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# Introduction

On behalf of APIC, I am delighted to introduce to you the 2nd edition of the *Infection Prevention Guide to Long-term Care*.

Healthcare-associated infection (HAIs) can result in considerable harm or death for residents in long-term care (LTC) facilities. This 2nd edition comes out in the wake of changes to Medicare requirements for LTC facilities that reflect the importance of infection prevention and control programs and the role of the infection preventionist (IP) in this healthcare setting. The new requirements provide an enhanced regulatory framework for quality assurance, performance improvement, safety, and infection prevention and control.

*Infection Prevention Guide to Long-term Care, 2nd Edition*, is intended to help LTC facility leaders navigate the new regulatory environment and implement evidence-based infection prevention programs. It is also intended to provide IPs with “how-to” infection prevention and control strategies in this unique practice setting.

The book begins with a discussion of the context and regulatory environment for infection prevention in LTC. It then moves on to address specific topics, including surveillance, antimicrobial stewardship, vaccinations, standard- and transmission-based precautions, and treatment modalities. The guide also looks at occupational health, environmental factors in LTC facilities, and emergency and disaster preparedness.

APIC is committed to patient and resident safety across the healthcare continuum. Led by Janet Nau Franck, MBA, BSN, CIC, FAPIC, and Mandy Bodily-Bartrum, DNP, MPH, RN, CIC, FAPIC, we have leveraged member expertise and experience specific to long-term care to produce this updated edition.

Together we can prevent infections and improve the quality of life for the 1.7 million Americans residing in nearly 16,000 long-term care facilities.

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# Infection Prevention in Long-Term Care

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## KEY CONCEPTS

- Residents in long-term care (LTC) facilities are at increased risk of infection because of congregate living, staffing turnover, dependence on unlicensed caregivers, blunted immune responses, and an increased use of invasive devices.
- Infection preventionists (IPs) working in LTC face unique challenges when developing and maintaining an infection prevention and control (IPC) program related to the complex resident population, the nature of the different care settings, and the historical lack of support for LTC IPC programs.
- IPC is a separate discipline with a specialized body of knowledge, requiring specialized education and training.
- The optimum success of the IPC program depends on having both a highly trained IP and access to essential IPC resources.
- An LTC facility's IPC program is described in a written plan based on both facility and infection prevention risk assessments.

**Long-term care (LTC) has changed dramatically in the last 20 years. The scope of care in U.S. LTC facilities now includes residents receiving traditional support for activities of daily living, memory support, respite care, hospice care, palliative care, and adult day services, as well as people who are admitted for short-stay post-acute rehabilitation, mechanical ventilation, hemodialysis, and peritoneal dialysis.<sup>1</sup> This expanded continuum of care has evolved to meet individual needs, and it requires complex and sophisticated infection prevention and control (IPC) programs.**

Acute care hospitals have had active IPC programs since the 1970s when the Centers for Disease Control and Prevention (CDC) and The Joint Commission moved to address the issues of healthcare-associated infections (HAIs).<sup>2</sup> Despite the fact that the CDC, Centers for Medicare & Medicaid Services (CMS), and the World Health Organization have recognized the need for strong IPC programs in LTC facilities, these programs to date have been minimally effective.

As of 2017, the Association for Professionals in Infection Control and Epidemiology (APIC) had less than 1,600 active members working in LTC, although there are more than 15,000 skilled nursing facilities certified by CMS and more than 22,000 assisted living facilities.<sup>3-5</sup> According to one study, fewer than 10 percent of IPs in nursing homes and skilled nursing facilities had received specialized training and/or achieved infection prevention certification compared to much higher numbers in acute care hospitals.<sup>7</sup>

Experts estimate that between 1.6 to 3.8 million infections occur annually in nursing homes.<sup>8,9</sup> The wide range of estimated infections can be attributed to the lack of standardized infection definitions, surveillance, and reporting, as well as a general lack of comprehensive IPC programs.<sup>9</sup>

## LTC FACILITY CHARACTERISTICS

The CDC defines LTC facilities as “nursing homes, skilled nursing facilities, and assisted living facilities, (collectively known as long-term care facilities) [that] provide a variety of services.”<sup>1</sup> Personal support ranges from cues and reminders to intensive interventions, including complex wound care, ventilator dependency, dialysis, and enteral nutrition.

More than 60 percent of LTC facilities are for-profit.<sup>4</sup> Regardless of the facility’s mission and profit status, without a focus on person-centered care and cost-effective, evidence-based systems of quality healthcare practice, the result may be a focus on cost. This has led to double, triple, and quadruple occupancy rooms, few licensed nurses to oversee care, low staffing ratios, high staff turnover, staff compelled to work even when sick (presenteeism), little competency-based training for healthcare personnel, use of less expensive and ineffective environmental cleaning products, systems designed for homes, schools, or the hospitality industry instead of the healthcare environment, and limited supplies and supply restrictions as a strategy to reduce costs. Low staffing ratios and supply restrictions result in less time for care, a decreased ability to keep the environment clean, and deficits in IPC activities.<sup>4</sup>

The residents in, and the environments of, LTC facilities may also be reservoirs of multidrug-resistant organisms and extensively drug-resistant organisms.<sup>1,9-15</sup> In studies of methicillin-resistant *Staphylococcus aureus* (MRSA) colonization, older adults in LTC facilities were found to have colonization rates of between 5 percent and 60 percent.<sup>16</sup> Lapses in infection prevention activities not only increase the risk of infection

and colonization and intra-facility transmission but also are often correlated with citations by CMS surveyors.<sup>17,18</sup> If nursing assistants, nursing departments, and IPC programs are not supported, and if supplies are insufficient, then infection outbreaks can occur before nurses or primary care providers become aware they exist.

## POPULATION CHARACTERISTICS OF LTC FACILITY RESIDENTS

Between 1.5 million and 1.7 million people are supported annually in U.S. LTC facilities.<sup>14</sup> With an average age of 80 years, older adult residents generally live in LTC facilities because of a self-care deficit or a medical condition that requires constant and consistent support.<sup>19</sup> Residents in LTC facilities are more likely than those who are living independently to have conditions such as increased frailty, increased use of devices (e.g., urinary catheters, enteral feeding, hemodialysis), dementia, decreased immune function, decreased skin integrity and wounds, problems with nutrition, decreased bowel or bladder function, and decreased mobility.<sup>1,4,5,9</sup>

The LTC facility becomes the resident's home. Multiple comorbidities create a greater likelihood of the resident being partially or totally dependent on minimally trained nursing assistants for activities of daily living (ADLs).<sup>9,11</sup> This support can include various levels of assistance for dressing, bathing, grooming, toileting, eating, and ambulating. Assistance with wheelchairs, walkers, and canes involves close physical contact between the healthcare provider and the resident.

The normal aging process increases vulnerability to infection because of a multitude of biopsychosocial changes. Healthcare providers, including IPs, must provide a person-centered approach to maintain the highest achievable functional status for the individual and to avoid preventable infection.<sup>1,2,5,6,19</sup> The U.S. population of individuals over age 85 is expected to grow to 7.3 million by 2020; a focus on preventable infection is critical, because the personal and economic expense of infection is high.<sup>2</sup> For instance, the attributed median dollar cost of a MRSA bloodstream infection has been reported to be as high as \$51,492 with an associated mortality rate of more than 20 percent.<sup>16</sup>

## INFECTIONS IN LTC FACILITIES

The most common types of infections in LTC facility residents are:

- Urinary tract infections (sometimes with asymptomatic bacteriuria diagnosed as active infection)
- Respiratory infections (including pneumonia and influenza)
- Skin and soft tissue infections and infestations (including scabies)
- Gastrointestinal infections (including norovirus)
- Bacteremia infections and bloodborne viral illness
- Conjunctivitis<sup>8,9,11</sup>

The prevalence of infections in dementia units has been found to be lower (6.3 percent, range 5.4 to 7.2 percent) than the infection prevalence in LTC facility rehabilitation units (12.1 percent, range 10.8 to 13.3 percent).<sup>8-10</sup> This statistic is not surprising, considering that the population in rehabilitation units consists primarily of adults with invasive devices, recent surgeries, and/or who are recovering from an acute illness or other procedure. Most residents in dementia units, on the other hand, have cognitive deficits; as long as they are provided appropriate support, they are generally in stable health.