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Major Article

Health care worker perspectives of their motivation to reduce health care–associated infections

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Background: Health care–associated infections (HAIs) are largely preventable, but are associated with considerable health care burden. Given the significant cost of HAIs, many health care institutions have implemented bundled interventions to reduce HAIs. These complex behavioral interventions require considerable effort; however, individual behaviors and motivations crucial to successful and sustained implementation have not been adequately assessed. We evaluated health care worker motivations to reduce HAIs.

Methods: This was a phenomenologic qualitative study of health care workers in different roles within a university hospital, recruited via a snowball strategy. Using constructs from the Consolidated Framework for Implementation Research model, face-to-face semi-structured interviews were used to explore perceptions of health care worker motivation to follow protocols on HAI prevention.

Results: Across all types of health care workers interviewed, patient safety and improvement in clinical outcomes were the major motivators to reducing HAIs. Other important motivators included collaborative environment that valued individual input, transparency and feedback at both organizational and individual levels, leadership involvement, and refresher trainings and workshops. We did not find policy, regulatory considerations, or financial penalties to be important motivators.

Conclusions: Health care workers perceived patient safety and clinical outcomes as the primary motivators to reduce HAI. Leadership engagement and data-driven interventions with frequent performance feedback were also identified as important facilitators of HAI prevention.

Health care–associated infections (HAIs) affect almost 1 million patients each year and cause 75,000 deaths in the United States.[1,2] The Hospital-Acquired Condition (HAC) Reduction Program was established under Section 3008 of the Affordable Care Act with the goal of incentivizing hospital systems to reduce their incidence of HACs by reducing reimbursements to hospitals with HAC scores in the lowest-performing quartile in the nation.[3] In recent years, most health care institutions in the United States have implemented bundles of evidence-based behavioral interventions to reduce the major types of HAI: central line–associated bloodstream infection (CLABSI), catheter-associated urinary tract infection (CAUTI), surgical site infection, methicillin-resistant *Staphylococcus aureus* bacteremia, and *Clostridium difficile* infection (CDI).[3,4] Cost of HAIs, including readmission and mortality rate, has been estimated at $35.7 billion-$45 billion per year, and per-patient cost ranges from $5,000-$50,000 per episode.[5,6]

HAIs are considered largely preventable.[2] A significant proportion can be avoided by adherence to evidence-based practices, such as handwashing, eliminating unnecessary use of medical devices, attention to insertion and maintenance protocols for devices, and consistent use of personal protective equipment. However, sustained adherence to the complex behavioral interventions necessary to reduce HAI can be challenging. Many barriers exist to high fidelity implementation of HAI prevention practices, including changes in organizational culture.[7,8]

A key factor affecting successful implementation of an intervention is the ability to achieve and sustain behavior modification of health care workers.[9] Highly motivated and engaged health care workers are crucial to the success of any infection prevention initiative. Understanding how individual behavior and motivation affect

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HAI prevention may provide insight into how to improve implementation efforts and overall success of these interventions.[9] However, there is a paucity of literature examining the motivation of health care workers to HAI prevention.

We therefore undertook a qualitative study to examine health care worker motivation for reducing HAI.

METHODS

We applied the Consolidated Framework for Implementation Research (CFIR)[10] model to analyze motivation of health care workers for infection prevention. The CFIR was used to explore the relationships between domains, including characteristics of a particular intervention, outer setting (surrounding structure of an organization), and inner setting (framework around the process of implementation), that may facilitate or act as barriers to reducing HAI. As examples and to provide context, we cited the implementation efforts in CLABSI, CAUTI, and CDI prevention at our institution.

This study was considered a quality improvement project and was exempt from institutional review board approval.

Study design

This was a phenomenologic qualitative study of interviews with key informant health care workers in different HAI prevention roles (eg, administrative, frontline patient care) in a large university hospital. Individual semi-structured face-to-face interviews were performed, with constructs from the CFIR guiding our questions, including outer and inner settings, and intervention characteristics. The intent was to allow open-ended responses to explore respondents' motivations related to infection prevention and perspectives of facilitators and barriers of HAI prevention bundle implementation.

Setting and timing

The setting was a large academic research institution in Madison, Wisconsin, with 592 staffed beds and a level 1 trauma center. At the time of the study (July 2016), a bundle addressing prevention of CLABSI was in place as of August 2012, so the practice of this prevention protocol had been underway for nearly 4 years. A bundle addressing prevention of CAUTI was also in place with implementation start up in May 2015, so the practice of the CAUTI protocol had been underway for approximately 1 year. A bundle addressing CDI was implemented in September 2015, so the practice of this prevention protocol had been underway for approximately 10 months.

Respondents

Respondents who were involved in the implementation of HAI prevention were recruited. These included nursing assistants, nurse champions, environmental service managers, trainee physicians, attending physicians, and physicians with administrative roles. Potential respondents were recruited by e-mail, and a snowball sampling strategy was used to identify additional potential respondents. Recruitment of new respondents and interviews were continued until theoretical saturation was reached.

Data collection and analysis

Respondents were interviewed in or near their offices by 1 trained research team member so that every interviewee had the same interview experience, allowing us to standardize the interviewing process as much as possible.

The interviewer used structured open-ended and follow-up questions to explore respondents' familiarity with the implementation process of CAUTI, CLABSI, and CDI prevention bundles in the hospital; their views of the purpose of the interventions; and their motivations for personal compliance to the protocols. An outline of the interview guide has been attached as Appendix 1. Interviews were recorded and transcribed, and using multiple thorough readings, the primary interviewer reviewed the interviews to generate a list of concepts and themes that might not already be included in the list of constructs outlined by the CFIR model. Data were analyzed and coded using a thematic approach based on the CFIR model, including any novel themes that emerged during the multiple readings of the interviews.

RESULTS

Of 15 individuals involved in HAI prevention who were asked to participate in the interview process, 5 people did not respond and 10 were interviewed (Table 1). Interviews were conducted in July 2016 and ranged in duration from 19-67 minutes. There were 6 physicians, 2 nurses, 1 nursing assistant, and 1 manager of environmental services, and the respondents came from a variety of departments, including internal medicine, critical care, hematology-oncology, general surgery, and orthopedic surgery. Three physicians held administrative roles, including 2 within quality improvement efforts in the hospital. Two physicians held HAI champion roles, including surgical site infection, CAUTI, and CLABSI, whereas 1 physician with an administrative role also held a champion role. The nursing personnel, including the nursing assistant, also held similar champion roles in CDI and CAUTI.

The most frequently discussed topics as categorized using the CFIR are subsequently discussed and summarized in Table 2.

Patient needs and resources

Every respondent described patient safety and the desire for patients to have the best possible outcomes as their primary motivation for complying with HAI prevention protocols. Respondents further identified having organizational resources, quality measures, and hospital reimbursement as facilitators to patient safety, whereas lack of proper infection prevention training and leadership buy-in were identified as barriers.

External policy and incentives

Eight respondents described a positive relationship between the enactment of the HAC Reduction Program legislation and bringing necessary attention to greater needs in HAI prevention. This increased focus on prevention by leadership allows greater resources to be allocated to the prevention of HAI, which leads to improvements in prevention efforts.

Few respondents, however, named the influence of external policies and financial consequences of poor performance as strong personal motivators.

Table 1
Snowball recruitment timeline

Interviewees	June 28, 2016	June 29, 2016	July 5, 2016	July 6, 2016	July 7, 2016	Total
No. of potential interviewees contacted	6	1	2	5	1	15
No. of responses	5	1	2	1	1	10