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Frameworks for Determinants of Health: Characteristics and Features in Indigenous Contexts

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FOREWORD

The United Nations Permanent Forum on Indigenous Issues (“Forum”) states that no formal universal definition of the term “Indigenous peoples” is necessary, given that a single definition would be over- or under-inclusive (1). Moreover, Article 33.1 of the United Nations Declaration on the Rights of Indigenous Peoples emphasizes the right of Indigenous people to determine their own identity or membership in accordance with their customs and traditions, without prejudice to their right to obtain citizenship of the states in which they live (2).

The Forum does state that the definition developed by former United Nations Special Rapporteur José Martínez Cobo is the most comprehensive and widely cited description of Indigenous peoples. In 1982, Martínez Cobo noted that an essential characteristic of Indigenous peoples is their determination to “preserve, develop, and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples” (3).

In Canada, the term “Indigenous” (or “Aboriginal”) is used to define the original peoples who inhabited the land before the arrival of European colonizers and their descendants. The *Constitution Act, 1982* recognizes three distinct Indigenous peoples: First Nations (Status and Non-Status), Inuit, and Métis. In Québec, the term “Indigenous” generally encompasses ten First Nations and Inuit, as there is no legally or politically recognized historic Métis community in the province. These First Nations are the Wabanaki (Abenaki), Anishnaabe, Atikamekw Nehirowisiwok, Eeyou (Cree), Huron-Wendat, Innu, Wolastoqiyik Wahsipekuk (Maliseet), Mi'kmaq (Micmac), Kanyen'kehà:ka (Mohawk), and Naskapi. Inuit in Québec live in the territory of Nunavik, mainly in one of 14 communities along the shores of the Hudson and Ungava bays. Nunavik is one of four ancestral Inuit regions in Canada, collectively known as Inuit Nunangat (4).

Indigenous peoples in Québec, as elsewhere in the world, are part of complex, dynamic, and heterogeneous legal, political, social, and cultural contexts.

The term “Indigenous community” is commonly used in scientific and grey literature to designate a place inhabited by a group of people who recognize their family, cultural, and historical ties to a piece of land. These communities differ from one another in terms of culture, language, geographic location (urban, rural, remote), and their political and administrative organization from which jurisdictional issues arise. These factors influence the socioeconomic and health development of Indigenous peoples.

In Québec, over half the Indigenous population lives in urban areas, with the trend of urban migration increasing significantly in recent years (5). The Regroupement des centres d'amitié autochtones du Québec defines the urban Indigenous community as "a diverse community of people who share an Indigenous (First Nations or Inuit) identity and the experience of living, be it temporarily or permanently, in the same city. […] The sense of belonging to an urban Indigenous community can vary from city to city and from person to person, and it can coexist with the sense of belonging to a territorial Indigenous community" (6).

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Frameworks for determinants of health are used to understand the factors and conditions that contribute to populations' health and ensure appropriate interventions. The magnitude and severity of the social inequalities experienced by Indigenous populations require public health actions that are based on a thorough understanding of all the individual, collective, and structural factors that influence Indigenous health at the population level. This document describes the key characteristics of frameworks for determinants of Indigenous health developed by or for Indigenous populations.

The systematized literature search identified 15 frameworks developed by or in collaboration with Indigenous organizations. Their analysis shows that they share similarities with commonly used public health frameworks, including:

- Use of monitoring data
- Categorization of determinants into various interconnected levels
- A focus on the underlying effects of structural determinants as sources of social inequalities in health

Frameworks developed by or in collaboration with Indigenous organizations are characterized by:

- A focus on the strengths, resilience, and protective factors of Indigenous populations rather than on illness, deficits, or risk factors
- Exposure to the adverse and ongoing effects of distinctive structural determinants—the impact of colonial policies and their resulting historical traumas—on the health of Indigenous peoples

Frameworks for determinants of Indigenous populations' health are useful for:

- Knowing the dimensions that influence health throughout a person's life
- Understanding the relationships between determinants and the influence of structural determinants on social inequalities in health
- Planning health promotion and preventive actions for a wide range of public health actors

Courses of action

- Document Québec organizations' and government departments' knowledge and use of the frameworks for determinants of Indigenous populations' health.
- Promote and support the implementation of a strategy for the dissemination and adoption of frameworks for determinants of Indigenous populations' health to Québec organizations and government departments.
- Foster collaborative spaces with Indigenous populations to agree on the determinants of health that should be prioritized and thus better define the actions that will contribute to improving Indigenous health.

SUMMARY

The Ministère de la Santé et des Services sociaux (MSSS) commissioned the Institut national de santé publique du Québec (INSPQ) to prepare a knowledge synthesis to describe the main characteristics of the frameworks for determinants of Indigenous health. One expected outcome was to better equip decision-makers and public health professionals to support the implementation of actions aimed at reducing the social health inequalities facing Indigenous populations.

Indigenous peoples around the world continue to experience and have to cope with the effects of colonial policies and historical trauma on their health and development. The determinants of health approach holds promise for reducing the social health inequalities experienced by Indigenous populations, as the magnitude and severity of these inequalities call for intersectoral public health initiatives based on a thorough understanding of all the individual, collective, and structural factors that influence Indigenous health at the population level.

Frameworks for determinants of health provide an understanding of the factors and conditions at the root of the problems they aim to prevent and ensure coherent interventions. The Dahlgren-Whitehead model and the framework developed by Solar and Irwin (adopted by WHO) are commonly used in public health. The Public Health Agency of Canada has compiled a list of 12 major determinants, and Raphael, Bryant, Mikkonen and Raphael propose 17. In Québec, the Ministère de la Santé et des Services sociaux published its own framework in 2012.

The use of a single framework or a single type of action is not sufficient to understand the uniqueness of lived realities, identify levers for action, and effectively use available resources to improve population health and address social health inequalities. This is one of the reasons why there are different frameworks tailored to the realities of different populations, including Indigenous populations.

Data extraction and analysis

This synthesis is based on a systematized literature search strategy that allowed for the selection of frameworks developed by or in collaboration with Indigenous organizations from the grey literature. Fifteen documents were included in the analysis. A data extraction grid was developed from four frameworks that are commonly used in public health, that are recognized by one or more Indigenous organizations, and that are relevant to the Canadian context.

Qualitative analysis identified similarities and differences between the frameworks for determinants of Indigenous populations' health and the frameworks often used in public health. This comparative analysis also helped identify specific characteristics useful for guiding public health action in Indigenous settings.

What does the analysis of frameworks for determinants of Indigenous health reveal?

The documents were prepared primarily by non-profit organizations with a health mandate from Canada, Australia, and New Zealand. Most of these non-profits are not Indigenous organizations.

The purpose of these documents varies according to their nature and the mission of the producing organization. The content of most of the documents is based on narrative reviews and consultations with various key informants.

All of the documents are based on a holistic definition of Indigenous health generally grounded in the relationship between four interdependent dimensions: physical, mental, emotional, and spiritual. Collective, cultural, and strength-based dimensions may also be added to this definition.

The frameworks for determinants of Indigenous health analyzed are similar to those commonly used in public health: they function based on a variety of quantitative monitoring data, categorize determinants of health into various interconnected levels, make explicit that the underlying effects of structural determinants are the source of major social health inequalities, and demonstrate the latent and cumulative effects of these determinants across individuals' lifetimes.

Common determinants in frameworks frequently used in public health settings are included in the categories considered in frameworks for Indigenous populations; these include the health and social services system, housing conditions and community infrastructure, mechanisms of social exclusion, child development, and sense of security.

How do the frameworks for determinants of Indigenous health differ from those commonly used in public health?

Meaningful determinants

Culture and land stand out as fundamental determinants of Indigenous health. This appears consistent with an element common to Indigenous populations' definition of health and wellness around the world: the individual is not considered as an entity separate from others and from their environment, but as tied to their family, community, nation, and land.

The development of families, communities and nations; culture; land; and self-determination are cited as individual and collective protective and resilience factors. These factors help mitigate

the effects of racism, structural discrimination, and historical trauma that are the root causes of the social health inequalities experienced by Indigenous peoples.

The frameworks for the health determinants of Indigenous populations put greater emphasis on the strengths, resilience, and protective factors of Indigenous peoples than on illness, deficits, and risk factors, which affect not only how Indigenous people are perceived but, more importantly, their own self-perception.

Adverse structural determinants

The influence of discrimination and racism on the determinants of Indigenous peoples' health is evident in all the frameworks analyzed. Racism is sometimes considered a determinant of health, and sometimes as a social stratifier that affects the fundamental determinants and diminishes the effectiveness of protective factors. The selected documents make explicit the influence of colonial policies and their persistent cumulative effects on all other determinants of Indigenous peoples' health. These effects can take the form of experiences of dispossession, exclusion, and discrimination, which are deemed historical traumas. Historical trauma is often considered one of the main sources of persistent social inequalities in health.

Circular models

The large majority of frameworks for determinants of Indigenous health are depicted in a circular form that emphasizes the holistic definition of health rather than in the form of boxes with arrows between depicting interactions.

How are frameworks for determinants of Indigenous health useful?

Frameworks for determinants of Indigenous health are coherent and meaningful to the populations they represent and use detailed concepts in types of documents that are understandable and relevant to decision-makers. They demonstrate these organizations' agility in combining two world views that influence research and development in Indigenous health.

They also aid in understanding the personal, family, societal, and structural dimensions that influence an individual's health throughout their lifetime. These frameworks help to define concepts; identify protective, health-promoting, and risk factors; provide an understanding of the relationships between determinants; and shed light on how structural determinants influence health and social health inequalities. They can also be used by a wide range of actors in planning actions to improve health and reduce social health inequalities.

Three courses of action can be determined from the results of this knowledge synthesis:

- Document Québec organizations' and government departments' knowledge and use of the frameworks for determinants of Indigenous populations' health.

- Promote and support the implementation of a strategy for the dissemination and adoption of frameworks for determinants of Indigenous populations' health to Québec organizations and government departments.
- Foster collaborative spaces with Indigenous populations to agree on the determinants of health that should be prioritized and thus better define the actions that will contribute to improving Indigenous health.

1 INTRODUCTION

It has long been recognized that social, economic, and environmental factors significantly influence population health (7). In its 1946 Constitution, WHO defined health as a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity (8). However, the term "social determinants of health" did not appear systematically in the scientific literature until the mid-1990s, defined as "social characteristics within which living takes place" (9).

This term and the shift in focus to broader health policies gained momentum in the early 2000s, notably through the work of the WHO Commission on Social Determinants of Health. The organization drew on multidisciplinary knowledge to illustrate the central role of the political and economic mechanisms that underlie social health inequalities at the population level (9, 10). It also helped highlight the influence of illness on people's social position and conceptualize the health system as a determinant of health (11).

Over time, models representing determinants of health have been developed to facilitate our understanding of how these determinants function at the population level (12). In addition to Solar and Irwin's model, adopted by WHO, a number of organizations have opted for a more structured visual representation, or "framework," depicting the different levels of determinants, their relationships, and their mechanisms of action (13).

In concrete terms, frameworks for determinants of health are useful for understanding the factors that influence health, protecting disadvantaged groups from the harmful effects of their social position on their health, improving universal access to healthcare, implementing surveillance systems to measure health status and social health inequalities within populations, and mobilizing all actors involved in public health (10, 13, 14).

In Canada, as elsewhere in the world, Indigenous populations are among the most likely to experience social inequalities in health. The magnitude and severity of these social inequalities call for intersectoral public health initiatives based on a thorough understanding of all the individual, collective, and structural factors that influence their health at the population level (7).

To this end, the Direction des affaires autochtones of the Ministère de la Santé et des Services sociaux (MSSS) commissioned the Institut national de santé publique du Québec (INSPQ) to produce a knowledge synthesis on frameworks for determinants of Indigenous health.

1.1 Objective and target audience

The main objective of this synthesis is to answer the following question: What are the key characteristics of the frameworks for determinants of Indigenous health? To respond, we sought

frameworks developed by or in collaboration with Indigenous organizations to ensure that they adequately reflect Indigenous realities.

This knowledge synthesis is aimed at a broad audience interested in contributing to Indigenous populations' health and well-being by implementing effective, relevant, and sustainable interventions. It will offer readers a better understanding of the many factors that can influence the health of these populations. This synthesis should also be regarded as useful in partnerships with First Nations and Inuit representatives, who can then validate and prioritize actions on factors that influence the health of their populations.

2 METHODOLOGY

An evaluation of the preliminary results of a systematic search of several databases on the OVID[1] and Ebsco[2] platforms revealed that few scientific articles[3] had been written by Indigenous authors. Indigenous people are underrepresented in the academic and research communities and favour other platforms for disseminating information and sharing knowledge (16–18). In light of these observations, grey literature[4] was prioritized for this project.

2.1 Literature search strategy

To identify relevant grey literature, a keyword search was conducted using Google's search engine. The team also used a strategy of targeting relevant organizations and verifying whether they had published frameworks. Documents were also identified using the snowball method; for example, by consulting the websites of known organizations and the bibliographies of documents deemed relevant by the project team.

2.1.1 Expert Google search

Although a grey literature search is not designed to achieve the same level of integrity and reproducibility as a systematic review of the scientific literature, an INSPQ librarian nonetheless developed a literature search strategy validated by the author of this synthesis (see Appendix 1).

A plan using French and English keywords for four concepts, "Indigenous," "social determinants," "health," and "frameworks," was adopted. In agreement with the librarian, the concept of "health" was used independently, and the concept of "frameworks" was used as needed. The latter is presumably implicit in the first two concepts of the plan. In addition, although the keywords around the concept of "Indigenous" are general, they were adapted to the specific geographical context[5]: in this case, Canada, Australia, New Zealand, the United States, the Arctic, and the circumpolar regions. For example, "Maori" was included in the searches for the New Zealand organizations, but not organizations in the United States. Finally, Google Boolean operators were used to refine the searches.

1 Medline, PsycINFO, and Global Health

2 CINAHL, Psychology & Behavioral Sciences Collection, Public Affairs Index, and SocINDEX

3 The Greenwood *et al.* article (15) is one exception.

4 In this report, grey literature refers to "information produced on all levels of government, academia, business and industry in electronic and print formats not controlled by commercial publishing, i.e., where publishing is not the primary activity of the producing body," Luxembourg definition, 1997; expanded in New York, 2004 (19).

5 The frameworks needed to present historical and contemporary realities similar to those experienced by Indigenous peoples in Québec and across Canada.

Search of the targeted organizations' websites

The search strategy was first carried out in Google in August 2021. A list of websites of Indigenous and non-Indigenous organizations was compiled from the results of this query based on the provenance of the documents obtained. The keywords were searched during this period and in September 2021 using these sites' search functions or using "site": as a Google Boolean operator. In addition, keyword searches were conducted on the sites of known organizations, such as the National Collaborating Centre for Indigenous Health, and of organizations followed by the INSPQ's Santé des Autochtones team for research monitoring purposes.

To increase the comprehensiveness of the results, no time restrictions were applied to the literature search. As mentioned by Wilson *et al.* (2021), from an Indigenous perspective, the frameworks published in the past are not necessarily less relevant than those published more recently, as they are built on ancestral knowledge (20).

2.2 Selection criteria

To refine the Google search results, an artificial limit was set according to the strategy used. For the searches of the websites of the identified organizations using the Google operator "site:", the first 10 results were taken into consideration. For the expert Google search limited to specific geographical areas, the first 50 results were consulted. More than 2,000 documents were identified using this technique. These 2,239 documents were then downloaded and duplicates were removed. Then, these documents were assessed by the author of this synthesis based on the following inclusion criteria:

- Written in English or French
- Presents a framework for Indigenous health and its determinants (an illustration of the framework facilitated document selection)
- Produced by an organization located in Canada, Australia, New Zealand, the United States, the Arctic, or a circumpolar region
- Relates exclusively to Indigenous people

The following exclusion criteria were applied:

- Scientific articles or books
- Documents in PowerPoint format (the original document mentioned in the presentation was favoured)
- Addresses a single determinant without presenting it as part of a framework

- Analyzes a specific topic, such as nutrition, from the perspective of determinants without presenting a framework
- Health or monitoring profile without a framework or rationale for the choice of health determinants being analyzed

A total of 86 documents were preselected at this stage.

The list of preselected documents was shared with two science advisors on the project team to select documents following an interrater reliability process. At this stage, the criterion "Presents a framework for Indigenous health" was specifically assessed. Comparisons were made between the selected documents to verify consistency and discussions were held in cases of doubt.

At the end of this process, 15 documents were retained for analysis (see Appendix 3).

2.2.1 Appraisal of the methodological quality of the selected documents

The methodological quality of the 15 documents was then assessed by the author on the basis of a French version of the Authority, Accuracy, Coverage, Objectivity, Date, and Significance (AACODS) checklist for grey literature, translated by the Institut national d'excellence en santé et services sociaux (2016). The complete checklist is available in Appendix 4. This list is intended as a simple framework for critically appraising the strength and validity of grey literature based on six criteria (22):

- The competency, in terms of expertise and experience, and credibility of the author or organization responsible for the intellectual content of the document (Authority)
- The accuracy of the document's intellectual content, based on other documents on a similar topic (Accuracy)
- The scope covered by the content (Coverage)
- The objectivity of the document, considering that an organization may have a particular point of view (Objectivity)
- The date of the document and reference to recent bibliographic sources (Date)
- The impact or value of the document (Significance)

The grid was primarily used in this synthesis to appraise the credibility of the organizations and the objectivity and scope of the documents.

2.3 Data extraction and analysis

This synthesis presents the key characteristics of the frameworks for the determinants of Indigenous populations' health and highlights the characteristics that distinguish them from the

frameworks typically used in public health. This comparative analysis also made it possible to identify specific characteristics useful for guiding public health action in Indigenous contexts. The INSPQ's mandate did not involve selecting a preferred framework based on predetermined criteria.

Four frameworks commonly used in public health were used to develop the extraction table for data identified in the literature search. These frameworks come from Dahlgren and Whitehead, WHO (Solar and Irwin), Raphael *et al.*, and the MSSS (7, 11, 23, 24). They were selected based on the following criteria:

1. Used in public healthcare
2. Referenced or recognized by one or more Indigenous organizations
3. Relevant to the Canadian context

These frameworks are briefly presented in section 3. The definition of determinants of health and the main determinants cited in these documents are presented in Appendix 5, and visual representations of these frameworks are presented in Appendix 6.

Finally, five general categories were considered in the analysis: the type of organization, including whether it is Indigenous or not; the type of document; the rationale for the framework; the definition of health; and the determinants presented. Based on these categories, the information was grouped by the producing organization and the framework's content.

2.4 Peer review

A preliminary version of this synthesis was submitted to two external reviewers in accordance with the INSPQ's peer review framework. They were asked to use the INSPQ's institutional grid (25) to validate the accuracy of the content of the report, the suitability of the methods used, and the appropriateness of the conclusions and proposed courses of action. The author of the synthesis drew up a table listing each of the comments received and how they were addressed in the final version. The author and reviewers also duly completed their declarations of conflicts of interest, and no real, apparent, or potential conflict of interest was found.

3 FRAMEWORKS COMMONLY USED IN PUBLIC HEALTH

The concepts of health equity and determinants of health are embedded in the foundations of public health (see Box 1) in the areas of health promotion, disease prevention, health protection, and population health surveillance (26). In Québec, these concepts are integrated into the Programme national de santé publique, which is the province's public health program (27), and the Politique gouvernementale de prévention en santé, which is the government's preventative health policy (28).

BOX 1 – THE CONCEPT OF DETERMINANTS OF HEALTH AS A FOUNDATION OF PUBLIC HEALTH PRACTICE

Determinants of health are the individual and collective factors that positively or negatively influence the health of populations and the individuals within them. These factors may be social, cultural, economic, political, or historical, depending on the populations and situations they are intended to describe (13, 29).

The concept of determinants of health provides a better understanding of how structural factors influence a population's access to the living conditions necessary for their development (7, 13, 24, 29, 30). In other words, there is a correlation between a person's position in the social hierarchy and their health status (31). This is what WHO refers to as the "social gradient in health" (32).

In addition, these factors can have repercussions on health, which accumulate over the course of a person's life. The determinants of health approach considers the cumulative effects of multiple interacting factors on the health and well-being of individuals and populations (33, 34). It underscores the importance of early initiatives to mitigate the effects of social determinants on children's health and development, as they can potentially affect long-term health trajectories (35).

As determinants of health are a complex concept and the nature of the factors to consider vary widely, models representing determinants of health have been developed to facilitate understanding at the population level (12). Some authors, for example, have proposed lists of determinants (7) while others have favoured narrative representations (36). The most commonly employed frameworks include those proposed by Evans and Stoddart (37), Dahlgren and Whitehead (38), and Solar and Irwin (adopted by WHO) (10), which were developed to support cross-sector decision-making based on a shared vision (13).

- Published in 1991 and illustrated in the form of a rainbow, the Dahlgren and Whitehead framework presents the key determinants of health for the entire population at different interconnected levels of influence. Several of these determinants are social and can be

mitigated through initiatives designed to reduce their impact. Unlike other frameworks that focus almost exclusively on risk factors, the Dahlgren-Whitehead model includes positive health determinants, protective determinants, and risk determinants. It is not a framework for determinants of social inequalities in health (38).

- The WHO framework shows the influence of power dynamics and distribution on how social health inequalities are distributed at the population level. It also emphasizes the influence of illness on people's social position and conceptualizes the health system as a determinant of health. Moreover, the framework explicitly highlights political action to promote health equity (10).

Over time, these frameworks have resonated throughout the world and been adapted to better reflect the diversity of realities experienced by different populations or population groups (see Box 2) (39).

BOX 2 – FRAMEWORKS FOR DETERMINANTS OF HEALTH IN CANADA

In Canada, Mikkonen and Raphael published a framework in 2010 based on the Dahlgren-Whitehead model of health determinants (1991). In the 2020 report update, Raphael *et al.* identified 17 determinants of health relevant to the Canadian context: stress, bodies, and illness; income and income distribution; education; unemployment and job security; employment and working conditions; early child development; food insecurity; housing; social exclusion; social safety net; health services; geography; disability; Indigenous ancestry; gender; immigration; race, and globalization (7).

The Public Health Agency of Canada also refers to a list of 12 key determinants of health: income and social status; employment and working conditions; education and literacy; childhood experiences; physical environments; social supports and coping skills; healthy behaviours; access to health services; biology and genetic endowment; gender; culture; and race/racism (29).

In Québec, the MSSS published a conceptual framework in 2012 to guide its public health interventions and those of its network (24). The framework is structured around five fields that influence each other in space and time: global context, systems, living environment, individual characteristics, and population health status. Determinants of health can be found in each of these fields.

3.1 Characteristics selected for analysis

The frameworks of Dahlgren and Whitehead, WHO, Raphael *et al.*, and the MSSS were used in this synthesis as tools to identify key characteristics of the frameworks for determinants of Indigenous health. We did not conduct a detailed analysis of these four frameworks, which are presented in appendices 5 and 6, or document their evolution since their first publication. For example, the Pan American Health Organization has since added the health effects of climate

change and the continued influence of structural racism and colonialism to the WHO model, following the work of the Commission on Social Determinants of Health (40).

Note that these four documents were produced in different contexts and have similar but distinct objectives. They also provide a definition of health and a description of the determinants they deem fundamental. The content of the frameworks is based on credible references and is presented simply, albeit differently, in each one.

4 RESULTS

The results of the analysis are presented in two parts: the first provides an overview of the organizations responsible for the documents analyzed and outlines the main characteristics of these documents, while the second details the frameworks and their content. Tables summarizing the main characteristics of the organizations and frameworks are presented in Appendix 7.

4.1 Overview of the organizations and selected documents presenting frameworks for determinants of Indigenous health

4.1.1 Characteristics of the organizations

The majority of the documents analyzed were produced by government or non-profit organizations with a health mandate, whether in service delivery, surveillance, or research. The organizations are listed in Table 1 by country and organization type. Since some of the selected documents are the result of collaborative efforts involving more than one organization, the number of organizations (n = 17) is greater than the number of documents identified (n = 15).

Table 1 Characteristics of organizations by country and organization type

Country	Organization		
	Governmental	Non-profit	
		Non-Indigenous	Indigenous[a]
Canada	The First Nations and Inuit Health Branch at Health Canada (now Indigenous Services Canada) Institut national de santé publique du Québec Nunavik Regional Board of Health and Social Services	National Collaborating Centre for Indigenous Health Office of the Provincial Health Officer (British Columbia)	Assembly of First Nations[b] The First Nations Information Governance Centre National Aboriginal Health Organization First Nations Health Authority First Nations Health Council Inuit Tapiriit Kanatami[b] Thunderbird Partnership Foundation
Australia	Commonwealth of Australia, Department of Health (now the Department of Health and Aged Care)	The Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange (CREATE) Lowitja Institute Telethon Kids Institute	
New Zealand	Social Policy Evaluation and Research Unit (Superu)		

[a] For this synthesis, an Indigenous organization is an entity appointed by its members that exclusively represents the interests of a group, community, nation, or people. This definition has no official standing and is used only as an exploratory tool to compare the frameworks produced by Indigenous organizations to those produced by non-Indigenous organizations. Under this definition, the Nunavik Regional Board of Health and Social Services is considered an entity of the Québec government's Santé et des Services sociaux network, established by the James Bay and Northern Quebec Agreement, with the mandate to oversee the health and well-being of the people of Nunavik (41).

[b] The Assembly of First Nations and Inuit Tapiriit Kanatami do not have specific health mandates. However, both organizations work to advance the interests of First Nations and of Inuit, respectively, including interests in health and determinants of health.

All the identified organizations have a good reputation in terms of expertise, experience, credibility, and reliability (the Authority criterion of the AACODS checklist).

Most of the organizations are in Canada. Three documents were produced by Australian organizations (42–44), and only one by a New Zealand organization (45). The majority of the documents were produced by non-Indigenous organizations. While these documents were

developed in collaboration with Indigenous representatives, it appears that few frameworks were produced directly by Indigenous organizations (see Appendix 7).

4.1.2 Types of documents selected

The selected documents are of various types: reference frameworks, research reports, monitoring reports, knowledge syntheses, discussion papers, and strategic planning documents. The purpose of the documents therefore varies widely by document type and mission of the producing organization. The documents included in the analysis were predominantly intended for one of the two following purposes:

1. Foster understanding of Indigenous health and its determinants by proposing health models (44, 46–52). Specifically, some papers aim to change current thinking around Indigenous health by providing an understanding of Indigenous health that focuses on positives, highlighting determinants specific to certain populations, or elaborating on the relationships between determinants. Two documents were produced to stimulate reflection for Canadian federal authorities during the work of the WHO Commission on Social Determinants of Health (47, 51).

2. Guide the work of organizations by presenting concepts of health and its determinants (42, 43, 45, 53–56). Here, the frameworks are created to provide communities and organizations with tools for future planning, whether for prioritizing research areas or in adopting a practical model to define health and wellness measures and monitoring indicators.

The content of the majority of the documents is based on narrative reviews and consultations with various key informants at workshops, in forums, and in interviews. None of the narrative reviews are based on systematic data collection and no systematic reviews were identified in the selected documents. Nonetheless, all documents refer to recent, reliable, or authoritative sources in health, such as WHO. Several also include recent surveillance data quantifying the social health inequalities faced by Indigenous populations (42, 46–50, 53, 54).

Finally, four documents produced by research organizations or researchers were peer reviewed (43, 46, 52, 53).

4.2 Content of the frameworks

The frameworks for Indigenous health identified in this analysis reflect the wide diversity of knowledge, values, and experiences that exist among Indigenous people, their communities, and their nations. Taking this diversity into account, some authors suggest their document be viewed as a starting point for reflection and not as an end in itself (45, 50, 54).

To facilitate the description of the selected frameworks' content, we focused on four perspectives of analysis: the definition of health used to construct the frameworks; the main determinants mentioned; their visual representations; and finally, a comparison of Indigenous health frameworks with the frameworks generally used in public health (which are presented in section 3 above).

4.2.1 Key elements of the definitions of health

All the documents are based on a holistic definition of Indigenous health grounded in the relationship between four interdependent dimensions: physical, mental, emotional, and spiritual. Some organizations also add other Indigenous-specific dimensions to this holistic perspective, such as:

- A **collective dimension** that goes beyond the individual to include family, extended family, community, nation, and the universe (42, 43, 46, 49, 53, 57).
- A **cultural dimension** rooted in ways of being and practices (44) that are embedded in Indigenous cultures, knowledge, languages, land, and identity, thus affirming the role of self-determination and governance in Indigenous populations' conceptualization of health (47, 52, 53, 56–58).

  Two documents stand out in this regard for their use of the languages of the Indigenous peoples to which they refer—namely, Inuktitut for Inuit in Québec and te reo Māori for the Māori in New Zealand—and of concepts that align with the significance of health-related vocabulary in these languages (45, 52).
- A **positive, strength-based dimension** that explicitly emphasizes resilience factors rather than factors of risk, deficit, or vulnerability (44, 46, 57).

4.2.2 Key determinants identified

A full list of the determinants identified in the analyzed documents is available in Appendix 7. The determinants most frequently cited (i.e., in 10 or more documents) include:

- Culture (43–45, 47, 48, 50–54, 59)
- Land (43–46, 48, 50–54);
- Economic development (43–48, 50, 52–54)
- Education (43, 44, 46–48, 50–54)

The following determinants appear often (i.e., in 5–9 documents):

- The health and social services system (43, 44, 46–48, 50, 52–54)
- Housing conditions and community infrastructure (43, 44, 46–48, 50, 52–54)
- Self-determination (43–48, 51)
- Mechanisms of social exclusion, including racism and intergenerational and contemporary trauma (43, 44, 46, 48, 51, 53)
- Food security (43, 44, 48, 50, 52)
- Child development (44, 46, 47, 49, 50)

Finally, the following determinants were mentioned in less than one third of the frameworks (i.e., in 0–4 documents):

- Living within the community (47, 49, 54)
- A sense of security (46, 50, 52)
- Gender (43, 47)

This order, based on the frequency of the determinants' occurrence in the analyzed frameworks, does not necessarily reflect their importance in the causal chain of social health inequalities in Indigenous populations. Many of the most frequently cited themes are in fact closely related to others that appear less frequently. For example, the concepts of racism, discrimination, and trauma (see Box 3 in section 5.1.2) are explicitly mentioned in about half of the frameworks. Nonetheless, all of the literature refers to the major impacts of the legacy of colonization on the health of Indigenous populations. In addition, racism, discrimination, and collective trauma are sometimes considered "historical determinants" (44, 46, 48, 51), and other times presented as major events that have greatly affected the health of Indigenous people and that must be taken into account (49, 50, 52, 53).

Culture, land, and self-determination: Resilience factors for Indigenous populations

Culture and land are seen as fundamental determinants of Indigenous health, which appears consistent with the holistic definition of health and wellness of Indigenous people throughout the world (44, 46, 50, 54). In fact, some frameworks are specifically structured around cultural determinants of health (44, 46) or make extensive reference to them (42).

In the documents analyzed, ties to the land are sometimes integrated into culture, meaning they do not clearly figure as a determinant. Similarly, in seven of the fifteen frameworks, self-determination and governance issues, which are explicitly mentioned, are sometimes included under cultural and land-related factors. That said, self-determination[6] is nevertheless considered to be a major determinant, the strengthening of which would help to mitigate the effects of racism, structural discrimination, and historical trauma, which are at the root of social health inequalities (43, 44, 46, 47, 49, 56, 58). According to several authors, self-determination is fundamental as it affects all other determinants of health (44, 46, 54, 58).

In fact, almost half of the frameworks identified culture, land, and self-determination as resilience factors that would promote the affirmation of individual and collective identity, cultural continuity, healing, and thus, health and well-being (42–44, 49, 50, 56). These three determinants are, according to several authors, essential protective factors for populations to achieve their full potential (42, 43, 46, 49, 53) and for restoring cultural strengths (54).

Economy and education as drivers of development

Approximately two-thirds of the documents include economic development, education, and housing conditions as determinants necessary for Indigenous health and well-being. The authors' interpretation of these terms may differ from the commonly accepted definitions in the frameworks often used in public health settings (see section 3).

In some documents, economic development naturally includes employment, income, and the cost of living, while also referring to activities performed without expectation of financial compensation, such as hunting, fishing, gathering, child and elder care, and spiritual and healing care (49, 50, 52, 54). These activities contribute to the healthy functioning of families and the development of communities by strengthening identity, cultural practices, and social norms.

The same applies to education, which includes education at school and all learning activities practiced on the land (49, 50, 52).

Some of the organizations that highlight the importance of housing to Indigenous health also cited the place of the residence—that is, within a community or outside of it ("away from

[6] The right to self-govern, participate in and exercise control over decisions, and the freedom to exercise one's own values and culture (44).

home")—as a potential determinant of health (56). Indeed, in urban areas, repeated moves can disrupt access to the various sources of social support provided by the family and community, among other things (49).

4.2.3 Visual representations

The illustrated frameworks are presented in Appendix 8. Frameworks for determinants generally tend to be presented in circular forms. Concentric circles highlight different components: the individual and their social environment, health, values, knowledge, needs, and so on. The number of circles varies from one framework to another: some have around 10 (54), and others only one (50). The centre of the circles, which usually represents the core element of health, also differs. These frameworks place the child, the individual, health, culture, values, extended family, or community at their centre.

Some non-circular visual representations are also used (45, 52). For example, the framework produced by the Nunavik Regional Board of Health and Social Services is represented in the form of a cloudberry (*aqpik* in Inuktitut), with the leaves symbolizing the fundamental concepts of health, and the fruit, the main determinants. The cloudberry is embedded in Inuit culture and language. Similarly, the National Aboriginal Health Organization has previously presented the determinants of Métis health in a rectangle, with an arrow indicating the influence of past events on current life and on the future (51).

The colours used in most of the frameworks seem to stem more from graphic design choices than symbolic ones. Two exceptions are the frameworks produced by the First Nations Health Authority and the First Nations and Inuit Health Branch at Health Canada and their collaborators (54), who both describe their use of colours in their frameworks. For example, for the First Nations Health Authority, the colours, reminiscent of a sunset, "reflect the whole spectrum of sunlight and depict the sun's rotation around the Earth that governs life cycles in First Nations communities in British Columbia."[7] For the First Nations and Inuit Health Branch and their collaborators, a single colour designates culture and underlies the other components of the illustration, as culture is considered the foundation for all elements of the framework.

4.2.4 Distinctions from frameworks for determinants commonly used in public health in Québec and Canada

The frameworks for determinants of Indigenous health analyzed are similar to those of WHO, Dahlgren and Whitehead, Raphael *et al.*, and the MSSS, which were presented in section 3. In fact, several organizations explicitly mention referring to WHO's work in developing their own frameworks (43, 46, 48, 50).

[7] Note: this explanation was found on the organization's site rather than in the documents selected for analysis (55).

The identified frameworks for determinants of Indigenous health share common elements with the frameworks often used in public health settings:

- They are supported by surveillance data.
- They categorize the determinants of health into various interconnected levels.
- They make explicit the underlying effects of structural determinants as the source of major social inequalities in health and demonstrate their latent and cumulative effects across a person's lifetime (46–48, 50).
- The relationships between the different levels of determinants are described in the National Collaborating Centre for Aboriginal Health's model: distal determinants influence the intermediate determinants, which act on the proximal determinants of health (48).
  - Similarly, Inuit Tapiriit Kanatami concentrated on illustrating the numerous interconnections between the determinants that influence Inuit health (50). For example, they explain how children's development is affected by food security, overcrowded housing, and lack of social support, and how these conditions stem from low family income, which in turn depends on gender and education level.

    The frameworks specific to Indigenous health also offer insights into the determinants of health for their respective contexts and align with the health views of the populations they concern (see section 4.2.1). In this regard, they differ from the frameworks commonly used in public health on three points: 1) the definition of the concept of health, 2) the prioritization of certain determinants, and 3) their visual representation.
- They are rooted in a holistic view of health that aims for balance among the different dimensions of the individual. Although this definition of health is similar to WHO's, these frameworks generally go further by considering the person as a whole (44, 49, 54), and by emphasizing the importance of cultural, land-related, and governance determinants on the development of families, communities, and nations (42, 44, 46–48, 51, 52).
- Many of the determinants in the WHO framework appear in a good number of frameworks specific to Indigenous health. However, with the exception of the First Nations Health Council document, no genetic determinant (especially in relation to Indigenous ancestry) is mentioned in the documents analyzed, while genetic susceptibility factors are frequently included in the "biological factors" category of the frameworks commonly used in public health. Indigenous health frameworks, on the other hand, seek to dispel the notion that being Indigenous is a biological, and therefore non-modifiable, health risk factor (55). Instead, the frameworks tend to categorize this vulnerability factor as resulting from the negative impacts of colonial policies on determinants of health and highlight the strengths of resilience associated with Indigenous cultural belonging (58).

- The frameworks commonly used in public health adopt different visual representations, including some linear models where the determinants are presented in boxes with arrows indicating interactions. Frameworks for Indigenous health seem to emphasize the holistic definition of health by using a concentric shape to illustrate the relationships between different components.

5 DISCUSSION

The purpose of this section is to offer insights on the frameworks for determinants of Indigenous health and compare them with the frameworks commonly used in public health, drawing from the results. This exercise aims to enable an assessment of their relevance for guiding public health action in partnership with Indigenous populations in Québec.

These findings stem from a methodological approach that has a number of strengths, but also some limitations. These strengths and limitations are discussed in section 5.2.

5.1 General observations

5.1.1 Applying the determinants of health concept to the realities of Indigenous populations

Several organizations and experts, beyond those responsible for the documents identified, have recognized the potential of the determinants of health approach to improve Indigenous health and reduce the social health inequalities experienced by Indigenous populations in Canada and elsewhere in the world.

First, there are **some similarities between Indigenous and non-Indigenous views on health**. Although the definitions of Indigenous health and well-being are diverse, they generally revolve around holistic dimensions aiming, among other things, at balancing mental, emotional, spiritual, and physical health. This vision is in fact closer to WHO's definition of health than it is to definitions derived from strictly biomedical perspectives, which focus on illness, deficits, and disabilities. However, Indigenous perspectives on health have unique characteristics that are missing from WHO's definition: the value placed on cultural practices and knowledge and the importance of strong social and land-based ties as essential foundations for collective well-being (3, 61–63).

The use of frameworks for determinants by Indigenous organizations around the world can also be explained in part by a **shared understanding of the social inequalities in health** faced by Indigenous populations. These inequalities are not solely the result of individual factors, but of social inequalities and other modifiable social factors (64), including the systemic processes of social exclusion resulting from colonialism (7, 15).

5.1.2 Significance of the determinants

This synthesis also demonstrates that the frameworks of determinants developed by international organizations like WHO have some bearing on the understanding of social health inequalities in several populations on a global scale, including in Indigenous contexts (46). In fact, living conditions, education, the health system, and culture, to name but a few, are common to all the frameworks analyzed in this report.

However, as noted above, the frameworks for describing the health determinants underlying the social inequalities in health experienced by Indigenous populations are grounded in the world views of these Indigenous populations. This may not be a focal point of the frameworks commonly employed in public health.

The central role of cultural anchoring

In 2007, the WHO Commission on Social Determinants of Health came to a similar conclusion in a report published following work at an international symposium on social determinants of Indigenous health. One of the key messages repeated at the symposium was the lack of understanding of Indigenous people's cultures and holistic views, which could hinder an adequate understanding of what the very concept of a health determinant means for these populations (65).

Frameworks specifically for Indigenous health tend to put more emphasis on two aspects:

- Culture and its components are a central protective determinant of Indigenous health. This aspect is also mentioned in other contexts (20, 66–69).
- Adverse structural determinants influence the effectiveness of cultural determinants as protective factors.

The importance of structural determinants

The WHO framework has greatly advanced our understanding of how structural determinants contribute to social inequalities in health. In Canada, as elsewhere in the world, Indigenous populations continue to experience and cope with the cumulative effects of colonial policies on all other determinants of their health. These effects can take the form of experiences of dispossession, exclusion, and discrimination, often regarded as historical traumas, and can be further compounded by contemporary traumatic experiences like violence. The combined effects of this trauma are considered to be the central mechanism behind the high levels of chronic stress experienced by Indigenous populations, the effects of which are seen in increased vulnerability to illness (7, 70). This is one of the reasons why the notion of historical trauma is often considered one of the main sources of persistent social inequalities in health (see Box 3) (7, 42, 46, 71).

BOX 3 – TRAUMA AND ITS IMPACTS ON THE HEALTH OF INDIGENOUS PEOPLES

Psychological trauma can be defined as a person's normal emotional response to an event or events perceived as threatening to their safety or survival (72, 73). The resulting stress response can lead to many long-term, interrelated psychological, social, and health problems that can persist beyond the years of exposure (72, 73).

A trauma-informed approach, typically associated with psychology and psychiatry, is increasingly being integrated into public health practice, especially in the context of collective trauma (e.g., in the context of armed conflict or genocide) (74).

Historical trauma usually refers to the sum of emotional responses from past collective trauma, the cumulative and lasting psychological effects of which are passed down from one generation to the next (hence the term intergenerational trauma). Historical trauma in Indigenous contexts therefore refers to the fact that past policies have caused significant trauma, with psychological effects that continue to affect the health of communities, families, and their children (74). That said, contemporary policies can also contribute to perpetuating historical trauma (70, 75, 76).

Not everyone experiences the impacts of trauma in the same way. Some traumas can be disproportionately experienced by certain groups due to structural sociopolitical and economic inequalities.

For example, marginalized populations like Indigenous peoples are not only more likely to experience certain types of trauma in response to current and historical events affecting them, but are also more likely to experience exacerbated stress responses. This is because they generally have fewer resources to cope with them (70, 74–76).

Although racism and its influence on determinants are mentioned in most of the frameworks analyzed, there does not appear to be a consensus on considering racism as a determinant of health. While Raphael *et al.* (2021) identify racism as a determinant of health, Dalhgren and Whitehead (2021) suggest that racism should instead be conceptualized as a social stratification factor that has a deleterious effect on access to all determinants and on the effectiveness of protective factors (20). This conceptualization seems to emphasize the importance of analyzing how racism operates and may make it possible to combat racism more effectively by tackling it from different angles (38).

5.1.3 Valuing health-promoting resilience factors

Indigenous health is often presented from a deficit perspective, as an area with many gaps to address. As noted, frameworks for determinants of health developed by or in collaboration with Indigenous organizations generally focus more on Indigenous strengths, resilience, and

protective factors (e.g., culture, land, collective identity, family and community support) than on illness, deficits, or risk factors (e.g., poverty, violence, addiction). Similar findings have been reported in other contexts (62, 68, 77).

This strength-based paradigm encourages Indigenous participation and self-determination in the programs and initiatives that affect them. It also contributes to changing persistent negative perceptions of Indigenous people (42, 46, 49, 51, 54, 58). **Focusing on gaps can give the impression that being Indigenous is a risk factor in and of itself, whereas the risk factor is in fact exposure to adverse structural determinants** (58). In addition, decontextualized portrayals of Indigenous populations' realities and an emphasis on illness can be seen as a continuation of a colonial and stigmatizing view (49). Discourses around Indigenous people being at risk or vulnerable frame these populations as in deficit, affecting not only how they are perceived but, more importantly, how they perceive themselves (78).

The creation of frameworks for determinants of Indigenous health by or in collaboration with Indigenous organizations contributes to global work on determinants of health. This plays a role in decolonizing research and Indigenous peoples' reclamation of knowledge, including experiential knowledge (16). It also involves rejecting some dominant biomedical perspectives in favour of approaches based on Indigenous values, strengths, and priorities by valuing the experiences and significant involvement of Indigenous communities (16, 68, 79).

Similarly, frameworks for determinants of Indigenous health are part of the cultural safety initiatives that have been in place for several years in New Zealand, Australia, and Canada (44, 46). The cultural safety approach is generally based on respect for Indigenous cultures and balanced power relations with a view to equity and reducing social inequalities in health (80–82).

5.1.4 Contribution to knowledge development and orientation of actions

Amalgamating knowledge

This analysis also demonstrates Indigenous organizations' agility in combining two world views that influence research and development in Indigenous health. On the one hand, they affirm wanting above all to be coherent and meaningful for Indigenous people. On the other, these organizations are keen to use concepts and formats that are understandable and relevant to decision-makers (43, 45, 49, 58, 62, 68).

These methods are nonetheless subject to a variety of requirements for which grey literature, including literature based on evidence from scientific research, if often criticized (16). When producing intellectual content, Indigenous organizations favour publication formats and take paths that may differ from those valued in academic and scientific circles (16–18). For some of the documents analyzed, we can assume that the organizations' choice to submit their document for peer review was made for reasons of conferring legitimacy on the content. This

appears to be the case for reference frameworks and research and surveillance reports produced by non-Indigenous organizations with research mandates.

That said, Tyndall (2008) points out that the authority of the authors, both individuals and organizations, gives the content of grey literature value and credibility as expert opinions or as entities' insider knowledge (22). Nonetheless, appraising the methodological quality (AACODS) of documents produced by or with Indigenous organizations allows for an assessment of their value comparable to that of frameworks for determinants of health made by comparable organizations.

Usefulness and scope

Conceptual frameworks for determinants of health are useful in many ways for understanding the multiple personal, family, societal, and structural dimensions that influence an individual's health throughout their lifetime (13, 38). They also help define concepts and explain the concentration of protective and risk factors according to the characteristics of various population groups. They help elucidate the relationships between determinants and the influence of structural determinants on social inequalities in health. Furthermore, they can be used by a wide range of actors in planning actions to improve health and reduce social health inequalities. The findings of this synthesis show that frameworks developed by or in collaboration with Indigenous organizations can be useful in addressing Indigenous health and its determinants.

The results presented here suggest that it may be useful for government departments and agencies, including those in Québec, to document knowledge of frameworks for determinants of Indigenous health. These departments and agencies could also support the implementation of a strategy for the dissemination and adoption of frameworks for determinants of Indigenous populations' health. In any case, collaborative spaces with Indigenous populations should be established in order to come to an agreement on the determinants of health that should be prioritized and thus better define and implement the actions that will contribute to improving Indigenous health.

5.2 Methodological strengths and limitations

To our knowledge, few knowledge syntheses examining frameworks for the health determinants of Indigenous populations appear to have been conducted in Québec. The results of this synthesis highlight the main characteristics of these frameworks and compare them with those generally used in public health. We hope that these findings can be useful in increasing the dissemination and use of frameworks for the health determinants of Indigenous populations to improve our understanding of how these factors interact and to guide action.

This synthesis is also based on a systematized methodological approach to identifying grey literature.

That said, it is important to note that this synthesis of knowledge was conducted by a team of non-Indigenous professionals using the scientific approach of a non-Indigenous organization. The participation of Indigenous experts would undeniably have helped deepen the analysis and discussion of the documents by juxtaposing different perspectives and knowledge. Moreover, our approach did not allow us to present the differences between different nations and communities.

Additionally, given its essentially descriptive purpose, the synthesis was not intended to analyze the scope and effects of each of the identified determinants of health. The methodological choice to focus on grey literature certainly did not make it possible to account for all knowledge relevant to the analysis of frameworks for determinants of Indigenous health.

The identification of documents using Google was limited by known constraints of the search engine (83):

- The user's search history and geographic location
- The search algorithm that indexes the sources
- The ranking of results by popularity and occurrence of search terms rather than by relevance and quality
- The automatic search for related words which multiplies the number of results
- The inability to replicate a search exactly

The higher number of documents produced in Canada included in the analysis should be interpreted as the likely result of a selection bias inherent in the grey literature, given the breadth of Australian and New Zealand scientific literature documenting Aboriginal, Torres Strait Islander, and Māori health.

Finally, it was not possible to identify frameworks for determinants for American Indians and Alaska Natives. Google searches generated few results, and the results were inconclusive. Further research on the websites of specific organizations produced similarly weak results. There is no doubt that these perspectives would have enriched the analysis.

Despite this limitation, the literature identifies a variety of organizations, document types, frameworks, and determinants that provide insights that may be useful for prevention and health-promotion activities in collaboration with Indigenous people.

6 CONCLUSION

The objective of this knowledge synthesis was to describe the main characteristics of the frameworks for determinants of Indigenous health developed by or in collaboration with Indigenous organizations.

The frameworks analyzed were mostly produced by non-Indigenous organizations in collaboration with Indigenous organizations. They share similarities with the conceptual frameworks commonly used in public health, including the use of surveillance data, categorization of determinants into interconnected levels, and elucidation of the underlying effects of structural determinants.

However, the frameworks for determinants of Indigenous health use visual representations and employ and define concepts that reflect Indigenous world views. In addition, their producing organizations seek to demonstrate the personal and collective strengths of Indigenous cultures and the impact of adverse structural forces on individuals, their families, and communities.

The production of frameworks for the health determinants of Indigenous populations contributes to decolonizing research and Indigenizing knowledge, as well as to the cultural safety initiatives that are underway in various settings, including Québec.

This synthesis was not intended to develop a single framework for the determinants of Indigenous health, nor was it intended for the INSPQ to select a specific conceptual framework to guide its work in Indigenous health. Our intention is to present the opportunity for professionals and managers to gain an understanding of Indigenous health as conveyed by the Indigenous organizations that represent them, in order to target the actions that will have the greatest impact.

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APPENDIX 1 LITERATURE SEARCH STRATEGY

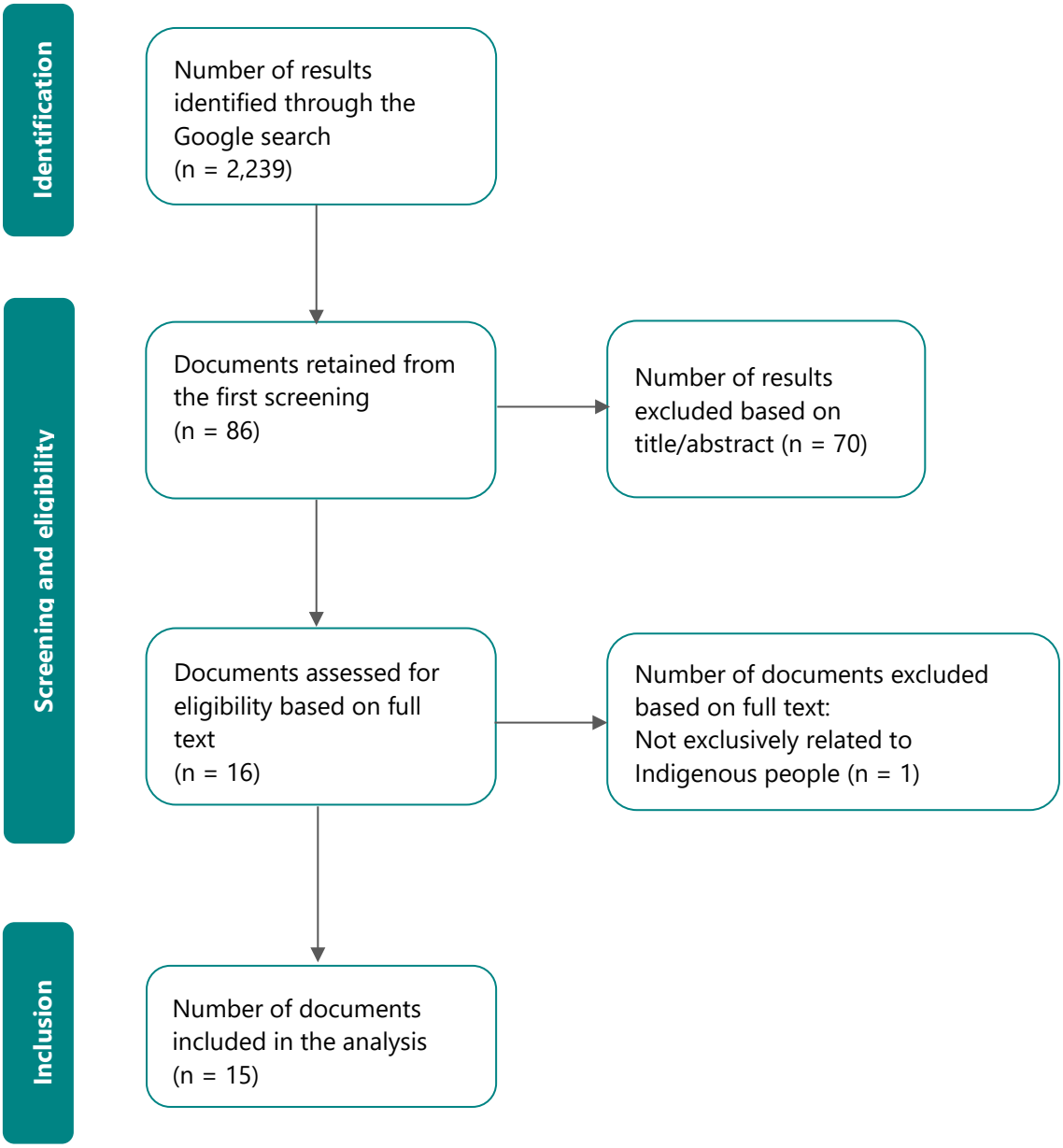
	Search strategy
English	aboriginal|"first nations"|indigenous|inuit "social determinants"|disparities|gaps|inequities health|"well-being"|wellbeing|wellness evaluation|evidence|framework|model|policy|strategy **ext:pdf**
	site:gov aboriginal|"first nations"|indigenous|inuit|"American Indians**"** "social determinants"|disparities|gaps|inequities health|"well-being"|wellbeing|wellness evaluation|evidence|framework|model|policy|strategy **ext:pdf**
	site:au aboriginal|"first nations"|indigenous|inuit "social determinants"|disparities|gaps|inequities health|"well-being"|wellbeing|wellness evaluation|evidence|framework|model|policy|strategy **ext:pdf**
	site:nz aboriginal|"first nations"|indigenous|maori "social determinants"|disparities|gaps|inequities health|"well-being"|wellbeing|wellness evaluation|evidence|framework|model|policy|strategy **ext:pdf**
French	autochtone|autochtones|inuit|"premières nations" "déterminants sociaux"|disparités|écarts|inégalités|iniquités santé|bien-être cadre|évaluation|évidence|stratégie **ext:pdf**

APPENDIX 2 WEBSITES OF TARGETED ORGANIZATIONS

Organization name (website URL)
Aboriginal Medical Services Alliance Northern Territory (http://www.amsant.org.au/)
Aboriginal Peoples Research and Knowledge Network (The) (DIALOG) (https://reseaudialog.ca/)
Alaska Native Tribal Health Consortium (https://anthc.org/)
American Indian Public Health Resource Center (https://www.ndsu.edu/centers/american_indian_health/)
Assembly of First Nations (https://afn.ca/)
Australian Indigenous Health*InfoNet* (https://healthinfonet.ecu.edu.au/)
Australian Institute of Health and Welfare (https://www.aihw.gov.au/)
Canadian Public Health Association (https://www.cpha.ca/)
Centers for American Indian & Alaska Native Health (https://coloradosph.cuanschutz.edu/research-and-practice/centers-programs/caianh)
Centers for Disease Control and Prevention (https://www.cdc.gov/tribal/tribes-organizations-health/index.html)
Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange (The) (https://create.sahmri.org/)
Cree Board of Health and Social Services of James Bay (https://www.creehealth.org/home)
First Nations Child & Family Caring Society (https://fncaringsociety.com/)
First Nations Health Authority (https://www.fnha.ca/)
First Nations Health Managers Association (https://fnhma.ca/)
First Nations Information Governance Centre (https://fnigc.ca/)
First Nations of Quebec and Labrador Health and Social Services Commission (https://cssspnql.com/)
Flinders University (https://www.flinders.edu.au/)
Indian Health Service (https://www.ihs.gov/)
Indigenous Services Canada (https://www.canada.ca/en/indigenous-services-canada.html)
Inuit Tapiriit Kanatami (https://www.itk.ca/)
Johns Hopkins Center for Indigenous Health (https://cih.jhu.edu/)

Organization name (website URL) (cont'd)
Lowitja Institute (https://www.lowitja.org.au/)
Ministry of Health — Manatū Hauora, New Zealand Government (https://www.health.govt.nz/)
National Aboriginal Community Controlled Health Organisation (NACCHO) (https://www.naccho.org.au/)
National Collaborating Centre for Determinants of Health (https://nccdh.ca/)
National Collaborating Centre for Indigenous Health (https://www.nccih.ca/)
National Institutes of Health – Tribal Health Research Office (https://dpcpsi.nih.gov/thro)
Native American Research Centers for Health (NARCH) (https://www.nigms.nih.gov/Research/DRCB/NARCH/Pages/default.aspx)
Native Women's Association of Canada (https://www.nwac.ca/)
Nunavik Regional Board of Health and Social Services (https://nrbhss.ca/)
Ongomiizwin – Indigenous Institute of Health and Healing (https://umanitoba.ca/ongomiizwin/)
Pan American Health Organization (https://www.paho.org/en)
Pauktuutit Inuit Women of Canada (https://www.pauktuutit.ca/)
Public Health Agency of Canada (https://www.canada.ca/en/public-health.html)
Public Health Association Australia (https://www.phaa.net.au/)
Quebec Native Women (https://faq-qnw.org/en/)
Regroupement des centres d'amitié autochtones du Québec (https://www.rcaaq.info/)
Telethon Kids Institute (https://www.telethonkids.org.au/)
Thunderbird Partnership Foundation (https://thunderbirdpf.org/)
World Health Organization (https://www.who.int/)
Yellowhead Institute (https://yellowheadinstitute.org/)

APPENDIX 3 PRISMA



APPENDIX 4 AACODS CHECKLIST

AACODS		Yes	No	?
Authority	Identifying who is responsible for the intellectual content. **Individual author**			
	• Associated with a reputable organization?			
	• Professional qualifications or considerable experience?			
	• Produced/published other work (grey/black) in the field?			
	• Recognized expert, identified in other sources?			
	• Cited by others? (use Google Scholar as a quick check)			
	• Higher degree student under "expert" supervision?			
	Organization or group			
	• Is the organization reputable? (e.g., World Health Organization)			
	• Is the organization an authority in the field?			
	In all cases:			
	• Does the item have a detailed reference list or bibliography?			
	Comments			
Accuracy	• Does the item have a clearly stated aim or brief?			
	• If so, is this met?			
	• Does it have a stated methodology?			
	• If so, is it adhered to?			
	• Has it been peer-reviewed?			
	• Has it been edited by a reputable authority?			
	• Supported by authoritative, documented references or credible sources?			
	• Is it representative of work in the field?			
	• If No, is it a valid counterbalance?			
	• Is any data collection explicit and appropriate for the research?			
	• If item is secondary material (e.g., a policy brief of a technical report), refer to the original.			
	• Is it an accurate, unbiased interpretation or analysis?			
	Comments			
Coverage	All items have parameters which define their content coverage. These limits might mean that a work refers to a particular population group, or that it excluded certain types of publication. A report could be designed to answer a particular question, or be based on statistics from a particular survey. • Are any limits clearly stated?			
Objectivity	It is important to identify bias, particularly if it is unstated or unacknowledged.			

AACODS		Yes	No	?
	• Opinion, expert or otherwise, is still opinion: is the author's standpoint clear?			
	• Does the work seem to be balanced in presentation?			
	Comments			
Date	For the item to inform your research, it needs to have a date that confirms relevance. • Does the item have a clearly stated date related to content? No easily discernible date is a strong concern.			
	• If no date is given, but can be closely ascertained, is there a valid reason for its absence?			
	• Check the bibliography: have key contemporary material been included?			
	Comments			
Significance	This is a value judgement of the item, in the context of the relevant research area. • Is the item meaningful? (this incorporates feasibility, utility and relevance)			
	• Does it add context?			
	• Does it enrich or add something unique to the research?			
	• Does it strengthen or refute a current position?			
	• Would the research area be lesser without it?			
	• Is it integral, representative, typical?			
	• Does it have impact? (in the sense of influencing the work or behaviour of others)			
	Comments			

Source: https://fac.flinders.edu.au/dspace/api/core/bitstreams/e94a96eb-0334-4300-8880-c836d4d9a676/content

APPENDIX 5 DETERMINANTS OF HEALTH IN THE FRAMEWORKS USED IN PUBLIC HEALTH

Table 2 Definition and determinants of health according to author

	Definition of determinants of health	Determinants of health
Dahlgren and Whitehead (38, 84)	These are factors that influence health positively or negatively. [...] social, economic, and lifestyle-related determinants of health – that is, factors that can be influenced by political, commercial, and individual decisions – as opposed to age, sex, and genetic factors, which also influence health but are not, on the whole, open to influence by political or other types of policy. Determinants of social inequities in health: These are social, economic, and lifestyle-related determinants of health that increase or decrease social inequities in health. These factors can always be influenced by political, commercial, and individual choices/decisions.	Age, sex, and genetic factors Lifestyle-related factors Social and community networks Factors related to living and working conditions: work environment, education, agriculture and food production, unemployment, water and sanitation, healthcare services, and housing Socioeconomic, cultural, and environmental conditions
World Health Organization (10, 11)	Conditions in which people are born, grow, live, work, and age. Poor and unequal living conditions are [...] the consequence of deeper structural conditions that together fashion the way societies are organized. [...] Daily living conditions, themselves the result of these structural drivers, together constitute the social determinants of health.	Conditions of early childhood Schooling Employment and working conditions Social environment (social protection) Physical (built) environment Healthcare Social stratification Social deviance, norms, and values Gender equity Global and national economy and social policy Governance Public health surveillance

Table 2 Definition and determinants of health according to author (cont'd)

	Definition of determinants of health	Determinants of health
Raphael *et al.* (7)	The main factors influencing the health of Canadians have nothing to do with medical treatments or lifestyle choices, but rather with living and working conditions. These conditions are what we have come to call the social determinants of health.	Income and income distribution Education Unemployment and job security Employment and working conditions Early child development Food insecurity Housing Social exclusion Social safety net Health services Geography Disability Indigenous ancestry Gender Immigration Race Globalization

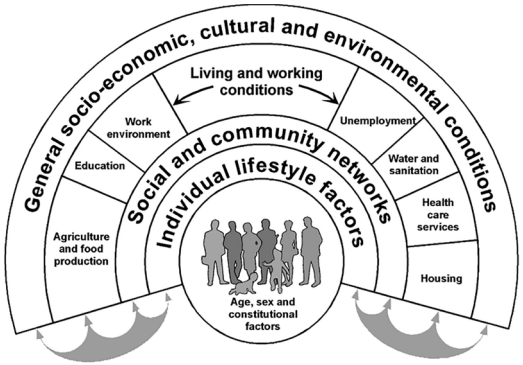
Table 2 Definition and determinants of health according to author (cont'd)

	Definition of determinants of health	Determinants of health
Ministère de la Santé et des Services sociaux (24)	Individual, social, economic, and environmental factors that can be associated with a particular health problem or overall health status.	Overall health Physical health Mental and psychosocial health Biological and genetic characteristics Personal and social skills Lifestyle habits and behaviours Socioeconomic characteristics Family environment Daycare and school environment Work environment Living environment Local community and neighbourhood Education and childcare systems Health and social services systems Land use planning Employment support and social solidarity Other systems and programs Political and legislative context Economic context Demographic context Social and cultural context Scientific and technological context Natural environment and ecosystems

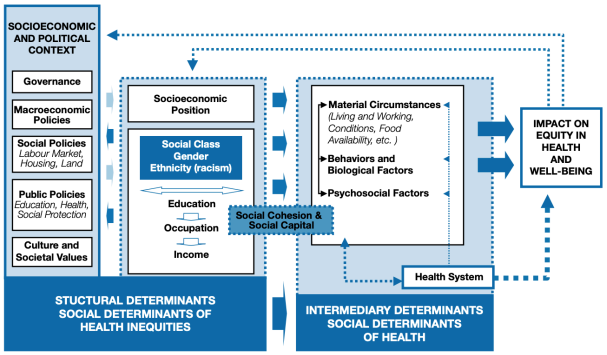
Table 2 Definition and determinants of health according to author (cont'd)

	Definition of determinants of health	Determinants of health
Public Health Agency of Canada (29)	Determinants of health are the broad range of personal, social, economic, and environmental factors that determine individual and population health.	Income and social status Employment and working conditions Education and literacy Childhood experiences Physical environments Social supports and coping skills Healthy behaviours Access to health services Biology and genetic endowment Gender Culture Race/racism

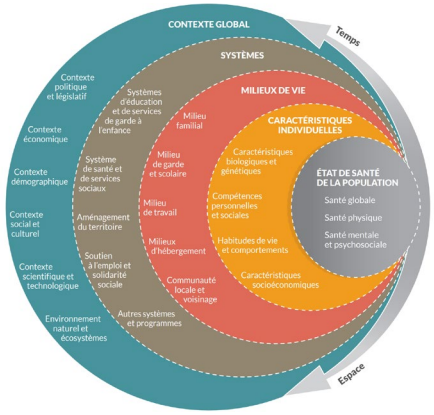
APPENDIX 6 VISUAL REPRESENTATIONS OF THE FRAMEWORKS COMMONLY USED IN PUBLIC HEALTH



Dahlgren and Whitehead



Solar and Irwin (adopted by WHO)



Ministère de la Santé et des Services sociaux

1. Income and social status
2. Employment and working conditions
3. Education and literacy
4. Childhood experiences
5. Physical environments
6. Social supports and coping skills
7. Healthy behaviours
8. Access to health services
9. Biology and genetic endowment
10. Gender
11. Culture
12. Race / Racism

Public Health Agency of Canada

disability
early child development
education
employment and working conditions
food insecurity
gender
geography
globalization
health services
housing
immigration
income and income distribution
Indigenous ancestry
race
social exclusion
social safety net
unemployment and job security

Raphael *et al.*

APPENDIX 7 SIMPLIFIED DATA EXTRACTION GRIDS

Table 3 Organization names, types, countries, mandates, published documents, and document types

	Organization type[a]	Country	Mandate	Document title	Document type
Assembly of First Nations (47)	Indigenous Non-profit	Canada	Promote the interests of First Nations according to the mandate given by the Chiefs in Assembly, through various activities.	First Nations Wholistic Policy and Planning Model: Discussion Paper for the World Health Organization Commission on Social Determinants of Health	Discussion paper
Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange (CREATE) (43)	Non-Indigenous Non-profit	Australia	Synthesize evidence to inform guidelines, policies, and/or other tools focused on improving health services and outcomes in Aboriginal and Torres Strait Islander people in Australia. Enhance the capacity of Indigenous health service providers and researchers to produce and use evidence to improve health outcomes.	Aboriginal Community Controlled Health Organisations in Practice: Sharing Ways of Working from the ACCHO Sector	Research report
Commonwealth of Australia Department of Health (42)	Non-Indigenous Government department	Australia	Develop and implement policies in collaboration with various stakeholders. Advise the Australian government on health, aged care, and sport.	My Life My Lead – Opportunities for strengthening approaches to the social determinants and cultural determinants of Indigenous health Report on the national consultations December 2017.	Synthesis document Organizational document

Table 3 Organization names, types, countries, mandates, published documents, and document types (cont'd)

	Organization type[a]	Country	Mandate	Document title	Document type
First Nations and Inuit Health Branch at Health Canada and Assembly of First Nations and Thunderbird Partnership Foundation (54)	Non-Indigenous Government department Indigenous Non-profit	Canada	The First Nations and Inuit Health Branch at Health Canada (now Indigenous Services Canada): Administer health services for Indigenous people in Canada. Thunderbird Partnership Foundation: Promote culturally appropriate services to address substance use and addiction for First Nations in Canada.	First Nations Mental Wellness Continuum Framework	Reference framework
First Nations Health Authority (49)	Indigenous Public	Canada	Represent BC First Nations communities in health and wellness through contribution agreements, programs, services, and other initiatives. Implement health plans and agreements. Publish reports and conduct assessments.	First Nations regional health survey Phase 3 (2015-17): Northern Region	Surveillance report
First Nations Health Authority and Office of the Provincial Health Officer	Indigenous Non-Indigenous Public	Canada	Provincial Health Officer: Monitor the health of the population of British Columbia. Provide independent advice to the Ministers and public officials on public health issues.	First Nations Population Health and Wellness Agenda	Strategic planning report
First Nations Health Council (56)	Indigenous Public	Canada	Implement tripartite agreements in British Columbia between the Council, the province, and the Government of Canada.	Reclaiming our Connections: The Next Ten Years	Strategic planning report
First Nations Information Governance Centre (53)	Indigenous Non-profit	Canada	Contribute to capacity development, education, and training in research and analysis related to First Nations. Develop and administer First Nations health surveys with regional partners.	National Report of the First Nations Regional Health Survey Phase 3: Volume One	Monitoring report
Inuit Tapiriit Kanatami (50)	Indigenous Non-profit	Canada	Promote and protect the cultural, political, environmental, and health rights and interests of Inuit in Canada.	Social Determinants of Inuit Health in Canada	Knowledge synthesis

Table 3 Organization names, types, countries, mandates, published documents, and document types (cont'd)

	Organization type[a]	Country	Mandate	Document title	Document type
Lowitja Institute (44)	Non-Indigenous Non-profit	Australia	Advance the health and well-being of Aboriginal and Torres Strait Islander people in Australia through high-impact quality research, knowledge translation, and support for researchers.	We nurture our culture for our future, and our culture nurtures us.	Discussion paper
National Aboriginal Health Organization (51)	Indigenous Non-profit *The organization ceased operations in 2002.*	Canada	Participate in research, training, and knowledge dissemination with Indigenous communities in Canada. Contribute to promoting the distinct health needs of Indigenous people in Canada by using contemporary Indigenous and non-Indigenous healing approaches.	Social determinants of Métis Health	Discussion paper
National Collaborating Centre for Indigenous Health (48)	Non-Indigenous Non-profit	Canada	The NCCIH is one of six National Collaborating Centres for public health funded by the Public Health Agency of Canada. They were created to promote and support the concept of evidence-informed public health. Their mission extends across Canada. The NCCIH's mission is to: Synthesize, apply, and share knowledge about Indigenous health. Create and foster linkages among Indigenous communities, as well as with stakeholders, the public, public health experts, and researchers.	Health inequalities and social determinants of Aboriginal Peoples' Health	Knowledge synthesis

Table 3 Organization names, types, countries, mandates, published documents, and document types (cont'd)

	Organization type[a]	Country	Mandate	Document title	Document type
Nunavik Regional Board of Health and Social Services and Institut national de santé publique du Québec (52)	Non-Indigenous Public	Canada	NRBHSS: Organize health programs in Nunavik, assess their effectiveness, and ensure that their users receive services of good quality appropriate to their needs. INSPQ: Support the MSSS, regional public health authorities, and institutions in carrying out their duties.	Definition of an Inuit cultural model and social determinants of health for Nunavik. Community Component. Nunavik Inuit Health Survey 2017 Qanuilirpitaa? How are we now?	Research report
Social Policy Evaluation and Research Unit (Superu) (45)	Non-Indigenous Public *The commission was dissolved in 2018.*	New Zealand	Increase data use by social workers to improve decision-making around funding, policy, and services in New Zealand.	The Whānau Rangatiratanga Frameworks: Approaching whānau wellbeing from within Te Ao Māori Summary	Reference framework
Telethon Kids Institute/Kulunga Research Network (46)	Non-Indigenous Non-profit	Australia	Telethon Kids Institute: Improve the health and well-being of children through excellence in research. Kulunga Research Network: Provide support, advice, and community navigation for all Telethon Kids researchers. Ensure the research responds to community needs and meets the standards for Aboriginal Health Research. Provide cultural training and oversight of cultural governance within research projects. Provide training and support for all Aboriginal people involved in conducting the Telethon Kids research effort. Build awareness and understanding of Telethon Kids research in Aboriginal communities.	Working Together: Aboriginal and Torres Strait Islander Mental Health and Wellbeing Principles and Practice	Research report

[a] An Indigenous organization is understood here to mean an entity appointed by its members that exclusively represents the interests of a group, community, nation, or people. This definition is used solely as a comparison tool for analyzing frameworks for determinants of Indigenous health.

Table 4 Organizations' rationale for their frameworks and presentation of the determinants of Indigenous health

	Framework rationale	Determinants[a]
Assembly of First Nations (47)	Improve health without categorizing it as deficient.	Self-determination Environmental stewardship Social services Justice Gender Healthy child development Life-long learning Languages, heritage, and culture Urban/rural Lands and resources Economic development Employment Health care On/away from reserve Housing
Centre of Research Excellence in Aboriginal Chronic Disease Knowledge Translation and Exchange (CREATE) (43	Propose a practical model of the social determinants of health. Bridge the language gap between the terminology used by the National Aboriginal Community Controlled Health Organizations and non-Indigenous terminology.	Physical environment Food security Individual behaviours and biological factors Psychological conditions Access to health services Social cohesion and social capital Gender Racism and discrimination Education and employment Governance Land and culture Self-determination

Table 4 Organizations' rationale for their frameworks and presentation of the determinants of Indigenous health (cont'd)

	Framework rationale	Determinants[a]
Commonwealth of Australia Department of Health (42)	Identify priority areas for action on the social and cultural determinants of health.	Culture Economic development Child development Access to health services Education Environmental health Social cohesion Racism and discrimination Trauma Food security
First Nations and Inuit Health Branch at Health Canada and Assembly of First Nations and Thunderbird Partnership Foundation (54)	Equip communities to redesign and realign their mental wellness programs and services. Inform future programming decisions to ensure better use of available resources.	Environmental stewardship Social services Justice, education, and lifelong learning Linguistic heritage and culture Urban and rural settings Land and resources Economic development Employment Healthcare Housing
First Nations Health Authority (49)	Propose a shared understanding of the dynamic and holistic view of health and wellness.	Governance Cultural and language Land, water, and environment Education Income and employment Child development Social support networks Gender Physical environment Personal health practices and coping skills

Table 4 Organizations' rationale for their frameworks and presentation of the determinants of Indigenous health (cont'd)

	Framework rationale	Determinants[a]
First Nations Health Authority and Office of the Provincial Health Officer (58)	Propose a concerted initiative to monitor 22 indicators over a 10-year period (2020-2030).	Self-determination Land Culture Social support Housing Education Access to health services Childhood and family
First Nations Health Council (56)	Outline the organization's direction and responsibilities for the next 10 years.	Self-determination Cultural and language Education Income and social status Employment and working conditions Physical environment Genetics Gender Social support networks Early childhood development Personal health practices and coping skills Access to health services Social inclusion

Table 4 Organizations' rationale for their frameworks and presentation of the determinants of Indigenous health (cont'd)

	Framework rationale	Determinants[a]
First Nations Information Governance Centre (53)	Highlight the relevance of culture, language, world view, and spirituality issues in First Nations a health survey. To help make redress for past research by highlighting positive changes in First Nations wellness.	Culture and language Income and employment Education Housing Food security Environment Sustainable resources Social justice and equity Unique history and experience Racism Access to services
Inuit Tapiriit Kanatami (50)	Outline the key social determinants of health for Inuit in Canada.	Quality of early childhood development Cultural and language Livelihoods Income distribution Housing Personal safety and security Education Food security Availability of health services Mental wellness The environment

Table 4 Organizations' rationale for their frameworks and presentation of the determinants of Indigenous health (cont'd)

	Framework rationale	Determinants[a]
Lowitja Institute (44)	Shift institutions and thinking towards a model that puts culture as the foundation for good health and well-being.	Early childhood development Education and youth Employment and income Racism Housing Environment and infrastructure Interaction with government systems and services Law and justice Alcohol, tobacco, and other drug dependency Poverty Food security Cultural determinants addressed in the document: Self-determination and leadership Indigenous beliefs and knowledge Cultural expression and continuity Connection to country
National Aboriginal Health Organization (51)	Take a first step towards a Métis framework of health in the form of a continuum.	Past: Colonialism, racism, marginalization, Métis rights (grief), Métis lands (grief), loss of culture, knowledge, language, spirituality, etc. (historical determinants) Present and future: Self-determination, resilience, healing, resurgence, education
National Collaborating Centre for Indigenous Health (48)	Understand the relationships between social determinants and various dimensions of health. Examine potential health trajectories across the life course.	Proximal: lifestyle, physical environments, employment and income, education, food insecurity Intermediate: health system, education system, community resources, territorial governance, cultural continuity Distal: colonialism, racism and social exclusion, self-determination

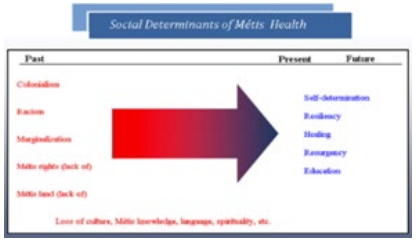
Table 4 Organizations' rationale for their frameworks and presentation of the determinants of Indigenous health (cont'd)

	Framework rationale	Determinants[a]
Nunavik Regional Board of Health and Social Services and Institut national de santé publique du Québec (52)	Synthesize a broad range of information. Propose a general health vocabulary in Inuktitut as the basis for a conceptual model of Inuit health and wellness.	Community Family Identity Food Land Knowledge Economy Services
Social Policy Evaluation and Research Unit (Superu) (45)	Illustrate whānau aspirations for well-being and empowerment. Provide a tool for defining whānau wellness measures, systematic data collection, and the general context needed to interpret and understand the data.	Sustainability of Te Ao Māori Social capability Human resource potential Economic self-sufficiency (this incorporates the notion of material well-being) Environmental sustainability Empowerment and enablement
Telethon Kids Institute/Kulunga Research Network (46)	Promote understanding of a variety of perspectives on the social and emotional well-being and mental health of Aboriginal and Torres Strait Islander people. Foster reflection.	Connection to family and community Land and culture Self-determination Socioeconomic status Housing Education Racism and social exclusion Exposure to violence, trauma, stressors, and chaos Access to community resources Government policies and historical oppression Self-determination Cultural continuity Child development Physical and mental health

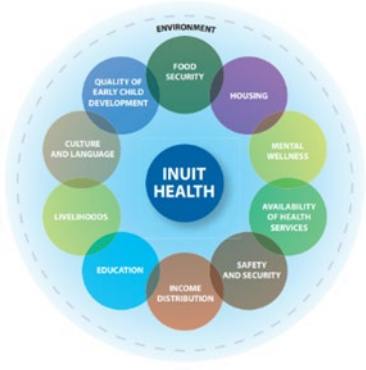
[a] The order of the determinants in the table does not indicate their importance; rather, it reflects how they are commonly presented in the analyzed documents.

APPENDIX 8 VISUAL REPRESENTATIONS OF FRAMEWORKS FOR DETERMINANTS OF INDIGENOUS HEALTH

National Collaborating Center for Indigenous Health

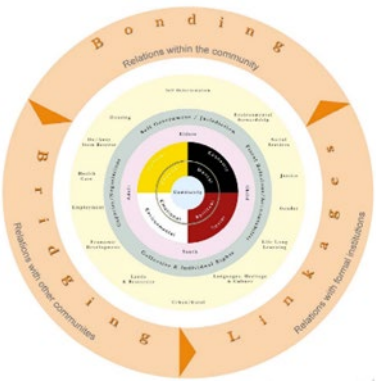


National Aboriginal Health Organization



Inuit Tapiriit Kanatami

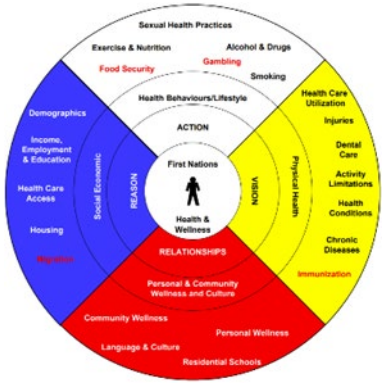
Nunavik Regional Board of Health and Social Services



Assembly of First Nations

First Nations Health Council

First Nations Health Authority



First Nations Information Governance Centre

Thunderbird Partnership Foundation

Telethon Kids Institute

Lowitja Institute

CREATE

Social Wellbeing Agency, NZ

Publication No.: