CANADIAN FRAMEWORK FOR TEAMWORK AND COMMUNICATION

Literature Review, Needs Assessment, Evaluation of Training Tools and Expert Consultations

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Canadian Patient Safety Institute
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Canadian Framework for Teamwork and Communication: Literature Review, Needs Assessment, Evaluation of Training Tools and Expert Consultations

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When Teamwork and Communication Fail: A Mother's Story

By Donna Davis

As a parent it is always at the back of your mind that your child may be hurt in some way, some time. Being the parents of four children we were no different and had been through the usual broken bones, bumps, and bruises. This time though, it was much more frightening. The fear that coursed through me when our only son had a motor vehicle accident and was missing for 36 hours was like nothing I'd ever encountered before. But, it was going to be okay now. He was in the hospital under the care of experts who were familiar with head injuries such as his. "It is just a minor head injury that is going to take time and rest," I'm told. I believe them because I want so desperately for it to be true. I am a little concerned though, because it seems that staff is not hearing what I am telling them about my son and about the accident. I still have confidence everything will be fine; after all, his injury is minor.

I am becoming more concerned. I notice my son's condition is deteriorating but the staff do not hear my concerns. I am respectful and cautious in voicing my observations to the staff. I know they are busy with many demands to meet. I don't want to alienate the people who hold my son's life in their hands but I am so scared. My mother's intuition and love for my son is telling me something is terribly wrong. But no one will listen. The physician is too busy to speak with me. My concerns are dismissed or explained away as irrelevant. I know my son better than anyone else. Why won't they listen to me? I am so scared I can hardly think. There is a knot in my stomach and a physical pain in my heart that is a foreboding that something terrible is happening. I see him dying before my eyes. I'm his mom, I'm supposed to protect him but I can't get anyone to help me.

Now, he is brain dead. My young, handsome, hard-working son is never going to phone me again just to say "Hi, I love you." He will not play hockey, ride a horse, and spoil his little niece. He came into this world in my arms; I want to hold him in my arms one last time but the side-rails are up, the bed is up high and there are machines and tubes everywhere. I just want to hold him close to me but I can't. No one will help me. The silence I encounter in this busy, healing place is deafening. Staff hurrying everywhere, yet I have never been so alone in my life. Why did this have to happen? If only someone had heard and acted on my concerns. If only the staff had communicated his deteriorating condition with each other. If only the environment had valued the assessment and evaluations of novice staff as well as senior staff. If only peer guidance and support had been present and willingly provided. If only effective handoffs had taken place. The "if only"s won't bring our son back or heal our broken hearts, but I hope by reading this experience and using the guidelines of this document we can all work towards care that will prevent another mother's heart from breaking.

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MESSAGE FROM HUGH MACLEOD

CEO, Canadian Patient Safety Institute CEO

With the unveiling of our strategic plan in 2010, the Canadian Patient Safety Institute introduced our main guiding theme: "Ask.Listen.Talk – Good healthcare starts with good communication." One of the CPSI's main strategic priorities in this plan is the effective integration of tools and resources into practice to ensure patient safety. It is no wonder then that we have made it a priority in the past year to develop this Canadian Framework for Teamwork and Communication.

To address this priority and to begin a dialogue on a national strategy to approach effective teamwork and communication, a Working Group comprised of quality and patient safety leaders and experts was established in September 2009. I would like to express my appreciation for the efforts of this group, and for the contributions of the experts and CPSI staff members who were consulted and took part in the creation of this comprehensive document.

CPSI has been pleased to provide secretariat and funding support to the Teamwork and Communication Working Group[1] chaired by Jane Mann and Cathy O'Neill. The efforts of this group are gratefully appreciated, as their work greatly supports the CPSI mission "to inspire extraordinary improvement in patient safety and quality."

1 See list of Working Group members and participating organizations on Page i.

MESSAGE FROM JANE MANN, RN, BSCN AND CATHY O'NEILL, RN, BSCN, PMPA(C)

Co-chairs, Teamwork and Communication Working Group

We have been honoured to serve as co-chairs of the Teamwork and Communication Working Group that was formed by the Canadian Patient Safety Institute in August 2009. The aim of this working group was to

1) Research and understand the current climate regarding teamwork and communication in Canadian healthcare.
2) Research, understand and recommend strategies to support effective teamwork and communication in the Canadian context.
3) Develop a framework to align with two of our Competency Framework domains: "Work in Teams for Patient Safety" (#2) and "Communicate Effectively for Patient Safety" (#3).
4) Integrate existing CPSI initiatives that support effective teamwork and communication.
5) Publish results of the project in a peer reviewed journal and at conferences.

It was evident from the beginning of our journey that we had an important task ahead of us, as we realized that the work we were about to embark on could have a significant influence on patient safety across the country. However we were confident that with the dynamic group of diverse and committed quality and patient safety leaders from across Canada in our Working Group, we would succeed.

In order to achieve the critical level of learning we felt we needed to understand the impact of teamwork and communication on patient safety, we sought out and immersed ourselves in methodologies such as inquiry based learning, positive deviance and human factors. We engaged with teamwork and communication experts from around the world including Dr. Ivy Oandasan, Dr. Alan Frankel and Dr. Michael Leonard as well as the Australian Commission on Safety and Quality in Health Care (ACSQHC) who are leading the way in clinical handovers and team training. Brief summaries of their work as it applied to our project is provided in the section of this document entitled "Consultation with Experts."

We also sought input from those who work in healthcare to understand what their needs are in regard to teamwork and communication. Most importantly, through our engagement with Patients for Patient Safety Canada (PFPSC), the voice of patients and families was sought to ensure our work embraced them as essential members of healthcare teams. This process of learning helped us define our scope and create the information and recommendations that rest within this document.

It is our intent that this document be utilized by all levels in health care organizations, from front-line staff to CEO, as they constantly look for ways to provide the safest care for their patients and families. The incorporation of effective teamwork and communication in safe patient care is essential and is an ongoing process – not one that can be "rolled out" over a period of weeks or months. It

requires cultural change within our organizations to truly sustain the knowledge, skills and attitudes that are the key elements of effective teamwork and communication. We are well aware of the harm that can occur when teamwork and communication are not effective.

This document is only a beginning, one which we anticipate will encourage conversation and ultimately transform discussion to action. Our challenge in healthcare organizations across Canada is to do what is necessary to improve our teamwork and communication and prevent Donna's story from being repeated.

Thank you to all members of the Teamwork and Communication Working Group for your insight, passion and dedication in bringing this document to life. In addition thank you to Paula Beard, Project Director and Cindy Winfield, Project Manager for your support and willingness to listen as we the co-chairs, with your help, guided this project to fruition.

THE CHALLENGE

Introduction

Healthcare providers work in complex, demanding and dynamic environments, which is why effective teamwork and communication are critical for the safe delivery of health care. Communication breakdowns and teamwork failures have been identified as key contributing factors in the occurrence of patient safety incidents [1, 2, 3]; conversely, effective teamwork and communication has been cited as essential for achieving high reliability systems and creating a "culture of safety" to support the safe delivery of patient care [4].

High performing teams share a common vision, possess a strong sense of trust and confidence, optimize collaboration, communication and coordination and understand one another's professional roles and responsibilities. Good communication is defined as the accurate and unbroken transmission of information that results in understanding [5, 6], while teamwork is defined as "the interaction or relationship of two or more health professionals who work interdependently to provide care for patients."[7] In effective teams, members: "i) are mutually dependent; ii) see themselves as working collaboratively for patient-centred care; iii) benefit from working collaboratively to provide patient care: iv) share information which may lead to shared decision-making; and, v) know when teamwork should be used to optimize patient-centred care" [7].

Teamwork and communication do not occur in vacuum and must be accompanied by a number of foundational elements to effectively thrive and support safe patient care. These elements include the following:

- Active involvement of patients and families as part of their care team;
- Leadership that establishes a vision of organizational excellence and optimal care delivery;
- A culture of safety where staff feel safe to report and learn from patient safety incidents;
- Individual and organization accountability to support patient safety clearly embedded within the organization;
- A care process that is transparent to the patient and their family, where data is readily shared, and open, honest disclosure occurs related to patient safety incidents;
- Organizational commitment to continuous learning and process improvement; and
- A collaborative model for effective teamwork and communication that is the stated norm and is known, taught and reinforced within the organization.

Goal of this document

Although the value of good teamwork and communication is well-recognized in healthcare, the complexity of healthcare and the dynamics among healthcare providers creates a myriad of challenges to creating sound practices. Considering these challenges and the broadness of the topic, the Working Group members felt that the most valuable contribution they could make would be to help

organizations navigate the extensive literature and resources available. The goal of this document is therefore to provide a framework for organizations to understand and convey to their teams the importance and impact of teamwork and communication in healthcare, and to select appropriate training tools to improve this. To this end, the Working Group conducted research on strategies to support effective teamwork and communication in the Canadian context through:

- A comprehensive review of the literature on effective teamwork and communication;
- A needs assessment to understand the status of teamwork and communication within Canadian healthcare organizations;
- A review of teamwork and communication training programs; and
- Consultation with national and international experts in teamwork and communication.

The sections that follow provide summaries of these endeavours as well as recommendations for consideration by leaders, decision makers, healthcare providers, educators and CPSI intended to support the integration of effective teamwork and communication into healthcare.

The role of patients on the healthcare team

Although this document and the literature review are focused on strategies to enhance provider to provider teamwork and communication, we fully recognize that patient to provider communication is key to a successful healthcare encounter. In fact, the recognition that patient and families represent key members of the healthcare team underpinned this entire initiative. Patient to provider communication is a two way process where the family receives the information they need and feel comfortable speaking up with information or concerns they have. The organization needs to support this environment, recognizing it as a necessary component for patient safety and a satisfying patient/family experience. This understanding is reflected in A Mother's Story (see p. 3) and in the recommendations that follow.

THE FINDINGS

Summary of the Literature Review

The purpose of the literature review was to provide a comprehensive understanding of existing research on effective teamwork and communication in Canada and internationally. To shape the scope and content of the literature review and the direction of the work, the Working Group undertook an inquiry based learning (IBL) session to create a concrete list of questions and concepts to inform the literature review. See the section entitled *Summary of Consultation with National and International Experts* for a summary of IBL.

The literature review sought to examine the components and/or models of teamwork, communication and patient safety culture, existing team training programs for healthcare providers, and the scope and type of tools for improving teamwork and communication.[2] The following summary of these findings is presented here within three broad headings:

I. What are the characteristics of effective teams in healthcare?

II. What are the characteristics of effective communication in healthcare?

III. Are teamwork and communication important to a culture of patient safety?

It should be noted that the literature review was completed in June 2010 and thus does not capture publications since this date with the exception of those citations noted.

What are the characteristics of effective teams in healthcare?

Teamwork is a complex and dynamic process and the skills and behaviours to support team performance and the safe delivery of patient care must be taught and evaluated [(8)]. The generic knowledge, skills and attitudes (KSA) required by healthcare providers to perform within teams (see Appendix A, Table 2) are summarized by Baker, Day and Salas [(9)] to include: team leadership; mutual performance; backup behaviour; adaptability; shared mental models; closed loop communication and a collective orientation. When team members possess these KSAs, their performance is highly effective and efficient. Salas, Sims and Klein [(10)] describe the characteristics of effective teams, as summarized in Table A on the follow page:

2 The literature review also identified concepts such as high reliability organizations and inter-professional practice and education. Since these concepts were not the main focus of the review they are not presented in this summary. The reader is referred to the full literature review for additional details on these concepts. (Appendix A).

Table 1 – Characteristics of effective teams

Knowledge, Skills, and Attitudes Required by Healthcare Providers	Characteristics of Effective Teams (adapted from Salas, Sims and Klein, 2004) [11]
Team leadership	Have a clear common purpose Team member roles are clear but not overly rigid Involve the right people in decisions Conduct effective meetings Establish and revise team goals and plans Team members believe the leaders care about them Distribute and assign work thoughtfully
Backup behaviour	Manage conflict well; team members confront each other effectively Regularly provide feedback to each other, both individually and as a team ("debrief") "Deal" with poor performers
Mutual performance monitoring	Effectively "span" boundaries with stakeholders outside the team Members understand each others' roles and how they fit together Examine and adjust the team's physical workplace Periodically diagnose team "effectiveness," including its results
Communication	Communicate "often enough" (see Table 2)
Adaptability	Members anticipate each other Reallocate functions Recognize and adjust their strategy under stress Consciously integrate new team members.
Shared mental models	Coordinate without the need to communicate overtly
Mutual trust	Trust other team members' "intentions"
Team orientation	Select team members who value teamwork Strongly believe in the team's collective ability to succeed

The literature suggests that a successful transfer of KSAs to clinical practice, and therefore an improvement in patient safety is unlikely to be permanently achieved with any single intervention or approach. A combination of classroom training to teach KSAs and simulation to practice clinical scenarios and crisis situations has been suggested as a prudent approach [12]. Successful training is dependent on the curriculum and instructional strategies and organisational variables such as leadership support, resource availability, training environment, readiness for change [13, 14, 15], buy-in from personnel at the management and staff level and a champion to monitor and keep the effort

active [16]. Team training is widely applied as a strategy to improve team performance [9]. Salas et al. [17] provided seven evidence-based, practical and systematic success factors for preparing, implementing and sustaining a team training and performance improvement initiative:

1) Aligning team training objectives and safety aims with the organizational goals;
2) Providing organizational support for the team training initiative;
3) Getting frontline care leaders on board;
4) Preparing the environment and trainees for team training;
5) Determining required resources and time commitment and ensure their availability;
6) Facilitating application of teamwork skills on the job parallel with or subsequent to training;
7) Measuring the effectiveness of the team training program.

What are the characteristics of effective communication in healthcare?

The literature identifies communication in healthcare between individuals as often "informal, disorganised and variable" [18]. Yet in complex situations, accurate information must be relayed in a manner that ensures the right information is conveyed to the right person.

Structured communication techniques to support effective communication are detailed in the following table:

Table 2 – Communication techniques, tools, and strategies

Communication Techniques, Tools and Strategies	Characteristics
Briefings	• Set the tone for team interaction • Ensure that care providers have a shared mental model of what is going to happen during a process to identify any risk points and plan for contingencies. • Can establish predictability, reduce interruptions, prevent delays and build social relationships for future interactions [19].
Debriefings	• Used to identify what happened in a particular circumstance, what was learned, and what can be done better next time. • Allows the team to determine how members are feeling about processes and recognises opportunities for improvement and further education. • The effectiveness of a debriefing is dependent on the quality of the briefing [20]

Communication Techniques, Tools and Strategies	Characteristics
Assertive Language	• Effective assertion is persistent, polite, timely, clear and solution focused. The two-challenge rule, where a concern is stated at least two times to ensure it has been heard, is a form of assertive language. • Using "CUS"as a guideline - "I'm **C**oncerned," "I'm **U**ncomfortable," "This is a **S**afety issue"- allows for succinct escalation of a concern
Critical Language	• A strategy to get another's attention. • Flags the immediacy of a concern to members of the team [18]. • Ensures that specific, relevant, critical information is communicated each time a patient is discussed. (Eg. SBAR - Situation, Background Assessment, and Recommendation) is used in clinical handovers and is valuable within nurse-physician communication [21].
Common Language	• Agreed upon method of communicating critical issues or concerns [18]
Closed Communication Loop	• Receiver of communication restates what was said to the sender to ensure correct understanding of a message.
Active Listening	• Entails listening completely, maintaining eye contact and body language and repeating back what was said to confirm understanding.
Call Outs	• Used particularly in the OR to confirm the phase of a process.

The effectiveness of these structured communication tools are not widely studied. Some evidence suggests that the use of them has resulted in improvement such as reductions in OR delays [8], wrong site surgeries [22] and patient safety incidents [23]. The literature also identifies a number of barriers to effective communication. Dayton and Henriksen [24] identified five key impediments to effective communication in the clinical setting:

1) Interruptions that affect work flow and the successful completion of tasks;
2) Team members who are educated in their respective discipline in a siloed manner resulting in ingrained assumptions about the other which can hinder communication;
3) Traditional hierarchy in healthcare that creates behaviour patterns that inhibit effective communication and dissemination of essential information and may lead to occurrence of a patient safety incident;
4) Role clarity is not always evident within the complex healthcare environment lending to confusion at the provider/patient interface; and
5) Handovers at several points in the patient care trajectory increase the risk for miscommunication and loss of vital patient information.

Are teamwork and communication important to a culture of patient safety?

Safety culture in any setting encompasses the "shared beliefs and practices of organization members regarding the organization's willingness to detect and learn from errors" [25]. While no commonly accepted definition of safety culture in a healthcare setting has been adopted, patient safety culture has been reported to encompass: 1) a shared belief that healthcare is a high-risk undertaking; 2) a commitment to detecting and analysing patient injuries and near misses; and 3) an environment that balances the need for reporting of incidents and individual accountability. [25]

Sammer et al [26] conducted a comprehensive literature review to identify key concepts of a patient safety culture. Seven subconcepts were identified: leadership, teamwork, evidence based practice, communication, learning and just patient centered care. Teamwork and communication were identified as integral to a culture of safety. Patient safety depends on teamwork [27] and safety is improved only when information is shared [28]. While not definitively linked to decreased patient safety incident rates, teamwork training has been associated with improvement in safety culture measures. Structured communication strategies (such as SBAR and CUS, as described in Table 2) have been implemented to tackle cultural issues of hierarchies and communication problems, although their impact on safety culture and patient safety incident rates remains unclear. What is clear is that a culture of shame and blame is the antithesis to the advancement of safety culture[6], and identifying and correcting underlying deficits related to teamwork and communication are fundamental elements of a sound organizational strategy.

Gaps in the Literature

While the importance of team training to support patient safety is intuitively sound, there is a need for healthcare to develop agreed upon teamwork-related knowledge, skills and attitude competencies [29]. The literature touches on suitable formats for carrying out team training but recommendations on what constitutes the "best" delivery in terms of how curricula is taught and length/duration/frequency of training are absent. [3]

Theories related to healthcare specific constructs for teamwork and team effectiveness also need to be developed. Currently, the idea of effective teamwork is based on the framework advocated by Salas and colleagues. However, the Salas model requires testing in healthcare to determine the relations among predictors of performance, team KSAs and the relations between predictors of knowledge, skills and abilities (KSAs) and outcome criteria.

A gap also exists in relation to team training strategies in health specialties where specific KSA requirements are central to enhancing teamwork performance. Generally, communication tools lack empirical data to support the evidence of their effectiveness in supporting patient outcomes; the evaluation of the effectiveness of individual communication tools is not reported.

3 "The Safety Competencies – Enhancing Patient Safety Across the Health Professions", developed by CPSI, is a foundational framework that identifies the knowledge, skills, and attitudes required by all health care professionals critical in providing safe health care.

Summary of the Needs Assessment

Given the challenges in improving teamwork and communication, such as organizational/workplace culture, lack of training and the nature of healthcare itself, the working group considered it essential to conduct a needs assessment to better understand the interest, will and capacity to receive and implement strategies to support effective teamwork and communication within the Canadian healthcare system. It was also a vital step in the process to explore the optimal delivery format(s) for a program that supports this work, and to understand perceptions pertaining to the barriers and enablers to implementing effective strategies. The following questions served as the basis for this research:

- What is the interest in teamwork and communication among health care organizations?
- How strong is the will within organizations to implement teamwork and communication programs and tools?
- How would training on teamwork and communication, as it pertains to patient safety, align with the current state of organizations?
- What is the capacity within organizations for such an initiative?
- What delivery model would work best for these organizations?

Methodology

CPSI engaged Prairie Research Associates Inc (PRA) to conduct key informant interviews with health professionals and administrators across the country to provide their opinions and perceptions on teamwork and communication and ultimately patient safety. Key informant interviews are a qualitative technique that allows for the gathering of more detailed information than would be the case in a survey. For the purpose of this research, a sampling of 25 interviews was considered adequate by PRA.

In order to collect a range of opinions across the healthcare spectrum in Canada, the Working Group developed a list of potential key informants representing a variety of health organizations (e.g., hospitals, nursing homes, health regions, etc.), different responsibilities within these organizations (e.g., CEOs, managers, physicians, educators, and frontline staff), and various regions across the country.

Table 3 describes the positions of those interviewed.

Table 3 – Roles of those interviewed

Role	n
Patient Safety/Quality Improvement/Risk Management	7
CEOs	5
Frontline staff (nursing, pharmacy, allied health professionals)	4
Managers/directors	4
Educators	3
Physicians	2

Total	**25**

The 25 key informants who participated in this research were located in eight provinces and one territory *(see Table 4)*.

Distribution of Interviewees

Table 4 – Regional distribution

Geographic Area Represented	Number of Participants (n)
The North	2
British Columbia	5
The West	2
Ontario	10
Quebec	3
Atlantic Canada	3
Total	**25**

Telephone interviews were conducted between August 5 and September 8, 2010. Although these interviews involved a variety of professionals, they cannot be said to be representative of the health care provider population. As such, these findings are considered as a guide only, and are not intended to be extrapolated to the population as a whole.

The following are the salient points most commonly identified in the responses to the study:

- Poor communication and teamwork is often a contributing factor of patient safety incidents, and patient safety improves with effective teamwork and communication.
- Patient safety is often identified as an organizational priority but the link between effective teamwork and communication as a means of supporting patient safety is not always made.
- Challenges to effective teamwork and communication include organizational culture and structure, workplace culture, lack of training and resources, and the nature of healthcare (including the business of day to day operations and the fact teams are dynamic in nature.)
- Structured team training would fit into organization's planning, current set of priorities and culture, and organizations are interested in effective teamwork and communication strategies that support safe patient care.
- Organizations were engaged in initiatives related to teamwork and communication either within their strategic plan or being discussed.
- Although teamwork and communication were not necessarily new concepts within some organizations, they were not always well articulated as a priority nor included as topics closely related to patient safety.
- Recognition of the importance of effective teamwork and communication at the senior levels of the organization did not always permeate to the frontline care providers.

- Existing teamwork and communication programs and tools were considered "too broad" and not consistently applied across all departments and amongst all staff.
- Designated leaders existed within the organization but had limited time or resources to champion any new initiatives.
- Greater alignment was likely to occur in those organizations where education and training were a focus and where leadership supported teamwork and communication.
- The most commonly mentioned tool was SBAR (Situation-Background Assessment-Recommendation) and was used as a stand alone tool or in conjunction with others. SBAR was frequently applied in specific areas but not universally throughout the organization. Few organizations appeared to have stand alone programs that focus on teamwork and communication or training programs that incorporate these elements.

Key informant interviews emphasized that successful uptake of a teamwork and communication program would be influenced by:

- aligning teamwork and communication with existing patient safety and quality initiatives to minimize competing priorities.
- availability of time and resources.
- evidence of relevance, outcomes and benefits (e.g. research, cost-benefit);
- buy-in from all levels of the organization from frontline staff to senior management and from all departments and units, each with their own culture. Healthcare providers assume they know how to communicate and work as a team, and as such, a training program may not be a priority.
- training that would provide all health workers with core competencies in teamwork and communication and is transferable to all settings.
- the nature of the training, how it is implemented, the amount of time required, and the resources available. Training programs need to be flexible, adaptable and integrated into existing programs and initiatives thus avoiding added workloads for participants.

The key informants suggested that two critical components for successful implementation of a teamwork and communication training program were the influence of leadership and the delivery method.

Leadership would:

- endorse teamwork and communication training as they are ultimately responsible for safe patient care within the organization.
- clearly identify champions, including physician leaders, who are willing and able to support a teamwork and communication initiative prior to implementation of any training program.

A delivery method (training type) would:

- be adaptable to meet the characteristics (eg: size, geographical location, resources) of the

organization as well as the specific department and units; customization is key factor to success.

- be delivered to all levels within the organization, adaptable in terms of delivery time because of shift work, and incorporated easily into orientation provided to new staff.
- be based on models that do not require all staff attend and a variety of delivery methods (preferably train-the-trainer methods). Training should be available online and be modular in nature.
- be integrated into existing training programs and educational sessions as acceptance of a program is less likely if it is seen as a "new initiative."

Summary of Team Training Research

As a result of the literature review, 13 team training programs and one team training framework (Crew Resource Management) were identified. For a more in depth understanding of each program, we also conducted a structured review of these programs with a specific focus on their applicability to the Canadian healthcare context.

Methodology

The working group formulated a series of questions for the purposes of gathering information on each program. This information was used to populate a matrix to highlight aspects of each program in five categories. The questions and categories were selected to assist organizations when considering the use of a certain program. The five broad categories included:

- Background information on the program or framework
- Applicability of the program to Canadian healthcare
- Program delivery
- Outcomes
- Tools

To efficiently obtain answers to these questions, CPSI engaged an independent research firm, Prairie Research Associates (PRA) to seek responses to the questions generated by the subcommittee and to populate the matrix in Appendix C).

Findings

The training programs and framework share the common goal of improving patient safety by optimizing human performance and reducing human error. There are strengths and weaknesses to all of the programs and all programs require financial commitment and time for implementation.

The following skills and tools were featured most commonly among all the programs (from most common to least common).

Skills
Situational awareness
Recognizing patient safety incidents/ RCA / FMEA
Human factors
Assertion
Leadership skills

Tools
Debriefings
Briefings / huddles
Structured communication tools
Closed communication/ feedback loops
Checklists/ standard protocols

The following table indicates the four team training programs (out of all 13 programs and the framework) for which the most information was available in relation to the categories and questions. The group agreed that the level of information provided for these four programs would be adequate to help inform the selection of the most appropriate team training program for any healthcare organization.

Table 5 - Summary of the available information for each of the four programs *(see Appendix C for more information on these programs)*:

Acronym	Name of Training Program
CRM	Crew Resource Management
TOPS	Triad for Optimal Patient Safety
MOREOB	Managing Obstetric Risk Effectively
TeamSTEPPS	Team Strategies and Tools to Enhance Performance and Patient Safety

Questions	CRM	TOPS	MORE-OB	TeamSTEPPS
Are curriculum details provided?	✓	✓	✓	✓
Is this program applicable to clinical health care professions?	✓	✓	✓	✓
Is the program applicable to non-clinical health care professions?	✓	✓	✓	X

Questions	CRM	TOPS	MORE-OB	TeamSTEPPS
Is the program applicable to health care administrators?	✓	X	✓	X
Is the program applicable to all levels of health care (e.g., acute care, LTC, community)?	✓	✓	X	✓
Is this program applicable to the Canadian context?	✓	✓	✓	✓
Are the modes of delivery used in this program described?	✓	✓	✓	✓
Are adult learning principles indicated?	✓	✓	✓	✓
Is the time required to prepare for the delivery of this program identified?	X	X	✓	X
Is the time required to participate in this program identified?	X	X	✓	X
Is the expected duration of delivering this program identified? (e.g.: require multiple dates or delivered at one time)?	X	✓	✓	✓
Are costs associated with this program including proprietary, delivery, personnel, and travel identified?	✓	✓	✓	✓
Is a specific research or methodology identified on which the program is based?	✓	✓	✓	✓
Is there a focus on behavioural changes?	✓	✓	✓	✓
Is behavioural science a component of the program?	✓	✓	✓	✓
Is the aim of the program to change behaviour?	✓	✓	✓	✓
Is the change indicated as being sustainable and measurable?	✓	✓	✓	✓
Are expected outcomes from implementing this program identified?	✓	✓	✓	✓
Is the use of communication-specific tools identified in this program?	✓	✓	✓	✓

✓ = Sufficient information to satisfactorily answer the question

X = Information was not available to answer the question or it was not satisfactory

These four programs demonstrated broad applicability based on the questions and responses garnered from team training program websites and key contacts, and therefore satisfied the majority

of criteria. More in depth information on each of these highly recommended programs is provided in Appendix C, but the following is a summary of each (listed alphabetically):

- **CRM** – The strengths of Crew Resource Management's approach includes interdisciplinary training for both clinical and non-clinical staff and a track record in healthcare for over 15 years. This course uses common communication tools such as SBAR, briefings and debriefings, and closed communication loops.
- **MORE-OB** – The Managing Obstetrical Risk Efficiently program was developed by *Salus Global*, a Canadian company. While it is obstetrics focused, the company has developed additional programs that have more general applicability for all areas of healthcare. Programs are available in both French and English.
- **TeamSTEPPS** – This is mainly clinical in focus and is widely used in the United States in both military and civilian health care settings. The curriculum is available in the public domain; the main cost consideration is that currently training can only be obtained in the United States. A caveat to this statement is that TeamSTEPPS has been recently introduced to participants of the Patient Safety Education Program offered by CPSI and is under license in South Australia.
- **TOPS** – The *Triad for Optimal Patient Safety* program is designed for clinical and non-clinical care providers. It can be used across the continuum of healthcare and is applicable to the Canadian context of care. Costing information was not provided other than cost varies by discipline and site.

Limitations

- The results of this team training research largely focused on the implementation of these team training programs within inpatient facility settings and did not encompass the full continuum of healthcare delivery (e.g. ambulatory and community care settings).
- This research did not focus on the important issue of how to sustain what was learned from a team training program post implementation.
- Although the critical importance of effective communication between healthcare providers and patients and families is recognized, this research did not examine the aspect of provider to patient communication in team training programs.

Despite these limitations, this review of team training programs provides a high level overview in terms of purpose, content, methodology, learning principles, expected outcomes, and applicability to the general Canadian healthcare context. Although it may not provide all of the necessary detail for an organization to confidently select one program, it is intended that this review provide organizations with the required information to identify which programs may meet their goals. After identifying a program, organizations will need to make assessments based on specific organizational needs.

Summary of Consultation with National and International Experts in Teamwork and Communication

Consultation with experts in quality and patient safety was recognized early as a strategy to support the development of knowledge within the Working Group and the success of this initiative. Key individuals were sought to provide guidance and input as the development of this document progressed. Engagement with these experts enlightened understanding of the varying strategies, research and methodologies for improving teamwork and communication in healthcare. A brief synopsis of the key lessons learned through the process of consultation follows.

A Framework for Safe and Reliable Care

Dr. Allen Frankel, Principle Pascal Metrics
Dr. Michael Leonard, Principle Pascal Metrics

Drs Allan Frankel and Michael Leonard, recognized experts in quality and patient safety, introduced the working group to their Framework for Safe and Reliable Care, an understanding of key components for effective team leadership attributes and team member behaviours which are summarized below (adapted from the September 23, 2009 presentation made by Drs Frankel and Leonard entitled "A Framework for Safe and Reliable Care").

Safety Leader Attributes
Enhance a positive culture through an environment of respect, teamwork and communication
Give assurance of psychological safety that recognizes people are fallible; concerns are important and will be dealt with; and expectation of superior safety and quality
Select team members in consideration of their KSAs to support clinical practice and improvement

Team Member Behaviours
Engage in briefings to convey shared mental models
Communicate clearly- e.g.: using closed loop communication; SBAR
Use conflict negotiation applying assertive and critical language
Engage in continuous learning using debriefings
Maintain situational awareness

Drs. Frankel and Leonard suggested that, through small investments of time, effective teamwork and communication can result in safer care.

Safety Culture

Dr. Mark Fleming, Department of Psychology, St. Mary's University, Halifax, Nova Scotia
Ms. Nicole Wilson, Human Resources Management & Organizational Behaviour, University of Alberta, Edmonton, Alberta

Dr. Mark Fleming, a recognized expert in safety culture and behaviour modification, and Ms. Nicole Wilson, a graduate student in organizational psychology, explained why effective teamwork is a prerequisite to a receptive safety culture. Safety culture was described in relation to the Safety Culture Maturity Model which proposes that safety culture moves from bad to good through five levels; pathological (attending to safety is seen as no added value), reactive (a response occurs in conjunction with an incident), bureaucratic (systems are in place to manage risk), proactive (organizations are alert for what might happen) and generative (risk management is key to every aspect of the organization). Safety culture motivates healthcare professionals to engage in behaviours that promote patient safety (including team training and open communication).

The State of Effective Teamwork and Interprofessional Education

Dr. Ivy Oandasan, Associate Professor and Research Scholar, Department of Family and Community Medicine, University of Toronto, Toronto, Ontario

Dr Ivy Oandasan, lead author of the Canadian Health Services Research Foundation (CHSRF) literature review on Effective Teamwork in Healthcare in Canada[7], shared her knowledge of what is known about effective team functioning and detailed the individual and organizational factors that influence teamwork, how teams can move from low to high functioning, the norms and values in teams and the barriers to collaboration. The CHSRF literature review found that healthcare providers working in effective teams can improve the quality of patient care, improve patient safety and positively impact healthcare providers (by reducing burnout). Dr. Oandasan strongly advocates for interprofessional, patient-centred care and for health profession educators to develop curricula and training models that support collaborative practice.

Positive Deviance: A Culture Change Management Approach to Reducing Health Care Acquired Infections

Dr. Michael Gardham, Director, Infectious Diseases Prevention and Control with the Ontario Agency for Health Protection and Promotion

Infection control expert Dr Michael Gardham shared his pilot work to introduce Positive Deviance (PD) to acute care hospitals in Canada to measure the impact of PD on Methicillin Resistant Staphylococcus Areus (MRSA) and Clostridium Difficile (CD). PD was described as a social change and improvement methodology that is premised on the belief that the solutions to seemingly immovable behavioural problems (eg: non compliance with hand washing) are discovered and adopted by certain individuals within a group. Positive deviance engages teams to identify and disseminate best practice to improve quality of care.

Information Flow Analysis in the Cardiac Operating Room

Dr. Avi Parush, Associate Professor of Psychology, Carleton University, Ottawa, Ontario

Dr. Avi Parush, whose research interest are in human factors in healthcare systems and patient safety, studied teamwork communication problems in the Cardiac Operating Room (OR) to assess implications for patient safety. Because patient safety incidents can be traced to the design and use of equipment, the research aimed to identify technology solutions to facilitate communication problems in the OR. Dr Parush and his team developed an information display system using human factors engineering methods. This display system provides critical patient information to OR team members and can minimize harm from communication breakdown and information loss, and is an example of how information technology can facilitate the work of clinicians and foster effective communication of critical information.

Inquiry Based Learning

Tavia Nazarko, Consultant
Kelly Kay, Consultant

To define the parameters to guide the comprehensive review of the literature, the Working Group applied an educational methodology known as inquiry based learning (IBL). IBL is a collaborative learning approach driven by learners' (in this case the Working Group) questions. IBL promotes teamwork, problem solving, critical thinking, communication and cooperation, attributes the group embraced as a means to move the work forward and at the same time model the teamwork and communication initiative. Through skillful modelling of a spirit of inquiry, Tavia Nazarko and Kelly Kay guided a process of questioning that supported discovery of the experience and the knowledge existing within the group. This process also "uncovered" the boundaries and key concepts that would direct the literature review and the research on team training programs and the degree to which organizations integrate or are prepared to embrace effective teamwork and communication to support quality and patient safety.

Clinical Handovers

Christy Pirone, South Australian Department of Health
Karen Stead, South Australian Department of Health
Chris Baggoley, Acting CEO, Australian Commission on Safety and Quality in Healthcare (ACSQHC)
Tamsin Kaneen, Australian Commission on Safety and Quality in Healthcare (ACSQHC)
Nicola Dunbar, Australian Commission on Safety and Quality in Healthcare (ACSQHC)

Christy Pirone and Karen Stead shared how TeamSTEPPS was implemented at five pilot sites. The program was tested to assess the applicability of the program to the Australian context. Additionally, an evaluation of how enhanced teamwork and communication KSAs improved clinical handovers using SBAR was undertaken. Chris Baggoley and Tamsin Kaneen gave a summary of the work they undertook which led to the ACSQHC's OSSIE Guide to Clinical Handover Improvement[8], which describes best practice and principles for clinical handovers. Nicola Dunbar shared the ACSQHC's work in comparing and making recommendations on designs for improving patient charts by

improving recognition and response to deterioration. Usability studies and pilot testing were identified as the next step in project.

These consultations with experts in quality and patient safety helped the Working Group broaden its understanding of research, methodologies and strategies to support effective teamwork and communication and thus greatly helped in the development of this document.

RECOMMENDATIONS

The work completed by the Teamwork and Communication Working Group is intended to highlight information that will be particularly helpful to decision makers and healthcare providers seeking guidance when selecting a course of action to support excellent teamwork and communication within their organization. As the Working Group examined and learned of efforts to improve communication and teamwork in Canada and abroad it became evident that there are many opportunities for improvement. As a result, the Working Group has developed a number of recommendations framed for consideration by leaders and decision makers, middle managers, frontline care providers, educators and CPSI.

Leaders and Decision-makers

- Actively promote, fund and evaluate integration of teamwork and communication training and education programs within organizations and pre-practice settings.

Middle Managers

- Establish formalized training in effective teamwork and communication as part of the core education and continuing education requirements within healthcare organizations with a particular focus on everyday practice and crisis situations.
- Standardize (as much as possible) general approaches to teamwork and communication training across organizations.
- Consider incorporating one of the recommended training approaches contained within this summary document.

Front-line Healthcare Providers

- Actively incorporate patients and family members as full members of the healthcare team ensuring all opportunities are sought and created to solicit information for healthcare decisions.
- Actively engage and participate in training opportunities for improved teamwork and communication and commit to integrating this knowledge into practice.

Educators

- Continue to encourage and support interprofessional practice education in all health professional programs

Canadian Patient Safety Institute (CPSI)

- Ensure continued collaboration with Accreditation Canada to design and maintain required

organizational practices and standards that support organizational and provider participation in safe teamwork and communication practices.

- Actively promote the integration of evidence-based teamwork and communication training through relevant CPSI programs, such as the Patient Safety Education Program (PSEP).
- Endorse the inclusion of teamwork and communication training through interprofessional practice education in health professional programs
- Endorse the integration of standardized teamwork and communication training within Canadian healthcare organizations across all sectors of care.

CONCLUSION

The journey to embrace and entrench effective teamwork and communication may be fraught with challenges. The German philosopher Goethe offered that "Knowing is not enough; we must apply. Willing is not enough; we must do." We have the knowledge, in the form of an ever-expanding body of literature extolling the value of teamwork and communication in improving patient safety; we now have to transform this knowledge into action. Organizations that embrace the value of teamwork and communication as a "must have" rather than a "nice to have" will ultimately strengthen their ability to provide safe patient care.

An impassioned plea: A mother's story (continued)

As a Mother who experienced a tragic outcome, Donna offers this impassioned plea on behalf of patients and families:

Circumstances have brought us together and now I am your patient; frightened, confused, frustrated and vulnerable. I need to trust that you will provide me with the safest care possible. I also need to be engaged in my care. Please listen to me, listen to my family as we provide the information that only we can provide. Listen to our questions, be receptive to our need to understand and fill in our knowledge gaps. We may not understand the processes involved in care delivery so may ask more than once for you to again explain the why, when and how's. Be patient, use clear, plain language. We will feel reassured that you are listening when we have a two way conversation.

My family and I have gone online to educate ourselves about my condition and the system in which my care will take place. Please accept these efforts to become engaged as a sign of our willingness to actively participate as members of the healthcare team. We are not trying to tell you how to do your job. Rather, we are trying to be active members of the care team. I'll do anything to help you help me.

I need to feel confident that everyone will have the courage to advocate for me if I am unable. Please respect the courage my family displays when intuition or a "gut feeling" tells them something isn't right. Please take their intuition to heart. We are active partners and need to share all information to support safe care and good outcomes.

I have tried to put myself in your shoes, but I can't imagine how, day in and day out, you see humanity at its weakest and still find the strength to help me. I'm just glad you can.

REFERENCES

1. Gawande AA, Zinner MJ, Studdert DM, Brennan TA. Analysis of errors reported by surgeons at three teaching hospitals. Surgery. 2003;133(6):614-21.

2. Sutcliffe KM, Lewton E, Rosenthal MM. Communication failures: an insidious contributor to medical mishaps. Acad Med. 2004;79(2):186-94.

3. Risser DT, Rice MM, Salisbury ML, Simon R, Jay GD, Berns SD. The potential for improved teamwork to reduce medical errors in the emergency department. The MedTeams Research Consortium. Ann Emerg Med. 1999;34(3):373-83.

4. Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. Qual Saf Health Care. 2004;13 Suppl 1:i85-90.

5. Feldman M, March J. Information as signal and symbol. Admin Sci Quart. 1981;26(2):171-86.

6. Stohl C, Redding WC. Messages and message exchange processes. In: Jablin F, Putnam L, Roberts K, Porter L, editors. The handbook of organizational communication. Beverly Hills (CA): Sage; 1987. p. 451–502.

7. Oandasan I, Baker GR, Barker K, Bosco C, D'Amour D, Jones L, et al. Teamwork in healthcare: promoting effective teamwork in healthcare in Canada. Ottawa (ON): Canadian Health Services Research Foundation 2006.

8. Frankel A, Gardner R, Maynard L, Kelly A. Using the Communication and Teamwork Skills (CATS) Assessment to measure health care team performance. Jt Comm J Qual Patient Saf. 2007 Sep;33(9):549-58.

9. Mickan S, Rodger S. Characteristics of effective teams: a literature review. Aust Health Rev. 2000;23(3):201-8.

10. Guise JM, Lowe NK. Do you speak SBAR? J Obstet Gynecol Neonatal Nurs. 2006; 35(3):313-4.

11. Salas E, Sims, DE, Klein C. Cooperation and teamwork at work. In Spielberger CD, editor. Encyclopaedia of applied psychology. San Diego: Academic Press; 2004. p. 497–505.

12. Pratt SD, Sachs BP. Team training: classroom training vs. high-fidelity simulation: Agency for Healthcare Research and Quality; 2006.

13. Baker DP, Day R, Salas E. Teamwork as an essential component of high-reliability organizations. Health Serv Res. 2006;41(4 Pt 2):1576-98.

14. Salas E, Cannon-Bowers J. Design training systematically. In: Locke EA, editor. The Blackwell handbook of principles of organizational behavior. Malden (MA): Blackwell Publishing; 2000. p. 43-59.

15. Salas E, Cannon-Bowers JA. The science of training: a decade of progress. Annu Rev Psychol. 2001;52:471-99.

16. Weaver SJ, Rosen MA, DiazGranados D, Lazzara EH, Lyons R, Salas E, et al. Does teamwork improve performance in the operating room? A multilevel evaluation. Jt Comm J Qual Patient Saf. 2010;36(3):133-42.

17. Salas E, Almeida SA, Salisbury M, King H, Lazzara EH, Lyons R, et al. What are the critical success factors for team training in health care? Jt Comm J Qual Patient Saf. 2009;35(8):398-405.

18. Frankel A, Leonard M, Simmonds R, Haraden C, Vega KB. Essential guide for patient safety officers. Oakbrook Terrace (IL): Joint Commission Resources; 2009.

19. Makary MA, Holzmueller CG, Thompson D, Rowen L, Heitmiller ES, Maley WR, et al. Operating room briefings: working on the same page. Jt Comm J Qual Patient Saf. 2006;32(6):351-5.

20. Frankel AB, Leonard M. Essential components for patient safety strategy. Perioper Nurs Clin. 2008;3(4):263-76.

21. Raines M, Mull A. Give it to me: the development of a tool for shift change report in a level I trauma center. J Emerg Nurs. 2007;33(4):358-60.

22. Makary MA, Mukherjee A, Sexton JB, Syin D, Goodrich E, Hartmann E, et al. Operating room briefings and wrong-site surgery. J Am Coll Surg. 2007;204(2):236-43.

23. Whittington J, Nagamine J. SBAR: application and critical success factors of implementation. Institute for Healthcare Improvement; 2006 [cited 2010 May 28th]; Available from: http://www.managedcare.com.

24. Dayton E, Henriksen K. Communication failure: basic components, contributing factors, and the call for structure. Jt Comm J Qual Patient Saf. 2007;33(1):34-47.

25. IOM report: patient safety—achieving a new standard for care. Acad Emerg Med. 2005;12(10):1011-2.

26. Sammer CE, Lykens K, Singh KP, Mains DA, Lackan NA. What is patient safety culture? A review of the literature. J Nurs Scholarsh. 2010;42(2):156-65.

27. Salas E, Sims D, Klein C, Burke CS. Can teamwork enhance patient safety? Forum Risk Manag. 2003;23(3):5-9.

28. Mann S. Changing culture: implementation of MedTeams. Forum Risk Manag. 2003;23(3):14-8.

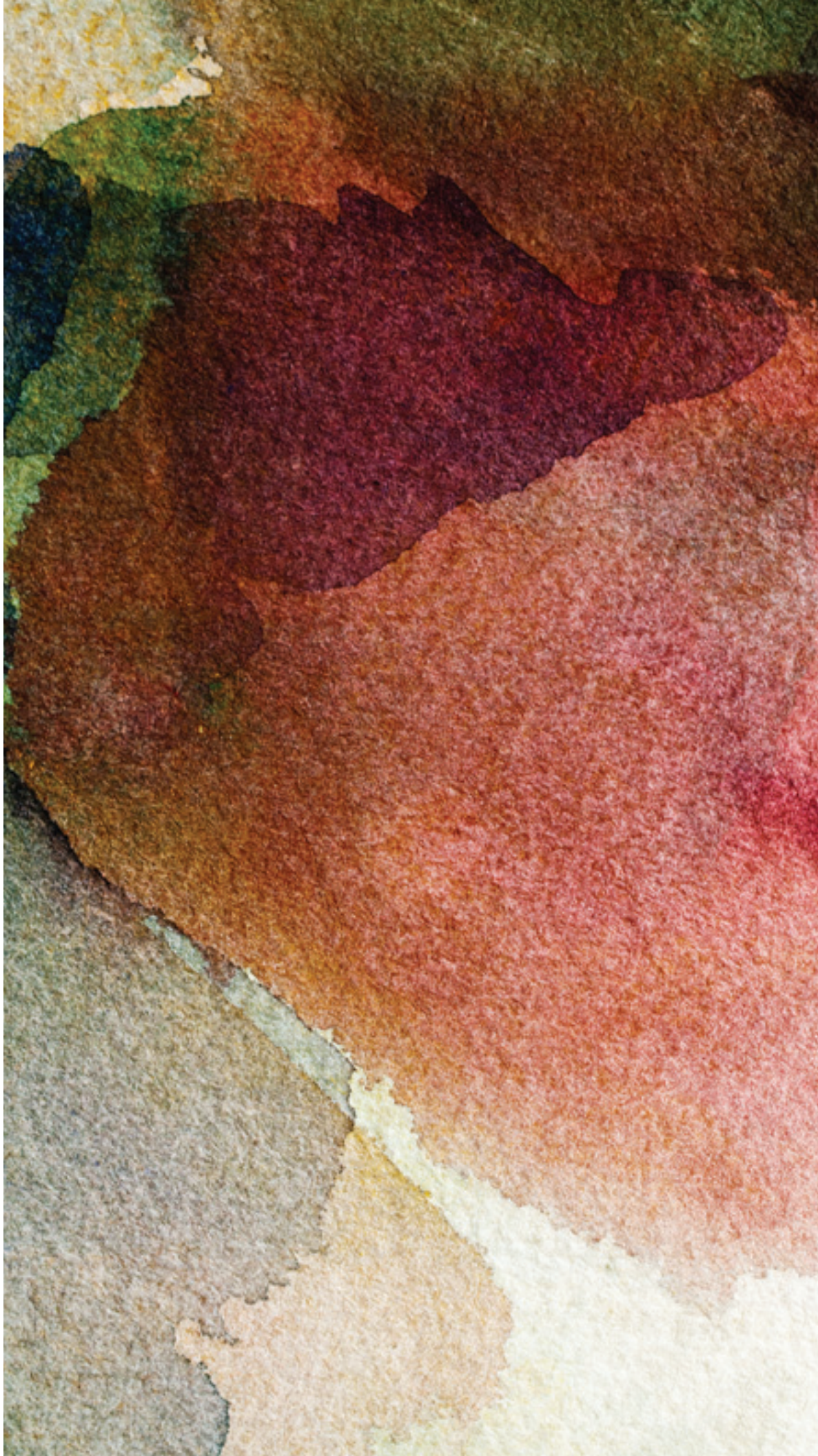
29. Baker DP, Gustafson S, Beaubien JM, Salas E, Barach P. Medical team training programs in health care. Advances in patient safety: from research to implementation (vols 1-4). Rockville (MD): Agency for Healthcare Research and Quality; 2005. p. 253-67.Australian Commission on Safety and Quality in Health Care. The OSSIE Guide to Clinical Handover Improvement. Sydney, ACSQHC; 2006.

The following companion documents to this framework can be found at www.patientsafetyinstitute.ca:

Appendix A – Teamwork and Communication in Healthcare: A Literature Review

Appendix B – Consultation with Health Professionals and Administrators: Regarding Teamwork and Communications

Appendix C – Report on Summary of Team Training Programs



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