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## Feature Article

## Perceived barriers to infection prevention and control for nursing home certified nursing assistants: A qualitative study



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## ABSTRACT

Healthcare-associated infections, while preventable, result in increased morbidity and mortality in nursing home (NH) residents. Frontline personnel, such as certified nursing assistants (CNAs), are crucial to successful implementation of infection prevention and control (IPC) practices. The purpose of this study was to explore barriers to implementing and maintaining IPC practices for NH CNAs as well as to describe strategies used to overcome these barriers. We conducted a multi-site qualitative study of NH personnel important to infection control. Audio-recorded interviews were transcribed verbatim and transcripts were analyzed using conventional content analysis. Five key themes emerged as perceived barriers to effective IPC for CNAs: 1) language/culture; 2) knowledge/training; 3) per-diem/part-time staff; 4) workload; and 5) accountability. Strategies used to overcome these barriers included: translating in-services, hands on training, on-the-spot training for per-diem/part-time staff, increased staffing ratios, and inclusion/empowerment of CNAs. Understanding IPC barriers and strategies to overcome these barriers may better enable NHs to achieve infection reduction goals.

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## Introduction

Healthcare-associated infections (HAIs) in nursing homes (NHs) are an increasingly important concern resulting in increased hospital admissions, morbidity, and mortality among NH residents.<sup>1</sup> There are an estimated 1.4–5.2 infections per 1000 resident-care days in NHs and skilled nursing facilities,<sup>1,2</sup> costing the US healthcare system an additional \$673 million.<sup>2,3</sup> The Department of Health and Human Services has declared HAI prevention in NHs a national priority,<sup>3</sup> and the Centers for Disease Control and Prevention provides toolkits to reduce the number of HAIs occurring in this vulnerable population.<sup>4</sup> HAIs are thought to be largely avoidable through adherence to infection prevention and control (IPC) practices.<sup>5</sup> Furthermore, education and training of frontline personnel is key to ensuring compliance and successful implementation of those practices.<sup>6</sup>

Certified nursing assistants (CNAs) comprise the majority of frontline personnel in NHs<sup>7</sup> and are increasingly responsible for the identification and reporting of residents presenting with signs and symptoms of infection.<sup>8,9</sup> When not performed effectively, activities primarily carried out by CNAs such as feeding, hydrating, hygienic care, toileting, ambulation, and resident turning and positioning, may increase the risk of infection transmission.<sup>3</sup>

Despite the potentially significant role CNAs play in reducing infection transmission, to our knowledge, there are no studies that explore the challenges to IPC compliance for NH CNAs. Therefore, the purposes of this study were to explore barriers to instituting and maintaining IPC practices for NH CNAs as well as to describe strategies utilized by NH personnel to overcome these barriers.

## Material and methods

## Study sample &amp; design

This study was part of a larger, mixed-method, multi-site study designed to describe the phenomena of infection control in NHs (NINR R01 NR013687). The methods utilized in this study are

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described in detail elsewhere.<sup>10</sup> Briefly, NHs were purposively sampled to obtain variation in geographic distribution, bed size, and ownership status. At each NH, we interviewed personnel important to IPC including: CNAs, infection preventionists (IP), directors and assistant directors of nursing, NH administrators, advanced clinicians, environmental services workers, staff development/risk managers/quality improvement coordinators, minimum data set (MDS) coordinators, and staff nurses. Participants were English-speaking staff that worked in the facility for approximately one year or longer. Written informed consent was obtained from all participants. The Institutional Review Boards of Columbia University Medical Center, University of Pittsburgh, and the RAND Corporation approved the study.

#### Data collection & analysis

Between May and September 2013, we enrolled facilities and conducted site visits at 10 NHs located across the country (Northeast:  $n = 3$ ; South:  $n = 4$ ; West/Midwest:  $n = 3$ ). NH size ranged from approximately 40–200 beds. Additional details about NH demographics are described elsewhere.<sup>10</sup> Semi-structured in-person interviews were conducted by a team of eight interviewers. All interviewers used topic guides tailored to the respondents' roles and interview methods were reviewed to ensure consistent data collection procedures. The interview guides (available upon request) were informed by Donabedian's conceptual framework of healthcare quality, that includes structures, processes, and outcomes,<sup>11</sup> and published guidelines for infection prevention in NHs.<sup>6</sup> Questions were open-ended and specific to infection prevention. Specific questions that were the focus of this sub-study included: "What are some of the barriers to effective infection control in your facility?", "What are the facilitators in your facility that have helped you prevent or control infections?", and "Tell me about the challenges related to infection control in your facility."

All interviews were digitally recorded, transcribed verbatim, and de-identified. Data were coded using a conventional content analysis<sup>12</sup> in NVivo 10 data analysis software (QSR International Pty Ltd. Version 10, 2012). This analysis allows for codes to flow from the data and is ideal when exploring a phenomenon that is poorly understood. Three members of the research team (PKS, RIB, CCC) coded all transcripts and, subsequently, data specific to the CNA's role were analyzed for themes related to barriers and facilitators of IPC. Coding discrepancies were reconciled during weekly team meetings. Emerging themes were also discussed in these meetings to ensure consensus of all interpretations. Analysis concluded when no new themes emerged from the data.

#### Results

In total, 73 interviews were conducted (Table 1) and averaged approximately 45 min in length. Many of the personnel interviewed, including all of the IPs ( $n = 9$ ), had multiple roles.<sup>10</sup> For example, a participant may have been interviewed for their role as an IP, but may have also served as the Director of Nursing/Assistant Director of Nursing, Staff Nurse, or Staff Development Coordinator. These characteristics are further described in detail elsewhere.<sup>10</sup> Five key themes emerged describing perceived barriers to implementing and maintaining IPC practices for CNAs: 1) language and culture; 2) knowledge and training; 3) per-diem and part-time staff; 4) workload; and 5) accountability. Descriptions of each theme with exemplar quotes of the barriers and strategies used to overcome the barriers can be found in Table 2.

**Table 1**

Personnel interviewed from a national sample of nursing homes.

Participant role	N
Administrator	9
Staff Development/Risk Manager/Quality Improvement Coordinator	4
Advanced Clinician	3
Infection Preventionist	9
Director/Assistant Director of Nursing	8
Staff Nurse	10
Environmental Services	10
Certified Nurse Aide	9
Minimum Data Set Coordinator	11
<b>Total</b>	<b>73</b>

#### Language and culture

Language and culture were perceived as common barriers to ensuring effective implementation of IPC practices. Participants noted that many of the CNAs came from diverse cultural backgrounds and were often non-native English speakers. These characteristics were perceived to limit the CNAs' ability to understand and, therefore, effectively adhere to routine IPC practices. For example, a risk manager responsible for resident and staff safety at NH 3 realized that a tool developed to help CNAs care for the resident,

*"really was not effective because some of [the CNAs] could not read it."*

In addition to language, the diverse cultures of CNAs were perceived to present challenges to IPC practices. An administrator from NH 2 described this as an issue of particular importance,

*"if you come from a culture where you don't really discuss medical issues ... sometimes that could be a barrier."*

To address barriers associated with language and culture, NHs provided translated in-services and rules and regulations. The same administrator from NH 2 stated that because of

*"an overwhelming number of nursing staff that [are non-native English speakers] ... when you do education in both languages, we're making sure that everyone is grasping the concept."*

Pictures and color-coding of messages were also described by participants as beneficial when working with diverse languages and cultures.

#### Knowledge and training

Lack of knowledge and training were perceived by participants to impede information delivery and limit the CNA's ability to effectively implement and adhere to IPC processes. Specifically, the lower educational requirements of CNAs, compared to those of other health professions, were perceived as a barrier when providing instruction on IPC practices. While discussing in-service trainings at the facility, a participant responsible for quality improvement from NH 1 noted,

*"I'm very aware that I'm sitting with a graduate person and I may be talking in the same session to somebody who has a GED [General Education Development certification]. Both people need what I have to say. Both people are going to view it differently, but the outcome must be the same. So I have to hope that the [graduate] person recognizes I'm certainly not talking down, but I'm putting it in language that can be understood. And that's my challenge."*

A registered nurse in charge of staff development at NH 4 discussed the varying educational levels of NH personnel and the

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