



Contents lists available at ScienceDirect

American Journal of Infection Control

journal homepage: www.ajicjournal.org

Major Article

A qualitative, interprofessional analysis of barriers to and facilitators of implementation of the Department of Veterans Affairs' *Clostridium difficile* prevention bundle using a human factors engineering approach

Eric Yanke MD ^a, Helene Moriarty PhD, RN ^{b,c}, Pascale Carayon PhD ^d,
Nasia Safdar MD, PhD ^{e,f,*}

^a Department of Medicine, William S. Middleton Memorial Veterans Hospital, Madison, WI

^b Villanova University College of Nursing, Villanova, PA

^c Department of Nursing, Corporal Michael J. Crescenz Veterans Affairs Medical Center, Philadelphia, PA

^d Department of Industrial and Systems Engineering, Center for Quality and Productivity Improvement, University of Wisconsin-Madison, Madison, WI

^e Department of Medicine, William S. Middleton Memorial Veterans Hospital and Division of Infectious Diseases, Madison, WI

^f University of Wisconsin Medical School and Infection Control Department, University of Wisconsin-Madison, Madison, WI

Key Words:

Clostridium difficile
infection prevention
human factors engineering
focus groups
bundle

Background: *Clostridium difficile* infection (CDI) is increasingly prevalent, severe, and costly. Adherence to infection prevention practices remains suboptimal. More effective strategies to implement guidelines and evidence are needed.

Methods: Interprofessional focus groups consisting of physicians, resident physicians, nurses, and health technicians were conducted for a quality improvement project evaluating adherence to the Department of Veterans Affairs' (VA) nationally mandated *C difficile* prevention bundle. Qualitative analysis with a visual matrix display identified barrier and facilitator themes guided by the Systems Engineering Initiative for Patient Safety model, a human factors engineering approach.

Results: Several themes, encompassing both barriers and facilitators to bundle adherence, emerged. Rapid turnaround time of *C difficile* polymerase chain reaction testing was a facilitator of timely diagnosis. Too few, poorly located, and cluttered sinks were barriers to appropriate hand hygiene. Patient care workload and the time-consuming process of contact isolation precautions were also barriers to adherence. Multiple work system components serve as barriers to and facilitators of adherence to the VA CDI prevention bundle among an interprofessional group of health care workers. Organizational factors appear to significantly influence bundle adherence.

Conclusion: Interprofessional perspectives are needed to identify barriers to and facilitators of bundle implementation, which is a necessary first step to address adherence to bundled infection prevention practices.

Published by Elsevier Inc. on behalf of Association for Professionals in Infection Control and Epidemiology, Inc.

Clostridium difficile infection (CDI) is an increasingly prevalent, severe, and costly health care-associated infection worldwide.¹ Recent surveillance data indicate *C difficile* is responsible for nearly 500,000 infections and 29,000 deaths per year in the United States.²

* Address correspondence to Nasia Safdar, MD, PhD., Department of Medicine, William S. Middleton Memorial Veterans Hospital, UWMF Centennial Building, 1685 Highland Ave, Madison, WI 53705.

E-mail address: ns2@medicine.wisc.edu (N. Safdar).

Funding/support: N.S. and H.M. are supported by the VA Patient Safety Center of Inquiry.

Conflicts of interest: None to report.

The economic burden of CDI in the United States is significant and likely exceeds \$3 billion per year.³

Although effective infection control practices are crucial for preventing *C difficile* transmission,⁴ health care worker (HCW) adherence remains suboptimal.⁵ Many health care institutions have created bundled infection control interventions to prevent CDI. However, these bundles can be difficult and complex to implement, even in the context of highly integrated health care systems.⁶

Lack of HCW adherence to infection prevention processes is a complex issue. Previous research using focus groups suggests clinical guideline ambiguity (ie, uncertainty or vagueness in guidelines that prevents a system from achieving its purpose) is a prominent

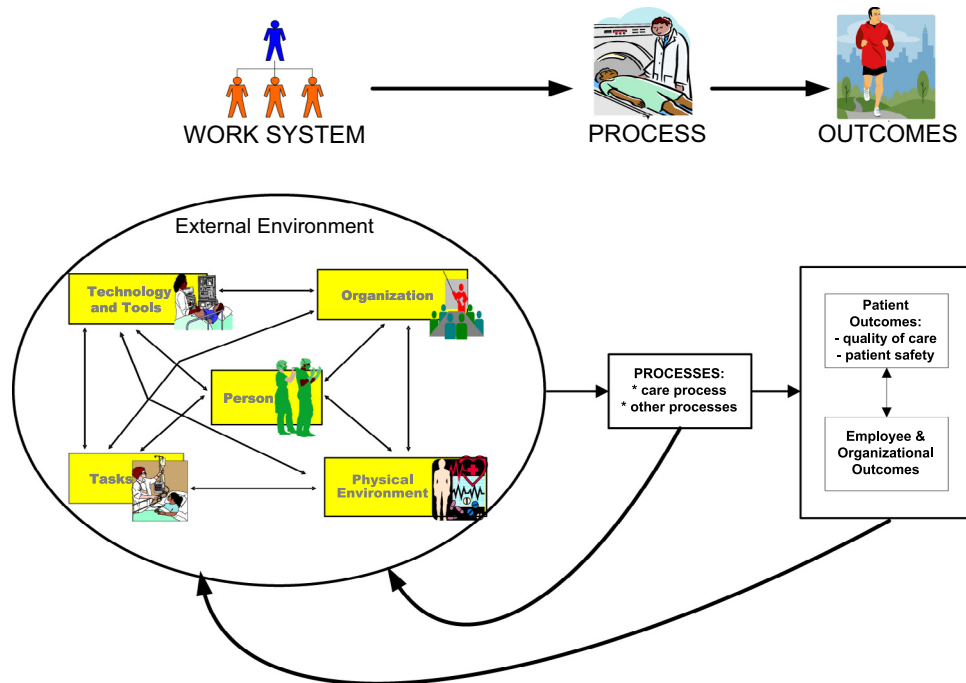


Fig 1. Systems Engineering Initiative for Patient Safety model.

theme when attempting to implement evidence-based practices to reduce health care–associated infections.⁷ Given this gap between knowledge and implementation, effective strategies for translating evidence and guidelines into effective practice are needed.⁸

The Systems Engineering Initiative for Patient Safety (SEIPS) model represents an innovative human factors engineering approach to patient safety. The SEIPS model has been applied extensively in the health care field,⁹ including in infection prevention.^{6,10} At the core of the SEIPS model is the work system that encompasses multiple interacting components: a person, tasks, tools and technologies, the physical environment, and organizational conditions (Fig 1). These 5 components are interrelated and influence care processes, such as implementation of a CDI bundle in health care settings. The Department of Veterans Affairs (VA) mandated implementation of a national CDI bundle at every VA hospital in early 2012, and implementation of such CDI bundles likely reduces CDI rates.¹¹

Guided by the SEIPS model, we conducted focus groups to perform a quality improvement, work system analysis of the VA's nationally mandated CDI prevention bundle relevant to health care providers' adherence to the CDI bundle (testing and diagnosis, hand hygiene, and contact isolation precautions [CIP]).¹² Antimicrobial stewardship is addressed under a separate VA initiative and not a component of this bundle.

METHODS

Design

In this qualitative, descriptive project, 4 focus groups were convened over a 5-month period to identify work system barriers and facilitators to implementation of the VA CDI bundle. In contrast with individual interviews, focus groups promote conversations about a range of perceptions and experiences, and provide opportunities for group members to refine their comments based on feedback from others.^{13,14} In accordance with our institution's institutional review board exemption policy and self-certification tool, this project did not constitute research as defined under 45 CFR 46.102(d).

Therefore, this quality improvement project was exempt from institutional review board review.

Setting and participants

The convenience sample consisted of attending hospitalist physicians, internal medicine resident physicians, and registered nurses (RNs) and health technicians (HTs) employed at our VA hospital, an 87-bed facility. Eligibility criteria included the following: regular contact with inpatients on the general medicine units and ability to understand English. E-mails were sent to all attending physicians, resident physicians, and RNs and HTs working on the general inpatient medical units to briefly introduce the project and invite participation.

Procedure

Four focus groups were conducted—1 with attending physicians, 1 with resident physicians, and 2 with RNs and HTs—between July and November 2013. The focus groups with attending physicians and resident physicians occurred during regular conference times. The RN and HT groups occurred outside their scheduled work hours; therefore, RNs and HTs received an hour of compensation time for their participation. No other compensation was provided, but light refreshments or lunch was provided. The attending physician group had 7 participants, the resident physician group had 8 participants, and the RN and HT groups had 7 participants total.

The group facilitator (E.Y.) reviewed ground rules for confidentiality of the discussion and again reviewed the group's purpose—to identify barriers to and facilitators of use of the VA nationally mandated CDI prevention bundle. All groups were audio recorded with a digital recorder. The facilitator posed a series of open-ended questions (Appendices 1 and 2), guided by the SEIPS work system components and general literature on guideline implementation, and followed with probes to elicit elaboration. Another author (N.S.) recorded field notes during the groups to document nonverbal behaviors and track the flow of communication. Duration of the focus

Download English Version:

<https://daneshyari.com/en/article/8566952>

Download Persian Version:

<https://daneshyari.com/article/8566952>

[Daneshyari.com](https://daneshyari.com)