Evidence Report/Technology Assessment
Number 74

The Effect of Health Care Working Conditions on Patient Safety

Agency for Healthcare Research and Quality

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Prepared by:
Oregon Health & Science University Evidence-based Practice Center
Portland, Oregon

David H. Hickam, MD, MPH, Principal Investigator
Susan Severance, MPH
Adrianne Feldstein, MD, MS
Leslie Ray, PhD, RN
Paul Gorman, MD
Sherrie Schuldheis, PhD, RN
William R. Hersh, MD
Kathryn Pyle Krages, AMLS, MA
Mark Helfand, MD, MS, EPC Director

Drs . Hickham, Schuldheis, and Helfand are affiliated with the VA Medical Center, Portland, Oregon. Dr. Feldstein is also affiliated with the Kaiser Permanente Center for Health Research, Portland, Oregon.

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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of health care in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new health care technologies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

To bring the broadest range of experts into the development of evidence reports and health technology assessments, AHRQ encourages the EPCs to form partnerships and enter into collaborations with other medical and research organizations. The EPCs work with these partner organizations to ensure that the evidence reports and technology assessments they produce will become building blocks for health care quality improvement projects throughout the Nation. The reports undergo peer review prior to their release.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the health care system as a whole by providing important information to help improve health care quality.

We welcome written comments on this evidence report. They may be sent to: Director, Center for Practice and Technology Assessment, Agency for Healthcare Research and Quality, 6010 Executive Blvd., Suite 300, Rockville, MD 20852.

Carolyn Clancy, M.D.
Director
Agency for Healthcare Research and Quality

Robert Graham, M.D.
Director, Center for Practice and Technology Assessment
Agency for Healthcare Research and Quality

The authors of this report are responsible for its content. Statements in the report should not be construed as endorsement by the Agency for Healthcare Research and Quality or the U.S. Department of Health and Human Services of a particular drug, device, test, treatment, or other clinical service.

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Structured Abstract

Objectives. The purpose of this report is to compile and summarize existing evidence on the aspects of the working environment that impact patient safety. Five categories of working conditions were evaluated: workforce staffing, workflow design, personal/social issues, physical environment, and organizational factors.

Search Strategy. Five bibliographic databases were searched; the databases were chosen to include citations from both the healthcare and non-healthcare literature. The databases included MEDLINE (with HealthSTAR), CINAHL, PsycINFO, EBSCO, and the Campbell Collaboration. Searches were conducted back to 1980 for MEDLINE and EBSCO, back to 1982 for CINAHL, and back to 1984 for PsycINFO. Additional studies were identified through hand searches of reference lists and selected tables of contents. Unpublished studies were identified through discussions with content experts.

Selection Criteria. The criterion for inclusion in the literature review was that the article addressed patient safety or human performance, together with predetermined definitions of working conditions. Studies with no original data were excluded unless they were systematic literature reviews. Selection criteria were tested through dual reviews by a second investigator.

Data Collection and Analysis. The articles included in the general literature review guided the definition of subcategories within the five main categories of working conditions. The quality of the evidence in individual studies was assessed through separate ratings of study design and execution. For each of the working-condition categories, six key questions were addressed to classify the nature of the evidence linking the working condition to aspects of patient safety.

Main Results. The strongest evidence linking working conditions to aspects of patient safety is in the areas of workforce staffing and workflow design. Specific working conditions in these two categories affect both rates of medical errors and the incidence of patient outcomes related to patient safety. The patient outcomes affected include hospital-acquired infections, decubitis ulcers, and patient falls. There is not consistent evidence that working conditions affect the rates of preventable deaths in hospitals.

Conclusions. The available evidence supports the recommendation that healthcare systems initiate demonstration projects and translational research to modify working conditions with the goal of improving patient safety. Specific areas in which such efforts are likely to be successful include: changes in nursing staffing, channeling high-risk technical procedures to high-volume physicians, avoidance of distractions in the healthcare workplace, and processes to improve information exchange between hospital and non-hospital settings. In addition, previous suggestive-but-inconclusive research indicates that limited investigations of workplace stress, lighting conditions, and organizational factors will clarify whether these additional working conditions affect patient safety.