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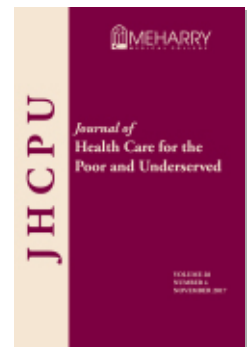
Assessing Health Care Access and Use among Indigenous Peoples in Alberta: a Systematic Review

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Assessing Health Care Access and Use among Indigenous Peoples in Alberta: a Systematic Review

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Abstract: Alberta's Indigenous population is growing, yet health care access may be limited. This paper presents a comprehensive review on health care access among Indigenous populations in Alberta with a focus on the health care services use and barriers to health care access. Scientific databases (PubMed, EMBASE, CINAHL, and PsycINFO) and online search engines were systematically searched for studies and grey literature published in English between 2000 and 2013 examining health care services access, use and barriers to access among Indigenous populations in Alberta. Information on health care services use and barriers to use or access was synthesized based on the MOOSE guidelines. Overall, compared to non-Indigenous populations, health care use rates for hospital/emergency room services were higher and health care services use of outpatient specialists was lower among Indigenous peoples. Inadequate numbers of Indigenous health care professionals; a lack of cross-cultural training; fear of foreign environments; and distance from family and friends were barriers to health care use and access. Inequity in social determinants of health among Indigenous peoples and inadequate "health services with prevention approaches," may contribute to present health disparities between Indigenous and non-Indigenous populations in the province.

Key words: Alberta, Canada, health services accessibility, health services, Indigenous peoples.

Generally public health services aim to provide accessible, high quality health care services that are free of charge or affordable, and responsive to the needs of individuals and communities.^{1,2} Health care access and use are linked and may be defined across five components: (1) availability of health care resources; (2) accessibility, including physical and informational accessibility; (3) accommodation characteristics (e.g., working hours, waiting time); (4) affordability, which corresponds to economical ease of use; and (5) acceptability, which describes how cognizant the health facilities are of ethical, cultural, and individual beliefs.³

Most health care systems endorse equity, efficiency, and acceptability goals for services.⁴

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In 1984, the Canada Health Act (CHA)⁵ stated that “*the primary objective of the Canadian health care policy is to protect, promote and restore the physical and mental well-being of residents of Canada and to facilitate reasonable access to health services without financial or other barriers.*”^[p.5] According to the CHA, principles for equality in health care access were listed as: “*public administration, comprehensiveness, universality, portability, and accessibility.*”^[p.5] Although equity in health care is the motto for the Canadian health system, access to certain preventive or therapeutic health services may be affected by place of residence, ethnicity, income, and education levels.^{6–10} Evidence across Canada shows that health care access may be limited among individuals who are Indigenous.^{11–16}

Out of 3,567,975 people living in Alberta in 2011, 220,695 self-identified as Indigenous.¹⁷ This accounts for 7% of the province’s total population, representing an increase in population size by 56% since 1996.¹⁸ In Canada, three groups of Indigenous peoples are recognized: First Nations, Métis, and Inuit, who have distinct languages, culture, heritage, and beliefs.¹⁹ First Nations peoples and Inuit inhabited the territory that is now Canada before contact with Europeans, with Inuit inhabiting Northern Canada. Métis are a people with mixed ancestry, usually European and First Nations peoples.¹⁹ Indigenous peoples in Alberta are a fast-growing population (up to 24% increase between 2006 and 2011) and young, with nearly half under 25 years old compared with 32% of non-Indigenous Albertans.²⁰ The Provincial Government covers health services for all Albertans through the Alberta Health Care Insurance Plan. In addition, external coverage through the Non-Insured Health Benefits (NIHB) program is supported by the Federal government.^{19–23} Indigenous peoples in Alberta have substantially lower health care utilization rates compared with non-Indigenous people, or even to economically disadvantaged populations,²⁴ and face disproportionately distributed determinants of health and health outcomes^{25–28} in Alberta. To improve health care on reserves, the current federal government has proposed to invest \$270 million over the next five years.²⁹ Understanding access and barriers to health care services in Indigenous peoples in Alberta is necessary to ensure such an investment is effective and meaningful.

This paper aims to present a comprehensive review on health care access among Indigenous populations in Alberta with a focus on the health care services use and barriers to health care access, and to synthesize information from scientific databases and grey literature pertaining to Indigenous populations in Alberta and health care services, including comparison group, outcome, and any study design type. Such a review is essential for highlighting areas for improvement and use of these important services.

Methods

This systematic review follows the guidelines of the Meta-analysis of Observational Studies in Epidemiology (MOOSE)²² to collect published evidence on the health services among the Indigenous population of Alberta.

Search strategy. All relevant scientific databases and online search engines were systematically searched according to a standardized protocol for studies and grey literature published between January 2000 and January 2013. The following electronic

databases were searched: PubMed; EMBASE; CINAHL; PsycINFO, as well as *Pimatiswin* (a Journal of Aboriginal and Indigenous Community Health), which was absent from the databases. Grey literature search included (1) websites, and governmental and technical reports: Public Health Agency of Canada (www.phac-aspc.gc.ca/index-eng.php); Statistics Canada (www.statcan.gc.ca/start-debut-eng.html); Health Canada (www.hc-sc.gc.ca/index-eng.php); National Aboriginal Health Organization (www.nahoh.ca/); The First Nations Information Governance Centre (<http://www.rhs-ers.ca/>); and Alberta Health (<http://www.health.alberta.ca/default.html>), (2) online search engines: Google; Google Scholar, and (3) correspondence with the related agencies and institutes or independent individuals and manual review of reference lists of identified studies. In instances throughout the grey literature review where there were many 'hits' for a particular search, focus was on the most relevant topics. For this purpose, the first 100 'hits' were scanned for inclusion in the review. After the first 100 'hits' were scanned, the following 100 'hits' were then assessed for relevance until 25 consecutive irrelevant 'hits' were found. At this point, the following 25 'hits' were brought up and five articles were randomly selected to be scanned for inclusion. Random review of five randomly selected articles per 25 'hits' continued until 200 total 'hits' were reached. A similar method was applied in a study in Canada.^{30,31}

Subject descriptors were the following MeSH terms/or text words: *Indigenous populations* and MeSH synonyms for that term (Inuit, First Nations, and Métis) combined with the terms *Canada* and *Alberta* and with the term *health services accessibility* [MeSH Terms] OR (*health* [All Fields] AND *services* [All Fields] AND *accessibility* [All Fields]) OR *health services accessibility* [All Fields].

Study selection and quality assessment. Two reviewers (FK, FN) independently assessed the titles and abstracts of all the sources from multiple databases for relevance. Only sources that met the specific criteria were considered relevant. A study was included in full text review when two researchers agreed that all the inclusion criteria were met. The criteria for inclusion were that the published, or unpublished piece of literature being considered, examined health care access. Additionally, the texts were to be written in English and included exclusively individuals of Indigenous identity, or a subgroup of individuals of Indigenous identity that could be analyzed separately. Furthermore, the data were to be collected in Alberta and both observational and intervention studies were analyzed. Conversely, a study was excluded if both reviewers felt at least one criterion was not acceptable. Criteria for exclusion included opinion pieces, letters to the editor and case reports. Two reviewers (FK, FN) read the full text of all the identified papers and judged the compatibility with the inclusion criteria and any discrepancies were resolved by consensus. A quality appraisal form was used to minimize bias (Box 1).²² Each section was given a 1 (standard met) or a 0 (standard not met). The ratings were then totaled for each resource. Studies that scored seven out of 10 or higher were accepted, except in cases where there was a clear violation of protocol. A set of protocols for data extraction was used to ensure inter-reviewer reliability and the following information was extracted: first author's name; publication year; participants' characteristics (age, gender); study design; sample size; methods of participant recruitment; potential sources of bias; outcome data (health services use, health services access barriers). The extracted data were examined to determine the concordance.

Box 1.**QUALITY APPRAISAL CRITERIA****Questions**

- Are the objectives of the study clearly asserted?
- Is the design of the study clearly described?
- Is the setting of the study clearly described?
- Are the characteristics of participants clearly described?
- Are the characteristics of non-participants clearly described?
- Is the sampling method for recruitment of participants clearly described?
- Are the data sources/measurements clearly described?
- Are the main results of study clearly asserted?
- Are the key results of study clearly described?
- Are the limitations of the study clearly described?

Ethics approval. Formal ethics approval was not required for this systematic review. This systematic review followed the MOOSE guidelines²² to collect published evidence on the health services among the Indigenous population of Alberta.

Results

Scientific databases, agencies, and institutes' websites and correspondence and online search engines yielded 942 records. After removal of duplicates and irrelevant texts, 873 records went through title and abstract screening. From that, 770 were excluded based on the lack of information on health care access among the Indigenous population. The remaining 103 studies were reviewed in full-text to further determine their eligibility. After the full-text review, 11 studies met the inclusion criteria of this review (Table 1). Quality appraisal scores ranged from seven to 10 out of a total possible score of 10. All included resources clearly described their objectives, participants, and results; most clearly described their limitations (Table 2). Included studies were either cohort or cross-sectional in design. One report was included²³ (without specific data on Indigenous peoples) to allow for comparison of the immunization rates among Indigenous peoples in Alberta with other non-Indigenous peoples.

Health care service use. A few studies showed differences in health care use between Indigenous and non-Indigenous people in Alberta.^{11,13,24} Indigenous individuals diagnosed with chronic diseases were more likely to visit the emergency room or make a physician office visit than non-Indigenous individuals.^{11,13,24} However, compared with non-Indigenous people, Indigenous people with chronic conditions were less likely to have visits to specialists, such as general internists, nephrologists, allergists, respirologists and pediatricians.^{11,13} Hospital admission rates and/or health care use for chronic kidney disease, anxiety, affective disorders (depression), substance abuse disorders, schizophrenia, diabetes, acute respiratory infections, bronchitis, pneumonia, influenza, chronic obstructive pulmonary disease and other respiratory diseases were also significantly higher among

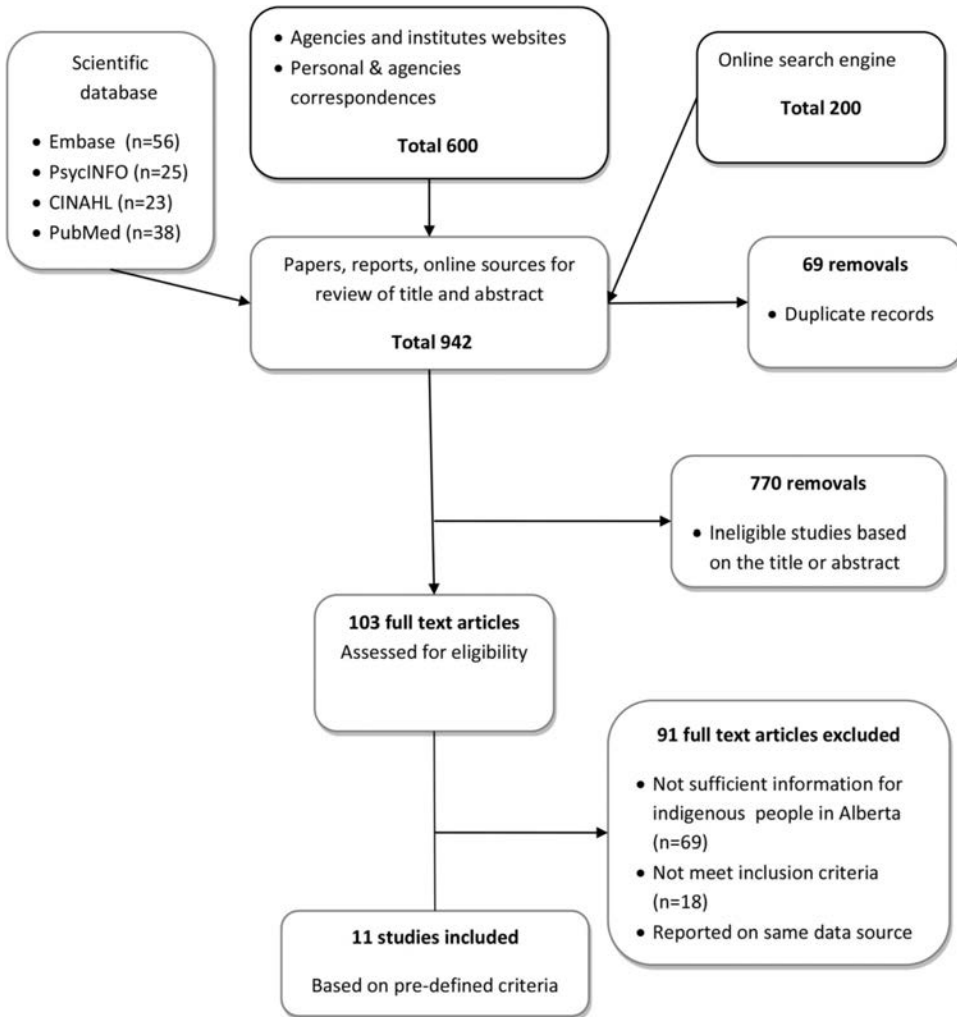


Figure 1. The search results and the number of excluded and included studies.

Indigenous individuals compared to non-Indigenous individuals (all p values < .05).^{11;13;24;25} Compared with non-First Nations peoples, First Nations peoples had higher hospital admission rates for injuries due to falls (OR = 1.57), injuries associated with assaults (OR = 6.75), motor vehicle accidents (OR = 6.74), and poisoning (OR = 3.45).²⁴ Health care services use for certain diseases such as diabetes mellitus and mental health conditions were minimal among Indigenous patients.^{26,27} A previous study noted that nearly half of diabetic patients reported not receiving health services from a diabetes team. Approximately 62%, 46% and 21% of Indigenous participants received dietitian counseling, recommended hemoglobin A1c testing and foot examinations, respectively. A total of 72% of participants had undiagnosed complications of diabetes.²⁷

In 2009–2010, the proportion of First Nations children in Alberta with complete immunization was lower than the recommended target of 97% immunization coverage.²⁸ Among one-year-old First Nations children, 61% had complete immunization for DTap

Table 1.

GENERAL CHARACTERISTICS OF THE STUDIES INCLUDED IN THE SYSTEMATIC REVIEW ON HEALTH CARE ACCESS AMONG INDIGENOUS PEOPLES IN ALBERTA

Author	Study year	Studied group	Study design	Participants	Outcomes	Results
Gao S, Manns BJ, Culleton BF et al. ¹¹	2008	Patients with kidney diseases in six out of the nine geographically defined health regions in Alberta (more than 80% of the provincial population)	Prospective Cohort	106,511 non-Aboriginal and 1,182 Aboriginal patients	To compare health care use between Indigenous and non-Indigenous peoples in Alberta	Among Indigenous individuals with chronic kidney disease, the incident of at least one hospitalization related to “ambulatory-care-sensitive-condition related to chronic kidney disease” was nearly two times higher than non-Indigenous peoples (6.2% vs. 2.7%, $p < .001$). Compared with non-Indigenous, Indigenous peoples with chronic kidney disease were less likely to have a nephrology visit for severe kidney disease [adjusted Hazard ratio (HR) 0.57, 95% CI 0.39–0.83]. The percentage of Indigenous individuals that had at least one visit to an emergency department was higher than non-Indigenous patients (72.2% vs. 44.0%, $p < .001$). Indigenous individuals diagnosed with asthma or COPD ^a were 2.1 (95% CI, 2.0 to 2.2) more likely to visit the emergency room and 1.6 (95% CI, 1.6 to 1.6) more likely to make a physician office visit than non-Indigenous individuals. However, Indigenous peoples with these conditions were 55% (95% CI, 52 to 58%) less likely to visit specialists, such as general internists, allergists, respirologists and pediatricians.
Sin DD, Wells H, Srenson LW, Man SF. ¹³	1996–1997	Patients with asthma and COPD ^a living in Alberta	Retrospective Cohort	2.8 million	Pulmonary disease emergency and physician office visits rates among Alberta residents	Indigenous individuals diagnosed with asthma or COPD ^a were 2.1 (95% CI, 2.0 to 2.2) more likely to visit the emergency room and 1.6 (95% CI, 1.6 to 1.6) more likely to make a physician office visit than non-Indigenous individuals. However, Indigenous peoples with these conditions were 55% (95% CI, 52 to 58%) less likely to visit specialists, such as general internists, allergists, respirologists and pediatricians.

(Continued on p. 1292)

Table 1. (continued)

Author	Study year	Studied group	Study design	Participants	Outcomes	Results
Cardinal JC, Schopflocher DP, Svenson LW, Morrison KB, Laing L. ^{24,b}	2000	First Nations in Alberta	Cross Sectional	112,792 First Nations individual and 2,855,029 non-First Nations individuals	Health care use among First Nations in Alberta	Compared with non-First Nations peoples, First Nations peoples had higher hospital admission rates for falling down injuries (OR = 1.57), injuries associated with assaults (OR = 6.75), motor vehicle accidents (OR = 6.74), poisoning (OR = 3.45). Treatment use were also higher among Indigenous individual than non-Indigenous residents for anxiety, affective disorders (depression), substance abuse disorders, schizophrenia, diabetes, acute respiratory infections, bronchitis, pneumonia, influenza, COPD* and other respiratory diseases (p value < .05).
Oster R, Hemmelgarn BR, ^a Toth EL, ^a King M, ^a Crowshoe L, ^a Ralph-Campbell K. ^{25,b}	2009	Individuals with status Indigenous in Alberta	Cross Sectional	Approximately 100,000	Health care use among Indigenous patients with diabetes mellitus.	Compared with non-Indigenous individuals, Indigenous patients with diabetes mellitus were 2–3 times more likely to use health care services
Templeton L, Durksen T, Zhang X. ²⁶	2005–2012	Low income and Indigenous families	Cross Sectional	207 families	Mental health care access	Among 33 individuals who had clinically significant mental health conditions, 5 cases were seeking treatment. A total of 27% children with “clinically significant levels of depression” and 18% of children with “clinically significant levels of hyperactivity” were seeking professional treatment.

(Continued on p. 1293)

Table 1. (continued)

Author	Study year	Studied group	Study design	Participants	Outcomes	Results
Oster RT, Virani S, Strong D, Shade S, Toth EL. ²⁷	2001	Self-referred Indigenous individuals with known diabetes in Alberta	Cross Sectional	743	Health care use among Indigenous patients with diabetes mellitus.	Nearly half of the diabetic patients reported they did not receive health services from a diabetes team. Approximately 62%, 46% and 21% of participants received dietitian counseling, recommended hemoglobin A1c testing and foot examinations, respectively. A total of 72% of participants had undiagnosed complications of diabetes.
First Nations Adult and Higher Education Consortium ^{32,b}	2002–2003	First Nations in Alberta	Cross Sectional	703	Barriers to health care access and use	Difficulties in physically accessing health care services (62.3%), long waiting lists (34.1%), lack of coverage provided by the Non-Insured Health Benefits program for some health services (52.3%), unaffordable direct cost of some services (43%), inadequacy of some services and cultural barriers (32.4%) were listed as obstacles to health care use.
Southern Alberta Child & Youth Health Network and the Aboriginal Health Program of the Calgary Health Region ^{29,b,c}	2004	Indigenous community members in south of Alberta	Cross Sectional and Literature Review	73	Barriers to health care access and use	Difficulties in physically accessing health care services, unfamiliarity with accessing funds for health care services, community and cultural barriers, political barriers were listed as obstacles in health care access and use.

(Continued on p. 1294)

Table 1. (continued)

Author	Study year	Studied group	Study design	Participants	Outcomes	Results
Lecompte E. ³⁰	2012	Health care providers in Alberta	Cross Sectional	110,865	Proportions of Indigenous and non-Indigenous workforce in health occupations	Out of 110,865 health care workers in Alberta, only 3,230 (2.76%) self-identified as Indigenous individuals.
Larson B, Herx L, Williamson T, Crowshoe L. ³¹	2011	Family physicians, residents in University of Calgary	Cross Sectional	52	Attitude of family medicine residents toward working Aboriginal health care	More than half of the residents were eager to work in Indigenous communities, 40% were aware of their limited experiences in practice using a culturally sensitive approach in Indigenous communities.
Health Canada. ^{28b}	2009 – 2010	First Nations children in Alberta	Cross Sectional	N/A	Complete immunization rates among First Nations children	Among “one-year-old” children, 61% had a complete immunization for DTap (Diphtheria, tetanus, acellular pertussis), IPV (polio) and Hib (Haemophilus Influenza type b). Proportions of “one-year-olds” with complete coverage for #2 MenC (Meningococcal conjugate) & #3 PCV7 (Pneumococcal conjugate) were 61%, and 56% respectively.

^a Chronic obstructive pulmonary disease

^b Grey literature

^c Observational, qualitative study

Table 2.

QUALITY APPRAISAL OF OF THE STUDIES INCLUDED IN THE SYSTEMATIC REVIEW ON HEALTH CARE ACCESS AMONG INDIGENOUS PEOPLES IN ALBERTA

Quality Appraisal Criteria Questions 1-10	Gao S et al. ¹¹	Sin DD et al. ¹³	Cardinal JC et al. ²⁴	Oster RT et al. ²⁵	Templeton L et al. ²⁶	Oster RT et al. ²⁷	FNAHEC ^{32,a}	SACYHN & AHPCHR ^{29,b}	Lecompte E ³⁰	Larson B et al. ³¹	Health Canada ²⁸
1 Are the objectives of the study clearly asserted?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2 Is the design of the study clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3 Is the setting of the study clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4 Are the characteristics of participants clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
5 Are the characteristics of non-participants clearly described?	Yes	No	No	No	No	Yes	No	No	No	No	Yes

(Continued on p. 1296)

Table 2. (continued)

Quality Appraisal Criteria Questions 1–10	Gao S et al. ¹¹	Sin DD et al. ¹³	Cardinal JC et al. ²⁴	Oster RT et al. ²⁵	Templeton L et al. ²⁶	Oster RT et al. ²⁷	FNAHEC ^{32,a}	SACYHN & AHPCHR ^{29,b}	Lecompte E ³⁰	Larson B et al. ³¹	Health Canada ²⁸
6 Is the sampling method for recruitment of participants clearly described?	Yes	Yes	Yes	No	No	Yes	No	Yes	No	Yes	Yes
7 Are the data sources/measurements clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
8 Are the main results of study clearly asserted?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
9 Are the key results of study clearly described?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
10 Are the limitations of the study clearly described?	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes
Total Score	10	9	9	8	7	10	8	9	7	9	10

Note: Studies were analyzed according to the questions in Table 1. Studies were assigned a value of '1' for each question for which they met the criteria, and a '0' for each question for which they failed to meet the criteria. The ratings were then totaled for each study.

^a First Nations Adult and Higher Education Consortium

^b Southern Alberta Child & Youth Health Network and the Aboriginal Health Program of the Calgary Health Region

(diphtheria, tetanus, acellular pertussis), IPV (polio) and Hib (Haemophilus Influenza type b). Proportions of one-year-olds with complete coverage for #2 MenC (Meningococcal conjugate) and #3 PCV7 (Pneumococcal conjugate) were 61% and 56%, respectively. For two-year-olds, the complete immunization rates varied between different vaccines (coverage rates ranged from 57%-80%). Measles, mumps, and rubella (MMR) and VZV (Varicella/Chickenpox) vaccines had the highest complete coverage rates among First Nations children in Alberta.²⁸ Among one-year-old general population children in Alberta complete DTaP-IPV-Hib coverage was 90%. The proportion of MMR coverage among two-year-old general population children in Alberta was 91%. The complete immunization rate for DTaP-IPV-Hib among two-year-old general population children in Alberta was 82%.²³

Barriers to health care access. *Location and accessibility.* For Indigenous peoples, especially populations living on reserves, the locations of treatment facilities were considered a barrier.^{24-26,28,29} For example, the location barrier affected mental health care use.²⁴ Due to the isolation of some Indigenous communities from urban communities, health facilities can be more costly and difficult to access.²⁴ Geographical barriers were also identified as potential barriers by a report on health care use among Indigenous people with diabetes mellitus.²⁵ Accessibility of specialized health services was also an issue due to environmental and health facility related barriers.^{11,13} In many cases, the use of emergency care has been higher among Indigenous people than non-Indigenous people,^{11,13} which may be explained by the lower availability of outpatient care services and primary care.^{13,24}

Lack of cultural competence. A recent report indicated that out of the 110,865 health care workers in Alberta, 3,230 were self-identified Indigenous individuals.³⁰ With a greater proportion of Indigenous people working in the field of health care, the acceptability of health care services for Indigenous peoples will be greater.³⁰ A study looked at family medicine residents in Alberta to examine their perception about providing health services in Indigenous communities. Though more than half of the residents were eager to work in Indigenous communities, large percentages were aware of their limited experiences in practice using a culturally sensitive approach in Indigenous communities. The participants also indicated the need for more in depth cross-cultural education about Indigenous culture and long-established traditional medicines.³¹ Miscommunication and misunderstanding are common barriers to Indigenous health care. One major barrier to accessing mental health services was cultural competence, although there are steps being made to address this concern.^{24,25,29}

Community and coverage barriers. Community characteristics were also identified as a barrier to health service use. These included difficulties in physically accessing health care services, long waiting lists, the lack of coverage provided by the NIHB for some health services, unaffordable direct cost of some services, inadequacy of some services and cultural and environmental barriers.³² In addition, some Indigenous communities are unfamiliar with accessing funds for health care services.²⁹ Together, these factors create challenges for health care access within Indigenous communities.²⁹

Discussion

This review presents some of the main obstacles encountered by Indigenous people in accessing health services in Alberta. While Canadians have generally enjoyed one of the

highest standards of living worldwide, Canadian Indigenous peoples have been subjected to social, physical, and psychological injustices that have had significant and long-term impacts on their health and wellness.³³⁻³⁵ An initially positive and mutually beneficial relationship with European settlers in the mid-1700s deteriorated over time into systematic political and social exclusion that manifested in a number of highly detrimental policies and programs.³⁶ Colonization and residential schools left many survivors and their offspring plagued by health disadvantages³⁷ and limited access to health service practitioners such as Elders, traditional healers, and spiritual leaders.³⁸ Indigenous Albertans have recently experienced noticeable improvement in health care services and use of these services.^{19-21,25,39-46} However, this improvement has not been evident in all regions in Alberta. Health care access inequities are still seen between Indigenous and non-Indigenous populations as well as Indigenous on-reserve and off-reserve residents.^{11,13,24,26} The rates of treatment service use among Indigenous people are higher than among non-Indigenous people. This may indicate inequity in distal determinants of health (e.g., education, employment, income, and housing) among Alberta populations as well as inadequate health services with prevention approaches for Indigenous people. Policy actions must incorporate interventions with a focus on opportunities to improve distal determinants of health in Alberta's Indigenous population. In addition, culturally accepted and supportive health promotion programs and health services with disease prevention approaches are crucial for Indigenous people in Alberta to attain improved health status.

Sources of unmet health care needs can be categorized into three main groups: availability of services (e.g., waiting time, availability of service in an area), accessibility (e.g., cost and transportation), and acceptability (e.g., language barriers, cultural awareness, feeling the services are inappropriate).⁴⁷ Previous studies among urban Indigenous populations examined interactions with health care services. Health care access challenges for urban Indigenous communities are summarized as inadequate number of Indigenous health care professionals; a lack of cross-cultural training for health services staff; fear of the foreign environment and distance from family and friends; stereotypes of Indigenous peoples by health care professionals; distrust of the health care system; and communication issues.^{11,13,24-26,28,29,29-31} Using community-based health programs can empower communities and offer an alternative resource for effective health care treatment that is often far away from isolated communities. For example, the Noojmowin Teg Health Centre focuses on community-based services, enhancing community capacity, and integrating Indigenous health practices.⁴⁷ Development of the program was time-consuming and required extensive and ongoing collaboration between many stakeholders including the provincial health authority and the community members. The centre hired Indigenous health care staff and integrated a culturally-based model of providing health services to allow clients to have a choice between Western or traditional services, or both, in various locations that were convenient for the clients. Reviewing the quality of the health care revealed that, despite the challenges, the Noojmowin Teg Health Centre has improved care and access for its clients and exists as a model for other communities to build upon. These programs are holistic approaches to addressing health care issues and would be effective in addressing prevalent health issues found within the community. More importantly, having treatment facilities in close proximity to communities may lessen

the frequency of relapse, which often occurs because of the difficulties associated with accessing aftercare facilities due to the community's isolated location.⁴⁸

Some studies recommended getting more Indigenous peoples into the health service workforce. Because of the prevalence of chronic diseases among Indigenous peoples, it is important to encourage Indigenous people to become educated and trained in the health care field. However, the barriers included little encouragement for Indigenous peoples to pursue a career in science, few spots targeting Indigenous people to receive health service training, and lack of cultural sensitivity in advanced education institutions.⁴⁹

Our review has some limitations. Most of the sources are from the grey literature and were not subject to academic peer-review, thus bias could have been introduced. Of the included literature, multiple resources used administrative data to identify Indigenous participants; often this only identifies people who are registered as Status Indigenous people in Alberta. This results in the exclusion of non-status Indigenous people and Métis. Several of the included studies used small sample sizes, convenience samples, or excluded significant Indigenous populations such as isolated communities, which may have biased the results. Additionally, Indigenous peoples in Alberta represent a great diversity in culture and geographic location, limiting the generalizability of study results. Furthermore, the information was limited regarding health care access for specific populations such as seniors or individuals with mental or physical disabilities. Lastly, the measure of the quality and access to health care services may be inconsistent across the included studies; for instance, the study with Noojmowin Teg Health Centre did not provide any formal quantitative measurement.

Conclusions. Barriers and ease of access to health care services for Albertan Indigenous individuals are characterized in previous research.^{11;13;24;26;32} This systematic review demonstrated a limitation in the critical evaluation of interventions to ease health care access among Indigenous peoples. Precise research may be necessary for a deeper understanding of the causes of inequity in health care access and use. Development of evidence-based policies for improved health care access to improve health care access among Indigenous people in Alberta are suggested.⁴⁹

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References

1. Holmes D, Margaret Chan: committed to universal health coverage. *Lancet*. 2012 Sep 8; 380(9845):879.
[https://doi.org/10.1016/S0140-6736\(12\)61493-7](https://doi.org/10.1016/S0140-6736(12)61493-7)
2. Evans DB, Marten R, Etienne C. Universal health coverage is a development issue. *Lancet*. 2012 Sep 8; 380(9845):864–5.
[https://doi.org/10.1016/S0140-6736\(12\)61483-4](https://doi.org/10.1016/S0140-6736(12)61483-4)
3. Penchansky R, Thomas JW. The concept of access: definition and relationship to consumer satisfaction. *Med Care*. 1981 Feb; 19(2):127–40.
<https://doi.org/10.1097/00005650-198102000-00001>
PMid:7206846
4. Musgrove P, Creese A, Preker A, Baez C, Anell A, Prentice T. World health report 2000: health systems: improving performance. Geneva, Switzerland: World Health Organization, 2000. Available at: http://www.who.int/whr/2000/en/whr00_en.pdf.
5. Minister of Justice. Consolidation Canada Health Act (R.S.C., 1985, c. C-6). 2013. Ottawa, ON: Department of Justice, 2017 Jul. Available at: <http://laws-lois.justice.gc.ca/eng/acts/c-6/>.
6. Giesbrecht M, Crooks VA, Williams A, Hankivsky O. Critically examining diversity in end-of-life family caregiving: implications for equitable caregiver support and Canada's Compassionate Care Benefit. *Int J Equity Health*. 2012 Nov 1; 11:65.
<https://doi.org/10.1186/1475-9276-11-65>
PMid:23116474
7. Balogh RS, Ouellette-Kuntz H, Brownell M, Colantonio A. Factors associated with hospitalisations for ambulatory care-sensitive conditions among persons with an intellectual disability - a publicly insured population perspective. *J Intellect Disabil Res*. 2013 Mar; 57(3):226–39.
<https://doi.org/10.1111/j.1365-2788.2011.01528.x>
PMid:22369576
8. Ryan BL, Stewart M, Campbell MK, Koval J, Thind A. Understanding adolescent and young adult use of family physician services: a cross-sectional analysis of the Canadian Community Health Survey. *BMC Fam Pract*. 2011 Nov 1; 12:118.
<https://doi.org/10.1186/1471-2296-12-118>
PMid:22044536
9. Maddison AR, Asada Y, Urquhart R. Inequity in access to cancer care: a review of the Canadian literature. *Cancer Causes Control*. 2011 Mar; 22(3):359–66.
<https://doi.org/10.1007/s10552-010-9722-3>
PMid:21221758
10. Grignon M, Hurley J, Wang L, Allin S. Inequity in a market-based health system: evidence from Canada's dental sector. *Health Policy*. 2010 Nov; 98(1):81–90.
<https://doi.org/10.1016/j.healthpol.2010.05.018>
PMid:20576308
11. Gao S, Manns BJ, Culleton BF et al. Access to health care among status Aboriginal people with chronic kidney disease. *CMAJ*. 2008 Nov 4; 179(10):1007–12.
<https://doi.org/10.1503/cmaj.080063>
PMid:18981441
12. Shah BR, Gunraj N, Hux JE. Markers of access to and quality of primary care for aboriginal people in Ontario, Canada. *Am J Public Health*. 2003 May; 93(5):798–802.

- <https://doi.org/10.2105/AJPH.93.5.798>
PMid:12721147
13. Sin DD, Wells H, Svenson LW, Man SF. Asthma and COPD among aboriginals in Alberta, Canada. *Chest*. 2002 Jun; 121(6):1841–6.
<https://doi.org/10.1378/chest.121.6.1841>
PMid:12065347
 14. Arkin E, Symington A. Ontario: study documents access and quality of care issues for women living with or vulnerable to HIV. *HIV AIDS Policy Law Rev*. 2011 Oct; 15(3):27–8.
PMid:22165260
 15. Plitt SS, Mihalicz D, Singh AE, Jayaraman G, Houston S, Lee BE. Time to testing and accessing care among a population of newly diagnosed patients with HIV with a high proportion of Canadian Aboriginals, 1998–2003. *AIDS Patient Care STDS*. 2009 Feb; 23(2):93–9.
<https://doi.org/10.1089/apc.2007.0238>
PMid:19133748
 16. Wood E, Li K, Palepu A et al. Sociodemographic disparities in access to addiction treatment among a cohort of Vancouver injection drug users. *Subst Use Misuse*. 2005; 40(8):1153–67.
<https://doi.org/10.1081/JA-200042287>
PMid:16040375
 17. Statistics Canada. National Household Survey (NHS) Aboriginal population profile, 2011. National Household Survey. Statistics Canada Catalogue no. 99-011-X2011007. Alberta (Code 48) (table). Ottawa, ON: Statistics Canada, 2013. Available at: <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/aprof/index.cfm?Lang=E>.
 18. Statistics Canada. 1996 census: Aboriginal data. Statistics Canada: Ottawa, ON, 1998. Available at: <http://www.statcan.gc.ca/daily-quotidien/980113/dq980113-eng.htm>.
 19. Meneen K. Alberta Aboriginal People and Communities Served by Capital Health. Edmonton, AB: Aboriginal Health Affairs, Capital Health, 2006.
 20. Minister of Health. First Nations and Inuit health - Alberta region programs and services. Ottawa, ON: Health Canada, 2010. Available at: <http://publications.gc.ca/pub?id=9.694967&sl=0>.
 21. Minister of Health. Health services reference guide for First Nations and Inuit in Alberta. Ottawa, ON: Health Canada, 2010. Available at: <http://publications.gc.ca/pub?id=9.652148&sl=0>.
 22. Stroup DF, Berlin JA, Morton SC et al. Meta-analysis of observational studies in epidemiology: a proposal for reporting. Meta-analysis Of Observational Studies in Epidemiology (MOOSE) group. *JAMA*. 2000 Apr 19; 283(15):2008–12.
<https://doi.org/10.1001/jama.283.15.2008>
PMid:10789670
 23. Alberta Health and Wellness. Alberta immunization strategy 2007–2017. Edmonton, AB: Government of Alberta, 2007. Available at: <https://open.alberta.ca/publications/0778535029>.
 24. Cardinal JC, Schopflocher DP, Svenson LW, Morrison KB, Laing L. First Nations in Alberta: A focus on health services use. Edmonton, AB: Alberta Health and Wellness, 2004.
 25. Oster R, Hemmelgarn BR, Toth EL, King M, Crowshoe L, Ralph-Campbell K. Diabetes and the status Aboriginal population in Alberta. In: Johnson J, Balko S, Hugel G, eds.

- Alberta Diabetes Atlas. Edmonton, AB: Alberta Diabetes Surveillance System; 2009; 189–212.
26. Templeton L, Durksen T, Zhang X. Social determinants of health for the Aboriginal families who participated in the Families First Edmonton study. Edmonton, AB: Families First Edmonton, 2012.
 27. Oster RT, Virani S, Strong D, Shade S, Toth EL. Diabetes care and health status of First Nations individuals with type 2 diabetes in Alberta. *Can Fam Physician*. 2009 Apr; 55(4):386–93.
PMid:19366950
 28. Minister of Health. First Nations health status report - Alberta region 2010–2011. Ottawa, ON: Health Canada, 2013. Available at: http://publications.gc.ca/collections/collection_2013/sc-hc/H26-4-2012-eng.pdf.
 29. Southern Alberta Child and Youth Health Network, Aboriginal Health Program of the Calgary Health Region. Report on the health status and health needs of Aboriginal children and youth. Calgary, AB: Southern Alberta Child and Youth Health Network and the Aboriginal Health Program of the Calgary Health Region, 2005 Jan. Available at: <http://www.turtleisland.org/healing/chilyouth.pdf>.
 30. Lecompte E. Aboriginal health human resources: a matter of health. *J Aborig Health*. 2012; 8:16–22. Available at: http://www.naho.ca/jah/english/jah08_02/08_02_health-human-resources.pdf.
 31. Larson B, Herx L, Williamson T, Crowshoe L. Beyond the barriers: family medicine residents' attitudes towards providing Aboriginal health care. *Med Educ*. 2011 Apr; 45(4):400–6.
<https://doi.org/10.1111/j.1365-2923.2010.03892.x>
PMid:21401688
 32. King Blood R. Alberta 2002–2003 regional longitudinal health survey report. Calgary, AB: First Nations Adult and Higher Education Consortium (FNAHEC), 2007 Sep. Available at: <http://fnahec.org/rhsreport2008.pdf>.
 33. King M, Smith A, Gracey M. Indigenous health part 2: the underlying causes of the health gap. *Lancet*. 2009 Jul 4; 374(9683):76–85.
[https://doi.org/10.1016/S0140-6736\(09\)60827-8](https://doi.org/10.1016/S0140-6736(09)60827-8)
 34. Reimer G, Bombay B, Ellsworth L, Fryer S, Logan T. The Indian Residential Schools Settlement Agreement's Common Experience Payment and Healing: A Qualitative Study Exploring Impacts on Recipients. Ottawa, ON: Aboriginal Healing Foundation, 2010.
 35. Smith D, Varcoe C, Edwards N. Turning around the intergenerational impact of residential schools on Aboriginal people: implications for health policy and practice. *Can J Nurs Res*. 2005 Dec; 37(4):38–60.
PMid:16541818
 36. Borrows J. Wampum Niagara: The Royal Proclamation, Canadian Legal History, and Self Government. In: Asch M, ed. *Aboriginal and Treaty Rights in Canada: Essay on Law, Equality, and Respect for Difference*. Vancouver, BC: University of British Columbia Press; 1997;155–172.
 37. Elias B, Mignone J, Hall M, Hong SP, Hart L, Sareen J. Trauma and suicide behaviour histories among a Canadian indigenous population: an empirical exploration of the potential role of Canada's residential school system. *Soc Sci Med*. 2012 May; 74(10):1560–9.
<https://doi.org/10.1016/j.socscimed.2012.01.026>
PMid:22464223

38. Wesley-Esquimaux CC, Smolewski M. *Historic Trauma and Aboriginal Healing*. Ottawa, ON: The Aboriginal Healing Foundation, 2004.
39. BIM Larsson & Associates, Allen Consulting and Training. *Aboriginal youth suicide prevention strategy (AYSPS), summative evaluation*. Edmonton, AB: Alberta Health Services, 2008 Mar. Available at: <http://www.albertahealthservices.ca/assets/healthinfo/MentalHealthWellness/hi-mhw-aysps-summative-evaluation-final.pdf>.
40. Spence W. *Aboriginal diabetes prevention and management program*. Winnipeg, MB, National Aboriginal Diabetes Association. 4-3-2013.
41. Davachi S. *Targeted chronic disease prevention and management: approaches for diverse and vulnerable populations in Alberta*. Edmonton, AB: Alberta Health Services, 2012 Aug. Available at: http://www.reseausantealbertain.ca/wp-content/uploads/2015/08/AHS_Priority_Populations1.pdf.
42. Alberta Health Services. *2008/2009 Annual report*. Edmonton, AB: Alberta Health Services, 2013. Available at: <http://albertahealthservices.ca/Publications/ahs-pub-annual-report-2008-2009.pdf>.
43. Alberta Mental Health Board. *Aboriginal mental health: a framework for Alberta, healthy Aboriginal people in healthy communities*. Edmonton, AB: Alberta Health Services, 2013. Available at: <http://www.albertahealthservices.ca/assets/healthinfo/MentalHealthWellness/hi-mhw-aboriginal-framework.pdf>.
44. Alberta Health Services. *Diabetes*. Edmonton, AB: Government of Alberta, 2013. Available at: <http://www.albertahealthservices.ca/info/Page7732.aspx>.
45. Ralph-Campbell K, Pohar SL, Guirguis LM, Toth EL. *Aboriginal participation in the DOVE study*. *Can J Public Health*. 2006 Jul-Aug; 97(4):305-9. PMID:16967751
46. Virani S, Strong D, Tennant M et al. *Rationale and implementation of the SLICK project: screening for Limb, I-Eye, Cardiovascular and Kidney (SLICK) complications in individuals with type 2 diabetes in Alberta's First Nations communities*. *Can J Public Health*. 2006 May-Jun; 97(3):241-7. PMID:16827417
47. Chen J, Hou F. *Unmet needs for health care*. *Health Rep*. 2002; 13(2):23-34. PMID:12743954
48. Maar M. *Clearing the path for community health empowerment: integrating health care services at an Aboriginal health access centre in rural north central Ontario*. *Journal of Aboriginal Health*. 2004 Jan; 1(1):54-64. Available at: <http://www.naho.ca/journal/2004/01/11/clearing-the-path-for-community-health-empowerment-integrating-health-care-services-at-an-aboriginal-health-access-centre-in-rural-north-central-ontario/>.
49. Levin R, Herbert M. *The experience of urban Aboriginals with health care services in Canada: implications for social work practice*. *Soc Work Health Care*. 2004; 39(1-2):165-79. https://doi.org/10.1300/J010v39n01_11 PMID:15774390
50. Peiris D, Brown A, Cass A. *Addressing inequities in access to quality health care for indigenous people*. *CMAJ*. 2008 Nov 4; 179(10):985-6. <https://doi.org/10.1503/cmaj.081445> PMID:18981431