

# Understanding Work Disability Prevention among Rural Healthcare Workers: A Comprehensive Literature Review

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## Context

- Healthcare workers have high occupational injury rates, prolonged work absences and high associated costs<sup>1,2,3</sup>.
- Up to 20% of healthcare workers in developed countries work in rural or remote areas<sup>4,5,6</sup>.
- Yet disability management programs are typically developed in urban areas with little or no attention to applicability for rural workers.

## Key Questions

- Do rural healthcare workers have higher rates of occupational injury?
- Do rural healthcare workers have longer work absences?
- Do rural workers have higher rates of risk factors for poor work disability outcomes?

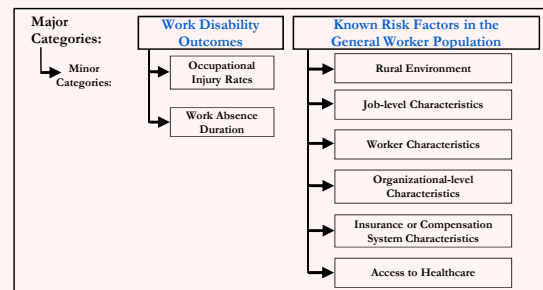
## Methods

- Comprehensive literature search of Medline, EMBASE, and CINAHL (Fig 1).
- Additional searches included:
  - Government health agencies
  - Rural research institutes
  - Reference lists of identified literature
- Date range:**
  - January 1, 2000 – October 6, 2009.
- English language articles
- Search concepts:**
  - Rural (Table A)
  - Work, occupational injury, work disability, or risk factors
  - Countries or regions: Canada, United States, and Australia
- Exclusion criteria:**
  - Agricultural workers
  - Non-working age populations
  - Non-work-related injuries
- Outcomes (Fig 1):**
  - Occupational injury rates
  - Work absence duration
- Risk factors (Fig 1):**
  - Established risk factors for occupational injury or prolonged work absences, based on systematic reviews<sup>7</sup>, public health knowledge<sup>8,9</sup> and conceptual frameworks of disability prevention<sup>10</sup>.

## A. Accepted definitions of rurality, in order of frequency of use in the selected literature.

Rural Concept	Definition
Convention	Areas commonly classified or considered rural by government or administrative structures
Population Size	Rurality defined based on a maximum population size for a defined area.
Availability of Resources	Rurality defined by ease of access to specific goods and services – measured directly based on defined goods and services, or indirectly by distance to metropolitan centers.
Population Density	Rurality defined by number of people per square kilometer or similar.
Commuting Flows	Rurality defined by commuting patterns to urban areas as a measure of the daily-life importance of urban areas for rural residents.
Primary Industry	Rurality defined by the types of industries or occupations available in an area: Primary resource extraction, manufacturing, agriculture, or primarily small employers.

## 1. Conceptual model of literature search concepts.

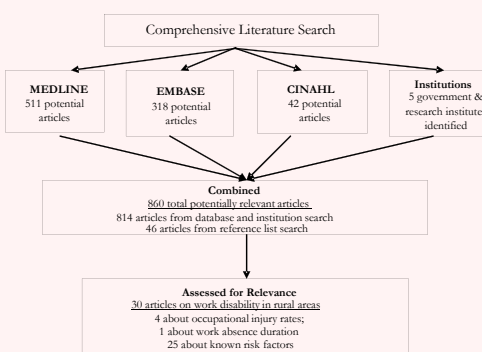


## B. Risk factors for poor work disability outcomes for which literature exists on vulnerability in rural healthcare workers.

Category	Risk Factor	Category	Risk Factor
Rural Context	Climate	Worker Factors	Age
	Road safety		Gender
	Distance		Educational level
	Remoteness	Income level	
	Social isolation*	Organizational-level Factors	Staff shortages
Job-Level Factors	Cultural barriers	Availability of replacement staff*	
	High workloads	Availability of leave	
	Scope/breadth of practice*	Distance management structures	
	Professional support (workplace isolation)*	Employer size	
	Long hours and on-call hours	Ratio of staff to patients	
	Workplace violence	Distribution of facility types: e.g. long-term care, acute care.	
	Social issues among patients	Availability of educational or re-training opportunities	
	Aging patient population	Insurance & Compensation System	Delayed filing of claims*
	Access to safety equipment	Access to Healthcare	Delays in referral process*
	Social support at work		Long distance to travel to services*
Workplace stress			
Job satisfaction*			
Part-time employment			

\*Risk factor for work absence duration only, not occupational injury.

## 2. Search strategy & results



## Results

### Occupational Injury Rates

- Four studies assessed occupational injury rates among rural healthcare workers, in Australia, United States & Japan.
- 12-month incidence of musculoskeletal disorders ranged from 80% to 92% in rural healthcare workers<sup>11,12,13</sup>.
  - In comparison with previous urban studies, rural workers had higher rates of low back pain – 83% rural healthcare workers versus 41-70% urban<sup>11,14,15</sup>.
- Only one study compared rural and urban workers:
  - Urban EMS workers were 2.8-times more likely to be injured than rural EMS workers, controlling for call volume, certification level and previous back problems<sup>16</sup>.

### Work Absence Duration

- Only one study compared work absence duration in rural and urban healthcare workers – in West Virginia, USA:
  - Urban home healthcare workers averaged 37.2 days of work absence after an occupational injury<sup>17</sup>, over a 2-year follow-up period.
  - Rural home healthcare workers averaged 57.9 days of work absence after an occupational injury<sup>17</sup>, over a 2-year follow-up period.

### Risk Factors for Injury and Poor Work Disability Outcomes

- Twenty-five studies discussed known risk factors for occupational injury and poor work disability outcomes, such as prolonged work absence, in rural healthcare workers (Table B).
  - No studies linked risk factors to injury rates or work disability outcomes.
- Overall, these studies paint a picture of highly vulnerable rural healthcare workers.
- Important risk factors for rural workers are rural context factors<sup>18,19,20,21,22,23,24,25,26</sup>, lack of replacement staff<sup>18,19,27</sup>, inadequate re-training opportunities<sup>18,19,26,27,28</sup> and exposure to violence<sup>18,19,25,29,30,31,32</sup>.

## Conclusions

- Research on work disability prevention for rural healthcare workers is lacking, and has methodological limitations.**
  - Rural-urban comparisons are rare;
  - No comparisons between risk factors and injury rates or absence duration;
  - Studies often lack clear definitions of rurality;
  - Lack of longitudinal or multivariable analyses.
- Rural healthcare workers appear to have higher injury rates than urban workers**
  - EMS workers may be the exception.
- Rural healthcare workers appear to have longer work absences than urban workers**
  - But, only one study is available;
  - The available study assesses home health care workers in West Virginia;
  - More research is needed to explore the generalizability of this finding to other healthcare workers and other contexts.
- Rural healthcare workers experience more risk factors for poor work disability outcomes**
  - Rural healthcare workers are older, with extremely high work demands, long hours, heavy on-call duties, working as multispecialists with little or no support, serving a patient population with complex health and social needs.

## Recommendations

- Healthcare & workers' compensation policies and processes should be tailored to the unique needs of rural workers.
- Further, methodologically strong, research is needed.
- GIS tools could improve current, less rigorous, definitions of rurality.

## Learning Objective

- Identify work disability prevention challenges unique to rural workers.

## References

- See reverse.

## For further information

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