A Guide to Patient Safety Improvement

Integrating Knowledge Translation & Quality Improvement Approaches
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This guide is built upon the following models, theories and frameworks

CPSI Knowledge Translation & Quality Improvement
Integrated Learning Design

Guiding our Learning Design

The Model for Improvement

Knowledge to Action Cycle

COM-B Theory

References:
Why a Guide?

When it comes to patient safety, a substantial body of evidence exists to demonstrate interventions [leading practices and processes] that lead to improved patient outcomes for numerous healthcare conditions. In spite of available evidence, practice changes are not implemented consistently and effectively to support organizations and teams to address patient safety challenges.

Implementation Challenge

Organizations and teams invest resources and time in Safety Improvement Projects as a direct response to this implementation challenge. The term interventions is used throughout the document and is intended to mean the use of context-tailored strategies together with evidence-based practice change ideas. Teams will be empowered and equipped with tools, resources and strategies to effectively implement patient safety practices in Canadian healthcare. These strategies can also be adapted to fit the international healthcare context.

Using this Guide

This resource has been designed to support teams across all healthcare sectors in using a Knowledge Translation and Quality Improvement integrated approach to change that will impact patient safety outcomes. Not all changes lead to improvement, but to improve we need to change [Langley et al., 2009]. This Guide for Patient Safety Improvement is intended to accompany current best available evidence change ideas, and tools and resources for your specific project. It includes ideal practice changes “the what” and strategies “the how” that creates the evidence-based intervention. Adaptations are expected and important considerations for implementation will be provided in this guide.

Look for the diamond icon to find tips and links to tools and resources to consider as well as references to articles used in the creation of this guide.

Reference:
Knowledge Translation (KT) and Quality Improvement (QI) draw from different evidence and methods but ultimately aim to achieve the same goal – improving patient outcomes. QI uses methods and processes to improve the quality, safety, and value of healthcare at a local level. KT uses theories, models, and frameworks to move knowledge gained from research evidence into practice for large-scale improvement. “Although the goals of the two fields seem complementary, they interact only sporadically and superficially, often at odds, and remain isolated from each other not only through their distinct methodology, but also through their effect on and engagement with the healthcare system.” (Koczvara et al., 2018).

Given our mission to inspire and advance a culture committed to sustained improvements for safer healthcare, the Canadian Patient Safety Institute (CPSI) has worked towards identifying synergies between KT and QI that will leverage the strengths of each field for greater impact in patient safety and healthcare. KT does not replace QI approaches; rather, they are integrated to produce an approach to change for more significant, sustainable impact on patient outcomes.

Examples of how KT approaches can contribute to existing QI initiatives include:

- Using knowledge of barriers, facilitators, evidence and theory to select implementation strategies;
- Providing a clear understanding of the effect of contextual factors on the implementation process, outcomes and sustainability;
- Enhancing fidelity (implementation quality) which is the degree to which an intervention is implemented as intended; and
- Planning for sustainability, spread, long term success and scale up.

Reference:
Assess Organizational Readiness

Have you ever worked for an organization that announced they were adopting a new practice change and thought “that’s a great idea but it’s just not going to work here”?

That happens all the time. We have good ideas for change but attempts to put them into practice often fail. When projects don’t succeed, time, resources and emotional energy are wasted as people attempt to make it work. The impact is that team members are less likely to adopt something new in the future. Organizational readiness is assessed before a practice change is introduced.

Organizational readiness begins with acknowledging the value and importance of leadership and trusting in them to be “ready” for successful adoption of new practice changes. Examples of where leadership have great impact in different aspects of general readiness include: existing communication channels, the organizational culture, whether new learning is supported and whether staff feel stressed. The readiness for practice change includes factors such as whether resources will be allocated to the change, whether it is compatible with the existing culture and workflow and whether it addresses organizational priorities. Organizations with general readiness and readiness related to the practice change are more likely to be successful.

Getting started means understanding not only readiness, but also your own patient safety culture that can influence patient safety outcomes by determining accepted norms and practices that impact the adoption of interventions designed to promote patient safety. The interconnections between people, system and culture, and focusing on system improvement and learning rather than individual performance will drive actions for improvement. Links to suggested resources are below.

**Resources:**
- Texas Christian University Organizational Readiness for Change (TCU ORC-S) survey
- The Safety Competencies: Domain 1 Patient Safety Culture
- Patient Safety Culture Bundle for CEO’s/Senior Leaders
- MSI Patient Safety Culture Survey
Identifying your stakeholders and their perspectives about your project is vitally important. Your stakeholders exist at a system level, as well as a local practice level. They can affect or be affected by the implementation of your Safety Improvement Project and can adopt certain positions drawn from their values, accountabilities, perceived losses and benefits.

## Form Implementation Teams

Implementation is accomplished by a group of individuals who “touch the processes” and are familiar with the Safety Improvement Project. They understand quality improvement and implementation science methods and are able to support and coordinate collaborative work. This group needs knowledge, dedicated time, budget and management support to be responsible for guiding implementation, sustainability and scale-up of the change at the local practice level. Responsibilities of the team include:

- Supporting local practice level assessments and data collection.
- Selecting and operationalizing implementation strategies.
- Conducting continuous quality rapid improvement cycles.
- Planning for sustainability.

**Resource:**
National Implementation Research Network (NIRN): Implementation Teams
Engage Patients and Families

Engagement is an approach to involve patients, families and/or patient partners in their own care and in the design, delivery and evaluation of health services, in a way that fits their circumstances and lived experiences.

Why engage patients along the entire project lifecycle?

Engagement accelerates improvement in many ways especially by helping to focus on safety issues and solutions that matter the most to patients (patients have a unique, complementary perspective).

How do we know that patient engagement improves safety?

Evaluating processes and outcomes before, during and after the project demonstrates impact and improves engagement. It is important to: set and monitor specific safety outcomes; indicate how change[s], especially engagement, impact outcomes; and specify how patients are engaged throughout the project (who, when, why).

How do we engage patients at point of care?

Actions that improve safety through engagement include: effective communications at transitions in care (e.g. discharge plans, teach back); and voicing and responding to concerns in real time (e.g. deteriorating patient, with patient safety issues).

How do we engage patients at the organizational level?

Engagement improves safety when: incident management policies and practices are co-designed with patients; patient engagement for safety has dedicated leadership and resources; and there is transparency about safety.

Resources:
The Safety Competencies: Domain 3 Communication
Engaging Patients in Patient Safety: A Canadian Guide
Enhance Teamwork and Communication

Patient safety incidents can occur for many reasons with many being linked to breakdowns in communication among healthcare teams. Patient safety experts agree that communication and other teamwork skills are essential to the delivery of quality healthcare and to preventing and mitigating errors and harm. It is imperative to address teamwork and communication in order to impact a patient safety culture that will improve patient outcomes. High performing teams engage with purpose and have a shared awareness of roles, responsibilities and situations within their teams and work environments. Having a positive work experience can make a difference in creating positive attitudes, trust, joy in work and overall performance.

TeamSTEPPS® (Team Strategies and Tools to Enhance Performance and Patient Safety) was originally developed jointly by the United States Department of Defense and the Agency for Healthcare Research and Quality (AHRQ). The program has been adopted and adapted by the Canadian Patient Safety Institute and TeamSTEPPS Canada™ was made available to the Canadian healthcare field. It is a teamwork system that offers a powerful solution to improving collaboration and communication within your organization.

Teamwork has been found to be one of the key initiatives within patient safety that can transform the culture within healthcare. The TeamSTEPPS® framework is an evidence-based teamwork system that optimizes patient care by improving communication and teamwork skills among healthcare teams and includes teachable, learnable skills that lead to better teamwork, communication, leadership, situation monitoring and mutual support within and among teams. TeamSTEPPS includes a comprehensive set of ready-to-use materials and a training curriculum to integrate teamwork principles into a variety of settings.

Resources:
The Safety Competencies: Domain 2 Teamwork
TeamSTEPPS Canada™ Essentials Microlearning Course
Team Attitudes Questionnaire & Team Perceptions Questionnaire

Reference:
2. Barriers/Facilitators & Defining the Opportunity

Assess Barriers and Facilitators to Change

Once problems are identified and practices to improve are prioritized, it’s time to start thinking about what implementation strategies will help overcome specific barriers to practice change. There are tools such as the COM-B below that can help identify those barriers and facilitators.

1. **Begin with a barriers and facilitators assessment.** This assessment can be formal or informal. Determine what is practical and feasible in your context.

2. **Explore whether barrier and facilitator issues relate to capability, opportunity, or motivation.** This exercise can be performed in group meetings (e.g., implementation team meetings), through discussion and consensus. **Use the chart below.**

3. **Select strategies.** Facilitators to change are often implementation strategies that are suggested by team members involved in the barriers and facilitators assessment.

**Barrier examples:**
- Barriers to capability – do they have the knowledge and skills?
- Barriers to opportunity – does the environment support the change?
- Barriers to motivation – do they want to change?

**Mapping using COM-B**

![COM-B Diagram]

**Reference:**
Measure

In order to set a meaningful and effective aim for your project, teams must begin by gathering and examining their baseline data. This data will help you establish your target aim — something that is feasible and attainable within a set time period, but which allows for setting goals that encourage substantive change and improvement over time.

In setting the aim for your Safety Improvement Project, state in measurable terms exactly what you hope to achieve — what will be achieved, baseline and targets, and in what time period will the aim be achieved. Think about your aim in relation to both process measures, and patient safety outcome measures.

A problem statement can be composed to define the opportunity and clearly articulate what the team is trying to accomplish and referenced throughout the improvement journey to keep the improvement efforts focused on the agreed upon need identified.

The use of Quality Improvement tools such as the Affinity Diagram, Fishbone, 5 Whys, Pareto and Process Maps are also invaluable in defining the opportunity for improvement. The use of Run Charts with interpretation using run chart rules will support the telling of your data story.

Run chart

Pareto

Flow Chart or Process Map

5 Whys

Resource:
Institute for Healthcare Improvement Tools [Cause & Effect, 5 Whys, Flow/Process Maps, Pareto, PDSA, Run Charts etc.]
The journey to discover effective ways to improve patient safety has evolved a great deal in the past 15 years, but it is fair to say that there is still a lot of work needed.

To improve your organization’s patient safety, both quantitative and qualitative information is needed to help guide delivery of safe healthcare. The Measurement and Monitoring of Safety Framework (MMSF), created by Professor Charles Vincent, Susan Burnett and Jane Carthey in 2013 for the Health Foundation in the UK, is a holistic conceptual model used to accomplish this purpose, and a powerful approach to advancing our perception of safety and our approaches to its improvement. The Framework helps users move from “assurance” to “inquiry” by shifting from relying solely on a focus on past cases of harm but to include current performance, future risks and organizational resiliency.

The framework consists of five dimensions that organizations, units, or individuals including leaders, providers, patients and families can use to understand, guide, and improve patient safety. These five dimensions prompt a series of five key questions making it possible for organizations and their teams to understand and discuss more clearly what it means to be safe. You will find much valuable information to carefully explore each dimension in the practical guide, video, and full report listed in resources below.

Resources:
Measurement and Monitoring of Safety Framework e-guide
The Safety Competencies: Domain 4 Safety, Risk and Quality Improvement

Reference:
Identify Change and Change Ideas

This section introduces components of QI such as change concepts and ideas that align with measurement for your project and are derived from best practices. Adopting a ‘Care Bundle’ approach means the practice changes or interventions which have been clinically proven to have the greatest impact are grouped together and implemented. This approach will result in significantly better outcomes. Change ideas that align to the measurement in your project relate to specific clinical guidelines, rather than tests of change that more broadly facilitate implementation of large-scale initiatives.

As implementation teams decide on their intervention [this is the “WHAT” defining what people will do differently] together with their implementation strategy from KT described in the next phase, there may be many different options and prioritization might be needed. Teams may consider using an impact/effort matrix to prioritize which interventions to begin with.

Reference:
3. Implementation Strategies & Analyzing Your System

Implementation strategies encompass a broad category of tools, activities and/or actions. These strategies aid the team in overcoming barriers, leveraging facilitators, and performing the best practices being implemented through these projects.

For example:

Often individuals do not, or cannot, change their behaviour to align with best practices. Analyzing and understanding your system by understanding the barriers and facilitators allows you to learn if team members do not have the capability, opportunity, or motivation to change their behaviour. Once identified, implementation strategies are selected to assist individuals and organizations in overcoming these barriers and enhancing facilitators. The result of this direct link with barriers and facilitators is the ability to select highly targeted and effective implementation strategies.

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Reference:
4. Context/Adaptation & Designing Tests of Change

Analyze Adaptations

Adaptations to practice changes are very common particularly when they are delivered in ‘real life’ and take into account the social determinants of health. It is common to fail to devote sufficient time to considering why to adapt and what should be adapted.

Questions for Adaptation of Implementation Quality

Is the adaptation planned or unplanned?

- A planned adaptation happens when the implementation team anticipates an issue and creates a plan to adapt the practice change accordingly. These adaptations are generally preferred over unplanned adaptations.
- An unplanned adaptation occurs when implementation has begun, and the implementation team reacts to implementation challenges by making adaptations. Although almost all implementation efforts include some unplanned adaptations, these have been associated with weakening the effectiveness of a change and should be avoided when possible.

Why is an adaptation being made?

- Is it because there are logistical issues with the fit of the practice change?
- Is it because there are philosophical differences in people’s values and beliefs about what should be done?

What types of adaptations are being made?

- Changes to the content (e.g., adding or removing elements, substituting elements, integration with another practice).
- Changes to the context (e.g., delivering the change to a new target audience).

Who is making the adaptations?

- Implementation team.
- Leadership.
- Point of care staff.

Who will be affected by the changes?

- Implementation team.
- Leadership.
- Point of care staff.
- Patients and families.

Reference:
Use Rapid Cycle Improvements (PDSA)

The “WHAT” describes the ideal practices changes and the “HOW” describes the strategies that will be used to change people’s behaviour. Ideally both the practices and the strategies have evidence of their effectiveness and the strategies are selected by understanding and addressing the underlying barriers and facilitators to change.

The “WHAT” in clinical practice is well-established, evidence-based practices and does not need to undergo a PDSA. However, for each team, it is not known which implementation strategies are the most appropriate. Therefore, PDSAs should be conducted on the “HOW” [i.e., the implementation strategies] to design the tests of change.

Resources:
The Safety Competencies: Domain 5 Optimize Human and System Factors
Institute for Healthcare Improvement Tools (Cause & Effect, 5 Whys, Flow/Process Maps, Pareto, PDSA, Run Charts etc.)
5. Implementation Quality & Formalize and Standardize Changes

Monitor Implementation Quality

Implementation quality refers to the degree to which a practice change or intervention is delivered as intended. It helps us consider issues such as whether change or intervention is being used effectively, is perceived as valuable or useful, is reaching the intended target audience, etc. There are six key constructs to consider:

Dosage
• How much of the intervention was delivered?
• How many training sessions did people attend?

Fidelity
• How closely the implementer adheres to the implementation strategy’s core components?
• How closely did the implementer follow the content?

Adaptations
• Changes made to the intervention content.
• Adding, deleting, or modifying the practice change.

Quality of Delivery
• Method of intervention delivery.
• Implementer’s enthusiasm, clarity, etc.

Reach
• Whether the intervention is reaching the target audience.
• What percentage of staff received the training?

Participant Responsiveness
• Attendance and engagement.
• Are the target audiences/participants interested in and receptive to the change?

Reference:
• Interventions with higher implementation quality are likely to produce the desired outcomes, which can signal an appropriate time to have the confidence to formalize and standardize the change while continuing to measure and monitor in order to progress to sustainability.

• When interventions (which are made up of the combination of the evidence informed change ideas and implementation strategies) are delivered without a control group, it is difficult to tell whether or not outcomes are the result of the intervention or not. Reporting implementation quality is a useful tool in illustrating whether the intervention was implemented as intended.

• If you do not see a change in outcomes, you can examine whether this might have been the result of low implementation quality. For example: Did the implementers deliver all of the implementation strategies and deliver them as intended? Did you miss some of the target audience, or were they disengaged?

Reference:
Plan For Sustainability

Sustainability literature is still in its infancy and accordingly, there is less evidence to present strong recommendations for planning for sustainability. Alternatively, we present a list of sustainability tips to consider.

Assess Sustainability Fit

- Select implementation strategies that “fit” the organization's mission, values, culture, and operating procedures. Once you have found an intervention that is a good fit, the next step is alignment planning.
- Determine the best methods for integrating the intervention into the existing organizational structure (e.g., embedding it in other initiatives, including it on an organization's strategic plan).
- One approach is to enlist a champion who will advocate for the practice change to management.
- Choose a champion who is respected by management and understands how to navigate the politics of the organization.

Engage for Sustainability

- Let those carrying out the change know how it could benefit them.
- People are more likely to change their behaviour if they perceive that there is a personal advantage for them.
- Describing the advantages of the new practice clearly can increase commitment to change and the likelihood that individuals will continue to change their behaviour.
- Ensure opportunities for capacity-building and ongoing training in the new practice change.
- Enlist a champion, although it is likely to be a different individual than the one described above.
- This champion’s role is to achieve implementer engagement, encourage and support implementers in the implementation and sustainability phases, and develop strategies to overcome roadblocks encountered during the process.
Engage Patients and Families

- In addition to engaging implementers, patients and families should also be engaged.
- Patients and families are the participants who are most affected by the new change.
- This group must consider the change to be beneficial in order to be willing to continue to engage or encourage new patients and families to be involved in their care planning.

Consider Financial and Other Supports

- Based on what you have included in Defining Sustainability and the Sustainability Action Plan, you can determine how much in-kind support and/or funding the site will need to sustain the change.
- When considering sustainability, financial sustainability is often the first thing identified.
- While support and funding may be important in predicting sustainability, we would stress that it is not the only factor.
- Sustainability is similar to implementation with regards to funding – although some form of continued support or funding may be necessary to sustain a new change, funding alone is not sufficient and additional factors need to be addressed.

Evaluate Sustainability and Demonstrate Impact

It is important to assess how the team will both plan and measure sustainability to demonstrate impact. A list of questions to consider when planning for sustainability:

- How will you assess whether the intervention is continuing to impact patients?
- How will you assess whether the original intervention continues to be delivered with high quality?
- What is your plan to ensure that partnerships among stakeholders are maintained to support continued use of the intervention?

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

References:

Research on what predicts sustainability is relatively new. However, we do know that planning for sustainability early on and engaging the appropriate stakeholders makes it more likely that you will sustain the practice change. On the flip side, failing to sustain a change decreases the likelihood that other interventions will be adopted in the future.

Once you understand the context for sustainability, including potential barriers and facilitators, the implementation team can work on defining what will be sustained and create an Action Plan that will address how to transition from full implementation to the sustainability phase and where impact can be continually demonstrated.

Although the readiness for change and many of the barriers and enablers within an organization are already assessed there may be differences in the new area chosen for spread and scale. The same processes outlined in this guide would apply to the new area, but fundamentally the process of assessment and planning will take much less time to accomplish.

Identifying champions who can share their experiences and support the processes in the new area for spread and scale will accelerate the commitment and motivation needed for success.

Reference:
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