

Strengthening Fire Safety in First Nations Communities: What Canada's Fire Service Needs to Know

By Len Garis, Mandy Desautels

Fire risk in Canada is not evenly distributed. Nowhere is this more evident than in First Nations communities, where structural conditions, socioeconomic realities, and geographic isolation combine to create a disproportionately high burden of fire-related injury and death. A recent independent evaluation commissioned by the National Indigenous Fire Safety Council (NIFSC) provides the most comprehensive analysis to date of fire incident reporting, home safety conditions, and fire department capacity across First Nations communities.

The evaluation was conducted by **Associate Professor Dr. Joseph (Joe) Clare, PhD, MCCJ, BCogSci (Hons)** of the University of Western Australia. Dr. Clare is an internationally recognized scholar whose work focuses on applied crime prevention, fire-risk analysis, and evidence-based public-safety policy. His research has informed major fire-prevention strategies in Canada, Australia, and the United States, and he is widely respected for his ability to translate complex datasets into practical, operationally relevant recommendations for fire services. As the report notes, the work was completed *"in response to Research Area #4... to complete a National Indigenous Fire Safety Data Collection Evaluation... with the goal of completing a review of data and collection methods and creating a template for reporting."*

This article synthesizes Dr. Clare's findings and outlines the implications for fire-service leaders, practitioners, and policymakers across Canada.

A Disproportionate Fire Burden

The evaluation begins by situating fire risk within broader demographic realities. Recent Census data shows that Indigenous peoples represent 5% of Canada's population, but face significantly higher structural and socioeconomic risk factors. As the report summarizes, Indigenous respondents were more likely to *"live in a dwelling in need of major repair... live in crowded housing... [and] live in low-income households."* These conditions are well-established predictors of elevated fire risk.

The consequences are severe. Previous analysis by Garis and Desautels (2021) found that *"Indigenous people in Canada are five times more likely to die from a fire than the general population, and that risk increases to 10 times if they live on reserve."* This is not a marginal disparity—it is a national public-safety crisis.

What the NIRS Data Reveals

The National Incident Reporting System (NIRS) is the primary source of fire incident data for First Nations communities. Reporting is voluntary, and participation varies widely. Of the 1,270 incidents captured between 2009 and 2022, 60% were reported in 2021 alone, and one Band accounted for more than half of all reports. As the evaluation notes, *"These trends are reflective of the voluntary nature of reporting."*

Despite these limitations, the available data reveals several critical patterns.

1. Residential structure fires are the most deadly

Of the 693 fire incidents recorded, 284 were structure fires. When filtered for residential use, 137 incidents accounted for:

- **91% of all injuries**
- **88% of all fire-related deaths**

This mirrors national and international research showing that residential fires are the most preventable—and the most lethal—category of fire incidents.

2. Fires that burn out before fire department arrival are catastrophic

One of the most striking findings is that *“13 fire events where the fire had burned out before the fire department arrived... resulted in 53 percent of the fatalities.”*

This underscores the life-saving importance of early detection and rapid suppression, especially in remote communities where response times are longer.

3. Smoke alarm coverage is dangerously low

Perhaps the most alarming statistic: less than 10% of reported residential fires had a confirmed, functioning smoke alarm.

The evaluation notes:

“The smoke alarm presence was unknown/missing in over two-thirds of records... [and] less than 10 percent... were recorded as having a present, functioning smoke alarm.”

Where alarms were absent, the fatality rate was extreme—**1,375 deaths per 1,000 fires** in homes without alarms.

4. Missing data is a major barrier

Across key variables—area of origin, igniting object, act or omission—between 40% and 65% of fields were blank or unknown. This severely limits the ability to conduct trend analysis or design targeted interventions.

Home Safety Assessments: A Mixed Picture

The Home Safety Assessment (HSA) program provides voluntary, household-level safety audits. Data from 14 communities (a small sample) shows:

- **78%** of homes had smoke alarms installed
- **70%** had functioning alarms
- **35%** had fire extinguishers
- **52%** had a household fire safety plan

These numbers are significantly better than what NIRS incident data suggests, but the evaluation cautions that HSA participation is extremely limited—representing just **2.2%** of First Nations communities.

Still, the findings reinforce a key theme: **where home safety programs are implemented, conditions improve.**

Fire Department Assessments: Capacity Gaps Are Widespread

The Fire Department Assessment (FDA) program evaluates fire department readiness across seven operational domains. Results from 55 communities show:

- **Documentation management** scored highest at 52%
- **Training programs** scored lowest at 38%
- **Fire life safety and public education programs** averaged 43%

Every category had departments scoring both 0% and 100%, indicating vast disparities in capacity and resources.

For communities facing high fire risk, these gaps have direct consequences. Weaknesses in training, public education, and life-safety systems translate into preventable injuries and deaths.

Key Recommendations for Canada's Fire Service

Dr. Clare's evaluation offers six major categories of recommendations. Below is a synthesis tailored for fire-service leaders and practitioners.

1. Prioritize Smoke Alarm Coverage

The evidence is unequivocal: functioning smoke alarms save lives. The report states plainly: *"There is unequivocal evidence... that working smoke alarms have a preventative effect on fire-related casualties."*

Fire services should:

- Implement targeted smoke alarm installation and maintenance programs
- Use risk-based tools (e.g., Huesken et al. 2020) to prioritize high-risk communities
- Partner with local agencies to expand reach

2. Expand Fire Safety Education

Human error contributed to 25% of fires and 30% of fatalities in the NIRS data. Education programs—especially those delivered by firefighters—have been shown to reduce both fire frequency and severity.

Effective strategies include:

- Door-to-door education campaigns
- Seasonal safety messaging
- Programs tailored to elders, families with young children, and high-mobility households

3. Address Suspicious and Vacant-Building Fires

One-third of fires were coded as suspicious. The evaluation notes the need to determine whether these are linked to abandoned or vacant buildings—an issue documented in other jurisdictions.

Fire services should:

- Work with local governments to identify distressed properties
- Implement prevention strategies such as boarding, demolition, or CPTED-based interventions

4. Strengthen Home Safety Assessment Coverage

HSA data is invaluable for identifying household-level risks, but participation is low. The report recommends:

- Standardizing HSA forms
- Automating summary reports to flag urgent risks
- Using partnerships to scale assessments across communities

5. Improve Fire Department Capacity Through Risk-Based Audits

FDA results show significant gaps in training, documentation, and life-safety programs. The evaluation recommends:

- Prioritizing audits in high-risk communities
- Focusing on life-safety systems, occupational health, and documentation
- Building sustainable, partnership-based models for ongoing assessments

6. Commit to Evaluation

The report emphasizes that every intervention—whether educational, engineering-based, or operational—must be evaluated for both process and impact. As the authors note: *“Evaluate the effectiveness of what you are trying to do... [to ensure] improvements have been made to the problems being targeted.”*

What This Means for the Canadian Fire Service

The findings of this evaluation should be a call to action for fire services across the country. While the challenges are significant—under-reporting, limited resources, remote geography, and socioeconomic disparities—the path forward is clear and evidence-based.

Fire services can play a transformative role by:

- Supporting national efforts to standardize and expand fire incident reporting
- Partnering with Indigenous leadership to deliver culturally grounded fire-safety programs
- Prioritizing early-detection systems such as smoke alarms and residential sprinklers
- Strengthening local fire department capacity through training and documentation support
- Advocating for sustainable funding models that reflect the true scale of need

The evaluation makes one point unmistakably clear: fire risk in First Nations communities is not inevitable—it is preventable. With coordinated, data-driven, and community-led action, Canada’s fire service can help close the fire-safety gap and save lives.

Authors

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