

Healthy Workers and Safe Patients: The Role of Management Policy and Practice

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Abstract – Hospital worker health and patient safety are two areas of concern for hospital systems. While often discussed separately, evidence is growing to suggest that worker health and patient safety are positively correlated. In addition to this, both have the potential to be affected by upstream policy and practices implemented and governed at the management level. This review article, from the discipline of public health, discusses the issues of hospital workers' (predominantly nurses) health, patient safety, and occupational health and safety management systems. The relationships between these three elements and potential underlying mechanisms are also discussed. Understanding these issues and relationships is of vital importance to designing safe hospital systems for both workers and patients.

Keywords: Safety, Hospital workers' health, Occupational health and safety

Introduction

Negative health and safety outcomes for both hospital patients and workers create significant health and economic burdens in Canada. Hospital workers face a range of occupational health and safety hazards, from musculoskeletal injuries to infectious disease, leading to higher than average rates of work-related injury and illness.¹ Meanwhile, each year over 7% of Canadian hospital patients experience an adverse event⁹— an unintended injury or complication resulting from hospital care. Between 13 and 34% of these events are fatal.⁹ This paper reviews the current literature on hospital patient and worker safety, the relationship between them, and the role of occupational health and safety management (OHSM) systems in promoting positive health and safety outcomes for both workers and patients with a specific focus on British Columbia and Canada. The term “health care workers” in this review primarily pertains to nurses and support staff (e.g. care aids) as these workers have high levels of patient contact. In addition to this, nurses are also directly responsible for patient care. Through patient contact and the process of providing care, health care workers have the potential to influence patient safety.

Occupational Health of Health Care Workers

Occupational illness and injury among health care workers represents a significant health burden. Health care workers make up 12% of the BC workforce, and have an occupational injury and illness rate that is nearly twice the

BC average.¹ The duration of work absence due to work injury or illness for health care workers also surpasses that of the provincial average.¹ While the majority of health care workers' compensation claims are associated with musculoskeletal injuries,² high levels of psychological illness, stress, and fatigue are also reported.³ These claims represent a significant economic burden: in 2010, the direct cost of accepted compensation claims for BC health care workers was \$56 million.⁴ As such, reducing occupational illness and injury both promotes worker health and well-being and conserves valuable health care resources.⁵

High rates of injury and illness raise concern for health care employees' rights to a safe workplace. Under the BC Workers Compensation Act, employers must ensure the health and safety of all employees and other workers present at the employer's workplace.⁶ However, health care environments present a challenging set of occupational hazards, including infectious disease contraction, needle-stick injury, and patient violence.³ While decreasing workers' exposure to hazards is a common strategy for improving workplace safety, changes to benefit hospital worker health must also consider the potential effects on patient safety and quality of care. For example, refusing to lift a heavy patient due to the risk of back injury could result in inequitable care among patients.

Patient Safety and Adverse Events

A landmark report released in 1999 by the Institute of Medicine⁷ revealed that more people in the US die each year from preventable adverse health care events than from other common causes, such as motor vehicle accidents, breast cancer, or AIDS. An adverse event is an unintended injury or complication in a patient caused by the receipt of medical care, rather than an underlying condition,⁸ and is commonly a result of surgery (e.g. infection or foreign

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body), medication (e.g. dosing error), or merely being in the hospital environment (e.g. infectious disease).⁹ Depending on its severity, an adverse event can result in prolonged hospital stay, disability, or death.⁹⁻¹¹ The Canadian Adverse Events Study, a national retrospective investigation into the incidence of adverse events in Canadian hospitals, estimated that in the year 2000, between 13 and 34% of preventable adverse events resulted in death.⁹ While some adverse events are unavoidable (e.g. the first manifestation of a drug allergy), 33-50% of all adverse events in North American hospitals are preventable.⁹⁻¹² The notable frequency of such events, which are a key measure of patient safety,⁹ underscores the severity of the problem. In Canada, 7% of patients admitted to hospitals experience at least one adverse event during their stay.⁹

In addition to negative impacts on patient well-being, adverse events increase health care costs and economic losses associated with hospitalization. Adverse events that lead to lengthened hospital stays, re-admission for related complications, and long-term disability increase health care spending.^{9,12,13} In turn, disability and premature death create overall economic loss; in 1996, total economic loss in the USA due to patients who experienced a preventable adverse event was estimated to be \$17 billion, while health care costs alone were estimated to be \$5.2 billion.¹¹ Although Canada-wide data on economic impact is unavailable, an Ontario study estimated that in 2007, \$481 million – 2.8% of total hospital costs for the province – was attributable to adverse events in Ontario hospitals.¹⁴

Connecting Health Care Worker Health and Patient Safety

While a positive correlation has been identified between hospital worker health and patient safety,³ less is known about causal factors in this relationship. A growing body of evidence suggests that organizational factors that influence work environment may play an important role in linking worker health with patient safety. For example, low staffing levels and worker fatigue are commonly associated with adverse medical events, either as a root cause or an associated factor;¹⁵ and both higher staff workload and longer shift duration are related to increased medical errors.^{16,17} Meanwhile, safety as a top management priority is linked to fewer medical errors.¹⁶ Health care workers share this perception: recent qualitative research found that when nurses reported positive colleague relationships, physical work environment, and job satisfaction, they also reported a higher quality of patient care.¹⁸ A survey among Canadian nurses identified fatigue, stress, fast pace, and heavy workload as workplace factors leading to increased patient health risks.¹⁹ Similarly, focus groups in a Macedonian hospital found that health practitioners perceived a causal relationship between higher work-related stress and poorer patient care quality.²⁰ On the patient end of this relationship, organizational factors such as department size, availability of support staff for nurses, and

education level of nursing staff have been found to positively affect patient satisfaction.²¹

Worker absenteeism due to workplace injury or illness may be a major mechanism that links worker and patient health. Reduced staffing poses a significant strain on the health care system, and ultimately affects health care delivery.^{15,22} Higher nurse-to-patient ratios mean nurses are able to spend more time with patients individually, which is associated with shorter hospital stays²² and reduced patient mortality rates.²³⁻²⁶ Accordingly, a recent study found that 89% of preventable clinical incidents leading to patient death occurred “out-of-hours” (i.e., evenings and weekends), when fewer workers were on shift,¹⁵ adding to a strong body of research linking weekend hospital admission with increased patient mortality.²⁷⁻²⁹ Furthermore, worker absenteeism can influence many of the factors that nurses perceive to affect patient safety, such as the ratio of experienced to inexperienced staff, staff members’ availability to work shift work or weekends, retention of experienced staff, increased overtime, and working multiple shifts in a row.¹⁹ Given an ongoing nursing shortage in Canada,^{30,31} accompanied by the retiring “baby-boomer” generation,³² maintaining a healthy workplace that prevents injury, illness, and absenteeism is of special interest to managing bodies, colleagues, and patients.

Occupational Health and Safety Management (OHSM) Systems and Health Care

Occupational health outcomes, such as lost-time injuries or illness, are determined by a complex interaction between the work environment and the people within it.³³ At the organizational level, OHSM systems exist to improve health and safety in the workplace through organizational-level planning, implementation, evaluation and improvement of policies and practices.³⁴ Components of an OHSM system may include: technical resources or expertise on safety management, hazard identification and control, communication, decision-making and accountability structures and practices, training programs, quality assurance, and organizational learning.³⁴ Multi-sector occupational health research has identified the importance of effective OHSM practices in reducing occupational illness and injury and industrial accidents. A study spanning seven industrial sectors found that organizations with strong safety diligence, safety training, and return-to-work programs were associated with reduced worker disability rates;³⁵ and that programs for preventing and managing workplace disability and illness have been effective in decreasing claims for lost time.³⁶ Industry experience also points to the importance of effective OHSM system performance for preventing safety related incidents such as oil spills or airline accidents.³⁸ Authors have suggested that management level safety practices used to prevent accidents in high risk industrial sectors may also help prevent adverse events in hospitals.³⁸

Hospitals in BC are required to have an occupational health and safety program under the BC Workers' Compensation Act. While Canadian studies investigating OHSM systems in health care are limited in number, evidence suggests that OHSM systems may be an avenue for improving worker health and patient safety outcomes. In 2007, six Ontario hospitals piloted an OHSM system designed by the Ontario Safety Association for Community and Healthcare, with all six indicating that the implementation led to an increase in safety-related activities (e.g. hazard identification, risk management, and monitoring) and advanced safety culture (e.g. staff and patient safety seen as equally important).³⁷ However, quantifiable health outcomes such as adverse events and worker injury or illness were not examined. More recently, a Quebec study comparing organizational models of nursing care found that professional models (characterized by the treatment of nurses as educated professionals), rather than functional models (characterized by the treatment of nursing practice as a type of labour accomplishable by a variety of workers) were associated with significantly fewer adverse events.³⁸ This study is one of few that examines the influence of management-level structures on patient outcomes, and suggests that management interventions that affect nurses also affect patients.

Conclusion and Future Directions

The health care sector sees a disproportionately high amount of work-related injury and illness, which can result in disability leave or reduced work capacity. Additionally, patient adverse events are common in Canadian hospitals, with the potential for debilitating or fatal outcomes. As a result, millions of dollars are spent each year in compensating injured health care workers and treating medical problems originating from adverse events. An expanding body of evidence demonstrates not only a positive association between worker health and patient safety, but also an influence of management-level policy and practice on both of these outcomes. Policy makers interested in reducing rates of worker injury and illness and adverse events in hospitals should work with occupational health and safety professionals to better implement safety oriented policy and practice at the management level. The results of the Ontario OHSM pilot study are promising and call for a need to further examine similar OHSM implementations in other provinces and health regions. Future research should seek to identify specific OHSM components most strongly associated with safety outcomes, and investigate the role of worker absenteeism as a causal factor in the worker-health/patient-safety relationship.

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