety.

### ***Monitoring Progress and Outcomes***

To monitor progress and outcomes, the teams were encouraged to identify processes, staff, and organizational factors that contribute to sustainability, and to develop action plans that incorporated the concepts of quality control and quality improvement to carry their work forward past the end date of the formal Collaborative.

Learner assessment is a key component that can inform program evaluation and progress on action plans. Utilizing concepts, such as the “strong string” approach presented earlier in the Collaborative, the teams were encouraged to assess learners in terms of what they know, what they can show, and what they are able to do as a result of experiential learning in real clinical settings. The teams were also asked to ensure their action plans included regular touchpoints to monitor the progress, spread, and impact of their new efforts to engage all first-year residents and fellows in patient safety event analysis as part of a program evaluation.

# OUTCOMES

Following six months of development and testing, in July 2018 the teams started the academic year with the goal of ensuring all first-year residents and fellows actively participate in a real (non-simulated) CLE patient safety event analysis within their first 12 months of their educational program. Throughout the year, teams shared their progress at Learning Sessions and during check-in calls.

Some teams found that timelines needed to be adjusted to meet the goal, while others paused to reengineer their processes to accommodate unexpected organizational changes. These efforts to track progress toward the goal resulted in learning opportunities for the teams and the Collaborative. Table 2 below presents the percentage of residents successfully engaged in event analysis at the mid-point of the academic year, and the percentage of residents engaged by the end of the academic year for each of the participating Sponsoring Institutions.

*Table 2: Percentage of New Learners Engaged in Event Analysis At Mid-Point and End of Collaborative (2018-2019)*

Sponsoring Institution's Clinical Learning Environment	Percent of New Learners Engaged in Event Analysis February 2019 (mid-point)	Percent of New Learners Engaged in Event Analysis June 2019 (end)
1	88%	97%
2	7%	49%
3	17%	84%
4	11%	50%
5	6%	35%
6	100%	100%
7	56%	100%
8	51%	56%
9	3%	3%

# LESSONS LEARNED

In joining the Collaborative, the participating teams agreed to try a new approach to engaging residents and fellows in understanding and improving patient safety. This required the hard work of changing mindsets; fostering new relationships; developing, testing, and re-designing new processes; and implementing new methodologies for assessing the learner experience. While all teams noted they experienced challenges, they also indicated their efforts resulted in significant rewards.

At the conclusion of the Collaborative, the ACGME staff members surveyed the participants. The following are some of the collective themes that emerged from the surveys, and later, some thoughts in their own words.

The teams repeatedly noted the importance of intentionally investing time to establish processes that the CLE and GME can use together to actively involve residents and fellows in addressing patient safety events. They noted these efforts contribute to a safer patient care environment, as residents and fellows have a fresh perspective that can be instrumental in developing solutions to improve care. They also noted that collaborating with the CLE's Patient Safety Office to improve patient care elevated the residents and fellows as a recognized and sought-out group for the valuable perspectives they bring as frontline providers of care.

Teams remarked that setting criteria that the event analyses be interprofessional had several benefits: (1) solving for systems issues requires input from various perspectives; (2) interprofessional engagement around a common cause enhances team function; and (3) the new infrastructure created to enhance learning for residents and fellow could also be applied to other new learners, such as medical students, pharmacy residents, nursing students, and nursing residents, creating economies of scale and increasing the capacity of the CLE.

The teams acknowledged that reframing the educational experience to start with patient safety event analysis has successfully contributed to a positive culture change within their CLEs. They also noted the structure of the Collaborative model helped them move from educational programming that principally focused on passive learning experiences (e.g., didactic, simulation) to programming that included more robust experiential opportunities.

The teams noted that initiating education in patient safety during residents' and fellows' first year at the CLE meant the residents and fellows would be knowledgeable about patient safety throughout their programs. Additionally, they noted this approach potentially assisted both GME and the CLE in building capacity, as, by the end of the Collaborative the first-year residents and fellows were now better prepared to learn advanced skills in their second and third years, and could serve as mentors to the next cohort of first-year residents and fellows.

Finally, the teams noted that when the event analyses resulted in tangible changes in the learning and working environment, it both empowered and encouraged the residents and fellows involved in these efforts and served to inspire them toward increased involvement in future efforts.

### ***Pearls of Wisdom***

As part of the post-Collaborative review, team members were asked for thoughts to share with the broader GME community and offer words of advice for colleagues seeking to engage their residents and fellows in meaningful experiential learning in patient safety. Excerpts of this advice is captured in the below table as “pearls of wisdom” from their journey reframing the approach to engaging residents and fellows in patient safety.

*Table 3: Pearls of Wisdom Advice from Teams*

#### ***Pearls of Wisdom from the Teams***

*Engage the patient safety office partners early and often. Make regularly scheduled meetings a part of the culture and expected communication. –University of Kentucky College of Medicine*

*To the extent possible, utilize flows and processes that already exist rather than trying to create a separate process for residents and fellows. –Atrium Health’s Carolinas Medical Center*

*Work with programs to block time throughout the year for trainees to participate in patient safety education and activities. –Maimonides Medical Center*

*Start small. Engage and partner with the patient safety team and provide guidance and structure, but allow programs to innovate and develop individualized approaches to this work. –Duke University Hospital*

*Take time to evaluate your institution’s state of readiness for a shift in operating. An established culture of safety, a robust patient safety reporting system, and support from leadership are all essential elements for success. –University of Nevada, Reno School of Medicine*

*Through this work, we have been able to grow interprofessional educational opportunities in this area. It is a natural topic for IPE, and we now have new partners and ideas for innovations as a result of our participation in the Collaborative. –University of Pennsylvania Health System*

*Clearly communicate to early learners both from the GME and PSO but also from the PDs that this is our professional responsibility and is no less important than learning their discipline. Their attitude and mindset is key to success. –University of Connecticut School of Medicine*

*We discovered that the pre-existing relationships with non-family medicine faculty within our hospital facilitated positive partnerships and enhanced our ability to impact our community. –St. Vincent’s East Hospital*

### ***Sharing at the ACGME Annual Educational Conference***

Embracing the key tenet of *Pursuing Excellence* to widely disseminate learning, several members of the Collaborative shared their experience with the broader GME community at a special Sunset Session of the 2019 ACGME Annual Educational Conference. In this plenary session, Collaborative participants shared some of the highlights of their innovative approaches to engaging residents and fellows in patient safety event analysis, and how doing so could serve as catalyst to inspire lasting commitment to patient safety and quality improvement.

## FUTURE DIRECTIONS

Seeking to build upon the momentum and successes of this initial effort, *Pursuing Excellence* expanded the Collaborative offerings to both extend the work of the first cohort of teams while simultaneously replicating the initial experience with a new cohort. In the fall of 2019, eight of the nine teams from the initial cohort joined a new 18-month Advanced Patient Safety Collaborative, in which the teams are focused on further developing strategies to engage faculty members in their patient safety educational programming, strengthening coaching and mentoring skills in their newly trained cohort of residents and fellows to help engage a new set of first-year residents and fellows, and deepening skills and capacity to conduct learner assessment and program evaluation. This Collaborative has continued, with only a three-month pause (March-June 2020) due to the COVID-19 pandemic. In addition, many of the participants from the first cohort of teams are serving as coaches and mentors to the second cohort of Pathway Leaders in Patient Safety. The Collaborative teams continue to evolve their work and strengthen their capacity for ongoing learning and improvement. The ACGME looks forward to continuing to foster and build this community of learning and integrating this learning with the broader learning gained from both the *Pursuing Excellence* Pathway Innovators Collaborative, and another program, the Program Directors Patient Safety and Quality (PDPO) Educators Network.



# APPENDIX

# APPENDIX 1: *PURSUING EXCELLENCE*

## PARTNER ORGANIZATIONS

Accreditation Council for Continuing Medical Education (ACCME)

Alliance of Independent Academic Medical Centers (AIAMC)

American Association for Physician Leadership (formerly ACPE)

American Association of Colleges of Osteopathic Medicine (AACOM)

American Board of Medical Specialties (ABMS)

American Hospital Association (AHA)

American Medical Association (AMA)

American Nurses Credentialing Center (ANCC)

American Osteopathic Association (AOA)

American Society of Health-System Pharmacists (ASHP)

Association for Hospital Medical Education (AHME)

Association of American Medical Colleges (AAMC)

Association of Osteopathic Directors and Medical Educators (AODME)

Council of Medical Specialty Societies (CMSS)

Health Resources and Services Administration (HRSA)

Institute for Healthcare Improvement (IHI)/ National Patient Safety Foundation (NPSF)

Liaison Committee on Medical Education (LCME)

Organization of Program Director Associations (OPDA)

The Joint Commission (TJC)

Vizient, Inc.

# APPENDIX 2: TOOLS

## Timeline

Institution: \_\_\_\_\_

Date: \_\_\_\_\_

Implementation Timeline				
	Align with Safety Culture	Recognize and Report	Participate and Analyze	Translate and Act
July				
August				
September				
October				
November				
December				
January				
February				
March				
April				
May				
June				
July				

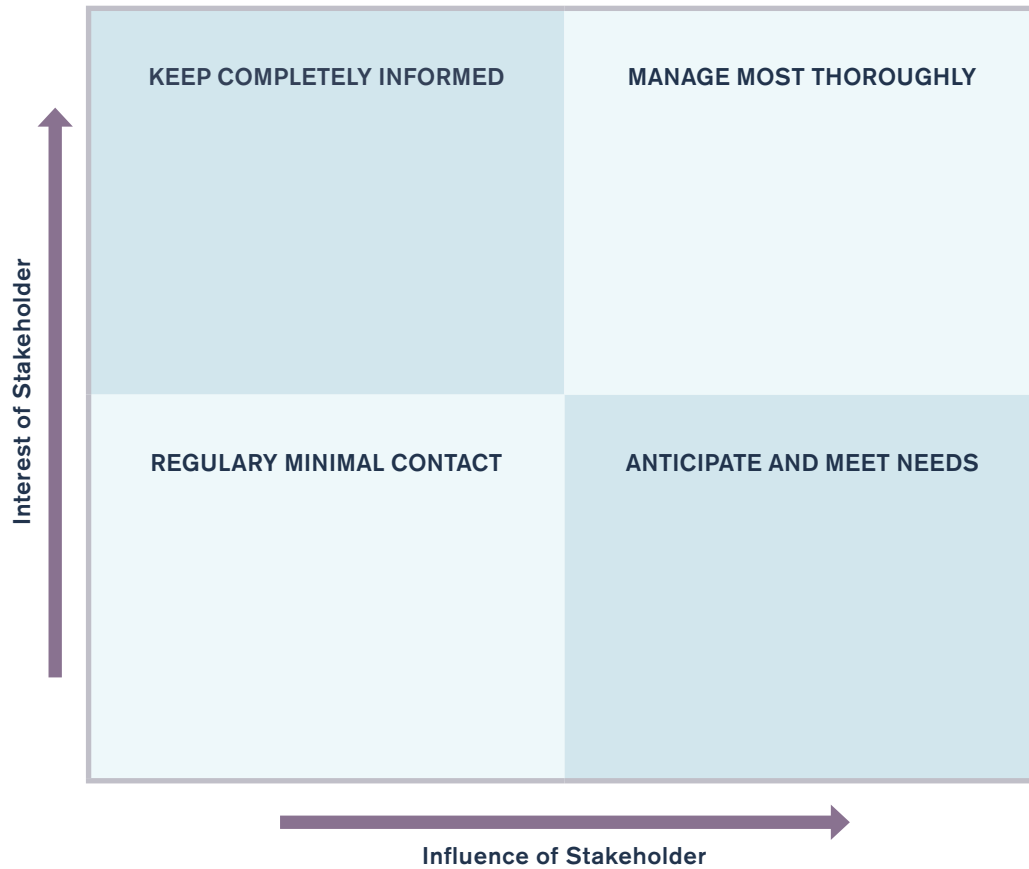
### Legend

- Skill Building Activity
- Knowledge Building Activity
- Attitude Development Activity
- Didactic Learning
- Experiential Learning

## Stakeholder Grid

### STAKEHOLDER GRID EXAMPLE

Please place strategic stakeholders where they fall on this grid.



## Needs Assessment

	Element	Current State: Who's buy-in do you have? What people and resoures do you have?	Needs Assessment: Who's buy-in do you need? What people and resources do you need?
Supportive Culture			
People			
Resources			

## Partnership Framework

Framework to Assess Stakeholder Engagement				
Category	Independent	Consultation	Involvement	Partnership
<b>Goals and Measures</b>	<ul style="list-style-type: none"> <li>• Not aligned with organizational goals</li> <li>• Tactical</li> <li>• Developed independently</li> <li>• Implemented independently</li> <li>• Not assessed for effectiveness</li> <li>• Tend to be static</li> </ul>	<ul style="list-style-type: none"> <li>• May or may not be aligned with organizational goals</li> <li>• Tactical</li> <li>• Developed with limited input or review</li> <li>• Implemented with limited assistance</li> <li>• Not assessed for effectiveness</li> <li>• Tend to be static</li> </ul>	<ul style="list-style-type: none"> <li>• Partially aligned with organizational goals</li> <li>• Tactical/Strategic</li> <li>• Reviewed with feedback Joint implementation for targeted learners</li> <li>• Limited assessment for effectiveness</li> <li>• May or may not be static</li> </ul>	<ul style="list-style-type: none"> <li>• Aligned with organizational goals</li> <li>• Strategic</li> <li>• Developed together</li> <li>• Measures developed and implemented</li> <li>• Goals are jointly implemented with leadership support</li> <li>• Continuously assessed for effectiveness</li> <li>• Evolve over time</li> </ul>
<b>Culture</b>	<ul style="list-style-type: none"> <li>• Culture reactive</li> <li>• Executive leadership unaware</li> </ul>	<ul style="list-style-type: none"> <li>• Culture is managing</li> <li>• Executive leadership aware</li> </ul>	<ul style="list-style-type: none"> <li>• Culture proactive characterized by open discussions, +/- change management strategy</li> <li>• Executive leadership aware</li> </ul>	<ul style="list-style-type: none"> <li>• Culture generative characterized by open discussion, continuous integration, change management strategy, evolving roles &amp; continuous assessment</li> <li>• Sponsorship by executive leadership</li> <li>• Celebration of wins</li> </ul>
<b>Process</b>	<ul style="list-style-type: none"> <li>• Siloed workflow</li> <li>• Plan Defined &amp; Communicated</li> <li>• Activity oriented</li> </ul>	<ul style="list-style-type: none"> <li>• Siloed Workflow</li> <li>• Plan reviewed w/ feedback from QI office</li> <li>• Activity oriented</li> </ul>	<ul style="list-style-type: none"> <li>• Limited integration workflow</li> <li>• Plan defined w/input from QI office</li> <li>• Activity somewhat strategic</li> </ul>	<ul style="list-style-type: none"> <li>• Integrated Workflows</li> <li>• Plan defined &amp; implemented collaboratively</li> <li>• Strategic implementation</li> </ul>
<b>Outcome</b>	Minimal Impact	Minimal Impact	Variable Impact	Maximum Impact

## Strong String Assessment Tool

Criteria	Total Possible Points	Points Scored
<b>Real event</b>	1.0	
(No=0 points; Yes=1 point)		
<b>Real time</b>	1.0	
(If > 30 days=0; If < 30 days=1 point)		
<b>Interprofessional team</b>	1.0	
e.g. physician, nurse, pharmacist, other healthcare professional role on patient safety event analysis team involved in chart review, interviews, and discussions; patient safety officer/manager does not count towards count; If only 1 role i.e. physicians=0 points; If 2 roles=0.5 points; If > 3 roles=1 point		
<b>Use of a cause and effect diagram</b>	1.0	
Problem statement <i>caused by</i> actions and/or conditions caused by . . . Not a fishbone diagram; If no diagram=0 points; If fishbone=1 point; If cause and effect diagram=2 points		
<b>Strong causal statements</b>	1.0	
Causal statements adhere to the rules of causation; None adhere=0; Some adhere to rules of causation=0.5 points; All causal statements adhere to rules of causation=1 point		
<b>Strong causal statements</b>	1.0	
Causal statements contain cause, effect, and event; None of the causal statements contain all three elements=0; some of the causal statements contain all three elements=0.5 points; all of the causal statements contain all three elements=1 point		
<b>Strength of actions</b>	1.0	
All actions suggested weak=0 points; At least one action suggested is intermediate or strong=1 point		
<b>Quantifiable measurement outcome</b>	1.0	
Outcome measure includes what will be measure, how long it will be measured, and goal; No outcome measure (s)=0; Outcome measures=1		
<b>Hand-off to organization for review and action</b>	1.0	
No=0; Yes=1		
<b>TOTAL</b>	<b>10.0</b>	

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# ACKNOWLEDGEMENTS

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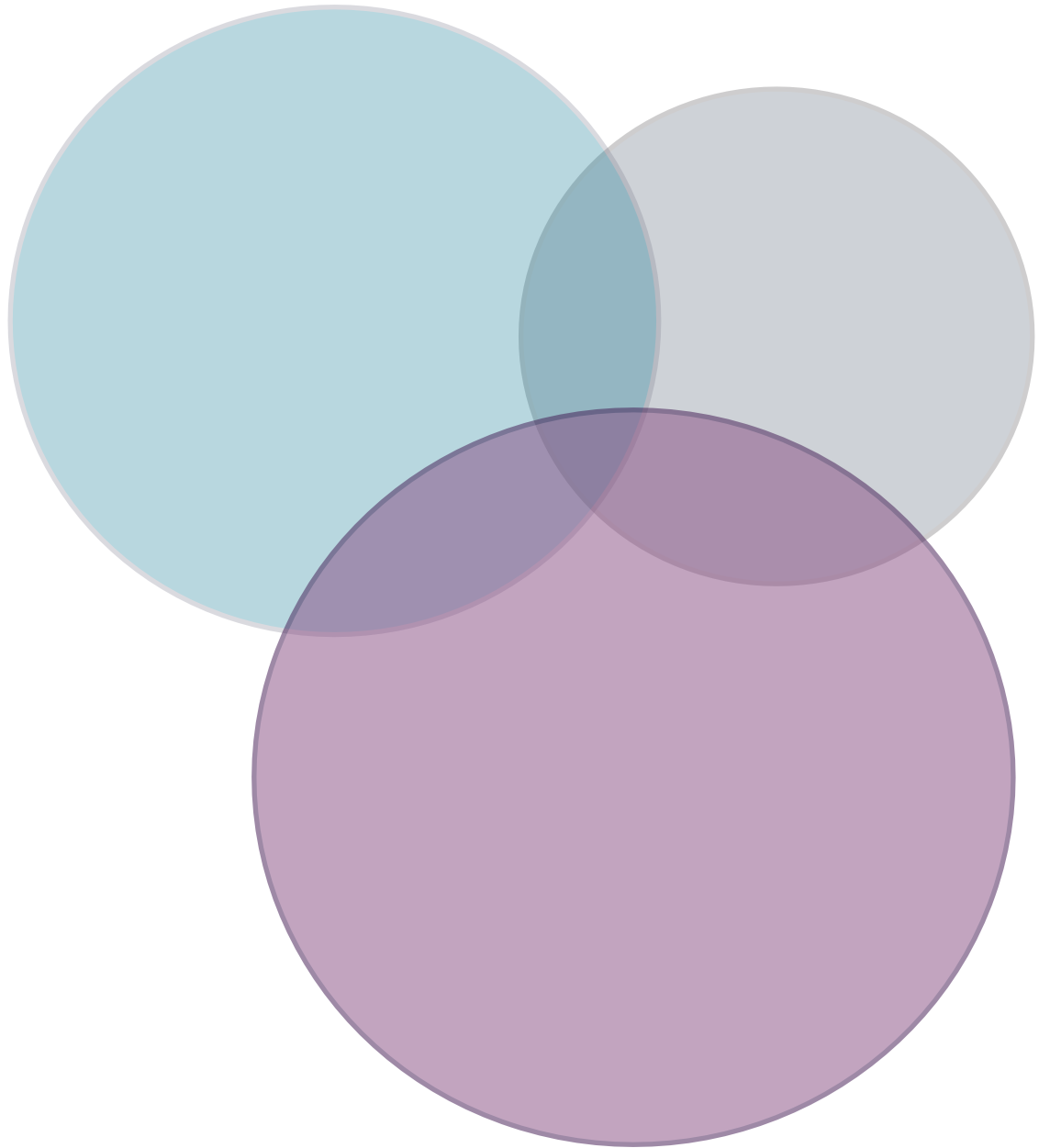
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ISBN: 978-1-945365-36-2