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Changes in patient safety culture after restructuring of intensive care units: Two cross-sectional studies

Anne Vifladt[a,b,*], Bjoerg O. Simonsen[c], Stian Lydersen[d], Per G. Farup[a,b]

[a] Department of Research, Innlandet Hospital Trust, Brumunddal, Norway
[b] Unit for Applied Clinical Research, Department of Cancer Research and Molecular Medicine, Norwegian University of Science and Technology, Trondheim, Norway
[c] Department of Quality and Patient Safety, Innlandet Hospital Trust, Brumunddal, Norway
[d] Regional Centre for Child and Youth Mental Health and Child Welfare, Norwegian University of Science and Technology, Trondheim, Norway

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KEYWORDS
Intensive care units;
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Summary
Objectives: Compare changes in registered nurses' perception of the patient safety culture in restructured and not restructured intensive care units during a four-year period.
Methodology/design: Two cross-sectional surveys were performed, in 2008/2009 (time 1) and 2012/2013 (time 2). During a period of 0–3 years after time 1, three of six hospitals merged their general and medical intensive care units (restructured). The other hospitals maintained their structure of the intensive care units (not restructured).
Setting: Intensive care units in hospitals at one Norwegian hospital trust.
Outcome measure: The safety culture was measured with Hospital Survey on Patient Safety Culture.
Results: At times 1 and 2, 217/302 (72%) and 145/289 (50%) registered nurses participated. Restructuring was negatively associated with change in the safety culture, in particular, the dimensions of the safety culture within the unit level. The dimensions most vulnerable for restructuring were manager expectations and actions promoting safety, teamwork within hospital units and staffing.

Abbreviations: ICU, intensive care unit; G-ICU, general intensive care unit; M-ICU, medical intensive care unit; MIX-ICU, general mixed intensive care unit; HSOPSC, hospital survey on patient safety culture; RN, registered nurse

* Corresponding author at: Department of Research, Innlandet Hospital Trust, Kyrre Greppsgate 11, N-2819 Gjoevik, Norway. Tel.: +47 976 09366.
E-mail addresses: anne.vifladt@sykehuset-innlandet.no (A. Vifladt), bjorg.simonsen@sykehuset-innlandet.no (B.O. Simonsen), stian.lydersen@ntnu.no (S. Lydersen), per.farup@ntnu.no (P.G. Farup).

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Conclusion: In this study, the restructuring of intensive care units was associated with a negative impact on the safety culture. When restructuring, the management should be particularly aware of changes in the safety culture dimensions manager expectations and actions promoting safety, teamwork within hospital units and staffing.

Implications for Clinical Practice

To avoid potential for reduced patient safety during restructuring of hospital units, it is important to
- Support the manager.
- Maintain and establish well functioning teamwork.
- Ensure a sufficient and appropriately qualified staff.

Introduction

Patient safety has attracted much attention after the publication of the report *To err is human: Building a safer health system* by the Institute of Medicine (Kohn et al., 2000). In hospitals, adverse events among patients have been estimated to occur from 3.7% to 16.6% of admissions (Baker et al., 2004; Brennan et al., 1991; Davis et al., 2002; Deilkas, 2013; Soop et al., 2009; Vincent et al., 2001; Wilson et al., 1995; Zegers et al., 2009). Medication errors have an association with a poor patient safety culture (Hofmann and Mark, 2006). ''Culture of safety'' is defined by the European Society for Quality in Healthcare as *an integrated pattern of individual and organisational behaviour, based upon shared beliefs and values that continuously seek to minimise patient harm, which may result from the processes of care delivery* (EUNetPaS, 2010, p. 4).

Restructuring, such as the merging of units, downsizing and re-engineering, is not uncommon in hospitals (Aiken et al., 2001; Nordang et al., 2010; Sochalski et al., 1997; Way et al., 2005). The impact on patient outcome has, however, been inconsistent, at least during and shortly after the restructuring (Andersen et al., 2009; Flaatten, 2005; Timmers et al., 2014). A number of studies have reported that nurses perceived concerns about the quality of patient care when restructuring (Spence Laschinger et al., 2001; Wynne, 2004). Merging of small units into larger ones is emphasised in intensive care units (ICUs) to enhance efficiency (Valentin and Ferdinande, 2011). ICUs, where continuous monitoring and treatment of critically ill patients take place, might be particularly vulnerable to possible negative effects of restructuring. Little knowledge is available about such effects of restructuring on the safety culture. If restructuring is associated with reduced safety culture, preventive actions should be taken during planning and carrying through a restructuring in ICUs.

The aim of this study was to compare changes in registered nurses' (RNs) perception of the safety culture in restructured and not restructured ICUs during a four-year period.

Methods

Design and setting

The study design incorporated two cross-sectional studies, carried out before and after a restructuring of ICUs in a Norwegian hospital trust.

Before the restructuring, four of the six hospitals had separate ICUs with general intensive care units (G-ICUs), and medical intensive care units (M-ICUs). The other two hospitals had general mixed intensive care units (MIX-ICUs).

Between 2009 and 2012, three hospitals merged their G-ICUs and M-ICUs into MIX-ICUs (restructured). The other three hospitals maintained their existing structure of the ICUs (not restructured).

Data collection

The first survey took place from December 2008 to February 2009 (time 1), before the restructuring, and has previously been published (Ballangrud et al., 2012). The second survey took place from December 2012 to February 2013 (time 2), after the restructuring. The manager of the unit distributed and collected the questionnaires (paper version), which were returned in sealable envelopes.

Participants

RNs employed at the ICUs were invited to participate. Included in the sample were RNs working at the bedside in the ICUs for at least three months, but not those in long-term absence.

Variables

The patient safety culture

To measure the safety culture the instrument Hospital Survey on Patient Safety Culture (HSOPSC) developed by the Agency for Healthcare Research and Quality was selected (Sorra and Nieva, 2004). A Norwegian translated and validated version of the questionnaire was used (Olsen, 2008).