Title: Impact of State and Federal Policies to Decrease Hospital Associated Infections: A Mixed Methods Longitudinal Study in California Hospitals

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Purpose: In October 2008, CMS denied payment for some healthcare associated infections (HAI). January, 2009 California mandated that hospitals join the National Healthcare Safety Network and report both process data and specific HAI rates. The purpose of this study is to examine the impact these state and federal policies on 1) the structure and processes of infection prevention and control departments, 2) the role of infection preventionists (IP), 3) the implementation and adherence to evidence-based infection prevention protocols at the bedside, and 4) HAI rates.

Methods: A longitudinal mixed methods study was conducted. Directors of infection control departments across the State of California completed two web-based surveys 18 months apart, pre and post policy changes. Empirical data on the structures, processes and outcomes of care (i.e., HAI rates) were collected. Chi-square and paired t-tests were conducted to examine changes overtime. Open ended, in-depth interviews with hospital personnel were also conducted 6 to 8 months after the policies were implemented. Content analysis was conducted.

Population Studied: All non-specialty acute care facilities in California with an adult intensive care unit (ICU) were surveyed. Psychiatric facilities, drug/alcohol rehabilitation centers, nursing homes, outpatient units, and children's hospitals were excluded. For the qualitative data, hospitals were purposively sampled with the goal of reaching a broad geographic range of hospitals as well as hospitals of various sizes. Within each hospital 4 to 8 participants with various roles within the hospital were interviewed including IPs, hospital epidemiologists, top administrators, nurse managers and staff nurses.

Results: Over 200 hospitals participated in both surveys and 25 interviews were conducted at 6 hospitals. At time 2, hospitals reported increased use of data mining technology (37% versus 60%, p = 0.02) and automatic alerts (58% versus 87%, p = 0.001). At time 2, IPs spent more time on surveillance (37% versus 41%, p < 0.02), less time on education (11% versus 9 %, p < 0.01), more time in department offices (47.4% versus 52.7%, p = 0.03), and less time in other locations (8.5% versus 6.4%, p = 0.02). Hospitals reported instituting evidence-based practices, increased clinician adherence at the bedside and decreased HAI rates in medical surgical ICUs at time 2 compared to time 1 (all p values < 0.05). The qualitative data confirmed the importance of mandatory reporting, technology, IPs’ role expansion, and organizational climate in the prevention of infections.

Conclusions: Results from this study suggest that the intended consequence, which is to drive changes in organizational structures that may facilitate process change such as the development of care pathways and ultimately clinician behavior change, maybe working.

Implications for Policy, Delivery or Practice: Legislation might be diverting scarce resources from patient care to meet mandatory public health reporting requirements without improving infection prevention and control (i.e., unintended consequences). Further research is warranted.