



Institute for Civil Justice

A RAND LAW, BUSINESS, AND REGULATION INSTITUTE

CHILDREN AND FAMILIES
EDUCATION AND THE ARTS
ENERGY AND ENVIRONMENT
HEALTH AND HEALTH CARE
INFRASTRUCTURE AND
TRANSPORTATION
INTERNATIONAL AFFAIRS
LAW AND BUSINESS
NATIONAL SECURITY
POPULATION AND AGING
PUBLIC SAFETY
SCIENCE AND TECHNOLOGY
TERRORISM AND
HOMELAND SECURITY

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis.

This electronic document was made available from www.rand.org as a public service of the RAND Corporation.

Skip all front matter: [Jump to Page 1](#) ▼

Support RAND

[Browse Reports & Bookstore](#)

[Make a charitable contribution](#)

For More Information

Visit RAND at www.rand.org

Explore the [RAND Institute for Civil Justice](#)

View [document details](#)

Limited Electronic Distribution Rights

This document and trademark(s) contained herein are protected by law as indicated in a notice appearing later in this work. This electronic representation of RAND intellectual property is provided for non-commercial use only. Unauthorized posting of RAND electronic documents to a non-RAND website is prohibited. RAND electronic documents are protected under copyright law. Permission is required from RAND to reproduce, or reuse in another form, any of our research documents for commercial use. For information on reprint and linking permissions, please see [RAND Permissions](#).

This product is part of the RAND Corporation technical report series. Reports may include research findings on a specific topic that is limited in scope; present discussions of the methodology employed in research; provide literature reviews, survey instruments, modeling exercises, guidelines for practitioners and research professionals, and supporting documentation; or deliver preliminary findings. All RAND reports undergo rigorous peer review to ensure that they meet high standards for research quality and objectivity.

TECHNICAL REPORT

The Impact of Health Care Reform on Workers' Compensation Medical Care

Evidence from Massachusetts

Paul Heaton

Supported by the Willis Research Network and the Hartford Financial
Services Group, Inc.



Institute for Civil Justice

A RAND LAW, BUSINESS, AND REGULATION INSTITUTE

The research described in this report was supported by the Willis Research Network and the Hartford Financial Services Group, Inc. The work was conducted in the RAND Institute for Civil Justice, a research institute within RAND Law, Business, and Regulation.

The RAND Corporation is a nonprofit institution that helps improve policy and decisionmaking through research and analysis. RAND's publications do not necessarily reflect the opinions of its research clients and sponsors.

RAND® is a registered trademark.

© Copyright 2012 RAND Corporation

Permission is given to duplicate this document for personal use only, as long as it is unaltered and complete. Copies may not be duplicated for commercial purposes. Unauthorized posting of RAND documents to a non-RAND website is prohibited. RAND documents are protected under copyright law. For information on reprint and linking permissions, please visit the RAND permissions page (<http://www.rand.org/publications/permissions.html>).

Published 2012 by the RAND Corporation
1776 Main Street, P.O. Box 2138, Santa Monica, CA 90407-2138
1200 South Hayes Street, Arlington, VA 22202-5050
4570 Fifth Avenue, Suite 600, Pittsburgh, PA 15213-2665
RAND URL: <http://www.rand.org>
To order RAND documents or to obtain additional information, contact
Distribution Services: Telephone: (310) 451-7002;
Fax: (310) 451-6915; Email: order@rand.org

Summary

Stakeholders in the workers' compensation (WC) system largely agree that health care reform measures such as those contained in the Patient Protection and Affordable Care Act (PPACA) have the potential to affect the cost and composition of medical care received under WC. So far, however, there has been no broad consensus on the magnitude or even direction of the likely impacts of reform. Moreover, the limited research literature on this topic draws mostly qualitative conclusions and highlights the considerable uncertainty that exists regarding reform's future impacts.

In this report, I used the experience of Massachusetts, which implemented a health care reform package in 2006 containing provisions similar to many of PPACA's key provisions, to develop quantitative, empirical evidence on the effects of reform. My analysis focused in particular on hospital care, drawing data from the State Emergency Department Data (SEDD) and State Inpatient Data (SID) files for Massachusetts. These data included observations on over 9.5 million emergency room (ER) visits and 3 million inpatient hospitalization episodes, and included detailed information on the diagnoses and medical procedures for each patient, patient demographics, billed charges, and source of payment.

Relative to nearby states, Massachusetts has a lower rate of recorded workplace injuries and illnesses, and its WC fee schedules provide a comparatively low rate of reimbursement to providers for medical services. These somewhat unique features of Massachusetts's WC system may affect the ability to generalize from Massachusetts to other contexts. Examining SEDD and SID data on the identity of payers over time, I found that the reform was successful at its primary goal of increasing health insurance coverage and reducing the number of uninsured. The share of patients accessing the ER who had no insurance fell from approximately 15 percent prior to the reform to about 9 percent after the reform, a 40 percent decrease. The increase in coverage can be explained by new enrollments in Medicaid rather than by uptake of private health insurance.

To arrive at empirical estimates of the reform's impact on WC bill and treatment volume and charging patterns, I conducted a projection analysis using 2005 data to predict the number of WC ER bills observed in future quarters, adjusting for the mix of patients observed in the ER. This analysis demonstrated that realized WC ER bill volume fell by 7 percent relative to expected volume in the period after the reform began, and the timing of the decline matched that of the reform's implementation. In addition, the results of a "dose-response" analysis suggest that segments of the population that experienced the largest increases in health insurance coverage during the reform also saw the largest declines in WC bill volume, providing further evidence that the reform reduced WC bills. These estimates suggest that the reform can account for a roughly 5 percent to 10 percent decline in WC ER bill volume.

The implementation of Massachusetts's health care reform partly overlapped the recession that began in December 2007, and a considerable body of evidence suggests that WC claiming activity is linked with business cycle conditions. However, four pieces of evidence suggest that the reform had impacts separate and apart from any changes in WC billing that occurred because of the business cycle: 1) segments of the population whose coverage expanded the most following the reform had the largest changes in WC billing; 2) declines in WC billing occurred in late 2006 and 2007, when the reform was being implemented but before the recession began; 3) parts of the state that saw little change in unemployment rates saw declines in WC billing that began as the reform was implemented; 4) the relationship between health coverage expansions and WC billing declines was strong even after measures of business cycle activity were directly controlled for.

Using projection and dose-response analyses that focused on hospital inpatients (whose average billed charges were \$21,000, versus \$900 for ER patients) and the 20 percent of ER patients with the most expensive medical conditions, I examined whether the decline in WC bills was observable for seriously injured patients. Both subgroup analyses showed a decline in WC bills, suggesting that reform may affect both lower-cost and high-cost WC patients.

To assess whether the reform affected hospital charges, I analyzed the evolution of billed charges for patients covered by WC and patients covered by other types of insurance, controlling for changes over time in the composition of the patient population. Although charges grew for all types of patients between 2005 and 2008, there is no evidence of differential charge growth among WC patients. Similarly, although available measures of treatment volume are somewhat limited, a differences-in-differences analysis comparing changes in treatment volume across the reform period for patients covered by WC versus patients covered by other types of insurance yielded little evidence of important impacts on treatment volume.

The findings of these analyses present important first evidence suggesting that health care reform may reduce WC billing volume and costs. Important questions do, however, remain. First, how readily these results will generalize to other states that implement health care reform is unclear. Second, only hospital care was considered; whether these results translate to other care modalities, such as outpatient visits or pharmaceutical prescriptions, remains to be seen. Third, only the short-run impacts of reform were assessed. Fourth, additional outcomes likely to be of interest to stakeholders, such as worker health or quality and appropriateness of treatment, were not considered. Despite these limitations, however, the results provide important evidence that health care reform may generate spillover effects on non-health insurance lines such as WC.