Canadian Health Services and Policy Research Alliance

Assessing The Impact of Health Services and Policy Research

A guide to implementing the CHSPRA Informing Decision-Making Impact Framework

PREPARED BY THE IMPACT ANALYSIS WORKING GROUP OF THE CANADIAN HEALTH SERVICES AND POLICY RESEARCH ALLIANCE (CHSPRA)

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List of Acronyms

AbSPORU
Alberta Strategy for Patient-Oriented Research Support Unit

BC
British Columbia

CAHS
Canadian Academy of Health Sciences

CHSPRA
Canadian Health Services and Policy Research Alliance

CIHR
Canadian Institutes of Health Research

CIHR-IHSPR
Canadian Institutes of Health Research – Institute of Health Services and Policy Research

IAP2
International Association for Public Participation

INESSS
Institut national d'excellence en santé et en services sociaux

ISRIA
The International School on Research Impact Assessment

NAPHRO
National Alliance of Provincial Health Research Organizations

NHS
National Health Service

SPOR
Strategy for Patient-Oriented Research

Executive Summary

Background to the Guide

Canadian organizations (e.g., funders, research institutes, universities) are being compelled, and possibly required, to assess and communicate their impact, or the long-term effect or benefit of research investments and activities of their research portfolios. Research impact assessment is fast becoming a reality for many organizations and is a burgeoning field internationally. The Canadian Health Services and Policy Research Alliance (CHSPRA) is a consortium of stakeholders from across Canada with a vested interest in advancing and optimizing the influence of health services and policy research on health and health system outcomes and impacts. (1) With this in mind, CHSPRA's Impact Analysis Working Group developed the CHSPRA Informing Decision-Making Impact Framework (2) (herein, "the CHSPRA Framework") and indicators to support fulsome assessment of research contributions to decision-making in the health system. Impact frameworks inform impact assessments by outlining specific impact categories and the theories of change that help identify the 'pathways to impact' from research to downstream health, social, and economic impacts.

The CHSPRA Framework is an evidence-informed practice tool for guiding research impact assessments on decision-making in health services and policy. It specifically builds upon the Canadian Academy of Health Sciences (CAHS) Impact Framework*, (3) targeting CAHS's 'informing decision-making' intermediary impact category.

The CHSPRA Framework development process included: a literature review†; (4) community consultation; a modified Delphi approach for indicator selection; and expert external review. The framework consists of 3 components: 1) pathways to impact; 2) methods, tools, and indicators; and 3) an introduction to communicating impact‡.

Impact frameworks help make sense of the messiness of assessing impact in theory. However, practical guidance on their implementation is limited. A 'bottom-up' approach was used to develop this guide, taking advantage of the rich experience and knowledge of organizations and impact assessment practitioners who responded to recommendations in "Making and impact: A shared framework for assessment the impact of health services and policy research on decision-making" to implement the CHSPRA Framework. Through their real-world experiences, it became clear that the CHSPRA Framework can be adapted to different organizational contexts and used in a variety of ways to plan and complete impact assessments.

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* *The CAHS Impact Framework was developed through a consensus building process including oversight by an international panel of experts, a literature review, commissioned papers, consultation with health research stakeholders (research funders, government, foundations, research institutes, healthcare professional organizations), expert interviews, and external review.*

† *The literature review completed by Meghan McMahon and the Impact Analysis Working Group can be retrieved from https://c2756327-591d-43bb-b7c1-a8fa96cea8a2.filesusr.com/ugd/5adc92_25e02d7f55574630b6b2095bf9848666.pdf*

‡ *"Making an Impact: A Shared Framework for Assessing the Impact of Health Services and Policy Research on Decision-Making" provides valuable information on the CHSPRA Framework categories as well as its development and the context of health services and policy research in Canada. The document is available at https://c2756327-591d-43bb-b7c1-a8fa96cea8a2.filesusr.com/ugd/5adc92_3ae941eaedb04ab4a66b6f83f98a479d.pdf*

Purpose of the Guide

The overarching purpose of this 'how-to' guide is to provide practice-based knowledge, tools, and guidance that will help organizations implement the CHSPRA Framework regardless of their impact assessment experience. The guide prioritizes real-world factors that are not necessarily featured in the impact assessment literature. This 'in the trenches' perspective will be valuable for both organizational leadership and those doing impact assessments on the ground. Specifically, this guide:

- Reviews the overall value and possible uses of the CHSPRA Framework;
- Outlines important considerations for assessing impact and implementing impact frameworks as well as practical suggestions for understanding and addressing these considerations;
- Explores advancing the 'how-to' of impact assessment by engaging with others, participating in learning opportunities, and taking a systems life cycle approach; and
- Provides recommended open access resources to aid with research impact assessment planning and implementation.

Value and Possible Uses of the CHSPRA Framework

The CHSPRA Framework's value applies to systems, assessment activities, and organizations. From a *system perspective*, it recognizes co-development as important for research impact on health services and policy decision-making and can be adapted to different contexts. The framework is credible from an *assessment perspective* because of its grounding in evidence and practice, its practical tools, and its system-level framing of decision-making. From an *organizational perspective*, the CHSPRA Framework can add value by informing strategic thinking and business operations as well as shaping the way impacts are communicated.

The CHSPRA Framework can be used in diverse ways, such as:

- *Organizational strategy* by informing priorities, performance management, and programs;
- *Organizational operations* by enhancing an organization's responsiveness (e.g., to requests for impact data from external stakeholders);
- *Assessment activities*, prospectively and retrospectively, to inform existing and new impact assessment plans (e.g., aligning impact categories with purpose, questions, and indicators) and data collection methods and tools (e.g., surveys, interview guides, indicators); and
- *Communicating impacts* inside and outside the organization by providing important concepts and language as well as structure for writing impact narratives and reporting (e.g., dashboards, score cards).

Important Considerations for Implementing the CHSPRA Framework & Assessing Impact

Research impact assessments occur within an organization's context and are influenced by system-level factors. Thoughtful planning and implementation are needed to ensure the CHSPRA Framework is optimally used and that organizations go into impact assessment with their eyes open. Understanding important *strategic*, *procedural*, and *methodological* considerations can help ensure that impact assessments are congruent with the organization's direction and manage expectations in terms of implementation and outcomes. In addition to their relevance to the CHSPRA Framework, the considerations outlined in the tables on the following pages could extend to using impact frameworks and completing impact assessments generally.*

* *The content for this guide has been developed from research impact practitioners' and organizations' experiences applying the CHSPRA Framework. The content may or may not apply to implementing other impact frameworks.*

Strategic Considerations

Impact assessment can have aims and consequences at the strategic level of an organization. Table 1 provides a summary of the relevance and ways of addressing three overarching strategic considerations: culture, organizational objectives, and performance management.

TABLE 1
Summary of Strategic Considerations

Strategic Considerations	Ways to Address the Considerations
Recognizing the Influence of Organizational Culture on Impact Assessment Because culture plays a crucial role in shaping behaviour, introducing impact assessment or a new impact framework may stimulate changes to organizational practices and policies. This requires that leadership and staff are ready for change and that there is sufficient support available to implement assessments.	• Plan ahead and embed impact assessment into existing operations where possible (e.g., understand leadership's mindset, scan organizational readiness, leverage existing evaluation capacity). • Consider potential governance approaches and leverage external drivers (e.g., engage people throughout the organization, consider a change management committee). • Build capacity with education and training (e.g., online and in-person training opportunities, learn by doing, presentations and briefings to leadership and staff).
Determining Alignment of the CHSPRA Framework with Organizational Objectives Impact assessment should align with an organization's strategic objectives and business needs. This will have important implications for allocating time and financial and human resources for assessment.	• Time and effort must be taken to determine alignment of the CHSPRA Framework to organizational and stakeholder needs. • Alignment can be determined by linking or mapping the organization's strategic objectives and activities to the CHSPRA Framework impact categories, pathways to impact, and theories of change. • Operationalize the CHSPRA Framework on a small scale (e.g., pilot on a program) to help determine alignment and aspects of the framework that need to be tailored.
Aligning Impact Assessment and Performance Management Impact assessment should be aligned with related activities such as performance management. Impact assessment takes a longer system-level view to assessing outcomes compared to performance management, which focuses on regular monitoring activities. Because impact assessment and performance management often draw on the same pool of resources (e.g., human and financial resources), it is in the organization's interest to coordinate timelines and processes.	• Establish estimated timelines for policy and practice objectives, and plan impact assessments accordingly. • Determine if performance indicators at the organizational level could also be used as impact indicators. • Long-term, develop a plan for integrating impact assessment alongside other organizational activities such as performance management, and outline reasonable timelines for integration. • Consider using external consultants to complete impact assessments to help limit the drain on human resources and provide focus and objectivity to the assessment.

Procedural Considerations

Important (and related) processes are involved in completing an impact assessment. The organizations who have implemented the CHSPRA Framework have identified five procedural considerations that those completing impact assessments should pay particular attention to: engaging stakeholders in the impact assessment process; using the CHSPRA Framework in whole or in part; selecting and adapting CHSPRA indicators; assessing impact retrospectively; and working with a small sample size. Table 2 provides a summary of and ways to address the considerations.

TABLE 2

Summary of Procedural Considerations

Procedural Considerations	Ways to Address the Considerations
Engaging Stakeholders in the Impact Assessment Process Program stakeholders are the subject matter experts and are excellent resources in the design of impact assessment. Furthermore, program stakeholders are the ones who will know what decisions need to be informed by research and their implications.	• Identify primary stakeholders and how they are affected by or involved in the assessment. • Engage with program stakeholders as early as appropriate to determine what decisions the assessment findings will inform. • Use a co-development model to guide engagement. This approach helps integrate and optimize stakeholder engagement throughout the assessment process. • Build additional time into the project plan for stakeholder engagement, enabling authentic (versus tokenistic) engagement.
Using the CHSPRA Framework in Whole or in Part The CHSPRA Framework offers a comprehensive, non-linear representation of the complex system of change in the health sector. Seeing the process as 'a whole' is useful and can provide deeper insight into what and how impacts have occurred. However, using the CHSPRA Framework in this way may not be necessary or feasible. Keeping the impact assessment 'manageable' and matching capacity and expectations will help maintain focus on completing impact assessments.	• Leverage the CHSPRA Framework's non-prescriptive nature to be flexible when considering assessment needs and capacity. • Being clear about the assessment's purpose, objectives, and questions will help determine what parts of the framework should be used. • Provide a range of assessment options to leadership with a rationale for each based on purpose, benefits to the organization, feasibility, and timelines to manage expectations and make the case for a particular approach. • Acknowledge your organization's current capacity to do impact assessments. This may mean starting with a focus on a particular impact category. • If rapid results are needed, the assessment questions must be specific and align with organizational decision-making priorities to ensure relevance.

TABLE 2 *(continued)*
Summary of Procedural Considerations

Procedural Considerations	Ways to Address the Considerations
Selecting and Adapting the CHSPRA Indicators Indicators are an important part of impact assessment. They can provide evidence that program objectives have been achieved and can be used to inform organizational decisions. However, CHSRPA indicators, in their current form, may not be relevant or applicable in all organizations. Thankfully, indicators can be adapted to align with the organization's context and objectives.	• Examine indicators relative to the organization's reality. Adaptations to indicators can then be made (if needed) relative to the organization's context to ensure indicators can be operationalized. • Leverage current organizational indicators. The CHSPRA indicators can be used to help 'shape' or complement organizational indicators. • Adapt and operationalize the indicator relative to the appropriate unit of analysis. • Ensure the adapted indicators reflect the CHSPRA Framework impact category. • Determine targets for indicators, if set, are appropriate. Targets will depend on how the indicator is defined and whether baseline data are available. • Repurpose the organization's historical data/information to align with and help inform adaptations to the CHSPRA indicators. • Document challenges for measuring the indicators, such as issues with potential methods and availability of data and resources.
Assessing Impact Retrospectively Retrospective analysis is often done because organizations have not planned for impact assessment at the outset. Impact assessment can also be retrospective in nature, looking backwards in time to assess outcomes and uncover impact pathways that can be used to assess whether and how organizational objectives were met.	• If possible, aim for prospective data collection that is driven by assessment questions and impact categories. • Use techniques that reduce recall bias. • Triangulate to reduce error. Use multiple data sources to increase the accuracy and credibility of the findings. • Leverage existing performance measurement indicators. • Be transparent about retrofitted data and its limitations. • Ensure data privacy, access, and use policies are followed.
Working with a Small Sample Size Small sample sizes may be unavoidable, the consequence of different factors such as the size of the organization/unit or the project/program being assessed. While it's true that small sample sizes can be a disadvantage for quantitative analysis, there are creative approaches that can be used to gather meaningful data on the impact of the organization or program's activities.	• Collect rich qualitative data. Semi-structured interviews and open-ended survey questions can be used to supplement quantitative data, providing a full picture of the indicators. • Leverage other similar or related data to 'tell the story', such as data from different organizations or historical data. • Gather information over multiple points in time. This is similar to a repeated measures design and will increase the number of data points available.

Impact Assessment Methodological Considerations

There are common methodological challenges in impact assessment that vex organizations globally.(5, 6) The three challenges that the organizations implementing the CHSPRA Framework have experienced are: time lags, assessing attribution and contribution, and establishing the counterfactual. How these considerations are relevant and ways to address them in practice are summarized in Table 3.

TABLE 3
Summary of Impact Assessment Methodological Considerations

Methodological Considerations	Ways to Address the Considerations
Time Lags Time lags, or the time that has elapsed between the start of the research process and its impact, are a reality of research impact assessment. Time lags could have positive (e.g., ensure safety of interventions) or negative (e.g., sacrifice patient benefit) consequences. Anticipating time lags improves impact assessment by helping plan and execute assessments (e.g., indicator and method selection) as well as identify what impacts are measurable at what point.	• Set a clear focus (e.g., purpose, questions) for the assessment to determine what will be assessed and the assessment timelines. • Use an impact framework, such as the CHSPRA Framework, to address time lags by outlining which impacts are more likely to occur over short-, medium-, and long-terms. • Identify and monitor 'signposts' (e.g., indicators, targets, proxies) along the pathway to highlight progress to downstream impacts or lack thereof so adjustments can be made. • Explore designs that are congruent with the timeline for anticipated impact. Different designs (e.g., case study, quasi-experimental, mixed method) can be used to capture various points in time along the pathway to impact. • Map out the chronological time to complete the assessment, considering factors that will influence time lags in completing the assessment such as data availability. • Communicate with organizational leadership and stakeholders early on about the timing of impacts (short-, medium-, and long-term) to manage expectations and illustrate progress.

TABLE 3 *(continued)*
Summary of Impact Assessment Methodological Considerations

Methodological Considerations	Ways to Address the Considerations
Assessing Attribution and Contribution Establishing a causal link between an organization's activities and system-level change is challenging. An organization's impact assessment aspirations may not be realistic. Additionally, leadership and stakeholders may expect or assume impact assessments will result in attribution claims, where contribution is more likely. There is also risk with claiming attribution, especially if supporting evidence is absent. However, being clear about attribution aspirations may drive the organization's thinking and the need to establish its contribution to system-level change.	• Take a realistic perspective from the outset. Demonstrating contribution to change rather than attribution is more viable and likely more accurate. • Be clear about the assumptions of what an impact assessment can achieve. • Use impact frameworks (e.g., CHSPRA Framework), multiple methods/triangulation of data sources, and validated tools for structure and evidence. • Consider assessment of attribution with short-term impacts that are within the organization's control. • Engage partners and stakeholders in developing and implementing impact assessments to keep the assessment honest.
Establishing the Counterfactual Counterfactuals can be used to determine whether there are alternate explanations for program outcomes. Counterfactual analysis adds rigour to the assessment and is a common stakeholder consideration (i.e., "would these results have happened anyway"). However, implementing a counterfactual design in practice is challenging and may require taking advantage of real-world or naturally occurring comparisons.	• Counterfactuals should be driven by stakeholder needs and stakeholders should be informed of the associated strengths, limitations, and costs. • Choose the right program or project. Counterfactual analysis may be better suited for programs with more tangible outcomes. • Use different and multiple methods to address feasibility challenges. • Be realistic about causation. Accepting correlations may be necessary, as well as ensuring triangulation of lines of evidence. • Keep the entire impact pathway in mind. The pathways to impact provide a big picture view of various ways that impact can occur, which can provide perspective if there is an urge to oversimplify.

Advancing the 'How-to' of Impact Assessment

Impact assessment is a relatively new and rapidly evolving field. Although a body of knowledge is growing, the organizations who have implemented the CHSPRA Framework agree that staying current and nimble is important to 'do' impact assessment. They highlight two mechanisms to advance assessment practice: *engagement in communities, networks, and learning opportunities* and *taking a systems life cycle approach.*

Engaging in communities, networks, and learning opportunities provides support for those new to impact assessment and accelerates the practice of impact assessment through the sharing of knowledge and experiences. However, learning through the process of completing assessment projects may not be enough. It is recommended that organizations new to impact assessment seek out engagement and learning opportunities both internal and external to their organizations such as:

- Following impact networks and communities (e.g., LSE Impact Blog) via social media and connecting with others doing impact assessment through trainings, workshops, and webinars to help build a support network and resources;
- Meeting with others consistently to have regular conversations about impact and impact assessment. This can include: scheduled meetings or learning sessions with individuals involved in impact assessment in your organization; formally engaging with other organizations through alliances (e.g., CHSPRA) or collaborations; and seeking mentorship to focus on knowledge and skill gaps; and
- Using targeted activities to create a local community. There are often specific projects related to an impact assessment that benefit from engagement with the community (e.g., development of tools and resources, or questionnaires). Use these opportunities to identify collaborators and engagement opportunities within the local community.

The focus on societal impact has been growing in prominence and popularity, particularly over the last decade. New insights in impact assessment have shifted the focus from simple linear models of impact to systems frameworks that describe it as a cycle with feedback loops and iterative processes to inform discovery, adaptation, and innovation. Not unlike a learning health system (7) this *systems life cycle approach*, is influenced by science, technology, and innovation policy as well as other drivers including design principles and methods that include an impact mindset and planning for impact.(8) The approach allows us to connect policy and strategy to impact planning, implementation, assessment, improvement, and cycling back between these processes to inform policy and strategy. Emerging practices with potential to stimulate impact and realize benefits for society draw on cross-sectoral experience and interdisciplinary knowledge and methods. A systems life cycle approach:

- Reinforces the need for collective efforts all along the impact life cycle;
- Recognizes the need to combine bottom-up and top-down approaches to affect change;
- Enables experimentation and learning by engaging stakeholders in the research of impact; and
- Embeds an impact 'mindset' in individuals, organizations, teams, policies, and systems.

Organizations can get a head start on a systems life cycle approach by using the CHSPRA Framework and this how-to guide. The CHSPRA Framework is a tool for designing and measuring the impact of health service and policy research. The guide supports users of the CHSPRA Framework by identifying and proposing solutions to key considerations and ways of engaging with stakeholders to advance the practice of impact assessment.

Recommended Resources for Using the CHSPRA Framework

Open access resources commonly used by the guide developers to inform research impact assessment planning and implementation are included in Appendix B of the guide. These resources complement the guide's content, providing a starting point for individuals and organizations new to impact assessment while possibly expanding resources for those more familiar with impact. The strategic, procedural, and methodological considerations have been cross-referenced with the resources to provide clearer direction to the reader. Note that some considerations may be more extensively addressed than others.

Conclusion

Organizations can use CHSPRA Framework and this 'how-to' guide to accelerate assessment of health services and policy research on decision-making. This guide advances impact assessment by identifying and addressing strategic, procedural, and methodological considerations for doing research impact assessment in the real world. Addressing these considerations is necessary for organizations to appropriately integrate impact assessment and develop an impact mindset. The guide provides suggestions, resources, and examples for using the CHSPRA Framework to advance implementation of impact assessment.

This guide advances impact assessment by identifying and addressing strategic, procedural, and methodological considerations for doing research impact assessment in the real world. Addressing these considerations is necessary for organizations to appropriately integrate impact assessment and develop an impact mindset.

Background to the Guide

The Canadian Health Services and Policy Research Alliance (CHSPRA) is a consortium of stakeholders from across Canada with a vested interest in advancing health services and policy research. An overarching aim of the alliance is to optimize the influence of health services and policy research on decision making and health and health system outcomes and impacts.(1) With this in mind, CHSPRA prioritized the development of an impact framework and indicators to support fulsome and accurate assessment of health services and policy research contributions. Research impact assessment identifies the change or effect brought about by an intervention. Assessments are often guided by frameworks that outline specific impact categories and the process through which change comes about, or the 'pathways to impact' from research to downstream health, social, and economic impacts.

The CHSPRA Informing Decision-Making Impact Framework (2) (herein, "the CHSPRA Framework") is an *evidence-informed best practice tool* for guiding research impact assessments on decision-making in health services and policy (see Figure 1). It specifically builds upon the Canadian Academy of Health Sciences (CAHS) Impact Framework*, (3) targeting CAHS's 'informing decision-making' intermediary impact category. See Figure 2 for a simplified version of the CAHS Impact Framework. The CHSPRA Framework development process included: a literature review†; (4) community consultation; a modified Delphi approach for indicator selection; and expert external review.

The CHSPRA Framework consists of 3 components: 1) pathways to impact; 2) methods, tools, and indicators; and 3) an introduction to communicating impact‡. The focus is on *assessing the use of health services and policy research on decision-making in the health system*§. The influence of research on decision-making is a key link or the 'magic in the middle' between knowledge production and translation to downstream health, social, and economic effects. However, decision-making is complex, involving stakeholders using research evidence in various ways and degrees within their unique contexts. To capture this nuance in a meaningful way, the CHSPRA Framework considers: the target(s) of decisions (e.g., policies, practices); who is making or affected by the decisions (e.g., healthcare providers, policy-makers); and how and when the research evidence has been used (e.g., increasing awareness of an issue, planning to change a policy).

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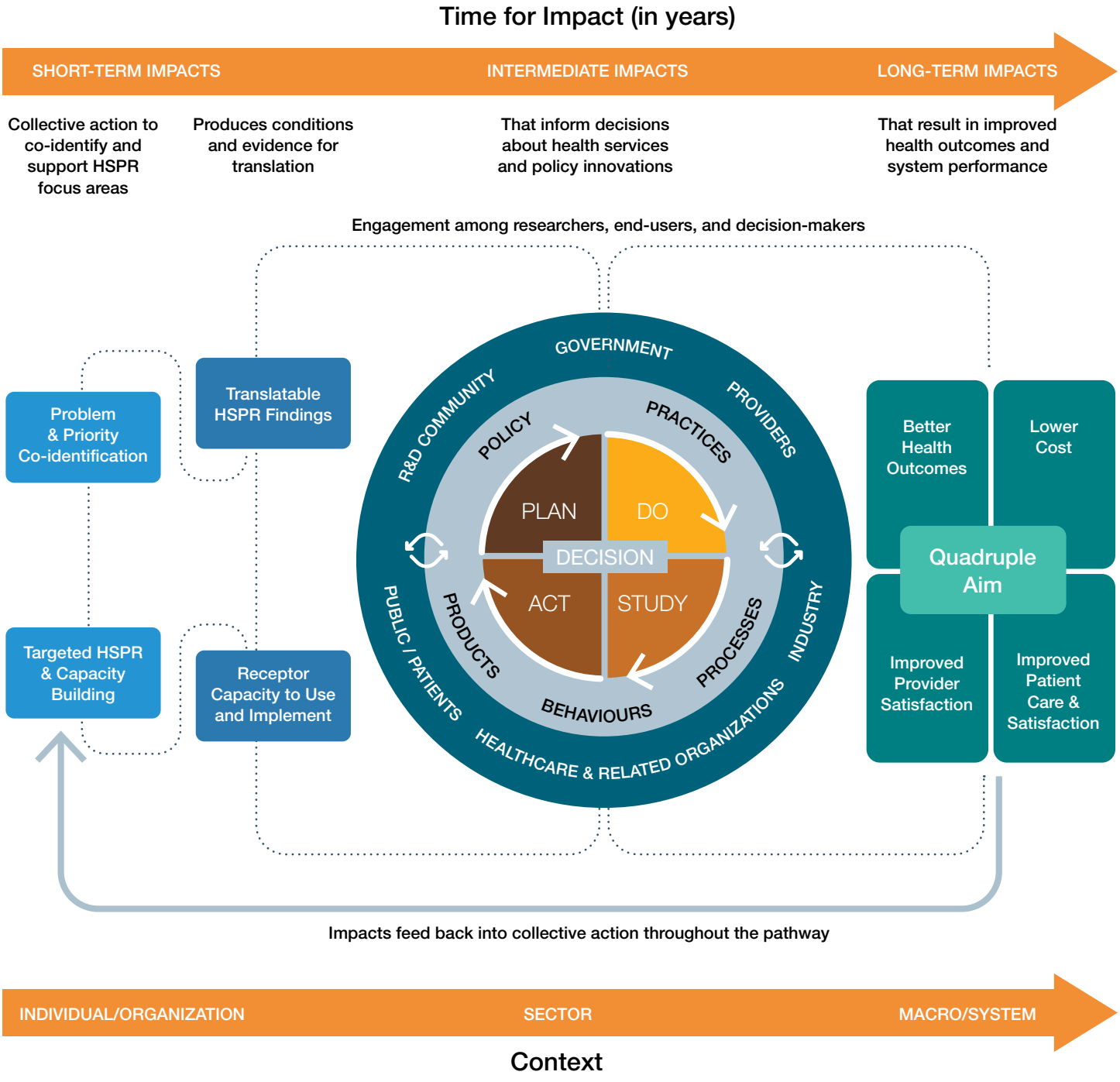
* *The CAHS Impact Framework was developed through a consensus building process including oversight by an international panel of experts, a literature review, commissioned papers, consultation with health research stakeholders (research funders, government, foundations, research institutes, healthcare professional organizations), expert interviews, and external review.*

† *The literature review completed by Meghan McMahon and the Impact Analysis Working Group can be retrieved from https://c2756327-591d-43bb-b7c1-a8fa96cea8a2.filesusr.com/ugd/5adc92_25e02d7f55574630b6b2095bf9848666.pdf*

‡ *"Making an Impact: A Shared Framework for Assessing the Impact of Health Services and Policy Research on Decision-Making" provides valuable information on the CHSPRA Framework categories as well as its development and the context of health services and policy research in Canada. The document is available at https://c2756327-591d-43bb-b7c1-a8fa96cea8a2.filesusr.com/ugd/5adc92_3ae941eaedb04ab4a66b6f83f98a479d.pdf*

§ *The CHSPRA Framework explicitly 'unpacks' the CAHS informing decision-making category.*

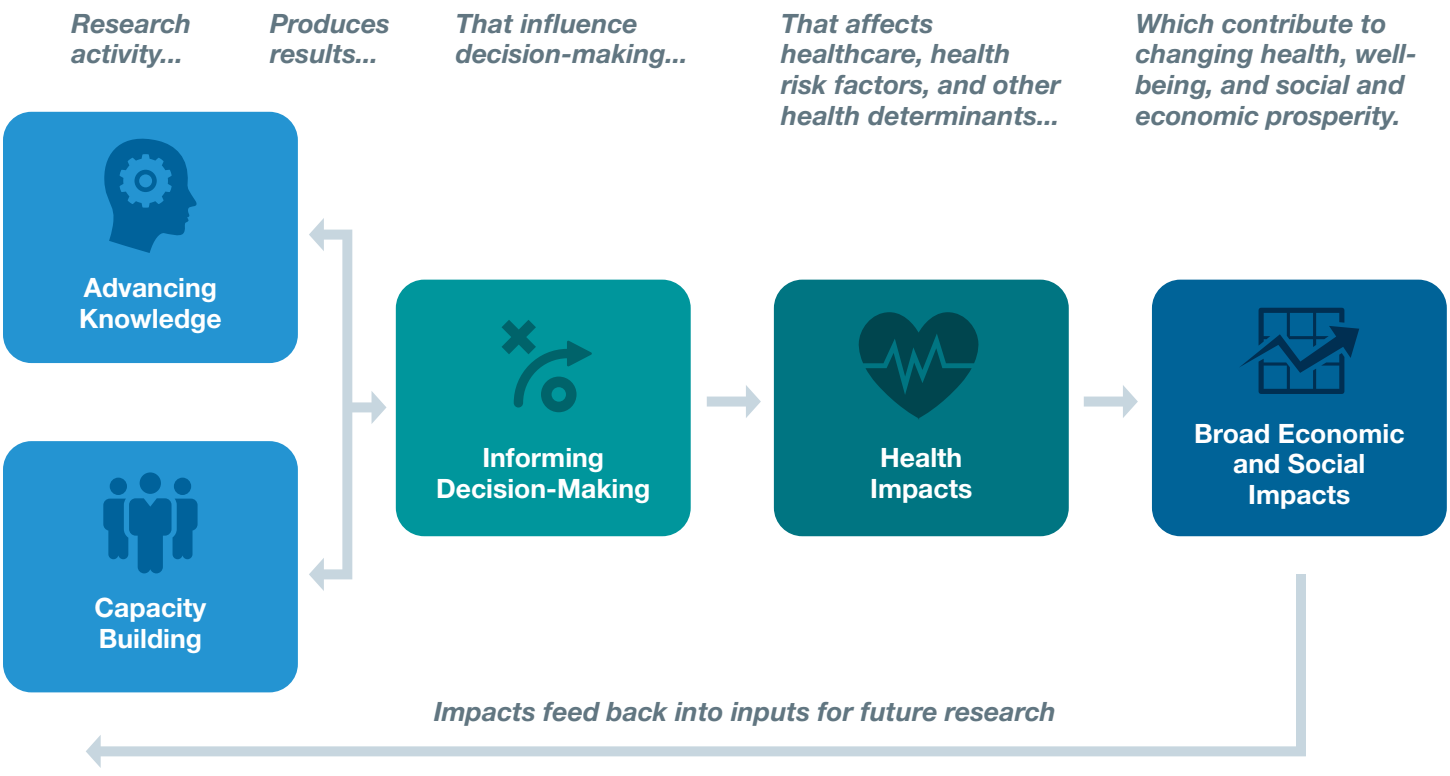
FIGURE 1
The CHSPRA Informing Decision-Making Impact Framework



Research impact frameworks help manage the inherent messiness of impact assessment. Given the CHSPRA Framework was originally developed to assess system-level impact, this guide has been developed to *support the use of the CHSPRA Framework* for organizations completing impact assessments. In response to recommendations forwarded in "Making and impact: A shared framework for assessment the impact of health services and policy research on decision-making", a group of organizations from across Canada agreed to implement the CHSPRA Framework. The experiences of these organizations were instrumental in creating the guide. Through their real-world experiences, it became clear that the CHSPRA Framework can be adapted to different organizational contexts and used in a variety of ways to plan and complete impact assessments. As illustrated by this guide, the framework is useful and actionable at the program, organizational, and system level. Considerations and lessons learned also emerged as useful for future CHSPRA Framework implementors.

FIGURE 2

Simplified Version of the CAHS Impact Framework



Purpose of the Guide

The overarching purpose of this document is to provide guidance, practice-based knowledge, and tools that will help organizations implement the CHSPRA Framework, regardless of the organization's 'impact maturity' or where they are currently positioned in their impact assessment planning or evaluation cycle*. The guide takes a practical or 'bottom-up' approach, meaning *the content is predominantly informed by actual experiences of practitioners implementing the CHSPRA Framework (in whole or in part) in the field*. This guide:

- Reviews the overall value and possible uses of the CHSPRA Framework;
- Outlines important considerations for assessing impact and implementing impact frameworks and practical suggestions for understanding and addressing these considerations;
- Explores advancing the 'how-to' of impact assessment by engaging with others, participating in learning opportunities, and taking a systems life cycle approach; and
- Provides a table of recommended open access resources to inform research impact assessment planning and implementation.

Consider the following when using this guide:

- This document was developed to be used in conjunction with the CHSPRA Framework document. The considerations outlined in this guide were designed to augment the value of the CHSPRA Framework to an organization.
- The content has been developed from research impact practitioners' and organizations' experiences applying the CHSPRA Framework. The content may or may not apply to implementing other impact frameworks.
- Consider your organization's context and apply information in this the guide and the CHSPRA Framework accordingly. The guide is not a recipe for implementing the CHSPRA Framework, but offers illustrations of use as well as considerations for applying the framework and ways of addressing the considerations.

* *An evaluation cycle refers to the type of evaluation that is most appropriate depending on the lifecycle of a program. For example, developmental evaluations can be done for exploratory or pilot initiatives, formative evaluations typically occur at the mid-point of a program, summative evaluations at the end, and monitoring activities throughout.*

Value and Possible Uses of the CHSPRA Framework

The characteristics of the CHSPRA Framework make it a valuable impact assessment tool in many respects. From a *system perspective*, it integrates co-development as a key facet of informing decision-making and can be adapted to different contexts and for different purposes. From an *assessment perspective*, the CHSPRA Framework is both evidence- and practice-informed, making it a legitimate best practice guide for assessing the nebulous area of research impact on policy and practice decision-making. Further, it has advanced measurement by providing practical tools and a frame for thinking about the system factors associated with decision-making in this area. From an *organizational perspective*, the CHSPRA Framework can add value by informing strategic thinking and business operations as well as shape how an organization communicates impacts.

Because of its diverse value, the CHSPRA Framework can be used in a variety of ways. The research impact practitioners that have used the CHSPRA Framework in their organizations have broadly done so to inform *organizational strategy and operations*, *assessment activities*, and *communicating impacts*. These areas illustrate 'why' the CHSPRA Framework would be used in an organization and are further described with examples below. The considerations for 'how' the CHSPRA Framework can be used are found later in the document.

Inform Organizational Strategy and Operations

Research organizations worldwide are becoming acutely aware of the need to understand and improve their impact and are increasingly considering research impact assessment from a strategic perspective. Strategy related to impact assessment must trickle down to operations to increase the likelihood of affecting the system and enhancing impact assessment activities. The CHSPRA Framework can be used in the following ways to inform strategic and business decisions:

Strategic level – The CHSPRA Framework can be used to inform thinking and planning related to:

- Determining or refining organizational priorities;
- Developing a performance management and implementation strategy prospectively; and
- Shaping programs and initiatives.

Business operations – Aspects of the CHSPRA Framework can be integrated into business operations for:

- Enhancing an organization's ability to respond to inquiries about organizational impact (e.g., government requests for data);
- Informing program decisions; and
- Guiding communications activity.

Organizations must demonstrate accountability by reporting to boards and stakeholders. Integrating impact data collection into operations enables nimble and accurate reporting that can be used to demonstrate accountability.

Inform Impact Assessment Activities

The CHSPRA Framework can be used in various ways to inform impact assessment planning and project design, data collection methods and tools, and interpretation of results. Broadly speaking, the CHSPRA Framework provides an interpretive lens to make sense of different kinds of impacts and how they relate to one another along short-, medium-, and long-term timelines. The CHSPRA Framework can be used prospectively or retrospectively to increase awareness of or explicitly define 'what' impacts to consider, and 'how' and 'when' those impacts may come about. For example, the framework can be systematically applied prospectively during assessment planning and project design. Figure 3 illustrates how the CHSPRA Framework can be used throughout a planning process that includes question development, identification of impact categories, and indicator selection, or as a function of each of these assessment tasks separately.* Additionally, the CHSPRA Framework's flexibility allows it to be used on its own or alongside other frameworks (e.g., logic models, stakeholder engagement frameworks). The CHSPRA Framework can be integrated within different aspects of an established assessment plan. For instance, if an organization is already using an impact framework or has collected data to assess impact, the CHSPRA Framework can be applied retrospectively and provide an interpretative lens to help deepen the assessment and understanding of results in terms of decision-making impact.

* *Figure 3 illustrates some of the activities involved in planning an impact assessment and how the CHSPRA Framework can inform these activities. It does not represent the full process involved in planning an impact assessment. For a comprehensive review of impact assessment planning, see the "Recommended Resources for Using the CHSPRA Framework" in Appendix B.*

BOX 1: PRACTICE INSIGHT

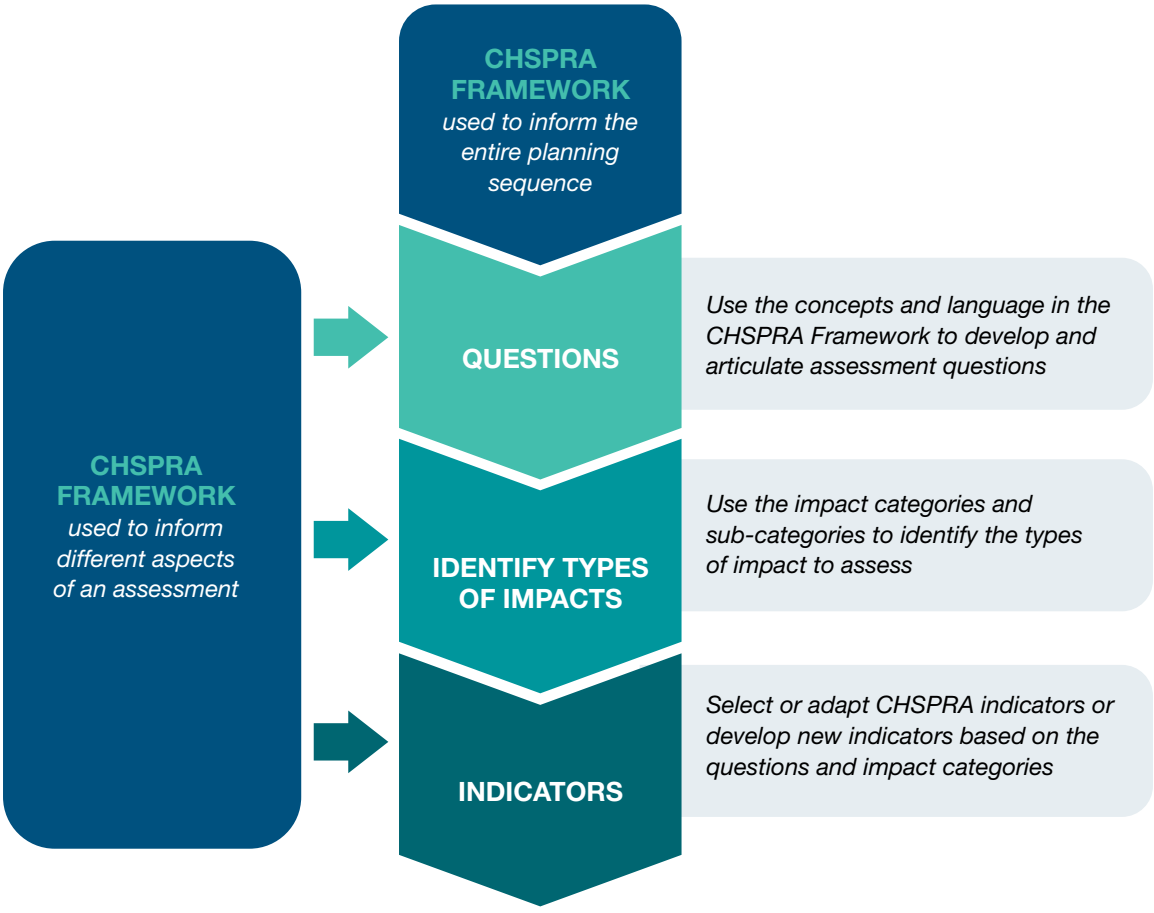
Using the CHSPRA Framework to Inform Impact Assessment Design and Indicators

"The CHSPRA Framework was key to informing the design of the ongoing evaluation of CIHR's Strategy for Patient-Oriented Research (SPOR). The SPOR evaluation matrix integrates the framework's indicators to enhance how the impact of SPOR investments and research on informing health services and policy decision-making will be assessed."

- Jean-Christian Maillet, CIHR

FIGURE 3

Illustration of When the CHSPRA Framework can be Integrated into an Impact Assessment



Specific examples of how the CHSPRA Framework and its indicators can be used to inform impact assessment plans and data collection tools are described below.

Inform Impact Assessment Plans – The CHSPRA Framework can be integrated into impact assessment plans in the following ways:

- Aligning impact categories with existing purpose, questions, and indicators;
- Informing updates or refinements to existing impact assessment plans;
- Informing stakeholder identification and engagement;
- Clarifying the unit of analysis; and
- Integrating into monitoring activities (e.g., indicators).

Inform Data Collection Methods and Tools – The CHSPRA Framework and its indicators can be used in monitoring and assessment data collection activities. The indicators can be integrated into:

- Program processes (e.g., client intake process, records management system);
- Surveys;
- Interview guides;
- Dashboards; and
- Indicator development (i.e., by stimulating thinking when CHSPRA indicators are close but not directly related to context).

Inform Impact Communication

The CHSPRA Framework can be used as a communication tool, within the organization and with external stakeholders, by:

- Providing key concepts and language to frame the way impact is communicated to stakeholders;
- Providing a structure for writing impact stories or narratives (e.g., using impact categories and sub-categories as key headings); and/or
- Providing a structure for reporting the organization's impact (e.g., score cards, dashboards).

BOX 2: PRACTICE INSIGHT

Using the CHSPRA Framework as a Communication Tool

"We have found the language from the CHSPRA Framework incredibly useful for communicating with stakeholders, especially when conveying what health services and policy research impact looks like."

- Julia Langton, Michael Smith Health Research BC

Important Considerations for Implementing Frameworks & Assessing Impact

Impact frameworks are tools that can provide clarity and guidance when planning and implementing impact assessments. Thoughtful planning and implementation processes are needed to ensure frameworks such as the CHSPRA Framework are optimally used, and that strategic and operational considerations are proactively identified. This section addresses *strategic*, *procedural*, and *methodological* considerations for using an impact framework and implementing an impact assessment. In addition to their relevance to the CHSPRA Framework, the considerations extend to using impact frameworks and completing impact assessments generally.

Strategic Considerations

Impact assessment can have aims and consequences at the strategic level of an organization. This section touches on three common strategic-level considerations for impact assessment: culture, performance management and measurement, and organizational objectives.

Recognizing the Influence of Organizational Culture on Impact Assessment

Why is this relevant?

- **There is universal agreement that organizational culture plays a crucial role in shaping behaviour.** (9) Organizational culture is in part how things are done in the organization and is driven by many factors including beliefs, normative assumptions, values, tacit knowledge, routine, and convention.(9)
- **Introducing impact assessment or a new impact framework within an organization may stimulate changes to the way it operates (e.g., organizational practices, policies).** The degree of change will depend on factors including the organization's level of experience with impact assessment, the extent of the changes, and the organization's capacity to absorb the changes.
- **Integrating impact and impact assessment into an organization's culture requires the readiness and commitment of leadership and staff.** This relates to their willingness and capacity to instigate and implement impact assessment, as well as to adapt along the way.
- **Organizational changes to support implementation need to be planned for, managed, and resourced.** This requires leadership buy-in and explicit support.
- **The following factors could influence the longevity of leadership's support for impact assessment:**
  - *Impact assessment results may not support the desired impact story.* Results are not always positive or align with what is expected. This can be disappointing and result in a reluctance to report and act on findings that expose challenges versus successes.
  - *Waning enthusiasm as reality sets in.* Enthusiasm for impact can stimulate assessment activities in the short term. However, the commitment and challenges associated with impact assessment, coupled with pressure from other organizational priorities, can derail the best intentions. "Impact is great" and "everyone's assessing impact" are attitudes that on their own likely will not sustain impact assessment culturally.

BOX 3: PRACTICE INSIGHT

Cultural Considerations in Practice

CHSPRA Framework implementors noted that cultural considerations for integrating impact assessment generally involved:

1. **The organization's willingness and readiness** to implement and act on impact assessments.
2. **Competence and commitment** of operational teams and employees.
3. **Availability and quality** of assessment infrastructure (e.g., data management systems).

What are the considerations?

- **Impact needs to be a priority.** Priorities influence decisions and the resources available for impact assessment. When leadership endorses impact as a priority, it signals their commitment to the process and what is important and expected of employees.
- **A change management or learning approach may be needed to introduce impact assessment into an organization's culture.** This will depend on the degree and nature of change that impact assessment triggers in the organization and its readiness to implement the change. A generic tool such as the Plan-Do-Check-Act cycle (also known as the Plan-Do-Study-Act model*) can be used to inform an organization's approach to managing change as well as bring learnings forward.(10) As a new organizational process, impact assessment can be introduced by going through the cycle of *planning* for impact assessment, *implementing* or doing impact assessment, *studying* how the implementation went, and *acting* or building upon what was learned to further integrate impact assessment into the organization's culture. It is also convenient that the CHSPRA Framework embeds such an approach (i.e., PDSA) as key to assessing the impact of research on decision-making. In organizations that use a learning approach, or are continually and deliberately collecting and using data, knowledge, and insights from inside or outside the organization to inform change and improvement, (11) impact assessment could be introduced to leadership and staff as a specific approach to collecting and analyzing evidence for understanding an organization's influence on the system and for informing organizational decisions over time. Impact assessment reinforces a learning approach, and can be enculturated in this way.
- **The resources expended on impact assessment could be wasted if an organization is not ready for change.** If an organization is not prepared to implement impact assessment and act on results (e.g., a lack of trust in the process, unavailable data, inexperience, etc.), resources could inadvertently be misused.
- **Organizations must manage finite resources.** Impact assessment requires financial, human, and material resources. Understanding organizational priorities and capacity is necessary to inform impact assessment project planning and to present a compelling case that the benefits outweigh costs. Determining the assessment purpose and scope will enable a grasp of the necessary resources and help the organization stay focused on completing the assessment.

Understanding organizational priorities and capacity is necessary to inform impact assessment project planning and to present a compelling case that the benefits outweigh costs.

* *The Plan-Do-Study-Act model is used in the CHSPRA Framework to illustrate where impacts could be located in the decision-making cycle.*

How can the considerations be addressed?

Plan ahead & embed impact assessment into existing operations where possible

- **Understand the strategic mindset of organizational leaders and priorities of the organization upfront.** Planning should consider the end-goal, as well as determine how well the CHSPRA Framework fits with organizational needs and what is feasible to implement within the available resources. Articulating the line of sight between an organizations' goals and impact assessment will help secure leadership buy-in and their commitment to allocate resources. For example, if it is important for an organization's leaders to know the impact of their investments, they need to be informed of what is required to demonstrate impact and what it costs in terms of project management and resources (timelines and costs). Once resource allocation is approved, the challenge shifts from negotiating to accessing those committed resources.
- **Take the time to scan the organization's readiness for impact assessment.** This can be done formally (e.g., use of checklists, surveys) or informally. If organizational culture, capacity, and commitment is lacking or needs to be strengthened, consider devoting time to building capacity and strengthening commitments first.
- **Be nimble, adaptable, and use existing organizational capacity to support impact assessment rather than create new requirements or processes.** Capacity includes available data, process infrastructure, and expertise/experience. Integrating impact assessment into operations helps optimize the use of existing assets. Ultimately, leveraging capacity minimizes the amount of change that impact assessment may introduce.
- **Explore what the organization could 'let go of' to create opportunities for impact assessment.** The expectation of doing more with less is a reality for many organizations, especially in times of constraint. Being proactive as an organization and addressing possible areas of operational inefficiency while integrating impact assessment processes not only frees up time and resources for assessment activities to be done well, but also reinforces the importance of impact in the organization. In other words, it's recommended that organizations avoid adding assessment activities without considering what current activities could be streamlined or removed.
- **Be prepared to act on the assessment results.** Regardless of the results (expected or unexpected), have a plan for communicating and using them. Acting on results reinforces the value of impact assessment and helps build an impact culture.

BOX 4: PRACTICE INSIGHT

Mapping Organizational Priorities Early in the Planning Process

"We convened an internal working group with representation from the research, evaluation, and knowledge management areas of the Ministry to map out the CHSPRA Framework and other tools against the priorities in our Research and Knowledge Management Strategy. This group provided foundational guidance in the early planning stages of our assessment."

- Janaki Jayanthan, BC Ministry of Health

Consider potential governance approaches and leverage external drivers

- **Engage people throughout the organization.** Impact assessment cannot be done alone. Engage people by using both top-down and bottom-up approaches. For example, assessment working groups of subject matter experts from across the organization can be convened and supported by a sponsorship committee with organizational leadership representation. Such structures can be used to engage key stakeholders across the organization throughout the process, promote shared learning, and build collective organizational capacity in impact assessment. Furthermore, a working group could be used to collectively address impact assessment planning, implementation, and communication.
- **Consider change management governance as needed.** For example, a change management committee could be used to facilitate the adoption of impact assessment results and optimize the return on investment made in impact assessment.
- **Seize opportunities from other governance functions.** The results of external reviews and organizational audit recommendations can be used to drive internal change and provide external validation and rationale for the value of investing in organizational impact assessment.

Build capacity with education & training

- **Seek out impact assessment training.** Education and training raise awareness, foster common language, build core competencies among participating stakeholders, and cultivate appreciation of the different approaches and requirements to implement impact assessment successfully. Various online educational resources and in-person training opportunities exist.*
- **Learn by doing.** Probably the best way of learning and integrating impact assessment into an organization's culture is through practical application. Experience is the ultimate educator. Involve people early and often and start with a manageable project (e.g., pilot with a smaller program).
- **Make educating leadership and staff a priority.** Seize opportunities to teach and communicate what impact assessment is and is not. This can be done using formal presentations and communication tools (e.g., infographics, briefings, video messages).

Probably the best way of learning and integrating impact assessment into an organization's culture is through practical application. Experience is the ultimate educator.

* *Examples of educational resources and training:*

- *The International School on Research Impact Assessment (ISRIA) has posted the materials from all courses (2013-2017) online (Available from: https://www.theinternationalschoolonria.com/resources.php);*
- *Organizations may offer in-person or online training courses. (e.g., Alberta Innovates Research and Innovation Impact Assessment Course program available from: https://albertainnovates.ca/wp-content/uploads/2019/05/RIIA-2019-Program_2.pdf);*
- *CHSPRA impact narrative training has been provided to targeted groups.*

Determining Alignment of the CHSPRA Framework with Organizational Objectives

Why is this relevant?

- **Impact assessment should align with an organization's strategic objectives and business needs.** An organization must determine if and how the impact framework fits with a pre-existing organizational strategic plan and performance measurement and assessment frameworks. From there, it can be determined if and what adaptations may be needed to ensure congruence and organizational 'buy-in'.
- **Impact assessment requires capacity (e.g., financial and human resources).** An organization needs to confirm where and how there is alignment before investing in using the CHSPRA Framework. Determining how an impact assessment framework strategically aligns with organizational needs will have important implications for allocating time and resources.

What are the considerations?

- **The value of using an impact framework or of impact assessment in general is often not well understood within an organization.** Organizations will often not have considered impact assessment within their strategic or evaluation frameworks. Additionally, there are many impact frameworks to choose from, therefore the value of using a specific framework needs to be clear.
- **Pre-existing strategy and evaluation frameworks lay the course for an organization for a specific period of time and often cannot be easily changed.** Frameworks introduced in the midst of an organization implementing its strategic plan or evaluation plan can be challenging. For example, shifts in strategy can require evaluators to bridge between the strategies, reporting on an 'old' strategy while also responding to a new one.

Lack of evaluation capacity limits the organization's ability to fulsomely use a framework in the planning and executing of an impact assessment.

- **Even though organizations want to know about the impact of their investments, they don't often strategically invest in evaluation capacity.** Lack of evaluation capacity limits the organization's ability to fulsomely use a framework in the planning and executing of an impact assessment. Ideally, resources should be committed early (e.g., during strategy development) and proportional to the organization's size.
- **The CHSRPA Framework was designed for broad use by a variety of organizations (e.g., health research funders, universities, health charities) across Canada.** While this fosters consistency and a common language across organizations, there may be a lack of specificity at the organizational level.* This means an organization may need to adapt the CHSPRA Framework to its context.
- **The CHSPRA Framework was developed for use at the system-level and may extend beyond the scope of an organization's mandate.** The framework can be used to assess an organization's contribution to system change. However, an organization may not wish or be able to assess all areas of impact outlined by the CHSPRA Framework, especially those outside the organization's control. Although you may not be able to assess everything, the framework will help focus the assessment relative to an organization's objectives and capacity, and aid in interpreting results.

* *'Organizational level' includes portfolios, programs, projects, or other initiatives undertaken by the organization.*

How can the considerations be addressed?

- **Time and effort must be taken to determine alignment of the CHSPRA Framework to organizational and stakeholder needs.** A review of an organization's key documents (e.g., mission statement, goals and objectives, or strategic focus areas) as a first step. Consultation across the organization and with other stakeholders is also essential. A process to understand organizational and stakeholder values and motivations to do impact assessment (e.g., mandated vs. voluntary/self-determined) is necessary because this may not be reflected concretely in an organization's documents. This is an important way of getting key stakeholders involved as well as promoting impact within an organization.
- **Alignment can be determined by linking or mapping an organization's strategic objectives and activities to the CHSPRA Framework impact categories, pathways to impact, and theories of change.** This can also be done with an organization's existing evaluation framework(s), including data sources and indicators. Mapping allows identification of common areas or where the CHSPRA Framework may expand on an aspect of the organizational framework.
- **Operationalizing the CHSPRA Framework on a small scale can help determine alignment.** Run a pilot application of the CHSPRA Framework on a small, targeted scale and get feedback and perspectives from people in the organization, including leadership and implementors. A pilot will help illuminate alignment issues so the CHSPRA Framework can be used or tailored appropriately. This can be a 'quick win' that generates evidence of the CHSPRA Framework's usefulness as well as greater interest in impact assessment. Examples of pilots include program level application of the CHSPRA Framework, completing an environmental scan, or completing a mapping exercise of the CHSPRA Framework to the organization's strategy/activities.

A pilot will help illuminate alignment issues so the CHSPRA Framework can be used or tailored appropriately.

BOX 5: PRACTICE INSIGHT

Using the CHSPRA Framework to Inform Strategic Thinking, Discussion, and Decisions

"The release of the CHSPRA Framework coincided with the implementation of INESSS's new strategic plan, which included the objective of better understanding its influence with its key audiences. The framework helped broaden considerations, led to internal discussions about measurement options, and supported impact measurement choices."

- Olivier Demers-Payette, INESSS

Aligning Impact Assessment and Performance Management

Why is this relevant?

- **Impact assessment should be aligned with related activities such as performance management.** Impact assessment and performance management approaches can complement each other. Compared with approaches such as performance management and measurement that focus on regular monitoring activities, impact assessment takes a longer system-level view to assessing outcomes beyond the walls of the organization to communities and society (e.g., effect on and with stakeholders).
- **Impact assessment and performance management processes draw on the same pool of finite resources (e.g., human and financial resources, organizational processes).** It is in an organization's best interest to ensure alignment between these processes and coordinate timelines and resources.

What are the considerations?

- **The difference in scope and timelines between performance measurement and impact assessment may not always be clear to leadership and staff.** Embracing impact assessment can be challenged by a limited understanding of:
  - **The increased scope of assessing system level change.** Assessing system change is complex, requiring a comprehensive approach that can include multiple methods, triangulation of data sources, qualitative indicators, and engagement with stakeholders.
  - **The link between organizational performance objectives** (e.g., individual, department) and the contribution to system-level change.

BOX 6: PRACTICE INSIGHT

Using the CHSPRA Framework to Monitor Implementation of an Organization's Strategic Plan

"The CIHR Strategic Plan 2021-2031 sets out organizational priorities for the next 10 years, while also allowing CIHR to reprioritize and redirect resources on short notice to respond to emerging issues. As part of the Strategic Plan, CIHR is developing a performance measurement framework to inform annual monitoring and reporting mechanisms to determine if the plan's implementation is on track. CIHR's framework is based on a theory of change that integrates key indicators from the CHSPRA Framework. Monitoring will involve tracking of the annual action plans for each of the Strategic Plan's priorities. The integration of CHSPRA indicators will inform the assessment of the impact of Strategic Plan priorities and actions to inform health practice and policy."

- Jean-Christian Maillet, CIHR

- **When overarching performance management (immediate to short-term) and impact assessment (short-, mid-, and long-term) timeframes differ:**
  - Information needs and data collection timelines may not always align.
  - Some stakeholders may be concerned that impact assessment is happening "too early" because impact takes time to register in the system. This can result in impact assessments that remain focused on activities and outputs instead of moving along the pathway to short-, medium-, and long-term outcomes.

How can the considerations be addressed?

- **Establish estimated timelines for policy and practice objectives, and plan impact assessments accordingly.** For example, it may be anticipated that a funding program will take 2-3 years to produce short-term changes.
- **Determine if performance indicators at the organizational level could also be used as impact indicators.** This is especially true earlier in the pathway (i.e., short-term). For example, capacity indicators that track organizational collaborations and partnerships could also be used to illustrate impact.
- **Longer term, develop a plan for integrating impact assessment alongside other organizational activities such as performance management and outline reasonable timelines for integration.** Realistically assess the feasibility for completing impact assessments and do pilots or proof of concept assessments to get 'quick wins' and build capacity.

Although incurring a financial cost, consultants can help limit the drain on human resources in the organization and provide focus and objectivity to the assessment.

- **Consider using external consultants to complete impact assessments.** External consultants are often used to complete impact assessments. While an organization will typically monitor key performance and impact indicators, external consultants can be used to complete large-scale impact assessments (e.g., formative and summative evaluations of a research portfolio). Although incurring a financial cost, consultants can help limit the drain on human resources in the organization and provide focus and objectivity to the assessment.

Procedural Considerations

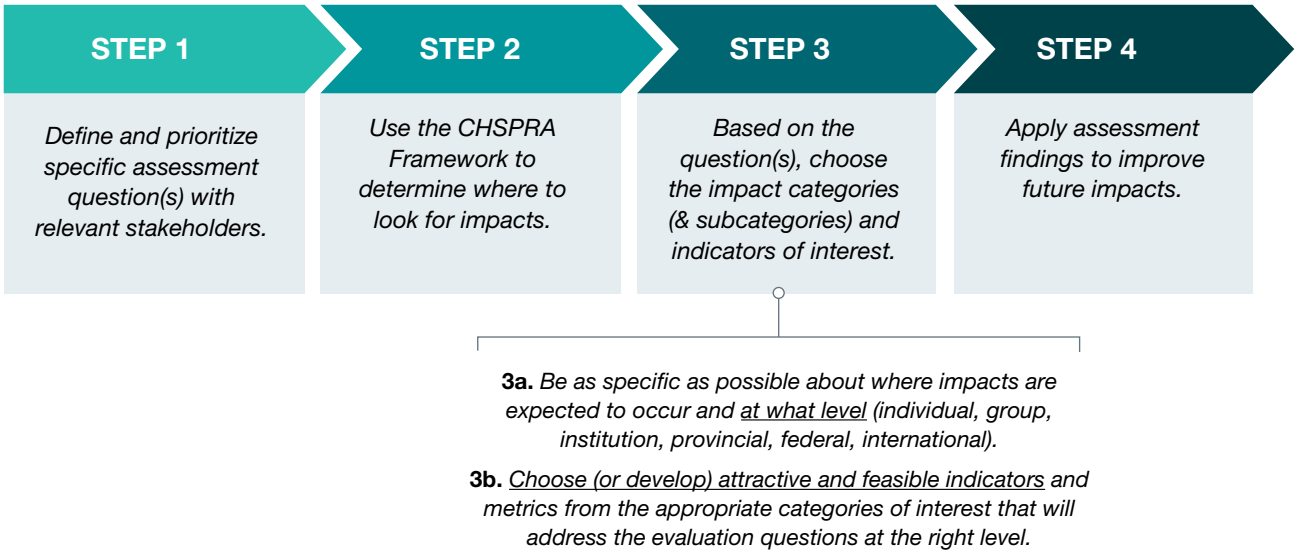
The organizations who have implemented the CHSPRA Framework have identified the following procedural considerations that those completing impact assessments should pay particular attention to: engaging stakeholders; using the CHSPRA Framework in whole or in part; selecting and adapting CHSPRA indicators; assessing impact retrospectively; and working with a small sample size.

In addition to these procedural considerations, there can be confusion or lack of awareness regarding *how* impact frameworks, such as the CHSPRA Framework, can be used in assessment plans. Figure 4 outlines a generic 4-step process to integrate the *CHSPRA Framework into assessment planning*. The steps in Figure 4 are also reflected in procedural considerations that follow. It should be noted that the process illustrated in Figure 4 is for illustrative purposes and does not represent the comprehensive process of developing an impact assessment plan. For more information on this, we suggest consulting ISRIA resources, (6, 12) which provide guidance on other key building blocks of an impact assessment, including the assessment context, purpose, indicators, methods, communication, and project management.*

* *Identifying an assessment framework is a part of understanding the context of the impact assessment, which is one aspect of developing an impact assessment plan. ISRIA resources for developing full impact assessment plans can be found in Appendix B "Recommended Resources for Using the CHSPRA Framework". Appendix C in "Making an impact: A shared framework for assessing the impact of health services and policy research on decision-making" provides a modified version of the ISRIA protocol for developing research impact assessment plans.*

FIGURE 4

Generic 4-Step Process for Integrating the CHSPRA Framework in Assessment Planning



Engaging Stakeholders in the Impact Assessment Process

Why is this relevant?

- **Program stakeholders are the subject matter experts and are excellent resources in the design of impact assessment.** Program stakeholders are the ones who will know what decisions need to be informed by research impact assessment. Therefore, a variety of stakeholders should be engaged depending on the subject of the impact assessment.

What are the considerations?

- **Stakeholders can be engaged on a spectrum based on:**
  - Timing: not all stakeholders need to be engaged at all points of the assessment;
  - Degree of engagement required: the degree of stakeholder engagement can range from informing stakeholders of the assessment and its findings to full participatory engagement (see Box 7); and
  - Importance to the assessment: related to the direction and input needed from stakeholders.
- **Stakeholders may have competing or different interests regarding the assessment purpose and questions.** This can create challenges with aligning assessment activities to stakeholder needs. For example, a stakeholder who is focused on accountability as the primary assessment purpose may not be as supportive of the activities needed for analysis and learning. For more detail on assessment purpose, see 'Using the CHSPRA Framework in Whole or in Part' below.
- **The organization's program/operations staff is a stakeholder.** Organizations who have individuals responsible for impact assessment in a separate unit to operations staff may consider that:
  - Operations stakeholders may have limited knowledge of impact assessment and its corresponding strengths and limitations; and
  - Operations staff often have more information than impact assessment staff on operations (e.g., in the case of a funding program, operations staff may have more information about reporting requirements, data sources, and key stakeholders to engage).

- **Engaging different stakeholders can be time and resource intensive.** Engagement strategies take time and resources to develop and implement. Tools and tactics for engaging stakeholders need to be "fit for purpose" and meaningful versus tokenistic (e.g., collaboratively engaging with Indigenous Peoples and Communities).

How can the considerations be addressed?

- **Identify primary stakeholders and how they are affected by or involved in the impact assessment.** For example, determine if stakeholders are: involved in program operations; affected by the program; needed to achieve intended impacts; or will be using the assessment results. A stakeholder table can be created at the start of the project to help clarify stakeholder involvement (see Appendix A).
- **Engage with program stakeholders as early as appropriate.** Identifying what decisions the findings will inform is key for clarifying scope, resources, and timelines.

BOX 7: FAST FACT

Grading the Extent of Stakeholder Engagement

The extent to which organizations engage stakeholders in impact assessment can be graded, from purely informing stakeholders to having them be central to decision-making. For example, the International Association for Public Participation (IAP2)(13) frames public participation on a spectrum where increasing participation results in increased public ownership of decision-making. Similarly, the National Health Service (NHS) England, in their resource "Planning for Participation"(14) uses a 'Ladder of Engagement' to help organizations plan for meaningful engagement with patients and the public.

- **Use a co-development model to guide engagement.** This is to integrate and optimize stakeholder engagement throughout the impact assessment process. The principles of participatory research can guide engagement. Examples include but are not limited to:
  - Mentoring stakeholders in the area of impact assessment, given that many will have varying degrees of understanding of this discipline;
  - Involving stakeholders in determining assessment purpose and questions; and
  - Leveraging existing processes (e.g., stakeholder engagement processes, IT platforms, contact lists, engagement tools).
- **Build additional time into the project plan to allow for stakeholder engagement.** This will enable authentic (versus tokenistic) engagement.

Using the CHSPRA Framework in Whole or in Part

Why is this relevant?

- **Seeing the process as 'a whole' is useful and can provide deeper insight into what and how impacts occur.** It enables analysis of the interactions between impact categories and provides greater breadth and depth of assessment. This can be useful for identifying less obvious, yet important pathways to impact. However, applying the CHSPRA Framework in its entirety may not be necessary or feasible. Keeping the impact assessment 'manageable' and matching capacity and expectations will help maintain focus on completing impact assessments.
- **The CHSPRA Framework offers a comprehensive, non-linear representation of the complex system of change in the health sector.** Given the system-level focus, there is a sense that all the dimensions must be examined at once to measure impact. However, each of the CHSPRA Framework's impact categories is well described, so it is possible to consider each of them separately and focus on a few at a time.

What are the considerations?

- **Purpose of the assessment.** There are four general reasons for completing an impact assessment – advocacy, analysis and learning, accountability, and allocation (Box 8).(6, 12) Different purposes can align better with particular components of the CHSPRA Framework. For example, to perform an 'advocacy' assessment, more distal components of the pathway (i.e., components closer to ultimate impacts) may be more relevant. However, for an 'analysis and learning' assessment, understanding strengths and weaknesses all along the pathway to impact will likely be relevant.
- **Accountability is not the only reason to do impact assessment.** A shift to integrate impact into an organization's culture should not view impact assessment as an "accountability exercise" in the same way that program evaluation or performance measurement are sometimes viewed.
- **Feasibility constraints.** Although it may be enticing to assess at all points along the pathway, the organization's 'impact maturity' and resource bandwidth may not allow it. Organizations with limited capacity may have difficulty staying focused on impact assessment, especially when competing priorities arise. Specific considerations regarding feasibility include the stage of development of the program to be assessed, data availability related to the impact categories, and resources needed to collect and analyze the data.
- **Rapid results and quick wins may be a priority.** Leadership and stakeholder priorities may dictate a focus on upstream categories that produce impacts that can be assessed in the short-term.

How can the considerations be addressed?

- **Leverage the CHSPRA Framework's non-prescriptive nature.** This is a strength of the CHSPRA Framework - allowing an organization to be flexible with how it assesses impact, based on need and capacity.
- **Be clear about the assessment's purpose, objectives, and questions.** This will provide clarity about alignment with the CHSPRA Framework (in whole or in part).
- **Provide assessment options to leadership.** Develop a range of assessment options and a rationale for each based on feasibility and timelines. This will help manage expectations, make the case for a particular approach, and allow an organization to balance practicality with the rigour of impact assessment, maximizing utility and meeting an organization's information needs.
- **Acknowledge your organization's current capacity to do impact assessments.** This may mean starting with a focus on a particular impact category. The CHSPRA Framework's logical progression from short-, medium-, and long-term impacts and the CHSPRA indicators help to determine an appropriate starting point (i.e., short-term impacts are easier to assess while there might be one or two medium or long-term impacts that could be included as well). This will help the organization remain focused on completing the impact assessment.
- **Rapid results require focus.** If rapid results are needed, it is essential that the assessment questions are specific and align with organizational decision-making priorities so that results are relevant.

BOX 8: FAST FACT

Four General Purposes for Completing an Impact Assessment

1. ***Advocate*** for continued research.
2. ***Analyze and learn*** about gaps, successes, and challenges to inform organizational decision-making.
3. Demonstrate ***accountability*** to stakeholders.
4. ***Allocate*** resources and investments.

Selecting and Adapting the CHSPRA Indicators

Why is this relevant?

- **Indicators are an important part of impact assessment.** They can provide compelling evidence that program objectives are being achieved and can be used to inform organizational decisions. They also help illustrate the meaning of 'conceptual' impact categories by representing them in measurable or observable units.
- **CHSRPA indicators may not all be relevant or applicable to all organizations.** The CHSPRA indicators were developed to assess the impacts of health services and policy research at a system level (e.g., impact of all health services and policy research done in Canada), with research funders being the primary users. Not all CHSPRA indicators may be suitable for an organization's monitoring and impact assessment needs.
- **CHSPRA indicators can be adapted.** CHSPRA indicators can be useful to organizations if they align with the organization's activities and contexts. If they align in principle, they can be adapted to accurately reflect the organization's context.

What are the considerations?

- **Indicators must be important, relevant, and feasible.** Organizations must translate/adapt the CHSPRA indicators to reflect their reality (i.e., organization's context) to ensure indicators are important, relevant, and feasible, while also reflecting the impact category.
- **Indicator definitions and the methodology must be aligned.** Although the underlying construct of the CHSPRA indicator may be useful, how it is framed as a metric (e.g., number of, percentage) may not be adequate or appropriate. In some cases, qualitative data collection methods (e.g., surveys, interviews) may be more appropriate than counts of quantitative data.
- **Ensure the indicator is appropriate for the unit of analysis/level of aggregation.** Indicators are valid at different levels of aggregation. For example, some CHSPRA indicators are not recommended for use at a group or department level but can be used at an organizational level.*
- **The CHSPRA indicators do not come with predefined targets or comparators.** Organizations will need to set their own targets and interpret results within their own context.

CHSPRA indicators can be useful to organizations if they align with the organization's activities and contexts. If they align in principle, they can be adapted to accurately reflect the organization's context.

* *Information on levels of aggregation for all of the CHSPRA indicators is found in* Making an impact: A shared framework for assessing the impact of health services and policy research on decision-making, *Appendix A (p. 68-73). Available from: https://c2756327-591d-43bb-b7c1-a8fa96cea8a2.filesusr.com/ugd/5adc92_3ae941eaedb04ab4a66b6f83f98a479d.pdf. This is building upon best practices established in the CAHS Impact Framework. Available from: https://www.cahs-acss.ca/wp-content/uploads/2011/09/ROI_FullReport.pdf*

How can the considerations be addressed?

- **Examine the CHSPRA indicators relative to the organization's reality.** CHSPRA indicators can be used efficiently by focusing on the indicators that best suit the organization's monitoring and impact assessment needs. For example, a first step could be to map the CSHPRA indicators onto current organizational priorities, initiatives, or assessment frameworks to determine if the underlying intention of the indicator is congruent with the priorities and impact assessment objectives of the organization. Adaptations to indicators can then be made (if needed) relative to the organization's context to ensure indicators can be operationalized.
- **Leverage current organizational indicators.** Determine if indicators currently used by the organization align with the CHSPRA impact categories. The CHSPRA indicators can be used to help 'shape' or complement organizational indicators. This will help illustrate the CHSPRA Framework's relevance and usefulness.
- **Adapt and operationalize the CHSPRA indicator relative to the appropriate unit of analysis.** The CHSPRA indicators are generally flexible, with most responding to group/department and institution levels of analysis. However, modifications to the CHSPRA indicators may be necessary if the unit of analysis indicated does not match the unit of analysis needed by the organization.
- **Ensure the adapted indicators reflect the CHSPRA Framework impact category.** The impact categories are described in the CHSPRA Framework. Refer back to these descriptions to confirm that adaptations have remained true to the spirit of the category.
- **Determine targets for indicators where appropriate.** Targets will depend on how the indicator is defined and whether baseline data is available. Organizations may choose not to set targets for some or all of the indicators, especially if they cannot establish a baseline. Focus then shifts to establishing a baseline if this is the limiting factor.
- **Repurpose historical data/information.** Mature organizations may have a significant amount of historical data and information that could be used in the context of the CHSPRA Framework and indicators. Specifically, this data can be 're-purposed' to align with and help iform adaptations to the CHSPRA indicators. This has the added benefit of ensuring that organizational information relevant to impact is not lost or forgotten.
- **Document challenges for measuring the indicators.** For example, assess issues with potential methods, availability of data, and availability of resources.

BOX 9A: PRACTICE INSIGHT

Adapting CHSPRA Indicators in the Real-World – Example from Alberta Innovates

"As AbSPORU does not fund research, rather it provides services and supports to those that conduct or participate in patient-oriented research, it does not monitor the indicators on health services and policy research funding and investment as defined in the CHSPRA Framework's core indicator set. Instead, given its context, AbSPORU intends to track the number (#) and type of health services and policy research projects that it supports, and the resources allocated to those projects, as a proxy measure of the program's investments in, and indirect contributions to, health services and policy research projects and outcomes."

- Heidi Chorzempa, Alberta Innovates

BOX 9B: PRACTICE INSIGHT

Adapting CHSPRA Indicators in the Real-World – Example from INESSS

Because the use of information by policy makers and practitioners is complex, the refinement of certain aspects of the CHSPRA Framework was necessary in the context of INESSS activities. Adapting the indicators from the CHSPRA Framework was therefore the first step in developing a specific measurement tool (a validated questionnaire) to collect statistical and qualitative data.

Example: Impact Category – Inform Decisions about Health Services and Policy Innovations (Short Term)

Original CHSPRA Indicator

Number (#) and percent (%) of policy/ decisionmakers' self-reported use of research.

Indicator Adaptations:

1. User satisfaction rate with INESSS knowledge products
2. % of stakeholders targeted for a product who reported using INESSS recommendations to inform decision-making

- Olivier Demers-Payette, INESSS

Assessing Impact Retrospectively

Why is this relevant?

- **Retrospective analysis may be the only option.** Retrospective analysis is often done because organizations have not planned for impact assessment at the outset or are in the middle of an evaluation cycle when they decide to assess impact. Similarly, retrospective data may be useful when working with small sample sizes (e.g., used to augment a small data set).
- **Impact assessment can be retrospective by nature.** Impact assessment often looks backwards in time to assess the long-term outcomes of organizational activities and to uncover the pathways and factors that led to research impact.
- **Retrospective assessment is useful.** A retrospective evaluation can be used to assess whether and how organizational objectives were met.

What are the considerations?

- **Error and bias (e.g., recall) are more likely with collecting data retrospectively.** Sources of error can occur due to confounding data. Bias is more common in retrospective studies than in prospective studies, which opens them to criticism.
- **Challenges with data availability and cost.** Availability of data can be difficult and costly, especially in cases where a new framework is being applied to a long running program.
- **Unintended consequences of using retrospective data.** Pulling up retrospective data from various sources may identify issues that may need to be addressed, such as privacy and permissions and how records are managed in general. Data utility is also a consideration. For example, older data may not be relevant in an organization's current context, however, could be useful for assessing long term impact.
- **Retrofitting the data.** If the organization does have useful data, it will likely need to be adapted to 'fit' or respond to the CHSPRA Framework.

BOX 10: PRACTICE INSIGHT

Collecting Data for CHSPRA Indicators in Practice – Prospective Versus Retrospective Approaches

Data collection for the CHSPRA Framework indicators is easier to do when planned prospectively, and preferably when the data collection can be integrated into or leverages existing processes from the start of a program or project. While retrospective application may be possible and easier for some indicators where data is already available (e.g., data originally captured for administrative purposes according to health services and policy research priority theme areas, for counts, descriptive and trending purposes), other indicators may not be feasible to collect retrospectively due to costs, timeliness, or lost opportunity that may be inherent in some post evaluation/retrospective assessment designs.

- Heidi Chorzempa, Alberta Innovates

How can the considerations be addressed?

- **Aim to collect data prospectively if possible.** While existing data can be retrofitted, if possible, aim to collect data prospectively that is driven by the assessment questions and impact categories (see Figure 2).
- **Use techniques to reduce recall bias.** For example, if surveying people to ask them about past impact, recall can be improved by sending out questionnaires to respondents prior to interviews.
- **Triangulate to reduce error.** Use multiple data sources to increase the accuracy and credibility of the findings.
- **Leverage existing performance measurement indicators.** Indicators developed after programs have been implemented can be challenging to operationalize in an impact assessment because data may not have been collected or may not be available. Performance measurement indicators already in use may be appropriate for the impact assessment in current form or could be modified.
- **Be transparent about retrofitted data.** Make it clear that the data was retrofitted and outline the limitations. Use this is as an opportunity to educate and manage expectations.
- **Ensure policies regarding data privacy, access, and use are followed.** For example, there may be agreements between organizations and permissions to use data from initiatives that must be considered. Permissions may need to be granted, and this may take longer than expected. This can be complex and may require consulting privacy experts

Use multiple data sources to increase the accuracy and credibility of the findings.

Working with a Small Sample Size

Why is this relevant?

- **Small sample sizes may be unavoidable.** A small sample size may be impossible to avoid due to different factors such as the size of the organization or the project/program being assessed.
- **Small sample sizes can be discouraging.** Organizations may shy away from doing a fulsome assessment because of the perception that a small sample size will negatively influence the trustworthiness of the assessment. While it's true that small sample sizes can be a disadvantage for quantitative analysis, there are creative approaches that can be used to gather meaningful data on the impact of activities using qualitative methods.

What are the considerations?

- **Rigour considerations should be anticipated and declared.** Small sample sizes can affect the reliability of survey results and lead to high variability and bias. Additionally, results gathered on indicators from a small sample may not be comparable or applicable to other programs. (15, 16)
- **More than one data source may be necessary to compensate for a small sample size.** In an attempt to tell the impact story, you may have to pull together different types of data.
- **Qualitative approaches (e.g., semi-structured interviews, focus groups) provide focus and depth of understanding.** Large quantitative data sets are typically more representative than smaller data sets and depending on how data were collected (e.g., sampling), are generalizable to other programs/contexts. However, quantitative data often lacks nuance and are not able to explain why and how a change (or lack thereof) occurred. Qualitative approaches can use purposive sampling to identify individuals with specific perspectives and experiences to provide rich information that can add more context to quantitative data or be used when larger data sets are not possible.

How can the considerations be addressed?

- **Collect rich qualitative data.** Methods such as semi-structured interviews and open-ended survey questions can be used to supplement quantitative data, providing a full picture of the indicators.
- **Leverage other similar or related data to 'tell the story'.** Data from different organizations or historical data from a similar program can be used. For example, the framework can be applied to more than one program, an entire suite of programs, or to the entire organization.
- **Gather information over multiple points in time.** This is similar to a repeated measures design and will increase the number of data points available.

BOX 11: PRACTICE INSIGHT

Adapting to a Small Sample Size

A small sample size can be anticipated, such as when 'testing the waters' by piloting the CHSPRA Framework to assess one program instead of an entire suite of programs. Don't let small sample sizes stop you! Small sample sizes are challenging for quantitative analyses but we saw an opportunity to adapt the indicators into questions for semi-structured interviews and gather rich qualitative data for our program.

- Julia Langton, Michael Smith Health Research BC

Impact Assessment Methodological Considerations

Organizations globally have struggled with various common impact assessment methodological challenges.(5, 6) This guide addresses three challenges that organizations experienced to be the most relevant when implementing the CHSPRA Framework: time lags, assessing attribution and contribution, and establishing the counterfactual.

Time Lags

Why is this relevant?

- **Time lags are a reality of research impact assessment.** By definition, a time lag is the time that has elapsed between the start of the research process and its impact.(19, 20) Time lags vary depending on the type of research (e.g., biomedical, health services and policy), contextual factors (e.g., social, political, system capacity) that limit or enable translation, overlapping research processes, and timing of research.(20) Immediate impacts may be realized as soon as months after funding, but more distal (broader health and societal) impacts can take years to materialize.
- **There are three main points in time where lags can occur:** 1) time to complete research; 2) research manifesting to impact; and 3) delayed assessment of impacts.
- **Time lags are complicated and could have positive or negative consequences.** Although some lag is necessary to ensure the safety and efficacy of new interventions or advances, lags should be optimized.(17, 18) Delays can result in a waste of scarce resources and a sacrifice of potential patient benefit.(21)
- **Anticipating time lags improves impact assessment.** Aspects of planning and executing impact assessments (e.g., indicator and method selection) can be informed by considerations related to time lags. This allows us to identify what impacts are measurable at what point.

Although some lag is necessary to ensure the safety and efficacy of new interventions or advances, lags should be optimized. Delays can result in a waste of scarce resources and a sacrifice of potential patient benefit.

BOX 12: FAST FACT

Time Lags in the Short and Medium Terms

Although the lag time from discovery research to health, social, or economic impact has been estimated at 17 years,(17) there are examples of shorter time lags (e.g., COVID-19 vaccine),(18) where broader impacts can be assessed in the short- and medium-term.

What are the considerations?

- **The timing of the impact assessment has implications if it is carried out too soon or too late.**
  - **Delaying assessment too long** increases the risk that data records could go missing or become outdated and accentuates recall bias of individuals who may be asked to provide accounts during impact assessments. Additionally, interest in the assessment may wane because the program or project is no longer part of an organization's agenda.
  - **If done too soon,** organizational leadership and stakeholders *may consider their initiatives ineffective and impact assessments as failures* if downstream impacts cannot be captured.
- **The timing of the impact assessment has implications for indicator and method selection.** The time period (e.g., short-, medium-, long-term) used for assessing impacts creates the boundaries for what is assessed and how it is assessed. For example, the assessment of a 5-year research program occurring 2-3 years post-implementation will likely assess short-term outcomes and include indicators that capture the processes and immediate outputs from the research or research program, which usually precedes the achievement of medium- and long-term outcomes. Case studies or multiple methods (e.g., qualitative interviews, surveys, documents reviews) can be used to support in-depth descriptions of the pathways to impact for those short-term outcomes.

How can the considerations be addressed?

- **Set a clear focus (e.g., purpose, questions) for the assessment.** A clear focus is important for determining assessment timelines and what will be assessed, as well as increasing awareness regarding what can be accomplished within the boundaries of the assessment. Distinguishing what the assessment will and will not address helps manage scope creep and stakeholder expectations. Establishing a clear focus provides an opportunity to educate stakeholders, including leadership, about time lags, which may stimulate further refinement of the assessment.
- **Use an impact framework, such as the CHSPRA Framework to address time lags.** Frameworks can help *define what is being assessed* by clarifying impact categories and pathways to downstream impacts (e.g., social and economic impacts) and *provide a general assessment of timeline* (e.g., short-, medium-, long-term). When selecting impact assessment indicators and methods, it is important to:
  - Recognize that there is a pathway to impact that happens *over time* (and measurement and data collection should occur over time);
  - Determine where your organization fits along the pathway (i.e., how your organization is performing along that pathway); and
  - Determine what your organization needs to do to address challenges along the pathway.

BOX 13: PRACTICE INSIGHT

Using the CHSPRA Framework to Address Time Lags

The impact categories in the CHSPRA Framework can be used to identify impacts as they correspond to the identified timeframe. For example, assessment of short-term impacts may involve selecting indicators that address "problem and priority co-identification" and "receptor capacity to use and implement" research evidence.

- **Identify and monitor 'signposts' (e.g., indicators, targets, proxies) along the pathway.** This provides an opportunity to highlight progress or identify areas where progress is lacking so that course corrections can be made early.(12)
- **Explore designs that are congruent with the timeline for anticipated impact.** Different designs can be used to capture various points in time along the pathway to impact. For example, case studies can be used at any point in time to get an in-depth snapshot of impact and can be used retrospectively. Time series designs collect data at multiple points over time. Implementing designs as described in the literature can be challenging in real-world impact assessment for various reasons (e.g., limited resources, time constraints, stakeholder needs); however, examining the potential of using the various formal designs can provide inspiration for developing impact assessments that fit the context.
- **Map out the chronological time to complete the impact assessment,** considering factors that will influence delays in completing the assessment (e.g., data availability, availability of resources).
- **Communicate with organizational leadership and stakeholders early on about the timing of impacts.** Clarifying short-, medium-, and long-term impacts can help to illustrate progress milestones along the pathway and where early success can signal future impacts.

Clarifying short-, medium-, and long-term impacts can help to illustrate progress milestones along the pathway and where early success can signal future impacts.

Assessing Attribution and Contribution

Why is this relevant?

- **An organization's impact assessment aspirations may not be realistic.** Organizations may want to demonstrate that their *activities have directly caused a measurable change in the system*. However, establishing attribution or the causal link between activities and long-term social and economic benefit is usually unrealistic.
- **Leadership and stakeholders may expect or assume impact assessments will result in attribution claims.** This creates pressure, implicitly or explicitly, to claim attribution.
- **Ability to demonstrate contribution to system level change is more likely.** System level initiatives typically involve collaborations and partnerships, which requires that contribution to impact be explicitly acknowledged and assessed.
- **There is risk associated with claiming attribution.** Organizations can assume significant risk if they do not have the supporting evidence for their claim. There is also reputational risk for the impact assessment field. Attribution claims become less believable because different organizations use the same indicators or report on identical impacts without acknowledging the influence of other system actors and factors.
- **Articulating aspirations about an organization's role in system change is important.** For example, striving to achieve attribution, and being clear this is an aspiration, may drive an organization's thinking and reinforce the need to assess an organization's contribution to long-term, collective impacts.

What are the considerations?

- **Establishing causal links between system level change and an organization's activities is very difficult.** (3, 22, 23) Impact is achieved through many actors (e.g., individual, organizations, governments, industry) interacting within a complex system over time,(24) making it less likely that change can be attributed to one organization's actions.(12) In other words, even if a direct causal link exists, it may be impossible to tease out, and it's important to remember that correlation does not equal causation.
- **Establishing attribution may not be feasible.** Resources and methods to determine direct causal links carry high financial and workload burden and appropriate data may not exist or be accessible.
- **Manage expectations and "stay humble" in the face of pressure to claim attribution.** This requires remaining realistic and educating leadership and external stakeholders on the underlying assumptions regarding attribution and appropriately framing impact assessments.

BOX 14: FAST FACT

Assessing for Contribution is Good Practice

Determining an organization's contribution to impact is considered good practice for impact assessment because of the significant challenges to determining attribution.

How can the considerations be addressed?

- **Take a realistic perspective from the outset.** Demonstrating contribution to change is more viable, and likely more accurate.(25)
- **Be clear about the assumptions of what an impact assessment can achieve.** This means explicitly declaring the attribution assumptions in the assessment plan.
- **Use the following:**
  - **CHSPRA Framework (and/or other impact frameworks):** to provide the structure and rationale for mapping how an organization or program is expected to cause or contribute to impact.
  - **Multiple methods and triangulation of data sources:** (12) to provide necessary lines of evidence for identifying an organization's influence on impact.
  - **Validated tools (e.g., targeted surveys):** to provide a stronger line of evidence for making claims about contribution regarding the use of research in decision-making.
- **Consider a more fulsome assessment of attribution with short-term impacts (i.e., earlier in the pathway).** Organizations have more 'control' over inputs, activities, and outputs (e.g., capacity) and may be more readily able to demonstrate attribution.
- **Engage partners and stakeholders in developing and implementing impact assessments.** Encouraging stakeholder contributions and oversight helps to keep the assessment honest.

Establishing the Counterfactual

All of the contributors from organizations implementing the CHSPRA Framework agree that the counterfactual is a compelling perspective, especially because a question that stakeholders often intuitively ask is "what would have happened if the program hadn't been implemented?" Implementing a counterfactual design as described in the literature is challenging given the inherent complexity and uncertainty in assessing system-level impact. However, taking advantage of a real-world or naturally occurring comparison can help illustrate the change (or lack thereof) brought about by a research program or initiative.

Why is this relevant?

- **Counterfactuals can be used to determine whether there are alternate explanations for program outcomes.** An ultimate aim can be to determine a causal link between observed impacts and the program or an estimate of what would have happened without the program.(26, 27)
  - This is done by analysing the difference between the observed or expected results and the "counter" or alternate scenario.(28, 29)
  - A control group or "counterfactual" can be an actual or hypothetical reference point of what would have occurred in the absence of a program or intervention.(12, 28) The control group can illustrate what would have happened had the program not been implemented.(30)
- **Counterfactual analysis adds rigour to the assessment.** Establishing a robust counterfactual can provide trustworthy evidence that program objectives were met and the process was efficient. (30)
- **The counterfactual is a common stakeholder consideration.** Stakeholders may ask what would have happened if a particular program did not exist (i.e., "would these results have happened anyway").

What are the considerations?

- **Counterfactual analysis is difficult to do well.** There are methodological challenges with establishing a robust counterfactual. For example, using quantitative designs for establishing a comparison group as the counterfactual may not be financially or practically feasible. Prospective impact assessments offer the best opportunity to establish a valid counterfactual. Counterfactuals can also be done retrospectively, (27) but can be challenged by data availability, which can make counterfactual analyses difficult.
- **Preliminary planning for a counterfactual can be of benefit.** Establishing that a counterfactual analysis will be completed early on in the impact assessment planning process allows baseline and subsequent monitoring data to be collected, which enables treatment and control group comparison.(28) Retrospective analysis can be completed, although with greater challenges. Additionally, counterfactuals can be time and resource intensive, reinforcing the need for early and thoughtful planning.

How can the considerations be addressed?

- **Counterfactuals should be driven by stakeholder needs.** Do not do a counterfactual analysis for the sake of it. Ensure stakeholders are aware of the strengths, limitations, challenges, and costs early in the planning process and prior to committing.
- **Choose the right program or project.** Counterfactual analysis may be better suited for programs with more tangible outcomes versus programs that are likely to have diffuse impacts that are dependent on complex interactions within the system. Also, consider the implications of the program – 'higher stakes' programs may demand a counterfactual analysis.

BOX 15: PRACTICE INSIGHT

Theory and Practice of Counterfactual Designs

In theory, the literature (27, 29) suggests the characteristics of a robust quantitative counterfactual design include:

- A valid control group (i.e., comparison group) is established:
  - Control and treatment (i.e., program) groups are adequately equivalent;
  - The intervention cannot affect the control group in any way; and
  - The control group's outcomes should be the same as the treatment group if they are exposed to the treatment.
- Pre-test measures are taken.
- Bias in the control group is accounted for.

In practice, achieving the above standards with research impact assessment may not be possible for various reasons including timing of the assessment, limited resources, and the nature of certain types of research (e.g., health service and policy research) and funding programs. That said, establishing a comparison can help clarify whether change has occurred and provide important context for the assessment. There are different ways to quantitatively and qualitatively explore comparisons in practice, for example, by comparing funded vs. non-funded researchers, using published literature to establish the comparator, being aware of 'natural experiments' at the beginning of research programs that can leverage a naturally occurring comparison, and asking the qualitative interview question "what would the world be like if this program didn't exist?" Additionally, the real-world practice of establishing a baseline enables comparison at various points along the life of a research program or initiative.

Sometimes it takes a bit of creativity to set up a real-world comparator. An example is Wang et al.'s (31) assessment that aimed to understand how early career setbacks in terms of funding success influenced researchers' career trajectory. Wang et al.(31) were thoughtful in how they constructed their comparison groups of funded and non-funded researchers to ensure they were as equivalent as possible. In their retrospective assessment, they created two groups of researchers that had applied for National Institute of Health (NIH) funding as junior researchers - one group was composed of researchers who were 'narrow wins' (i.e., just made the threshold for NIH funding) and the other of 'near misses' (i.e., just missed the threshold for funding).

Their rationale was that the groups would be similar because the relationship between peer review scores and grant success is typically non-linear in evaluation scores that hover just above or below the threshold. Indeed, Wang et al. (31) found that the groups were statistically similar in all respects (e.g., percentage of female applicants, number of pre-treatment publications) prior to applying for funding (i.e., 'pre-treatment'). Further, the assessment findings were compelling. Although the 'near miss' group had higher attrition compared to the 'near win' group, those that remained in research were more successful than their 'near win' counterparts over the long term. They concluded that early failure should not necessarily be seen as a negative, especially with junior researchers who persevere. The assessment findings could have implications for the way that early career researchers are supported.

- **Use different and multiple methods to address feasibility challenges.** Mixed methods are considered best practice in impact assessment. Qualitative methods, such as interviews or surveys with key stakeholders, can be used to reconstruct the counterfactual scenario by hypothesizing the alternate state. This approach requires fewer resources and less time to complete, making counterfactual analysis in some scenarios more viable.(32)
- **Be realistic about causation.** Accepting correlations (vs. causation) may be necessary, along with ensuring triangulation of lines of evidence.
- **Keep the entire impact pathway in mind.** The pathways to impact provide a big picture view of various ways that impact can occur. Keep this in mind to challenge the impulse to oversimplify.

BOX 16: PRACTICE INSIGHT

Counterfactual Example in the Real-world - Impact of the Kidney Research Scientist Core Education and National Training (KRESCENT) Program

Background to the Impact Assessment

Burns et al. (33) completed an assessment of the impact of the KRESCENT Program between 2005-2015. KRESCENT aimed to increase capacity, collaborations, and knowledge translation related to kidney research in Canada. The program included salary support, curriculum delivered via 2 workshops/year, career development sessions, grant and manuscript writing sessions, and mentorship.

The Counterfactual

The assessment included a *counterfactual* to determine whether the program had directly impacted research productivity, collaborations, and knowledge translation. The 'intervention group' was the researchers (post-doctoral fellows, early career researchers) who had taken part in the KRESCENT Program between 2005-2014. The 'control group' was KRESCENT applicants that were not funded by the program over the same period of time.

A bibliometric analysis was completed with both groups, before and after the program for successful KRESCENT applicants and before and after the application for unsuccessful applicants. The following metrics were assessed: average number of manuscripts, average number of authors per manuscript, average number of addresses per manuscript, international collaborations, average of relative citations (ARC), and average of relative impact factor (ARIF).

Results of the Counterfactual Assessment Using Bibliometric Analysis

The KRESCENT researchers outperformed their nonfunded counterparts on the majority of bibliometrics, indicating that the KRESCENT program positively impacted knowledge production (e.g., publication quantity and quality), collaborations (e.g., international collaborations), and knowledge translation (e.g., relative citations).

Advancing the 'How-to' of Impact Assessment

Engage in Communities, Networks, and Learning Opportunities

Impact assessment is a relatively new field. There are a handful of organizations in Canada and internationally that are mature in terms of impact assessment knowledge, experience, and resources. Although growing, the field lacks a deep body of knowledge to guide practitioners. Considering these factors, sharing knowledge and experiences between practitioners and organizations is paramount for advancing impact assessment practice. Learning occurs through the process of completing assessment projects, however, this may not be enough. It is highly recommended that organizations new to impact assessment seek out engagement and learning opportunities both internal and external to their organizations. The following are ideas to consider.

Follow networks and communities of practice

- **Use social media to engage with research impact networks.** There are various organizations and research impact networks that have Twitter accounts and websites. These sites also provide resources, articles, and blog posts. Examples include:
  - Health Services Research Association (NZ, AUS) https://www.hsraanz.org/
  - LSE Impact Blog (https://blogs.lse.ac.uk/impactofsocialsciences/)
  - RAND (https://www.rand.org/topics/impact-assessment.html)
  - Research on Research Institute (RORI) (UK) https://researchonresearch.org/
- **Connect through training, workshops, and webinars.** Participate in training, workshops, and webinars to increase knowledge and get a sense of who is doing impact assessment. There may be opportunities to connect over common interests.

Meet with others consistently

Regular conversation about impact and impact assessment promotes learning. The following are ways to promote consistent dialogue:

- **Schedule meetings or learning sessions with those involved in impact assessment in your organization.** These can take the form of reflective learning sessions, journal clubs, lunch and learns within a specific unit, or forming impact committees/working groups. This is especially important in organizations with limited evaluation capacity. This will help to socialize impact thinking and foster an impact-oriented culture in the organization. Consider inviting external 'experts' to the learning engagements to contribute to and complement the knowledge and experience of the organization.
- **Look for opportunities to formally engage with other organizations.** Alliances (e.g., CHSPRA) and collaborations provide fertile ground for learning about impact assessment through discussion and shared learning. Active collaborations can also be leveraged by exploring opportunities for joint impact assessment projects. Formal opportunities to share learnings and collaborate can spring from established and consistent relationships.
- **Get a mentor.** Regular meetings with a mentor can be a safe and generative space to focus on knowledge and skills gaps as well as specific organizational challenges.

Use targeted activities to create a local community of practice

Often there are specific projects related to an impact assessment that benefit from engagement with the local community (e.g., development of 'fit for purpose' tools, resources, and questionnaires). These activities can be targeted and brief.

- Use these opportunities to identify collaborators within the local community. These individuals could become impact champions in the community by helping to advocate for the benefits of participating in impact assessment.

Impact by Design – Taking a Systems Life Cycle Approach*

The focus on societal impact has been growing in prominence and popularity, particularly over the last decade. To better assess societal impact, new insights have shifted the focus from simple linear models of impact to systems frameworks that describe it as a cycle with feedback loops and iterative processes to inform discovery, adaptation, and innovation. Not unlike a learning health system, (7) this *systems life cycle approach* is influenced by science, technology, and innovation policy as well as other drivers including design principles and methods that include an impact mindset and planning for impact. (8) A systems life cycle approach allows us to connect policy and strategy to impact planning, implementation, assessment, and improvement, cycling through these processes and back, to inform policy and strategy and repeat the cycle again. Further, emerging practices with potential to stimulate impact and realize benefits for society draw on cross-sectoral experience and interdisciplinary knowledge and methods.

A systems life cycle approach:

- Reinforces that impact is optimized by collective efforts at all stages of the impact assessment life cycle;
- Recognizes that we need to combine bottom-up and top-down approaches to affect change. Bottom-up approaches include considering an organization's culture and engaging both those affecting and being affected by the change, whereas top-down approaches include impact policies that can be used as levers of change;
- Enables experimentation and learning by engaging stakeholders in the research of impact, which promises new ways for stimulating impact versus simply demonstrating impact; and
- Embeds an impact 'mindset' in individuals, organizations, teams, policies, and health systems.

A systems life cycle approach allows us to connect policy and strategy to impact planning, implementation, assessment, and improvement, cycling through these processes and back, to inform policy and strategy and repeat the cycle again.

* *Dr. Kathryn Graham (Executive Director, Impact Action Lab, Alberta Innovates) has described her experience of connecting policy and strategy to impact assessment in complex ecosystems as a 'systems life cycle approach'. Her impact assessment practice experience is described in this section,* "Impact by Design – Taking a Systems Life Cycle Approach".

Conclusion

Organizations can get a head start on assessing the impacts of health services and policy research by using the CHSPRA Framework and this 'how-to' guide. The CHSPRA Framework is a non-linear tool for designing and measuring impact. This 'how-to' guide advances impact assessment by identifying and addressing strategic, procedural, and methodological considerations for doing research impact assessment. Addressing these considerations is necessary for shifting to an impact mindset. The guide provides suggestions, resources, and examples for using the framework to advance implementation of impact assessment in the real world.

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Appendices

Appendix A

Stakeholder Table* - Example

Below is an example of a stakeholder table. Creating a stakeholder table can help identify primary and secondary stakeholders related to a particular impact assessment and clarify their roles or how they will be impacted by the assessment. The table can be adapted to the organization's needs.

Stakeholder	Who will be ...				
	Involved in program operations	Affected by the program	Needed to achieve the intended impacts	Using the assessment results	Informed of the assessment results
Government					✓
Funding Agency (executive, program managers)	✓		✓	✓	✓
Patients	✓	✓	✓		✓
Healthcare Providers	✓	✓	✓		✓
Program Steering Committee			✓	✓	✓
Academic Partners			✓		✓

* *Stakeholder table provided by Alberta Innovates.*

Appendix B

Recommended Resources for Using the CHSPRA Framework

Open access resources that the contributors to this guide have used in practice to inform research impact assessment planning and implementation are provided in Table 4. Note that this is not an exhaustive or systematically generated list of resources. The 'important considerations for implementing frameworks and assessing impact' have been cross-referenced to the resources to provide additional guidance on where to look for more information. There are more resources for some considerations than others.

TABLE 4

Open-access Impact Assessment Resources Commonly Used by the Guide Contributors

RESOURCE	CONNECTION TO CONSIDERATIONS
Panel on Return on Investment in Health Research. Making an impact: a preferred framework and indicators to measure returns on investment in health research [Internet]. Ottawa (ON): Canadian Academy of Health Sciences; 2009 [cited 2022 Jan 31]. 134 p. Available from: https://www.cahs-acss.ca/wp-content/uploads/2011/09/ROI_FullReport.pdf (3) Panel on Return on Investment in Health Research. Appendices. Making an impact: a preferred framework and indicators to measure returns on investment in health research. [Internet]. Ottawa (ON): Canadian Academy of Health Sciences; 2009 [cited 2022 Jan 31]. A331 p. Available from: https://www.cahs-acss.ca/wp-content/uploads/2011/09/ROI_Appendices.pdf (34)	**General Resource** – relevant for most of the strategic and procedural considerations
The International School on Research Impact Assessment (ISRIA) [Internet]. ISRIA; n.d. Resources; [cited 2022 Jan 26]; [about 2 screens]. Available from: https://www.theinternationalschoolonria.com/resources.php* (6)	**General Resource** – relevant for most of the strategic and procedural considerations

* *ISRIA held impact assessment training courses annually, in different international locations, between 2013-2017. Course materials are available for all iterations of the course at: https://www.theinternationalschoolonria.com/resources.php*

TABLE 4 *(continued)*
Open-access Impact Assessment Resources Commonly Used by the Guide Contributors

RESOURCE	CONNECTION TO CONSIDERATIONS
Adam P, Ovseiko PV, Grant J, Graham KEA, Boukhris OF, Dowd A-M, et al. ISRIA statement: ten-point guidelines for an effective process of research impact assessment. Health Res Policy Syst. 2018;16:8. Available from: https://doi.org/10.1186/s12961-018-0281-5 (12)	**Resource most relevant for:** • Determining Alignment of the Framework with Organizational Objectives • Aligning Impact Assessment & Performance Management • Engaging Stakeholders in the Impact Assessment • Selecting & Adapting the CHSPRA Indicators
HM Treasury, Cabinet Office, National Audit Office, Audit Commission, Office for National Statistics. Choosing the right FABRIC: a framework for performance information [Internet]. London (UK): HM Stationary Office; 2011 [cited 2022 Feb 15]. 35 p. Available from: https://webarchive.nationalarchives.gov.uk/ukgwa/20170207052351/https://www.nao.org.uk/wp-content/uploads/2013/02/fabric.pdf (35)	**Resource most relevant for:** • Strategic Considerations • Selecting & Adapting the CHSPRA Indicators
Guthrie S, Wamae W, Diepeveen S, Wooding S, Grant J. Measuring research: a guide to research evaluation frameworks and tools [Internet]. Santa Monica (CA): RAND Corporation; 2013 [cited 2022 Jan 31]. 171 p. Avalaible from: https://www.rand.org/pubs/monographs/MG1217.html (23)	**Resource most relevant for:** • Time Lags • Assessing Attribution & Contribution
Hicks D, Wouters P, Waltman L, de Rijcke S, Rafois I. The Leiden Manifesto for research metrics. Nature. 2015;520:429-31. Available from: https://www.nature.com/news/polopoly_fs/1.17351!/menu/main/topColumns/topLeftColumn/pdf/520429a.pdf (36)	**Resource most relevant for:** • Aligning Impact Assessment & Performance Management • Selecting & Adapting the CHSPRA Indicators

TABLE 4 *(continued)*
Open-access Impact Assessment Resources Commonly Used by the Guide Contributors

RESOURCE	CONNECTION TO CONSIDERATIONS
Project Retrosight Publications Wooding S, Hanney S, Pollitt A, Buxton M, Grant J. Project Retrosight. Understanding the returns from cardiovascular and stroke research: the policy report [Internet]. Santa Monica (CA):RAND Corporation; 2011 [cited 2022 Jan 26]. 46 p. Available from: https://www.rand.org/pubs/monographs/MG1079.html (37) Pollitt A, Wooding S, Hanney S, Buxton M, Grant J. Project Retrosight. Understanding the returns from cardiovascular and stroke research: methodology report [Internet]. Santa Monica (CA): RAND Corporation; 2011 [cited 2022 Jan 26]. 92 p. Available from: https://www.rand.org/pubs/technical_reports/TR925.html (38)	**Resource most relevant for:** • Assessing Impact Retrospectively
Joyce CM, Fujiwara D, Gramatki I. Measuring impact by design: a guide to methods for impact measurement [Internet]. Ottawa (ON): Impact Canada, Government of Canada; 2019 [cited 2022 Jan 26]. 55 p. Available from: https://www.canada.ca/content/dam/ih-ci/documents/pdfs/MIBD-eng.pdf (29)	**Resource most relevant for:** • Establishing the Counterfactual
Gertler PJ, Martinez S, Premand P, Rawlings LB, Vermeersch CMJ. Impact evaluation in practice [Internet]. 2nd ed. Washington (DC): Inter-American Development Bank and World Bank; 2016 [cited 2022 Jan 31]. 335 p. Available from: https://openknowledge.worldbank.org/bitstream/handle/10986/25030/9781464807794.pdf?sequence=2&isAllowed=y (27)	**Resource most relevant for:** • Assessing Impact Retrospectively • Time Lags • Establishing the Counterfactual
Mayne J. Revisiting contribution analysis. Can J Program Eval. 2019;34(2):171-91. Available from: https://doi.org/10.3138/cjpe.68004 (39) Mayne J. Contribution analysis: an approach to exploring cause and effect. ILAC Brief 16. 4 p. Available from: https://hdl.handle.net/10568/70124 (40)	**Resource most relevant for:** • Assessing Attribution and Contribution

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