A First Nation Framework for Emergency Planning: A Community-Based Response to the Health and Social Effects from a Flood

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Abstract

In June 2013, a severe flooding of the Bow and Elbow Rivers affected southern Alberta, a province in Canada. The flood was subsequently described to be the costliest natural disaster in Canadian history. Among the hardest hit communities was the Siksika First Nation, located on the Bow River banks about 100 kilometers east of the city of Calgary. A community-university partnership was formed to qualitatively document the Siksika First Nation community-based response to the health and social impacts to their community resulting from the flood. Our findings informed the development of a culturally appropriate framework for disaster and emergency planning in First Nations communities. The Siksika Nation's work to mitigate the impacts from the flood followed a holistic and socio-ecological approach that took the determinants of Indigenous peoples' health into consideration.

Keywords

Community-based disaster response, emergency planning, First Nation's health, resilience, Canada

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Introduction

In June 2013, a severe flooding of the Bow and Elbow Rivers affected southern Alberta, a province in Canada. In addition to a provincial state of emergency, there were 29 local states of emergency declared across the province. According to the Government of Alberta, the “scale and impacts of the flooding [were] unprecedented in Alberta,” causing significant damage to homes and infrastructure in the southern region of the province (Government of Alberta 2013, p. 4). The flood was subsequently described to be the costliest natural disaster in Canadian history, with an estimated \$6 billion cost to the province (Government of Alberta 2013; Calgary Herald 2013).

Among the hardest hit communities was the Siksika First Nation, located on the Bow River banks, about 100 kilometers east of the city of Calgary. Unprecedented water levels forced the evacuation of many residents of the Siksika community – approximately 1,000 people over the duration of the flood. The flood destroyed 170 homes, and nearly 780 Siksika residents were displaced and unable to return home. Given the extremely fast rise of the floodwaters, Siksika residents had only thirty minutes warning to gather personal items and evacuate the area. As a result, many items were left behind, inside of homes and vehicles and on the land, and were destroyed by floodwater. These included spiritually significant items that were used in ceremony and had great inherent value to families.

Siksika declared a state of emergency on the evening of June 20, 2013. This was not the first time that the community was impacted by a flood; previous floods occurred in 1995 and 2005. More than 80 families were evacuated from their homes during the 2005 flood (R. Medicine Traveller, personal communication, March 10, 2016). Infrastructure and damage costs from the floods in Siksika were \$100 million in 1995, and \$4 million in 2005. The total estimated costs of damage to the affected residents from the First Nations of Siksika and Stoney Nakoda in 2013/14 was \$345 million (CBC News, 2014), making it by far the worst flood experience.

A community-university partnership was formed to document the Siksika First Nation community-based response to the health and social effects to their community from the flood. Specifically, the study sought to: (1) document Siksika First Nation’s response to the health and social impacts resulting from the flood in their community; and (2) develop a culturally appropriate framework for disaster and emergency planning in First Nations communities.

Literature Review

Disaster and Emergency Planning in Indigenous Communities

We searched empirical and non-empirical papers from 1995 to 2016. We reviewed 25 empirical papers and 11 grey literature reports that met our inclusion criteria. Of the papers that were reviewed, 11 examined case studies were from Australia and New Zealand; 4 were from Asia or the Pacific Islands; 6 were from the US; and 2 were from Canada. Several knowledge gaps were identified from our literature review of disaster and emergency response planning in Indigenous communities across the globe. First,

it demonstrated that very little attention has been paid by researchers to disasters or emergencies in First Nations or other Indigenous communities in Canada and globally. Second, existing generic disaster and emergency preparedness and response plans were not meeting the needs of the diverse Indigenous populations globally (Andrulis et al., 2011; Cutter et al., 2008; Thompson et al., 2011). Third, no existing Indigenous frameworks for disaster or emergency response planning were identified. Fourth, there was limited knowledge of what an Indigenous disaster or emergency response plan should include.

While the research literature provided little insight on Indigenous frameworks for disaster or emergency management, some important considerations for implementing disaster or emergency response plans were discussed. Some literature emphasized the importance of Indigenous knowledge (Mercer et al. 2010) and respecting the land, people, and impacts to community. The lack of Indigenous community engagement and attention to cultural safety in the planning and decision-making around disaster and emergency plans were raised as issues (Ellemor, 2005; Howitt et al., 2012). Two papers examined cultural sensitivity training programs for externally-employed emergency responders and service providers; however, evaluations of the training programs were not conducted and no information about their effectiveness in disaster or emergency response efforts in Indigenous communities was available. Another important consideration noted in the literature was that partnerships between Indigenous communities and government agencies needed to recognize Indigenous institutions of governance and their cultural values (Howitt et al., 2012).

A small number of studies have examined the public health impacts of disasters on the health and well-being of Indigenous peoples in Canada. Scharbach (2014) found that residents of Hatchet Lake First Nation in northern Saskatchewan experienced considerable distress during a wildfire evacuation in 2011. Research in Whitefish Lake First Nation in northeastern Alberta also found that residents experienced considerable emotional and mental stress during a wildfire evacuation, also in 2011, and were still experiencing stress three years later (Christianson & McGee, 2015). Preliminary findings from a current CIHR-funded study led by the lead author found that Indigenous youth and their families who lost their homes during the 2016 Horse River wildfire in Fort McMurray were having a difficult time coping after the fire. Insights from disaster response in Indigenous communities can provide valuable lessons to inform and improve future disaster response planning by the federal and provincial governments that reduce negative impacts on Indigenous peoples' health and well-being after a disaster.

The Siksika First Nation

Siksika First Nation is a member of the Blackfoot Confederacy and has the second largest reserve land base in Canada with 186,000 acres located in southern Alberta. At the time of this study, Siksika had a total population of approximately 7,300, with close to half residing off the reserve lands. Siksika is represented by a Chief and twelve Councillors (elected by Nation members for three-year terms), and through the Treaty 7 Management Corporation, which advises and advocates on behalf of the majority of signatory Nations of Treaty 7. Siksika provides and administers a range of health, social,

educational, and recreational services to Nation members through the departments of Siksika Health Services (with an accredited primary care facility); Siksika Family Services; Siksika Board of Education (with three schools providing K-12 education); and other community support services (including recreational services and a Sportsplex). Siksika also administers departments responsible for land management and resource development. A Tribal Manager oversees the operations of all departments and reports to Chief and Council.

Methods

Our study took place between January, 2014, and March, 2016. Documenting the Siksika Nation community-based response to the 2013 flood, through a case study methodology, provided an opportunity to increase knowledge of disaster response and mitigation in First Nations communities and assess how the Nation-led emergency response effectively addressed the flood's health and social impacts on Siksika residents and the community at large (i.e., best practices). From this, we propose guidelines for the development of a holistic population health framework for future culturally safe disaster and emergency response planning in First Nation communities.

A memorandum of understanding/partnership agreement between university researchers and the Siksika Community Wellness Committee (SCWC) to study the response to the health and social effects to the Siksika community was approved in June, 2014 by the SCWC and Chief and Council. The SCWC was created in January, 2014 to oversee the coordination of the Community Wellness Plan, a response to promote health and resilience in the community. The research strongly affirmed OCAPTM principles, in particular by first engaging community leadership in a community-university partnership, ensuring that community members played key roles in the design and implementation of the research, and ensuring that appropriate Nation-specific communication strategies were used so that Chief and Council were informed and gave their approval. The study was also approved by the University of Calgary Research Ethics Board.

For this case study of Siksika First Nation's response to the flood impacts, we gathered information from multiple sources (Creswell, 2007; Yin, 2009).

Key Informant Interviews

We conducted key informant interviews with members of the SCWC, service providers from Siksika First Nation, and representatives from the provincial government departments of Alberta Health, Alberta Health Services, and Alberta Aboriginal Relations. These interviews were completed by the principal investigator between May and July, 2015. Email invitations were sent by the principal investigator to individuals identified as key informants to formally invite them to participate in the study. Each interview began with informing the participant of the study's purpose, the expected contributions of participating in the interview, and the expected outcomes of the study. Verbal and written informed consent was provided and obtained from each participant. With the consent of the key

informants, we were permitted to include direct participant quotes where relevant in our reporting of results of the study.

Attendance at the SCWC Meetings

SCWC committee meetings were held once monthly in Siksika, and the research investigators attended the 11 meetings between December, 2014 and September, 2015. At the meetings, we took notes on department reports and updates on the flood response (e.g., issues or concerns as they arose; decisions that were made regarding allocation of resources; hiring of staff and provision of health and social services; and planning of community initiatives). We also received the minutes of meetings as distributed to committee members.

Site Visits

In the first year following the flood, we visited the reception centre at the Deerfoot Sportsplex, the donation centre organized by the Dancing Deer Disaster Recovery Centre, the temporary housing units set up by the Chief Crowfoot School, the facilities at Siksika Health Services, and the three schools on the reserve and in the nearby town of Strathmore. In the following two years, we continued to make regular visits to Siksika through our attendance at the SCWC meetings, which were held initially at the Administration building and later at Siksika Health Services. We documented our observations during these visits.

Review of Publicly Available and Internal Documents

We reviewed documents publicly available and internal to the SCWC related to the emergency management on Siksika to promote an in-depth understanding of our case study and to ensure analytical rigor (Creswell, 2007; Yin, 2009). Internal documents that we were permitted to review included information such as the number of community evacuees and houses destroyed, the rebuild process, and overview and allocation of funding for specific health and social services and programs provided to evacuees.

Participation in Community Events for Recovery

We attended and participated in Siksika community events for recovery, including the one year anniversary of the flood, a Christmas blessing ceremony for flood evacuees that was held at the end of 2014, two community and family resilience conferences held in March of 2015 and 2016, and the Siksika Health Fair held in April, 2015. At the two resilience conferences, we were given the opportunity to present our research findings and gather feedback.

Data Analysis

All interviews were audio-recorded, and extensive notes were taken to supplement the recorded material. Interviews were transcribed verbatim and the formatted transcripts and notes were imported into the qualitative data analysis software program QSR NVivo (version 10) for analysis. The principal investigator and co-investigator read through a subset of the transcripts to generate a set of preliminary themes. Document reviews and participatory observation notes were compared with the findings from the key informant interviews. A draft community report was prepared by the principal investigator and then shared with members of the SCWC to seek their input and comments on the analysis and findings as reported. Their input was then integrated into the final report.

Findings

Siksika Nation Emergency Management

When key informants were asked to describe the Nation-led response to the 2013 Southern Alberta flood, they described disaster and emergency planning in First Nations communities as contextual, multi-faceted, and situational. They disagreed with the portrayal of disaster and emergency planning as a linear process with discrete phases that showed a progression from response to mitigation and preparedness or, in the case of Alberta's process, from response and stabilization to intermediate and long-term recovery. Key informants described how the socio-political and socio-economic contexts of First Nations communities can change quickly, in a few days or weeks. More importantly, the relationships among individuals, families, and different communities may be positive, negative, in flux, or stuck in one place, so that responses to services provided and decisions taken will not be uniformly positive or negative. Moreover, consideration of the determinants of First Nation peoples' health is essential to emergency planning at each phase. Determinants of Indigenous people's health include gender and sexuality, age, economic and educational opportunity, spirituality, relationship to the land, geography, history, culture, language, knowledge systems, and daily micro-aggressions arising from racism and colonialism. In response to this lack of linearity, the Siksika Nation emergency planning of the flood is grouped under headings that respect the overlap in the phases of response, recovery, mitigation, and preparedness.

Preparation to Response

Siksika exhibited a rapid and strategic community-based response to the flood. As stated previously, this was not the first time there was a flood that forced the evacuation of Siksika residents from their homes. The speed with which the water rose was unprecedented, however, and left little time for planning per se. Siksika was prepared though because of their experiences with previous floods. The Siksika Peacetime Emergency Plan was developed in 2005 by Siksika Health Services in consultation with Siksika Nation Emergency Services and identified the four stages of emergency management from

initial response that involves evacuation and protection of the community, through recovery, mitigation, and preparedness. The Peacetime Emergency Plan included Indigenous knowledge about the history of the river and community capacities in emergency planning. When it became necessary, the Siksika Nation Fire Chief was enabled through the plan, approved by a previous Chief and Council, to make the declaration of a state of emergency and put the emergency plan into action. Key informants described the importance of Siksika having developed their own disaster and emergency plans instead of having externally developed disaster and emergency plans imposed on them.

Table 1. *Some Examples of the Intersection of Determinants of Health in an Indigenous Emergency Response Plan by Phase.*

Community or Individual Determinants of Health	Response	Recovery	Mitigation	Preparedness
Sex and Gender	Domestic and gender-based violence in temporary shelter units and within families	Male and female mental health support groups offered by Siksika Health Services	Male and female mental health support groups continued	Male and female mental health support groups continued
Age	Dancing Deer Disaster Recovery Centre (DDRC) provided outreach to families, children and youth evacuees	DDRC partners with the schools in Siksika to delivery mental health support to youth	Lack of funding to continue new service from DDRC	Family and Community Services and expertise in place
Political Power	New chief and council elected in Nov 2013, slowed the flood response at the onset	Negotiations with the province stalled the rebuild process. Limited communication from provincial ministers and their predisposition to direct decision-making in First Nations	Flood evacuees upset that homes will be rebuilt in new subdivisions and away from their family kin	Blockade of road to construction to express disfavour towards housing plan
Socioeconomic Status	Donations of clothing, bottled water, and food are collected at Sportsplex	DDRC continue to provide support to families	Families moved into temporary shelters with different family clans. The tight living quarters and increased stress due to the living situation created significant issues for residents	The food bank that was originally set up for flood evacuees has now been established as an ongoing service for residents to access
Degree of social relationships and social capital	Clans like to remain physically close in houses; offer a means of support and strength Family is deeply respected and highly valued	Siksika held two community resilience and wellness conferences in 2014 and 2015 to bring the community together and strengthen community resilience	Traditional parenting program provided to families	Involvement of Spiritual Elders in promoting community resilience

In the response phase, the Siksika Emergency Team was called together and coordinated the evacuation of affected residents, placing them in temporary emergency shelters. The team members were trained and skilled, and no lives were lost nor serious injuries experienced during the evacuation. An emergency reception centre was soon set up at Siksika's Deerfoot Sportsplex. The Siksika Emergency Team then established a call centre and set-up a Facebook page to coordinate relief efforts, donations, and volunteers.

Temporary housing for evacuees were subsequently placed at three sites on the reserve (Deerfoot, Crowfoot, and Poor Eagle Flats); these were referred to as New Temporary Neighbourhoods (NTNs). In addition to providing housing to displaced residents, these temporary shelters distributed donations of food, water, and clothing. Donations came from Calgary as well as closer communities, such as Strathmore.

The Chief and Council established the Siksika Nation Disaster Relief Fund to receive financial donations. The Disaster Relief Fund received \$900,000 in donations from private donors, corporations, faith-based organizations (e.g., the Salvation Army), and non-governmental organizations (NGOs) (e.g., the Canadian Red Cross). In addition to the money distributed from the Disaster Relief Fund, the Salvation Army provided \$2500 to each evacuee, and Chief and Council allocated \$3000 to all 138 heads of households. Siksika Nation flood evacuees also received preloaded debit cards of \$1500 from the Alberta government to purchase necessities or household items.

Key informants described the Peacetime Emergency Plan as an asset in Siksika's immediate response to the flood. One key informant said, "Having their own predetermined peacetime response plan enacted by the Nation and not an external plan really helped...it was unbelievable to see how resilient and how effective all community members were at responding to their own needs." Some observers from outside the community had the same opinion:

Search and rescue had a good plan and pulled it together...Siksika pulled together and made it better afterward. You need to be proud of each other and of being family. I know the challenges between provincial and federal governments and trying to get things done, but you are in good hands with Chief and Council. (MLA, speaking at public meeting, June 21, 2014).

Some key informants described delays in the Nation's response to the flood after the immediate emergency. Siksika was in an election year, and a new Chief and Council were elected on November 27, 2013, which was five months post-flood. It took the next six months for new members (a majority) to become orientated to the governance issues. Other delays were reported to result from limited communication from provincial ministers and their predisposition to try and direct the decision-making process in First Nations. One key informant put it this way, "One provincial ministry had provided

direction to the community on what they should and shouldn't be doing. Which was a challenge because the community was doing what they felt was needed and it wasn't helpful. That complicated matters."

Memorandum of Understanding with the Provincial Government

Siksika Nation and the Government of Alberta signed a memorandum of understanding (MOU) for the rebuild of homes on November 6, 2013. Funding from the Alberta government supported the hire of the Siksika Rebuild Team to coordinate, organize, and communicate the rebuilding efforts on the Nation. The team comprised a Project Coordinator, Housing Coordinator, Communications Coordinator, Site Coordinators for the three NTN, NTN Property Manager, Administrative Assistant, and three Community Representatives. The Siksika Rebuild Team carried out day-to-day functions including assessing interim housing needs, demolition, or new construction and relocation; community consultation; and housing policy development.

The Rebuild Funding Envelope of \$49 million from the Alberta Government included coverage for costs of the demolition and future rebuild of 136 homes on the Nation, and the relocation of 307 displaced residents into the shelter housing in NTN until their permanent housing was available. Rather than being a one-time emergency expenditure, the MOU indicated that an effective flood recovery response must address long-term housing needs, including meaningful opportunities for Siksika Nation members to participate in community and economic development. Additionally, the MOU also set aside \$10 million to be used for training Siksika Nation members through a mentoring process to increase employment. This provided an opportunity for Siksika members to gain skills they could use for employment both on and off the reserve, and to increase capacity to support the community. As reported in the Siksika First Nation Annual Community Report (2015), 265 Nation members had been trained in various trades to support the demolitions and housing rebuilds, including security, construction, heavy equipment operation, accounting and early learning childcare.

Federal government participation was conspicuously absent in the MOU. Key informants expressed that future government involvement in emergency and disaster planning requires that both provincial and federal governments sit at the table with Siksika Nation.

Response to Recovery

As the rebuild and repair efforts were well underway, Siksika began to initiate strategies to promote community resilience and healing. A documentary video titled "Siksika Strong" was filmed and released August 19, 2013 (see <https://www.youtube.com/watch?v=ITosNIwQB9I>). The film became a popular representation of the Nation's healing post-flood as it highlighted the collective efforts and strengths of the community as they responded to the devastation and loss. A newsletter titled "*Aakyistowapsiini*", a Blackfoot word for resilience, was created by the Communications Coordinator of the Siksika Rebuild Team to communicate updates on the rebuild and recovery efforts, and also included information about services and supports offered to evacuees. Perhaps most importantly, Siksika developed and

implemented a Community Wellness Plan specifically to address health and social concerns following the flood.

Recovery to Mitigation: Community Wellness Plan

In December 2013, Siksika received funding from Alberta Health to develop and implement their Community Wellness Plan (D. Turner, personal communication, January 8, 2014). A funding proposal to Alberta Health was initiated by Siksika Health Services and the Tribal Manager. This funding supported a Nation-led initiative to promote health and wellness and strengthen resilience of the community following the flood, but also thinking long-term (preparedness) about future challenges, whether from natural disasters or emergencies.

The overall goals and objectives of the Siksika Community Wellness Plan were to: a) assess the health and social needs of community members; b) develop an interdepartmental, multidisciplinary network of service providers and resources and assist community members with connecting to these supports and services; c) provide flood relief and recovery supports to evacuees; d) counsel community members; and e) promote resiliency.

As one key informant noted, community leaders hoped that one outcome of the Community Wellness Plan would be Nation members with less dependency on external governments that was evident and had developed as a result of colonial policies. An overall spirit of self-determination was being enhanced and enabled by Siksika community members.

The provincial funding for the Community Wellness Plan was broken down into two phases. In phase 1, health and social services were provided for the more immediate needs of flood evacuees living in the three NTN (Deerfoot, Crowfoot, and Poor Eagle Flats). In phase 2, Alberta Health secured additional funding for the continuation of some health and mental health services as evacuees adjusted to living in the NTNs.

Siksika Nation Administration, responsible for the Nation's service area operations, was tasked with dividing the funding into priority areas, including health, mental health, education, and recreation, and hiring the new staff and service providers needed. The following departments received funding to administer services and programs to flood evacuees, including families and youth: Siksika Health Services; Siksika Parks and Recreation; Siksika Family and Child Services; and Siksika Board of Education.

The SCWC was created in January, 2014, and was responsible for overseeing the coordination of the Community Wellness Plan. It included representatives from Alberta Aboriginal Relations, a community liaison from Alberta Health Services, representatives from Siksika Child and Family Services and Social Work, Siksika Health Services, the Siksika Tribal Manager, Siksika service providers, and the lead investigators on this study. Terms of Reference that outlined roles and

responsibilities of committee members guided the work of the committee. The SCWC was able to identify and respond to emerging issues because of their relationships and knowledge. For example, key informants talked about the rise of family or domestic violence post-flood in Siksika. While there was no systematic collection of data to support claims for an increased rate of violence in the community, concerns about the breakdown of the family and domestic disputes were seen to warrant attention based on the wisdom of service providers and community leaders.

Attention to Children and Youth

Recognizing the needs of children and youth and families required attention in the aftermath of the flood. Siksika Family Services, with support from Siksika Health Services, established the Dancing Deer Disaster Recovery Centre (DDDC) almost immediately. DDDRC was a one-stop-service for families, including a donation centre (with food, clothing, and furniture), counseling, and recreational activities. DDDRC hired six family support workers and provided outreach services to 357 flood evacuees in the first year of recovery (Key informant). The program manager for DDDRC explained that, “the human aspect of a disaster are usually not considered and people are traumatized by the experience.”

Through the DDDRC after-school recreational programs and youth counseling were offered at the three schools on the reserve. Four mental health workers were hired, including three psychologists and one therapist. These mental health workers worked with the schools to provide culturally-based programs to address several issues among the youth, ranging from depression, behavior changes, suicidal thoughts, and grief. As well, three wellness coaches were hired, one for each school. The mental health workers also referred youth to the Siksika Medicine Lodge when appropriate.

DDDC also partnered with external organizations, such as Save the Children, to secure additional funding for youth activities and programs. DDDRC program ended on March 31, 2016, however, the SCWC raised concerns about the ongoing needs of children and youth in the community during the recovery period. This resulted in the loss of mental health services and supports for children and youth in the community.

Key informants explained that it was important for children and youth to continue to participate in activities and sports that promoted their physical and social development. The Siksika Deerfoot Sportsplex was used as an emergency evacuation shelter for the first four months post-flood, and during that time Siksika Parks and Recreation had to temporarily stop all recreational programs. Once flood evacuees moved out of the Sportsplex and into the NTN, recreational programs and activities resumed. Siksika Parks and Recreation also hired two recreational program coordinators to provide recreational activities for children and youth living in the NTN. One key informant described this experience:

Once the evacuees moved out of the Sportsplex...we just started running programs again and ensured that the community had access to the Sportsplex...and we also

worked with the schools to deliver recreation programs....The Deerfoot Sportsplex is where we bring the community back together, and providing sports and recreation for families and youth is a way of promoting their resilience.

New Model of Service Delivery Envisioned

Interdepartmental collaboration was identified as a key priority by the SCWC. The Community Wellness Plan therefore aimed for a multidisciplinary approach to service delivery that reflected a holistic understanding of health and wellness and acknowledged First Nation cultural protocols and values. Multidisciplinary teams were envisioned that included family support workers, mental health therapists and psychologists, youth social workers, childcare workers, traditional counselors, addiction counselors, and health care personnel including physicians and registered nurses. The Tribal Manager brought together Siksika department managers to talk about an integrated service delivery model. He stated that, “getting rid of our invisible walls” was key to multidisciplinary team care.

One key informant commended Siksika for developing and leading their own plan to promote community health and wellbeing. However, key informants also described the challenges in carrying out the proposed plan. Although the intention was to work in a multidisciplinary approach to service delivery, silos across the different departments (e.g., Siksika Health Services, Family Services, Community Support Services, and Education) were reported to hinder collaboration and integration of services. There was limited or lack of communication about the roles of and actions taken by each department. As one key informant described it, “There is lack of clarity on who is responsible for what.” Another key informant reported their own personal challenges in working with other departments and explained a lack of understanding as to what a multidisciplinary team approach entailed.

Pressing Need to Support Mental Wellness

The mental health of flood evacuees and the community as a whole was a key focus of the Community Wellness Plan. Community leaders recognized that this was an opportunity to work on resolution of some of the accumulated trauma experienced by Nation members. The trauma experience of the 2013 flood could not be solely separated out from the experience of residential schools and racism, and micro-aggressions in daily life.

Evacuees spent four months in emergency accommodations, some in the Siksika Deerfoot Sportsplex with cots, some in hotels, and others with families (contributing to strain on other people). They were then moved to the NTN created with ATCO trailers, which were very small for families of three or more. These NTNs were surrounded by fences and guarded by security staff from outside the Nation. For some the NTNs reflected a re-experience of the colonial past, residential schools,

surveillance by other governments, and disrespect (Calgary Herald, 2013). Some people remained in the NTN from 10 to 14 months.

A large portion of the funds from the Alberta Health was allocated to support staffing of service providers, that is, hiring of mental health workers, nurses, and psychologists. These service providers provided outreach, care and support to evacuees living in the NTNs.

Additionally, Siksika Nation held two community resilience and wellness conferences, in March of 2014 and 2015. These conferences were intended to “bring the community back together” (Key Informant, Tribal Administration). The two-day conferences provided a space for evacuees and their families to share stories of the flood and to voice their concerns about the Nation’s responses and plans. Service providers and community partners were present at these conferences to inform the community of services and/or programs available to them. A focus of these conferences was to connect community members to traditional teachings and values. Topics addressed at the conferences included traditional parenting, grief counseling, and post-disaster recovery and resilience. The conferences ended with a traditional powwow ceremony.

Mitigation and Preparedness

Through the MOU, the Government of Alberta provided \$49 million to the Siksika Nation to aid with rebuilding of homes destroyed by the flood (Siksika Nation, 2015). While First Nations housing remains a Government of Canada responsibility, steps taken by the Alberta government to provide aid reflected the extent of flood damage and need for immediate solutions, although the negotiations with the provincial government had delayed the rebuilding. The community was informed about the rebuild process and mitigation efforts to rebuild the homes away from the floodway and contaminated sewage systems. According to the housing policy that emerged from the MOU Housing Agreement between Siksika First Nation and the province, houses were to be rebuilt in new subdivisions with clusters of 10 to 14 homes in each. With these new subdivisions, families who would be receiving the new homes would not be together with their extended families as before. Also in the new housing policy was that multiple families living in a single dwelling was no longer prohibited, which raised concerns about overcrowding.

Siksika members were more than a little uneasy about the decision to move them away from their family clans. In Spring 2015, the Siksika Rebuild Team held consultations, facilitated by the Project Coordinator, with the community to obtain their input on the *on-reserve housing policy* pertaining to the location of the new homes that were damaged in the flood. However, since the Nation appeared to have no leeway to change decisions about building on the flood plain (where some people wanted to return), these were more opportunities to express concerns than to really be consulted.

While several key considerations were taken into account in Siksika Nation’s Peacetime Emergency plan, other important issues for mitigation were described to be a challenge. According to

one key informant, “the challenge with mitigation efforts is to address the many layers of impacts from infrastructure, to health, and the social” (Key Informant, Family and Community Services). The challenges to multi-sectoral and multidisciplinary collaboration contributed to some lack of efficiency and effectiveness in mitigation.

While still in the response/recovery phases, interviewees spoke about what needed to happen for future mitigation and preparedness. Past, present, and future experiences were regarded as important in the response; for instance, the legacies of residential schools and intergenerational trauma must be considered. Vulnerabilities were considered from the start. The Siksika First Nation’s response to the disaster did not depend on members being characterized as affected/not affected, as it was assumed that everyone in the community was affected in one way or another because of strong family and other social relations; in fact the concept of family could not be interpreted using non-Indigenous standard criteria of biological or legal relationships. Unlike many response plans, Siksika prioritized the children and youth, recognizing they were a vulnerable population.

A First Nations Framework for Responding to Disasters or Emergencies

Aspects of a framework for First Nations disaster and emergency planning arose from this study. In Table 2, we list these aspects along with further descriptions, and we also include some recommendations for moving forward with framework development. A major forest fire in Fort McMurray in northern Alberta in 2016 has further reinforced the urgent need for a holistic population health framework for Indigenous emergency planning. Siksika First Nation sent people to help the Fort McMurray First Nation in their response and recovery efforts. Alberta Health Services also sent its Aboriginal community coordinator, who had served on the SCWC.

Recognition of traditional ways of life and cultural protocols were considered important in recovery and mitigation strategies. One key informant specifically talked about the role of spiritual Elders to “help the Nation heal” from disaster. Cultural protocols and historical sensitivities have shaped current relationships between Siksika First Nation and government agencies. To build relationships and meaningful partnerships for emergency planning, Indigenous communities and their issues need to be well understood by the government agencies, emergency responders, NGOs, and researchers that may be involved. These relationships cannot be built quickly; discussions take time, and trust is developed over time.

Furthermore, key informants talked about having a community engagement process in provincial disaster and emergency planning that acknowledges and respects Indigenous cultural protocols and knowledge and includes their meaningful involvement in the planning and decision-making of plans and/or policies. Figure 1 below presents the recommendations for disaster and emergency planning for Indigenous communities across the phases.

Table 2. *Framework for Indigenous Disaster and Emergency Planning.*

Aspects of an Indigenous Model	Description	Recommendation
A holistic understanding of health and wellness	Indigenous people do not separate physical, mental, and spiritual health, nor do they separate human health from that of the rest of the earth. Health is also a function of the past, the present (emergency) and the future, as is healing. Elders have an important role to play in all aspects of emergency management for a Nation.	Cultural competence and respect of Indigenous views of the world, ways of knowing, values and ethics need to be brought to a framework. It is incumbent upon settlers to prepare themselves rather than ask Indigenous people to do the teaching. The Truth and Reconciliation Commission reports and recommendations should be studied. Understanding among settlers of the roles of Elders is necessary.
Community-led emergency plans	Includes Indigenous knowledge and capacities; community ownership and control; self-determination is an underlying principle. A designated leader to enact the plan in the Nation is a key asset.	Indigenous communities will vary in the history of governance; nevertheless, mutual respect must be experienced when outsiders provide assistance in plan development. The Federal Government must do better in plan development. In Alberta an Indigenous Emergency Response Plan is needed that coordinates various sectors and is developed in collaboration with Nations.
First Nations can expect the same rapid response and return to pre-emergency standard of living as non-Indigenous peoples	There are no inequities in indicators of a successful emergency management (e.g., time to NTNs, followed by time to new or refurbished homes, number of suicides).	Federal and provincial jurisdictional issues need to be clarified in the best interest of reconciliation. Current inequities in health status and standards of living exist and need remediation before equity can even be imagined. Resilience and capacities need to be identified and strengthened with community input. The Siksika First Nation MOU deserves evaluation.
Contractors and others selected by outside governments or organizations are screened for capacity to provide a culturally safe process (e.g., in delivery or evaluation of a government program, service provision)	Cultural competency among service providers outside the nation, including NGOs and government agencies is needed, including respect of Indigenous cultural protocols, local knowledge, historical sensitivities, oral traditions of story-telling, and so on.	Identify people who are respected by First Nations; encourage corporate and other organizations to develop the capacity to work well with First Nations; take First Nation complaints of lack of respect seriously.
A community committee comprised of community leaders and established by the community should be supported.	In this case study the Rebuild Committee and the	Financial support of this work is necessary to recognize that First Nation leaders are often over-committed before the

Terms of Reference for committees are an important first step.	SNWSC were models of leadership capacity enacted.	emergency, and are likely stressed by the community impacts themselves.
A good communication system to community members	The Nation must identify what works for its members and lead the communication strategy.	Consultation may or may not be needed; resources for this can aid the processes.
Plans need to be written to respect the Indigenous worldview, way of knowing, and values.	Academic and settler jargon may not represent the First Nation worldview (e.g., psychological needs). Many Western concepts separate the mind, body, land etc. and also are focused on individuals rather than communities. Indigenous identity is very collectively oriented. Words have power.	Indigenous models of healing and serving must be considered to create cultural safety. Community recommendations should be incorporated.
An Indigenous framework will recognize that colonialism and racism still exist and are to be discouraged. Daily micro-aggressions exist before and after a disaster.	Processes of colonialism and racism are understood and responsibility to end these is articulated.	The Truth and Reconciliation Commission recommendations for knowledge and skill development require continued attention.
The inequitable health status is addressed and the need for enhanced attention to the well-being of sub-populations is recognized. Burn-out may be quicker or different in Indigenous service providers.	A plan or service for non-Indigenous sub-populations may not be acceptable nor accessible to Indigenous sub-populations (e.g., ill seniors, children and youth, mentally ill, addicted, violent).	Preparedness requires greater attention to successful programs to reduce health inequities faced by First Nations.
Children and youth must be a focus of an Indigenous Emergency Management plan.	In addition to facing health inequities, children and youth are greatly valued in Indigenous communities. Indigenous philosophy makes decisions with the next seven generations in mind.	All plans should assume that children need additional and appropriate support.

Figure 1. Disaster and Emergency Planning for Indigenous Communities Across Different Phases

Discussion

The Siksika Nation's work to mitigate the impact of the flood followed a holistic or socio-ecological model that took the determinants of population health into consideration, even though the construct of "determinants of health" was not generally vocalized. This is in keeping with the understanding that Indigenous peoples generally have a socio-ecological view of health and well-being that incorporates physical, social, mental and emotional, and spiritual balance (Castellano, 2015, p. 34-35) and includes all elements in their environment. Within social and political domains, colonialism must also be counted as a significant determinant of Indigenous peoples' health (de Leeuw et al., 2015, p. xi) and a source of structural violence.

Community control over what services are provided and to whom enhances community health through "the sense of individual and collective efficacy and pride" (Kirmayer et al., 2000, p. 614). Self-determination is a powerful counter to the oppressive legacy of colonization, enabling community-level healing in addition to yielding more effective services. Cultural continuity (e.g., self-governance, cultural facilities) is associated with resilience (Chandler & Labonte, 2003). Thus, resilience is related to First Nation self-determination. From an Indigenous perspective, resilience also comes from the interplay between spirituality, family strength, Elders, ceremonial rituals, oral traditions, tribal identity, and support networks (HeavyRunner & Marshall, 2003), and relationships to the land (Andersson & Ledogar, 2008). This understanding of resilience may include Treaties and traditional systems of belief and practice passed on through generations. Indigenous resilience is also based on Indigenous peoples' capabilities focusing on success rather than overcoming challenges alone (McGuire 2010). It is a strength-based concept that builds on assets rather than emphasizing deficits, and it is relational in that individuals are considered part of a larger system of capabilities and challenges (Kirmayer et al., 2007).

Siksika First Nation had a robust governance system, with community participation in elections for Chief and Council, including the willingness of members to run and to serve. The Tribal Manager played a key role in transitioning between the old and new Chief and Council following the election that occurred five months post-flood, and is a well respected for his leadership and respect for community strengths. Experienced people were available to take on coordinator roles when needed. Further, transparent financial management and reporting was common practice, even though financial decisions were sometimes contentious. Often, staff and managers were directly impacted by the flood, with some living in temporary housing; however, they met the challenges and did their best for the Siksika community.

The robust governance was exhibited in the creation of the Peacetime Emergency Plan in 2005 and the preparation that was done at that time for future emergencies. The person in charge of the plan knew what to do and was given the authority to act when the 2013 flood occurred. This resulted in no lives lost and only minor injuries in a potentially life-threatening emergency. The Siksika leadership were then ready to begin the processes of recovery and rebuilding the community, strengthening it if possible. Jurisdictional disputes between provincial and federal governments, as well as the timing of the Siksika Nation election created delays in getting underway, and Siksika leadership often received criticism for delays that were beyond their control, but never publicly owned by the other governments. The lack of federal government involvement in the MOU between Siksika Nation and the Government of Alberta leaves questions about the future of this approach to policy development.

It was a commonly shared belief that managing the emergency and recovery was an opportunity presented by the Creator to build on community strengths and to increase the community's capacity to move into the future. In a philosophy of self-determination, that future would be designed and implemented by the Siksika First Nation. While the Nation was open to outside assistance, there was also a conscious effort to limit the access of those from the outside who might see the disaster as a chance to 'get a foot in the door' or benefit the outside organizations as much or more than Siksika members. There was also a need to limit the number of outsiders developing flood response projects within the Nation, as coordinators, staff, and the people of Siksika were then put in the position of taking care of new people and guiding them, preventing duplication, and averting burn-out for staff and service-overload for the evacuees. Another opportunity seized by Nation members was to look at how 'siloed' administration of services limited benefits to Nation members.

Despite there being differences among Siksika members based on clan, religious beliefs, neighbourhood, or history, the predominate language and philosophy was of one community, one Nation working for the best possible outcomes. In part this was maintained as residents were free to express concerns, complaints, and different points of view. In addition, every effort was made to keep all Nation members informed. Based on the successes achieved, it is likely that Siksika Nation will come out of the disaster stronger than before.

Chandler et al. (2003) argued that resilience is portrayed as the confluence of several input factors (e.g., self-governance, education, the presences of cultural facilities, and health) and that the effectiveness of these resilience-promoting factors may be optimal in one situation or event, but limited in another. In Siksika First Nation, resilience-promoting factors embedded in the Community Wellness Plan were an interplay between spirituality, family strength, Elders, ceremonial rituals, support networks, and intergovernmental collaboration. Members of our research team are, to this day, working with the Siksika community on resilience-promoting interventions, as mental health and social issues continue to linger in the community post-flood. One such intervention involves the participation of youth from the community in arts-based projects focused on mental health promotion (Henderson, Montesanti, Williams, & Crowshoe, 2018).

Prior to the flooding, the Alberta government deferred to the federal government on Indigenous matters relating to housing, education, employment, and health care. As part of their coordinated flood response, the Alberta government intervened to promote the social and mental health of First Nations peoples. Within days of the flood, First Nations were notified that the government flood response would include affected reserves and First Nations would be considered for provincial funding. As a result, a new relationship was forged between the provincial government and Siksika Nation, which required careful negotiations and mutual understanding. A number of forces can stall relationship-building efforts, including institutional inertia, the lack of a policy framework to structure action, and the memory and lasting consequences of past conflicts. There is no guarantee that this government-to-government relationship will retain any currency beyond the 2013 flood response. The MOU deserves more study in terms of the opportunities, challenges, and outcomes it has created.

Conclusion

The health and social impacts experienced by Indigenous peoples and communities after a disaster is a significant, but under-studied public health issue. Our study helps to fill key knowledge gaps on disaster and emergency planning, recovery, and mitigation in Indigenous communities. This case study of the flood response in Siksika Nation provides important lessons for a framework for Indigenous emergency planning. Such a framework requires new inter-governmental relations be created by all partners to develop an appropriate emergency response that moves beyond rigid conceptions of federal, provincial and First Nation responsibilities.

We devised a framework for Indigenous disaster and emergency planning to respond to the health and social impacts in a community that arose from our study findings. The framework has been accepted by the Siksika community and presented to Alberta policy makers and service providers with the intention to inform future decision-making for disaster and emergency planning in First Nations or other Indigenous communities. Through effective knowledge translation, this framework will inform policy decisions related to emergency management among Indigenous peoples and will influence health and social policy and service delivery in the face of disaster. Research underway by members of our

research team to study the health impacts from the 2016 wildfire in Fort McMurray to Indigenous residents and communities in northern Alberta provide opportunities to apply lessons learned from the flood in Siksika First Nation and to build on the Indigenous public health framework for disaster and emergency response.

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