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Major Article

### A national collaborative approach to reduce catheter-associated urinary tract infections in nursing homes: A qualitative assessment

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Key Words: Infection prevention Quality improvement Long-term care Resident safety Qualitative interviews **Background:** Reducing health care-associated infections (HAIs), such as catheter-associated urinary tract infection (CAUTI), is a critical performance improvement target in nursing homes. The Agency for Health-care Research and Quality Safety Program for Long-term Care: Health Care-Associated Infections/Catheter-Associated Urinary Tract Infection, a national performance improvement program, was designed to promote implementation of a CAUTI prevention program through state-based or regional collaboratives in more than 500 nursing homes across the United States.

**Methods:** Qualitative interviews were conducted with 8 purposefully selected organizational leads (who led implementation activities for a group of facilities) and 8 facility leads (who led implementation activities at a given facility) to understand implementation successes and challenges and experiences of participants involved in the program. Key themes were identified using a rapid analysis approach.

**Results:** Key themes related to general perceptions, changes due to program participation, and factors influencing program implementation were identified. In general, the program was viewed positively by organizational and facility leads with changes in catheter care practices, staff empowerment, and improvements in knowledge identified as benefits. Implementation challenges included the time required for program start-up as well as issues with staff and physician support, logistic barriers, and staffing turnover. **Conclusions:** Despite some challenges, the observed program success and positive views of those participating suggest that collaboratives are an important strategy for providing nursing homes with enhanced expertise and support to prevent HAIs and ensure resident safety.

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Enhancing resident safety is a major focus area for the more than 15,000 nursing homes across the United States.<sup>1</sup> Food safety, medication management, and infection control are frequently cited as top safety concerns.<sup>2</sup> Estimates suggest that on any given day approximately 12% of the 1.5 million nursing home residents in the United States may have an infection.<sup>3,4</sup> Additionally, nearly onequarter of the postacute population who become nursing home residents return to a hospital due to an infection, accounting for more than \$4 billion in additional health care costs per year in the United States.<sup>5</sup>

Recognizing the importance of preventing infections in nursing homes, the 1987 Omnibus Budget Reconciliation Act mandated that each nursing home have an infection prevention and control (IPC) program.<sup>6</sup> Updates to this Act encouraged more robust IPC programs,<sup>7</sup>

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and prevention of health care-associated infections (HAIs), including catheter-associated urinary tract infection (CAUTI), in longterm care facilities was identified as a national priority in 2013.<sup>8</sup> More recently, implementation of an antibiotic stewardship program is required in nursing homes that receive Medicare and Medicaid funding.<sup>9</sup>

Evidence suggests that nursing homes are responding to these national initiatives. A recent study found that more than 70% of nursing homes reported having an experienced infection preventionist (IP) and a committee that reviewed HAIs.<sup>10</sup> Yet, challenges exist. Nursing home IPs often have limited time to devote to infection control,<sup>10</sup> and many receive no formal training in infection prevention.<sup>11</sup> Moreover, identified knowledge gaps related to key aspects of IPC exist among both licensed and unlicensed staff.<sup>12</sup> Consequently, innovative strategies to strengthen IPC activities in nursing homes are critically needed.

The Agency for Healthcare Research and Quality (AHRQ) Safety Program for Long-term Care: Health Care-Associated Infections/ Catheter-Associated Urinary Tract Infection was a national performance improvement program designed to reduce CAUTI in nursing homes.<sup>13</sup> This multimodal program, which focused on implementing CAUTI prevention practices and improving safety culture, teamwork, and communication, as well as general IPC practices and antibiotic stewardship, resulted in a substantial reduction in CAUTI among a cohort of more than 400 community-based nursing homes.<sup>14</sup> We conducted a qualitative assessment to understand implementation successes and challenges and experiences of participants involved in the program. In this paper, we describe the key findings to inform nursing home and IPC leaders as well as those engaged in quality improvement as we work together to enhance IPC in nursing homes.

#### METHODS

#### Study setting

From March 2014-September 2016, the AHRQ Safety Program for Long-term Care was available for implementation in all states, the District of Columbia, and Puerto Rico through state-based or regional collaboratives modeled, in part, after a successful program to reduce CAUTI in acute care hospitals.<sup>15</sup> A detailed overview of the program is published elsewhere.<sup>13</sup> The AHRQ program was coordinated by a national-level project team. This team recruited organizational leads, which included representatives from state hospital associations, professional organizations, national partners from long-term care corporations, organizations with expertise in performance improvement, and the Department of Veterans Affairs, to work directly with nursing home facility teams to implement the program. The nursing homes were asked to identify a facility leader and a multidisciplinary team that would be responsible for implementing the program. Specific activities for which the national team, organizational leads, and facility leads were responsible are shown in Figure 1. A total of 568 nursing homes were recruited for full program implementation, of which 433 actively participated and 135 withdrew.

#### Design and recruitment

We conducted a qualitative study to understand the opinions and experiences of organizational and facility leads during program implementation. During June and July 2016, semistructured telephone interviews were conducted with 8 of 33 organizational leads who were part of the contracted project team, and 8 nursing home facility leads. Interviewees were selected using a mix of purposeful and convenience sampling techniques. Given their role in the program, organizational leads were purposefully sampled. However, to ensure a range of experiences, they were recruited from different states. Organizational leads were asked to identify a convenience sample of facility leads to invite for interviews. To capture various experiences, facility leads were stratified based on their participation (high or low) in program activities as determined by data submission rates and attendance at educational webinars. We interviewed both organizational and facility leads, given that the organizational leads had unique insights and perspectives because they oversaw a group of facilities, whereas each facility lead provided in-depth information that was specific to his or her facility only. Interviews were scheduled and conducted by several quali-

Agency for Healthcare Research and Quality (AHRQ)	Organizational Lead Responsibilities	<u>Facility Lead</u> Responsibilities
and Quality (AHRQ) (funder) Health Research & Educational Trust (HRET) – National Project Team Responsibilities* • Program coordination • Organizational lead recruitment • Adapt materials for use in the nursing home setting • Develop tools and	<ul> <li>Facility lead recruitment</li> <li>Ensure facility team attendance at educational sessions</li> <li>Ensure facilities submit data</li> <li>Monitor data</li> <li>Coach facility leaders and team members to encourage staff engagement throughout the program period</li> </ul>	<ul> <li>Sharing program education and resources,</li> <li>Participate in monthly coaching sessions via teleconference or webinar</li> <li>Collect and submit facility data</li> <li>Communicate with residents and families about the program.</li> </ul>
materials to support program implementation	<ul> <li>Disseminate program-related information, materials, and resources</li> </ul>	

Fig 1. Roles and responsibilities. The national project team was composed of members from the University of Michigan, Abt Associates, the Association for Professionals in Infection Control and Epidemiology, Baylor College of Medicine, Contrast Creative, Qualidigm, and the Society of Hospital Medicine; the Centers for Disease Control and Prevention (CDC) and other federal agencies were interagency partners.

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