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Canadian Patient Safety Institute
Institut canadien pour la sécurité des patients

The Safety Competencies

2ND EDITION

Enhancing Patient Safety Across the Health Professions

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The Safety Competencies

Enhancing Patient Safety Across the Health Professions

Second Edition

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Patient Safety is a critical aspect of high quality health care.

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The Safety Competencies 2nd Edition (March 2020)

Table of Contents

Foreword

Message from the Co-chairs

Despite significant advances in medical knowledge and technology over the decades, safety issues remain prevalent. The number of deaths in Canada due to *avoidable* medical incidents ranks as the third leading cause of death, after cancer and heart disease, the equivalent of three jumbo jets crashing every month.[1] There continues to exist a growing imperative to embed safety and quality improvement knowledge within health and social services education as a means of achieving a culture of safety across the healthcare continuum. The first (2008) version of the Canadian Patient Safety Institute Safety Competencies Framework (SCF) has proven to be foundational in establishing consistent safety language and translating emerging patient safety and quality improvement evidence to action, with particular emphasis on the accreditation of programs, and the education and certification of pre-licensure health and social service learners.

Since the release of the SCF in 2008, the Canadian Patient Safety Institute has also received valuable feedback from educators and national health organizations for consideration in future editions. One decade after publication of the SCF, the Canadian Patient Safety Institute recognized the need to update the framework. As educators, safety and quality advocates, and champions of the SCF, we were honored and keenly motivated to be invited to serve as co-chairs for a second edition of the SCF. The challenge was ambitious, with the recognition that the SCF must continue to resonate with all members of the Canadian health and social services community across the entire continuum of care, with patients and families, frontline health and social service providers, support personnel, administrators and the general public, as well as policy makers, universities, colleges, students, accrediting and certification organizations, jurisdictional regulatory bodies and national professional associations. Broad stakeholder engagement was seen as an essential enabler.

Over the past year, we have facilitated a comprehensive and robust process to revise and update the 2008 SCF. To date, we have worked with close to 60 representatives and volunteers serving as content experts, members of our steering committee and domain working groups to produce the 2020 Safety Competencies Framework. The revisions were further informed and validated through a safety education survey and modified Delphi process. Although only minor revisions were made to the six original competency domains of the SCF, significant revisions have been made to the competencies and elements falling under each domain. A consistent message from the Delphi survey was that there was an overwhelming number of Key and Enabling Competencies and associated Knowledge, Skills, and Attitudes (specifically 26 Key Competencies, 147 Enabling Competencies, and 143 Elements). As co-chairs, we decided to retain the detail, recognizing that users/educators naïve to safety and quality improvement literature would benefit from a more extensive list of competencies and elements.

1 Canada's doctor shortage will only worsen in the coming decade, Fraser Institute. Accessed Dec 20, 2019. https://www.fraserinstitute.org/article/canadas-doctor-shortage-will-only-worsen-in-the-coming-decade

We also share three case studies that demonstrate how the competencies framework can be used by educators. In the first case, the College of Pharmacy, University of Manitoba (UofM) has streamlined the detail into six abridged documents, each corresponding to one of the six Canadian Patient Safety Institute competency domains and each no more than one to two pages in length. Over the next few years, UofM College of Pharmacy course coordinators are committed to mapping specified safety and quality improvement learning objectives against not only their stated national pharmacy educational outcomes and national certifying competencies, but also the SCF competencies. In the second case study, McGill University describes how it created an innovative, accredited, and theory-driven faculty development patient safety workshop series based on the Safety Competencies framework. The third case study from Queen's University demonstrates how the competencies can be used to guide curriculum development for healthcare aids.

As co-chairs passionate about achieving a safe health and social service delivery culture, over the next decade we challenge the academic and continuing professional development communities to use the revised SCF as a means of ensuring consistency in teaching safety and quality improvement and further, to measure and continuously improve the effectiveness of their educational approaches with the aim of graduating/developing learners who can demonstrate competence in safety and quality improvement. A decade from now, we should be in the position to evaluate the impact of safety and quality education on health and social services delivery, analyze costs and benefits and, ultimately, improve health outcomes of our service users.

We would like to extend our gratitude to our project consultant for her tireless support and keeping us focused and on track, the Canadian Patient Safety Institute staff for their encouragement and expertise, members of our steering committee for sharing their wisdom and experiences, and all of the content experts and working group members who selflessly shared their knowledge and devoted so much time to ensure the new and improved Safety Competencies Framework continues to inspire and invigorate health educators everywhere. The full list of our many contributors to this significant work is available in Appendix 5.

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Message from Patients for Patients Safety Canada

As patients, providers, health educators, and health leaders, we **all** envision Canada as a leader in providing safe care. To make care safer, we must all work together. This involves speaking up, asking questions, working collaboratively, and creating a safety culture where learning and acting in a timely manner, and improvements, are encouraged and rewarded.

Since 2006, members of Patients for Patient Safety Canada (PFPSC) have been actively contributing to creating a culture of safety in many ways. Initially, our initiatives were dedicated to 'hearing from the patient and family voice' in patient safety education. Over the years, our dedication to patient safety, and especially to education, has not let up.

The revised Safety Competencies Framework is the result of a dedicated team who appreciate the complexities and challenges that will need to be overcome in each domain of the framework.

The revisions to the framework reflect advancements in our collective knowledge of patient engagement in patient safety. They highlight the importance of engagement at all system levels. The significance of interprofessional partnerships that are inclusive of patients/families is emphasized, along with ensuring the necessary elements of equity and cultural relevance.

As your partners, Patients for Patient Safety Canada will continue to work with you – health educators – in turning the concepts in each domain into safety actions and reality. We know that by working together, care can be safer. Education, participation, and communication are fundamental to ensuring safe care. The revised Safety Competencies will go a long way in helping to create a safety culture where indeed ***Every Patient is Safe.***

Sharon Nettleton
Member
Patients for Patient Safety Canada

Background

Safety Competencies Framework from first edition (2008) to second edition (2020)

In 2003, Health Canada created the Canadian Patient Safety Institute (CPSI) to improve the safety and quality of healthcare in response to recommendations of a National Steering Committee on Patient Safety established to consider the requirements for the provision of safer care in Canada.

In 2005, CPSI directed its Education and Professional Development Advisory Committee to conduct an environmental scan of several health curricula to understand where the gaps in patient safety content were in the education of healthcare professionals. The scan confirmed that education focusing on patient safety was nearly absent, or misunderstood, within sampled faculties and schools of medicine, nursing and pharmacy. The scan also confirmed that such education was not only sporadic and inconsistent, but also lacked the tie-in to teamwork and collaboration, an essential element to the provision of patient-centred care. In short, there was no well-established body of knowledge in Canada dedicated to patient safety content with an interprofessional perspective, though many health disciplines had related topics in their curricula.

After creating a first draft and consulting with over 500 representatives from various healthcare organizations from all the major health disciplines, CPSI, in collaboration with the Royal College of Physicians and Surgeons of Canada, designed and launched the first patient safety competency framework in Canada in 2008. Using the Royal College's internationally respected *CanMEDS* framework and the methodology utilized to create professional competencies for physicians as a model, the interprofessional safety competencies were developed and arranged into six domains that included 23 key competencies and 140 enabling competencies. The final framework was approved by the CPSI Board and launched as "*The Safety Competencies: Enhancing Patient Safety across the Health Professions.*" The Safety Competencies Framework (SCF) is a simple, powerful, and flexible framework that was designed to be a road map for health professional educators to create contextual patient safety curricula for their programs and for professional development. Since 2008, many postsecondary, postgraduate, and continuing professional education programs across the country have integrated the SCF into curricula to make patient safety truly effective across the spectrum of healthcare settings.

Integration of the Safety Competencies Framework into curricula – 2008-2010

The original objectives of the *Safety Competencies Framework* were to:

- identify the key knowledge, skills, and attitudes related to patient safety competencies for all healthcare workers;
- develop a simple, flexible framework that will act as a benchmark for training, educating, and assessing healthcare professionals in patient safety; and
- help make patient safety competencies easy for everyone to understand and apply in postsecondary, postgraduate, and continuing professional development settings.

Support and informal endorsements of the SCF were prompt in the beginning and have become widespread since publication in 2008, with a number of organizations incorporating the framework into national standards of practice, educational outcomes, and entry-to-practice examinations. Over the years, CPSI has also focused on advancing the shift to patient-centred, systems-based care via both developing educational programs for practicing healthcare workers while supporting the integration of the *Safety Competencies* into the postsecondary curricula for all healthcare professions.

In 2017, CPSI completed a report entitled *"Report on the Integration of the Safety Competencies Framework into Health Professions Education Programs in Canada"* [2]. The final report on the integration of the Safety Competencies is a sample of postsecondary health professions education programs that presents a picture of success in uptake and influence of the framework since it was launched in 2008. The report offers various testimonies and essays that document the effect of the framework on health profession educators in several different disciplines. Despite the passage of time, the popularity of the SCF has endured in paper and virtual form. The framework remains one of the most popular downloads from the CPSI web site. However, the report also included remarks from established educators in healthcare who offer candid comments and support for CPSI's continued investment in the *Safety Competencies.*

Safety Competencies Framework - 2020

CPSI, in collaboration with Patients for Patient Safety Canada, decided to again engage in a robust process to revise and update the first edition of the SCF. The revisions have included over 60 volunteers serving as members of a steering committee, content experts, domain working groups, and external reviewers to produce a second edition of the SCF.

CPSI decided to support revisions to the framework to ensure it remains relevant for educators and organizations invested in the education of health professionals whether in academia or in practice. For example, in reviewing the current framework, it quickly became obvious the areas of patient/family partnership, leadership, quality improvement, and cultural competency were found to be weak or non-existent. The field's evolving understanding of patient safety/quality improvement (QI) has changed over 10 years since the framework was first launched. Another objective was to continue fostering an interest in interprofessional patient safety/QI education and collaboration, and to renew awareness of the framework's existence by launching and promoting a new edition of the SCF. However, from the beginning, the working assumption was always that no new domains would be added, though some of the domains could be renamed. In addition, all who worked on updating the six domains of the SCF had to maintain the primary focus of the framework's key attribute as an interprofessional curriculum guide.

Educational survey

CPSI started the process by conducting an educational survey to assess educators' current awareness of the SCF; to evaluate the current uptake of safety competencies among faculties and schools for allied health,

medicine, nursing and pharmacy, etc., to verify if there was continued interest in integrating safety competencies into curricula; and to ask respondents, including a sample of accrediting, certifying and regulatory bodies, to identify what patient safety content they believe should be incorporated in their curricula, standards of practice, or educational objectives. The target audiences (70) for the survey offered many helpful suggestions for the new edition. The survey revealed that:

» Many of the respondents have incorporated updated concepts into their own programs.

2 https://www.patientsafetyinstitute.ca/en/toolsResources/Integration-of-Safety-Competencies-Framework/Pages/default.aspx

» The following concepts were most likely integrated into existing programs and had high average rankings of importance: person-centred care, communication, interprofessional teams, and interprofessional education.

» The following concepts were less likely to be integrated into existing programs, but received high average rankings of importance: patient engagement, transparency and disclosure, human factors and patient safety, and personal leadership skills.

Steering Committee

The membership of the steering committee included two co-chairs representing different healthcare professions. Committee members were selected to represent a cross-section of health practitioners familiar with patient safety science (e.g. medicine, nursing, pharmacy, occupational therapy, respiratory therapy, physical therapy, emergency services), and a representative from Patients for Patient Safety Canada.

Content Experts

Several content experts were also identified to update the language of patient safety/QI in the SCF and to integrate the following factors horizontally across all six domains:

1. incorporating the patient and family voice (patient engagement in healthcare);
2. reframing and updating Domain 4 (Managing Safety Risks) as continuous quality improvement, and updating the terminology such as "adverse events" to "patient safety incidents";
3. incorporating cultural safety/competency (cross-cultural patient/client safety); and
4. incorporating leadership for patient safety.

Domain Working Groups

Following the recommendations from the content experts, six domain working groups were created and, again, composed of health practitioners familiar with patient safety/QI science and representatives from Patients for Patient Safety Canada and First Nations/Aboriginal communities.

The working groups each reviewed the recommendations produced by the content experts to revise the SCF in the four areas mentioned above. Similar to the work of the content experts, the working groups also had to ensure a consistent application of the interprofessional principles upon which the SCF was built originally. The working groups each produced recommendations from within their domain group expertise for review and endorsement by the steering committee.

Consensus meeting

Following the work of the content experts and domain working groups, CPSI organized a consensus meeting at which all contributors who worked on the project were invited to provide input on the drafting of the proposed combined revisions to the SCF. From the meeting, it became clear that several assumptions should guide the final draft of the six domains:

1. It's acceptable to have some concept redundancy across the six domains, as some users may want to access a domain in a stand-alone fashion. As such, it's acceptable to have some repetition of important concepts within the overall product.

2. There was acceptance that the target audience for the SCF has evolved as awareness and accountability for patient safety has expanded. As such, the revisions must reflect language that is inclusive of the many types of healthcare providers as well as some specific competencies and language targeting leaders.
3. The revised SCF remains targeted to:
    - » health professionals or healthcare providers with increased patient care accountabilities or system leadership;
    - » pre and post licensure;
    - » life-long health professional learners; and
    - » novice to expert practitioners/clinicians.
4. The SCF also needs to meet a wider audience where possible, especially patients and families.

Following the consensus meeting, the steering committee met to review all the comments received at the meeting to integrate as many of the suggested revisions and recommendations from attendees as possible.

External validation

An additional step was then added to share the draft framework with a small group of patient safety educators and researchers (20) already familiar with the competencies, but not previously involved in the revisions, to provide a final review of the proposed changes. This last process of sharing the draft revisions externally, referred to as a "modified Delphi", allowed CPSI to receive further comments and validation for the proposed changes before final publication of the second edition, and to send a signal to the field that a new framework would soon be released.

Content harmonization from external validation

Once the external validation was completed, the two co-chairs reviewed the comments received from the external experts to integrate the appropriate ones for the final revisions. Once this was done, the final revisions were circulated once more to the content experts and domain working group members, and then on to the steering committee for their acceptance of the proposed content. The revised edition includes the main body of the competencies and several case studies that complement the publication to provide context for readers who want to apply the competencies in academia or practice. Once complete and edited, the new framework was returned to CPSI decision makers for final approval and translation. Following official release, CPSI developed a communications strategy for the launch of the new and improved *Safety Competencies Framework – 2020*.

Conclusion

The development and integration of a framework of interprofessional patient safety competencies is a critical achievement to accelerate the development of local patient safety curricula. The integration of safety theories and the "how-to's" of system improvement at all levels of education and continuing professional development is needed across the spectrum of care. Educating healthcare providers about patient safety and enabling them to use the tools and knowledge to build and maintain a safe system is critical to creating safe health systems.

Safety Competencies Framework

Domain 1: Patient Safety Culture

Definition

Patient safety culture is an integrated pattern of individual and organizational actions and behaviour based on shared beliefs and values that enables individuals and organizations to continuously seek to minimize the potential for patient harm which may result from the processes of care delivery.[1] Patient safety culture is characterized by authentic leadership, broad, timely and responsive communication, transparency of information, as well as the engagement of patients and families.[1]

Description

It is widely accepted that the safety culture determines what actions and behaviours are acceptable, and the level of priority that all individuals place on issues related to quality, safety and risk. The shared nature of a patient safety culture means that it is bigger than the individual healthcare providers who work within the organization. Patient safety culture improvement involves recognizing the importance of ongoing collaboration and the commitment to advocate for change. Often changes in culture occur following a sentinel event or as a part of a broader patient safety improvement initiative. While it is difficult for individuals to change the culture on their own, changes in collective attitudes, actions and ethical values aimed at goals to continuously minimize patient harm are essential in helping to move organizations forward.

It is important for healthcare providers to understand what a patient safety culture is, why it is important and how it impacts performance. It is also important for healthcare providers to understand the complexities inherent in a safety culture and how they can influence the culture as individuals, and how their actions and behaviour can change outcomes. Having a clear understanding of one's role in enhancing a safety culture is essential. In this way, each and every one can experience psychological safety and be able to speak-up when problems are identified. Healthcare leaders must set clear expectations for a positive safety culture and balance a 'no-blame system' with individual accountability, often referred to as a 'just culture'.

In advancing a safety culture, all healthcare providers have an essential role and duty to engage patients and their families in all aspects of patient care. This requires understanding, respect for and sensitivity to diversity in culture, age, cognition, gender, sexual orientation, life experience, religion, or ethnicity.

Patient safety culture improvement involves recognizing the importance of ongoing collaboration and the commitment to advocate for change.

Key and Enabling Competencies

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
1. Contribute to the establishment and maintenance of a just culture.	1.1 Outline the attributes of an ideal patient safety culture. 1.2 Describe why a patient safety culture is important and how culture impacts patient safety outcomes. 1.3 Describe the dominant patient safety culture models and assessment methods. 1.4 List the elements which leadership must enable for a culture of patient safety (e.g. CPSI Patient Safety Culture Bundle). 1.5 Describe the elements of a just culture for patient safety, and the role of professional and organizational accountabilities. 1.6 Describe the importance of assessing patient safety culture and the responsibility to participate in the assessment. 1.7 Analyze how a patient safety culture relates to other related concepts (e.g. High Reliability Organizations, Crew Resource Management, and Lean). 1.8 Describe how a poor patient safety culture can adversely impact patient care and continuous improvement. 1.9 Describe how patient safety needs to be a major organizational or institutional goal demonstrated at the most senior levels. 1.10 Describe the impact of cultural humility on patient safety.
2. Advocate for improved patient safety culture.	2.1 Identify opportunities for continuous patient safety culture improvements. 2.2 Describe the methods by which healthcare providers can advocate to improve a patient safety culture. 2.3 Contribute to the creation, dissemination, application, and translation of new healthcare system safety knowledge and practices. 2.4 Advocate for improvements in system processes to support continuous patient safety improvement. 2.5 Act as role models and champion patient safety improvements. 2.6 Reflect on actions and decisions continuously with self-awareness to improve knowledge and skills in patient safety.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
3. Contribute to the continuous improvement of safety culture.	3.1 Reflect on the importance of challenging existing practices and norms in relation to continuous improvements. 3.2 Leaders demonstrate accountability for organizational priority setting and leadership practices that motivate the pursuit of safety (e.g. setting clear expectations/incentives for safety, ongoing communications, resources for patient safety and quality improvement infrastructures, engagement of patients and families). 3.3 Initiate and engage in local and system patient safety improvements. 3.4 Involve patients and their families as key players in patient safety. 3.5 Foster psychological safety (e.g. speaking up/stop the line). 3.6 Act on immediate patient safety threats (e.g. stop the line). 3.7 Escalate care concerns. 3.8 Lead and participate in the implementation of patient safety best practices.

See Appendix 1 for the related knowledge (K), skills (S), and attitudes (A) key elements.

References

1. American College of Healthcare Executives, Lucian Leape Institute. *Leading a Culture of Safety: A Blueprint for Success*. Boston, MA: American College of Healthcare Executives and Institute for Healthcare Improvement; 2017. http://www.ihi.org/resources/Pages/Publications/Leading-a-Culture-of-Safety-A-Blueprint-for-Success.aspx.

Domain 2: Teamwork

Definition

Optimizing teamwork within and across teams to maximize patient safety, quality of care, and health outcomes.

Description

Safe and effective care involves the coordinated activities of a multi-team system – with patients and families as equal partners – that includes: the core care team, contingency teams, coordinating teams, administration, and ancillary and support service teams. High-performing interprofessional teams demonstrate capabilities and competencies that are essential to efficient, effective, and safe collaborative practice. Each key competency aligns with one of the six Canadian Interprofessional Health Collaborative (CIHC) Interprofessional Competency Framework domains that are foundational to interprofessional collaborative practice:

1. patient/client/family/community-centred care;
2. role clarification;
3. team functioning;
4. collaborative leadership;
5. interprofessional communication; and
6. interprofessional conflict management.

Organizational and system enablers facilitate interprofessional teamwork. Team members and leaders at all levels promote collaboration, partnerships with patient and family, cultural safety, team effectiveness, and quality improvement initiatives. Patients and their families are key partners on the team, engaged in decision-making and appropriately directing their own care.

High-performing interprofessional teams demonstrate capabilities and competencies that are essential to efficient, effective, and safe collaborative practice.

Key and Enabling Competencies

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
1. Meaningfully partner with patients and families, enabling them to be key members of their interprofessional teams.	1.1 Engage patients and their families in decision-making and the management of their own health, quality of life and wellbeing. 1.2 Work with patients and their families to define the extent to which they want to be involved in their own care. 1.3 Support informed decision-making of patients and families by providing and seeking appropriate, sufficient and clear information, and confirming mutual understanding. 1.4 Advocate with individual patients, their families and all members of the interprofessional team for the resources to be able to provide people-centred, high-quality and safe care. 1.5 Respect individual patient's needs related to cultural and personal health beliefs and practices. 1.6 Describe the ways in which patients and families are partners in care leading to improved health, quality of life and wellbeing.
2. Respect the professional and patient and family roles and responsibilities within the interprofessional team and integrate this diversity seamlessly into service delivery.	2.1 Articulate your own roles and responsibilities within various interprofessional teams. 2.2 Negotiate the interprofessional team composition and structure, including staff lower on the professional hierarchy (such as healthcare aides and ward clerks). 2.3 Describe the relevant competencies, roles, expertise, and overlapping scopes of practice of all members of the interprofessional team including patients and families, and identify gaps that need to be addressed. 2.4 Demonstrate respect for all interprofessional team members' perspectives, particularly those of patients and their family. 2.5 Acknowledge that each member of the interprofessional team has an important role to contribute, and access others' knowledge and skills as appropriate.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
3. Be vigilant of interprofessional team dynamics to optimize patient safety, quality of care, and health outcomes.	3.1 Develop and implement a shared set of individual patient and healthcare provider values, rights and responsibilities. 3.2 Maintain the prevention, identification and resolution of safety issues as a priority function of the interprofessional team. 3.3 Create a team environment where open communication and continuous learning are the norm. 3.4 Define a process for introducing new and emerging evidence into team-based care. 3.5 Practice individual and interprofessional team reflection to incorporate feedback and improve team performance. 3.6 Set individual patient and team goals and priorities, measure progress, and learn from the experience together as a team.
4. Demonstrate shared authority, leadership, and decision-making.	4.1 As an interprofessional team collaboratively consult with, delegate tasks to, supervise and support one another. 4.2 As a member of the interprofessional team, accept and execute delegated tasks. 4.3 As a member of the interprofessional team, ask for support when appropriate.
5. Communicate in a respectful and responsive manner.	5.1 Demonstrate support for all team members to speak up, question, challenge, advocate, and be accountable to address safety issues and risks especially in a perceived power imbalance relationship. 5.2 Define clear strategies and processes for optimal interprofessional team communication, including under high stakes situations or environments. 5.3 Demonstrate active listening techniques to contribute to optimal interprofessional teamwork and patient care. 5.4 Optimize use of information and communication technology in team safety practices. 5.5 Model respectful communication.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
6. Work effectively with all members of the interprofessional team to promote understanding, manage differences, and resolve conflict.	6.1 Foster an interprofessional team culture that allows for healthy discussion of dissenting opinions in a manner such that all members of a team can express concerns or alternative ideas. 6.2 Identify conflict in interprofessional teams. 6.3 Identify and respect differences, misunderstandings, and limitations that may contribute to conflict, and work to resolve these. 6.4 Identify and address all practice variations that can negatively impact the reliable delivery of evidence-informed care.

See Appendix 1 for the related knowledge (K), skills (S), and attitudes (A) elements.

Domain 3: Communication

Definition

Healthcare professionals engage patients and family members in an open dialogue to promote patient safety, and to prevent and respond to patient safety incidents.

Description

This domain centres on processes where healthcare providers and healthcare leaders share and receive information to develop positive interpersonal relationships within clinical situations, within and across organizations, and support active patient engagement and safe, effective patient care. Communication practices include written, oral and technological communications. Online communication tools and information channels are important methods to raise awareness of threats to patient safety.

Through effective communication, healthcare providers and healthcare leaders share safety knowledge and improve their understanding of patient and family perspectives. One of the most important goals of effective communication is to establish partnerships with patients and their family as members of their own healthcare team, as well as when they are engaged as partners of safety and quality teams. Patient and family members' perspectives about their care are continuously evolving, are grounded within a sense of trust and comfort with the processes of care, and are influenced by social context and community values. Effective communication is beneficial to patients and healthcare providers, builds trust, and is a precondition of obtaining patient consent. Information that is clear and consistent enables patients to understand the risks, benefits and possible outcomes of investigations and treatments, with the goal to participate as full partners in their own care and shared decision-making.

Effective communication is beneficial to patients and healthcare providers, builds trust, and is a precondition of obtaining patient consent.

Key and Enabling Competencies

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
1. Demonstrate effective verbal and non-verbal communication skills to promote patient safety.	1.1 Demonstrate respect, humility and empathy in communication. 1.2 Discuss diagnosis, investigations, treatments and protocols clearly and comprehensively with patients and families, and confirm their understanding. 1.3 Convey information in structured communications to patients and families, and healthcare team members to promote understanding. 1.4 Communicate in a manner that is sensitive to cognitive status and health literacy needs. 1.5 Employ active listening techniques to understand the needs of others. 1.6 Communicate in a manner that respects cultural diversity, cultural safety and cultural humility, also recognizing the barriers of authority gradient and their impact on patient safety. 1.7 Respect privacy and maintain confidentiality.
2. Demonstrate effective clinical documentation for patient safety.	2.1 Provide appropriately detailed and clear clinical documentation in the patient health record. 2.2 Provide patient care orders and prescriptions using evidence-based practices to reduce the risk of errors, including the use of approved abbreviations. 2.3 Provide patient care orders and prescriptions to convey the appropriate degree of urgency. 2.4 Use communication approaches that ensure clear and comprehensive information is provided in consultation requests and responses, investigative, operative and other reports, and other correspondence.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
3. Communicate to prevent high-risk patient safety threats.	3.1 Design evidence-based patient education material incorporating patient and family engagement, diversity and health literacy. 3.2 Engage patients or substitute decision-makers in context- appropriate discussions regarding the risks and benefits of assessments and treatments and in obtaining informed consent. 3.3 Provide clear and comprehensive information at transitions in care (e.g. engage patients and/or families during shift change, discharge to community care). 3.4 Communicate the urgency of a clinical situation across authority gradients, escalating concerns where needed and closing the loop on follow-up. 3.5 Adapt communications for use in ordinary, crisis and stressful situations. 3.6 Use structured communication approaches to escalate attention to urgent clinical situations and in high-risk clinical situations such as transitions in care.
4. Employ healthcare technology to provide safe patient care.	4.1 Use technology to support safe communication (e.g. e-health records, decision support tools, electronic standardized order sets/protocols/ care maps, alerts and monitoring). 4.2 Understand the benefits and risks associated with using technology for healthcare communication. 4.3 Facilitate patients' access to their own health records (according to jurisdictional legislation).

See Appendix 1 for the related knowledge (K), skills (S), and attitudes (A) elements.

Domain 4: Safety, Risk, and Quality Improvement

Definition

Acting on safety risks is a broad concept that encompasses identifying, assessing, reducing, and mitigating safety risks to both patients and healthcare providers. This is accomplished by engaging patients and their families and other members of the care team in implementing evidence-informed principles of system design and quality improvement.

Description

Healthcare providers work in complex environments and they are vulnerable to service delivery pressures, systems failures and their own fallibility. Healthcare leaders and providers must be accountable not only in their daily work, mitigating ongoing risk within specific care contexts at the local level, but also from a proactive preventative systems design perspective. To detect patient safety threats, acting on risk and improving quality in dynamic complex situations, healthcare providers require competence in system-based activities as well as clinical practice. These competencies can include teamwork, task management, and situational awareness as well as knowledge of quality improvement methods. By learning and applying these skills, healthcare providers can help to improve outcomes for patients and their families by preventing or mitigating patient and provider safety incidents.

Healthcare providers collect and monitor performance data to assess risk and improve outcomes. They also apply their knowledge to proactively prevent patient safety incidents through engagement in quality and safety improvement activities. Achieving highly reliable healthcare service for patients and families depends on healthcare providers knowing when to escalate care concerns and what processes to employ for real-time early detection of safety risk (stop the line) as well as patient deterioration. Healthcare leaders and managers are accountable to foster learning organizations that provide adequate resources and infrastructure to support healthcare providers in clinical work as well as quality improvement, quality assurance and patient safety efforts. Organizations have strategic plans that prioritize patient safety though safety and quality vision/mission statements and goals. Safe environment programs in organizations support healthcare provider health and safety by protecting their teams from physical and psychological injury as well as burnout, all known to negatively impact patient safety.

Key and Enabling Competencies

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
1. Anticipate, identify, reduce and mitigate hazardous and routine situations and settings in which safety problems may arise.	1.1 Demonstrate situational awareness by continually observing the environment, thinking ahead and reviewing potential options and consequences. 1.2 Incorporate individual patient's cultural and health beliefs to mitigate safety hazards. 1.3 Recognize safety hazards in real-time and respond to correct them, preventing them from reaching the patient. 1.4 Recognize the impact of system complexity on the safe outcome of healthcare interventions. 1.5 Employ techniques such as diligent information-gathering, cross-checking of information using checklists, and investigating mismatches between the current situation and the expected state. 1.6 Triage, document, and report safety hazards to ensure problems are addressed in order of severity of harm. 1.7 Demonstrate awareness of one's own and the team's vulnerabilities and fallibilities within complex systems.

Healthcare providers collect and monitor performance data to assess risk and improve outcomes.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
2. Systematically identify, implement, and evaluate quality improvement interventions for patient safety.	2.1 Critically appraise the evidence to identify leading and emerging safety solutions. 2.2 Learn from local successes and experiences, assessing their appropriateness to one's own environment. 2.3 Select and implement the most appropriate solution for a given context, taking into account quality, resources, practicality, and patient preferences. 2.4 Evaluate the impact of quality improvement and safety interventions, including the potential for harm and/or unintended consequences (balancing measures). 2.5 Evaluate the ongoing impact of quality improvement and safety interventions, continuously incorporating lessons learned. 2.6 Develop knowledge and skills on how to meaningfully engage patients and families in quality assurance and quality improvement initiatives. 2.7 Demonstrate respect for culture when engaging with patients and families in safe system design and improvement.
3. Sustain quality improvement and safety practices at a local and system level.	3.1 Lead and engage in the measurement of quality and performance indicators for the people and populations served. 3.2 Continuously develop system level knowledge related to patient safety and quality improvement science, change theory, human factors, and technology. 3.3 Engage collaboratively with healthcare leadership to ensure well-resourced improvement efforts. 3.4 Advocate with healthcare leadership and team members to create a culture of continuous quality improvement. 3.5 Engage and involve patients and families in discussions about safety hazards and encourage on-going dialogue and questions about care. 3.6 Advocate for patient satisfaction and patient ombudsmen processes and structures; enable patients and families to access these resources. 3.7 Maintain up-to-date policies and procedures.

See Appendix 1 for the related knowledge (K), skills (S), and attitudes (A) elements.

Domain 5: Optimize Human and System Factors

Definition

Managing the interaction between people (individuals, healthcare providers, patients, family members and teams) and other system factors (tasks, tools/technologies, organizational, environmental) to optimize patient safety.

Description

Human factors is a scientific discipline that studies how people interact with systems, tools, processes, and devices. It incorporates how psychological, social, physical, biological and safety characteristics of users affect these interactions. Optimizing the human and environmental factors that support the achievement of best human performance is an essential safety competency for all healthcare providers. An understanding of individual human factors (patients, family and healthcare providers) and the ambient or environmental factors that shape decisions helps in recognizing and mitigating prejudices and biases and improving decision-making.

The ability of healthcare providers to optimize patient safety depends on an understanding of their own performance and the performance of others within a given practice environment, including how to involve patients and their families. Complex, ongoing interactions between individual providers and patients, together with the technological characteristics of the healthcare environment, significantly shape individual and system performance and the safety of patient care. Critical thinking, which involves situational awareness and insight into the cognitive biases that affect decision-making, is influenced by a variety of human and organizational factors.

In terms of individual factors, human performance is significantly shaped by knowledge, skill and experience, as well as personality attributes and attitudes toward risk tolerance. The well-being of individual practitioners with regard to work-life balance, fatigue, and other personal health factors constitutes another key element of performance.

In terms of environmental factors, systems-based thinking in healthcare can help in further understanding the relationships between the various elements of complex work environments. The relationships between policies and procedures, resource allocation and work cultures are intertwined with local, regional, national and international organizational structures. It is important that health providers are aware of these relationships and how their interactions with patients impact these relationships.

Finally, the interface between individual practitioners and patients and the technological attributes of healthcare environments has a critical effect on individual and system capacities in achieving the delivery of safe care. The key to identifying effective interventions lies in aligning interventions to causal factors. Interventions should avoid always resorting to person-based solutions (e.g. remedial training, policy/procedure reinforcement which impose actions on the individuals). Instead, system-level changes (e.g. automating a safety check, forcing functions, changing culture) should be considered to address poorly designed systems.

An established framework in human factors engineering for framing the design and analysis of healthcare research is the Systems Engineering Initiative for Patient Safety (SEIPS). This model of work systems and patient safety is noted in Appendix 2. It depicts the healthcare work system as a sociotechnical, human-centred system with six interacting elements that influence system performance:

1. person;
2. tasks;
3. tools and technologies;
4. organization;
5. internal environment; and
6. external environment.

Optimizing the human and environmental factors that support the achievement of best human performance is an essential safety competency for all healthcare providers.

Key and Enabling Competencies

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
1. Describe the individual and environmental factors that affect human performance.	1.1 Describe the impact of fatigue and other human limitations on clinical performance. 1.2 Respect the influence of attitude and diversity on clinical practice. 1.3 Discuss the role of wellness and its effect on knowledge and clinical practice. 1.4 Demonstrate humility in interpersonal relations as well as in the design and implementation of clinical care processes. 1.5 Discuss how to integrate coping mechanisms to mitigate performance hazards in ambient conditions and various practice environments. 1.6 Describe the impact of organizational resource allocation, policies and procedures and safety culture on patient safety outcomes.
2. Apply critical thinking techniques to enhance safe decision outcomes.	2.1 Demonstrate processes for sound decision-making, understanding where processes can be challenged and corrected. 2.2 Model the behavioural characteristics of situational awareness. 2.3 Engage in processes for real-time/early detection of safety risks and patient deterioration. 2.4 Demonstrate the ability for shared decision-making with patients and families as partners by hearing a diverse range of opinions or characteristics. 2.5 Develop and engage in protocols and processes for real-time/early detection of safety risk, act on safety threats and communicate actions across all levels of the system, including leadership. 2.6 Encourage patients and families to communicate concerns and ask questions.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
3. Discuss the impact of the human/technology interface on patient safety.	3.1 Define human factors and human factors engineering and understand their application in healthcare environments. 3.2 Describe the role of usability assessment in the safe application of technology. 3.3 Recognize the importance of ergonomics in safety design. 3.4 Adopt and advocate for health information or technological devices to support safer care (i.e., e-Health records, decision support, alerts, monitoring). 3.5 Describe principles of workflow analysis to enhance safe care.
4. Recognize that human factors are a diverse set of system elements that must be considered in an integrated manner to improve patient safety, and prevent and mitigate hazards.	4.1 Ensure communication across all system levels includes closed loop feedback. 4.2 Demonstrate that effective decision-making involves the integration of information from multiple system levels (e.g. individuals – including patient and family, team, organization, regulatory). 4.3 Leaders ensure that decision outcomes made at the leadership/governance level are systematically communicated at all levels, and are integrated into decisions and actions occurring at all levels of the system. 4.4 Describe the common types of cognitive and cultural biases (conscious and unconscious). 4.5 Engage patients and families in their own safety as well as in efforts to improve safety at an organizational and systems level.

See Appendix 1 for the related knowledge (K), skills (S), and attitudes (A) elements.

Domain 6: Recognize, Respond to and Disclose Patient Safety Incidents

Definition

Recognize and report patient safety incidents, respond appropriately and effectively to mitigate harm, ensure disclosure, and prevent recurrences.

Description

The human impact of a patient safety incident on the patient, their family, the healthcare providers directly involved, as well as the ramifications on the system itself including the economic burden are significant.

Disclosure is an ethical, professional and legal obligation. Patients and their families, governments, regulatory licensing authorities, and Canadian courts expect health providers to be knowledgeable and accountable for their actions and for their responses to patient safety incidents. Open, honest, and empathetic disclosure and appropriate apologies benefit patients and families, health providers, and their organizations. Patients and families impacted by a patient safety incident want to know the extent of harm, the facts about how it happened, and what measures can be undertaken to prevent the harm in the future. Many patients and families want to be involved in seeing these improvements put into action, and/or to be informed when these new safety measures are in place.

Healthcare providers are able to recognize patient safety incidents, and take responsibility to respond in a timely way with empathy and compassion to meet urgent clinical, emotional, and information needs, and to provide follow-up as required of their patients.

Healthcare providers report these incidents to their leaders, team members and colleagues, and support these individuals as needed. Healthcare providers recognize the importance of culturally sensitive disclosure through an exploration and acknowledgement of the patient's values, beliefs, and wishes. Patients and/or their family are told about the occurrence of harm in a timely manner. A commitment is made to provide the factual reasons for what happened as soon as these are known and in a timely manner to the patient and/or their family. To mitigate harm, the healthcare provider and team effectively address the patient's immediate clinical needs and plan with the patient and/or their family for further ongoing care. An appropriate apology is provided.

Open, honest, and empathetic disclosure and appropriate apologies benefit patients and families, health providers, and their organizations.

Healthcare providers report patient safety incidents including near misses to their organization and contribute to incident analyses, recognizing these as learning opportunities for contributing to system redesign and patient engagement, and improving team and personal performance.

The patient and/or family is provided with a follow-up about the improvement in a timely manner. The patient and/or family may be invited to participate in helping to design, test and/or implement the improvement to prevent similar harm to other patients in the future.

Being involved in a safety incident where a patient has suffered harm, whether it is preventable or not, can be extremely stressful and can have a significant impact on one's personal, family and professional life.

Patients and their family are provided with supports and access to resources to assist them through this stressful period.

Healthcare providers reflect and recognize if they or their team's ability to provide the best clinical care is compromised because of the stress related to the safety incident. Healthcare providers use healthy and constructive coping strategies and readily seek emotional support. They help their team and other colleagues to cope emotionally with incidents, including drawing on available support systems.

Key and Enabling Competencies

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
1. Recognize patient safety incidents.	1.1 Describe the different types of patient safety incidents (near miss, no harm, harm) and the response and disclosure approach that is appropriate to each type, in alignment with provincial regulations. 1.2 Define the term harm and distinguish between preventable harm resulting from a patient safety incident, harm from a recognized unavoidable complication related to the inherent risk of treatment, and harm from the natural progression of the patient's underlying medical condition. 1.3 Manage the risk of harm to other patients who may also be affected by a patient safety incident (e.g., remove biohazards and malfunctioning equipment). 1.4 Facilitate clinical care including timely clinical testing, consultations, and care for a harmed patient.
2. Engage with patients and families affected by patient safety incidents to meet their needs.	2.1 Engage with patients and/or families to assess immediate safety and care needs for their physical and emotional well-being following an incident and provide interventions to mitigate further harm. 2.2 Describe the role of patients and/or families in the initial (early) and post-analysis stages of disclosure. 2.3 Recognize there are situations that constitute special consideration regarding disclosure, for example, patients in vulnerable situations, patients who have a substitute decision-maker, patients with special communication requirements (e.g., those who are hearing impaired or have language translation needs). 2.4 Recognize diversity factors that may impact the relationship between the health professional and the patient. 2.5 Invite the patient and/or family to be involved in identifying patient safety incidents, designing, testing and implementing improvements and/or providing updates on these activities as required. 2.6 Encourage patients and families to report incidents and omissions in their information or care.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
3. Disclose patient safety incidents.	3.1 Recognize the ethical, professional, organizational and legal obligations to disclose patient safety incidents and also recognize the expectations of the patient and family. 3.2 Be aware of existing policies and procedures associated with disclosure and how these contribute to an organizational culture of patient safety. 3.3 Describe the legal implications arising from disclosure. 3.4 Disclose the occurrence of a patient safety incident to the patient and/or their family in a timely, empathetic and culturally sensitive way. 3.5 Determine who is accountable for disclosure, who should be present when disclosure communications occur, how to disclose on behalf of others, and who should be accountable for following up with the patient/family. 3.6 Describe what information should be disclosed at the initial (early) disclosure stage, the timeframe for disclosure, and the relevant required documentation, reporting, and analyses. 3.7 Appropriately ask for help and advice about disclosure. 3.8 Engage with patients and/or families in honest communication and empathic, culturally sensitive dialogue with respect to disclosure. 3.9 Recognize the importance of empathy and apology in all disclosure discussions. 3.10 Recognize the importance of timely communication and contact with the patient and/or family in all disclosure related discussions.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
4. Learn from patient safety incidents.	4.1 Recognize the ethical and professional obligations to report all types of patient safety incidents so that harm can be mitigated and care improved. 4.2 Describe the process for reporting patient safety incidents. 4.3 Recognize the reporting of patient safety incidents is required across the entire continuum of primary and specialty services provided by community centres and hospitals, including for patients participating in research programs. 4.4 At the time of the event, interview those involved for appropriate information related to the event; collect the necessary clinical materials (e.g., tracings from monitors), samples and equipment that may facilitate a more thorough analysis; and preserve the evidence to understand the reasons for what happened. 4.5 Participate in timely event analysis and planning for improvements to prevent recurrence. 4.6 Engage in personal and professional reflection regarding a patient safety incident. 4.7 Engage with patients and/or families in a timely manner to obtain their perspective on what happened. 4.8 Recognize the importance of monitoring the outcome of incident analysis in collaboration with leadership. 4.9 Demonstrate leadership by professionally advocating for required system changes. 4.10 Apply lessons learned and implement improvements to strengthen the safety of future care. 4.11 Share lessons learned at the organizational- and health system-levels. 4.12 Implement measures to prevent similar events. 4.13 Appropriately document the facts of what happened and disclosure discussions.

Key Competencies	Enabling Competencies
Healthcare providers are able to:	Each key competency is supported by the following related knowledge (K), skills (S), and attitudes (A) – the tailored enabling competencies that allow the key competency to be put into practice.
5. Professionally and constructively cope with the emotional stress of being involved in a patient safety incident.	5.1 Engage in self-care, healthy coping strategies, and support team members post-incident, including accessing resources as appropriate. 5.2 Recognize the potential psychological impact on individuals of being involved in patient safety incidents. 5.3 Provide support for individual health providers, teams and leaders involved in the patient safety incident.
6. For those in formal leadership roles, support patients, families, and health providers involved in a patient safety incident.	6.1 Facilitate reporting of patient safety incidents and disclosure within the organization through the establishment of appropriate policies and procedures. 6.2 Use just culture principles to determine fair accountability for what happened. 6.3 Provide advice in determining the content of disclosure discussions. 6.4 Coach and give direct help in communications with patients and families as required. 6.5 Implement structures and processes to prevent further emotional injury for healthcare providers in post-analysis disclosure discussions and incident investigation. 6.6 Implement structures and processes to support patients, families and providers to cope with the emotional stress of patient safety incidents. 6.7 Provide educational resources with respect to diversity including health literacy and cultural sensitivities etc. as may be necessary for the patient and/or family involved in the disclosure process. 6.8 If required, inform the public and media appropriately of a patient safety incident. 6.9 Ensure ongoing long term psychological support and clinical care for patients, families and healthcare providers following patient safety incidents as needed. 6.10 Manage innate power differentials that can contribute to patient safety incidents and influence communications.

See Appendix 1 for the related knowledge (K), skills (S), and attitudes (A) elements.

Case Study: University of Manitoba

Translating the CPSI Competency Framework to a Health Professions' Curriculum: The University of Manitoba, College of Pharmacy Experience

Ruby Grymonpre, Kelly Drummond, Kaarina Kowalec, Sheila Ng, Robin Oliver & Dana Turcotte

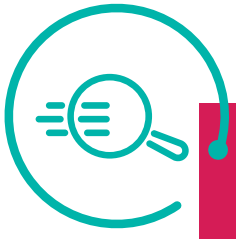
Many professions in health and social services delivery, including pharmacy, are regulated, meaning that they are governed by provincial legislation and act to ensure services are delivered in a safe, professional and ethical manner. One component of these requirements is the issuance of a license to practice, achieved through successfully completing an entry-to-practice exam. To ensure high standards for pharmacy practice, protection of the public, and to prepare students for these high stakes exams, Canadian Colleges of Pharmacy are expected to align their curricula with the Association of Faculties of Pharmacy Educational Outcomes (AFPC, 2017) and the National Association of Pharmacy Regulatory Authority entry-to-practice competencies (NAPRA, 2014). Similarly, to ensure health and social service providers have the necessary knowledge, skills, attitudes and behaviours to provide safe care, the Canadian Patient Safety Institute developed its first (2008) and now this second (2020) edition of the Canadian Patient Safety Institute Safety Competency Framework. The framework defines and illustrates the interdependency between six core competency domains, associated key and enabling competencies, and requisite knowledge, skills, and attitudes required by all health and social service occupations in providing safe care. Given that the Canadian Patient Safety Institute competency language has been embedded into both the NAPRA and AFPC competencies and outcomes, Canadian Colleges of Pharmacy must integrate these safety competencies into their curriculum.

Curriculum mapping is a process of documentation and analysis used by academic programs for continuous quality improvement. Curriculum mapping involves aligning elements of all courses within its curriculum (learning objectives, course content, educational formats, student assessment, levels of learning) with required entry-to-practice competencies/educational outcomes. Of relevance to this paper, College of Pharmacy, University of Manitoba Course Coordinators are required to tabulate each course learning objective with its relevant AFPC Educational Outcomes and NAPRA Competencies and associated Learning (Ideas, Connections, Extension) and Performance (Novice, Functional, Competent) levels. For transparency, these tabulated data must be included in the Course Outlines distributed to students enrolled in each course. These data are also entered onto the College of Pharmacy curriculum map spreadsheet. Analysis of the curriculum map spreadsheet helps to identify gaps and redundancies, and inform whether the courses build along a learning continuum to achieve the AFPC outcomes and NAPRA competencies. Zelenitsky et al (2014) describe the process used by the College of Pharmacy, University of Manitoba, in developing its curriculum map: Evaluation of the mapping process demonstrated alignment of course objectives with AFPC educational outcomes and the entry-to-practice exam blueprint and an appropriate level and sequencing of course content.[1] Employer and student surveys confirmed alignment between the intended and learned curricula.

In an effort to understand uptake of their competencies, between 2012 and 2014, the Canadian Patient Safety Institute invited Canadian healthcare schools and faculties to participate in an e-mapping exercise.[2] The purpose was to review the learning objectives of all courses taught within each college or school, to map this content against the Canadian Patient Safety Institute Competency Framework and to analyse the data for gaps or redundancies. The process involved entry of the following data variables onto a Microsoft® Access database (Course Name and, as relevant, Course Objective(s), CPSI Domain(s), CPSI Descriptor(s), CPSI Enabling Descriptor(s), CIHC competency domain(s) and CIHC competency descriptor(s)). The College of Pharmacy, University of Manitoba participated in the exercise and received a personalized report. Review of the data suggested that a gap existed in addressing the competency: Recognize, Respond, and Disclose Adverse Events. The College of Pharmacy responded by delivering interprofessional (2015) and subsequently uniprofessional (2017-current) interactive sessions requiring pharmacy students to describe the key elements of and practice Disclosure and Apology.

In 2020, the College of Pharmacy, University of Manitoba will celebrate its first direct-entry intake of students into a new four year Doctorate of Pharmacy (PharmD) program. This presents opportunities for our College to introduce new courses and modify existing courses within the four year curriculum. A PharmD Patient Safety Working Group has been charged with developing a longitudinal curriculum in patient safety. The original mandate of this Working Group was '*to review what is taught within the College of Pharmacy in patient safety, to map this content against the Canadian Patient Safety Institute Competency Framework and to ensure there are not gaps or redundancies.*' In essence our mandate was to repeat/update the 2012-2014 Canadian Patient Safety Institute e-mapping exercise.

The PharmD Safety Working Group started by reviewing the previous Canadian Patient Safety Institute e-mapping exercise and identified several issues with the process. Although simplified by using an e-entry database, the process required manual review of the several hundred learning objectives for all courses offered throughout the four year Pharmacy curriculum, a tedious and time consuming process, subject to data entry fatigue. Data entry was also retrospective and subjective, dependent on the data entry personnel's perception of whether a particular learning objective aligned with one or more of the Canadian Patient Safety Institute's competency domains. For example the following learning objective: "Upon completion of this course the student will be able to clearly discuss with the patient their diagnosis and self-care treatment options" was interpreted by the data entry personnel as aligning with 'Optimize Human and Environmental Factors', 'Manage Safety Risks', 'Communicate Effectively for Patient Safety', and 'Work in Teams for Patient Safety.' It became apparent to the PharmD Safety Working Group that this method of mapping current course content was not providing a clear, prospective direction for future course content. As illustrated in the example, there was also concern that some of learning objectives were interpreted as having relevance to safety, without explicit reference to the Canadian Patient Safety Institute competency domains and corresponding safety knowledge, skills, attitudes or behaviors. Given its limitations and considering that a window of opportunity existed within our College to introduce new or improve existing safety content into our curriculum, the Working Group has decided to take an innovative approach to translating the Canadian Patient Safety Institute Competency Framework to College of Pharmacy curriculum.



A PharmD Patient Safety Working Group has been charged with developing a longitudinal curriculum in patient safety.

The PharmD Safety Working Group started by tabulating data within each of the six 2019 Canadian Patient Safety Institute competency domains verbatim (with permission). This original table compilation exceeded 30 pages in length and specified 26 Key Competencies, 147 Enabling Competencies, and 143 Elements (knowledge, skills, and attitudes). Course coordinators found this to be unmanageable. In response to this feedback, the Working Group created six abridged documents, each corresponding to one of the six Canadian Patient Safety Institute competency domains and each no more than one to two pages in length. (See Appendix 3, Table 1) The six Domain documents state the Key Competencies and selectively outline the more overarching Enabling Competencies while numerically cross referencing the remaining Enabling Competencies and Elements contained in an Appendix. Each Competency Domain document also outlines the relevant patient safety NAPRA competencies and AFPC educational outcomes. In essence the Working Group has created a 'menu' from which course coordinators and course instructors can identify a Key Competency, and one or more Enabling Competencies and Elements to address in their course (while also considering learner level and learning continuum/prior learning). Course instructors can then use their chosen competency statements to prospectively design course content and learning formats. (See Appendix 3, Table 2)

Courses in the College of Pharmacy curriculum fall within one of four streams: Biomedical and Pharmaceutical Sciences; Clinical and Applied Sciences; Pharmacy Skills Lab and Pharmacy Practice; Experiential Learning and IPE. Stream meetings are held on a regular basis to allow for information exchange within and between streams. These stream meetings provide the opportunity for Course Coordinators and Instructors to discuss their safety course content and ensure material builds on and does not duplicate previous, concurrent or future safety course content. Recognizing that Course Coordinators already map their learning objectives against the AFPC educational outcomes and NAPRA competencies as part of the curriculum mapping process, the Safety Working Group has made the recommendation that course coordinators also map the relevant Canadian Patient Safety Institute competency domains. (See Appendix 4) In other words, analysis of the patient safety curriculum should be a seamless component of the existing College of Pharmacy Curriculum mapping process providing explicit, timely, prospective and efficient picture of gaps and redundancies of safety competencies along the learning continuum.

This mapping exercise has also unveiled gaps in both the NAPRA competencies and AFPC outcomes. Both NAPRA and AFPC make reference to Domain 1 (Patient Safety Culture), Domain 4 (Safety, Risk, and Quality Improvement), and Domain 5 (Optimize Human and System Factors). However only AFPC makes reference to Domain 2 (Teamwork) and Domain 3 (Communication) and only NAPRA makes reference to Domain 6 (Recognize, Respond to and Disclose Patient Safety Incidents). Our intentions are to communicate this information to the respective organizations.

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Case Study: McGill University

Safety is Everybody's Business: Applying and Teaching Patient Safety Competencies

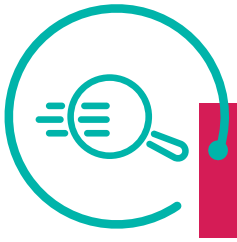
Mark Daly

At McGill University, located in Montreal Canada, we have created an innovative, accredited, and theory-driven faculty development patient safety workshop series based on the Canadian Patient Safety Institute's Safety Competencies framework. *Safety is Everybody's Business: Applying and Teaching Patient Safety Competencies* occurs annually over one and a half days, and is open to any faculty and staff from our clinical networks. The workshop series has been in place since 2014. Driven by the results of a needs assessment survey with the target audience, the planning committee identified two overarching goals for the workshop series. The first goal is to increase knowledge and skills of clinical teachers regarding patient safety principles. The second goal is to improve the ability of clinical teachers to contribute to developing a culture of patient safety within their setting.

That culture can be defined as one where "... staff have a constant and active awareness of the potential for things to go wrong. It is also a culture that is open and fair, and one that encourages people to speak up about mistakes. In organisations with a safety culture, people are able to learn about what is going wrong and then put things right."[1]

Increasingly, patient safety principles are included in formal curricula and taught to learners at both the undergraduate and postgraduate levels. Many health profession programs and professional orders have included patient safety theory in their requirements. Most recently, patient safety has been integrated into the *CanMEDS* 2015 framework. Yet much of clinical teaching and learning is *work-based*, and changing the culture of patient safety involves changing the attitudes and behaviors of clinical teachers who serve as powerful role models for students and residents. It is imperative that we provide educational sessions for clinical teachers in order to sensitize them to the importance of role modeling, the hidden curriculum, and synergy created by an interprofessional team in advancing patient safety.

The planning committee is a testament to interprofessional collaboration in addition to creating a platform to bridge the gap between the academic and clinical environments. The planning committee includes the following representatives from various McGill offices, health profession programs and clinical partners.



The first goal is to increase knowledge and skills of clinical teachers regarding patient safety principles.

Patient Safety Planning Committee

McGill Offices

» Faculty Development

» Continuing Professional Development

» Interprofessional Education

McGill Health Profession Programs

» Communication Sciences and Disorders

» Ingram School of Nursing

» Physical and Occupational Therapy

» Medicine

Clinical Partners

» Montreal West Island Integrated University Health and Social Services Centre

» Integrated Health and Social Services University Network for West-Central Montreal

» McGill University Health Centre

Collaborating with our clinical partners has been one of the keys to our success. It has enhanced our ability to ensure a direct link with the clinical environment, identify local patient safety/quality improvement initiatives to share, assist with recruiting participants or presenters, provide input on workshop content, ensure workshop advertising is disseminated to internal stakeholders (Communications, Professional Councils, Education Directors), and coordinate on-site logistics. The richness of the planning committee members helps ensure a positive contribution to improving the culture and learning environment.

Why did we choose the Canadian Patient Safety Institute's Safety Competencies framework? We wanted to base the workshop series on a validated framework that could be used by various healthcare professionals; that included a robust set of key and enabling competencies; and that was aligned with other competency-based frameworks.

The first workshop is conducted over a full day and focuses on the six domains from the Safety Competencies Framework. The second workshop is a half-day, devoted to quality improvement. Guided by adult learning theories, a variety of instructional strategies are used that promote knowledge acquisition and discussion about practical application in the learning environment. Examples include alternating interactive plenary/facilitated small group discussions, videos, cases, individual reflection, and narrated posters. And most importantly, the workshops are delivered within a clinical site. The location is rotated among our various clinical partners and has the following advantages: it is easier for clinically based staff to attend; it helps create an internal community of practice (within one department, the institution, or across the network); and it builds partnerships internally that might not have been created.

Workshop goals:

» describe patient safety concepts and disclosure guidelines;

» identify teacher, learner and system factors that influence patient safety;

» instruct learners on how to communicate about adverse events;

» recognize the importance of role modeling in advancing patient safety;

» discuss the impact of adverse events;

» describe effective teamwork and team communication; and

» analyze how to enhance safety in one's own context.

Our team has also embedded a scholarly component to the workshop series by designing and executing a research project driven by an outcome-based evaluation framework.[2] The study looks at the feasibility of implementing and evaluating the impact of the workshop series on levels of participation, satisfaction, usefulness, knowledge, confidence, intention to change behavior and reported changes in practice.[3]

Overall, participants reported an increase in their knowledge of patient safety theory as well as an improvement in their perception of how to integrate patient safety theory into their teaching and clinical practices.

In conclusion, our learnings include the following:

» Using the CPSI Safety Competencies framework created a robust and validated foundation for our faculty development patient safety workshop series.

» Patient safety teaching must include both academic (theory) and clinical experiences based on a common framework.

» Culture of safety is optimized when learners and teachers are both exposed to patient safety knowledge.

» In situ patient safety workshops can create a community of practice (departmental, institutional, cross-network).

» Academic and clinical partnerships are integral to implementing sustainable improvement to the patient safety culture.

The interprofessional nature of the planning committee reinforced the importance of a diverse team when discussing patient safety issues. Using the CPSI Safety Competencies Framework as a common foundation galvanized the team and supported our overarching goals of increasing knowledge and skills of clinical teachers regarding patient safety principles. Ultimately, this increase in knowledge and skills of clinical teachers improves their ability to contribute to developing a culture of patient safety within their clinical setting.

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Case Study: Queen's University

Utilization of the Safety Competency Framework

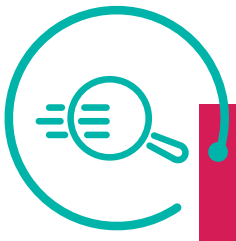
Callie Cullen, Ciara Papaioannou, & Carole Finn

Introduction

Every year, the graduating class of nursing students at Queen's University undergo a practical course in health promotion as part of their final year educational curriculum. Throughout this course, students are paired with an agency preceptor whom they work with to develop a program intervention based on the Precede-Proceed Model. For our health promotion project, an interactive workshop was created and presented to the Personal Support Worker (PSW) students of the Loyola School of Adult and Continuing Education (Loyola) located in Kingston, ON. The main goal of this workshop was to improve the health and safety of prospective PSW graduates from the Loyola program. This workshop aimed to educate the PSW students on how ergonomics, patient handling practices and communication can affect patient safety outcomes. Furthermore, students were challenged to apply critical thinking skills while participating in five interactive scenarios based on patient safety (see Box 1.1 for an example scenario). During the development phase of the intervention, it became evident that the safety competencies published by the Canadian Patient Safety Institute were highly relevant to the goals of this project; and thus, these safety competencies were influential in the development of workshop scenarios and discussion questions.

Domain One: Patient Safety Culture

The three key competencies under this domain include advocating for improved patient safety, contributing to the establishment and maintenance of a just culture, and contributing to the continuous improvement of safety culture. Through the creation and implementation of this interactive workshop, education regarding workplace safety was successfully disseminated to a multitude of PSW students (competency 2.3). During the workshop students explored various contributing factors of patient safety culture to further understand how these factors can either positively or negatively impact patient safety (competency 1.2, 1.8). Moreover, at the end of the session the students engaged in several interactive scenarios, challenging them to apply their knowledge and critical thinking skills to potential real-life events. The scenario described in box 1.1 was designed specifically for this workshop to illustrate the importance of challenging unsafe practices, thus stimulating the development of advocacy skills (competency 3.1, 3.5). .



The main goal of this workshop was to improve the health and safety of prospective PSW graduates from the Loyola program.

Domain Two: Teamwork

The focus of this domain aims to achieve optimal teamwork to ensure patient safety, quality of care, and positive patient health outcomes. The implementation of this interactive workshop required PSW students to work together simulating a clinical setting. Through clinical scenarios, PSW students worked together to identify and resolve safety issues (competency 3.2). Discussion on the roles and responsibilities of members of the healthcare team, and the importance of asking for support was made a priority in our workshop (competency 3.3, 4.3). During our workshop, conversation on patient and self-advocacy was made a high priority. One of our situations focused on "speaking up" on unsafe practices regarding a senior staff member. The PSW students were required to identify a respectful response to the scenario which promoted safety of not only the patient, but also the workers (competency 5.1, 5.5).

Domain Three: Communication

Central to the third domain, all healthcare providers must be able to communicate effectively with others to prevent high-risk patient safety threats and demonstrate adequate clinical documentation pertaining to patient safety. Throughout this workshop the value of frequent client assessment was strongly emphasized. Continuous assessments provide PSWs with a comprehensive narrative of their clients, thus enabling them to provide the most accurate information possible to other authorized healthcare providers (competency 3.3). In addition to verbal communication, the importance of written communication was accentuated, as a portion of the workshop focused on documentation. Basic information was reviewed including what and when to document along with a general introduction to incident reporting. As part of the debriefing activities for several of the interactive scenarios, the PSW students identified how they would document specific events.

Domain Four: Safety, Risks and Quality Improvement

Concepts of the fourth domain surround acting upon safety risks through proper identification, assessment, and reduction strategies. By incorporating safety scenarios in our workshop, PSW students were forced to critically think about their simulated environment and evaluate safety outcomes based on the given situation (competency 1.1). The importance of a thorough patient assessment was highlighted in the discussion portion of our workshop. This stressed how vital critical thinking is to quality of care (competency 1.1, 1.3). A discussion on patient education on new subjects to improve overall safety was provided. For example, one of the patients in our scenario just started to use a cane. A conversation was started in our workshop based on how to provide health teaching to this patient on when and how to properly use her cane (competency 2.4, 3.5).

Domain Five: Optimize Human and Systems Factors

Overarching principles of this domain consist of describing the individual and environmental factors that affect human performance, discussing the impact of human factors on patient safety and applying critical thinking techniques to promote safe decision-making. The focus of the workshop was to educate the PSW students on the importance of ergonomics and safe patient handling techniques (competency 3.3). Throughout the workshop, physical wellness as it relates to musculoskeletal health was thoroughly examined (competency 1.3). The interactive scenarios within the workshop challenged the PSW students to critically think and identify various safety risks (competency 2.3). For example, the scenario outlined in box 1.1 challenged students to identify that transferring a client with less assistance than the client is documented to require is a safety hazard, and that the co-worker's idea goes against best practice. In addition, the students discussed potential negative consequences that could arise from this situation, including injury to themselves, the client and/or the co-worker.

Domain Six: Recognize, Respond to and Disclose Patient Safety Incidents

Lastly, the sixth domain emphasizes the recognition and reporting of patient safety incidents. As our clinical workshop focused not only on positioning and ergonomics, but also safety and advocacy, we discussed the importance of incident reporting. PSW students were asked to brainstorm situations in which an incident should be reported and ways to prevent incidents from happening in the clinical setting (competency 4.9, 4.12). Our workshop also promoted asking for help when necessary. For example, in one of our scenarios a volunteer PSW student was asked to get a resident up for breakfast however, the resident was more tired than normal. The PSW student was meant to identify that extra help was required in the transfer of this patient (competency 3.7, 4.1).

Moving Forward

Carole Finn

The need for PSWs to utilize evidence based practice (EBP), is essential, as the scope of Unregulated Care Providers (UCP) is not clearly defined.1 It is therefore imperative that the practice of a PSW is rooted in an ability to recognize mitigating evidence that will guide safe practice.[1] Clinical reasoning for the PSW does not extend to full comprehension and rationalization of assessed changes; it is therefore necessary for the PSW to have an ability to recognize the patient's normal baseline in order to be able to provide responsive care to changes noted and report changes to the appropriate supervisor. In addition, the PSW must be confident in their decision-making to have conviction to practice EBP, especially when presented with conflicting information or input from colleagues who are not willing to follow policies and EBP.

The employment of reasoning improves patient outcome, assures patient safety, and provides the PSW with the assurance that their practice is safe; which aids in developing their ability to advocate for themselves and their patients. It is necessary for the PSW to feel valued and able to voice their assessment with colleagues and offer reasoned change for care needs while assuring they remain in their scope of practice.

PSW's require guidance and knowledge to be able to recognize, adapt and employ best practices to ensure patient safety and further promote overall well-being of the patient. If nursing staff encourage and validate the contributions and observations made by PSW's, the nurse will be promoting overall health of the PSW. As defined by King, "Health implies adjustment to stressors in the environment through optimum use of resources to achieve maximum potential".[2,3] The increasing demands being placed on PSW's as front-line caregivers could produce an environment where "short cuts" or refusal to follow policies and best practices jeopardize patient safety in their attempt to complete tasks in a timely manner. If the PSW is to develop conviction in their practice, internal wellness is essential. Dunn (1977), identified that wellness necessitates a balance and purpose within a setting.[4] By helping the PSW to achieve health, wellness and participate as a respected member of the multi-disciplinary team; nursing must help the PSW develop confidence and ability to adjust to the demanding needs of the healthcare environment thus, directly improving patient care.

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Box 1.1 Scenario

You are short-staffed on your unit and working with an experienced co-worker. You are running late for breakfast when you go into Mr. Jones' room to get him up. Mr. Jones normally requires a sit-stand lift, to transfer to his wheelchair. Your co-worker insists on transferring Mr. Jones as a two-person assist, as this would be faster.

- **Instructions**:
  - Students will observe the above scenario being performed by the presenters.
  - Students will then discuss how they would handle this situation.
- **Scenario Goal:**
  - PSWs should recognize that transferring Mr. Jones with a two-person assist is not best practice. PSWs should recognize that taking short-cuts to save time can result in injury to the client and/or staff. Despite the co-worker having more experience than the PSW, the PSW should remain confident and advocate for the safest practice. It is important that PSWs understand that they can always provide more mobility assistance than required (e.g. if a client is a one-person assist you can use a two-person assist if necessary), but they can never provide less mobility assistance than required (e.g. if a client is a two-person assist you cannot mobilize them using a one-person assist).
- **Discussion / Follow-Up Questions:**
  - Why is transferring Mr. Jones as a two-person assist wrong?
  - How would you feel challenging what a more experienced co-worker suggests?
  - What injuries could result from transferring Mr. Jones as a two-person assist? (Injuries to both the client and PSW)

Appendix 1

Knowledge, Skills and Attitudes

Domain 1: Patient Safety Culture

Elements

Knowledge

Individuals who enhance patient safety culture:

1. State the elements that contribute to a culture of patient safety, conceptual models of safety culture, and safety culture assessment methods.
2. Examine how a poor patient safety culture can negatively impact patient safety and patient outcomes.
3. Analyze how patient safety culture relates to patient safety improvement concepts, such as high reliability organizations.
4. Describe how a patient safety culture is related to other concepts, such as leadership, engagement, teamwork and communication.
5. Describe how individuals contribute to improving the patient safety culture at an individual, team, organization and system level.
6. Describe attributes of effective leadership for quality, safety and risk.
7. Recognize how engagement with patients and families contributes to patient safety culture.
8. Describe how cultural diversity and humility influence patient safety culture.

Skills

Individuals who enhance patient safety culture:

1. Enact patient safety principles and systems in daily practice.
2. Demonstrate leadership skills to champion patient safety culture improvement.
3. Employ strategies to improve safety culture within their area of influence.
4. Partner with patients and families in respectful and meaningful ways.

Attitudes

Individuals who enhance patient safety culture:

1. Demonstrate a willingness to collaborate with others, including patients and families, to contribute to a positive patient safety culture.
2. Embrace strategies that promote patient safety culture.
3. Value and respect patients, families and colleagues in ways that are respectful, non-judgemental and culturally safe.
4. Commit to reporting and learning from patient safety incidents.
5. Demonstrate openness to change

Value and respect patients, families and colleagues in ways that are respectful, non-judgemental and culturally safe.

Domain 2: Teamwork

Elements

Knowledge

Healthcare providers who work effectively in teams for patient safety are able to:

1. State the roles and responsibilities of each team member, including decision-making, supervision and support, and the expectations and requirements for individual contribution.
2. Identify the relevant competencies, experience and scopes of practice of interprofessional team members, including overlaps and gaps in the team's capabilities.
3. Describe the team's role within the healthcare system.
4. Define team dynamics.
5. Recognize key safety issues and priorities inherent in interprofessional team practice and relevant to the patient population.
6. Outline the rationale for and implementation of an interprofessional team's processes, policies and procedures.
7. Describe the resources and administrative skills required to achieve the interprofessional team's objectives.
8. Identify levels of authority and the importance of relevant expertise as a basis for leadership in a given situation.
9. State the impact of information and communication technology on an interprofessional team's function and dynamics.
10. Describe how to proactively address concerns about provider or system performance involving risk to members of the interprofessional team including patients and/or family to optimize patient safety.

Skills

Healthcare providers who work effectively in teams for patient safety will:

1. Demonstrate empathy and professionalism.
2. Establish partnerships with patients/families.
3. Integrate patient's beliefs, and values in a respectful manner.
4. Discuss options with patient using language that they understand.
5. Advocate on behalf of patient.
6. Demonstrate with confidence and respect one's own professional roles and responsibility.
7. Access unique skills and knowledge of other members of the interprofessional team to address needs of patients.
8. Apply standardized team processes and protocols to ensure consistency and shared understanding.
9. Give and receive clear and accurate feedback.
10. Manage patient safety incidents appropriately.

11. Monitor, evaluate and take action to improve performance of the interprofessional team.
12. Exercise decision-making authority in a situationally appropriate manner.
13. Set clear parameters for independent decision-making.
14. Provide consultation, support, and delegate tasks appropriately.
15. Advocate for solutions to address concerns involving risk to team members.
16. Use a shared vocabulary to facilitate effective communication within the team.
17. Seek clarification when language or jargon makes comprehension unclear.
18. Use appropriate shared documentation to facilitate continuity of care.
19. Apply a variety of evidence-informed communication tools and techniques.
20. Engage in respectful communication that fosters team development.
21. Actively participate on teams.
22. Respect perspectives of others.
23. Employ strategies to prevent, manage and resolve conflict.

Attitudes

Health care providers who work effectively in teams for patient safety will:

1. Value and respect the contributions of patients and their families as partners in their care.
2. Commit to fulfilling individual responsibilities in the team environment.
3. Respect all team members, including their histories, feelings and values and beliefs.
4. Seek and value constructive feedback.
5. Embrace a culture and where team functioning is viewed as an important element of continuous quality improvement.
6. Accept the team as an evidence-informed community of practice that learns with, from, and about one another.
7. Foster an environment in which responsibility for care and accountability for outcomes is appropriately shared.
8. Foster an environment in which the team works to provide the best possible patient outcomes.
9. Commit to advocating for resources and systems that support the needs of individual team members.
10. Acknowledge the value of, and foster shared leadership.
11. Value the potential positive nature of conflict.

Foster an environment in which responsibility for care and accountability for outcomes is appropriately shared.

Domain 3: Communication

Elements

Knowledge

Healthcare providers who communicate effectively for patient safety can:

1. Describe models of effective communication, which include concepts of patient engagement, cultural humility, and diversity, with considerations of power differential.
2. Assess patient and family competence related to issues of health literacy.
3. Assess patient and family capacity to make healthcare decisions.

Skills

Healthcare providers who communicate effectively for patient safety can:

1. Demonstrate respect, empathy, humility and non-judgemental active listening.
2. Protect privacy and confldentiality.
3. Obtain informed consent.
4. Ensure clear communication between all healthcare providers during transitions in care.
5. Engage patients and families in all transitions in care (including discharge) to ensure safe continuity of care.
6. Effectively communicate (close the loop) on delegated tasks and provide appropriate supervision.
7. Modify communication approaches, including the use of interpretive services, to ensure clear understanding.
8. Provide the correct type and amount of information on disclosure and reporting of patient safety incidents and use jargon-free language to convey complex information clearly.

Attitudes

Healthcare providers who communicate effectively for patient safety:

1. Have courage and will to speak up.
2. Respect and value individuals' contributions and create opportunities for expression.
3. Seek and value ways to improve communication.
4. Advocate for robust system communication processes related to healthcare risk, and in the aftermath of safety breakdowns.

Demonstrate respect, empathy, humility and non-judgemental active listening.

Domain 4: Safety, Risk, and Quality Improvement

Elements

Knowledge

Healthcare providers who act on safety risk and quality improvement can:

1. Describe human and system design factors related to safety risk and quality improvement.
2. Outline quality improvement methodologies and quality assurance practices.
3. Outline patient and family engagement approaches related to safety risk and quality improvement.
4. Describe potential safety threats to both patients/families and healthcare providers (e.g. infection control, injury prevention, proper handling and maintenance of equipment, and safe administration of medication).
5. Describe high risk situations that require fail-safe reliable processes (e.g., medication reconciliation, medication checking, allergy checking, wrong-side checking, checklists and buddy systems).
6. Describe when standardization of approaches and process is required (e.g. evidence-informed practice guidelines and standard order forms).
7. Describe the impact of cultural diversity on healthcare risk and patient safety.

Skills

Healthcare providers who act on safety risk and quality improvement will:

1. Anticipate, recognize and act on risk at the individual patient, unit and system level of care.
2. Report risks and the potential for harm.
3. Monitor, track and evaluate system failures.
4. Demonstrate awareness of how cognitive biases can influence safety.
5. Develop personal practices to mitigate individual level factors that influence safety (e.g. fatigue, service delivery pressure, and compassion fatigue).
6. Exercise vigilance on safety issues.

Attitudes

Healthcare providers who act on safety risk and quality improvement:

1. Discuss and report near-misses openly.
2. Foster a blame free practice environment.
3. Commit to being transparent in the team and practice environment.
4. Advocate for patient safety.
5. Speak up and listen up.
6. Commit to protecting civility in all interpersonal relationships.
7. Commit to self-reflection and be personally accountable while acknowledging one's own fallibility and vulnerability in the healthcare system.

Domain 5: Optimize Human and System Factors

Elements

Knowledge

Healthcare providers who optimize human and environmental factors for patient safety can:

1. Recognize the effect of individual characteristics, including gender, age, personality, cultural background and risk tolerance/aversion on interactions and actions.
2. Understand the effect of environmental factors such as light and sound, surge conditions, work interruptions and technology on the safety of care, as well as healthcare provider safety.
3. Relate the theory and practice of ergonomics, human factors engineering, system design, technology and work flow to safe system functioning.
4. Integrate knowledge of critical thinking, including situational awareness, and an awareness of cognitive biases in decision-making to clinical care processes and personal practice.
5. Understand systems thinking (unit, service, organization/ local, regional, provincial, national and international).

Skills

Healthcare providers who optimize human and environmental factors for patient safety can:

1. Execute self-monitoring and self-care to optimize a safe level of performance.
2. Identify the normalization of deviance and unsafe work-arounds as they relate to human performance and culture.
3. Identify cognitive, psychological, emotional and cultural biases that influence effective decision-making.
4. Demonstrate situational awareness.
5. Apply systems level thinking to the development and execution of clinical care processes and clinical practice.

Attitudes

Healthcare providers who optimize human and environmental factors for patient safety can:

6. Appreciate that human performance is affected by one's behaviour within a system constructed by types of tasks being completed, tools and technology used and by organizational factors such as culture and politics.
7. Accept that certain factors may affect one's personal well-being, including work-life balance, sleep deprivation/sleep debt, and physical and emotional health issues which may interfere with a safe level of performance.
8. Accept the fallibility of human performance.

Domain 6: Recognize, Respond to and Disclose Patient Safety Incidents

Elements

Knowledge

Healthcare providers who effectively recognize, respond to, and disclose patient safety incidents can:

1. Define the different types of patient safety incidents and how to recognize these in their professional practice.
2. Describe the ethical importance and foundation of disclosure.
3. Recall the relevant regulatory and organizational policies and related legislation.
4. Describe professional accountabilities of individual health providers, interprofessional teams, and organizations for disclosure and reporting.
5. Determine the threshold for disclosure when a patient has suffered any degree of harm, when there is a potential for future harm, or there will be a change in care or monitoring due to increased risk.
6. Recognize the importance of reporting near misses and when might patients and organizations benefit from learning of these instances.
7. Describe disclosure as a process with initial (early) and post-analysis stages, often requiring multiple conversations at each stage.
8. List possible roles in the initial (early) and post-analysis stages of disclosure.
9. Describe the importance of genuine apology.
10. Document patient safety incidents and disclosure in the patient's health record.
11. Contrast how disclosure of harm and reporting aligns with improving quality of care.
12. Recognize that all members of the healthcare team are responsible for contributing to a just culture and culture of safety and that for those in leadership roles, there is a responsibility for *establishing* a just culture and culture of safety.

Skills

Health providers who effectively recognize, respond to, and disclose patient safety incidents can:

1. Provide honest, timely, factual communications about the occurrence and reasons for a patient safety incident as they become known.
2. Differentiate between a clinical outcome related to the natural progression of a medical condition, a recognized unavoidable complication related to the inherent risk of treatment, and avoidable harm.
3. Partner with patients and/or families to meet their clinical, emotional and information needs.
4. Support their leaders and team in disclosure communications.
5. Demonstrate personal learning from incidents and implement practice improvements.
6. Employ healthy strategies to constructively cope with the stress from a patient safety incident.
7. Demonstrate emotional support for their team and other health providers affected by the patient safety incident.

8. Effectively coach individuals and teams to plan and prepare for disclosure and debrief afterwards when in a formal leadership role.
9. Demonstrate how to appropriately apologize depending on the type of incident.
10. Demonstration of openness, empathy and compassion when communicating and providing an apology.
11. Achieving cultural humility and disclosure through exploration and acknowledgement of the patient's and/or family's values, beliefs, and wishes.
12. Find information on disclosure, and when and how to seek advice and help.
13. Employ healthy strategies for individuals and teams to cope with the stress of being involved in patient safety incidents.
14. Differentiate between a clinical outcome related to the natural progression of disease, a recognized unavoidable complication related to the inherent risk of treatment, and avoidable harm from a patient safety incident.

Attitudes

Health providers who effectively recognize, respond to, and disclose patient safety incidents can:

1. Apply moral-ethical reasoning and critical analysis about how patient safety incidents happen.
2. Commit to maintaining honesty and trust in the patient–health professional relationship.
3. Accept the personal obligation to disclose the occurrence of patient safety incidents in keeping with codes of ethics, professionalism, organization and regulatory policies, and legislation.
4. Demonstrate support for each other when participating in team disclosure communications.
5. Demonstrate a willingness to report patient safety incidents, including near misses, and fully participate in incident analysis and quality improvement activities.
6. Partner with patients and/or families in quality improvement activities.
7. Self-reflect and constructively learn from patient safety incidents to prevent their recurrence.
8. Demonstrate constructive coping strategies to deal with the stress of a patient safety incident and provide emotional support to team members and colleagues.

Self-reflect and constructively learn from patient safety incidents to prevent their recurrence.

Appendix 2: Systems Engineering Initiative for Patient Safety (SEIPS)

Model of Work System and Patient Safety[1]

This model depicts the healthcare work system as a sociotechnical, human-centred system with six interacting elements that influence system performance: person, tasks, tools and technologies, organization, internal environment, and external environment.

Person factors

The "person" element can be a single individual (e.g. a clinician, patient/and or family, or informal caregiver), or it can represent a group of individuals (e.g. a healthcare team including the patient and their family member(s) and includes the following characteristics:

» Physical characteristics (e.g. strength, height).

» Ethnicity and cultural characteristics.

» Cognitive characteristics (e.g. expertise).

» Psychosocial characteristics (e.g. motivation).

» Biases and prejudices (personal and cultural biases that affect decision-making must be identified such that they can be overcome trough initiatives including patient engagement).

» Group-level characteristics, such as team cohesiveness.

» Critical thinking, including situational awareness and an awareness of cognitive biases in decision-making, as well as knowledge on to mitigate them including through patient engagement.

» Factors that affect their personal well-being, including work-life balance, sleep deprivation/sleep debt, and physical and emotional health.

Task factors

The "Tasks" element represents attributes or characteristics of the tasks performed within the healthcare work system, including:

» Difficulty or complexity of the task.

» Physical or cognitive demands of the task.

» Level of training required to perform the task.

Tool/Technology factors

The "Tools/Technology" element represents characteristics of the objects used to complete work tasks, including::

» Medical devices, equipment, or instrumentation.

» Usability, accessibility of the tools/technologies.

» Familiarity, degree of automation of the tools/technologies.

Organization factors

The "organization" element captures structures beyond the individual that organize time, space, resources, and activity and includes:

» Scheduling (e.g. number of hours worked per day by the clinical team).

» Training (e.g. whether team members have received training).

» Management (e.g. availability of appropriate policies/procedures for emergency situations).

» Organizational culture (e.g. do team members feel that they can speak up).

» Policies, governance and procedures, resource allocation and culture, including an awareness of biases and prejudices on a systemic level and the knowledge of how patient engagement can help to identify or address these.

» Governance and senior leadership strategic planning, vision and mission setting, engagement in operations.

» Personal work-life balance issues and how they affect professional performance and the safety of patients and human performance.

» Level of human resources support and accessibility to services.

Internal Environment factors

The "Internal Environment" element refers to the physical characteristics of the environment of work, including:

» Temperature, physical layout, and available space.

» Light and sound, surge conditions, work interruptions and technology.

External Environment factors

The "External Environment" element refers to macro-level societal, economic, ecological and policy factors outside an organization, including:

- National workforces and regulators.
- Federal governments, regulatory groups and local governance.
- Availability of community resources for post-discharge support to the family.
- Policies related to the privacy of health information.
- Financial, motivational and spiritual support offered by the patient's local community.
- Shared electronic medical records across systems of care including acute, homecare, long term care, rehabilitation care and primary care.

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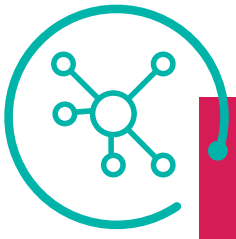
Return to Domain 5



Optimizing the human and environmental factors that support the achievement of best human performance is an essential safety competency for all healthcare providers.

Appendix 3

College of Pharmacy Patient Safety Map[3,4]

Prepared by College of Pharmacy Patient Safety Working Group

Table 1: Domains, Competencies, and Elements mapping

Domain 1: Patient Safety Culture

NAPRA Competencies 2014	**9.1 Contribute to a culture of patient safety.** 9.1.1 Apply principles of patient safety to improve practice. 9.1.2 Employ best practices when informing the patient of the occurrence of a medication incident or adverse drug event. 9.1.3 Share information about problems, resolutions, system changes and lessons learned with the workplace team
AFPC Educational Outcomes (2017)	**LM1.2** Contribute to a culture of patient safety.

Key Competencies	Enabling Competencies and Elements (Knowledge, Skills, Attitudes)
1. Contribute to the establishment and maintenance of a just culture.	» Outline the attributes of an ideal patient safety culture. (1.1) » Describe why patient safety culture is important and how culture impacts patient care, patient outcomes and continuous improvement. (1.2, 1.8, K2) » List the elements that contribute to a culture of patient safety, conceptual models of safety culture, and safety culture assessment methods. (e.g. 'Patient Safety Culture Bundle')(1.3, 1.4, 1.5, 1.6, 1.9, K1, K4, K5, K6) » Describe how cultural diversity and humility influence patient safety culture. (K8, 1.10)

3 The Domains, Competencies and Elements outlined in this table have been extracted verbatim from the October 30, 2019 version of the revised 2019 Canadian Patient Safety Institute Competency Framework. Permission has been granted by the Canadian Patient Safety Institute to share this work within our College of Pharmacy Curriculum and Assessment Committee and its subordinate working groups, on the condition that the work is not shared outside of these committees, that it remains confidential, and on the understanding that the current version is a work-in-progress.

4 This table outlines the high level Key Competencies, Enabling Competencies, and Elements. Refer to the supporting document (191030 v.6 Safety Curriculum Map – Supporting Document) to cross reference all cited Enabling Competencies and Elements.

	» Recognize how engagement with patients and families contributes to patient safety culture. (K7) » Analyze how patient safety culture relates to patient safety improvement concepts. (e.g. High Reliability organizations, Crew Resource Management, and Lean) (1.7, K3) » Establish and maintain a just culture. (S1, S2, S3, S4, A1, A2, A3)
2. Contribute to the *continuous improvement* of patient safety culture.	» Reflect on the importance of challenging existing practices and norms in relationship to continuous improvements. (3.1) » Describe the methods by which healthcare professionals can *advocate* to improve safety culture. (2,2.2, 2.4) » Outline strategies by which healthcare professionals can *contribute* to the continuous improvement of safety culture. (2.1, 2.3, 2.5, 2.6, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, A4, A5) » Describe the attributes of leadership in contributing to the continuous improvement of safety culture. (3.8, 3.2)

Domain 2: Teamwork

NAPRA Competencies 2014	None
AFPC Educational Outcomes (2017)	**CM2.4** In word and in action, convey the importance of teamwork in patient-centred care, patient safety, healthcare quality improvement and health program delivery.

Key Competencies	Enabling Competencies and Elements (Knowledge, Skills, Attitudes)
1. Meaningfully **partner with patients and families** enabling them to be key members of their interprofessional teams.	» Demonstrate the skills necessary to engage patients and their families to support informed decision-making, and the management of their own health, quality of life and wellbeing. (1.1, 1.2, 1.3, 1.5, 1.6, S1, S2, S3, S4, S16, S17, A1) » Advocate with individual patients, their families and all members of their interprofessional team for the resources to be able to provide people-centred, high quality and safe care. (1.4, S5)

2.	Respect the professional and patient and family **roles and responsibilities** within the interprofessional team and integrate this diversity seamlessly into service delivery.	» Negotiate the interprofessional team composition and structure including staff lower on the professional hierarchy including healthcare aides and ward clerks. (2.1, 2.2, 2.3, K1, K2, K3, K7) » Demonstrate respect for all interprofessional team members' perspectives, particularly those of patients and their family. (2.4, S6, S7, A3) » Acknowledge that each member of the interprofessional team has an important role to contribute and access others' knowledge and skills as appropriate. (2.5, A2, A7, A8)
3.	Be vigilant of interprofessional **team dynamics** to optimize patient safety, quality of care, and health outcomes	» Embrace a culture where interprofessional team functioning is viewed as an important element of continuous quality improvement. (3.1, 3.4, 3.6, K4, K6, A5) » Describe how to proactively address concerns about provider or system performance involving risk to team members and patients/family to optimize patient safety. (3.2, 3.3, 3.5, 6.4, K5, S8, S9, S10, S11, S15, A4, A6)
4.	Demonstrate **shared authority, leadership,** and decision-making.	» Acknowledge the value of and foster shared leadership. (4.1, 4.2, 4.3, A10, K8) » Exercise decision-making authority in a situationally appropriate manner. (4, S12, S13, S14, A9)
5.	**Communicate** in a respectful and responsive manner.	» Optimize use of information and communication technology in team safety practices. (5.4, K9) » Define clear strategies and processes for optimal interprofessional team communication including under high stakes situations or environments. (5.1, 5.2, 5.3, 5.5, S18, S19, S20, S21)
6.	Work effectively with all members of the interprofessional team to promote understanding, manage differences and **resolve conflict.**	» Employ strategies to prevent, manage and resolve conflict. (6.1, 6.2, 6.3, S22, S23) » Value the potential positive nature of conflict. (A11)

Domain 3: Communication

NAPRA Competencies 2014	None
AFPC Educational Outcomes (2017)	**CM1.7** Compose and share oral, written and electronic information in a manner that optimizes patient safety, dignity, confidentiality and privacy.

Key Competencies	Enabling Competencies and Elements (Knowledge, Skills, Attitudes)
1. Demonstrate effective verbal and non-verbal communication skills to promote patient safety.	» Describe models of effective communication, which include concepts of patient engagement, cultural humility and diversity, with considerations of power differential. (K1) » Communicate in a manner that respects cultural diversity, cultural safety and cultural humility, also recognizing the barriers of authority gradient and their impact on patient safety. (1.1, 1.2, 1.3, 1.4, 1.5, 1.6, K2, K3, S1, S7, S8) » Respect privacy and maintain confidentiality. (1.7, S2, S3) » Ensure clear communication between all healthcare professionals and patients and/or families during transitions in care. (e.g. shift change, discharge to community care) (3.3, S4, S5, S6)
2. Demonstrate effective clinical documentation for patient safety.	» Provide detailed, clear and evidence-based documentation, patient care orders and prescriptions (including use of approved abbreviations) in the patient health record, appropriate to the degree of urgency. (2.1, 2.2, 2.3, 2.4)
3. Communicate to prevent high-risk patient safety threats.	» Engage patients or substitute decision makers in context-appropriate discussions regarding the risks and benefits of assessments and treatments and in obtaining informed consent. (3.1, 3.2, 4.3) » Advocate for robust system communication processes related to healthcare risk, and in the aftermath of safety breakdowns. (A1, A2, A3, A4) » Adapt communication styles in ordinary, crisis and stressful situations across authority gradients, escalate concerns and close the loop on follow-up. (3.3, 3.4, 3.5, 3.6)
4. Employ healthcare technology to provide safe patient care.	» Understand the benefits and risks associated with using technology for healthcare communication. (4.2) » Use technology to support safe communication. (e.g. e-health records, decision support tools, electronic standardized order sets/protocols/care maps/alerts and monitoring) (4.1)

Domain 4: Safety, Risk, and Quality Improvement

NAPRA Competencies 2014	**9.2 Contribute to continuous quality improvement and risk management activities related to pharmacy practice.** 9.2.1 Apply principles of continuous quality improvement to practice. 9.2.2 Apply principles of risk management to practice by anticipating, recognizing and managing situations that place the patient at risk. 9.2.3 Identify the occurrence of a medication incident, adverse drug event or close call and respond effectively to mitigate harm and prevent reoccurrence. 9.2.4 Identify high-alert drugs and high-risk processes in order to respond effectively.
AFPC Educational Outcomes (2017)	**PR2.2** Demonstrate a commitment to patient safety and quality improvement.

Key Competencies	Enabling Competencies and Elements (Knowledge, Skills, Attitudes)
1. Anticipate, identify, reduce and mitigate hazardous and routine situations and settings in which safety problems may arise.	» Describe human and system design factors related to safety risk and quality improvement (1.2, K1, K7, S4) » Recognize safety hazards in real time and respond to correct them, preventing them from reaching the patient. (1.1, 1.3, 1.4, 1.5, 1.6, 1.7, K4, K5, K6, S1, S2, S5, S6, A2, A3, A5, A6, A7)
2. Systematically identify, implement, and evaluate quality improvement interventions for patient safety.	» Select and implement the most appropriate solution for a given context, taking into account quality, resources, practicality, and patient preferences. (2.1, 2.2, 2.3, 2.4, 2.6, 2.7, K2, K3) » Evaluate the ongoing impact of quality improvement and safety interventions and continuously incorporate lessons learned. (2.5, S3).
3. Sustain quality improvement and safety practices at a local and system level.	» Engage and involve patients and families in discussions about safety hazards and encourage ongoing dialogue and questions about care. (3.5, 3.6, A4). » Continuously develop system level knowledge related to patient safety and quality improvement science, change theory, human factors, and technology. (3.1, 3.2, 3.3, 3.4, 3.7)

Domain 5: Optimize Human and System Factors

NAPRA Competencies 2014

9.3 Ensure the quality, safety and integrity of products.

9.3.1 Ensure the cleanliness, functionality and integrity of compounding, packaging, dispensing, and storage equipment.

9.3.2 Ensure that products are stored and transported under the conditions required to maintain product quality, safety and integrity, including cold chain management.

9.3.3 Evaluate the quality of supplies and products using recognized quality assurance techniques including visual inspection, verification of the legitimacy of the supplier and use of manufacturers' quality markers.

9.4 Create and maintain a working environment that promotes safety.

9.4.1 Minimize and manage distractions in the work environment.

9.4.2 Manage factors that affect personal wellness including work-life balance, sleep deprivation and physical and emotional health.

9.4.3 Identify factors that impact the safety of the working environment including resource allocation, procedural consistency and ergonomics.

9.4.4 Handle hazardous products safely by minimizing personal exposure and reducing environmental contamination.

9.2 Contribute to continuous quality improvement and risk management activities related to pharmacy practice.

9.2.4 Identify high-alert drugs and high-risk processes in order to respond effectively.

AFPC Educational Outcomes (2017)

CP3.2 Adopt strategies that promote patient safety and address human and system factors.

LM1.3 Confirm the quality, safety and integrity of products.

LM1.4 Use health informatics to improve the quality of care, manage resources and optimize patient safety.

Key Competencies	Enabling Competencies and Elements (Knowledge, Skills, Attitudes)
1. Describe the individual and environmental factors that affect human performance.	» Recognize the effect of individual characteristics, including gender, age, personality, cultural background and risk tolerance/aversion on interactions and actions. (1.1, 1.2, 1.3, 1.4, 1.5, 2.2, K1, S1, S2, S3, A2, A3) » Understand the effect of environmental factors such as light and sound, surge conditions, work interruptions and technology on the safety of care as well as healthcare provider safety. (K2)

2. Recognize that human factors are a diverse set of system elements that must be considered in an integrated manner to improve patient safety, and prevent and mitigate hazards.	» Appreciate that human performance is affected by one's behaviour within a system constructed by types of tasks being completed, tools and technology used and by organizational factors such as politics, resource allocation, safety culture, and policies and procedures. (1.6, A1) » Understand and apply systems level thinking to the development and execution of clinical care processes and clinical practice. (K5, S5) » Describe how effective decision-making involves integration of information from multiple system levels and that communication across all system levels includes closed loop feedback. (4.1, 4.2, 4.3) » Engage patients and families in their own safety as well as efforts to improve organizational and systems safety. (4.5)
3. Apply critical thinking techniques to enhance safe decision outcomes.	» Integrate knowledge of critical thinking, including situational awareness, and an awareness of cognitive biases in decision-making to clinical care processes and personal practice. (2.2, 2.3, 4.4, K4, S4) » Demonstrate processes for sound decision-making, understanding where processes can be challenged and corrected. (2.1, 2.4, 2.6) » Develop and engage in protocols and processes for real-time/early detection of safety risk, act on safety threats and communicate threats and actions across all levels of the system, including leadership. (2.5)
4. Discuss the impact of the human/technology interface on patient safety.	» Relate the theory and practice of ergonomics, human factors engineering, system design, technology and work flow to safe system functioning. (3.1, 3.2, 3.3, 3.5, K3) » Adopt and advocate for health information or technological devices to support safer care. (e-health records, decision support, alerts, monitoring) (3.4)

Domain 6: Recognize, Respond to and Disclose Patient Safety Incidents

NAPRA Competencies 2014

9.1.2 Employ best practices when informing the patient of the occurrence of a medication incident or adverse drug event.

9.2.3 Identify the occurrence of a medication incident, adverse drug event or close call and respond effectively to mitigate harm and prevent reoccurrence.

AFPC Educational Outcomes (2017)

Key Competencies	Enabling Competencies and Elements (Knowledge, Skills, Attitudes)
1. Recognize and manage patient safety incidents.	» Define the term harm; list the different types of incidents and distinguish between avoidable harm resulting from a patient safety incident, harm from a recognized unavoidable complication related to the inherent risk of treatment and harm from the natural progression of the patient's underlying medical condition. (1.1, 1.2, K1, S2, S14) » Facilitate clinical care including timely clinical testing, consultations, and care for a harmed patient. (1.4) » Manage the risk of harm to other patients who may also be affected by a patient safety incident (e.g., remove biohazards and malfunctioning equipment). (1.3)
2. Engage with patients and families affected by patient safety incidents to meet their needs.	» Engage with patients and/or families to assess immediate safety and care needs for their physical and emotional well-being following an incident and provide interventions to mitigate harm. (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, S3)
3. Disclose patient safety incidents.	» Determine the threshold for disclosure when a patient has suffered any degree of harm, when there is a potential for future harm, or there will be a change in care or monitoring due to increased risk. (K5) » Recognize the ethical, professional and legal obligations to disclose patient safety incidents and also recognize the expectations of the patient and family. (3.1, 3.2, 3.3, K2, K3, K4, A2, A3) » Determine who is accountable for disclosure, who should be present when disclosure communications occur, and how to disclose on behalf of others and who should be accountable for following up with the patient/family. (3.5, 3.7, K8, S12) » Disclose the occurrence of a patient safety incident to the patient and/or their family in a timely, empathetic and culturally sensitive way. (3.4, 3.6, 3.8, 3.9, 3.10, K7, K9, S1, S9, S10, S11)

4. Learn from patient safety incidents.	» Recognize the ethical and professional obligations to report all types of patient safety incidents so that care can be improved. (4.1, 4.2, 4.3, K6, K11, A5, A6) » Recognize the importance of monitoring the outcome of incident analysis in collaboration with leadership. (4.4, 4.5, 4.7, 4.8, 4.13, K10, A1, A8) » Demonstrate leadership by professionally advocating for required system changes. (4.9, 4.10, 4.11, 4.12) » Engage in personal and professional reflection regarding a patient safety incident. (4.6, S5, A7)
5. Professionally and constructively cope with the emotional stress of being involved in a patient safety incident.	» Employ healthy strategies for individuals and teams to cope with the stress of being involved in patient safety incidents. (5.1, 5.2, 5.3, S4, S6, S7, S13, A4, A8)
6. For those in formal leadership roles, support patients, family and health providers in the disclosure process. (5)	» Recognize that all members of the healthcare team are responsible for *contributing* to a just culture and culture of safety and that for those in leadership roles, there is a responsibility for *establishing* a just culture and culture of safety. (K12, 6.10) » Facilitate reporting of patient safety incidents and disclosure within the organization through the establishment of appropriate policies and procedures. (6.1, 6.2, 6.8) » Implement structures and processes to support patients, families and providers to cope with the emotional stress of patient safety incidents. (6.4, 6.5, 6.6, 6.9) » Effectively coach individuals and teams to plan and prepare for disclosure and debrief afterwards when in a formal leadership role. (6.3, 6.7, S8)

Table 2: Course Design and Learning Formats

COURSE OBJECTIVES *At the completion of this course, the student should be able to:*	**AFPC Educational Outcome (2017) Achieved**	**NAPRA Competency Achieved**	**CPSI Competency Domain**	**Learning Level** (ICE – Ideas, Connections, Extensions)	**Performance Level** (Novice, Functional, Competent)
Identify and interpret relevant patient information/data to determine medication-related needs (MRNs) for general and patient-specific scenarios. [e.g., demographics, social conditions, medical history/status, co-morbid conditions, physical assessment, laboratory/ other diagnostic tests, medications, allergies]	CP 1.3 CP 2.1 CP 2.2 HA 1.3 SC 2.1 CM1.7	2.2 2.3 2.4 5.1 9.2.2	3.2 Demonstrate effective clinical documentation for patient safety 4.1 Anticipate, identify, reduce and mitigate high risk and routine situations and settings in which safety problems may arise 5 Apply critical thinking techniques to enhance safe decision outcomes	Extensions Extensions Extensions Connections Extensions	Functional Functional Functional Functional Functional
Compare and contrast (differentiate) therapeutic alternatives to meet a patient's MRNs by considering, for example, clinical efficacy, adverse effects, drug interactions, availability, affordability and adherence.	CP 1.1 CP 1.3 CP 1.5 SC 1.1 SC 1.2 SC 1.3 SC 2.2 SC 2.3 SC 3.1	2.5 5.1 8.4 9.2.2	4.1 Anticipate, identify, reduce and mitigate high risk and routine situations and settings in which safety problems may arise 5 Apply critical thinking techniques to enhance safe decision outcomes	Connections Extensions Extensions Extensions Connections Connections Connections Extensions Extensions	Functional Functional Functional Functional Functional Functional Functional Functional Functional

APPENDIX 3

COURSE OBJECTIVES *At the completion of this course, the student should be able to:*	**AFPC Educational Outcome (2017) Achieved**	**NAPRA Competency Achieved**	**CPSI Competency Domain**	**Learning Level** (ICE – Ideas, Connections, Extensions)	**Performance Level** (Novice, Functional, Competent)
Select and justify the most appropriate therapeutic alternative to meet a patient's MRNs.	CP 1.3 CM 2.4 CL 2.1 LM 2.1 SC 2.4	2.5 6.1 8.4 9.2.2	3.2 Demonstrate effective clinical documentation for patient safety 4.1 Anticipate, identify, reduce and mitigate high risk and routine situations and settings in which safety problems may arise 5 Apply critical thinking techniques to enhance safe decision outcomes	Extensions Connections Connections Connections Extensions	Functional Functional Functional Functional Functional
Formulate an appropriate therapeutic plan, including patient education, to meet a patient's MRNs.	CP 1.5 CP 2.3 CM 1.2 HA 1.1 HA 1.2 HA 1.3	2.5 6.1 8.4	3.2 Demonstrate effective clinical documentation for patient safety 5 Apply critical thinking techniques to enhance safe decision outcomes	Extensions Extensions Connections Connections Connections Connections	Functional Functional Functional Functional Functional Functional
Identify the appropriate parameters and follow-up to monitor the efficacy and safety of a therapeutic plan.	CP 2.5 CP 3.1 SC 4.4	2.5 2.8 9.2.3	3.2 Demonstrate effective clinical documentation for patient safety 5 Apply critical thinking techniques to enhance safe decision outcomes	Extensions Extensions Extensions	Functional Functional Functional

Appendix 4

University of Manitoba College of Pharmacy Safety Curriculum Map

Domain 1: Patient Safety Culture

Definition

Patient safety culture is an integrated pattern of individual and organizational actions and behaviours based on shared beliefs and values that enable individuals and organizations to continuously seek to minimize the potential for patient harm which may result from the processes of care delivery. Patient safety culture is characterized by authentic leadership, broad, timely and responsive communication, transparency of information, as well as the engagement of patients and families.

Description

It is widely accepted that the safety culture determines what actions and behaviours are acceptable, and the level of priority that all individuals place on issues related to quality, safety and risk. The shared nature of a patient safety culture means that it is bigger than the individual healthcare providers who work within the organization. Patient safety culture improvement involves recognizing the importance of ongoing collaboration and the commitment to advocate for change. Often changes in culture occur following a sentinel event or as a part of a broader patient safety improvement initiative. While it is difficult for individuals to change the culture on their own, changes in collective attitudes, actions and ethical values aimed at goals to continuously minimize patient harm are essential in helping to move organizations forward.

It is important for healthcare providers to understand what a patient safety culture is, why it is important and how it impacts performance. It is also important for healthcare providers to understand the complexities inherent in a safety culture and how they can influence the culture as individuals, and how their actions and behaviour can change outcomes. Having a clear understanding of one's role in enhancing a safety culture is essential. In this way, each and every one can experience psychological safety and be able to speak-up when problems are identified. Healthcare leaders must set clear expectations for a positive safety culture and balance a 'no-blame system' with individual accountability, often referred to as a 'just culture'.

In advancing a safety culture, all healthcare providers have an essential role and duty to engage patients and their families in all aspects of patient care. This requires understanding, respect for and sensitivity to diversity in culture, age, cognition, gender, sexual orientation, life experience, religion, or ethnicity.

Enabling Competencies and their requisite Knowledge, Skills, Attitudes

Each key competency is supported by related enabling competencies and requisite knowledge (K), skills (S), and attitudes (A).

Key Competency	
1.	Contribute to the establishment and maintenance of a just culture.
1.1	Outline the attributes of an ideal patient safety culture.
Describe why patient safety culture is important and how culture impacts patient care, patient outcomes and continuous improvement.	
1.2	Describe why patient safety culture is important and how culture impacts patient safety outcomes.
1.8	Describe how poor patient safety culture can adversely impact patient care and continuous improvement.
K2	Examine how a poor patient safety culture can negatively impact patient safety and patient outcomes.
K1	**List the elements that contribute to a culture of patient safety, conceptual models of safety culture, and safety culture assessment methods (e.g. 'Patient Safety Culture Bundle').**
1.3	Describe the dominant patient safety culture models and assessment methods.
1.4	List the elements which leadership must enable for a culture of patient safety (e.g. CPSI Patient Safety Culture Bundle).
1.5	Describe the elements of a just culture for patient safety, and the role of professional and organizational accountabilities.
1.6	Describe the importance of assessing patient safety culture and the responsibility to participate in the assessment.
1.9	Describe how patient safety needs to be a major organizational or institutional goal demonstrated at the most senior levels.
K1	State the elements that contribute to a culture of patient safety, conceptual models of safety culture, and safety culture assessment methods.
K4	Describe how a patient safety culture is related to other concepts, such as leadership, engagement, teamwork and communication.
K5	Describe how individuals contribute to improving the patient safety culture at an individual, team, organization and system level.
K6	Describe attributes of effective leadership for quality, safety and risk.
K8	**Describe how cultural diversity and humility influence patient safety culture.**
1.10	Describe the impact of cultural humility on patient safety.

K7	**Recognize how engagement with patients and families contributes to patient safety culture.**
1.7	**Analyze how patient safety culture relates to patient safety improvement concepts (e.g. High Reliability Organizations, Crew Resource Management, and Lean).**
K3	Analyze how patient safety culture relates to patient safety improvement concepts, such as high reliability organizations.
Establish and maintain a just culture.	
S1	Enact patient safety principles and systems in daily practice.
S2	Demonstrate leadership skills to champion patient safety culture improvement.
S3	Employ strategies to improve safety culture within their area of influence.
S4	Partner with patients and families in respectful and meaningful ways.
A1	Demonstrate a willingness to collaborate with others, including patients and families, to contribute to a positive patient safety culture.
A2	Embrace strategies that promote patient safety culture.
A3	Value and respect patients, families and colleagues in ways that are respectful, non-judgemental and culturally safe.
Key Competency	
2.	Contribute to the continuous improvement of safety culture.
3.1	**Reflect on the importance of challenging existing practices and norms in relationship to continuous improvements.**
2.2	Describe the methods by which healthcare professionals can advocate to improve patient safety culture.
2	Advocate for improved patient safety culture.
2.4	Advocate for improvements in system processes to support continuous patient safety improvement.

Outline strategies by which healthcare professionals can *contribute* to the continuous improvement of safety culture.

2.1 Identify opportunities for continuous patient safety culture improvements.

2.3 Contribute to the creation, dissemination, application, and translation of new healthcare system safety knowledge and practices.

2.5 Act as role models and champion patient safety improvements.

2.6 Reflect on actions and decisions continuously, with self-awareness to improve knowledge and skills in patient safety.

3.5 Foster psychological safety (e.g. speaking up/stop the line).

3.6 Act on immediate patient safety threats (e.g. stop the line).

3.7 Escalate care concerns.

3.8 Lead and participate in the implementation of patient safety best practices.

3.3 Initiate and engage in local and system patient safety improvements.

3.4 Involve patients and their families as key players in patient safety.

A4 Commit to reporting and learning from patient safety incidents.

A5 Demonstrate openness to change.

3.8 **Describe the attributes of leadership in contributing to the continuous improvement of safety culture.**

3.2 Leaders demonstrate accountability for organizational priority setting and leadership practice that motivate the pursuit of safety (e.g. setting clear expectations/incentives for safety, ongoing communications, resources for patient safety and quality improvement infrastructures, engagement of patients and families).

Domain 2: Teamwork

Definition

Optimizing teamwork within and across teams to maximize patient safety, quality of care, and health outcomes.

Description

Safe and effective care involves the coordinated activities of a multi-team system – with patients and families as equal partners – that includes the core care team, contingency teams, coordinating teams, administration, and ancillary and support service teams. High-performing interprofessional teams demonstrate capabilities and competencies that are essential to efficient, effective, and safe collaborative practice. Each key competency aligns with one of the six Canadian Interprofessional Health Collaborative (CIHC) Interprofessional Competency Framework domains that are foundational to interprofessional collaborative practice:

1. patient/client/family/community-centred care;
2. role clarification;
3. team functioning;
4. collaborative leadership;
5. interprofessional communication; and
6. interprofessional conflict management.

Organizational and system enablers facilitate interprofessional teamwork. Team members and leaders at all levels promote collaboration, partnerships with patient and family, cultural safety, team effectiveness, and quality improvement initiatives. Patients and their families are key partners on the team, engaged in decision-making and appropriately directing their own care.

Enabling Competencies and their requisite Knowledge, Skills, Attitudes

Each key competency is supported by related enabling competencies and requisite knowledge (K), skills (S), and attitudes (A).

Key Competency

1. Meaningfully partner with patients and families enabling them to be key members of their interprofessional teams.

Demonstrate the skills necessary to engage patients and their families to support informed decision making, and the management of their own health, quality of life and wellbeing.

1.1 Engage patients and their families in decision-making and the management of their own health, quality of life and wellbeing.

1.2 Work with patients and their families to define the extent to which they want to be involved in their own care.

1.3 Support informed decision making of patients and families by providing and seeking appropriate, sufficient and clear information, and confirming mutual understanding.

1.5 Respect individual patient's needs related to cultural and personal health beliefs and practices

1.6 Describe the ways in which patients and families are partners in care leading to improved health, quality of life and wellbeing.

S1 Demonstrate empathy and professionalism.

S2 Establish partnerships with patients/families.

S3 Integrate patient's beliefs and values in a respectful manner.

S4 Discuss options with patient using language that they understand.

S16 Use a shared vocabulary to facilitate effective communication within the team.

S17 Seek clarification when language or jargon makes comprehension unclear.

A1 Value and respect the contributions of patients and their families as partners in their care.

1.4 Advocate with individual patients, their families and all members of their interprofessional team for the resources to be able to provide people-centred, high-quality and safe care.

S5 Advocate on behalf of patient.

Key Competency	
2.	Respect the professional and patient and family **roles and responsibilities** within the interprofessional team and integrate this diversity seamlessly into service delivery.
2.2	**Negotiate the interprofessional team composition and structure including staff lower on the professional hierarchy (such as healthcare aides and ward clerks).**
2.3	Describe the relevant competencies, roles, expertise, and overlapping scopes of practice of all members of the interprofessional team including patients and families and identify gaps that need to be addressed.
2.1	Articulate your own roles and responsibilities within various interprofessional teams.
K1	State the roles and responsibilities of each team member, including decision-making, supervision and support, and the expectations and requirements for individual contribution.
K2	Identify the relevant competencies, experience and scopes of practice of team members, including overlaps and gaps in the team's capabilities.
K3	Describe the team's role within the healthcare system.
K7	Describe the resources and administrative skills required to achieve the team's objectives.
2.4	**Demonstrate respect for all interprofessional team members' perspectives, particularly those of patients and their family.**
S6	Demonstrate with confidence and respect one's own professional roles and responsibility.
S7	Access unique skills and knowledge of other members of the healthcare team to address needs of patient.
A3	Respect all team members, including their histories, feelings, values and beliefs.
2.5	**Acknowledge that each member of the interprofessional team has an important role to contribute and access others' knowledge and skills as appropriate.**
A2	Commit to fulfilling individual responsibilities in the team environment.
A7	Foster an environment in which responsibility for care and accountability for outcomes is appropriately shared.
A8	Foster an environment in which the team works to provide the best possible patient outcomes.

Key Competency	
3.	Be vigilant of interprofessional **team dynamics** to optimize patient safety, quality of care, and health outcomes.
A5	Embrace a culture where team functioning is viewed as an important element of continuous quality improvement.
K4	Define team dynamics.
K6	Outline the rationale for and implementation of team processes, policies and procedures.
3.1	Develop and implement a shared set of individual patient and healthcare provider values, rights and responsibilities.
3.4	Define a process for introducing new and emerging evidence into team-based care.
3.6	Set individual patient and team goals and priorities, measure progress, and learn from the experience together as a team.
K10	**Describe how to proactively address concerns about provider or system performance involving risk to team members and patients/family to optimize patient safety.**
3.2	Maintain the prevention, identification and resolution of safety issues as a priority function of the interprofessional team.
3.3	Create a team environment where open communication and continuous learning is the norm.
3.5	Practice individual and interprofessional team reflection to incorporate feedback and improve team performance.
6.4	Identify and address all practice variations that can negatively impact the reliable delivery of evidence-informed care.
K5	Recognize key safety issues and priorities inherent in team practice and relevant to the patient population.
S8	Apply standardized team processes and protocols to ensure consistency and shared understanding.
S9	Give and receive clear and accurate feedback.
S10	Manage patient safety incidents appropriately.
S11	Monitor, evaluate and take action to improve team performance.
S15	Advocate for solutions to address concerns involving risk to team members.
A4	Seek and value constructive feedback.
A6	Accept the team as an evidence-informed community of practice that learns with, from, and about one another.

Key Competency	
4.	Demonstrate shared authority, leadership, and decision-making.
4.1	As an interprofessional team, collaboratively consult with, delegate tasks to, supervise and support one another.
4.2	As a member of the interprofessional team, accept and execute delegated tasks.
4.3	As a member of the interprofessional team, ask for support when appropriate.
K8	Identify levels of authority and the importance of relevant expertise as a basis for leadership in a given situation.
S12	Exercise decision-making authority in a situationally appropriate manner.
S13	Set clear parameters for independent decision-making.
S14	Provide consultation, support, and delegate tasks appropriately.
A9	Commit to advocating for resources and systems that support the needs of individual team members.
A10	Acknowledge the value of and foster shared leadership.

Key Competency	
5.	**Communicate** in respectful and responsive manner
5.4	**Optimize use of information and communication technology in team safety practices.**
K9	State the impact of information and communication technology on team function and dynamics.
5.2	**Define clear strategies and processes for optimal interprofessional team communication including under high stakes situations or environments.**
5.1	Demonstrate support for all team members to speak up, question, challenge, advocate, and be accountable to address safety issues and risks especially in a perceived power imbalance relationship.
5.3	Demonstrate active listening techniques to contribute to optimal interprofessional teamwork and patient care.
5.5	Model respectful communication.
S18	Use appropriate shared documentation to facilitate continuity of care.
S19	Apply a variety of evidence-informed communication tools and techniques.
S20	Engage in respectful communication that fosters team development.
S21	Actively participates on team.

Key Competency	
6.	Work effectively with all members of the interprofessional team to promote understanding, manage differences and **resolve conflict**.
S23	**Employ strategies to prevent, manage and resolve conflict.**
6.1	Foster an interprofessional team culture that allows for healthy discussion of dissenting opinions in a manner such that all members of a team can express concerns or alternative ideas.
6.2	Identify conflict in interprofessional teams.
6.3	Identify and respect differences, misunderstandings, and limitations that may contribute to conflict, and work to resolve these
S22	Respect perspectives of others.
A11	**Value the potential positive nature of conflict**.

Domain 3: Communication

Definition

Healthcare professionals engage patients and family members in an open dialogue to promote patient safety, and to prevent and respond to patient safety incidents.

Description

This domain centres on processes where healthcare providers and healthcare leaders share and receive information to develop positive interpersonal relationships within clinical situations, within and across organizations, and support active patient engagement and safe, effective patient care. Communication practices include written, oral and technological communications. Online communication tools and information channels are important methods to raise awareness of threats to patient safety.

Through effective communication, healthcare providers and healthcare leaders share safety knowledge and improve their understanding of patient and family perspectives. One of the most important goals of effective communication is to establish partnerships with patients and their family as members of their own healthcare team, as well as when they are engaged as partners of safety and quality teams. Patient and family members' perspectives about their care are continuously evolving, are grounded within a sense of trust and comfort with the processes of care, and are influenced by social context and community values. Effective communication is beneficial to patients and healthcare providers, builds trust, and is a precondition of obtaining patient consent. Information that is clear and consistent enables patients to understand the risks, benefits and possible outcomes of investigations and treatments, with the goal to participate as full partners in their own care and shared decision-making.

Enabling Competencies and their requisite Knowledge, Skills, Attitudes

Each key competency is supported by related enabling competencies and requisite knowledge (K), skills (S), and attitudes (A).

Key Competency
1. Demonstrate effective verbal and non-verbal communication skills to promote patient safety.
K1 **Describe models of effective communication, which includes concepts of patient engagement, cultural humility and diversity, with considerations of power differential.**
1.6 **Communicate in a manner that respects cultural diversity, cultural safety and cultural humility, also recognizing the barriers of authority gradient and their impact on patient safety.**
1.1 Demonstrate respect, humility and empathy in communication.
1.2 Discuss diagnosis, investigations, treatments and protocols clearly and comprehensively with patients and families, and confirm their understanding.
1.3 Convey information in structured communications to patients and families, and team members to promote understanding.
1.4 Communicate in a manner that is sensitive to cognitive status and health literacy needs.
1.5 Employ active listening techniques to understand the needs of others.
K2 Assess patient and family competence related to issues of health literacy.
K3 Assess patient and family capacity to make healthcare decisions.
S1 Demonstrate respect, empathy, humility and non -judgemental active listening.
S7 Modify communication approaches, including use of interpretive services, to ensure clear understanding.
S8 Provide the correct type and amount of information on disclosure and reporting of patient safety incidents and use jargon-free language to convey complex information clearly.
1.7 Respect privacy and maintain confidentiality.
S2 Protect privacy and confidentiality.
S3 Obtain informed consent.
Ensure clear communication between all healthcare professionals and patients and/or families during transitions in care (e.g. shift change, discharge to community care).
3.3 Provide clear and comprehensive information at transitions in care (e.g. engage patients and/or families during shift change, discharge to community care).
S4 Ensure clear communication between all healthcare professionals during transitions in care.
S5 Engage patients and families in all transitions in care (including discharge) to ensure safe continuity of care.
S6 Effectively communicate (close the loop) on delegated tasks and provide appropriate supervision.

Key Competency

2. Demonstrate effective clinical documentation for patient safety

Provide detailed, clear and evidence based documentation, patient care orders and prescriptions (including use of approved abbreviations) in the patient health record, appropriate to the degree of urgency.

2.1 Provide appropriately detailed and clear clinical documentation in the patient health record.

2.2 Provide patient care orders and prescriptions using evidence-based practices to reduce the risk of errors, including the use of approved abbreviations.

2.3 Provide patient care orders and prescriptions to convey the appropriate degree of urgency.

2.4 Use communication approaches that ensure clear and comprehensive information is provided in consultation requests and responses, investigative, operative and other reports, and other correspondence.

Key Competency

3. Communicate to prevent high-risk patient safety threats

3.2 **Engage patients or substitute decision-makers in context-appropriate discussions regarding the risks and benefits of assessments and treatments and in obtaining informed consent.**

3.1 Design evidence-based patient education material incorporating patient and family engagement, diversity and health literacy.

4.3 Facilitate patients' access to their health record (according to jurisdictional legislation).

A4 **Advocate for robust system communication processes related to healthcare risk, and in the aftermath of safety breakdowns.**

A1 Have courage and will to speak up.

A2 Respect and value individuals' contributions and create opportunities for expression.

A3 Seek and value ways to improve communication.

Adapt communication styles in ordinary, crisis and stressful situations across authority gradients, escalate concerns and close the loop on follow-up.

3.3 Provide clear and comprehensive information at transitions in care (e.g. engage patients and/or families during shift change, discharge to community care).

3.4 Communicate the urgency of a clinical situation across authority gradients, escalating concerns where needed and closing the loop on follow-up.

3.5 Adapt communications for use in ordinary, crisis and stressful situations.

3.6 Use structured communication approaches to escalate attention to urgent clinical situations and in high-risk clinical situations such as transitions in care (e.g. SBAR, CUS, checklists).

Key Competency	
4.	Employ healthcare technology to provide safe patient care
4.2	**Understand the benefits and risks associated with using technology for healthcare communication.**
4.1	**Use technology to support safe communication (e.g. e-health records, decision support tools, electronic standardized order sets/protocols/care maps, alerts and monitoring).**

Domain 4: Safety, Risk, and Quality Improvement

Definition

Acting on safety risks is a broad concept that encompasses identifying, assessing, reducing, and mitigating safety risks to both patients and healthcare providers. This is accomplished by engaging patients and their families and other members of the care team in implementing evidence-informed principles of system design and quality improvement.

Description

Healthcare providers work in complex environments and they are vulnerable to service delivery pressures, systems failures and their own fallibility. Healthcare leaders and providers must be accountable not only in their daily work mitigating ongoing risk within specific care contexts at the local level, but also from a proactive preventative systems design perspective. To detect patient safety threats, acting on risk and improving quality in dynamic complex situations, healthcare providers require competence in system-based activities as well as clinical practice. These competencies can include teamwork, task management, situational awareness as well as knowledge of quality improvement methods. By learning and applying these skills, healthcare providers can help to improve outcomes for patients and their families by preventing or mitigating patient and provider safety incidents.

Healthcare providers collect and monitor performance data to assess risk and improve outcomes. They also apply their knowledge to proactively prevent patient safety incidents through engagement in quality and safety improvement activities. Achieving highly reliable healthcare service for patients and families depends on healthcare providers knowing when to escalate care concerns and what processes to employ for real-time early detection of safety risk (stop the line) as well as patient deterioration. Healthcare leaders and managers are accountable to foster learning organizations that provide adequate resources and infrastructure to support healthcare providers in clinical work as well as quality improvement, quality assurance and patient safety efforts. Organizations have strategic plans that prioritize patient safety though safety and quality vision/mission statements and goals. Safe environment programs in organizations support healthcare provider health and safety by protecting their teams from physical and psychological injury as well as burnout, all known to negatively impact patient safety.

Enabling Competencies and their requisite Knowledge, Skills, Attitudes

Each key competency is supported by related enabling competencies and requisite knowledge (K), skills (S), and attitudes (A).

Key Competency	
1.	Anticipate, identify, reduce and mitigate hazardous and routine situations and settings in which safety problems may arise.
K1	**Describe human and system design factors related to safety risk and quality improvement.**
1.2	Incorporate individual patient's cultural and health beliefs to mitigate safety hazards.
K7	Describe the impact of cultural diversity on healthcare risk and patient safety.
S4	Demonstrate awareness of how cognitive biases can influence safety.
1.3	**Recognize safety hazards in real-time and respond to correct them, preventing them from reaching the patient.**
1.1	Demonstrate situational awareness by continually observing the environment, thinking ahead and reviewing potential options and consequences.
1.7	Demonstrate awareness of one's own and the team's vulnerabilities and fallibilities within complex systems.
1.4	Recognize the impact of system complexity on the safe outcome of healthcare interventions.
1.5	Employ techniques such as diligent information-gathering, cross-checking of information using checklists, and investigating mismatches between the current situation and the expected state.
1.6	Triage, document and report safety hazards to ensure problems are addressed in order of severity of harm.
K4	Describe potential safety threats to both patients/families and healthcare providers (e.g. infection control, injury prevention, proper handling and maintenance of equipment, safe administration of medication).
K5	Describe high risk situations that require fail-safe reliable processes (e.g., medication reconciliation, medication checking, allergy checking, wrong-side checking, checklists and buddy systems.
K6	Describe when standardization of approaches and process is required (e.g. evidence-informed practice guidelines and standard order forms).
S1	Anticipate, recognize and act on risk at the individual patient, unit and system level of care.
S2	Report risks and the potential for harm.
S5	Develop personal practices to mitigate individual level factors that influence safety (e.g. fatigue, service delivery pressure, compassion fatigue).
S6	Exercise vigilance on safety issues.

A2	Foster a blame free practice environment.
A3	Commit to being transparent in the team and practice environment.
A5	Speak up and listen up.
A6	Commit to protecting civility in all interpersonal relationships.
A7	Commit to self-reflection and be personally accountable while acknowledging one's own fallibility and vulnerability in the healthcare system.
Key Competency	
2.	Systematically identify, implement, and evaluate quality improvement interventions for patient safety
2.3	**Select and implement the most appropriate solution for a given context, taking into account quality, resources, practicality, and patient preferences.**
2.1	Critically appraise the evidence to identify leading and emerging safety solutions.
2.2	Learn from local successes and experiences, assessing their appropriateness to one's own environment.
2.4	Evaluate the impact of quality improvement and safety interventions, including the potential for harm and/or unintended consequences (balancing measures).
2.6	Develop knowledge and skills on how to meaningfully engage patients and families in quality assurance and quality improvement initiatives.
2.7	Demonstrate respect for culture when engaging with patients and families in safe system design and improvement.
K2	Outline quality improvement methodologies and quality assurance practices.
K3	Outline patient and family engagement approaches related to safety risk and quality improvement.
2.5	**Evaluate the ongoing impact of quality improvement and safety interventions, continuously incorporating lessons learned.**
S3	Monitor, track and evaluate system failures
A1	Discuss and report near-misses openly.

Key Competency	
3. Sustain quality improvement and safety practices at a local and system level	
3.5	**Engage and involve patients and families in discussions about safety hazards and encourage ongoing dialogue and questions about care.**
3.6	Advocate for patient satisfaction and patient ombudsmen processes and structures; enable patients and families to access these resources.
A4	Advocate for patient safety.
3.2	**Continuously develop system level knowledge related to patient safety and quality improvement science, change theory, human factors, and technology.**
3.1	Lead and engage in the measurement of quality and performance indicators for the people and population served.
3.3	Engage collaboratively with healthcare leadership to ensure well-resourced improvement efforts.
3.4	Advocate with healthcare leadership and team members to create a culture of continuous quality improvement.
3.7	Maintain up-to-date policies and procedures.

Domain 5: Optimize Human and System Factors

Definition

Managing the interaction between people (individuals, healthcare providers, patients, family members and teams) and other system factors (tasks, tools/technologies, organizational, environmental) to optimize patient safety.

Description

Human factors is a scientific discipline that studies how people interact with systems, tools, processes, and devices. It incorporates how psychological, social, physical, biological and safety characteristics of users affect these interactions. Optimizing the human and environmental factors that support the achievement of best human performance is an essential safety competency for all healthcare providers. An understanding of individual human factors (patients, family and healthcare providers) and the ambient or environmental factors that shape decisions helps in recognizing and mitigating prejudices and biases and improving decision-making.

The ability of healthcare providers to optimize patient safety depends on an understanding of their own performance and the performance of others within a given practice environment, including how to involve patients and their families. Complex, ongoing interactions between individual providers and patients, together with the technological characteristics of the healthcare environment, significantly shapes individual and system performance and the safety of patient care. Critical thinking, which involves situational awareness and insight into the cognitive biases that affect decision-making, is influenced by a variety of human and organizational factors.

In terms of individual factors, human performance is significantly shaped by knowledge, skill and experience, as well as personality attributes and attitudes toward risk tolerance. The well-being of individual practitioners with regard to work-life balance, fatigue, and other personal health factors constitute another key element of performance.

In terms of environmental factors, systems-based thinking in healthcare can help in further understanding the relationships between the various elements of complex work environments. The relationships between policies and procedures, resource allocation and work cultures are intertwined with local, regional, national and international organizational structures. It is important that health providers are aware of these relationships and how their interactions with patients impact these relationships.

Finally, the interface between individual practitioners and patients and the technological attributes of healthcare environments has a critical effect on individual and system capacities in achieving the delivery of safe care. The key to identifying effective interventions lies in aligning interventions to causal factors. Interventions should avoid always resorting to person-based solutions (e.g. remedial training, policy/procedure reinforcement which imposes actions on the individuals). Instead, system-level changes (e.g. automating a safety check, forcing functions, changing culture) should be considered to address poorly designed systems.

An established framework in human factors engineering for framing the design and analysis of healthcare research is the Systems Engineering Initiative for Patient Safety (SEIPS). This model of work systems and patient safety is noted in Appendix 2. It depicts the healthcare work system as a sociotechnical, human-centred system with six interacting elements that influence system performance:

1. person;
2. tasks;
3. tools and technologies;
4. organization;
5. internal environment; and
6. external environment.

Enabling Competencies and their requisite Knowledge, Skills, Attitudes

Each key competency is supported by related enabling competencies and requisite knowledge (K), skills (S), and attitudes (A).

Key Competency	
1.	Describe the individual and environmental factors that affect human performance.
K1	**Recognize the effect of individual characteristics, including gender, age, personality, cultural background and risk tolerance/aversion on interactions and actions.**
1.1	Describe the impact of fatigue and other human limitations on clinical performance.
1.2	Respect the influence of attitude and diversity on clinical practice.
1.3	Discuss the role of wellness and its effect on knowledge and clinical practice.
1.4	Demonstrate humility in interpersonal relations as well as in the design and implementation of clinical care processes.
1.5	Discuss how to integrate coping mechanisms to mitigate performance hazards in ambient conditions and various practice environments.
S1	Execute self-monitoring and self-care to optimize a safe level of performance.
S2	Identify the normalization of deviance and unsafe work-arounds as they relate to human performance and culture.
S3	Identify cognitive, psychological, emotional and cultural biases that influence effective decision-making.
A2	Accept that certain factors may affect effect one's personal well-being, including work-life balance, sleep deprivation/sleep debt, and physical and emotional health issues which may interfere with a safe level of performance.
A3	Accept the fallibility of human performance.
K2	**Understand the effect of environmental factors such as light and sound, surge conditions, work interruptions and technology on the safety of care as well as healthcare provider safety.**

Key Competency

2. Recognize that human factors are a diverse set of system elements that must be considered in an integrated manner to improve patient safety, and prevent and mitigate hazards.

Appreciate that human performance is affected by one's behaviour within a system constructed by types of tasks being completed, tools and technology used and by organizational factors such as politics, resource allocation, safety culture and policies and procedures.

A1 Appreciate that human performance is affected by one's behaviour within a system constructed by types of tasks being completed, tools and technology used and by organizational factors such as culture and politics.

1.6 Describe the impact of organizational resource allocation, policies and procedures and safety culture on patient safety outcomes.

Understand and apply systems level thinking to the development and execution of clinical care processes and clinical practice.

K5 Understand systems thinking (unit, service, organization/ local, regional, provincial, national and international).

S5 Apply systems level thinking to the development and execution of clinical care processes and clinical practice.

Describe how effective decision-making involves integration of information from multiple system levels and that communication across all system levels includes closed loop feedback.

4.1 Ensure communication across all system levels includes closed loop feedback.

4.2 Demonstrate that effective decision-making involves the integration of information from multiple system levels (e.g. individuals – including patients and families, team, organization, regulatory).

4.3 Leaders ensure that decision outcomes made at the leadership/governance level are systematically communicated at all levels, and are integrated into decisions and actions occurring at all levels of the system.

4.5 **Engage patients and families in their own safety as well as efforts to improve organizational and systems safety.**

Key Competency

3. Apply critical thinking techniques to enhance safe decision outcomes.

K4 **Integrate knowledge of critical thinking, including situational awareness, and an awareness of cognitive biases in decision-making to clinical care processes and personal practice.**

2.2 Model the behavioural characteristics of situational awareness.

2.3 Engage in processes for real-time/early detection of safety risks and patient deterioration.

4.4 Describe the common types of cognitive and cultural biases (conscious and unconscious).

S4 Demonstrate situational awareness.

2.1.	**Demonstrate processes for sound decision-making, understanding where processes can be challenged and corrected.**
2.4	Demonstrate the ability for shared decision-making with patients and families as partners by hearing a diverse range of opinions or characteristics.
2.6	Encourage patients and families to communicate concerns and ask questions.
2.5	**Develop and engage in protocols and processes for real-time/early detection of safety risk, act on safety threats and communicate actions across all levels of the system, including leadership.**
Key Competency	
3.	Discuss the impact of the human/technology interface on patient safety.
K3	**Relate the theory and practice of ergonomics, human factors engineering, system design, technology and work flow to safe system functioning.**
3.1	Define human factors and human factors engineering and understand their application in healthcare environments
3.2	Describe the role of usability assessment in the safe application of technology.
3.3	Recognize the importance of ergonomics in safety design.
3.5	Describe principles of workflow analysis to enhance safe care.
3.4	**Adopt and advocate for health information or technological devices to support safer care (E-health records, decision support, alerts, monitoring).**

Domain 6: Recognize, Respond to and Disclose Patient Safety Incidents

Definition

Recognize and report patient safety incidents, respond appropriately and effectively to mitigate harm, ensure disclosure, and prevent recurrences.

Description

The human impact of a patient safety incident on the patient, their family, the healthcare providers directly involved, as well as the ramifications to the system itself – including the economic burden – are significant.

Disclosure is an ethical, professional and legal obligation. Patients and their families, governments, regulatory licensing authorities, and Canadian courts expect health providers to be knowledgeable and accountable for their actions and for their responses to patient safety incidents. Open, honest and empathetic disclosure and appropriate apologies benefit patients and families, health providers and their organizations. Patients and families impacted by a patient safety incident want to know the extent of harm, the facts about how it happened, and what measures can be undertaken to prevent the harm in the future. Many patients and family want to be involved in seeing these improvements put into action and/or to be informed when these new safety measures are in place.

Healthcare providers are able to recognize patient safety incidents, and take responsibility to respond in a timely way with empathy and compassion to meet urgent clinical, emotional, and information needs and to provide follow-up as required of their patients.

Healthcare providers report these incidents to their leaders, team members and colleagues and support these individuals as needed. Healthcare providers recognize the importance of culturally sensitive disclosure through an exploration and acknowledgement of the patient's values, beliefs, and wishes. Patients and/or their family are told about the occurrence of harm in a timely manner. A commitment is made to provide the factual reasons for what happened as soon as these are known and in a timely manner to the patient and/or their family. To mitigate harm, the healthcare provider and team effectively address the patient's immediate clinical needs and plan with the patient and/or their family for further ongoing care. An appropriate apology is provided.

Healthcare providers report patient safety incidents including near misses to their organization and contribute to incident analyses, recognizing these as learning opportunities for contributing to system redesign and patient engagement, and improving team and personal performance.

The patient and/or family is provided with a follow-up about the improvement in a timely manner. The patient and/or family may be invited to participate in helping to design, test and/or implement the improvement to prevent similar harm to other patients in the future.

Being involved in a safety incident where a patient has suffered harm, whether it is preventable or not, can be extremely stressful and can have a significant impact on one's personal, family and professional life.

Patients and their family are provided with supports and access to resources to assist them through this stressful period.

Healthcare providers reflect and recognize if they or their team's ability to provide the best clinical care is compromised because of stress related to the safety incident. Healthcare providers use healthy and constructive coping strategies and readily seek emotional support. They help their team and other colleagues to cope emotionally with incidents, including by drawing on available support systems.

Enabling Competencies and their requisite Knowledge, Skills, Attitudes

Each key competency is supported by related enabling competencies and requisite knowledge (K), skills (S), and attitudes (A).

Key Competency

1. Recognize patient safety incidents.

Define the term harm, list the different types of incidents and distinguish between avoidable harm resulting from a patient safety incident, harm from a recognized unavoidable complication related to the inherent risk of treatment and harm from the natural progress of the patient's underlying medical condition.

1.2 Define the term harm and distinguish between preventable harm resulting from a patient safety incident, harm from a recognized unavoidable complication related to the inherent risk of treatment and harm from the natural progression of the patient's underlying medical condition.

1.1 Describe the different types of patient safety incidents (near miss, no harm, harm) and the response and disclosure approach that is appropriate to each type in alignment with provincial regulations.

K1 Define the different types of patient safety incidents and how to recognize these in their professional practice.

S2 Differentiate between a clinical outcome related to the natural progression of a medical condition, a recognized unavoidable complication related to the inherent risk of treatment, and avoidable harm.

S14 Differentiate between a clinical outcome related to the natural progression of disease, a recognized unavoidable complication related to the inherent risk of treatment, and avoidable harm from a patient safety incident.

1.4 **Facilitate clinical care including timely clinical testing, consultations, and care for a harmed patient.**

1.3 **Manage the risk of harm to other patients who may also be affected by a patient safety incident (e.g., remove biohazards and malfunctioning equipment).**

Key Competency

2. Engage with patients and families affected by patient safety incidents to meet their needs..

2.1 **Engage with patients and/or families to assess immediate safety and care needs for their physical and emotional well-being following an incident and provide interventions to mitigate further harm.**

2.2 Describe the role of patients and/or families in the initial (early) and post-analysis stages of disclosure.

2.3 Recognize there are situations that constitute special consideration regarding disclosure, for example, patients in vulnerable situations, patients who have a substitute decision-maker, patients with special communication requirements (e.g., those who are hearing impaired or have language translation needs).

2.4 Recognize diversity factors that may impact the relationship between the health professional and patient.

2.5 Invite the patient and/or family to be involved in identifying patient safety incidents, designing, testing and implementing improvements and/or providing updates on these activities as required.

2.6 Encourage patients and families to report incidents and omissions in their information or care.

S3 Partner with patients and/or family to be involved in to meet their clinical, emotional and information needs.

Key Competency	
3.	Disclose patient safety incidents
K5	**Determine the threshold for disclosure when a patient has suffered any degree of harm, when there is a potential for future harm, or there will be a change in care or monitoring due to increased risk.**
3.1	**Recognize the ethical, professional, organizational and legal obligations to disclose patient safety incidents and also recognize the expectations of the patient and family.**
3.2	Be aware of existing policies and procedures associated with disclosure and how these contribute to an organizational culture of patient safety.
3.3	Describe the legal implications arising from disclosure.
K2	Describe the ethical importance and foundation of disclosure.
K3	Recall the relevant regulatory and organizational policies and related legislation.
K4	Describe professional accountabilities of individual healthcare providers, interprofessional teams, and organizations for disclosure and reporting.
A2	Commitment to maintaining honesty and trust in the patient–health professional relationship.
A3	Acceptance of the personal obligation to disclose the occurrence of patient safety incidents in keeping with codes of ethics, professionalism, organization and regulatory policies, and legislation.
3.5	**Determine who is accountable for disclosure, who should be present when disclosure communications occur, and how to disclose on behalf of others and who should be accountable for following up with the patient/family.**
3.7	Appropriately ask for help and advice about disclosure.
K8	List possible roles in the initial (early) and post-analysis stages of disclosure.
S12	Find information on disclosure, and when and how to seek advice and help.
3.4	**Disclose the occurrence of a patient safety incident to the patient and/or their family in a timely, empathetic and culturally sensitive way.**
3.6	Describe what information should be disclosed at the initial (early) disclosure stage, the time frame for disclosure, and the relevant required documentation, reporting, and analyses.
3.8	Engage with patients and/or families in honest communication and empathic, culturally sensitive dialogue with respect to disclosure.
3.9	Recognize the importance of empathy and apology in all disclosure discussions.
3.10	Recognize the importance of timely communication and contact with the patient and/or family in all disclosure related discussions.
K7	Describe disclosure as a process with initial (early) and post-analysis stages; often requiring multiple conversations at each stage.
K9	Describe the importance of genuine apology.

S1	Provide honest, timely, factual communications about the occurrence and reasons for a patient safety incident as they become known.
S9	Demonstrate how to appropriately apologize depending on the type of incident.
S10	Demonstration of openness, empathy and compassion when communicating and providing an apology.
S11	Achieving cultural humility and disclosure through exploration and acknowledgement of the patient's and/or family's values, beliefs, and wishes. s
Key Competency	
4.	Learn from patient safety incidents
4.1	**Recognize the ethical and professional obligations to report all types of patient safety incidents so that harm can be mitigated and care improved.**
4.2	Describe the process for reporting patient safety incidents.
4.3	Recognize the reporting of patient safety incidents is required across the entire continuum of primary and specialty services provided by community centres and hospitals, including for patients participating in research programs.
K6	Recognize the importance of reporting near misses and when patients and organizations could benefit from learning of these instances.
K11	Contrast how disclosure of harm and reporting aligns with improving quality of care.
A5	Willingness to report patient safety incidents, including near misses, and fully participate in incident analysis and quality improvement activities.
A6	Partnering with patients and/or families in quality improvement activities.
4.8	**Recognize the importance of monitoring the outcome of incident analysis in collaboration with leadership.**
4.13	Appropriately document the facts of what happened and disclosure discussions.
4.4	At the time of the event, interview those involved for appropriate information related to the event, collect the necessary clinical materials (e.g., tracings from monitors), samples and equipment that may facilitate a more thorough analysis; and preserve the evidence to understand the reasons for what happened.
4.5	Participate in timely event analysis and planning for improvements to prevent recurrence.
4.7	Engage with patients and/or families in a timely manner to obtain their perspective on what happened.
K10	Document patient safety incidents and disclosure in the patient's health record.
A1	Apply moral-ethical reasoning and critical analysis about how patient safety incidents happen.
A8	Demonstrate constructive coping strategies to deal with the stress of a patient safety incident and provide emotional support to team members and colleagues.
4.9	**Demonstrate leadership by professionally advocating for required system changes.**
4.10	Apply lessons learned and implement improvements to strengthen the safety of future care.
4.11	Share lessons learned at the organizational- and health system-levels.
4.12	Implement measures to prevent similar events.

4.6	**Engage in personal and professional reflection regarding a patient safety incident.**
S5	Demonstrate personal learning from incidents and implement practice improvements.
A7	Self-reflection and constructive learning from patient safety incidents to prevent their recurrence.
Key Competency	
5.	Professionally and constructively cope with the emotional stress of being involved in a patient safety incident.
S13	**Employ healthy strategies for individuals and teams to cope with the stress of being involved in patient safety incidents.**
S6	Employ healthy strategies to constructively cope with the stress from a patient safety incident.
5.3	Provide support for individual health providers, teams and leaders in the patient safety incident.
5.1	Engage in self-care, healthy coping strategies, and support team members post-incident including accessing resources as appropriate.
5.2	Recognize the potential psychological impact on individuals of being involved in patient safety incidents.
S4	Support their leaders and team in disclosure communications.
S7	Demonstrate emotional support for their team and other health professionals affected by the patient safety incident.
A4	Demonstrate support for each other when participating in team disclosure communications.
A8	Demonstrate constructive coping strategies to deal with the stress of a patient safety incident and provide emotional support to team members and colleagues.
Key Competency	
6.	For those in formal leadership roles, support patients, family and health providers in the disclosure process.
K12	**Recognize that all members of the healthcare team are responsible for *contributing* to a just culture and culture of safety and that for those in leadership roles, there is a responsibility for *establishing* a just culture and culture of safety.**
6.10	Manage innate power differentials that can contribute to patient safety incidents and influence communications.
6.1	**Facilitate reporting of patient safety incidents and disclosure within the organization through the establishment of appropriate policies and procedures.**
6.2	Use just culture principles to determine fair accountability for what happened.
6.8	If required, inform the public and media appropriately of a patient safety incident.

6.6	**Implement structures and processes to support patients, families and providers to cope with the emotional stress of patient safety incidents.**
6.4	Coach and give direct help in communications with patients and families as required.
6.5	Implement structures and processes to prevent further emotional injury for healthcare providers in post-analysis disclosure discussions and incident investigation.
6.9	Ensure ongoing long term psychological support and clinical care for patients, families and healthcare providers following patient safety incidents as needed.
S8	**Effectively coach individuals and teams to plan and prepare for disclosure and debrief afterwards when in a formal leadership role.**
6.3	Provide advice in determining the content of disclosure discussions.
6.7	Provide educational resources with respect to diversity including health literacy and cultural sensitivities etc. as may be necessary for the patient and/or family involved in the disclosure process. s

Appendix 5

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Alberta Health Services (AHS)

Videos to support early disclosure conversations are available on the AHS YouTube Channel. To access these videos, search "AHS Channel" on YouTube, then enter "disclosure" into the search function within the AHS Channel.

Enhancing Patient Safety Across the Health Professions

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