

# Survey said! LTC-CIP certificant's perspective with passing the certification exam

Steven J. Schweon RN, MPH, MSN, CIC, LTC-CIP, CPHQ, FSHEA, FAPIC<sup>1</sup>,  
Monika Pogorzelska-Maziarz PhD, MPH, CIC, FAPIC, FSHEA, FACE<sup>2</sup>

<sup>1</sup> Infection Prevention Consultant, Saylorsburg, PA

<sup>2</sup> Villanova University, M. Louise Fitzpatrick College of Nursing, Villanova, PA

## ABSTRACT

**Background:** The Coronavirus Disease 2019 (COVID-19) pandemic's severe long-term care (LTC) disease burden underscores the need for infection prevention and control (IPC) expertise in LTC facilities. Launched in 2023, the LTC Certification in Infection Prevention (LTC-CIP) exam allows LTC infection preventionists to demonstrate proficiency in IPC program management. This study aims to evaluate the LTC-CIP certification's impact on certificants' IPC practices, programs, and personal and professional growth.

**Methods:** An electronic survey was distributed to all certificants in March 2024. Data were analyzed using thematic analysis.

**Results:** Eighty responses were collected (17% response rate). Key themes were identified regarding certification's impact on IPC practices, including best practice implementation, enhanced knowledge and skills, and increased confidence and professional growth. Respondents reported certification resulted in enhanced program effectiveness, improved staff knowledge and compliance, and increased leadership and influence. Additionally, certificants reported lower infection rates, improved antimicrobial stewardship and vaccine adherence, and stronger data analysis skills.

**Discussion:** The findings demonstrate LTC-CIP certificants were highly motivated to gain advanced LTC IPC knowledge and apply it to their IPC programs, leading to reported improvements in resident and staff outcomes.

**Conclusions:** This study highlights the LTC-CIP certification's positive impact on reported IPC practices, infection rates, and professional growth in LTC settings. Future research should validate findings with objective outcome data, assess long-term effects, broader applicability, and certification barriers.

## KEYWORDS:

Long-term care infection prevention evidence-based practice professional development leadership in healthcare competency

## BACKGROUND

The gravity of infections in long-term care (LTC) settings was first recognized in the 1980s, leading to the development of infection control programs, the evolving infection control practitioner role, and increasing regulatory requirements (Smith & Rusnak, 1997). "The National Action Plan to Prevent Healthcare-Associated Infections" notes the geriatric population has numerous comorbidities contributing to the severity and frequency of infections, including host defense defects, limited physiologic reserve, and higher rates of coexistent chronic diseases, for example, diabetes, chronic obstructive pulmonary disease (Department of Health and Human Services, 2013). The Centers for Disease Control and Prevention estimates there are 1 to 3 million serious infections occurring in LTC settings annually (Centers for Disease Control and Prevention, 2022). The Centers for Medicare and Medicaid Services (CMS) recognizes that multidrug-resistant organism transmission is common in long-term care facilities (LTCF), contributing to resident morbidity, mortality, and increased healthcare expenditures (Centers for Medicare and Medicaid Services, 2024a). To ensure regulatory compliance, the facility must establish and maintain an infection prevention and control (IPC) program to prevent the development and transmission

of communicable diseases and infection (Centers for Medicare and Medicaid Services, 2024b). In 2016, CMS required the LTC infection preventionist to be qualified by education, training, experience, or certification by November 28, 2019 (Code of Federal Regulations, 2016).

The Certification in Infection Control (CIC) certification developed by the Certification Board of Infection Control and Epidemiology, Inc (CBIC) is to "increase protection of the public by providing an objective measurement of standardized current knowledge recognized and respected within and outside the field of infection prevention and control." (Certification Board of Infection Control and Epidemiology, n.d.). The CIC certification in the acute care hospital setting supports higher salary compensation, increases job satisfaction through a structured career development framework, improves patient outcomes, advances evidence-based infection prevention practices, and is valued by the public and within the health care industry (Marx, Callery, & Boukidjian, 2019). Having a certified infection control director was a significant predictor of lower methicillin-resistant *Staphylococcus aureus* bloodstream infection rates in acute care hospitals (Pogorzelska, Stone, & Larson, 2012). Data on certification in the LTC setting are sparse. For example, Agarwal *et al.* (Agarwal *et al.*, 2022) compared infection

preventionist certification rates in LTC facilities in 2014 and 2018. Although there was an increase in the number of NHs with credentialed IPs from 2014 to 2018 (7.4% compared with 2.6%,  $P < .001$ ), the overall percentage remained alarmingly low (Agarwal *et al.*, 2022).

In response to the growing need for specialized expertise in managing IPC programs in LTCF, "The Association for Professionals in Infection Control and Epidemiology (APIC)" charged CBIC in 2018 to develop a certification exam specifically for LTC settings (Schweon *et al.*, 2024). The Long-Term Care Certification in Infection Prevention (LTC-CIP) certification exam was formally released in January 2023, providing a means for IPs to demonstrate proficiency and credibility with managing an LTCF IPC program and to promote resident and staff safety. The need for expanded IPC expertise in LTCF was highlighted by a concerning number of IPC deficiencies in US LTCF, with CMS citing more than 7,000 deficiencies of varying scope and severity during 2023 (Centers for Medicare and Medicaid Services, n.d.).

The Coronavirus Disease 2019 (COVID-19) pandemic brought additional urgency to strengthening IPC measures in LTC settings, exposing significant gaps in preparedness and response (U.S. Department of Health and Human Services, Office of the Inspector General, 2024), (Henriques *et al.*, 2023). It emphasized the critical role of specialized training and certification, such as the LTC-CIP, in supporting effective infection prevention practices capable of managing both routine infections and major outbreaks. This highlights the ongoing need for enhanced education, expertise, and vigilance to safeguard the health and safety of LTC residents.

The LTC-CIP is a critical step toward enhancing the quality of infection control in LTCF. Certification provides IPs with specialized knowledge and skills, ensuring a high standard of care for residents. It also serves as a formal recognition of an individual's proficiency and credibility in managing IPC programs. Data are needed to show the LTC-CIP certification's impact in the LTC setting. The CBIC Marketing Committee's objective was to understand the certification's impact on certificants with their personal infection prevention practices, their infection prevention programs within their facilities, personal insights, and self-growth awareness.

## METHODS

The CBIC Marketing Committee created an electronic survey with six open-ended questions:

1. Describe what difference(s), if any, has the LTC-CIP certification had upon your personal infection prevention practice, for example, using evidence-based practices when making recommendations, more thorough when analyzing data, etc.?
2. Describe what difference(s), if any, has the LTC-CIP certification had upon your facility's infection prevention program, for example, decreasing infection rates, greater vaccination update, etc.?
3. What, if anything, can be done to improve the certification process?
4. Is there anything you know now that you wished you knew, prior to taking the LTC-CIP?

5. Do you also have your CIC? If yes, what motivated you to take the LTC-CIP?
6. Please add any additional comments, questions, or thoughts. Participants also provided their job title, years of experience in IPC (i.e., 0-5, 6-10, 11-15, 16-20, and  $\geq 21$ ), and their current location (United States, Canada, and outside of North America). Providing the participant's name and e-mail address in case CBIC staff needed additional information was optional. Additionally, the survey asked who paid for the exam with available response choices of 1. "I paid for the exam," (Department of Health and Human Services, 2013). "My employer paid for the exam," (Centers for Disease Control and Prevention, 2022). "The exam was paid for by a grant or scholarship (e.g., healthcare-associated infections (HAI) Division of Health Department, local APIC chapter, etc.)."

The survey was distributed 16 months after the exam had been in the field. The survey was sent to 475 national and international certificants. The data were analyzed using thematic analysis, which identified key themes and patterns in the responses. The survey data were analyzed separately for each question by two researchers, SS and MPM. An initial coding book was developed based on a preliminary review of the responses. The coding process involved independently categorizing responses into thematic codes, with both SS and MPM conducting the initial coding. Any discrepancies in coding between the two researchers were identified and resolved through discussion to ensure consistency and accuracy. Thematic analysis was employed to identify and interpret patterns and themes within the data, focusing on respondent's experiences and perceptions related to the LTC-CIP certification. This approach allowed for a detailed examination of the qualitative data, providing insights into the various ways the certification has influenced infection prevention practices, professional growth, and the perceived value of the certification within the LTC setting.

## RESULTS

A total of 80 responses were collected, resulting in a response rate of 17%. The demographic data revealed a diverse group of professionals in terms of their experience level, primarily within the early to mid-stages of their infection prevention careers. Half of the respondents (48%) had 0-5 years of IPC experience, 23% reported 6-10 years, 14% reported having 11-15 years, 6% with 16-20 years, and 10% possessed over 21 years of experience. Notably, 74% of respondents held titles directly related to IPC, such as Infection Preventionists, Infection Prevention and Control Leads, or IPC Managers, while 10% held more senior administrative roles, including Directors of Nursing, Assistant Directors of Care, or VP of Clinical Services, 8% held both an administrative and an IPC role, and 8% held another role. All respondents were based in North America, with 63% residing in the United States and 37% in Canada. In terms of the LTC-CIP certification funding, 54% of respondents indicated that their employers covered the cost of the certification exam, in contrast, 38% of respondents reported personally paying for their certification and a small group (9%) received funding through grants or scholarships.

### **Impact of LTC-CIP certification on personal infection prevention practice**

Several key themes were identified from the responses to the question regarding the impact of the LTC-CIP certification on personal infection prevention practices (Table 1). The most prominent theme was “Implementation of Best Practices” with respondents indicating that the certification had a significant influence on how they apply evidence-based practices,

implement new procedures, and improve communication within their facilities. For example, one respondent noted, “*It has encouraged me to always use evidence-based data when making recommendations.*” Another added, “*I am more thoughtful about making recommendations, analyzing and reporting data, creating new education programs, etc. I strive to stay current with the latest recommendations and evidence-based practices.*”

**Table 1: Themes with definitions**

Themes	Definition
<b>Impact of the LTC-CIC certification on personal infection prevention practice</b>	
Implementation of Best Practices	How the LTC-CIP certification has influenced respondents' ability to apply evidence-based practices in their infection prevention work
Enhanced Knowledge and Skills	Increase in knowledge and expertise, particularly in areas relevant to infection prevention and control
Increased Confidence and Professional Growth	Increased confidence in infection prevention knowledge and decision-making abilities
No Noticeable Change in Practice	Experiences of respondents who did not observe any significant changes in their infection prevention practice as a result of obtaining certification
<b>Impact of LTC-CIP certification on facility infection prevention program</b>	
Enhanced Program Effectiveness	Improvements in IPC programs, such as reduced infection rates, better data tracking, and more effective outbreak management
Improved Staff Knowledge and Compliance	Positive impact of certification on staff training, awareness, and adherence to infection prevention protocols
Increased Leadership and Influence	Describes how certification empowered respondents to take on leadership roles and influence infection prevention policies and procedures within their facilities
<b>Prior knowledge before taking the LTC-CIP</b>	
Content and Knowledge Gaps	Recognition of gaps in knowledge, which respondents wished they had been more familiar with before taking the exam
Preparation and Study	Reflections on the need for better preparation, including understanding the test format, content, and effective study strategies, which they wished they had known before taking the exam
Cost and Funding	Concerns about costs associated with certification, including the expense of the exam and study materials, and the availability of funding opportunities that they were not aware of before taking the exam
<b>Suggested improvements to the LTC-CIP certification process</b>	
Content and Relevance	Suggestions for aligning the exam content more closely with LTC situations, including the inclusion of more relevant questions and content specific to LTC
Study Materials and Resources	Need for improved or more accessible study materials and resources to better prepare candidates for the exam
Exam Experience and Accessibility	Logistics of taking the exam, such as the proctoring process, availability in different locations, and overall exam experience
<b>Motivations for taking the LTC-CIP certification among CIC holders</b>	
Specificity to LTC Setting/Desire for Specialized Knowledge	Motivation to gain specialized knowledge in LTC or to demonstrate expertise and credibility specific to LTC
Teaching or Consulting	Motivation to validate IPC skills in LTC for the purpose of teaching or consulting, often to provide guidance or education to others in the field
Job Requirement or Job Advancement	Motivation driven by job requirements or the potential for job advancement within their current roles, where the LTC-CIP certification is seen as beneficial or necessary
Compliance and Safety	Motivation to stay updated on the latest regulations or to create a safer environment within their facilities
<b>Additional feedback related to the LTC-CIC certification</b>	
Certification Impact and Importance	Views on the value and significance of the LTC-CIP certification in LTC, including its impact on professional credibility and outcomes
Cost and Affordability	Feedback on the financial challenges associated with obtaining and maintaining the LTC-CIP certification, particularly regarding the cost of the exam, study materials, and recertification

LTC, long-term care; LTC-CIC, LTC-Certification in Infection Prevention.

Another important theme was "Enhanced Knowledge and Skills," with respondents reporting that the certification provided them with greater knowledge, particularly in evidence-based practices and infection control, which has bolstered their expertise in the field. As one respondent shared that the certification process resulted in "*increased knowledge and confidence in the work that I am doing.*" Another respondent emphasized, "*The courses I've taken to prepare for the exam provided me with the knowledge I need to confidently make decisions surrounding infection control.*"

"Increased Confidence and Professional Growth" was a theme frequently reported by respondents, who expressed that the certification increased their confidence in their knowledge and decision-making abilities, as well as opened up new professional opportunities and enhanced their credibility. One respondent noted, "*As a consultant, this has opened up more opportunities to support LTCF.*" Another highlighted, "*The LTC-CIP® certification made me more confident in implementing the IPAC program in our LTC home.*"

Lastly, about a fifth of respondents indicated that the certification did not yet lead to any noticeable changes in their practice. One respondent reported, "*No change to actual practice as I have been CIC® certified for many years.*" Another pointed out, "*Today is my first day back after taking the exam. However, I now feel more confident in putting my foot down and standing up for my knowledge when action needs to be taken, but have yet to see a significant change in practice.*" These findings highlight the varied impacts of the LTC-CIP certification, with the majority of respondents experiencing positive changes in their professional practice.

### **Impact of LTC-CIP certification on facility infection prevention program**

The analysis of responses regarding the impact of the certification on the facility's infection prevention program identified several key themes. The most prominent theme was "Enhanced Program Effectiveness," with respondents indicating that the certification led to improvements such as reduced infection rates, better tracking of infection data, and more effective outbreak management. One respondent shared that their facility experienced, "*Decreased infection rates due to better practices,*" while another added, "*Better tracking of infection data.*"

"Improved Staff Knowledge and Compliance" was highlighted by respondents, who noted better staff training, increased awareness, and improved adherence to infection prevention protocols as a result of certification. A respondent mentioned, "*Staff are more aware of infection control practices,*" and another observed "*Improved staff compliance with hand hygiene.*"

Similarly, "Increased Leadership and Influence" was noted by respondents, indicating that the certification enabled them to take on leadership roles and influence policy changes within their facilities. One respondent stated, "*I have been able to take on a more active role in policy development and implementation within my facility*" and another noted, "*Certification helped in implementing a new vaccination program.*"

### **Prior knowledge before taking the LTC-CIP**

The analysis of responses to the question, "Is there anything you know now, that you wished you knew, prior to taking the LTC-CIP®?" revealed several key themes. "Content and Knowledge Gaps" was a theme often highlighted by respondents, who mentioned gaps in their knowledge related to regulations, uncommon infections, and other areas they wished they had been more familiar with before taking the exam. As one respondent noted, "*I was not familiar with all the quality lingo,*" and another emphasized that they wished they had known, "*More about uncommon infections (measles, mumps, etc.).*"

"Preparation and Study" was a theme noted by respondents, reflecting a desire to have been better prepared for the test, including knowing more about the test format and study strategies. One respondent shared, "*I wish I knew how to better prepare for the test and what to study,*" while another mentioned, "*I wish I had known more about the test process and format.*"

Lastly, "Cost and Funding" was mentioned by a few respondents, indicating that some wished they had known about funding opportunities, or the total cost involved in the certification process. As one respondent stated, "*I didn't know my facility would be receiving grant money that would have paid for the test.*" These findings suggest that while many respondents felt well-prepared for the LTC-CIP exam, some encountered gaps in knowledge or preparation that they would have liked to address beforehand.

### **Suggested improvements to the LTC-CIP certification process**

Several important themes were identified in the analysis of responses regarding potential improvements to the LTC-CIP certification process. The most frequently mentioned theme was "Content and Relevance," with respondents suggesting that the exam content should be more aligned with LTC situations, including the inclusion of more relevant questions and content specific to LTC. One respondent commented, "*I still found the exam not very focused on long-term care situations,*" and another suggested, "*I think people that work in LTC should be assisting with the exam questions, not people working in acute care settings.*"

Improvements related to "Study Materials and Resources" were often highlighted by respondents, who expressed the need for improved or more accessible study materials and resources to better prepare for the certification. As one respondent suggested, "*If possible, review materials for the LTC-CIP exam® [should] be available. Because when I took the exam I only used the APIC study guide which is hospital-based.*" Another noted that the following would have been helpful: "*Free paper copy of certification. Less ads. Free access to source material, so you can study. More example questions.*"

Lastly, improvements in "Exam Experience and Accessibility" were noted by respondents, with suggestions related to the logistics of taking the exam, including the proctoring process and accessibility in different locations. One respondent recounted, "*I had a real difficult time with getting the virtual testing underway because I ended up having to completely disassemble my office instead of just having my desk cleaned off.*" These findings suggest that while the certification

process is generally well-received, there is a desire for more LTC-specific content and enhanced study materials.

### **Motivations for taking the LTC-CIP certification among CIC holders**

The analysis of responses regarding the motivation for taking the LTC-CIP certification among those who already hold a CIC revealed several important themes. The most prominent motivation was "Specificity to LTC Setting/Desire for Specialized Knowledge." Individuals were motivated by the desire to gain specialized knowledge in the LTC setting or to demonstrate expertise and credibility specific to LTC. One respondent emphasized, "Yes, I work in a Long-Term Care setting and having the LTC-CIP certification would show my expertise on the subject matter," while another shared, "Yes, I took the LTC-CIP® to demonstrate my knowledge extends to a variety of settings."

"Teaching or Consulting" was a theme often mentioned by respondents, who sought to validate their IPC skills in LTC for purposes related to teaching or consulting. One respondent noted, "I took the LTC-CIP® to ensure I was knowledgeable when training and consulting in long-term care settings."

"Job Requirement or Job Advancement" was another motivating factor with respondents indicating that their job or potential for advancement within their role necessitated the certification. One respondent stated that certification was a "Mandatory requirement in LTC Ontario," while another stated that they pursued certification based on "Recommendations from health department staff."

Lastly, "Compliance and Safety" was mentioned by some respondents, reflecting a desire to learn more about the latest regulations for IPC compliance or to create a safer environment. A respondent explained that they were motivated to take the exam "To ensure our facility meets all compliance standards and to enhance safety protocols for both residents and staff." These findings underscore the varied reasons professionals seek the LTC-CIP certification, particularly in contexts where specialized LTC knowledge is crucial.

### **Additional feedback related to the LTC-CIP certification**

The analysis of additional comments provided by respondents revealed two important themes related to the LTC-CIP certification. The most frequently mentioned theme was "Certification Impact and Importance," where respondents emphasized the value of the LTC-CIP certification in the LTC setting. One respondent remarked, "I believe having this certification makes a difference in how others view you. You are seen as an educated professional with verifiable credentials in the field of infection control."

"Cost and Affordability" emerged as another significant theme, with respondents expressing concerns about the cost of the certification, including the expense of study materials and the financial burden of maintaining multiple certifications. One respondent highlighted the need for, "Study materials [to be] made available on a cheaper rate. Cannot afford the current package." Another respondent stated, "I do not plan to recertify due to the similar content and the cost of keeping both the CIC®

and LTC-CIP® certifications. Both are out-of-pocket costs for me." Additionally, another participant pointed out, "Certification is cost-prohibitive for many of my peers working in long-term care facilities that do not prioritize their IPC programs."

### **DISCUSSION**

This is the first study to evaluate the impact of the LTC-CIP certification on infection prevention practices and outcomes in LTC settings. Overall, certificants reported increased implementation of evidence-based practices, improved infection prevention programs, enhanced professional confidence, and greater leadership in driving infection control initiatives within their facilities. The perceived improvement in participants' ability to initiate evidence-based practices and new procedures is especially crucial in LTC settings, where residents are often at higher risk of infections due to advanced age, multiple comorbidities, and frequent use of invasive devices such as urinary catheters (Cristina et al., 2021). Multiple federal, national, state, and professional health care organizations have contributed to the development of evidence-based information about effective strategies to prevent HAIs within health care facilities, including LTCFs (Association for Professionals in Infection Control and Epidemiology, n.d.; Centers for Disease Control and Prevention, 2022, 2024; Centers for Medicare and Medicaid Services, 2024b; Texas Health and Human Services, n.d.; The Society for Healthcare Epidemiology of America, n.d.). These initial findings indicate that the LTC-CIP certification equips IPs with the specialized knowledge, increased confidence, and influence to apply these evidence-based strategies effectively. This underscores the potential for certification to play a critical role in elevating the standard of IPC in LTC.

In our survey, respondents reported that the knowledge they gained through certification bolstered their expertise, improved their professional standing, and enhanced their leadership roles within their facilities. This increased expertise not only elevated their credibility with their colleagues but also fostered better intrafacility collaboration and communication. Effective collaboration and communication are a cornerstone of successful IPC programs ensuring that all staff are informed and engaged in identifying and mitigating infection risk. Enhanced communication is essential to providing better-coordinated care, quickly responding to potential outbreaks, and improving safety for residents and staff. Some respondents viewed their certification as a stepping-stone for taking on greater leadership roles, including becoming more involved in policy development. These enhanced roles may help create a more cohesive and informed team approach to IPC, ultimately contributing to improved facility-wide outcomes.

The most prominent motivation for taking this certification was the desire to gain specialized expertise in the LTC practice setting. Indeed, evidence underscores the importance of specialized training for IPs in NHs. For instance, a national survey of U.S. LTC facilities by Agarwal et al. (Agarwal et

al., 2022) revealed that facilities with IPs who had specialized IPC training – such as certification in infection control or completion of state, local, or professional society training courses – were significantly more likely to have essential IPC policies in place, including those for antibiotic stewardship, outbreak management, and urinary tract infection prevention (Agarwal et al., 2022). Further studies are needed to explore the specific types and intensity of IPC training, such as the duration, content, and delivery methods, and their direct impact on the implementation and effectiveness of IPC policies. Additionally, understanding how these training programs influence key resident outcomes, such as infection rates, antibiotic use, and overall quality of care,

will provide valuable insights into optimizing training for infection preventionists in LTC settings. Such research could guide the development of more targeted and effective training programs that ensure IPs are fully equipped to meet the complex challenges of infection prevention in these vulnerable populations.

Over half of the respondents stated their employer paid for the certification exam, thus reflecting a strong organizational commitment to professional development in infection prevention for this first wave of certificants. Thirty-eight percent of the respondents personally paid their own certification costs, thus reflecting their strong personal commitment and underscoring the importance of external financial support in less-resourced settings. This finding underscores the importance of external financial support, particularly in less-resourced settings where personal funding of certification may be a barrier.

The study also revealed some areas of improvement. Some desired the content to be more aligned with LTC situations, despite the certification being developed by LTC subject matter experts (Schweon et al., 2024). The need for specific study materials and resources for this newly offered certification was often cited due to operational delays with study guides and resources being introduced to the marketplace. This feedback indicates a need for ongoing refinement of the certification exam and related study materials to ensure that they are fully relevant and applicable to the unique context of LTC. As the certification is relatively new, the availability and accessibility of study materials are crucial for supporting candidates in their journey to certification. Continuous improvement of the certification process is important to ensure that future candidates are well-prepared and can achieve certification with confidence.

The overall findings demonstrated certificants who were highly motivated to gain LTC IPC knowledge and to apply their learning to their IPC programs for better resident and staff outcomes. However, it is important to acknowledge the limitations of this study. One limitation is the certification is fairly new, and as more participants are certified, the certification's impact on a larger number of IPC programs a broader will require future research. Certificants who are consultants may have different motives and goals compared with certificants who are clinically responsible for the IPC program in an LTC facility. Another limitation is that the study's findings are based on self-

reported data from certificants, which may be subject to recall bias and the inability of the investigators to independently verify the statements made. The certificants have invested a great deal of time, money, and effort to achieve certification, and this may result in a confirmation bias to interpret outcomes only in a positive way. Additionally, the 17% response rate may not accurately represent the views and experiences of all certificants, potentially limiting the generalizability of the findings. Finally, there is the potential for confirmation bias, as the survey and findings were conducted and reviewed by the CBIC Marketing Committee rather than an independent third party.

## CONCLUSIONS

The LTC-CIP certification study contributed to our understanding of the motivators for taking this exam and the perceived positive impact upon certificant's IPC programs and IPs themselves. The findings highlight the certification's role in enhancing IPC practices, improving resident and staff safety, and fostering professional growth among IPs. Future research will need to confirm these findings and continue exploring the LTC certificant's impact on infection prevention programs, infection rates, and the potential for certification to be a federal regulation with promoting resident and staff safety. Addressing the identified limitations and refining the certification process and study materials will be crucial in ensuring that the LTC-CIP certification continues to meet the needs of IPs and the facilities they serve. Additionally, improving access to the certification process – particularly for IPs in resource-constrained settings – will be crucial in promoting equity and ensuring that all facilities, regardless of financial or logistical constraints, can benefit from the advantages of certification.

## REFERENCES

Smith, P. W., & Rusnak, P. G. (1997). Infection prevention and control in the long-term-care facility. *American Journal of Infection Control*, 25(6), 488–512. [https://doi.org/10.1016/S0196-6553\(97\)70010-7](https://doi.org/10.1016/S0196-6553(97)70010-7)

Department of Health and Human Services. (2013). *National action plan to prevent health care-associated infections: Road map to elimination*. <https://odph.health.gov/sites/default/files/2019-09/hai-action-plan-ltcf.pdf>

Centers for Disease Control and Prevention. (2022, September 13). Protecting long-term care residents from sepsis. <https://blogs.cdc.gov/safehealthcare/protecting-ltc-residents-from-sepsis/>

Centers for Medicare and Medicaid Services. (2024, March 20). Center for Clinical Standards and Quality/Quality, Safety, and Oversight Group. Ref: QSO-24-08-NH. <https://www.cms.gov/files/document/qso-24-08-nh.pdf>

Centers for Medicare and Medicaid Services. (2024, August 8). *State operations manual*. <https://www.cms.gov/medicare/provider-enrollment-and-certification/guidanceforlawsandregulations/downloads/appendix-pp-state-operations-manual.pdf>

Code of Federal Regulations. (2016, October 4). Medicare and Medicaid programs; Reform of requirements for long-term care facilities. *Federal Register*. <https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities>

Certification Board of Infection Control and Epidemiology. (n.d.). CIC initial certification FAQ. <https://www.cbic.org/CBIC/Exam-and-Certification-FAQ.htm>

Marx, J. F., Callery, S., & Boukidjian, J. (2019). Value of certification in infection prevention and control. *American Journal of Infection Control*, 47(11), 1265-1269. <https://doi.org/10.1016/j.ajic.2019.06.005>

Pogorzelska, M., Stone, P. W., & Larson, E. L. (2012). Certification in infection control matters: Impact of infection control department characteristics and policies on rates of multidrug-resistant infections. *American Journal of Infection Control*, 40(2), 96-101. <https://doi.org/10.1016/j.ajic.2011.03.020>

Agarwal, M., Dick, A. W., Sorbero, M., et al. (2022). Changes in U.S. nursing home infection prevention and control programs from 2014 to 2018. *Journal of the American Medical Directors Association*, 21(1), 97-103. <https://doi.org/10.1016/j.jamda.2019.09.006>

Schweon, S. J., Larson, E., Callery, S., et al. (2024). Long-term care certification in infection: The time is...now! *American Journal of Infection Control*, 52(3), 249-251. <https://doi.org/10.1016/j.ajic.2023.11.010>

Centers for Medicare and Medicaid Services. (n.d.). Welcome to S&C's quality, certification, and oversight reports. <https://qcor.cms.gov/main.jsp>

U.S. Department of Health and Human Services, Office of the Inspector General. (2024, February 26). *Lessons learned during the pandemic can help improve care in nursing homes*. <https://oig.hhs.gov/reports/all/2024/lessons-learned-during-the-pandemic-can-help-improve-care-in-nursing-homes/>

Henriques, H. R., Sousa, D., Faria, J., et al. (2023). Learning from the COVID-19 outbreaks in long-term care facilities: A systematic review. *BMC Geriatrics*, 23, 618-650. <https://doi.org/10.1186/s12877-023-04232-1>

Cristina, M. L., Spagnolo, A. M., Giribone, L., et al. (2021). Epidemiology and prevention of healthcare-associated infections in geriatric patients: A narrative review. *International Journal of Environmental Research and Public Health*, 18(10), 5333. <https://doi.org/10.3390/ijerph18105333>

The Society for Healthcare Epidemiology of America. (n.d.). *Compendium of strategies to prevent healthcare-associated infections in acute care hospitals*. <https://shea-online.org/compendium-of-strategies-to-prevent-healthcare-associated-infections-in-acute-care-hospitals/>

Texas Health and Human Services. (n.d.). Infection prevention and control. <https://www.hhs.texas.gov/providers/long-term-care-providers/nursing-facilities-nf/quality-monitoring-program-qmp/evidence-based-best-practices/infection-prevention-control>

Centers for Disease Control and Prevention. (2024, April 8). Guidelines and guidance library. <https://www.cdc.gov/infection-control/hcp/guidance/index.html>

Association for Professionals in Infection Control and Epidemiology. (n.d.). Practice guidance for infection prevention. <https://apic.org/professional-practice/overview/>