

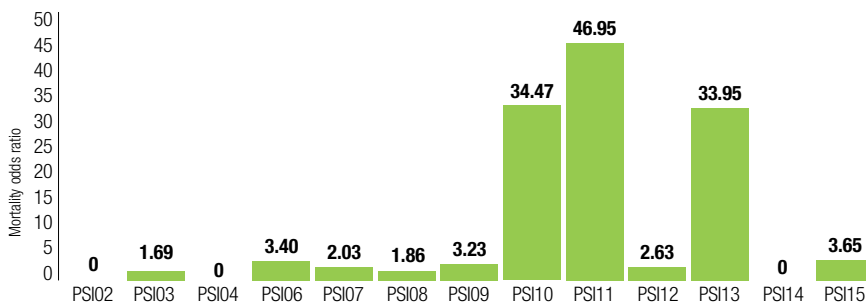
FACTFILE

Burden of Inpatient Safety and Adverse Outcomes

Hospitals and payers are focused on preventing and reducing the health and cost consequences of the adverse events so starkly highlighted by the Institute of Medicine's 1999 seminal report on patient safety, *To Err Is Human*. Adverse events are defined as either the failure of a planned action to be completed as intended, or the use of a wrong plan to achieve an aim. In 1999, the total cost of these events, including indirect costs, was estimated to be as high as \$29 billion a year. In the United States, patient safety continues to be a priority, as part of a drive toward value. Patient safety events can directly impact hospital revenue. CMS' Hospital-Acquired Condition Reduction Program penalizes reimbursements by 1% for hospitals achieving the bottom quartile in performance scoring. This study presents the incremental consequences of selected inpatient medical injuries as identified by the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Indicators (in terms of mortality, length of stay, and total hospital cost per case among national U.S. inpatients), and quantifies the estimated overall impact of such events at the national level.

INCREASED RISK (SHOWN BY ODDS RATIOS) FOR IN-HOSPITAL MORTALITY BY PSI ADVERSE EVENTS

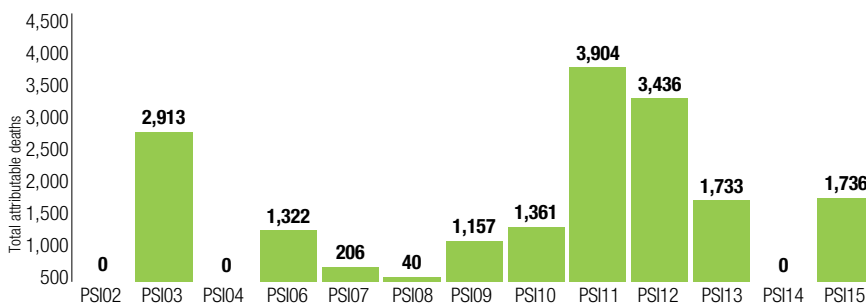
Patients with postoperative respiratory failure were over 46 times more likely to die than those who did not experience this event. The two other greatest adverse events that were linked to mortality were postoperative physiologic and metabolic derangement (odds ratio 34.47) and postoperative sepsis (odds ratio 33.95).



SOURCE: Truven Health Analytics, part of the IBM Watson Health business.

ESTIMATED 2013 DEATHS ATTRIBUTABLE TO PSI ADVERSE EVENTS

The top five adverse events by mortality were associated with over 13,000 potentially avoidable deaths. These events included postoperative respiratory failure (3,904), perioperative pulmonary embolism or deep vein thrombosis (3,436), pressure ulcer (2,913), accidental puncture or laceration (1,736), and postoperative sepsis (1,733).



SOURCE: Truven Health Analytics, part of the IBM Watson Health business.

Summary

An estimated 223,204 patient safety adverse events occurred among 38,345,099 civilian inpatients in federal fiscal year (FFY) 2015, a rate of about 6 events per 1,000 inpatients. At the national level, we estimate that the following may be attributable to the 13 potentially preventable patient safety adverse outcomes that we examined:

- 1,854,035 additional days of stay
- \$7.1 billion in additional total hospital costs of care
- 17,808 potentially avoidable inpatient deaths

Methodology

Truven Health Analytics, part of the IBM Watson Health business, analyzed data in the FFY 2015 Truven Health Projected Inpatient Database (PIDB), which contains approximately 20 million discharges per year from more than 2,600 acute-care hospitals, statistically projected to the entire United States Regression models were used to adjust for age, sex, clinical category (case-mix), and comorbid conditions using the AHRQ Clinical Classification Software grouper methodology. Criteria for 13 AHRQ PSIs were used to identify selected medical and surgical injuries using AHRQ methodologies. The total projected estimate of U.S. civilian, acute-care discharges for FFY 2015 from the PIDB was 38,122,139.

Patient Safety Indicators Used

- PSI 02 death rate in low-mortality diagnosis-related groups (DRGs)
- PSI 03 Pressure ulcer rate
- PSI 04 Death rate among surgical inpatients with serious treatable conditions
- PSI 06 Iatrogenic pneumothorax rate
- PSI 07 Central venous catheter-related blood stream infection rate
- PSI 08 Postoperative hip fracture rate
- PSI 09 Perioperative hemorrhage or hematoma rate
- PSI 10 Postoperative physiologic and metabolic derangement rate
- PSI 11 Postoperative respiratory failure rate
- PSI 12 Perioperative pulmonary embolism or deep vein thrombosis rate
- PSI 13 Postoperative sepsis rate
- PSI 14 Postoperative wound dehiscence rate
- PSI 15 Accidental puncture or laceration rate

Upcoming Topic:

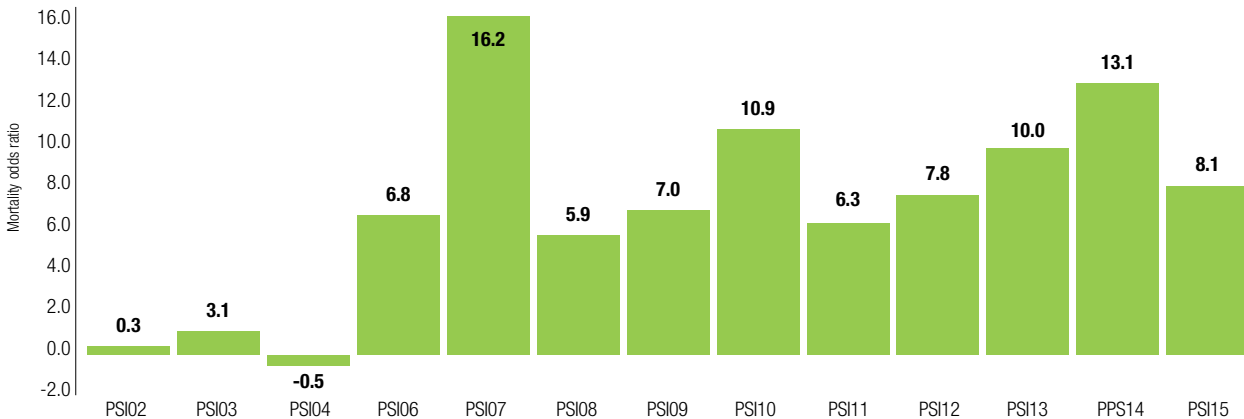
- > Profiling the High-Cost Patient

FACT FILE PARTNER:



PER-DISCHARGE IMPACT ON LENGTH OF STAY BY PSI ADVERSE EVENTS

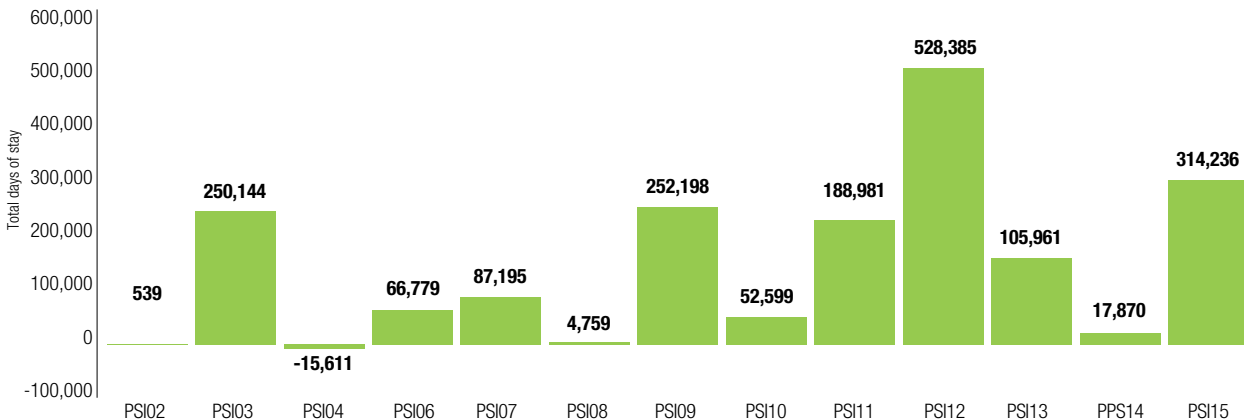
Central venous catheter-related bloodstream infections, the top adverse event, added over 2 weeks of additional length of stay (16.2) to an inpatient admission. Postoperative wound dehiscence, postoperative physiologic and metabolic derangement, postoperative sepsis, and accidental puncture or lacerations rounded out the most frequent adverse events, and increased length of stay from anywhere between 8 and 13 additional days.



SOURCE: Truven Health Analytics, part of the IBM Watson Health business.

ESTIMATED NATIONAL IMPACT OF PSI ADVERSE EVENTS ON LENGTH OF STAY

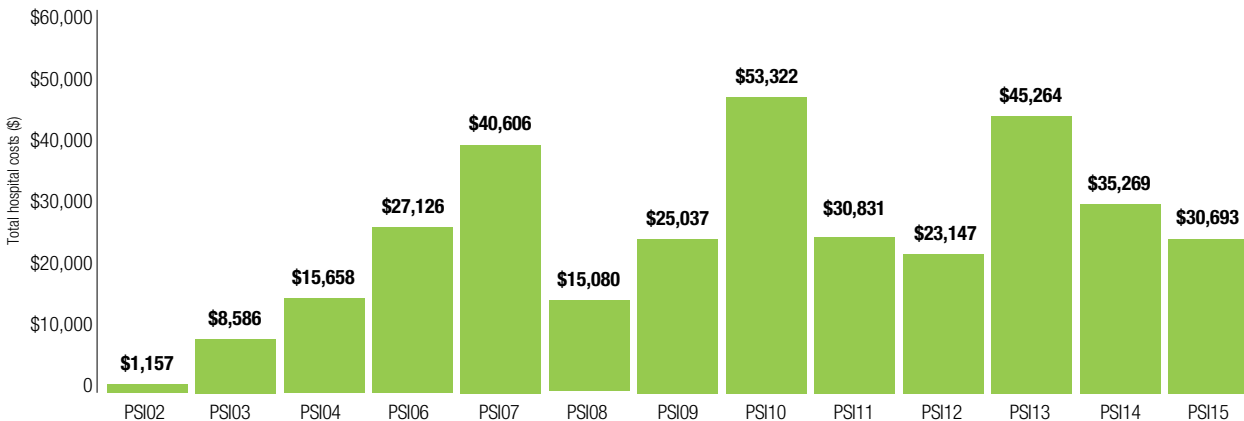
Perioperative pulmonary embolism or deep vein thrombosis was the greatest contributor to LOS, adding over half a million additional hospital days nationwide. Other adverse events that significantly added to LOS across the nation included accidental puncture or laceration (314,236), perioperative hemorrhage or hematoma (252,198), pressure ulcers (250,144), and postoperative respiratory failure (188,981).



SOURCE: Truven Health Analytics, part of the IBM Watson Health business.

PER-DISCHARGE IMPACT ON COSTS BY PSI ADVERSE EVENTS

The most costly adverse event for a discharge, postoperative physiologic and metabolic derangement, increased per-discharge cost by over \$53,000. This event was followed in cost by postoperative sepsis, central venous catheter-related bloodstream infections, postoperative wound dehiscence, postoperative respiratory failure, and accidental puncture or lacerations. These events added between about \$30,000 and \$45,000 to a single hospital discharge.



SOURCE: Truven Health Analytics, part of the IBM Watson Health business.

