

Public Health Agency of Canada Scientific Framework for Guidance Development

Public Health Agency of Canada

To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.

— *Public Health Agency of Canada*

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PHAC Scientific Framework for Guidance Development

Introduction

The Public Health Agency of Canada's (PHAC) activities focus on preventing diseases and injuries, responding to public health threats, promoting good physical and mental health, and providing information to support informed health decision-making.

One of the ways PHAC provides information to support informed decision-making is through guidance. Guidance refers to systematically developed, evidence-based statements that assist providers, recipients, and other knowledge users to make informed decisions about appropriate health interventions or other actions to protect public health. Guidance contains recommendations that can be considered, adapted, or adopted by users.

In keeping with the PHAC Science Strategy, PHAC strives to ensure that all its guidance products are high quality, based on the best available scientific evidence, developed according to rigorous standards, and are timely in order to meet the needs of users. A recent external assessment of PHAC's evidence-support system noted opportunities to enhance consistency in guidance products through creation of a common framework and support system.

To build public trust and to promote science literacy, PHAC must be transparent about the methods it uses to develop guidance and the scientific basis for its recommendations. Guidance development is a specialized discipline and the recruitment and retention of staff with expertise in guidance development will be a priority to carry forward science excellence in all PHAC's guidance products.

PHAC provides guidance for the general population and for diverse sub-groups, including equity-denied groups. In Canada, equity-denied groups may include women, Indigenous, Black and other racialized Peoples, people with disabilities, people who are part of 2SLGBTQI+ communities, and religious minority groups, among others, and may vary based on factors including geography, sociocultural, linguistic, and health context.¹ The constitutional relationship the Government of Canada has with Indigenous Peoples—First Nations, Inuit, and Métis—paves the way for important nation-to-nation, government-to-government, and Inuit-Crown engagement when developing public health actions.

Existing and future governmental policies, action plans, and initiatives apply to all PHAC program areas. Inherent within this Scientific Framework is the application of those policies. The Principles respecting the Government of Canada's relationship with Indigenous Peoples,² Health Canada-PHAC Scientific Integrity Policy,³ Health Portfolio SGBA Plus Policy,⁴ PHAC Anti-Racism in Science Framework and Proposed Action Plan,⁵ and Science in French initiative⁶ are examples where outlined actions would apply.

PHAC has staff across all its program branches with expertise in guidance development. Together, they have worked to develop this PHAC Scientific Framework for Guidance Development to guide work across program areas.

A Vision for PHAC Guidance

Trustworthy: PHAC is recognized and relied on as an authoritative source of expertise and guidance on public health issues in Canada

Scientific underpinning: PHAC uses the best available evidence to advise and support Canadians and public health stakeholders to improve their health and that of their communities

Clarity: PHAC produces guidance that is tailored and communicated according to the needs of the target audience (e.g., understandable, appropriate length & format, and practical)

Timely: PHAC has business and scientific processes and resources in place to produce and disseminate high-quality guidance to support public health decision-making and action

Preparedness: PHAC is set up to make smart use of its expertise and resources during emergencies to prepare or adapt guidance in a timely manner

Equity: PHAC guidance is developed in an equity-sensitive manner and aims to promote health equity

Scope

For the purposes of this Framework, guidance includes any product that is:

- a systematically developed, evidence-based statement that assists providers, recipients, and other knowledge users to make informed decisions about appropriate health interventions or other actions to protect public health.⁷ The statement also includes consideration of contextual factors, such as ethics, equity, feasibility, economics, and acceptability;⁸
- advice that can be considered, adapted, or adopted by users; and
- an externally-facing product.

Purpose

The purpose of this Scientific Framework is to articulate a baseline approach for how science should inform guidance development at PHAC.

This baseline approach was designed to outline core principles, while providing flexibility for its implementation. Agency program areas represent a breadth of content areas and health contexts with varying timelines for the needed guidance. Resourcing available to program areas may also change with time. Timeliness and resourcing can affect the processes being undertaken to produce guidance. Notable examples of where discretion may be needed, appropriate to scenario, are 1) the use of abbreviated methods for evidence gathering and synthesis and 2) how best and when to involve key interested parties,^{9,10} when striving for an integrated knowledge translation approach. It is important that all aspects of the Scientific Framework are assessed for relevance to each guidance project.

Intended Users

The users of this Scientific Framework include all staff or groups within PHAC who develop, support, or collaborate on the development and dissemination of guidance products. Implementation of this Scientific Framework is a shared responsibility among PHAC staff who:

- develop guidance;
- support standing guideline development groups;
- collaborate on guidance with external parties;
- support guidance development by external organizations through funding mechanisms; and/or
- approve guidance.

Scientific Approach

To develop the Scientific Framework, we established a cross-Agency Guidance Working Group and recruited external experts to provide scientific and methodological advice on the project process and outputs. A PHAC Guidance Project Team reviewed existing federal, provincial, and territorial guidance products and practices and scoped international scientific resources, such as guidance standards, checklists, and handbooks; the team reviewed 64 resources from 50 organizations to the point of information saturation. Key themes and recommended practices for the development of trustworthy guidelines were extracted in a stepwise manner, starting first with identified guidance standards and mapping those visually to collate related concepts and interconnections. An initial Scientific Framework prototype was developed, and remaining resources were reviewed for additional concepts to consider to the point of information saturation. This literature base was supplemented by input from the PHAC Guidance Working Group, external guidance and methodological experts, and Agency senior management and other personnel.

Scientific Framework Principles

Figure 1. Eight principles of the PHAC Scientific Framework for Guidance Development.



Figure 1 – Text Description

Figure 1 is a rectangle that contains eight boxes; there are two rows with four square boxes in each row. Each box includes a graphic and text that represent each of the eight principles that are part of the PHAC Scientific Framework for Guidance Development:

- Transparently reports processes and outputs
- Knowledge user involvement and guidance dissemination
- Evidence-based products
- Clearly stated, actionable recommendations
- Advances health equity
- Manages conflicts of interest
- Promotes efficiency and public resource stewardship
- Timely, current, and evaluated guidance

Transparently reports processes and outputs

- Use processes and methods that are set, defined, and explicit, including rationale for the approach taken
 - » Establish public health objective(s), approving authority for initiation and final approval, and timelines, all at the outset
 - » Include whether the guidance is being developed collaboratively with provincial, territorial, and/or Indigenous partners
- Report what occurred throughout the process, for all stages that are relevant,¹¹ including any process or methods changes
- Use existing reporting guidelines, where available, and adapt where required
- Link across resources¹² to fully inform readers of scientific underpinning

Knowledge user involvement and guidance dissemination

- Use an integrated knowledge translation process that considers, at the outset, when and how knowledge users will be involved in the process
- Consider a diversity of perspectives and geography within and across knowledge user groups, such as the public, people with lived and living experience/expertise, specific groups to whom the guideline may apply, service providers, content expert disciplines, policymakers, and program managers
- Determine the engagement strategy, such as defining roles, how engagement will occur and at which stages, process for productive discourse, informing and equipping parties for participation, and how feedback is handled
 - » Engagement may occur through panel membership, advisory role, peer or knowledge user review, and/or Agency internal review
 - » When assembling a guidance panel, include the appropriate mix of content expertise and experience to actively participate. Consider the clinical, public health, methodological, and/or other scientific expertise needed for this group, as a minimum, with intentional engagement between this group and evidence producers throughout the process
- Appropriately recognize knowledge user contributions, such as through honoraria, acknowledgement, and/or authorship

- Engage with Indigenous health experts, partners, and/or organizations to determine if the health topic is a priority and/or has specific implications for First Nations, Inuit, and Métis, including urban Indigenous Peoples
- Ensure guidance considers applicable accessibility requirements, is easy to find, is written in the language level appropriate for the intended audiences, and is made available in an open-access format
- Define a dissemination plan early in the process, including relevant messages, tools, and channels
 - » Inform format and presentation of information through available science
 - » Ensure communications explicitly address diverse populations to reduce inequities
 - » Engage Indigenous health experts, partners, and/or organizations to design or co-design distinctions-based, culturally-relevant knowledge translation tools for First Nations, Inuit, and Métis, as appropriate, including translating into Indigenous languages; consider a similar approach for other equity-denied groups who may benefit from tailored communications

Evidence-based products

- Develop guidance to the highest scientific standards that are relevant to the product and process
 - » A systematic review will be the preferred approach to undertake or use in many circumstances and for the main questions of scientific query. Employ sound methodological approaches if a rapid review is conducted when a systematic review is not feasible
 - » Include scientific literature produced in French
- Recognize that First Nations, Inuit, and Métis health outcomes and values and preferences may not be included in the academic literature. Think critically when exploring data or examining results such as whether Indigenous Peoples have been partners in the design of studies or provided consent to data collection and analysis. Examine data of other equity-denied groups in the same manner
- Use various types or forms of evidence to inform guidance, as appropriate, including qualitative and quantitative information

- » Meaningfully engage with experts, partners, and/or organizations on whether and how to include evidence from diverse knowledge systems, including Indigenous knowledges, within guidance development processes¹³
- Provide a summary of the body of evidence on outcomes or similar parameters that are key to decision-making, the extent of confidence (such as assessing for bias and variability in the evidence) to place in them, and the limitations of the evidence and process
 - » A summary of the evidence would be provided for any question it was analyzed for, such as public health benefits and harms, values and preferences, and economics
 - Summarize the views, values, and preferences of equity-denied groups who are impacted by systems of power and oppression where possible and relevant to the question addressed
 - » Be explicit as to what other inputs were used to interpret, augment, complement, or support the evidence, such as clinical, public health, or laboratory science principles

Clearly stated, actionable recommendations

- Frame recommendations according to all relevant parameters: who, what, when, how, and circumstances to which they apply
- Directly link recommendations to the public health objectives and research questions that were outlined at the outset; for some program areas, specify the requirements the recommendations support, such as for laboratory licensing
- Engage Indigenous health experts, partners, and/or organizations to co-design distinctions-based, culturally-relevant recommendations for First Nations, Inuit, and Métis, including urban Indigenous Peoples; consider the need for culturally-relevant recommendations for other equity-denied groups
- Align language level to the primary audience, using plain language wherever possible and applicable, and with forethought to how the recommendation language may translate to other linguistic and cultural settings
- Use a standardized format for framing the recommendation, including direction and conditions for implementation
- Write an explicit rationale to accompany the recommendations, including:
 - » Clearly specifying the evidence that informs the recommendations

- » Reporting inputs used to interpret, augment, complement, or support that evidence
- » Explicitly indicating to what extent other factors inform the recommendation. For many program areas, these are factors such as ethics, equity, feasibility, acceptability, economics, and planetary health. Relevant factors will be tailored to program area and product
- » Declaring any uncertainties in relation to the above
- Provide additional supporting information to the recommendation, such as considerations for population subgroups, considerations and strategies for implementation, monitoring and evaluation indicators, and research priorities

Advances health equity

- Use an intersectional approach to advance health equity in the guidance development process,¹⁴ which considers how overlapping determinants of health (see Figure 2), including individual, group, social, and structural determinants of health, contribute to health outcomes
 - » Integrate this approach in all stages, such as planning, evidence review, recommendation development, and dissemination, taking into account available expertise, resources, and time
 - For example, prioritize populations for whom the public health topic is particularly relevant, consider how these groups participate as part of guideline development, and how their considerations are integrated, such as strengths and barriers to implementation
 - » Undertake training on health equity, anti-racism, cultural safety, and trauma-informed approaches
 - » Recognize that taking a distinctions-based approach, which accounts for the distinct lived experience between and within First Nations, Inuit, and Métis can strengthen Indigenous-focused public health guidance
 - » Consider racism and other facets of systems of power and oppression as part of an intersectional analysis, using communications and practices that convey value and respect while engaging individuals

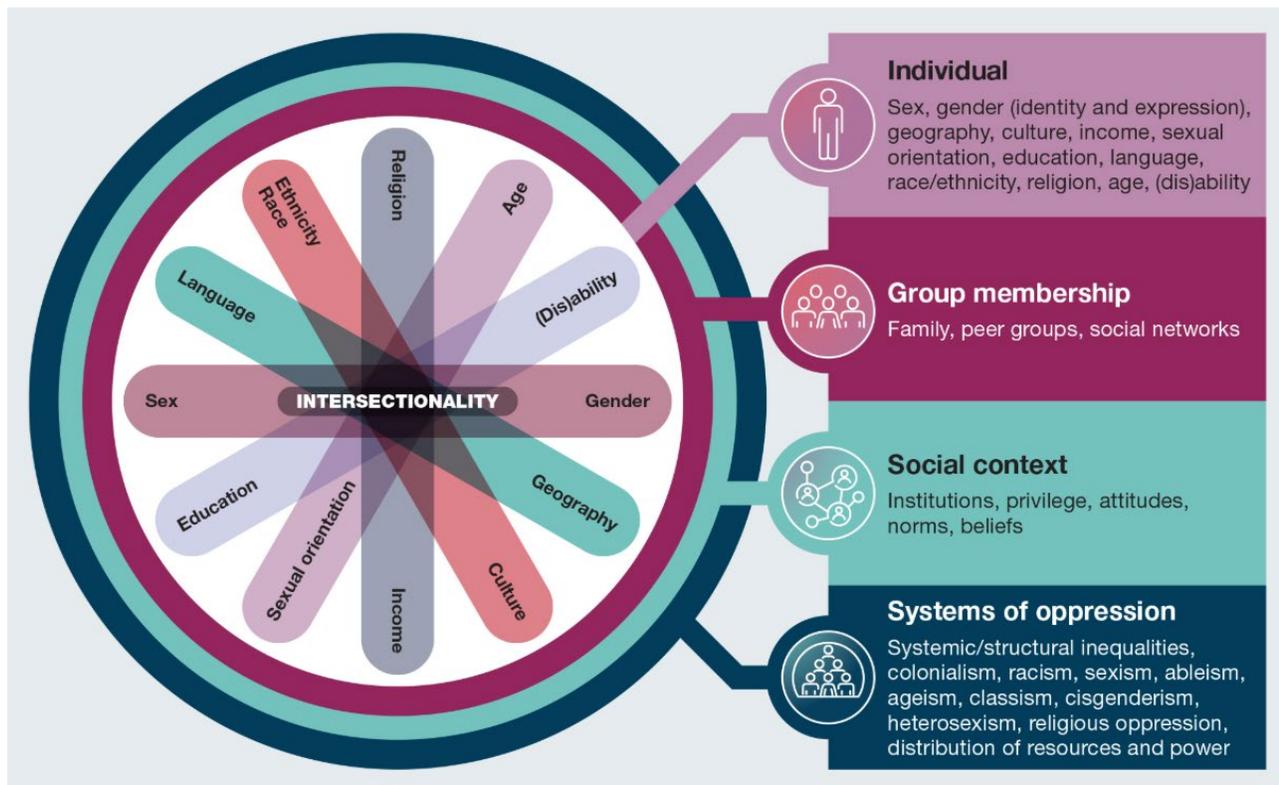
Figure 2. SGBA Plus intersectionality wheel and flower¹⁵

Figure 2 – Text Description

This figure illustrates some of the factors which can be considered while applying Sex and Gender-Based Analysis Plus. A figure depicting intersectionality is centered within a concentric circle with 4 layers. From the centre of the circle, and moving outwards the figure describes intersectionality considerations related to individual-level factors, group membership, social context, and systems of oppressions.

The centre of the circle depicts the concept of intersectionality, and some of the individual-level factors which can intersect with sex and gender. Six oblong shapes of differing colors overlap and fan out. "Intersectionality" is written in the middle where all the shapes intersect. Each oblong has 2 identity factors written on it. The middle oblong has the word "sex" written on the left and "gender" written on the right. From the word "sex", in a clockwise order, other identity factors are written: geography, culture, income, sexual orientation, education, language, race/ethnicity, religion, age, and (dis)ability.

The second layer of the circle represents group membership considerations such as family, peer groups, and social networks. The third layer of the circle represents social

context considerations such as institutions, privilege, attitudes, norms, and beliefs. The fourth and final layer on the outside of the circle describes systems of oppression, such as systemic/structural inequalities, colonialism, racism, sexism, ableism, ageism, classism, cisgenderism, heterosexism, religious oppression, and distribution of resources and power.

Manages conflicts of interest

- Govern the participation of all individuals involved in developing guidance (such as experts, evidence review producers, panel members, peer reviewers, and the public) with a conflict of interest (COI) process¹⁶
- Consider financial and non-financial interests that may affect or reasonably be perceived to affect objectivity and independence
- Select a group of individuals involved in the development process (i.e., COI group) to identify what constitutes significant conflicts that need to be managed and to handle the COI process, such as evaluating, deciding, and managing whether individuals can be involved and to what extent based on those declarations
- Keep appropriate records of the COI process and use in guidance reporting
- Report funding sources

Promotes efficiency and public resource stewardship

- Use existing, synthesized evidence and guidance when available and appropriate
- Capitalize on opportunities to collaborate within the Agency or with other organizations on aspects such as evidence reviews
 - » Contribute to a coordinated PHAC-wide approach to engagement with Indigenous health experts, partners, and/or organizations, understanding the limited capacity and time constraints of those groups
- Support Indigenous organizations to interpret, adapt, and/or adopt broader population guidance to Indigenous settings and populations to facilitate Indigenous Peoples' control over public health policies, programs, or initiatives that affect them¹⁷
- Leverage technology, including tested artificial intelligence capabilities, keeping in step with best practices to mitigate risk and bias

- Establish critical paths that minimize the impact on scientific time when accounting for processes that are necessary to launch products, such as language translation, web posting, and meeting accessibility requirements
- Decide how best to develop guidance given resource constraints

Timely, current, and evaluated guidance

- Respond nimbly to Agency needs to develop or update guidance
 - » Conduct priority-setting
 - » Reorganize Agency resources to be ready to deliver urgent and ad hoc guidance based on emerging needs, including through rapid methodologies or moving into a living mode
- Devise contingency plans for potential changes, such as a substantive shift in priorities and scope
- Define the evaluation plan, including monitoring and assessing relevant impact measures
- Monitor guidance for currency and define a plan for who undertakes an update, when, how, and what triggers this action. This relates to guidance lifecycle, updating activities, and sunseting guidance

Endnotes

- ¹ Defined according to [Guide on Equity, Diversity and Inclusion Terminology](#).
- ² [Principles respecting the Government of Canada's relationship with Indigenous Peoples](#).
- ³ [Health Canada-Public Health Agency of Canada Scientific Integrity Policy](#).
- ⁴ [Health Portfolio Sex- and Gender-Based Analysis Plus Policy](#).
- ⁵ Public Health Agency of Canada Anti-Racism in Science Framework and Proposed Action Plan, 2024. Unpublished.
- ⁶ [Science in French Initiative and Research Guide](#) (accessible only on the Government of Canada network).
- ⁷ World Health Organization. Global Programme on Evidence for Health Policy. (2003). [Guidelines for WHO guidelines](#). World Health Organization.
- ⁸ World Health Organization. (2014). [WHO handbook for guideline development, 2nd ed.](#) World Health Organization.
- ⁹ Petkovic J, Magwood O, Concannon TW, et al. [The GIN-McMaster Guideline Development Checklist extension for engagement](#). Journal of Clinical Epidemiology 2024;181:111727.
- ¹⁰ [Cochrane Equity Methods Multiple Stakeholder Engagement \(MuSE\) types of interest holders](#).
- ¹¹ Reporting may vary according to the program area and product type. Examples of processes and methods that can be considered for reporting include priority setting and topic selection, protocol use, process for recruiting guidance panel and other knowledge users, conflict of interest process, methods for conducting evidence synthesis, other inputs that were used to contextualize evidence findings, and other factors influencing the setting of the recommendation(s). Reporting guidelines, where available, are a key resource to support program areas.
- ¹² The intent is to provide flexibility for program areas on how they want to tailor their guidance product. For example, if they are wishing to develop and disseminate

multimedia, a fact sheet, or an infographic, then they can link to information that is housed or posted elsewhere to describe the process undertaken to develop it.

¹³ We attribute this to the draft PHAC Indigenous engagement principles provided by the Strategic Policy Branch. In accordance with United Nations Declaration on the Rights of Indigenous Peoples Act Article 31, “Indigenous peoples have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions”.

¹⁴ The Health Portfolio’s intersectional approach is SGBA Plus ([Health Portfolio Sex and Gender-Based Analysis Policy - Canada.ca](#)). Intersectionality is an approach for understanding how intersecting identity factors, histories, power relations, distribution of resources, and individuals’ lived realities contribute to differences in health outcomes.

¹⁵ Adapted from Chief Public Health Officer of Canada’s Report on the State of Public Health in Canada 2023: [Creating the Conditions for Resilient Communities: A Public Health Approach to Emergencies](#). Ottawa, ON: Public Health Agency of Canada; 2023.

¹⁶ Traversy G, Barnieh L, Akl EA, et al. [Managing conflicts of interest in the development of health guidelines](#). Canadian Medical Association Journal 2021;193(2):E49-E54.

¹⁷ We attribute this content to the PHAC Indigenous Engagement principles-provided by the Strategic Policy Branch. We recognize Indigenous Peoples’ inherent right to self-determination and self-government is fundamental for addressing health inequities in Canada. As such, PHAC has a role in championing health governance structures and funding models that help to build Indigenous Peoples’ capacity to reclaim control over relevant public health policies, programs, or initiatives.