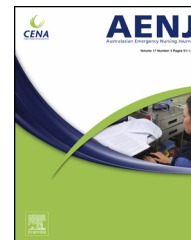




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RESEARCH PAPER

# Wildfire disasters: Implications for rural nurses



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## KEYWORDS

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## Summary

**Background:** As natural disasters are increasing globally, nursing's role in responding to disasters is evolving. Disaster nursing has emerged as a specialty that focuses on the care of groups and communities during disaster response. The role of rural nurses in disasters is less well defined. **Methods:** A review of peer-reviewed literature combined with the International Council of Nurses framework of Disaster Nursing Competencies was conducted to understand the roles and functions of nurses in rural areas that experience disasters. The authors' findings from investigating the effects of four wildfires in rural Canadian communities are also discussed.

**Results:** Six major themes derived from our wildfire studies were generated within the context of nursing practice and are useful in the preparation of rural nurses involved in disaster management and recovery. This adds to the current literature which by and large has not addressed nursing in rural catastrophes.

**Conclusion:** Well-prepared and educated rural nurses who combine theoretical knowledge with their understanding of a rural community potentially can reduce the impact of a disaster. Other nursing roles include mentoring nursing students in disaster preparation and assisting in initiatives to address community recovery in the aftermath of a disaster.

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## What is known

- Disasters are on the rise globally and nursing's role within disasters is evolving.
- The ICN Framework of Disaster Nursing Competencies are aligned with the model of disaster management continuum—prevention/mitigation, preparedness, response, and recovery/rehabilitation.
- However, the role of rural nurses in disasters and the use of these competencies to describe rural nurses' roles in disaster is lacking in current literature.

## What this paper adds?

- Rural nurses have special knowledge about their communities and can positively assist in all phases of disaster preparedness.
- The ICN Disaster Nursing Competencies can further clarify rural nurses' roles in disasters: one example is the inclusion of rural nurses in local policy development that specifically addresses their unique rural setting.
- Nursing education programs need to include theoretical content focusing on disaster mitigation, preparation and recovery to better prepare their students for disaster nursing. Nursing's role in attending to disaster impacts will help enhance the resilience of rural communities.

## Introduction

In 2012 across the globe, 32.4 million people were displaced from disasters, normally described as unpredictable and catastrophic events,<sup>1</sup> the vast majority being weather or climate related.<sup>2</sup> In the same time frame, 1.8 million North Americans experienced displacement from natural disasters, representing five percent of the global total. Trends over the past 50 years indicate that natural disasters are increasing.<sup>3</sup> The economic and health consequences of these disasters are enormous; assessing potential threats, planning for prevention and responding to disaster events requires the coordination and commitment of many.

Amongst natural disaster events in Canada between 1980 and 2010, the percentages of reported people affected by disasters were highest for floods (42%) and wildfires (32%) compared to other forms of disaster.<sup>4</sup> In 2011, Canada experienced 4306 intensive forest fires that either destroyed land of high value or posed risks to human life; the majority of these fires were in the western provinces of Alberta and British Columbia.<sup>5</sup> Evidence points to the increasing risk of wildfires worldwide from climate change, particularly in the northern hemisphere.<sup>6</sup> This article examines the role of nursing in wildfire disasters through an integration of literature, the International Council of Nurses framework of Disaster Nursing Competencies and primary findings from three investigations that examined resiliency in four rural communities whose residents were evacuated during wildfires. In North America, the term "wildfire" is used and is considered interchangeable with "bushfire".

## Background

As nurses are among the most trusted of all health professions,<sup>7</sup> individuals look towards nurses for not only clinical assistance during a disaster, but for leadership and support.<sup>8</sup> To better understand nursing roles in disasters, we searched MEDLINE, CINAHL, EMBASE and Google Scholar using keywords "disasters\*", "nursing role", "disaster nursing and research", "rural\*", limited to English language, and various combinations with no time restrictions. While there is plethora of articles written about disaster nursing, limited research-based publications exist about the role of nursing in disaster response and management. Understanding the dynamics of disaster nursing in rural areas is challenging, given the restricted research available on this topic. Only four documents were found that addressed rural nursing or rural hospitals in disaster situations,<sup>9–12</sup> two articles described rural disaster preparedness,<sup>13,14</sup> and two dealt specifically with nursing response to bushfires in Australia.<sup>15,16</sup> The grey literature was retrieved online from governmental and disaster organisational sites. A brief overview of disaster nursing competencies, relevant literature, and research on rural nursing and disasters follows.

## Disaster nursing competencies

In a systematic review of disaster competencies, Daily, Padjen and Birnbaum<sup>17</sup> identified hundreds of published competencies in 39 articles published inclusive to 2007 from a variety of professions and criticised the work as lacking measurability and validation. Eleven of the 39 articles outlined nursing competencies. Recognizing the need for a unified set of global nursing competencies, the World Health Organization (WHO) and International Council of Nurses (ICN) developed expected competencies of the generalist nurse in disaster situations regardless of geographic setting, and published these competencies in a document entitled *ICN Framework of Disaster Nursing Competencies*.<sup>18</sup>

The WHO/ICN competencies are aligned within a model of the disaster management continuum, which describes the continuous process of a disaster, from pre-incident to post-incident phase. The model built upon previously published work of Jennings-Sanders<sup>19</sup> and Veenema.<sup>20</sup> Detailed competencies are grouped under the four categories of prevention/mitigation, preparedness, response, and recovery/rehabilitation; the competencies address the stages of disaster response that go beyond the immediate challenges of human physical injuries.<sup>21</sup> Continued climate change and unplanned urban growth heighten the chance of future disasters according to the WHO/ICN authors. They argue that nurses and other health care professionals must be prepared, but are silent on the role of rural nurses, despite acknowledging a number of issues that amplify the chance of disasters in rural settings. Other disaster competencies have addressed specific groups of nurses, including public health nurses<sup>22</sup> and Japanese nurses,<sup>23</sup> but are not included in this discussion.

## Nurses' role in disaster

Nurses are called to assist in disasters because of their caring nature and care giving skills. Nursing roles in disasters,

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