

# Ontario Chief Coroner's Table on Understanding Fire Deaths in First Nations

July 2021



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## Acknowledgement

We would like to acknowledge each life that was lost in the fires and all the families, friends, loved ones, communities and first responders that have been impacted. The most recent tragedy occurred while this review was being conducted. Five loved ones were lost in a devastating fire in Kitchenuhmaykoosib Inninuwug First Nation (Big Trout Lake First Nation) in May of 2019. We honour the memory of each life lost and offer this report which seeks to provide information to support change that may prevent further tragedies.

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# Preface: Historical Context and Present-Day Realities

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This brief context section by no means reflects all of Canada’s attempts to eradicate and assimilate Indigenous Peoples. Instead, this section is meant to provide some context and understanding as to how and why First Nations communities are disproportionately impacted by fatal fires.

## History

For over 100 years, Canada has used law and policy to target Indigenous Nations in an attempt to “eliminate [I]ndigenous governments; ignore Indigenous rights; terminate the Treaties; and, through a process of assimilation, cause Indigenous Peoples to cease to exist as distinct legal, social, cultural, religious and racial entities in Canada.”<sup>i</sup>

Arguably the most devastating vehicle through which this was attempted was by severing ties to land and, in so doing, severing ties to history, culture, identity and belonging. The separation of Indigenous Peoples from ancestral lands and forcible confinement to reserve lands held in trust by the Crown was, in some parts of the country, made possible through the negotiation of treaties. While the treaty making process appeared to be honourable and conducted under proper legal authority, it was often “marked by fraud and coercion.”<sup>ii</sup> In other parts of the country, land was simply seized without consent.

Alongside these efforts to remove Indigenous Peoples from the land, came forced processes of assimilation that were carried out through several legislated and non-legislated methods. These included the Indian Residential School system, the 60’s scoop and the millennium scoop.

It is critical to recognize that this history continues to have lasting impacts and many Indigenous people still carry the harmful legacies of this past. While reviewing the contents of this report, it is essential to understand Canada’s dark history and the intergenerational trauma that continues to be experienced by Indigenous communities as a direct result of Canada’s attempts at colonization and forced assimilation.

## Jurisdictional Neglect

The complexities of many of the issues raised in this section and report can be traced back to the fact that provincial and federal governments have overlapping jurisdiction when it comes to services for Indigenous people under the Canadian Constitution.

Under the Constitution, the federal government is authorized to govern “Indians and Lands reserved for Indians” and does so through a piece of federal legislation called the Indian Act. This means that the federal government is responsible for delivering services on-reserve that are otherwise delivered by Provinces off-reserve. As a result, disputes between federal and provincial governments over their respective jurisdictions has contributed to chronic underfunding and fragmented and inadequate services being delivered to Indigenous communities.<sup>iii</sup>

“Jurisdictional neglect” occurs when groups or individuals might “fall through the cracks” due to a lack of interjurisdictional cooperation.<sup>iv</sup> An example of this is drinking and waste-water facilities, which provincial and territorial governments are generally responsible for. However, provincial and territorial governments can claim that their jurisdiction does not extend to reserve lands, which are a federal responsibility. While the federal government committed in its 2016 budget to ensure that First Nations’ have access to clean drinking water, there are still communities in Ontario and across Canada who do not enjoy this right as non-Indigenous people do.<sup>v</sup> The example of access to clean water and water facilities is critical to this report when considering how this may impact a community’s ability to respond to a fire.

Indigenous communities may also experience jurisdictional neglect when it comes to the enforcement of building codes on reserves. As previously indicated, First Nations lands are regulated pursuant to the Indian Act and are the responsibility of the federal government. Provincial building codes generally do not apply to on-reserve construction projects. In relation to this, the National Building Code of Canada has no legal status unless it is adopted at provincial levels.<sup>vi</sup>

The Indian Act provides First Nations authority to make by-laws that regulate the construction, repair and use of buildings.<sup>vii</sup> Some First Nations communities in Ontario have adopted by-laws to address these areas. Other First Nations communities in Ontario have entered into agreements with Canada to manage their lands and resources as per Canada’s *First Nations Land Management Act*.<sup>viii</sup> These agreements may address building code provisions on-reserve. However, the lack of uniformity across the province, chronic underfunding and a lack of support for enforcement mechanisms has left many communities with homes in disrepair.

## Living Conditions On-Reserve

This brief overview will focus on the ways in which Indigenous people continue to receive fewer services and less funding, putting them at greater risk of harm and, specifically, at greater risk of experiencing fatal fires.

As the process of colonization and settlement was carried out, Canada often “forced First Nations to relocate their reserves from agriculturally valuable or resource-rich land onto remote and economically marginal reserves.”<sup>ix</sup> Many communities were forced on to reserves that were / are situated on the Canadian Shield, lands with little arable soil, flood plains etc. The present impacts of this often result in unsafe living conditions including structural damage to housing, electrical wiring issues, or mold. In a 2018 report, First Nations households were identified as having issues with mold or mildew “at a rate (39.7%) three times higher than the general population (13%).”<sup>x</sup> The use of often inadequate building materials for homes on-reserve and the severe lack of resources required to maintain the structural integrity of housing greatly contribute to this statistic.

Safe and secure housing in First Nations communities remains an ongoing systemic issue. In 2016, Statistics Canada found that 44.2% of First Nations people living on-reserve were living in a dwelling in need of major repairs.<sup>xi</sup> In comparison, 6.0% of the non-Indigenous population indicated that their dwelling needed major repairs. In many First Nations communities, the federal government allocates annual funding for infrastructure and building repairs.<sup>xii</sup> This can often result in difficult choices for Chiefs and Councils that may involve determining whether multiple homes should be partially repaired, or a fewer number of homes fully repaired.

This statistic is further compounded by overcrowding - another systemic issue that impacts First Nations people disproportionately. In 2016, 18.5% of people living off reserve indicated that they were living in crowded conditions. In comparison, 36.8% of First Nations people with registered or treaty Indian status were living in a crowded dwelling”.<sup>xiii</sup>

This number is expected to rise as a result of recent changes made to the Indian Act. In an effort to remove discrimination on the basis of gender, the federal government has extended Indian Status to those that were previously enfranchised and their descendants.<sup>xiv</sup> In addition to this sudden rise in the number of people entitled to live on-reserve, since 2006 the population of Indigenous people has grown by 42.5%, according to the 2016 Census. This is more than four times the growth rate of non-Indigenous people.<sup>xv</sup> Each of these factors is expected to further contribute to the issue of overcrowding on-reserve.

## Fire Safety On-Reserve

In 2011, the Ontario First Nations Technical Services Corporation reported that “on average, an on-reserve housing unit cost \$250,000 and that \$2.2 billion was required to remedy the First Nations housing deficit in Ontario”. This number includes the amount required to build new units to meet demand and renovate existing units in need of major repair.<sup>xvi</sup>

In regards to fire protection services, Indigenous Services Canada (ISC) provides annual funding as part of the First Nation’s core capital funding which is managed by individual First Nations Chief and Councils.<sup>xvii</sup> The amount of funding for fire protection is determined through a regionally-based formula that examines a variety of factors including the number of buildings on-reserve, how close the community is to other communities, and the population size.<sup>xviii</sup>

Between 2008 and 2017, ISC provided only \$29 million annually for fire protection services to First Nations communities.<sup>xix</sup> There are 634 First Nations across Canada. The \$29 million for fire protection services included less than \$5 million for fire protection services training.<sup>xx</sup>

First Nations Chiefs and Councils can use the allocated funds to operate their own fire departments or to contract fire protection services from nearby communities.<sup>xxi</sup> Depending on where a First Nation is located, access to nearby fire protection services may not be a viable option. We heard from members of the Advisory Group about a variety of issues with fire protection in First Nations communities. Problems with fire trucks, not being able to access operational fire hydrants, and a lack of training were all described.

## Reading this Report

As you read through this report, it is important to understand how Canada’s treatment of Indigenous people has led to systemic issues that put Indigenous communities at a higher risk of experiencing house fires and fire fatalities. The issues highlighted in this section are meant to support readers as they review the data and findings included in this report. It is important to recognize that the complexities of Canada’s history, ongoing issues of jurisdictional neglect and the continued lived realities of Indigenous people cannot be fully understood, nor respectfully addressed in this report.

## Preface endnotes

- <sup>i</sup> Truth and Reconciliation Commission of Canada. [Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada at 1](#). Truth and Reconciliation Commission of Canada; 2015.
- <sup>ii</sup> Truth and Reconciliation Commission of Canada. [Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada at 1](#). Truth and Reconciliation Commission of Canada; 2015.
- <sup>iii</sup> National Inquiry into Missing and Murdered Indigenous Women and Girls. Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls, Volume 1a at 561.
- <sup>iv</sup> National Inquiry into Missing and Murdered Indigenous Women and Girls. Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls, Volume 1a at 561.
- <sup>v</sup> National Inquiry into Missing and Murdered Indigenous Women and Girls. Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls, Volume 1a at 571.
- <sup>vi</sup> For additional information see [Codes Canada Publications](#) and [National Building Code of Canada 2015](#).
- <sup>vii</sup> [Indian Act, RSC 1985, C. 1-5 s 81\(1\)\(h\)](#).
- <sup>viii</sup> First Nations Land Management Act, S.C. 1999, c.24.
- <sup>ix</sup> Truth and Reconciliation Commission of Canada. [Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada at 1](#). Truth and Reconciliation Commission of Canada; 2015.
- <sup>x</sup> National Inquiry into Missing and Murdered Indigenous Women and Girls. Reclaiming Power and Place: The Final Report of the National Inquiry into Missing and Murdered Indigenous Women and Girls, Volume 1a at 443, citing First Nations Information Governance Centre, National Report of the First Nations Regional Health Survey Phase 3: Volume One, at 31 (Ottawa: 2018). 200 pages. Published in March 2018.

- <sup>xi</sup> Canada, Statistics Canada. [The housing conditions of Aboriginal people in Canada: Census of Population, 2016 at 2.](#)
- <sup>xii</sup> Canada, Statistics Canada. [The housing conditions of Aboriginal people in Canada: Census of Population, 2016 at 1.](#)
- <sup>xiii</sup> Canada, Statistics Canada. [The housing conditions of Aboriginal people in Canada: Census of Population, 2016 at 4.](#)
- <sup>xiv</sup> For examples see: An Act to Amend the Indian Act, 33-34 Eliz. II, 1984-85 (Can.), Bill C-31, (deemed in force as of April 17, 1985 – S. 23); Gender Equity in Indian Registration Act, SC 2010, c.18; and An Act to amend the Indian Act in response to the Superior Court of Quebec decision in Descheneaux c. Canada (Procureur general) SC 2017, c.25.
- <sup>xv</sup> Canada, Statistics Canada. [Aboriginal peoples in Canada: Key results from the 2016 Census at 1.](#)
- <sup>xvi</sup> [The Canadian Council for Public-Private Partnerships, “P3s: Bridging the First Nations Infrastructure Gap” at 3.](#)
- <sup>xvii</sup> Accessed online at [Indigenous Services Canada.](#)
- <sup>xviii</sup> Accessed online at [Indigenous Services Canada.](#)
- <sup>xix</sup> Accessed online at [Indigenous Services Canada](#) and at [Assembly of First Nations.](#)
- <sup>xx</sup> Accessed online at [Indigenous Services Canada.](#)
- <sup>xxi</sup> Accessed online at [Indigenous Services Canada.](#)

# Executive Summary

Two devastating fires that took place in 2016 in Pikangikum First Nation and Oneida Nation of the Thames led to calls for the Office of the Chief Coroner for Ontario to review fire deaths that have occurred in First Nations communities. These tragic deaths were not isolated. In response to multiple fire related deaths in many First Nation communities, First Nation Chiefs and community members were calling for an inquest to explore potential systemic issues contributing to ongoing fire related deaths. The Ontario Chief Coroner's Table on Understanding Fire Deaths in First Nations (OCC-UFDNF) was assembled to collect data and information to effectively inform the understanding of fire deaths in First Nations communities. The OCC-UFDNF included a core group that formed the main governance team, a Working Group of technical experts and an Advisory Group of Elders and Knowledge Keepers. The Advisory Group guided the Working Group to ensure that the review was carried out respectfully and in a manner that reflected the voices and perspectives of First Nations communities.

The "First Nations Fire Template" (FNFT) was developed to capture data that informed the analysis of information contained in this report. The FNFT is a tool that can allow for the sharing of information from fire death investigations and can assist in the evaluation and comparison of fire fatalities in First Nations communities.

Findings that were individually made during each fire investigation were combined as part of the review to describe the fires, structures and individuals impacted as well as potential relationships between these factors. Grouping of the data allowed analysis and inability to identify individuals who tragically died. The findings were compared to information from the Ontario Fire Marshal for fatal fires in non-First Nations communities in Ontario during the same time period when possible.

The OCC-UFDNF examined fire deaths in First Nations communities in Ontario over a ten-year period, spanning from 2008 to 2017. This review identified 56 deaths in 29 fires that occurred in 20 First Nations communities across Ontario. Communities where the fatal fires occurred ranged in population size from 30 to 12,750, with the majority having less than 1,000 people living in the community. Communities with no year-round road access had the highest number of fatal fires as well as the highest number of fire fatalities.

Previous research into fire fatalities found those at greatest risk to be children and older adults. This review found that First Nations children aged zero to nine had the highest fire-related mortality rate (86 times greater than non-First Nations children in Ontario).

Seventy percent of fire fatalities in First Nations communities occurred in colder months and 70% occurred overnight. This pattern is consistent with fire fatalities in non-First Nations communities in Ontario and other populations previously reviewed. However, there were a few months that did not follow the overall pattern. A further examination of what may be occurring during these months should be considered.

Most (86%) fatal fires in First Nations communities had either no or non-operational smoke alarms in the homes/structures (or the presence of the smoke alarms was unknown). Smoke alarms alert house occupants to smoke allowing early detection and more opportunity for escape. Smoke alarms are one of a number of safety planning approaches important in preventing fire deaths. Education and prevention key elements in reducing fire fatalities.

Compared to non-First Nations communities in Ontario, more fatal fire investigations report the cause as undetermined in First Nations communities. This is likely due to the higher levels of structural damage seen in fatal fires in First Nations communities, especially those in remote areas where there is limited or no fire suppression capability. Cooking stoves and heating sources (wood stove, chimney/fire place) were the most common way a fire started when the cause was known.

This review identified differences in the most common building materials and heating sources used in homes and structures in First Nations communities. Specific construction materials may affect flammability and fire spread in structures. OFM will be conducting further research on structural elements of fatal fires.

Emergency response and fire suppression on their own have a limited impact on survival which makes early detection and escape paramount. In some communities there were no fire services available to respond to a fire. It is important to consider the funding and resources required for First Nations communities to ensure that training and education occurs and is tailored to the communities' needs and realities.

The review was focused on factors affecting fire fatalities. However, there may also be other factors that impact individual communities differently due to the unique realities of each. The impact of socioeconomic factors may be an area to review in the future. There may also be value in examining and comparing the resources and realities of First Nations communities that experienced experiencing fatal fires to other First Nations communities in Ontario that did not experience fatal fires. A similar comparison could be done to non-First Nation communities.

The Advisory Group raised several issues and concerns about housing structures and funding. Important issues requiring further consideration in fire fatalities include:

- Funding for structures
- Allocation of funds to meet community needs
- Role of fire and building codes
- Status of structure maintenance
- Jurisdictional issues and responsibilities

The aim of the OCC-UFDN was to collect data and information to effectively inform the understanding of fire deaths in First Nations communities. The information that is provided cannot be meaningfully understood without considering the historical context and present day-realities of First Nations communities. The OCC-UFDN shares this information to “advent change and provide a message about hope.”

# Key Terms and Definitions

## **Band means a body of Indians**

- (a) for whose use and benefit in common, lands, the legal title to which is vested in Her Majesty, have been set apart before, on or after September 4, 1951,
- (b) for whose use and benefit in common, moneys are held by Her Majesty, or
- (c) declared by the Governor in Council to be a band for the purposes of this Act. (definition from the *Indian Act*)

**Exits** for the purposes of this report refers to a door that allows for a path of escape from any point in a structure to outside of the structure or to a space protected from fire exposure. The Ontario Fire Code defines exit as follows: Exit means that part of a means of egress, including doorways, that leads from the floor area it serves to a separate building, an open public thoroughfare or an exterior open space protected from fire exposure from the building and having access to an open public thoroughfare.

## **First Nations**

This term refers to the Original Peoples of what is now Canada who are not Métis or Inuit. First Nations is a term that was created and embraced to replace the term “Indian” and is seen as a respectful descriptor of the Original Peoples of this land. The term First Nations is used commonly as a more accurate and respectful term to describe Bands created under the Indian Act.

## **First Nations communities**

The term First Nations communities may include both on and off-reserve communities. For the purposes of this review, only fires that occurred on-reserve were examined.

**Ignition source** refers to how a fire can start including open flame, lightning strike, electrical arc, etc.

The **Indian Register** is the official record identifying Indigenous people registered as Indian under the Indian Act. According to section 5 of the Indian Act, Indigenous and Northern Affairs Canada (INAC) is responsible for maintaining the Register.

## **Indigenous**

This is a term that is currently used as a general descriptor of First Nations, Inuit and Métis Peoples within Canada. For over 20 years, Original Peoples from around the world negotiated the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and “Indigenous Peoples” was proposed as the most respectful term to refer to the Original Peoples of any territory.

## **Manner of death**

There are five manners of death used in Ontario death investigations: Natural, Accident, Suicide, Homicide, and Undetermined. A classification of Undetermined will be made if the cause of death could not be selected from the other four classifications due to inadequate evidence, equal evidence for two or more classifications, or not reasonably fitting the definitions of the four classifications. The classification of manner is made impartially, on the basis of balance of probabilities, and following careful scrutiny of the relevant evidence. The terminology used in other legislation (such as the *Criminal Code*), as well as findings of criminal, civil, professional or other hearings relating to the death are irrelevant to the classification of manner of death under the *Coroners Act*.

**Median** is the middle number, separating the higher half and lower half of a set of numbers.

## **MTSA**

A Municipal-Type Service Agreement is an agreement between a First Nations community and a federal department, provincial ministry, municipal government, private contractor, individual, or organization.<sup>1</sup> Under most MTSAs, the First Nations community agrees to pay a fee in exchange for receiving third-party services such as the delivery of treated drinking water, solid waste disposal and fire protection.<sup>1</sup>

## **OCC**

Office of the Chief Coroner for Ontario.

## **OFPS**

Ontario Forensic Pathology Service.

## **OFM**

Office of the Fire Marshal.

**Residence** refers to a structure that one or more individuals live in.

## **Reserve**

- (a) means a tract of land, the legal title to which is vested in Her Majesty, that has been set apart by Her Majesty for the use and benefit of a band, and
- (b) except in subsection 18(2), sections 20 to 25, 28, 37, 38, 42, 44, 46, 48 to 51 and 58 to 60 and the regulations made under any of those provisions, includes designated lands (definition from the *Indian Act*).

**Structure** may refer to any dwelling, occupancy, building, shelter, trailer, shed, etc. that may provide protection to people and/or property.

# Introduction

## Why are we doing this review?

Two devastating fires that took place in 2016 in Pikangikum First Nation and Oneida Nation of the Thames led to calls for the Office of the Chief Coroner for Ontario to review fire deaths that have occurred in First Nations communities. These tragic deaths were not isolated. In response to multiple fire related deaths in many First Nation communities, First Nation Chiefs and community members were calling for an inquest to explore potential systemic issues contributing to ongoing fire related deaths. A meeting was held in December 2017 between members of the Office of the Chief Coroner (OCC), Department of Indigenous Services Canada's Ontario Region (ISC), and Indigenous community representatives to discuss a strategy that would establish a framework to effectively gain an understanding of these tragedies. It was decided that the OCC, along with the Office of the Fire Marshal (OFM) and the Ontario Forensic Pathology Service (OFPS), would assemble the Ontario Chief Coroner's Table on Understanding Fire Deaths in First Nations to lead and facilitate analyzing these tragedies.

## Who was involved?

A core group from the OCC and the OFM formed the main governance team and set the strategic direction for the review. In the spring of 2018, the review's Working Group was established by bringing together technical experts from the OCC, OFM, OFPS, Ontario Native Fire Fighters Society, Ontario Provincial Police, Nishnawbe Aski Nation – Infrastructure & Housing, Ministry of the Attorney General – Indigenous Justice Division, and ISC. In 2019, an Advisory Group consisting of Elders and Knowledge Keepers from six communities impacted by multiple fatal fires was formed. The Advisory Group guided the Working Group to ensure that the review was carried out respectfully and in a manner that reflected the voices and perspectives of First Nations communities.

## Background on the Office of the Chief Coroner and Office of the Fire Marshal

In Ontario, death investigation services are provided by the OCC and the OFPS. According to legislature, all non-natural deaths require investigation. Death investigations and inquests are conducted to gather information about the circumstances surrounding a death. The purpose is to answer **five questions**: who died, when and where a person died, the medical cause of death and the manner of death. Investigations and inquests can also lead to recommendations to protect the public and, where possible, prevent further deaths. As part of the death investigation, all persons who pass away in a fire undergo a post mortem examination. Where possible, toxicological testing is completed to determine carbon monoxide levels as well as any other substances present.

OFM investigations of fatal and non-fatal fires in First Nations communities in Ontario are conducted in support of investigations that may be led by other agencies like the Office of the Chief Coroner and police services. In some circumstances, the OFM may be invited by Chief and Council.

An OFM investigation may determine the cause, origin and circumstance of a fire or explosion. Every OFM fire investigation is scientifically based, and the methodology utilized is applied consistently to ensure the reliability and validity of the finding(s). Information from OFM fire investigations may be used to inform public education, inspection and emergency response/suppression programming to reduce the risk of fire deaths, injury, and loss of property.

The OFM recommends that municipal fire protection services be based on the three lines of defence:

- Line 1: Public fire safety education
- Line 2: Fire safety standards and enforcement
- Line 3: Emergency response (suppression)

As of July 1, 2024 all municipalities must complete a Community Risk Assessment as set out in *O. Reg 378/18*, a regulation under the [Fire Protection and Prevention Act, 1997](#). The Community Risk Assessment is to be used to inform decisions about the provision of fire protection services. In setting levels of service municipalities are strongly encouraged to consider the OFM three lines of defence.

To assist municipalities with the implementation of the Regulation, the OFM has developed a technical guideline and worksheets for municipalities. These documents are available on the [OFM website](#).

## What is the aim?

The aim of the Ontario Chief Coroner's Table on Understanding Fire Deaths in First Nations (OCC-UFDNF) was to collect data and information to effectively inform the understanding of fire deaths in First Nations communities. The findings will be shared with, primarily, First Nations communities and, secondarily, other interested parties, to identify both community and system level factors and gaps that contribute directly or indirectly to fire deaths in First Nations communities in Ontario. The sharing of the findings is also to provide information to assist in program and policy development, enhance fire safety, and contribute to fire prevention in First Nations communities. The OCC-UFDNF also established a mechanism to share information from fire death investigations through the development of a First Nations Fire Template (FNFT). The FNFT is a tool that can allow for the collection and sharing of information from fire death investigations and can assist in the evaluation and comparison of fire fatalities. .

## What did we look at?

The OCC-UFDNF examined fire deaths in First Nations communities in Ontario over a ten-year period, spanning from 2008 to 2017. This included reviewing 56 deaths in 29 fires that occurred in 20 First Nations communities across Ontario. This review did not include non-fatal fires in First Nations communities. The OCC-UFDNF did not make recommendations or develop policies and strategies. The data and information in this review will inform and support First Nations communities and others to recommend and develop policies and strategies to prevent fire fatalities.

## What did we do and how did we do it?

Cases for the review were selected based on a scan of the OCC's data management system (Coroner's Information System). All cases in First Nations communities involving a structural fire fatality were selected. These cases were cross referenced with the OFM's data management system (Fire Investigation Report System) to ensure that all relevant cases were included in the review.

The "First Nations Fire Template" (FNFT) was developed to gather data to analyze fire deaths in First Nations communities in Ontario. It includes the following:

- Information about the deceased person – the individual's demographic information
- Community Information – the community's demographics and resources
- Fire Marshal Information - the fire's cause, origin and circumstances
- Coroner Information - the individual's relevant medical history and manner of death
- Forensic Pathology and Forensic Anthropology Information - the individual's post mortem findings, including the cause of death

Data was then gathered from case files at the OCC (Coroner Death Investigation Reports, Post Mortem Reports, Toxicology Reports, Forensic Anthropology Reports, Police Reports), OFM (Fire Investigation Report System), and through ISC (First Nation Profiles <sup>2</sup>, Registered Indian Population <sup>3</sup>, Asset Conditioning Report System), Statistics Canada (Census <sup>4-6</sup>), Nishnawbe Aski Nation, Sioux Lookout Area Aboriginal Management Board, and data shared by the communities.

The geographical location of the communities was considered, with respect to the presence of year-round access and closeness to resources and services. Communities that have Municipal-Type Service Agreements (MTSA) in place were used as an indicator for closeness to other municipalities or services. Indigenous and Northern Affairs website includes First Nation Profiles which is a collection of information that describes First Nations communities. This includes geographical zones. The geographical zones and the presence of MTSA were used to form three groups for this review:

- communities with year-round road access to a service centre and an MTSA in place,
- communities with year-round road access to a service centre and no MTSA in place,
- and communities with no year-round road access to a service centre.

A priority of the review was to maintain the deceased individual's privacy and attempt to reduce further trauma to those impacted by the fire fatalities. For these reasons, the data in this report was anonymized.

A literature review was conducted to determine previously identified risk factors in fire fatalities, as well as factors that may be specific to Indigenous Peoples and First Nations communities.

Anonymized information was then combined and reviewed to describe the fires, structures and individuals impacted as well as potential relationships between these factors. The findings were compared to information from the Ontario Fire Marshal for fatal residential fires in non-First Nations communities in Ontario during the same time period when possible.

## What do we know about fire fatalities – A review of the literature

### Residential fires and fire fatalities

Risk factors for fire and fire fatalities are not the same, and factors that affect individuals' ability to survive a fire do not necessarily affect the likelihood of a fire occurring<sup>7</sup>. Rural homes are often isolated and removed from fire response services and have shown a higher concentration of residential fires resulting in higher fire mortality rates<sup>7-9</sup>. Allareddy et al.<sup>7</sup> found that rural homes were more likely to use supplemental heating sources than urban households.

Though there are differences in provincial/territorial fire coding, a Canada-wide study reveals the leading cause of residential fires to be cooking followed by heating equipment and arson/set fires<sup>10</sup>. These results were very similar to those reported for residential fires in the United States<sup>10</sup>. The same study found that most fire deaths in Canadian homes where a cause was identified were from smoking followed by arson/set fire and cooking<sup>10</sup>. The association of fatal fires with smoking material and cooking is also observed in other jurisdictions outside of Canada including in the study by Jonsson et al.<sup>9</sup> in Sweden. Based on data available from five Canadian jurisdictions, the study by the Canadian Centre for Justice Statistics<sup>11</sup> found the source of ignition in residential fires to be cooking equipment (i.e. ovens and fryers) followed closely by smoker's equipment/open flames, heating equipment, and electrical distribution equipment.

When examining all fire fatalities in Ontario, the major known fire cause was smoking followed by arson/set fire and electrical distribution equipment<sup>10</sup>. The leading probable cause of fire deaths was asphyxia (carbon monoxide and hydrogen cyanide poisoning) followed by complications from burns or scalds<sup>10</sup>. In 2014, sources of ignition in Ontario residential fires were found to depict a similar pattern with cooking equipment leading, followed by smoker's equipment/open flames, heating equipment, and electrical distribution equipment<sup>11</sup>. There was a slight variation observed when examining the ten-year span of 2008-2017 as the source of ignition in residential fires was reported to be lit smokers' material followed by arson and cooking equipment<sup>12</sup>. Fire play and electrical failure were the top two causes of fire deaths in the pediatric population in Ontario, followed by unattended candles, stove fires, and cigarette fires. However, a cause was not identified in 28% of fires<sup>13</sup>.

Fatal fires tend to occur more commonly during the night<sup>8,9,13-15</sup>. Chen et al.<sup>13</sup> looked at pediatric fire deaths and found nighttime fires were most commonly due to electrical failures or unattended candles. Daytime fires were primarily caused by unsupervised fire play and stove fires<sup>13</sup>. A review of fire fatalities in children and youth from 2005-2014 by the British Columbia (BC) Coroners Service<sup>8</sup> found that residential fatal fires happen more frequently in colder months.

The absence of a life safety system (smoke alarm or sprinkler system) appears to increase the risk of fatality in fires<sup>9,14,16</sup>. In homes that do have smoke alarms, it is the functionality of the smoke alarm that is a risk factor<sup>13,14,17</sup>.

Previous studies have shown that behavioural, demographic and socio-economic factors contribute to fire deaths. These include age (children or elderly), sex (males), smoking, alcohol use (younger adults) living alone, disability, low-income, and sub-standard housing<sup>7-9,14-19</sup>.

Studies have reported factors believed to increase childhood risk for fire injury and death, include maternal education, socioeconomic status, single-parent households, housing regulations, substandard and overcrowded housing conditions, behaviour (fire escape and fire-play), smoke alarm functionality, exposure to smoking environments, degree of adult supervision and children protection service involvement<sup>8,13,17</sup>. Caregivers in low-income families are more likely to disable working smoke alarms due to annoyance with false alarms from cooking or cigarette smoke in overcrowded living spaces<sup>13</sup>.

In fire fatalities the individual's cause of death is usually smoke inhalation and/or thermal burns <sup>9,11</sup>.

The literature indicates that the ability to escape is affected by an individual's physical and mental capacities (children less likely to be able to self-rescue), any attempts made to put out the fire, the route of escape (trapped by spreading fire or smoke), distance to nearest exit, and familiarity with surroundings <sup>8,11</sup>.

### **Fire and fire fatalities in Indigenous communities**

The research into fire related deaths of Indigenous people shows the rate of fire-related mortality is higher than in non-Indigenous populations. In 2007 the Canadian Mortgage and Housing Corporation <sup>20</sup> found the First Nations per capita fire incident rate and the death rate to be 2.4 and 10.4 times higher than the non-First Nations people in Canada. Research from BC between 2006 and 2011 found a rate of 36.5 deaths per 1,000 fires in First Nations community residential structure fires compared to 15.1 deaths per 1,000 fires for non-First Nations people in BC <sup>8</sup>. The BC Coroners Service <sup>14</sup> found from 2007-2011 Indigenous people were four times more likely to die in residential structure fires than non-Indigenous people and were also on average 20 years younger than non-Indigenous people. Forty percent had died on Federal Reserve land <sup>14</sup>. Gilbert et al. <sup>21</sup> found age-specific death rates were higher in every age category for Indigenous people who were registered as Indian under the Indian Act in BC. Indigenous people in other countries also experience higher rates of fire fatalities in comparison to non-Indigenous people. For example, in New Zealand the fire fatality rate for Maori aged 15-64 was reported to be 5 times the rate for non-Maori of the same age <sup>18</sup>.

Cigarettes and heat sources (e.g. wood fires, electrical heating units) were common causes of residential fatal fires in Indigenous communities in BC <sup>21</sup>. Other issues related to fire deaths include: lack of mechanism to enforce compliance with building and fire codes, substandard housing, overcrowding, prevalent use of wood stoves (which may not always be installed and maintained as prescribed), youth experimenting with fire, absence of functioning life safety systems (including smoke detectors, fire extinguisher and sprinkler systems) and inadequate or inaccessible fire response services <sup>20; 22-24</sup>. Gilbert et al. <sup>21</sup> also identified risk factors for fatal fires that had not been recognized in non-Indigenous populations including: abandoned and traditional housing and use of propane lanterns due to a lack of access to electricity.

Previous and current federal government attempts to examine fires in First Nations communities include: First Nations Fire Protection Strategy 2010–2015 <sup>25</sup>; Joint First Nations Fire Protection Strategy 2016-2021 <sup>26</sup>; and From the Ashes <sup>24</sup>. The important role of knowledge and awareness through public education programs and fire prevention in First Nations communities has been acknowledged. Fire inspection regimes are not uniform and vary from community to community <sup>22, 26</sup>. Concerns with funding of fire services to meet communities' needs have also been identified <sup>24</sup>.

The literature reveals a long history of under-resourcing Indigenous communities. The final report of the Truth and Reconciliation Commission of Canada <sup>27</sup>, demonstrated that for much of their history, Canadian residential schools operated outside the jurisdiction of existing fire regulations.

**“Residential schools were often poorly built and isolated from help in case of fire. Many of the boarding schools were of wood-frame construction. The wood- and coal-burning stoves used to heat the buildings could throw off sparks that could result in a blaze. Heat was transmitted from room to room by stovepipes that were themselves a potential source of fire. Most of the schools were far from any source of electricity, and, for years, most of them were lit by gas lamps.”** <sup>27</sup>; pg465

**“Over time, most schools acquired electrical generators, but poor wiring was often the cause of school fires.”** <sup>27</sup>; pg466.

There are accounts of inadequate power and water to provide satisfactory fire safety, inadequate firefighting equipment and means of escape; poor structure maintenance and overcrowding conditions; use of dangerous and forbidden practices (locking of fire escapes) <sup>27</sup>. Many of these conditions were noted by Indian Affairs officials but little action resulted <sup>27</sup>. “In the interest of cost containment, the Canadian government placed the lives of students and staff at risk for six decades” <sup>27</sup>; pg333. It wasn’t until after the 1940s that a decrease in deaths of children who were forced to attend residential schools was noted and attributed in part to new buildings being built that provided higher degrees of fire protection <sup>27</sup>.

# What the review found

The following section provides the findings of the review of the 56 deaths in 29 fires that occurred in 20 First Nations communities across Ontario from 2008-2017.

**Table 1. Number of fires, fatalities and communities involved by geographic group, 2008-2017**

		Fires in Communities with year-round road access and a MTSA	Fires in Communities with year-round road access and no MTSA	Fires in Communities with no year-round road access	Total Fatal Fires in First Nations Communities
Number of fatal fires (% of fires)		9 (31%)	9 (31%)	11 (38%)	29
Number of fire fatalities (% of total deaths)		14 (25%)	16 (29%)	26 (46 %)	56
Number of communities (% of total communities)		6 (30%)	7 (35%)	7 (35%)	20

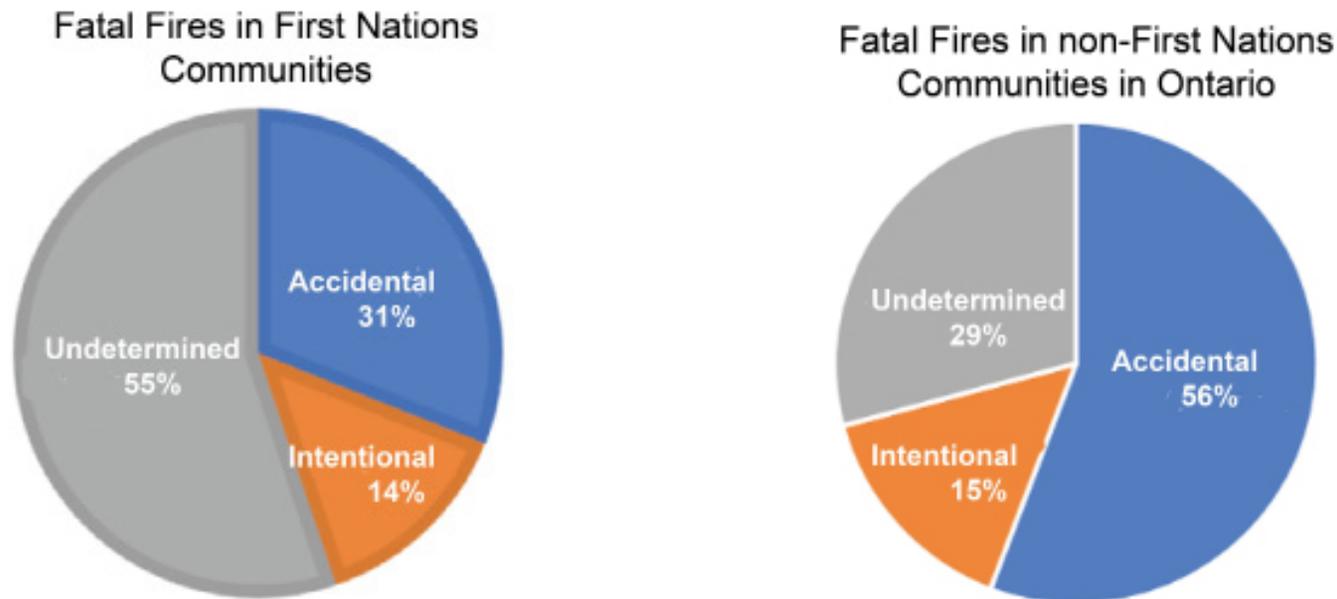
- Communities where the fatal fires occurred ranged in population size from 30 to 12,750. The majority (13 of 20) had less than 1,000 people living in the community.
- The highest number (11) and percentage (38%) of fatal fires occurred in communities with no year-round road access.
- The highest number (26) and percentage (46%) of fire fatalities occurred in communities with no year-round road access.
- There were 27 residential fires, 1 fire in an administrative building and 1 fire in a shed.

## What is happening - Cause of Fatal Fires

In most (55%) First Nations community fatal fire investigations, the cause of the fire was reported as undetermined. In comparison, in non-First Nations communities in Ontario, the cause of fatal fires was reported as undetermined in 29%.

Communities with no year-round road access had the greatest percentage of undetermined cause of the fire (73%). The complete or near complete destruction often precludes ability to determine the cause of the fire as all potential evidence is consumed in the fire, a key factor in the high percentage of fires classified as undetermined cause.

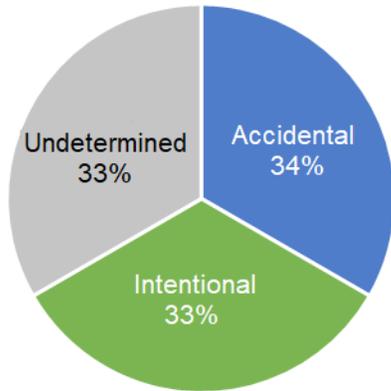
Figure 1: Cause of fatal fires in First Nations (N=29) and non-First Nations communities (N=725) in Ontario, 2008-2017



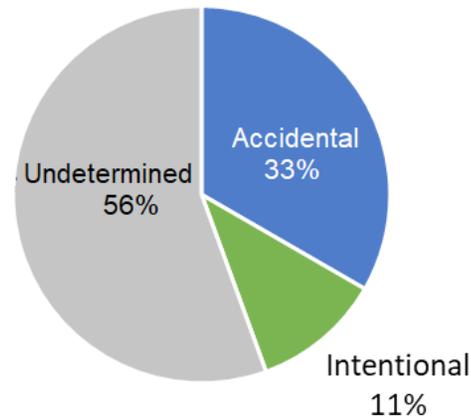
Note: The comparative data for non-First Nations communities in Ontario are all residential fires.

Figure 2: Cause of fatal fires by geographic location of First Nations Communities (N=29), 2008-2017

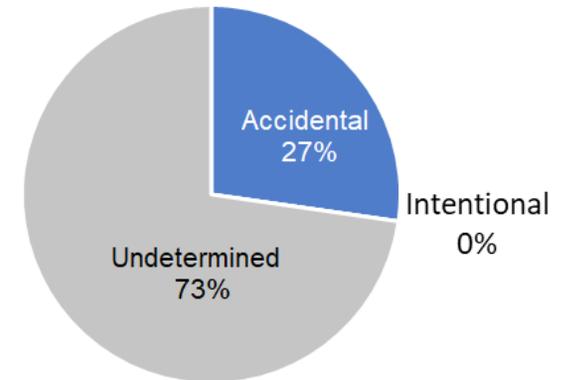
Communities with year-round road access and a MSTA (N=9)



Communities with year-round road access and no MSTA (N=9)



Communities with no year-round road access (N=11)



Notes: Intentional cause of fatal fires includes arson, homicide, suicide and intentionally setting a fire that results in death(s).

The cause of a fire is classified as undetermined when there are competing theories as to the cause or when there is insufficient evidence to determine the cause of the fire. In many undetermined cases, the extent of damage sustained by the fire destroys evidence that can assist in determining the cause. When there is complete loss of a structure, most of the evidence that can assist in determining the cause may have been lost.

In fires where the cause was reported as undetermined (i.e. without reliable information to determine the cause) in First Nation communities:



13/16 structures were a complete loss  
3/16 structures had sustained significant damage

## How are fires starting?

When known, cooking stoves and heating sources (wood stove, chimney/fire place) were the most common way a fire started. All three of the fires that were known to have started because of a heating source were in communities with no year-round road access.

Figure 3: Ignition source of fatal fires in First Nations (N=29) and non-First Nations communities (N=725) in Ontario, 2008-2017

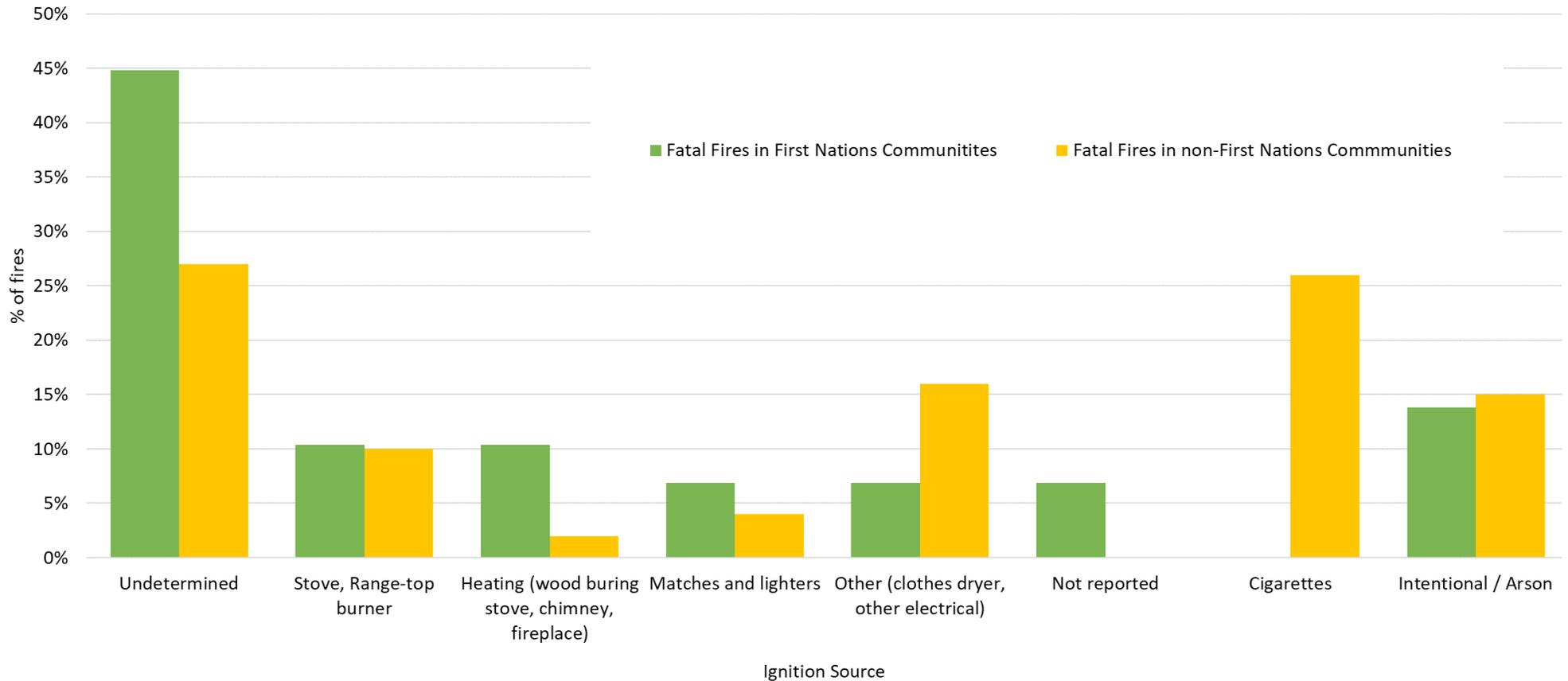
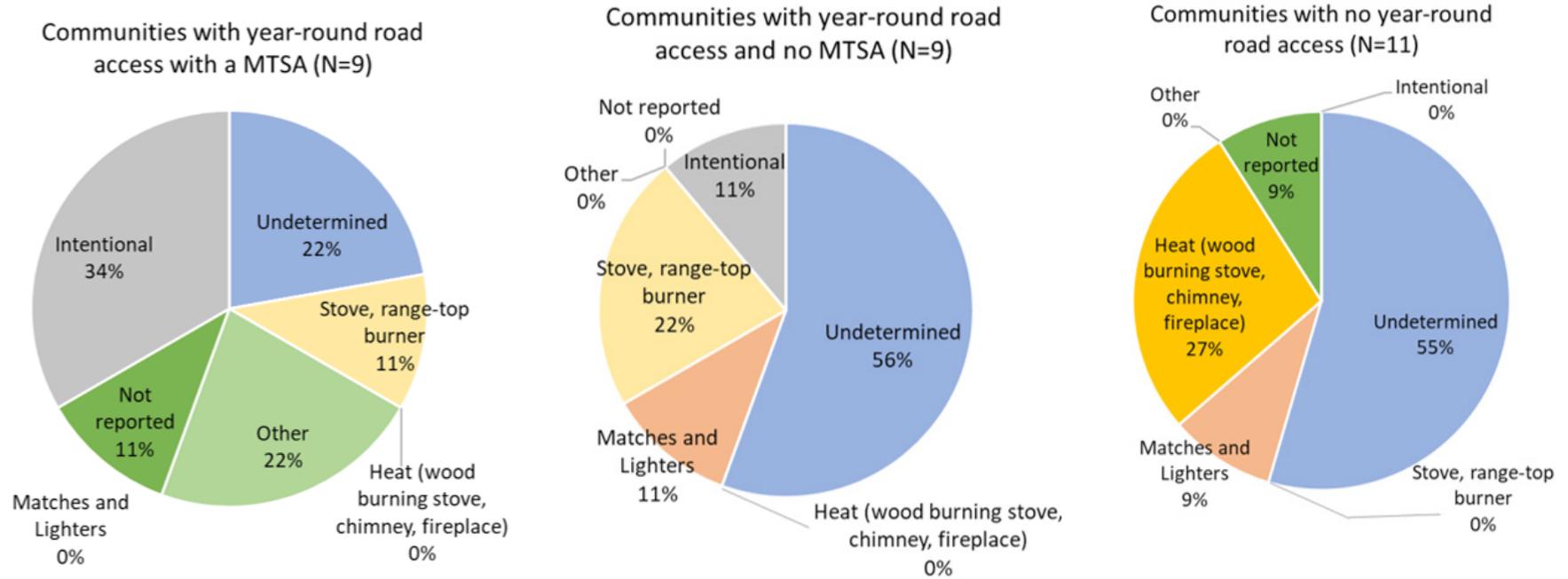


Figure 4: Ignition source of fatal fires by geographic location of First Nations communities (N=29), 2008-2017

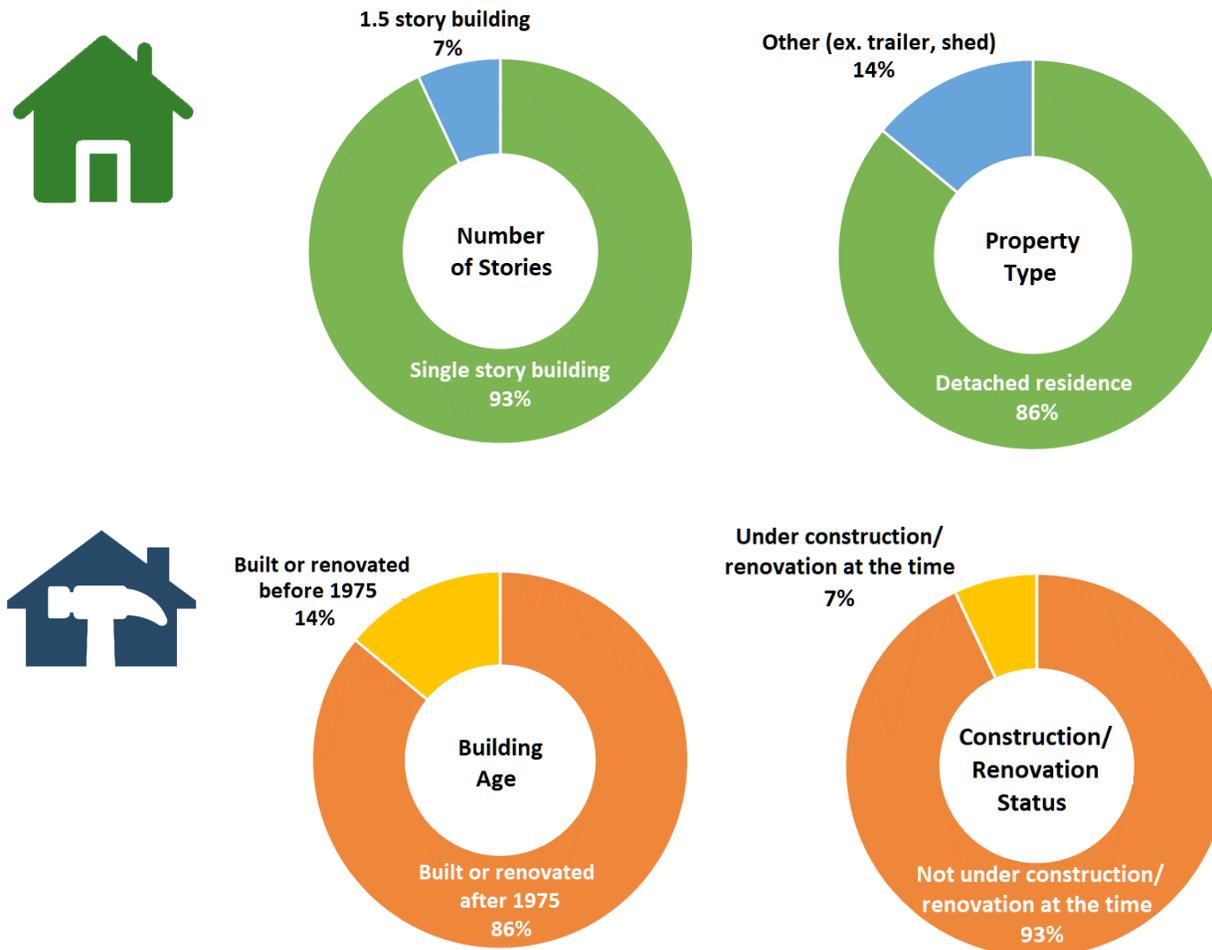


Notes: Ignition sources are more likely to be undetermined when there is significant damage to the structure (similar to the determination of the cause of a fire).

## Where are the fires occurring and what are the living arrangements?

Most structures were detached, single story residences built after 1975.

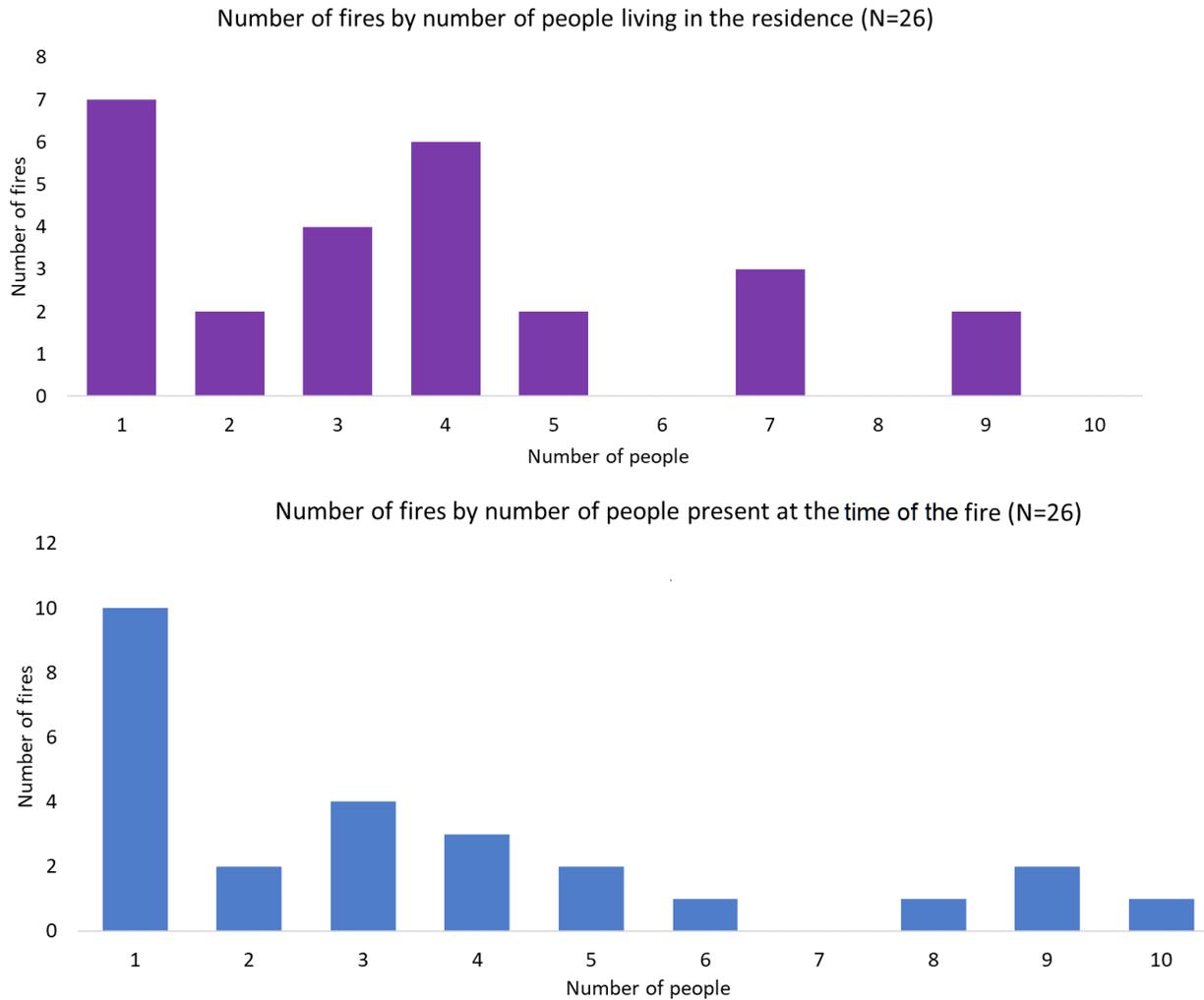
Figure 5: Structure characteristics of fatal fires in First Nations communities (N=29)



Note: The information available to the review did not reveal if renovations were required for the structures or the year the structure was built.

The number of people living in the residences at the time of the fire ranged from 1-9. The number of individuals present in the residence at the time of the fires ranged from 1 - 10.

Figure 6: Number of fires by the number of people living in the house and the number of people present at the time of the fire (N=26\*), 2008-2017.



Notes: A higher number of individuals living in a residence would likely mean that there are more personal belongings within the structure, and potentially more flammable material for fires. It could also mean that it is more difficult to escape a structure.

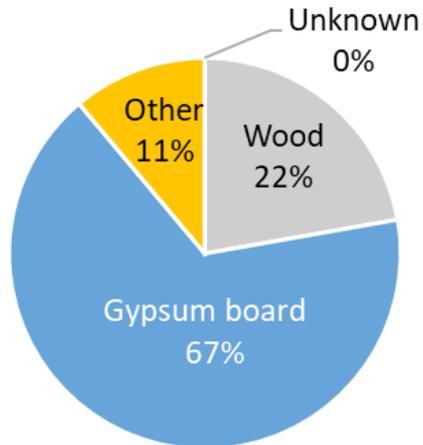
\*Data not included for 3 fires. Information was not available for one fire and 2 fires did not occur in a residence.

## How are structures constructed and heated?

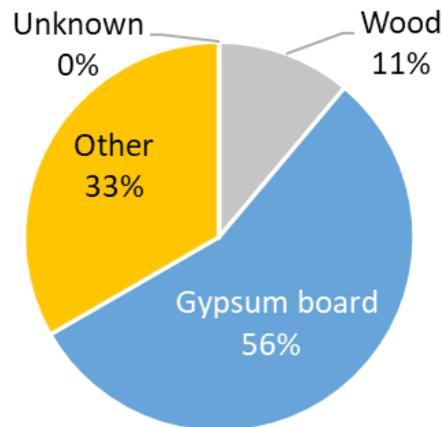
Common floor and ceiling construction material differed between the three geographic communities. In communities with no year-round road access wood finish interior walls (55%) and fibre tiles ceilings (55%) were more common. Gypsum board was more common in communities with year round-road access.

Figure 7: Interior building materials by geographic location of First Nations communities (N=29), 2008-2017

Communities with year-round road access with a MTSA (N=9)



Communities with year-round road access and no MTSA (N=9)



Communities with no year-round road access (N=11)

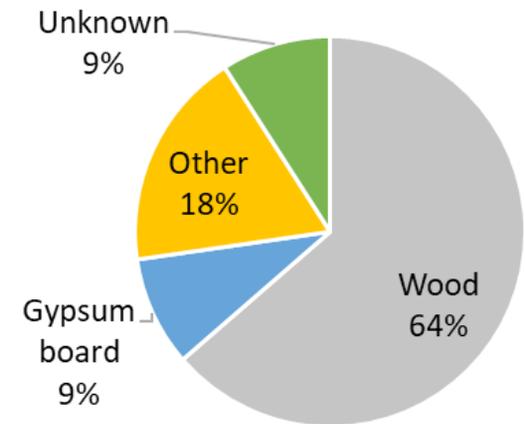
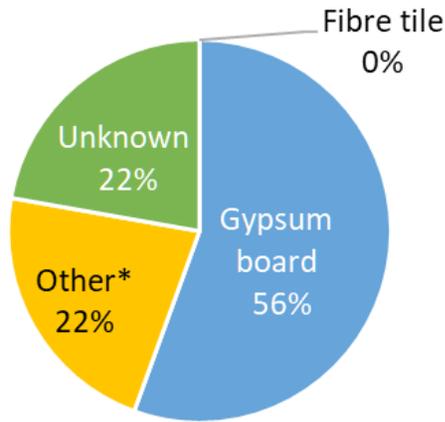
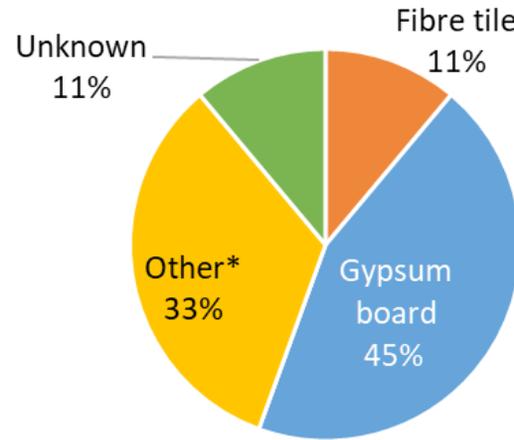


Figure 8: Ceiling materials of structure by geographic location of First Nations communities (N=29), 2008-2017

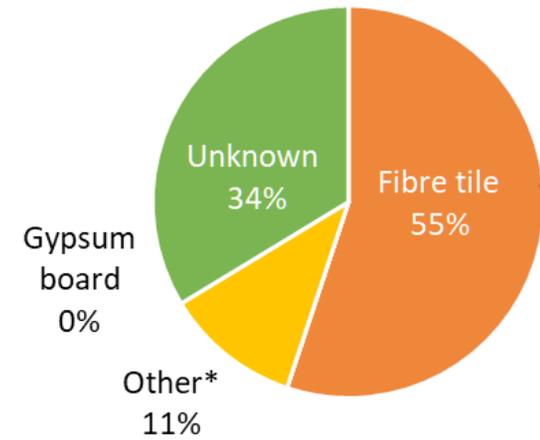
Communities with year-round road access with a MTSA (N=9)



Communities with year-round road access and no MTSA (N=9)



Communities with no year-round road access (N=11)



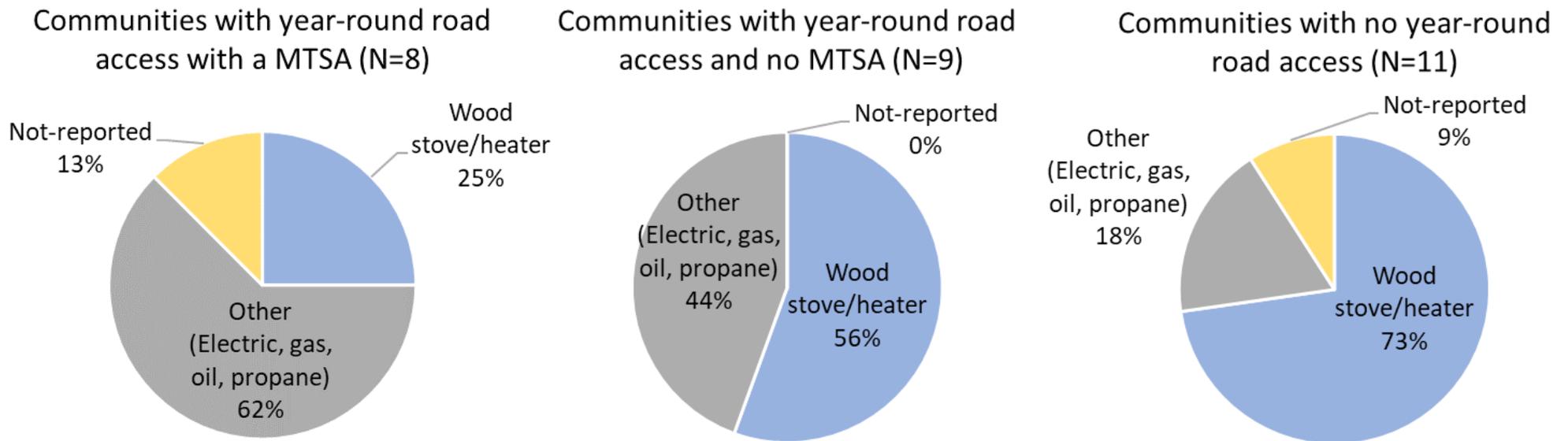
\*includes exposed wood joists, wood finish, mineral tile

Notes: Construction material may affect the amount of flammable material and fire spread in a structure. Wood and fibre construction material are more flammable than gypsum board.

Fatal fires where the primary source of heating was wood stove/wood heater were highest in communities with no year-round road access (73%).

A quarter of the structures had a secondary heating source (e.g. electric baseboard heaters, radiant propane heater, kitchen range).

Figure 9: Primary heating source of structure by geographic location of First Nations communities (N=28\*), 2008-2017

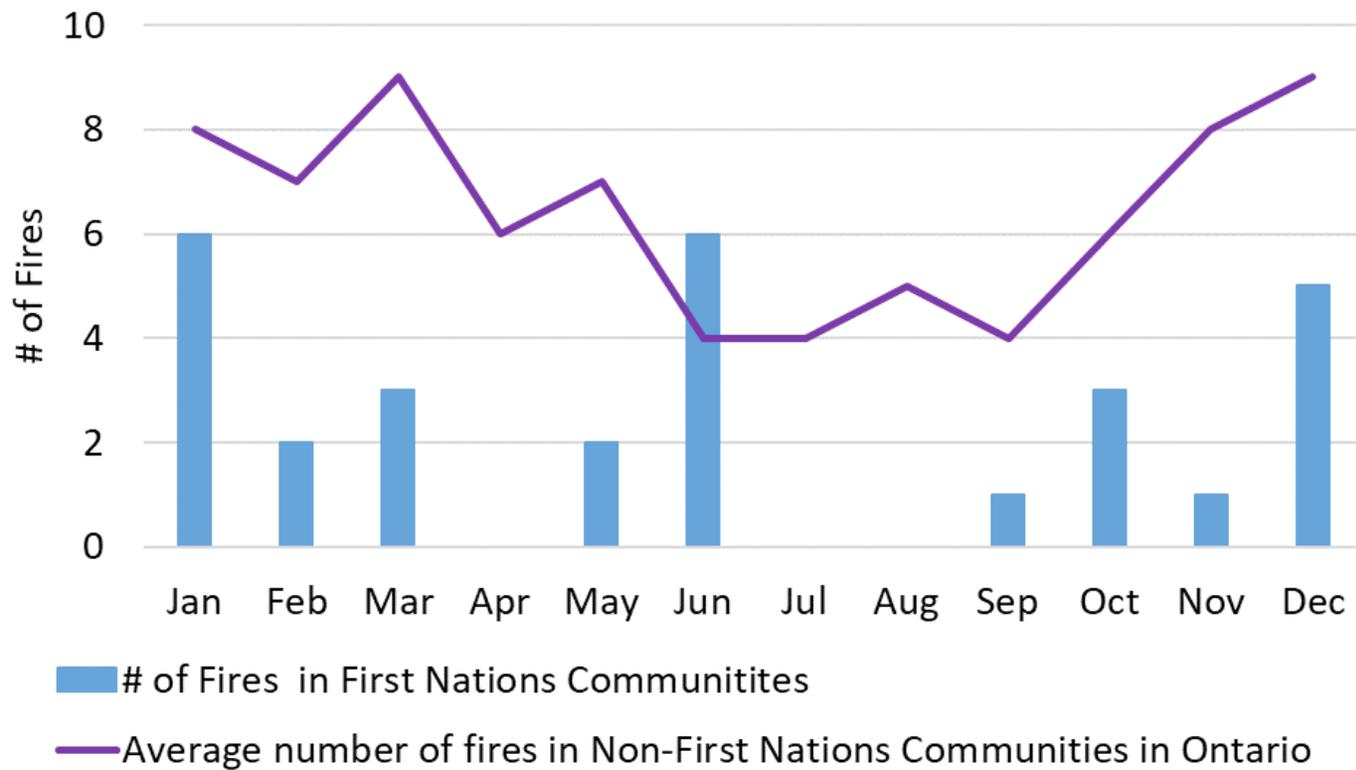


\* One structure did not have a heating source and was excluded.

## When are fires occurring?

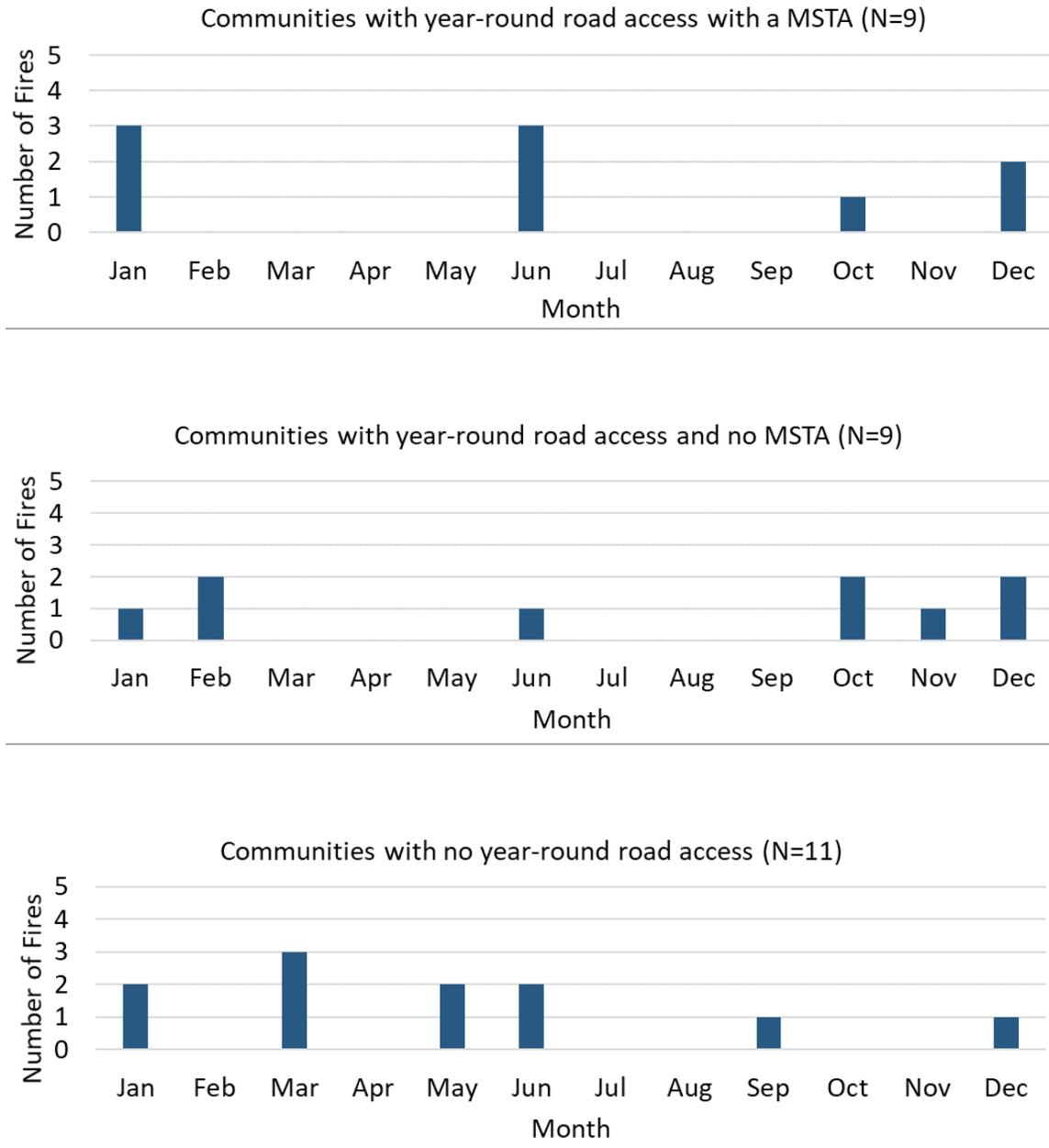
Over 70% (21/29) fatal fires occurred in the colder months. This similar pattern is observed in non-First Nations communities in Ontario.

Figure 10: Fatal fires by month of fire in First Nations and non-First Nations communities in Ontario (N=29), 2008-2017



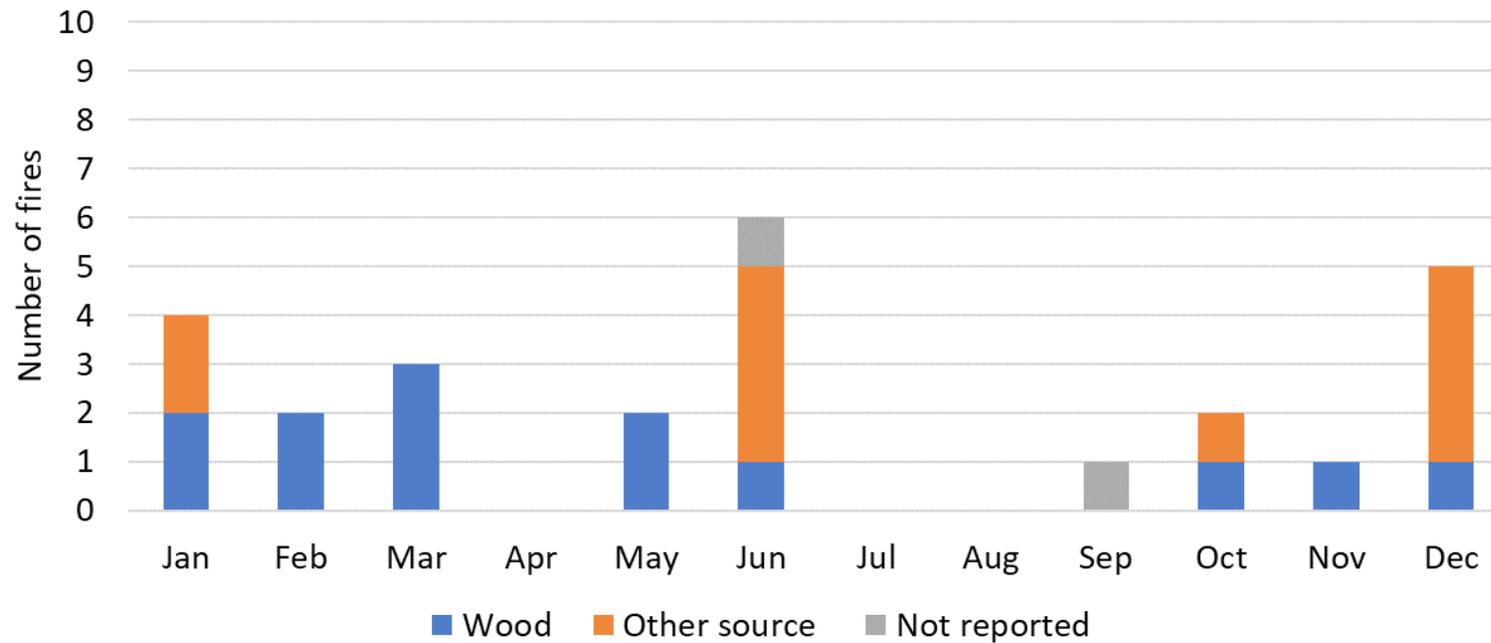
Note: No obvious pattern was observed for the six fatal fires that occurred in June.

Figure 11: Fatal fires by month of fire and geographic location of First Nations Communities (N=29), 2008-2017



No specific pattern was observed between the heating source and months of the fatal fires.

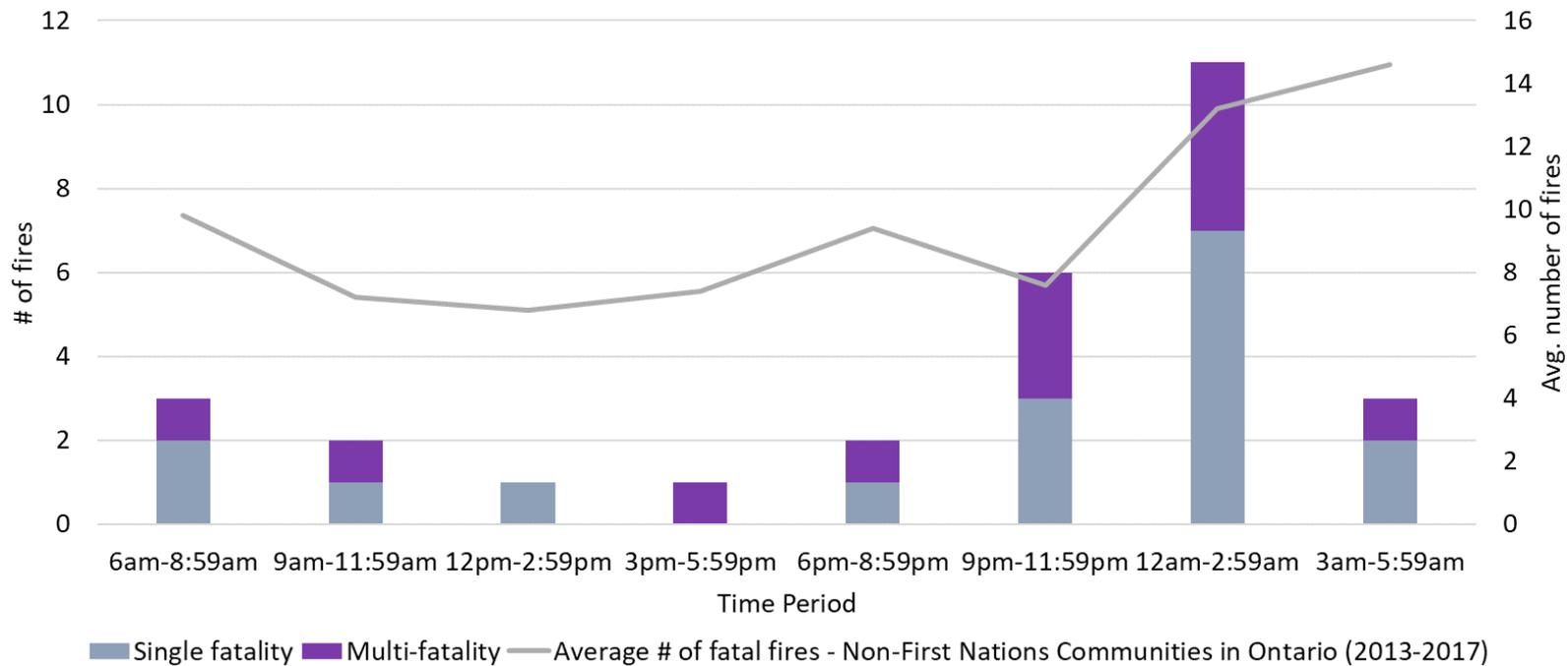
Figure 12: Heating sources in structures by month of fire (N=29), 2008-2017



Notes: Heating source was not necessarily found to be connected to cause of fire. This may be due to the large number of fires with an undetermined cause.

70% of fires occurred overnight (9 p.m. - 6 a.m.). A similar trend of fatalities occurring in overnight fires was seen in non-First Nations communities in Ontario. No pattern was observed for single or multi-fatality fires.

Figure 13: Number of fires by number of fatalities and time of day (3 hour time periods) (N=29), 2008-2017

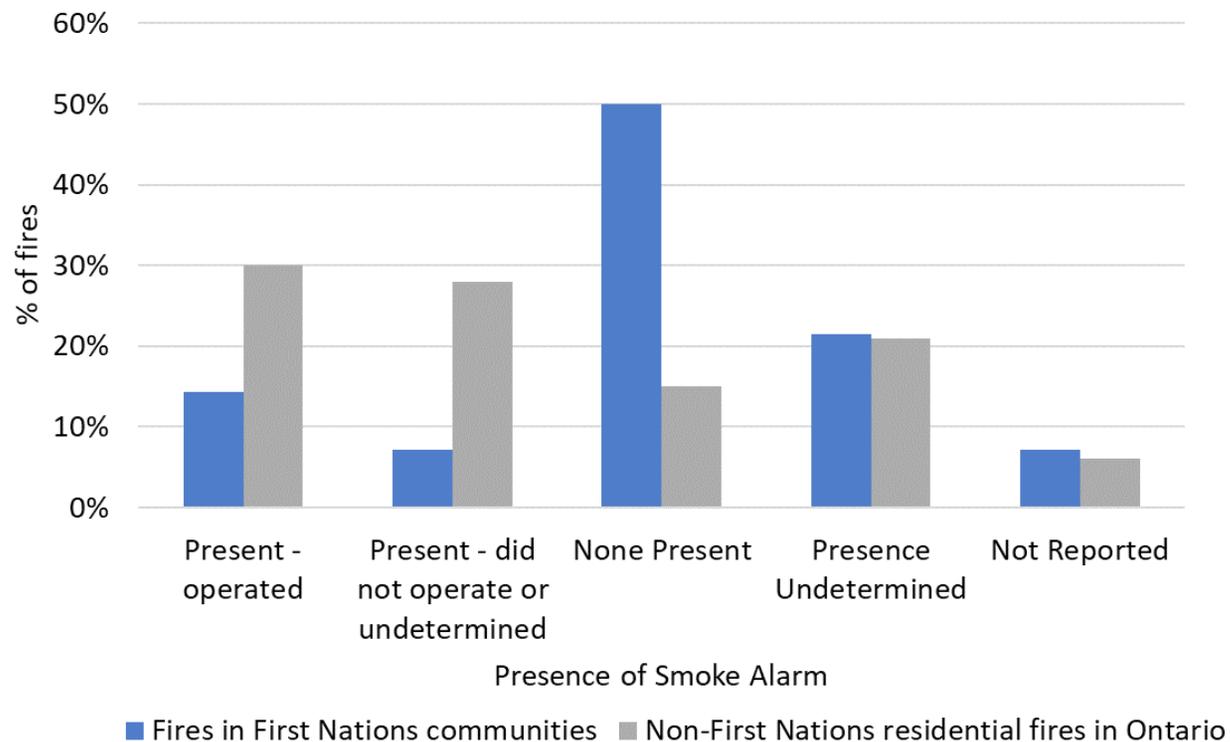


## Importance of early notification

86% of fatal fires in First Nations communities had either no (50%) or non-operational (7%) smoke alarms or the presence of the smoke alarms was unknown (either undetermined or not reported) (29%). For comparison, 70% of fatal residential fires in non-First Nations communities in Ontario had either no (15%) or non-operational (28%) smoke alarms or the presence of the smoke alarms was unknown (either undetermined or not reported) (27%).

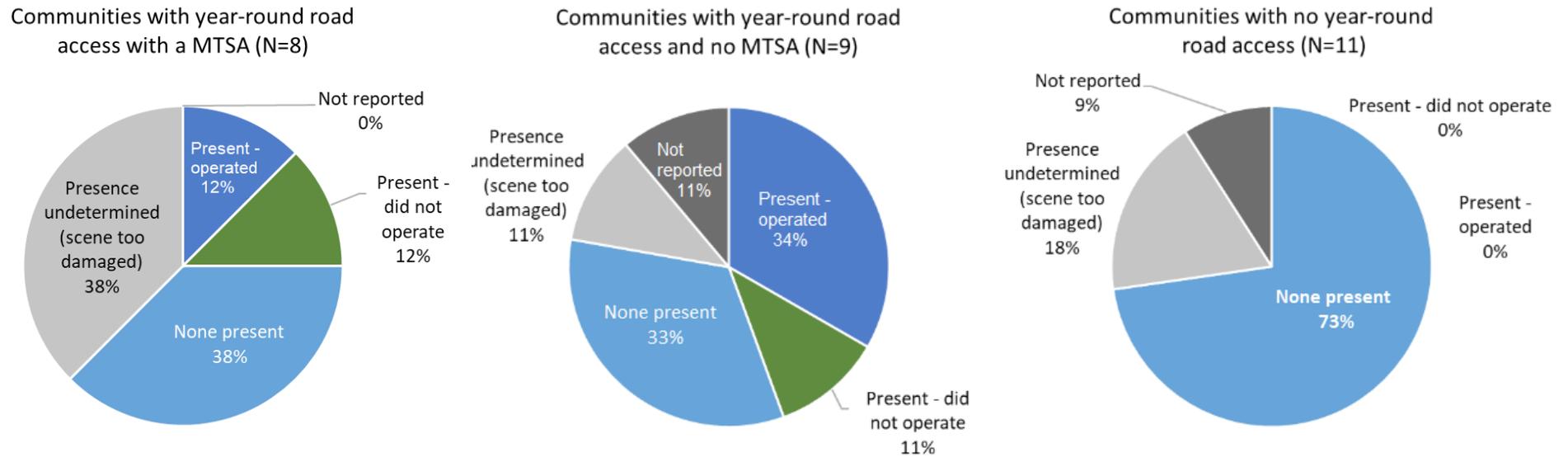
The absence of smoke detectors was highest (73%) in fires in communities with no year-round road access.

Figure 14: Presence and operation of a smoke alarm in fatal fires in First Nations (N=28\*) and non-First Nations communities in Ontario (N=725), 2008-2017



\*1 fire was excluded because a detection device was not required in the structure type.

Figure 15: Presence and operation of a smoke alarm by geographic location of First Nations communities, 2008-2017

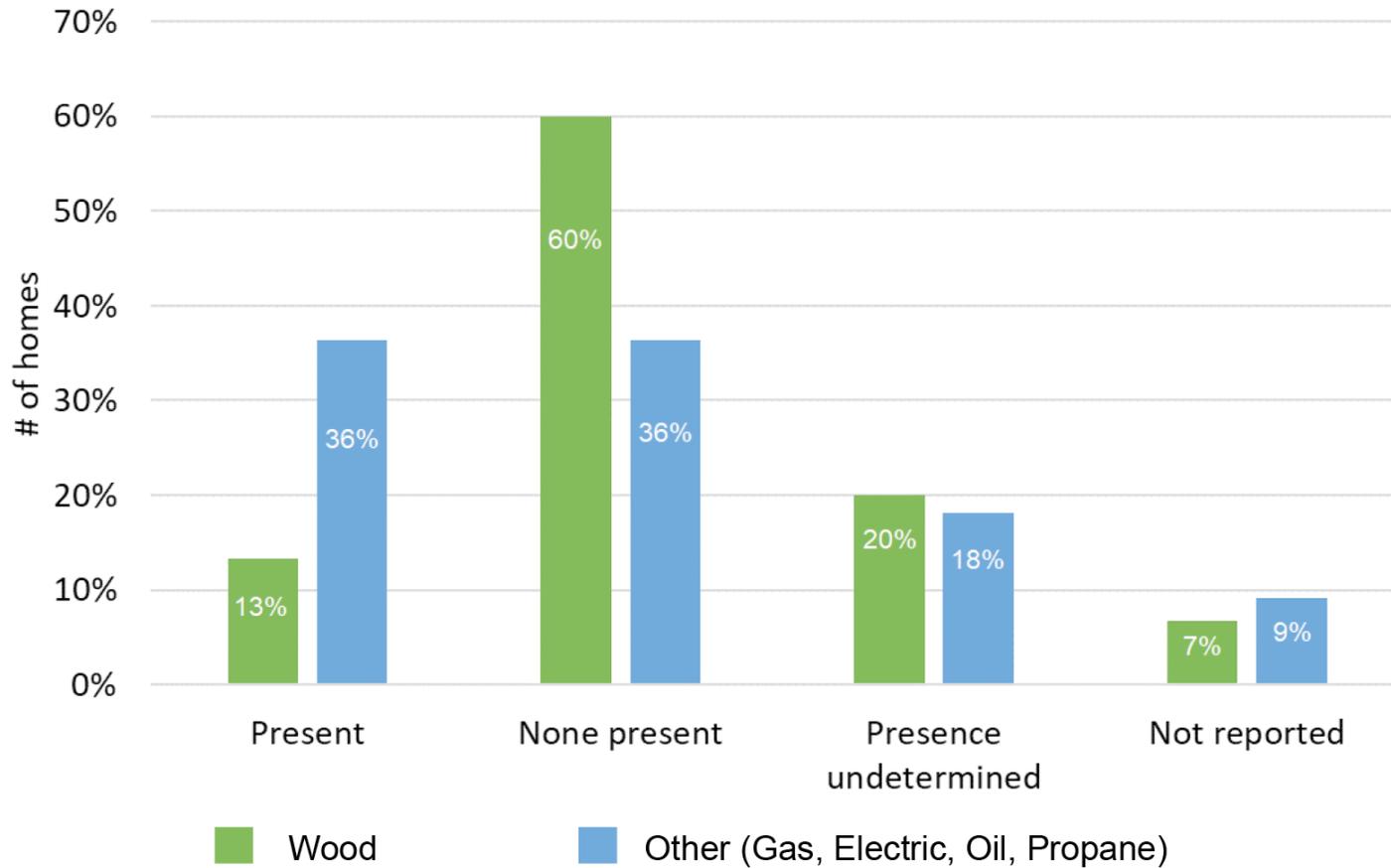


\*1 fire was excluded because a detection device was not required in the structure type

Notes: Presence of a smoke alarm may have been undetermined due to the severity and damage of the fire.

Structures that used wood stoves/wood heaters were less likely to have a smoke alarm.

Figure 16: Heating source and presence of smoke alarms in First Nations communities (N=26\*), 2008-2017

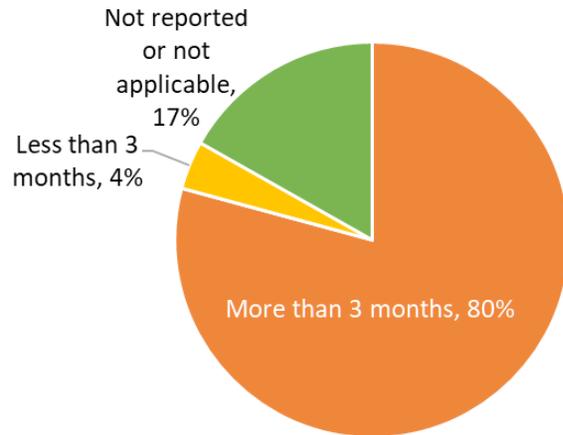


\*Two residences where the source of heat was not reported and 1 structure where a smoke alarm was not required were excluded.

## Ability to escape

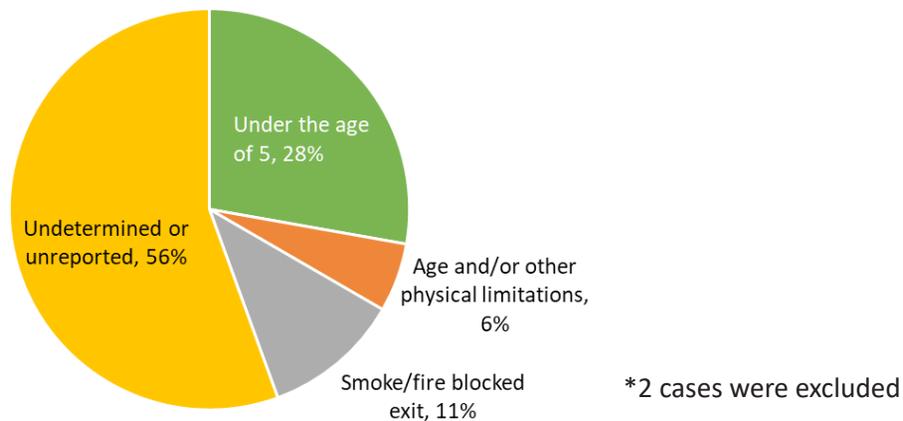
Most people were familiar with their surroundings. Most structures were built with multiple doors providing opportunities for multiple exit locations. Some exits were blocked prior to the fire to maintain heat in the structure or for another reason; making the exit unavailable when the fire occurred. Some exits were blocked by fire and/or smoke at the time of fire.

Figure 17: Fire-related death by familiarity with structure (N=56), 2008-2017



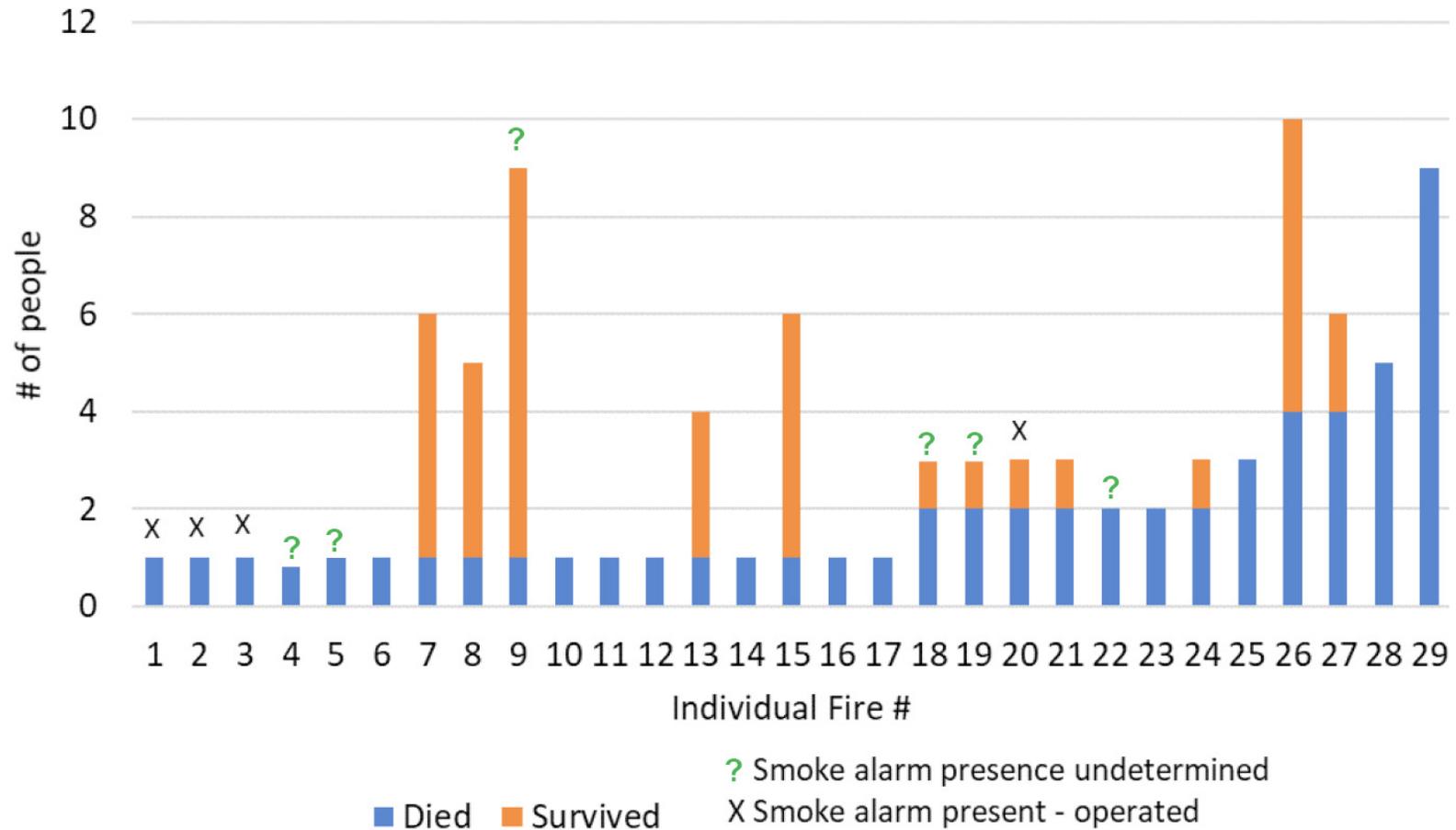
Mobility impairments, doorways blocked by objects, and smoke/fire may have prevented escape for some adults.

Figure 18: Reason for failure to escape (N=54\*), 2008-2017



There was at least one survivor in 41% of the fires that occurred (12 of 29 fires). Most fires with survivors occurred between 10pm and 7am. There was no pattern observed in regards to survivors and the presence or absence of smoke alarms. The deceased person was the only occupant in 41% of the fires (12 of 29 fires). Of the total number of fires, multi-fatalities with no survivors occurred in 17% (5 of 29 fires).

Figure 19: Number of deaths and number of individuals who survived by fire (N=29)



## Emergency response and outcome

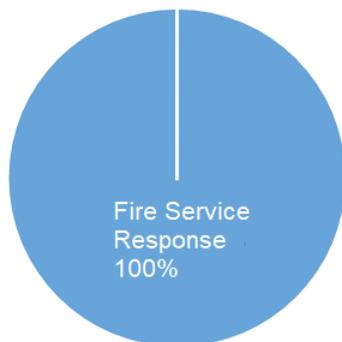
In 70% of communities a fire service responded at the time of fire (15 of 20 communities). Emergency response and fire suppression on their own have a limited impact on survival which makes early detection and escape paramount. Even though there was a fire service response in most communities, it does not necessarily mean that the response was adequately supported, maintained and able to affect the outcome.

In the 15 communities where a fire service response occurred there were 4 fire trucks/tankers that were not fully operational (e.g., . frozen pumps/nozzles, fire truck wouldn't start, pumper did not have water in the tank). While some information remains unknown, there were 3 fires where hydrants were available, but the water supply was inaccessible (e.g.,. due to weather, water pressure, distance).

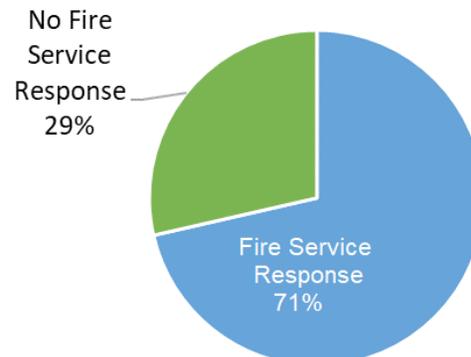
In 31% of fires (8 of 29) there was a rescue attempt by first responders (police and fire).

Figure 20: Proportion of communities where a fire service responded at the time of the fire, by geographic region (N=20), 2008-2017

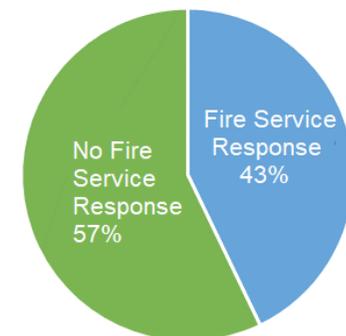
Communities with year-round road access and with a MTSA (N=6)



Communities with year-round road access and no MTSA (N=7)



Communities with no year-round road access (N=7)



Notes: There are varying definitions of 'fire service' and resources to respond to a fire. The definitions ranged from a solitary Fire Chief to a municipal fire department.

There were 29 fires in 20 communities. The data captured whether there was a fire service response for each fire. If there were multiple fires in the same community, the fire service response was recorded separately for each fire.

## Who is at greatest risk?

First Nations children under the age of 5 had the highest number of deaths.

Overall, there were a similar number of deaths for males and females. However, there were slightly more males than females in the 50+ age group.

Children under 10 tended to be in residential fires with multiple fatalities, compared to those aged 75+ who died in single fatality fires, in First Nations communities.

Figure 21: Number of First Nations communities fire-related deaths by age group and sex (N=56), 2008-2017

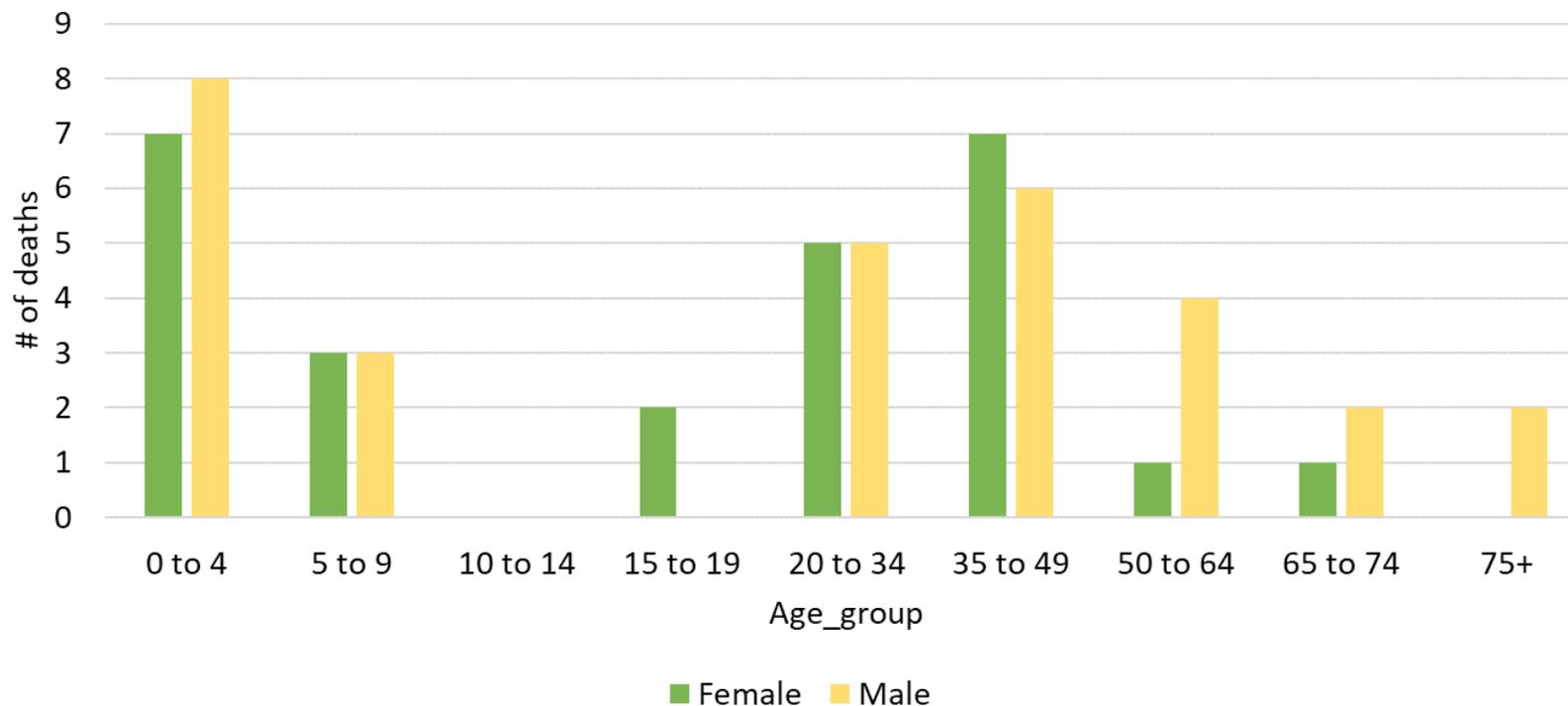
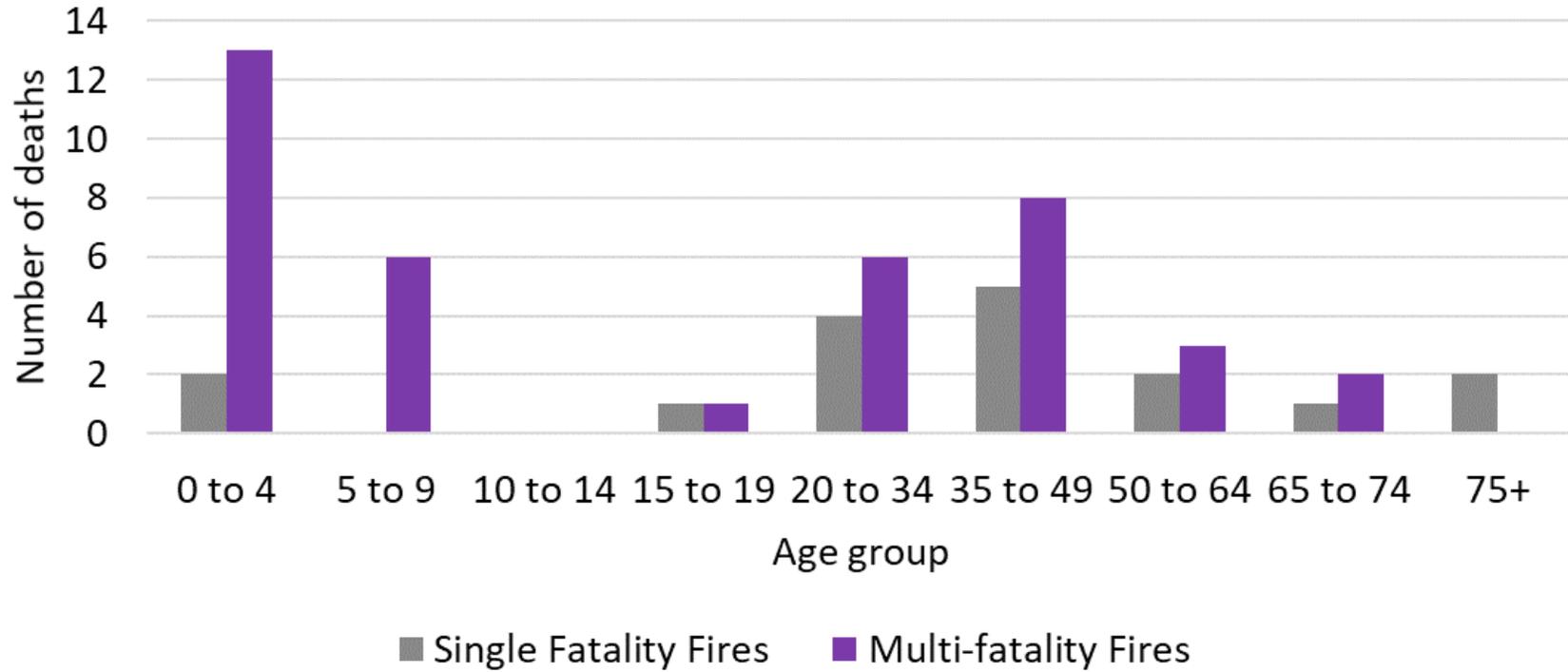


Figure 22: Number of fire-related deaths by age-group whether fire was single or multi-fatality (N=56), 2008-2017

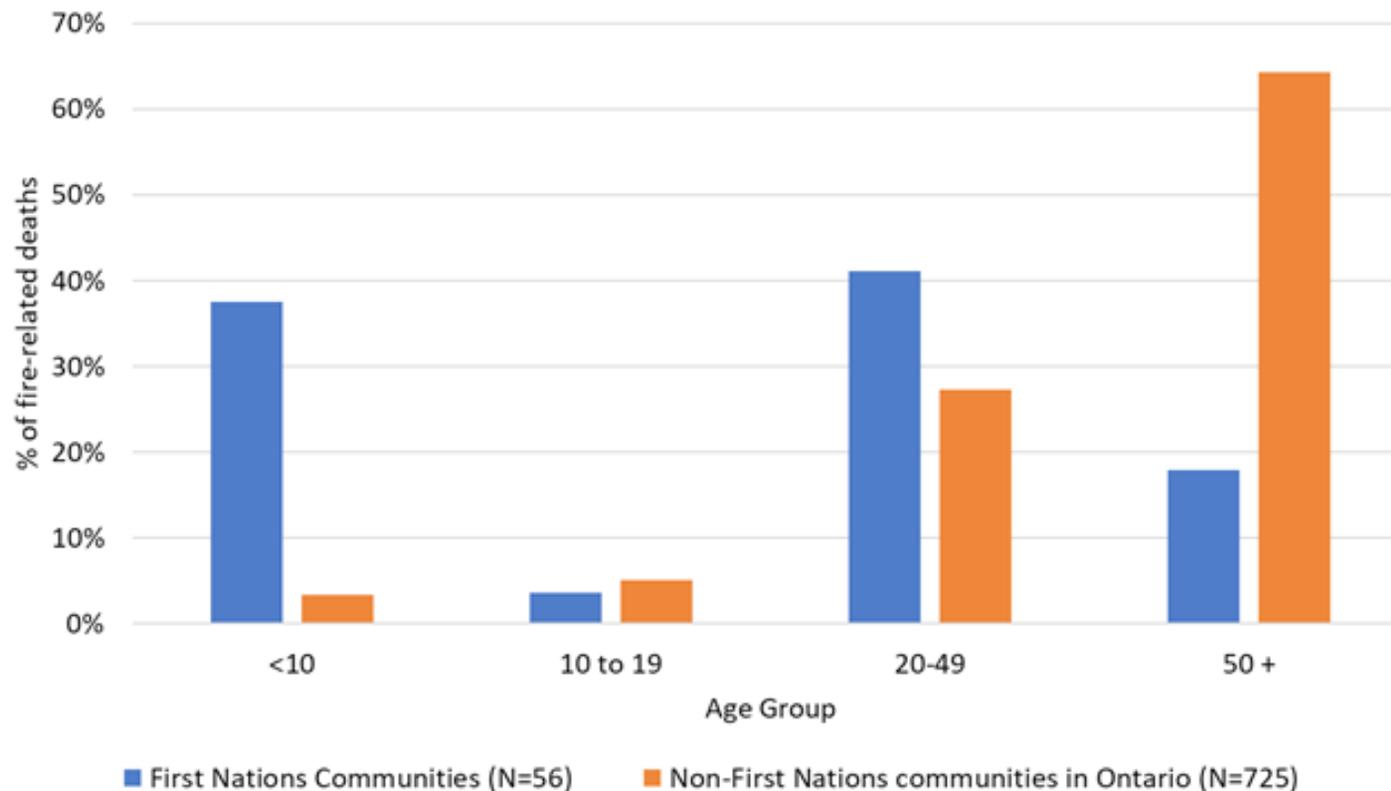


Compared to fire fatalities in non-First Nations communities in Ontario, fires in First Nations communities had a markedly higher number of deaths in children under age 10. Fires in First Nations communities resulted in a higher number of deaths in the 20-49 age group and a lower number of deaths in the 50+ age group compared to deaths in non-First Nations communities in Ontario.

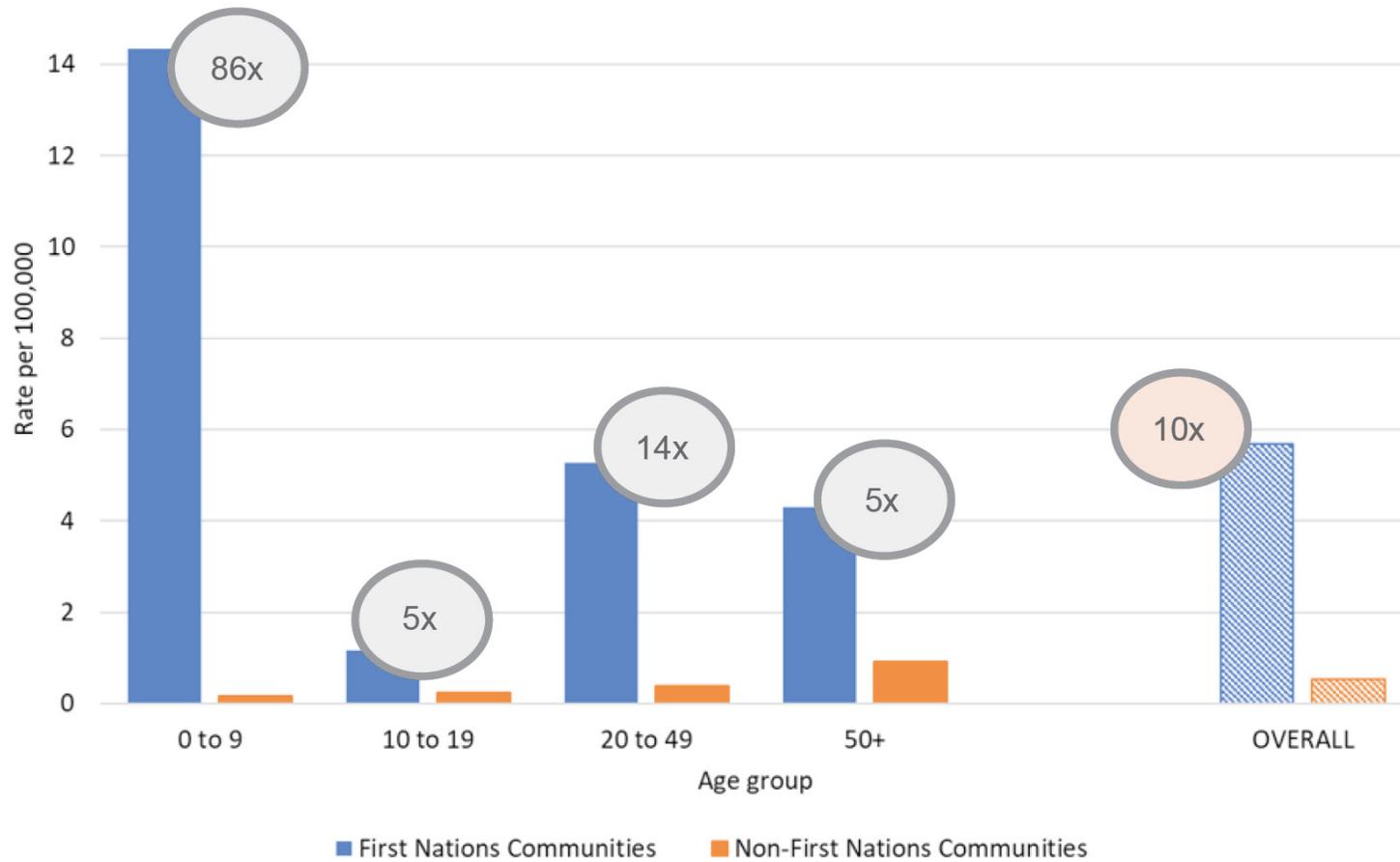
Overall, the fire-related mortality rate is 10 times greater in First Nations communities compared to non-First Nations communities in Ontario during the period of 2008-2017.

The age-specific mortality rate for residential fire fatalities in children (under the age of 10) is 86 times greater in First Nations communities compared to non-First Nations communities in Ontario.

Figure 23: Proportion of fire fatalities in First Nations communities (N=56) compared to Residential fire fatalities in non-First Nations communities in Ontario (N=725) by age group, 2008-2017



**Figure 24: Overall and age-specific annualized fire mortality rate in First Nations communities and residential non-First Nations communities in Ontario, 2008-2017**



See appendix 3 for calculations.

Notes: Recognized differences in the age distribution of First Nations communities compared to non-First Nations communities in Ontario does not explain the large number of fire fatalities involving children and youth in First Nations fires.

First Nations individuals that die in a fire outside of a First Nations community are included as part of the residential fire-related mortality rate of non-First Nations communities in Ontario.

## What were people doing at the time of the fire?

At the time of the fire just under 40% of all individuals in the structure were active (i.e. the individuals were not sleeping).



**31% of fatal fires had individuals in the structures were sleeping**



**38% of people in the structures were active (watching TV, playing)**

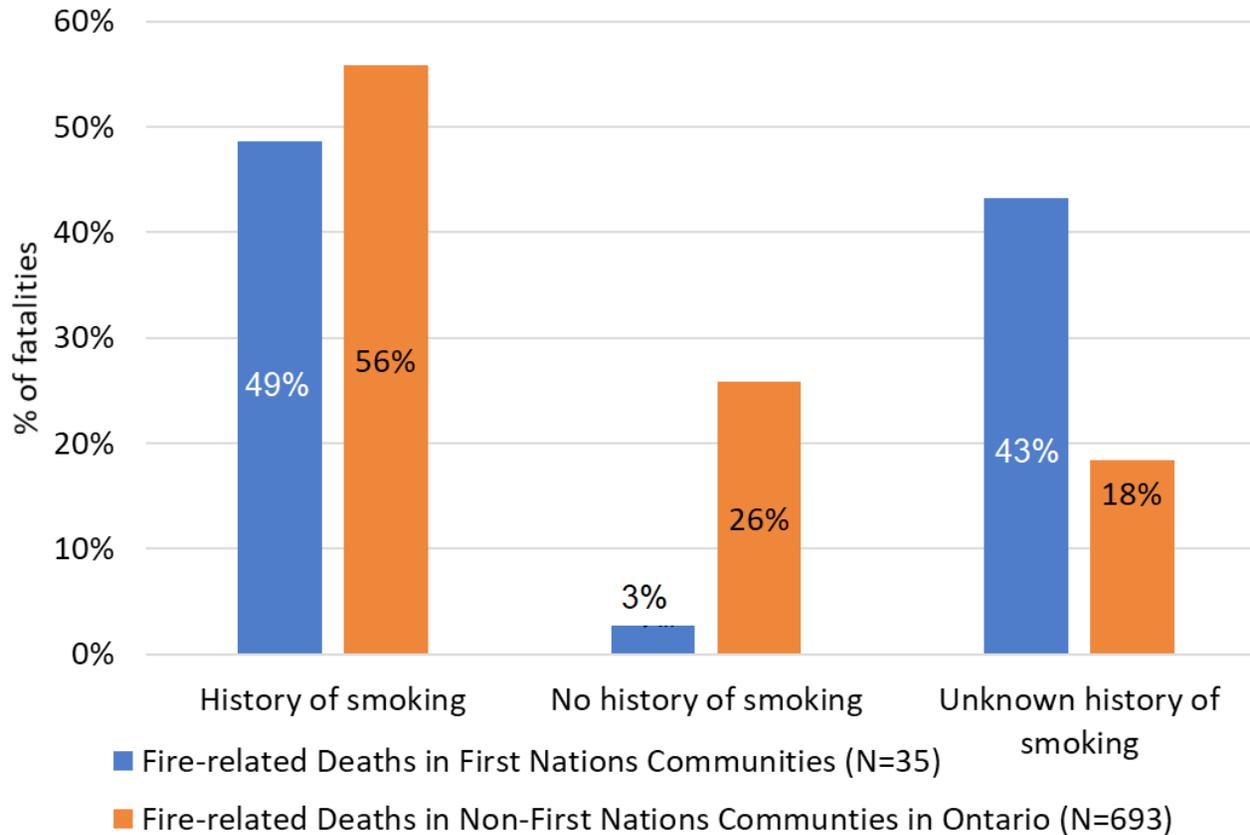


**The activities were unknown for 38% of individuals in the structures.**

Notes: If there were no survivors to report information to the investigators, the activities of individuals may be unknown.

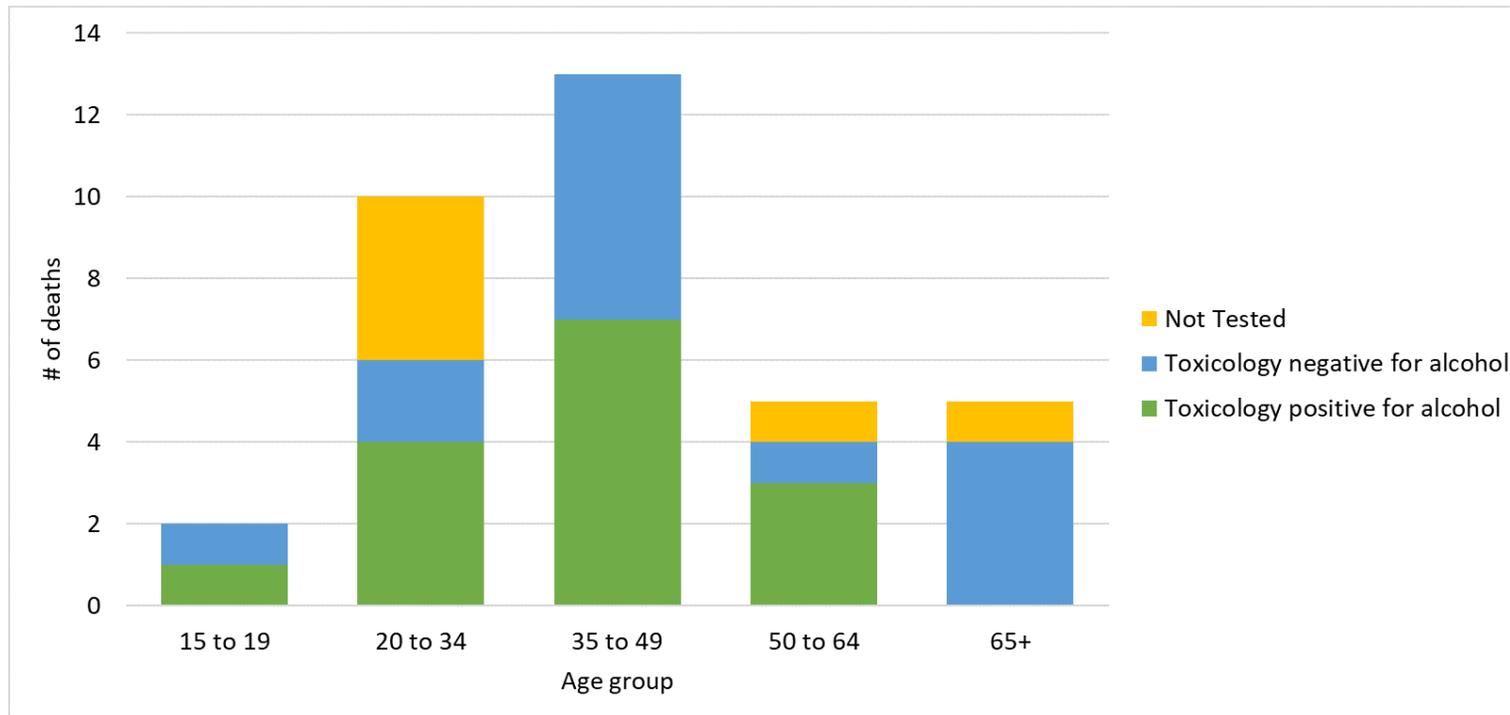
In almost 60% of fires there was an individual within the structure with a history of smoking. Of the individuals that died over the age of 15, 49% of individuals had a history of smoking. This percentage is similar to fire fatalities in non-First Nations communities (56%). When the cause of the fire could be determined in First Nations communities, smoking was not found to be the cause. Smoking cannot be excluded in the 55% of fires where the cause of the fire could not be determined.

Figure 25: History of smoking for fire-related deaths over 15 years of age in First Nations communities (N=56) and non-First Nations communities in Ontario (N=725), 2008-2017



As is the case for all fire fatalities in Ontario, toxicology is routinely performed on deceased persons. This review showed that 15/35 of people over the age of 15 had some level of alcohol detected in post mortem toxicology while 40% of people had no alcohol detected in post mortem toxicology. Comparison with toxicological testing from non-First Nations communities fire deaths was not completed as these data were not available in the data sources referenced.

Figure 26: Fire-related deaths over the age of 15 by toxicology testing for alcohol (N= 35)

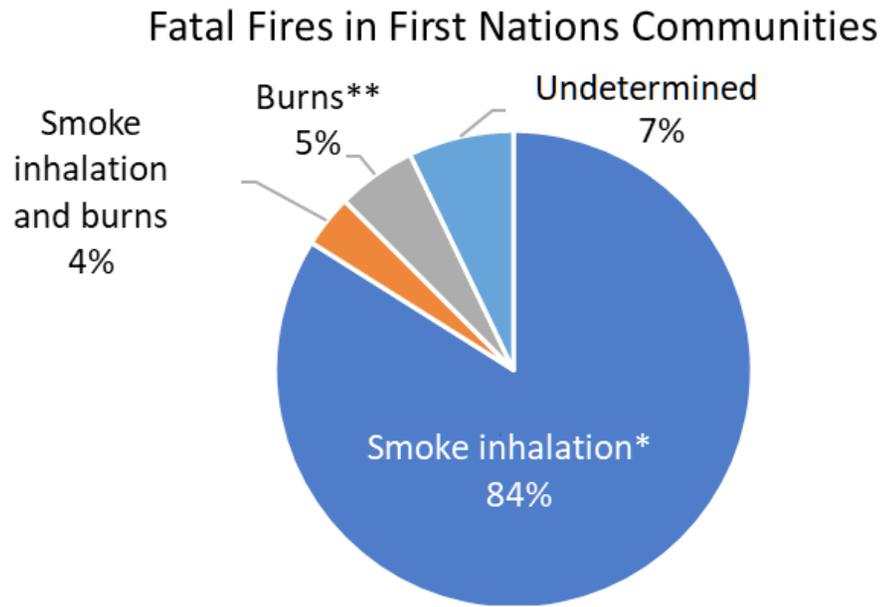


Note: Toxicology is not completed if relevant samples are unable to be obtained (no samples available due to severity of fire related injury).

## What is cause of deaths in fatal fires?

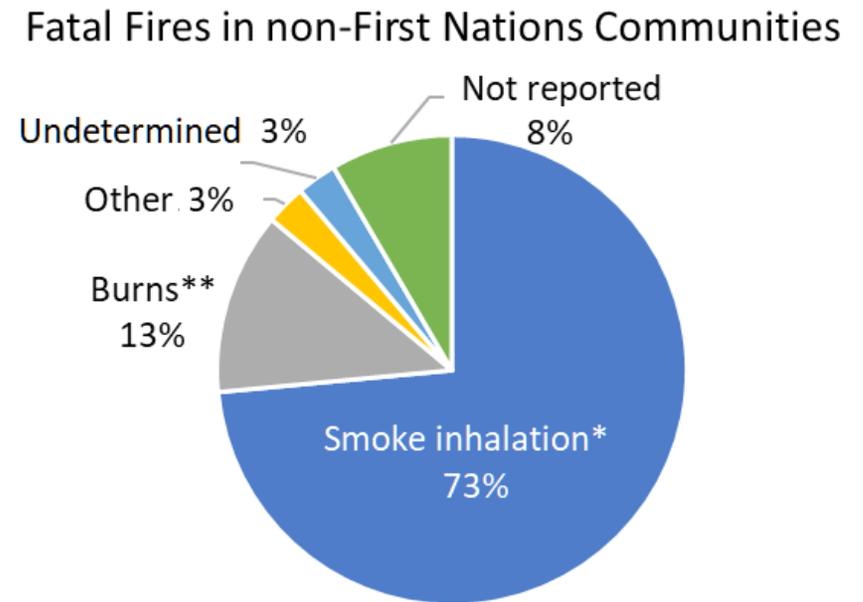
Smoke inhalation directly contributed to 88% of deaths. This is similar to non-First Nations communities in Ontario where smoke inhalation directly contributed to 73% of fire-related deaths.

Figure 27: Cause of death of fire fatalities in First Nations communities (N=56) and non-First Nations communities in Ontario (N=725), 2008-2017



\*Includes one death also related to injury

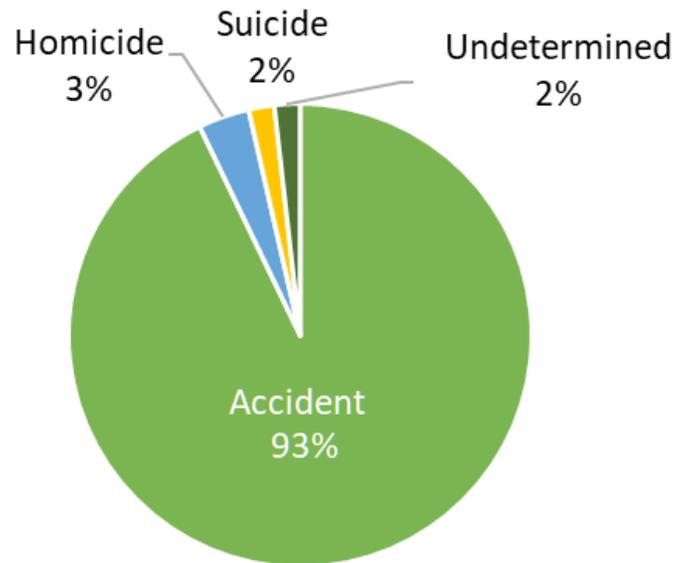
\*\*Includes one death also related to ischemic heart disease



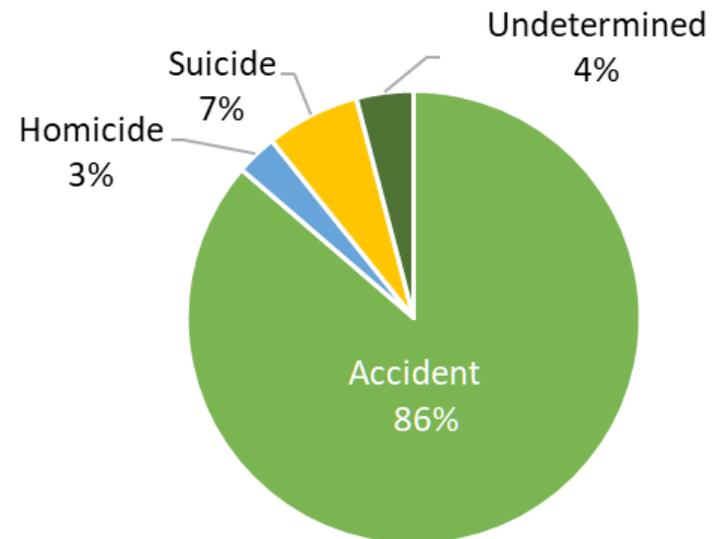
The manner of death was mostly classified as accident (93%; 52 deaths) with 2% (1 death) suicide, 3% homicide (2 deaths) and 2% (1 death) undetermined. This is similar to non-First Nations fire fatalities where the manner of death was classified as accident (86%), suicide (7%), homicide (3%) and undetermined (4%).

Figure 28: Manner of death of fire fatalities in First Nations (N=56) and non-First Nations communities (N=614 - OCC), 2008-2017

### First Nations Communities



### Non-First Nations Communities in Ontario (N=614)



Notes: Manner of death was provided from review of OCC data.

## Limitations of this review

Individual findings from each death were combined to allow review. The combined findings were described and reported to allow evaluation for potential patterns associated with fire fatalities in First Nation communities. When comparable findings from fire fatalities in non-First Nations communities were available these were presented to illustrate similarities or differences. However, since no complex statistical analysis was conducted there are limitations to drawing conclusions from this review.

The inability to obtain complete information over the 10-year timeline of the review is another limitation. Some information was not consistently captured, including demographic information and resources available at the time of the fire. This type of data was not part of the core information needed to complete death or fire investigations, e.g. population of First Nations communities at the time of fire.

Other sources of review included federal data which has its own limitations. The Indian Register was used to obtain estimates for the number of First Nations people living on-reserve in Ontario. These values may not reflect the actual number of individuals living in First Nations communities. The Register only includes individuals registered under the Indian Act and may not account for everyone living in the community.

Another limitation with respect to the data would be the age and status of a structure. Fire investigations by the OFM capture if a structure was built before or after 1975 (the year the Ontario building code came into effect). However, the data did not reflect whether or not a structure needed maintenance or major repairs.

The review only examined data from fatal fires. Information about non-fatal fires was not collected in this review. Factors relating to surviving a non-fatal fire could be important in informing approaches to preventing deaths. Analysis of non-fatal fires could be considered for future review.

The amount of information and the strength of the conclusions could be impacted by the limited sample size of fires (29) and fatalities (56) reviewed during this 10-year period. Findings and statistics should be interpreted carefully as the numbers could be impacted by misclassification. The statistics could also be impacted by circumstances where a significant proportion of responses to questions were unknown or undetermined. An example is the variation observed between First Nations and non-First Nations communities' data during the time of day that a fatal fire occurred. In this review, non-First Nations communities see a continuous increase in fire fatalities from 9 p.m. to just before 6 a.m. Based upon the data available for analysis First Nations communities see an increase of fire fatalities from 9 p.m. and a decrease from 3 a.m. to just before 6 a.m. This review cannot determine if this difference is due to the sample size of the data set or other factors that affect First Nations communities during this time of day.

For the purpose of this review, First Nations communities were included into one of three groups based upon presence of road access to a service centre and involvement with a Municipal-Type Service Agreement. This categorization was utilized to capture the concept of "remoteness" and accessibility to resources relevant to fire deaths which may be a potential limitation.

There were 29 fatal fires in 20 First Nations communities examined during this review. Another limitation of the review is that unique realities in each First Nations community may not have been identified, considered or reflected in the review. Examples include: population sizes ranged from approximately 30 to 12,750 and geographic land size ranged from less than 2 to 239 square kilometers. When reviewing these data, it is important to recognize the variability among the communities and to understand that multiple factors may impact each community in many different ways.

## Overview of findings and questions that remain

Previous research into fire fatalities found those at greatest risk to be children and older adults. This review found that the age-specific mortality rate for residential fire fatalities in children (under the age of 10) is 86 times greater in First Nations communities compared to non-First Nations communities in Ontario. This review found that First Nations children under the age of 5 had the highest number of deaths.

Considering when the fatal fires occurred, 70% of fire fatalities in First Nations communities occurred in colder months and 70% occurred overnight. This pattern is observed in non-First Nations communities in Ontario and other populations previously reviewed. However, there were a number of months in our data that did not follow the reported overall pattern (e.g., April, June and November). A further examination of these months should be considered. What was happening in the communities in April, July and August when there were no fatal fires? What was happening in January, June and December when there were more fatal fires?

Most (86%) fatal fires in First Nations communities had either no or non-operational smoke alarms or the presence of the smoke alarms was unknown. Smoke alarms and other safety planning approaches are important in preventing fire deaths. Smoke alarms can prevent fires from starting by alerting house occupants to smoke, allow for early detection and allow for more time to escape. The use of smoke alarms may be more complex in First Nations communities due to reasons such as wood stoves causing nuisance alarms, remoteness etc.

Education and prevention are key to reducing fire fatalities. Appropriate education and funding must be considered for the use, installation, and maintenance of smoke alarms. Suitable types of smoke alarms must be provided in accordance with the type of heating sources used. Specifically, in communities where wood stoves/wood heaters are used, special types of smoke alarms may be required to reduce nuisance alarms. The OFM provides resources<sup>28</sup> which follow Ontario Fire Code requirements and can be accessed by First Nations communities. The available material includes information for installing smoke alarms, using the hush feature, moving the alarm, trying a different type of smoke alarm, maintaining the alarm, planning and practicing escapes.

Compared to non-First Nations communities in Ontario, more fatal fire investigations report the cause as undetermined in First Nations communities. This is likely due to the higher levels of damage to the structures in fatal fires in First Nations communities. OFM reports that in rural and remote areas with limited or no fire suppression, the levels of structural destruction is greater. Under such circumstances the opportunity to determine the cause of fire may be very limited. The factors described by the OFM are also factors that frequently occur when investigating fires in remote First Nations communities.

It is important to note that emergency response and fire suppression on their own are known to have a limited impact on survival. Early detection and escape are paramount. It is important to consider the funding and resources required for First Nations communities to ensure that training and education occurs on topics including fire escape, fire safety and resource and facility maintenance. This includes both communities where fire response services are available and unavailable. Tailored training should be delivered based on the community's needs and realities. To assist in informing the decisions about the provision of fire protection services, communities can use the [Community Risk Assessment technical guideline and worksheets developed by the OFM](#).

The review was focused on factors affecting fire fatalities. As discussed in the limitations section, there may be other factors that impact individual communities differently due to the unique realities of each. The impact of socioeconomic factors (socioeconomic standing, food security, cost of living, overcrowded living conditions, etc.) may be areas for future review. There may also be value in examining and comparing the resources and realities of First Nations communities experiencing fatal fires with other First Nations communities in Ontario that have not experienced fatal fires.

Further review could be conducted on the structural elements of fatal fires. Construction material may affect flammability and fire spread in structures. This review revealed that different materials and heating sources are used by the three categories of First Nations communities created for this review. The reasons for these differences require further review.

The Advisory Group raised several issues and concerns about housing structures and funding. As noted in 2018, the Canada Mortgage and Housing Corporation indicated that in Ontario 25.5% of Indigenous households living on-reserve are living below adequacy and suitability standards and are unable to access acceptable housing.<sup>29</sup>

Important issues requiring further consideration in fire fatalities include:

- Funding for structures
- Allocation of funds to meet community needs
- Role of fire and building codes
- Status of structure maintenance
- Jurisdictional issues and responsibilities

## Final thoughts

The purpose of this review was to gather data that would allow for a better understanding of how and why First Nations communities within Ontario are uniquely impacted by fires. This review found that the residential fire-related mortality rate was 10 times greater in First Nations communities compared to non-First Nations communities in Ontario from 2008-2017. This finding will not come as a surprise to First Nations communities who have raised concerns about the lack of safe housing and adequate funding in their communities for years. These concerns are directly linked with the safety, wellbeing and lives of children, Elders, and loved ones in First Nations communities.

The process of this review has been a learning opportunity for the Office of the Chief Coroner, and, for that, we are thankful for each member of the Advisory Group and the Working Group for their contributions to this important work.

There is a significant historical context to be considered when reviewing this report. It is critical to recognize that this history continues to have lasting impacts and many Indigenous people still carry the harmful legacies of Canada's past. It is important to keep in mind the limitations of the data collected for this review, as the information available from the investigations often did not include the historical context and present day-realities that are essential to understanding this issue.

The opportunity to work with and, more importantly, learn from the Communities impacted by these fires has been humbling and invaluable. The knowledge and advice shared by the Advisory Group and the Working Group has allowed for a better understanding of the complexities of this issue and the critical need for Community based and developed solutions. We were told at every stage of this process that solutions designed, developed and delivered locally were needed. This is one of the reasons that this report does not offer recommendations to Communities but rather a commitment to share this data broadly.

We are optimistic that the information contained in this report will support positive change and help prevent further tragedies. The OCC-UFDNFN shares this information to, in the words of one of our Advisory Group members, "advent change and provide a message about hope." The Office of the Chief Coroner remains committed to better serving and better supporting First Nations communities.

# Acknowledgements

We gratefully acknowledge the support and contributions of the following people and groups to this review:

## Technical Experts of the Working Group

- James Sproule – OCC – Deputy Chief Coroner - Executive Lead
- Douglas Browne – OFM – Deputy Fire Marshal - Executive Lead
- Ross Nichols – OFM – Former Fire Marshal - Former Executive Lead
- Michael Wilson – OCC – Regional Supervising Coroner
- Tara Dadgostari – OCC – Project Manager
- Regan Murray – OCC – Data Analysis
- Andrew Stephen – OCC – Information Management Lead
- Kona Williams – OFPS – Forensic Pathologist
- Kathy Gruspier – OFPS – Forensic Anthropologist
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- Manny Garcia – OFM - Quality Assurance and Risk Management Supervisor
- Matthew Miller – Ontario Native Fire Fighters Society – Fire Chief
- Michael McKay – Nishnawbe Aski Nation – Infrastructure & Housing
- Daniel Nadeau – Ontario Provincial Police – Investigation and Support Bureau
- Kate Forget – Ministry of the Attorney General – Indigenous Justice Division
- Anne Scotton – Department of Indigenous Services Canada - Ontario Region – Federal Partner

Elder Helen Cromarty

Aliesha Arndt – Ministry of the Attorney General – Indigenous Justice Division

## Elders and Knowledge Keepers of the Advisory Group

- David Meekis – Deer Lake First Nation
- Connie Gray McKay – Mishkeegogamang First Nation
- Adrian Chrisjohn – Oneida Nation of the Thames
- Dean Peters – Pikangikum First Nation
- Norma General-Lickers – Six Nations of the Grand River
- Tommy Sainnawap – Wunnumin Lake First Nation

## Culture and Mental Health Support

- Dilico Anishinabek Family Care
- Department of Indigenous Services Canada - First Nations and Inuit Health Branch
- Indian Residential Schools Resolution Health Support Program (IRS RHSP)
- Ontario Provincial Police - Indigenous Policing Bureau
- Ontario Provincial Police - Provincial Liaison Team

## Data Sources

- Environment Canada
- First Nations Communities
- Department of Indigenous Services Canada - Ontario Region
- Ministry of Children, Community and Social Services - Social Assistance Analytics Unit
- Nishnawbe Aski Nation
- Office of the Chief Coroner
- Office of the Fire Marshal
- Sioux Lookout Area Aboriginal Management Board
- Statistics Canada

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The analysis undertaken as part of this review was a descriptive analysis. Comparative analysis was performed where possible. However, there are limitations to drawing conclusions from this model as complex statistical analysis were not performed in this review.

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# Appendix 1: First Nations Fire Template

The First Nations Fire Template was used to collect data for this review. After the completion of this review, there will be opportunities to revise the templates in order to improve the data collected and available for future analysis.

## Template: Decedent Information

#	Question
1	Last Name
2	First Name
3	Middle Name(s)
4	Also Known As
5	Address (Residence)
6	Date of Birth
7	Date of Death (Date death pronounced)
8	Age
9	Sex (Biological)
10	Gender
11	Positively Identified
a	If Yes
b	If Other
12	Employment status
13	Marital status
14	Household characteristics (living situation)
15	Self identified as Indigenous (First Nations/Metis/Inuit)

## Template: Community Information

#	Question
1	First Nation Community Name
2	Community On-Reserve Population Size
	<b>Geographic</b>
3	Geographic Size (square kilometres)
4	Accessibility (Road Year Round/Road Only in the Winter (Ice Road)/Air Year Round)
	<b>Demographic</b>
5	Average age of the population
6	Median age of the population
7	Age characteristics - Total
a	0-4
b	5-9
c	10-14
d	15-19
e	20-34
f	35-49
g	50-64
h	65-74
i	75-84
j	85+
8	Marital status (Total Population 15 years and over)
a	Married Including Common-Law
b	Separated
c	Divorced
d	Widowed
e	Never Married
9	Children in census families (as in sons, daughters or grandchildren) (childrens living situation)

a	Living With 2 Parents (2 biological or adoptive;1 biological or adoptive and one step-parent)
b	Living With Lone-Parent Families
c	Living With Grandparents (without parents present)
d	Living With Other Relatives
e	Foster Children
f	Living with non-relatives only or alone
10	Total - Highest level of educational attainment of population aged 25 to 64 in private households
a	No Certificate/Diploma/Degree
b	Secondary
c	Post Secondary
d	Apprenticeship or trades certificate or diploma
e	College
f	University certificate or diploma below bachelor level
g	University certificate, diploma or degree at bachelor level or above
11	Elementary School Located in Community
12	High School Located in Community
a	If Yes, what is the highest level available
13	Language(s) Spoken Most Often at Home
a	1st
b	2nd
c	3rd
d	4th
14	Community Indicators of Substance Use/Alcohol Consumption and Smoking
15	Addiction Services Readily Available in Community

a	If yes, type of service (individual counselling, treatment centres, rehabilitation treatment programs, circles, land-based activities i.e. hunting trips or fishing, other...)
16	Mental Health Services Readily Available in Community
17	Community health issues at time of fire (ex. high rates of chronic or infectious disease)
18	Primary Health Services Readily Available in Community
	<b>Economic (Income of Individuals - population aged 15 years and over in private households for year prior to census)</b>
19	Average Income
20	Median Income
21	Unemployment Rate
22	Number of individuals employed on reserve
23	Number of individuals employed off reserve
	<b>Housing</b>
24	Number of Dwellings (defined as any place where people live including shack)
25	Private Households Size (Total - Private households by household size)
a	1 Person
b	2 Persons
c	3 Persons
d	4 Persons
e	5-9 Persons
f	10-14 Persons
g	15+ Persons
26	Total - Private households by housing suitability
a	Suitable
b	Not Suitable
27	Total - Private households by number of persons per room

a	One person or fewer per room
b	More than 1 person per room
28	Total Occupied private dwellings by dwelling condition
a	Major repairs needed
29	Total Occupied council owned dwellings by dwelling condition
a	Major repairs needed
30	Total Occupied private dwellings by period of construction
a	Total constructed Prior to 2001
31	Total number of dwellings with electricity
32	Average number of doors/exits per dwelling
	<b>Fire Prevention and Response Capacity (FPRC)</b>
33	Fire Department Annual Budget
34	Budget for Public Fire Safety Education
35	Budget for Fire Safety Standards and Enforcement
36	Budget for Emergency Response - Suppression
37	Does the community have an established level of fire protection services
a	If yes, describe
38	Has the community conducted and maintain a current simplified risk assessment or other type of risk assessment
39	Are formal community based fire suppression services provided
40	If suppression services are provided are they interior/ exterior or exterior only
41	Does the community have an agreement in-place with another community for fire protection services
a	If yes, Distance to community providing fire protection services
b	If yes, Is the time to be on scene greater than 10 minutes

42	Does the community have fire apparatus but no fire department
43	Number of non-fatal fires in the community during the period of study
	<b>FPRC - Public Fire Safety Education</b>
44	Are public fire safety education materials distributed in the community
45	Is public fire safety education provided in school
46	Are fire drills conducted by schools and documented
47	Does the fire department/community have a public education program in place
48	Has the fire department/community established smoke and carbon monoxide alarm programs
49	what percentage of residential occupancies have smoke and carbon monoxide alarms
a	How many are operational
	<b>FPRC - Fire Safety Standards and Enforcement</b>
50	Does the community conduct inspections upon request or complaint
51	Does the community conduct fire safety inspections as part of a regular inspection program
52	If the community does inspect occupancies on a regular basis what occupancies are inspected
53	Does the community conduct home visits to ensure smoke alarms are in-place
54	Has the community adopted or utilize the National or Ontario building code
55	Has the community adopted or utilize the National or Ontario fire code
56	Does the community follow/enforce building codes
57	Does the community follow/enforce fire codes
58	Are fire safety inspections conducted in the community by any other agencies (federal government)

59	What type of occupancies are inspected by other agencies
	<b>FPRC - Emergency Response - Suppression</b>
60	Does the community have a Fire Hall
a	What is the condition of the Fire Hall
61	Is fire apparatus in community maintained and operational
62	Is the firefighting equipment maintained and operational
63	Is personal protective equipment (eg. SCBA, bunker gear) maintained and operational at accepted standards
64	What is the minimum level of training/certification of suppression Firefighters
a	How many firefighters are trained/certified at this level
65	Do firefighters have the necessary equipment including bunker gear, SCBA, and communications to conduct interior operations
66	Water available to community for fire suppression
67	Were hydrants available
a	If not, are other water supply sources available i.e. water tanker shuttle
68	Are first responders available in community
69	Health services available in community to treat injuries
70	Medical first response team readily available in community
	<b>Weather</b>
71	Nearest weather station
72	Distance from nearest weather station to community
73	Temperature conditions
a	Day after commencement of fire
b	Day of commencement of fire
74	Precipitation conditions at time of fire
a	Day after commencement of fire
b	Day of commencement of fire
75	Other Information Regarding Weather Conditions

## Template: Fire Marshal Information

#	Question
1	Fire Investigation Case Number
2	Location of fire (address)
3	Date of fire
4	Time of fire alarm
5	Jurisdictional Fire Department
6	Jurisdictional Police Service
7	Number of fire fatalities
8	Date Fire Department on scene
9	Time of Fire Department on scene
10	How was the fire discovered
11	Were there any identified Fire Safety Issues
12	What was the fire cause
13	What were the possible fire causes considered if a cause could not be determined
14	What was the motive
15	What was the property type
16	What is the area of origin
17	What was the ignition source
18	What was the object first ignited
19	What was the fuel of ignition source
20	Was there an incendiary device
21	What kind of complex was the structure
22	What is the occupancy classification
23	What is the status of the building
24	What was the construction date

25	Were there previous fire events in the building
26	Number of storeys
27	Does the dwelling unit have a crawlspace (heated areas containing gas furnace, etc.)
28	Floor
29	Roof
30	Interior
31	Ceiling
32	Level of origin
33	Flashover
34	Fire spread if a multi unit dwelling
35	Fire spread reasons if a multi unit dwelling
36	Smoke spread if a multi unit dwelling
37	Smoke spread reasons if a multi unit dwelling
38	Fire spread and reason if not a multi unit
39	Smoke spread and reason if not a multi unit
40	Is the occupancy a complete loss
41	Fatality status
42	Structure familiarity
43	Fatality location
44	Egress prevented
45	Reason for failure to escape
46	Number of occupants who did escape
47	Is the wood stove normally removed when not in use (eg. summer months)
48	Is the wood stove normally situated in the centre area of the dwelling

49	What was the source of heat in the house
a	Other
50	What was the construction material
a	Other
51	Were there any fire-resistant barriers / shields
52	How many routes of exit were available
53	How many routes of exit were accessible (eg not blocked off)
54	Presence and Operation of Fire Detection Device (FDD) closest to area of origin
55	Number of devices
	<b>For each device</b>
56	Device type
57	Device location
58	Alarm type
59	Alarm power
60	Alarm placement
61	Device operation
62	Reason for Inoperation
	<b>Emergency Response</b>
63	Did road conditions negatively impact/affect response or ability of responding fire department to attend scene
64	Did police attempt to suppress fire
65	Did the police effect rescue prior to fire department arrival
66	Did the fire department performed the search and rescue of occupants?
67	Were hydrants available
68	Was limited or inaccessible water supply a factor in the fire

69	Were all responding apparatus fully serviceable
70	How many fire apparatus responded
71	Total number of firefighters on scene
72	Number of firefighters on initial responding apparatus
73	Did the fire department apply agent to the fire
a	If yes, date and time the fire department applied agent
74	Did the fire department perform an offensive or defensive initial attack
75	Performance of fire department affected by weather conditions
76	Building performance affected by weather conditions
77	Time required to supress fire
78	Mutual aid activated in this fire
79	Was automatic aid initiated

## Template: Coroner Information

#	Question
1	Coroner's Investigation Case Number
<b>Individual Factors (The Decedent)</b>	
2	Was there any history of addiction and/or mental health issues
a	If yes, describe
3	Stressors (check all that apply)
a	Estranged from family
b	Others in household with history of addiction and/or mental health issues
c	History of physical or sexual abuse (decedent or within household)
d	Recent loss (children/siblings/parents/etc...)
e	CAS involvement (with decedent or family)
f	Domestic issues
4	Was decedent intoxicated or using alcohol/ drugs at time of fire
a	If yes, describe
5	Were there others in the household intoxicated or using alcohol/ drugs at time of fire
a	If yes, describe
6	Was decedent a smoker
7	Were there smokers within the household (not including decedent) present at time of fire
8	Was decedent's mobility impaired
a	If yes, describe
9	Manner of Death

	Scene Factors
10	How many people lived in residence usually
11	Describe their relationships
12	How many people were present at time of fire
13	What were they doing
14	Did they have another residence (e.g. were they overnight guests / visitors)

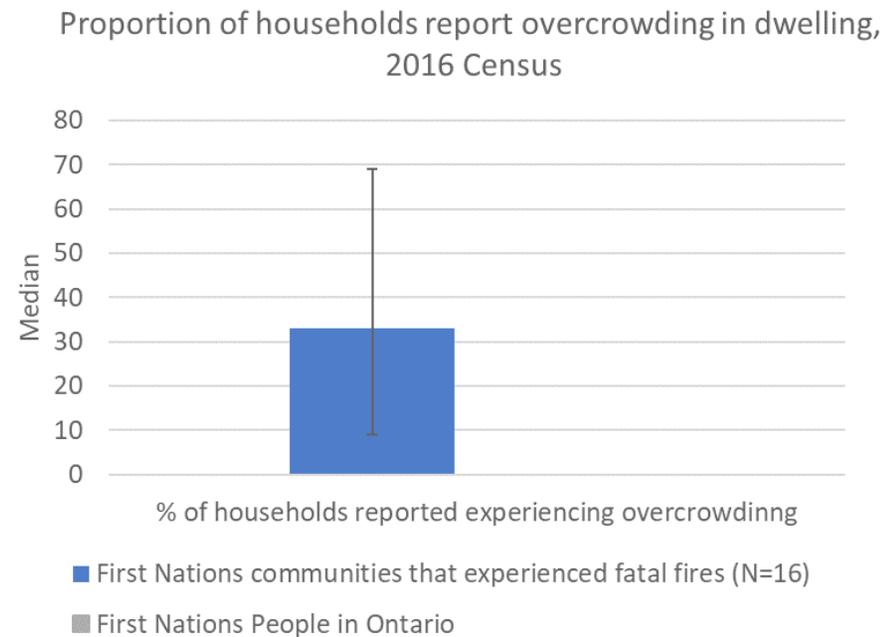
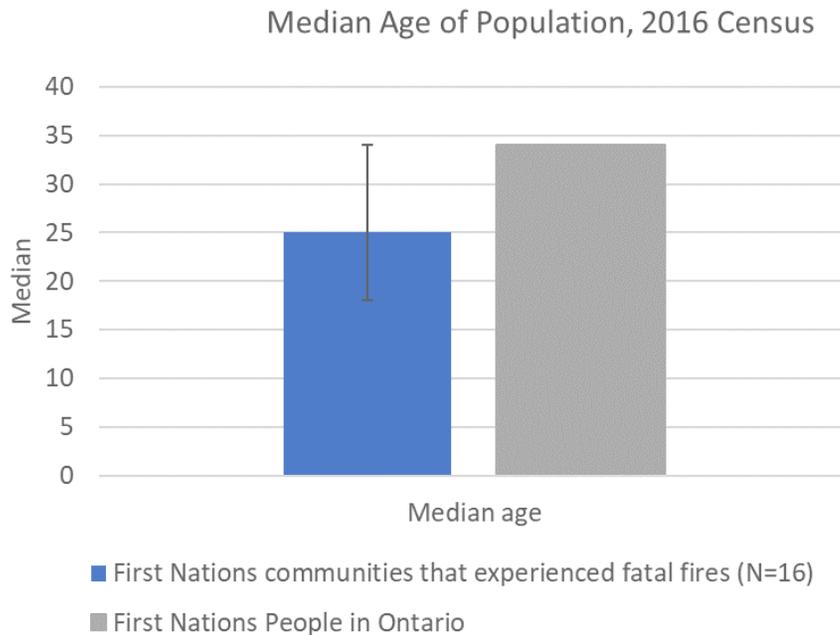
## Template: Forensic Pathology & Forensic Anthropology Information

#	Question
1	Pathology Case Number
2	Date of Autopsy
3	Location of Autopsy
4	Cause of Death
5	Soot present in airways
6	Lividity
7	Toxicology Completed
a	Substances Found
8	Comorbidities
9	Burn Severity (by depth - 1st to 4th degree)
10	Extent of Burns (Percent Body Surface Area)
11	Antemortem Trauma
12	Post-Mortem Fire Artefacts (check all that apply)
a	Charring
b	Skin splitting
c	Skin blistering
d	Thermal amputation
e	Breach of thoracic/abdominal cavities/upper airways
f	Heat epidural hematoma
g	Singeing of the hair
h	Pugilistic attitude
i	Heat fractures
j	Heat contractures
k	Calcination

l	Fragmentation
13	Co-mingling
14	Decedent Alive Before Fire
a	If yes, describe

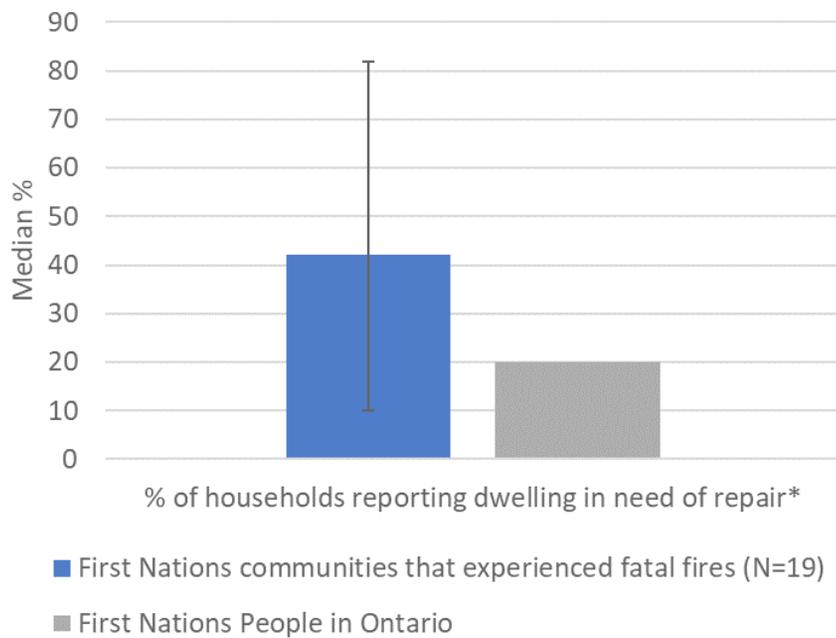
## Appendix 2: Communities that were part of this review

- The population in First Nations communities that experienced fires were younger than average compared to the population of non-First Nations people in Ontario
- Several communities reported over-crowding in their place of residence (more than 1 person per room) (Census 2016, Statistics Canada)
- Many communities reported living in a residence in need of major repair (Census 2016, Statistics Canada)
- 85% of communities had an elementary school and 15% had a high school in the community. Distance education is available in an additional 40% of the communities.
- Knowledge of First Nations languages vary by communities (Census 2016, Statistics Canada).

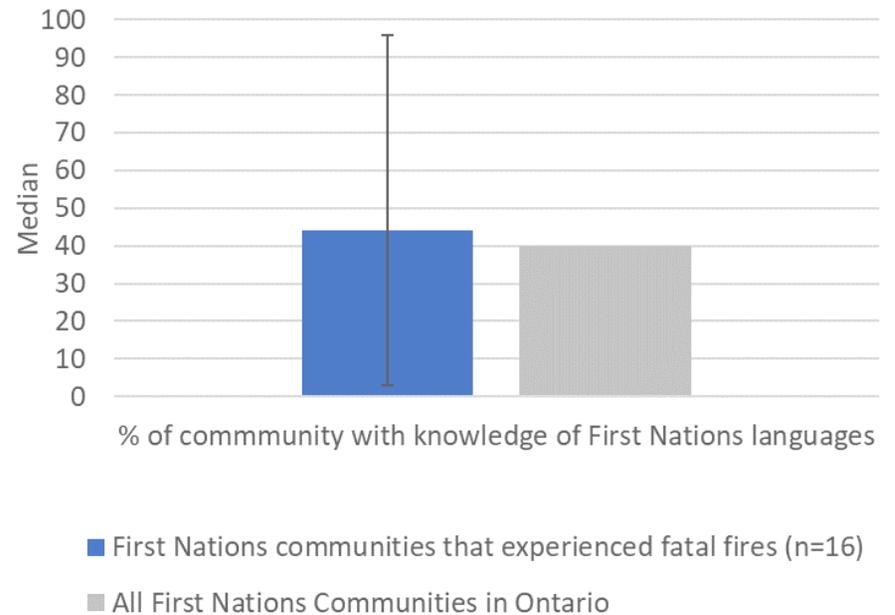


Note: Four communities did not participate in the 2016 Census. In communities that did participate in the 2016 Census, not all households may have participated. For the communities that did not participate in the 2016 Census, some variables were provided directly by the First Nations communities.

Proportion living in a dwelling in need of major repairs\*



Proportion of population with knowledge of First Nations languages, 2016 Census



\*Both community information from First Nations communities and 2016 Census included

Note: Median for all communities with available information that experienced a fire is reported and the range of minimum and maximum values are shown with the additional black line bar.

# Appendix 3: Residential Fire Mortality Rate Calculations

## Residential\* Fatal Fires in First Nations Communities in Ontario

Population reference: [Registered Indian Population by Sex and Residence \(On Reserve\) 2016](#) <sup>3</sup>

Age group	Number of Deaths, 2008-2017	Population in 2016	Annualized Rate per 100, 000	(95% Confidence Interval)	Mortality rate difference compared to Non-First Nations Communities in Ontario
0 to 9 years	21	14,645	14.3	9.1-21.6	86
10 to 19	2	17,009	1.2	0.2-3.9	5
20 to 49	22	41,741	5.3	3.4-7.8	14
50+	10	23,315	4.3	2.2-7.6	5
Overall Total	55	96,710	5.7	4.3-7.3	10

\*one fire-related death included in the review was excluded as it was not a residential location

## Residential Fatal Fires in non-First Nations communities in Ontario

Population reference: [Statistics Canada 2016 Census](#) <sup>5</sup> minus population living in First Nations Communities.

Age group	Number of Deaths, 2008-2017	Population in 2016	Annualized Rate per 100, 000	(95% Confidence Interval)
0 to 9	24	1,438,800	0.17	0.01-0.24
10 to 19	37	1,549,191	0.24	0.17-0.33
20 to 49	198	5,243,509	0.38	0.33-0.43
50+	466	5,120,284	0.91	0.83-1
Overall Total	725	13,351,784	0.54	0.5-0.58