Education and Training for Infection Prevention and Control Provided by Long-term Care Homes to Visitors: A Scoping Review in Partnership with Loch Lomond Villa

by

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Abstract

Historically, visitors are restricted in long-term care homes during infectious outbreaks to decrease virus transmission to vulnerable residents. The coronavirus disease 2019 pandemic highlighted the negative consequences that visitor restrictions have for both residents and families, further complicated by the paucity of guidance for infection prevention and control education and training for long-term care visitors. In partnership with Loch Lomond Villa, a scoping review of infection prevention and control for visitors in long-term care was conducted to understand ways to mitigate the risk of infectious agents while upholding person-centered care. This report presents the results of a scoping review aimed at mapping available evidence on what infection prevention and control education and training has been recommended or provided to visitors in long-term care, and what, when, and how it is delivered.

Dedication

To my astonishing grandmother, Florence Hawkins, who broke generational cycles by getting an education against her family's wishes and support. Without her courage, I would not have had the privilege or desire to pursue higher education. My Nanny's experiences in long-term care during the COVID-19 pandemic motivated me to do this project. Unfortunately, she passed away before I completed it. Nevertheless, I know she is proud of me.

Acknowledgements

This project exists because of the support system around me. Dr. Pamela Durepos has believed in me since our very first meeting in 2021 and has become a vital part of my story. Her compassion, strength, and brilliance have not gone unnoticed. Dr. Rose McCloskey, along with Dr. Durepos and Dr. Sarah Balcom, provided me with research positions, so I could work while staying home with my kids. I have enormous gratitude for their generosity, guidance, and expertise. Dr. Sue O'Donnell was the first person to instill a love of research in me as an undergraduate nursing student. She made me feel it was okay to enjoy research classes more than other nursing classes and always gave me a listening ear. Dr. Lisa Keeping-Burke has a wealth of knowledge on scoping reviews and consistently provides me with insightful feedback to improve my work. My husband, Tom, has provided me with unconditional support, love, and validation throughout this degree in more ways than I could ever list. My sister, Christy Roberts, loves my family as much as her own and has stepped in to help me countless times so I could focus on my work. Thank you to my four sons, Noah, Max, Theo, and Henry, for being great sleepers so I could work on schoolwork while they were in bed. Thank you to my sister-in-love, Emily MacLean, who unwaveringly believes in me and is continually excited to hear about my research work. Thank you to my parents-in-love, Archie and Judy MacLean, for watching my boys while I attended classes. Thank you to Dr. Petrea Taylor for always giving me sunshine when I need it most. Thank you to Cindy Donovan, former CEO of Loch Lomond Villa, for eagerly supporting this project and offering great insight into long-term care in New Brunswick. Finally, thank you to the individuals behind the Alzheimer Society of NB/ Dr. Jed B. Sutherland Bursary for supporting this work.

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List of Abbreviations

Abbreviation	Explanation
CDC	Centers for Disease Control and Prevention
COVID-19	SARS-CoV-2 Coronavirus Disease
IPAC	Infection prevention and control
JBI	Joanna Briggs Institute
LLV	Loch Lomond Villa Nursing Home
LTC	Long-term care
NB	New Brunswick
OECD	Organization for Economic Co-operation and Development
PHAC	Public Health Agency of Canada
WHO	World Health Organization

Introduction

Infection prevention and control (IPAC) procedures, education, and training are essential in long-term care (LTC) homes (i.e., residential and skilled nursing facilities) to protect the older adult population (Office of the Chief Science Advisor of Canada [OSCAC], 2020). When the coronavirus disease (COVID-19) pandemic emerged in late 2019, many shortcomings for IPAC in LTC homes were quickly revealed. More than 50% of COVID-19 deaths in many countries occurred in LTC homes, including in Canada, Ireland, Israel, Norway, and Spain (Canadian Institute for Health Information [CIHI], 2020), highlighting the vulnerability, fragility, and safety needs of older adults for infectious diseases. Canada's LTC homes were hit particularly hard, with 81% of COVID-19 deaths within the first six months occurring in LTC homes (CIHI, 2020). Canada's LTC homes were among the highest proportion of all COVID-19 worldwide deaths, including visitors (i.e., residents' family members, friends, or caregivers) (Estabrooks et al., 2023).

Many studies highlight the disproportionate impact the COVID-19 pandemic had on LTC homes. A recent Canadian study reported the LTC mortality rate being over nine times higher than that of the same-aged population in the community early in the pandemic (Grignon & Hothi, 2023). The authors state the COVID-19 death rate was 16% higher amongst LTC residents than the same-aged community members due to poor IPAC practices and insufficient staffing. Findings from an exploratory quantitative study note that sub-optimal IPAC practices increase infection transmission rates (Barratt & Gilbert, 2021). A report from the Organisation for Economic Co-operation and

Development (OECD) indicates older adults are more likely to die from COVID-19 in all countries than younger people (Rocard et al., 2021).

LTC homes need exceptional prophylactic safety measures to protect the highly vulnerable population (OCSAC, 2020). The lack of preparedness and varied responses for IPAC in LTC homes during the pandemic highlighted weaknesses and many systemic issues that negatively impact older adults in the LTC sector (Iyamu, 2022; OCSAC, 2020). For example, LTC homes commonly have difficulty accessing necessary services, like guidance during an infectious outbreak, due to a disjointed continuum of care and diverse operational models, leaving homes underequipped to effectively protect residents during an outbreak (Estabrooks et al., 2023; Iyamu, 2022; OCSAC, 2020). A lack of resources in LTC homes further contributes to inequalities in health and social care for older adults, especially during crises, and chronic underfunding, over-crowding, and shared rooms and bathrooms present further challenges to protecting older adults' wellbeing (Iyamu, 2022; OSCAC, 2020). Residents of LTC have increasingly complex chronic conditions and progressively lose control over their daily lives resulting in increased dependence on others (Abdi et al., 2019; OCSAC, 2020; Sanchini et al., 2022; Srigley et al., 2023).

Infection prevention and control policies, practices, and education and training have been shown to reduce infectious outbreaks in LTC and to help protect residents (Augustin & Barry, 2021; Lee et al., 2020; PHAC, 2013b). Long-term care home IPAC measures are therefore essential to prevent the spread of infectious disease as the LTC population in general is susceptible to infectious agents due to aging, high acuity health conditions, decreased independence, medications, and reliance on healthcare workers and

family members to meet daily needs (Bergman et al., 2020; Lee et al., 2020; Siegel et al., 2023; Smith et al., 2008). Unfortunately, healthcare workers and visitors in LTC have both been noted to have generally low compliance with IPAC measures (Lee et al., 2020; Park et al., 2022; Smith et al., 2008). Healthcare workers perceive uncooperative visitors as a barrier to implementing adequate IPAC measures in LTC, while visitors perceive their own lack of knowledge of IPAC measures as a barrier (Lee et al., 2017). Close living conditions in LTC also contribute to pathogenic spread (Lee et al., 2020). Although the most common infectious outbreaks in LTC are caused by influenza and group A streptococcus micro-organisms (Lee et al., 2020), all infectious outbreaks result in significant resident morbidity and mortality (Augustin & Barry, 2021). A recent systematic review identified violations in even basic IPAC practices, such as improper hand hygiene or failure to adequately clean medical devices between uses, as leading contributors to the spread of contagious diseases in LTC (Lee et al., 2020).

Historically, a key IPAC strategy during infectious outbreaks has been to enforce visitor restrictions (PHAC, 2011; PHAC, 2013a; PHAC 2013b; PHAC, 2017) based on the belief that visitors are vehicles for the transmission of common infections (PHAC, 2013a; Rocard, 2022). The first IPAC guidelines, written in 1985, were done so from a disease-specific lens and did not address issues related to isolation in LTC homes (PHAC 2017). However, the psychological risks associated with social isolation due to infectious outbreaks have been mentioned in the literature since the 1990s with emphasis on LTC homes needing to balance psychosocial health with infection control needs (Siegel et al., 2023). Despite this, a basic IPAC strategy during the COVID-19 pandemic implemented worldwide was total visitor restriction, meaning the complete cessation of visitation

(Armstrong & Lucas, 2020; Juergensen et al., 2020; van Nguyen et al., 2021), even in the absence of any local COVID-19 outbreak.

Evidence quickly emerged of the devastating effects the IPAC visitor restriction policies had on residents' quality of life and wellbeing. These restrictions resulted in increased rates of depression, social isolation, agitation, cognitive decline, and antipsychotic and antidepressant use, as well as diminished quality of life and wellbeing among residents (Cohen-Mansfield & Meschiany, 2022; Iyamu, 2022; O'Caomich et al. 2020; Stall et al., 2021; van der Roest et al., 2020). Several qualitative investigations reported extensive stress for families with exclusion from regular care routines, few opportunities for engaging with residents, poor quality of life, and changes in identity as caregiver roles were altered (Chu et al., 2022; Gonella et al., 2022; Iyamu, 2022; Prins et al., 2021; WHO, 2020). Family members and friends could not safely access LTC homes to be with residents to contribute to their well-being, resulting in many older adults lacking social and mental stimulation, and dying alone and afraid (OCSAC, 2020). These examples demonstrate the severity of negative consequences that visitor restrictions can have on the physical and psychosocial health and wellbeing of LTC home residents and their families (Stall et al., 2020). The restrictions in visitation resulted in a culture shift in LTC as care reverted from a person-centered approach to more of an institutional approach, without consideration of residents' specific needs and values (Iyamu, 2022).

As the pandemic evolved, governments and agencies recognized the essential role of visitors in residents' health and wellbeing, albeit a potential source of infection. Visitation restrictions were therefore eased and guidelines for re-opening LTC homes to visitors were released containing varying recommendations (Chu et al., 2022). As a

result, individual LTC homes were left to decide how to best prepare for safe visitation without clear and consistent recommendations.

This scoping review Master's thesis was conducted because there is currently a lack of knowledge on IPAC education and training activities and practices provided to visitors in LTC. It is important to identify, describe, and share such strategies to help promote safe visiting during infectious outbreaks. The results of this review will be disseminated to LTC homes pursuing IPAC strategies for visitors through journal publications. My thesis project partner will use the findings in their research simulation lab while developing education and training strategies for IPAC for visitors to their LTC facility. Findings from this review will identify the need for future reviews or research on IPAC strategies targeted at visitors.

Partner Description

Loch Lomond Villa (LLV), an LTC home in Saint John, New Brunswick (NB), was the community partner for this project. LLV officials identified a need for more guidance around IPAC and visitation. Every LTC home is unique and factors such as the built environment, model of care, and government operating standards influence policies and practices surrounding IPAC and visitation. First opening its doors in 1973, and undergoing extensive renovations and upgrades since, LLV is home to more than 400 people in three independent living apartment buildings, a special care home, and two LTC care homes. The independent living apartment buildings house 50 studio apartments, 176 one-bedroom apartments, five two-bedroom apartments, and an 18-bed special care home. The two LTC homes, The Villa and The Village, house 90 and 100

beds respectively, providing residents with 24/7 personalized, person-centered skilled-nursing care. The Villa is divided into three smaller houses and The Village into four smaller houses. Each LTC home includes private and semi-private rooms that include either private or semi-private bathrooms and bathing rooms with assistive equipment. Each home has additional amenities and shared-spaces such as dining areas, cafés, family rooms, theaters, open-air courtyards, glass-covered atriums, libraries, walking paths, and celebration rooms for activities (LLV, 2017a).

Loch Lomond Villa values community and engages in community partnership. They offer a wide range of on-site services to residents including a beauty salon, chapel, country store, massage therapy, senior's wellness center, and an exercise room. Many of LLV's buildings are connected by pedways, to promote a sense of community and facilitate resident independence (LLV, 2017a). Loch Lomond Villa also gives community members and students the opportunity to volunteer in many ways, such as by providing musical entertainment or by reading. The variety of shared and private spaces accessed by residents daily for activities such as eating, sleeping, bathing, toileting, and recreation must be considered when planning IPAC procedures.

In 2019, LLV achieved Planetree International designation and was awarded gold certification for excellence in person-centered care (LLV, 2017b). As a not-for-profit global leader in healthcare, Planetree International provides a framework that sets the standard for person-centered care globally (Planetree International, 2022). Achieving gold certification in Planetree designation places LLV as one of 90 healthcare organizations worldwide and the second largest gold-certified continuing care community to be recognized as an exemplary model of person-centered care. Gold certification is the

highest evidence- and standards-based achievement in person-centered care (LLV, 2017b), indicating LLV is an organization where staff work to provide high-quality care and prioritize resident and family comfort, dignity, empowerment, and wellbeing. Planetree certification standards include a requirement for flexible visitation practices and policies (Planetree International, 2021). Achieving Planetree certification demonstrates the centrality of visitation and involvement of family and friends in LLV's person-centered care philosophy.

In addition to meeting the criteria to maintain Planetree International status, LLV must also pass an annual inspection by the Department of Social Development to operate as an LTC home in NB. To pass inspection, LTC homes must be compliant with IPAC criteria, such as having an evidence-informed infection control program and following best practices for IPAC (Department of Social Development, 2021). Having a process in place to educate families about the role they have in preventing and controlling infectious outbreaks is also essential (Department of Social Development, 2021).

As the COVID-19 pandemic evolved, LLV aimed to keep the wellbeing of residents and their families central when considering each change in policy and procedure in accordance with the Planetree International criteria. In March 2020, the NB provincial government abruptly stopped all visitor entry into LTC homes. During visitor restrictions and throughout the pandemic, LLV consistently provided communication to inform residents and families of potential exposures and outbreaks, visiting guidelines, and IPAC measures through modes such as memos on their website (see LLV, n.d.). Early in the pandemic, LLV communicated and emphasized its commitment to providing the best possible person-centered care under ever-changing circumstances while keeping residents

and staff safe (Donovan, 2020). In LLV's online memos, families and staff alike expressed frustration and heartbreak with the frequently changing guidelines through different stages of the pandemic.

Despite continued vigilance to public health guidelines, LLV experienced its first outbreak of COVID-19 in March of 2022, around the same time NB lifted its COVID-19 restrictions (Macfarlane, 2022). The exact chain of transmission which led to COVID-19 outbreaks in LLV is unknown. However, the foremer Chief Executive Officer of LLV specifically requested guidance surrounding IPAC education and training for visitors to improve safe visiting**,** avoid sweeping restrictions again in the future**,** and reduce burden on staff. Therefore, this scoping review mapped the available literature surrounding policies, recommendations, standards, and practices for IPAC education and training used during the pandemic and other infectious outbreaks to guide how best to prepare visitors to safely visit LTC homes. LLV acquired a new Chief Executive Officer (CEO) while I worked on this scoping review resulting in minimal engagement from the partner during the scoping review work. The former CEO of LLV came up with the research idea, approved the research questions, read through my research proposal, and attended my proposal discussion. LLV's research lab team will use the results from my review to inform the creation of visitor IPAC education and training strategies and future research projects. Myself, my supervisor, the new CEO of LLV, and members of LLV staff plan to meet to discuss further dissemination plans in the coming months.

Situating Myself in this Study

My professional and personal experiences have piqued my interest in delving into the education and training LTC homes provide to visitors in IPAC. As a graduate student and novice researcher my perspective is influenced by my professional and personal experiences. I decided to pursue a Bachelor of Nursing degree after years of volunteering at a local LTC home in hopes of one day working there as a registered nurse. However, my background as a registered nurse lies primarily in neurorehabilitation, not LTC.

Throughout my professional career, I have witnessed many surprising, unexpected recoveries as well as multiple heart-breaking situations. A common theme I observed repeatedly is the importance of family and support to health and wellbeing. Many patients I cared for defied medical odds in the presence of support from loving family members or friends. For example, a young patient who was well-supported by their mother and partner experienced nearly a full recovery following a motor vehicle accident that resulted in a traumatic brain injury. Similarly, an older patient who was constantly supported by their spouse, children, and friends regained the full use of their legs after a hockey accident left them paralyzed. Conversely, many patients I have cared for have struggled to recover in the absence of support, despite seemingly minor illnesses or injuries. These observations have been the subject of conversation amongst my colleagues and myself and highlight the importance of family support to optimize health and wellbeing. These concerns were further validated throughout the COVID-19 pandemic when family members and friends were restricted from visiting healthcare facilities. There is evidence my own experiences are consistent with that of researchers,

such as Wendlandt et al. (2022) who found patients, families, and the nursing staff suffered negative outcomes with visitation restriction policies in place.

My personal experience with sweeping visitor restrictions and the negative impacts on my family members inspired my interest to explore IPAC education and training for visitors through a scoping review. Visitor restrictions potentially could have been avoided if guidelines for IPAC education and training were available to guide safe visiting. At the height of the pandemic, my grandmother, who is like a mother to me, was transported by ambulance to our local hospital and subsequently placed in a LTC home. She had rapidly progressing Alzheimer's disease and only recognized my grandfather's face. When visitor restriction policies were in place, my grandfather was not allowed to be with her.

During this time, my grandfather experienced intense anxiety about my grandmother's wellbeing, suffered from insomnia, and grew agitated and very lonely with sporadic communication with my grandmother over the phone. My grandfather even developed a skin infection requiring dressing changes from an increasing lack of self-care. He often expressed frustration with the lack of communication with my grandmother's nurses and asked me to explain what he needed to say to receive more frequent and clear communication from the nurses. While isolated from my grandfather, my grandmother became aggressive and was placed on sertraline and risperidone - antidepressant and antipsychotic medications. Although this was a traumatic experience for members of my family, it is more distressing for me to think about how traumatic it was for my grandmother, who no longer had the capacity to understand why she was

placed alone in an unfamiliar environment. I wonder, was she scared when nurses would try to bathe her and she became 'aggressive'? Did anyone try to bathe her forcefully? Did anyone sit with her and tell her she was safe? Did she know how loved she was without anyone there to tell her? I will never know. In trying to connect my grandfather with the nurse caring for my grandmother, he questioned why someone simply could not explain how he could safely be with her.

Therefore, I approached this scoping review as a novice researcher, an experienced clinician, and a visitor to LTC. My experience and training enabled me to: i) map the evidence surrounding IPAC education and training for visitors to LTC; and ii) map what, when, and how education and training is provided to permit a balance between resident and family wellbeing and infection risk. The findings from this review will act as a valuable resource for not only LLV, but for all LTC homes, educators, and policymakers and highlight best practices for education and training to allow safe visiting during infectious outbreaks.

Review Questions

The overarching review question was: what IPAC education and training have been recommended and/or implemented for visitors in LTC homes? This overarching question was answered through five sub-questions that were used to guide the study. The five sub-questions were as follows:

1. What IPAC education and training policies and guidelines exist related to family visitation in LTC?

2. How is education and training related to IPAC delivered to visitors of LTC residents, including frequency, timing, and mode of delivery?

3. What content is included in the IPAC education and training provided to visitors of LTC residents?

4. What qualifications are required by staff who provide education and training to visitors of LTC residents?

5. How has the education and training provided to visitors evolved over time (i.e., pre-pandemic, throughout the pandemic)?

Methods

I followed the Joanna Briggs Institute (JBI) methodology for scoping reviews. JBI is a multidisciplinary global health research organization that offers various methods and technologies to access, appraise, and apply evidence to inform decision-making at the point of care, such as through scoping reviews (JBI, n.d.). JBI seeks to collaborate with researchers globally to generate feasible, appropriate, meaningful, and effective evidence transferable to healthcare systems (JBI, n.d.; Jordan et al., 2015). There are many evidence synthesis methodologies – the most similar to JBI is Cochrane. Cochrane methodology differs from JBI ontologically and epistemologically. For example, Cochrane methodology is based on an empiricist view where knowledge is obtained through high-quality empirical studies, emphasizing the importance of randomized control trials (Cochrane, n.d.). JBI is based on a pluralist view where knowledge and clinical wisdom are obtained empirically, theoretically, and experientially, necessitating the need for multiple systematic review forms (Jordan et al., 2015). I chose JBI based on it's roots in the nursing profession and alignment with nursing values.

According to JBI, a scoping review is a type of systematic review used to map key concepts underlying a research area by exploring the scope of the literature and summarizing the evidence to inform future research (Peters et al., 2021). While systematic reviews focus on single, precise research questions, scoping reviews add value to evidence-based practice through the examination of a broader area to identify gaps in research knowledge, clarify key concepts, and report on the types of evidence that address and inform practice (Peters et al., 2021). Scoping reviews do not focus on

appraising the quality of evidence to inform clinical guidelines, but rather provide a map of the available evidence to answer questions concerning the nature and variety of such evidence (Peters et al., 2021). Scoping reviews map evidence, including policies, by exploring how, for what purpose, and by whom a concept is used in a particular area (Peters et al., 2021). Scoping reviews are conducted to provide recommendations for future research, specify practice or policy recommendations, or identify evidence gaps (Tricco et al., 2016).

This scoping review mapped evidence of the education and training on IPAC provided to visitors of LTC. In following the JBI scoping review framework (Peters et al., 2021), the methods of this review included five phases discussed in the next sections: (i) identifying the research questions, inclusion criteria, and approach to evidence searching, selection, extraction, and presentation; (ii) searching for studies; (iii) selecting studies; (iv) extracting and charting data; (v) and synthesizing and reporting the findings. A search of EMBASE, ERIC, MEDLINE, the Cochrane Database of Systematic Reviews and JBI Evidence Synthesis was conducted on June 30, 2022, and no current or underway systematic reviews or scoping reviews were identified on this topic. The protocol for this scoping review was published in *JBI Evidence Synthesis* (see MacLean et al., 2023).

Inclusion Criteria

Participants

This review included education and training activities and practices for IPAC for visitors to LTC homes. Visitors to LTC are not a homogenous group - their IPAC

education needs and visiting patterns vary, impacting the educational resources, content, and modes of delivery. Visitors included in this review were unpaid caregivers, essential caregivers, volunteers, care partners, family members and/or friends who entered LTC for the sole purpose of visiting a resident. Any education and training that involved staff but also included visitors was considered. There were no limitations imposed on the age, gender, or ethnicity of a visitor to LTC. Although the corresponding scoping review protocol stated participants were family caregivers (MacLean et al., 2023), the participants for this review ultimately focused on visitors in general as family caregivers are often referred to in the literature as visitors.

Concept

The concepts examined in this scoping review included all planned and intentional education and training activities, practices and guidelines used for IPAC with visitors in LTC homes. Education included intentional activities aimed at changing knowledge, attitudes, or awareness and included, but were not limited to, in-person, independent, virtual, individual, or group activities. Training included intentional activities aimed at the acquisition of a skill or behavior, and included, but were not limited to in-person, independent, virtual, individual, or group activities. All education and training activities were included irrespective of who provided it, where it was provided, or the time taken to deliver it. There were no limits regarding frequency or duration of the education and training. Education and training provided to staff was excluded.

Context

An LTC home included any setting that provided formal (paid) accommodation and health or social LTC services. This included, but was not limited to, nursing homes, aged care facilities, hostels for the aged, residential aged care facilities, and skilled-nursing and subacute facilities. Papers that addressed education and training for families in settings outside the focus of this research, such as home or hospital, were not considered.

Types of Sources

Quantitative, qualitative, and mixed methods study designs were considered for inclusion in this scoping review. All variations of experimental, quasi-experimental, observational, and descriptive observational quantitative designs were considered if they addressed the questions of this review. All studies that employed a qualitative methodology, such as, but not limited to, phenomenology, grounded theory, ethnography, qualitative description, etc., were also considered. All variations of mixed methods studies were considered. Likewise, text, opinion, policy, guidelines, and all types of systematic reviews that met the inclusion criteria were considered.

Search Strategy and Information Sources

The search strategy aimed to find both published and unpublished studies using a three-step strategy. An exploratory search was performed in Embase (Ovid) along with an analysis of text words contained in the titles, abstracts, and subject descriptors. A JBI-trained librarian, Richelle Witherspoon, developed a full search strategy for Embase by using text words and index terms gathered from relevant articles and reviewed the search

process with me step by step in each database. The search terms were tested in Embase (Ovid) in a variety of combinations and using a variety of search fields until it was determined that the search results both completely reflected the scope of the research available on the topic and avoided irrelevant results. A second search using identified keywords and index terms followed and was conducted across all included databases for the full review. This search strategy was adapted for use in each information source as demonstrated in Appendix A. Finally, the reference lists of all studies selected for inclusion were searched for additional studies. Only studies published in English or French were included due to a lack of resources available to search and screen other languages, although no documents in French were identified. Papers published from 1990 onwards were considered as this was the earliest retrieved published guideline on infection prevention and control (Centers for Disease Control, 1990).

The databases searched included CINAHL (EBSCOhost), Embase (Ovid), Eric (EBSCOhost), MEDLINE(R), AgeLine (EBSCO) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations, Daily and Versions (R) 1946 to Present (Ovid). To gather unpublished studies and grey literature, I compiled a list with my supervisor of 89 English-speaking international, national, and local aging-related organization websites to search, including the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), and Public Health Agency of Canada (PHAC) websites. I hand-searched these websites and the Google search engine using variations of the search terms used for the databases (i.e., infection prevention family, infection prevention visitor).

Study Selection

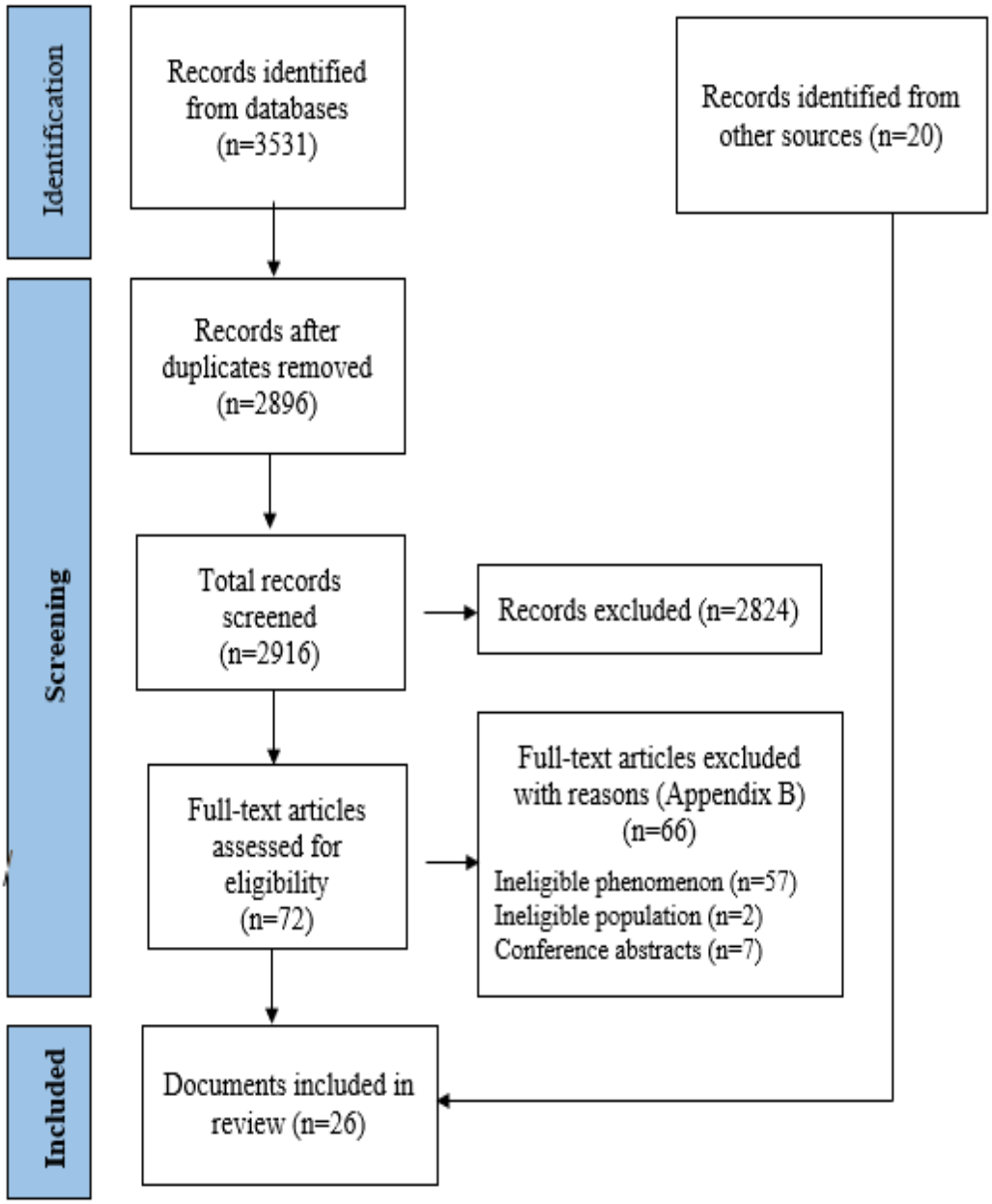
Before screening, the reviewers (Dr. Pamela Durepos, Dr. Rose McCloskey, Dr. Lisa-Keeping Burke, and I) met to complete a pilot test on 5% of the records to ensure consistency between reviewers during the screening phase. To enhance the credibility and confirmability of the study's findings, multiple reviewers screened the articles, ensuring articles were only selected according to the inclusion criteria to decrease bias. All identified records were collated and uploaded into Covidence systematic review software (Ventas Health Innovation, Melbourne, Australia) for reference management during the systematic screening process. The Covidence software allows reviewers to screen titles, abstracts, and full-text articles against the specified inclusion criteria and then complete data extraction. When two reviewers independently indicate an article's title and abstract meet inclusion criteria, the article moves to full-text screening where two reviewers independently read the full-text article and determine if it meets inclusion criteria. The Covidence software prompts a third reviewer to resolve disagreements during these screening phases and prompts reviewers to track reasons for excluding articles (see Appendix B). I tracked grey literature organization and association websites searched with a Microsoft Excel (version 2403) spreadsheet (see Appendix C).

The Covidence software generated a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA) flow diagram (Page et al., 2021) of the database search, screening, and data extraction processes. I adjusted the diagram to include the grey literature search to provide an overview of how I merged the searches to obtain the included documents (see Figure 1). The PRISMA flow diagram

enhances the transferability of my findings by demonstrating how I reached the study results.

Figure 1

PRISMA Flow Diagram



Data Extraction

After reviewers agreed on the final included articles, I completed data extraction in Covidence according to the extraction table (see Appendix D) with the assistance of Drs. McCloskey and Durepos. Two of us independently extracted data from each article and the third checked the extractions for convergence and accuracy. Dr. Durepos and I extracted data from the gathered grey literature in an Excel spreadsheet and imported the Covidence data to merge datasets for analysis. Extracted data included the article's authors and year, country, aim, study type, description of LTC, as well as details about IPAC education and training for visitors relevant to the review question and sub-questions.

Data Analysis and Presentation

I present all extracted data as narrative summaries and tabular descriptive statistics. The tables highlight details such as papers by year of publication, countries of origin, type of document, and types, frequency, mode of delivery, and content of IPAC education and training used in LTC homes. I provide narrative summaries of tabular outcomes and describe how each result relates to the main review question and sub-questions.

Results

For the remainder of this thesis, I will refer to all included literature as documents due to the inclusion of various types of information. I discuss the search results and characteristics of the included documents and then separate the review findings according to each research question.

Document Inclusion

As demonstrated in the PRISMA flow diagram, 3,531 citations were identified through database searches. After 635 duplicate citations were removed, I along with my supervisor and committee member screened the titles and abstracts of 2,896 records for eligibility and excluded 2,824. I reviewed the full texts of the remaining 72 records and excluded 66. The reasons for excluding the full-text articles are provided in Appendix B. Twenty documents were located through the grey literature search, resulting in 26 records for inclusion in this review.

Characteristics of Included Documents

Details of the characteristics of the included documents are provided in Table 1. Most documents in this review were IPAC guidelines (n = 13; 50.0%) (Australian Government, 2021; CDC, 2022; CDC 2023; Fraser Health, 2013; Ministry of LTC, 2021; Missouri Department of Health and Senior Services [MDHS], 2005; PHAC, 2011; PHAC, 2013b; PHAC, 2017; PHAC, 2021; Provincial Infection Control Network [PICN], 2011; Siegel et al., 2023; WHO, 2021), educational resources (n = 4; 15.4%) (Agency for Integrated Care [AIC], 2023; Australian Government, 2023; Centres for Learning, Research, and Innovation [CLRI], 2023; ResCare Community Living [RCCL],

2020), and policies (n = 3; 11.5%) (American Health Care Association [AHCA], 2015; Ontario Public Health [OPH], 2022; UniversalCare [UC], 2022). Two included documents were opinion papers (n = 2; 7.7%) discussing the importance of safe visitation in LTC (Stefanacci, 2020; Tupper et al., 2020) and one document (n = 1; 3.9%) was a report from the PHAC (2013b). The review also included a position statement from a national agency (n = 1; 3.9%) (Augustin & Barry, 2021), a standard for IPAC in LTC in Ontario, Canada (n = 1; 3.9%) (Ontario Health [OH], 2022), and one research paper that used a Delphi approach (n = 1; 3.9%) (Bergman et al., 2020).

Most of the included documents originated from Canada (n = 14; 53.9%) (Augustin & Barry, 2021; CLRI, 2023; Fraser Health, 2013; Ministry of Long-Term, 2021; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PHAC, 2021; PICN, 2011; OH, 2022; OPH, 2022; Tupper et al., 2020; UC, 2022), the United States of America (n = 7; 26.9%) (AHCA, 2015; CDC, 2022; CDC, 2023; MDHS, 2005; RCCL, 2020; Siegel et al., 2023; Stefanacci, 2020), Australia (n = 2; 7.7%) (Australian Government, 2021; Australian Government, 2023), and Singapore (n = 1; 3.9%) (AIC, 2023). A document from the World Health Organization (n = 1; 3.9%) (WHO, 2021) and a document based in Canada and the USA (n = 1; 3.9%) (Bergman et al., 2020) were also included.

Eight documents (n = 8; 30.8%) were published prior to the COVID-19 pandemic (AHCA, 2015; Fraser Health, 2013; MDHS, 2005; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PICN, 2011), six of which were Canadian (n = 6; 23.1%) (Fraser Health, 2013; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PICN, 2011). The remaining eighteen documents (n = 18; 69.2%) were published after the onset of the

pandemic (AIC, 2023; Augustin & Barry, 2021; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CDC, 2023; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2021; RCCL, 2020; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021).

The intended audience of the documents included for this review were healthcare workers (n = 13; 50.0%) (AHCA, 2015; Australian Government, 2021; CDC 2023; CLRI, 2023; Fraser Health, 2013; MDHS, 2005; OPH, 2022; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; Siegel et al., 2023; WHO, 2021), visitors (n = 6; 23.1%) (AIC, 2023; Australian Government, 2023; CLRI, 2023; OPH, 2022; RCCL, 2020; WHO, 2021), healthcare organizations, including LTC (n = 6; 23.1%) (CDC, 2022; Ministry of LTC, 2021; OH, 2022; PHAC, 2021; PICN, 2011; UC, 2022), policy- and decision-makers (n = 4; 15.4%) (CDC, 2022; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020), and infection control professionals (n = 3; 11.5%) (Augustin & Barry, 2021; OH, 2022; PHAC, 2017). The participants of the included Delphi study were post-acute and long-term care experts (N = 21) (Bergman et al., 2020). All articles were written in English.

Table 1

Document Characteristics for IPAC Education and Training for LTC Visitors (N=26)

Author, Year	Country	Document Type	Audience/ Sample	Setting	Phenomena of interest/ Purpose	Relevant Findings/ Recommendations
MDHS, 2005	USA	G	HCW	LTCF	Guide for establishing high-quality IPAC in MDHS LTC.	Visitor education is recommended when there is a suspected or known disease or organism in the facility.
PICN, 2011	CAN	G	LTCF	LTCF	Guide LTC homes on the current best practices for preventing and controlling infections.	The basis of good IPAC practice is through educating staff, residents, and visitors.
PHAC, 2011	CAN	G	HCW	*All HC	Guide IPAC & occupational health planning & management of pandemic Influenza.	During an influenza outbreak, visitors should only visit LTC if they've already had influenza or were immunized. If visitors have symptoms, they should be educated.
FH, 2013	CAN	G	HCW	LTCF	Guidelines for IPAC for residential care.	Visitors should be educated on IPAC
PHAC, 2013a	CAN	R	HCW	*All HC	Describe state of HAIs; educate, raise awareness & provide recommendations to prevent HAIs.	80% of infections are spread by visitors, patients, and healthcare workers (ie., MRSA, *C. difficile, staph*). Facilities need to educate visitors on IPAC.
PHAC, 2013b	CAN	G	HCW	LTCF	Guide IPAC for management of residents with *C. difficile* infection.	Recommend visitors be educated about the IPAC precautions in place. Any visitor participating in resident care should be educated on personal-protective equipment (PPE).
AHCA, 2015	USA	P	HCW	LTCF	Guide preparation for infectious diseases.	Families should be provided with education about the outbreak and the center's response strategy.

Author, Year	Country	Document Type	Audience/ Sample	Setting	Phenomena of interest/ Purpose	Relevant Findings/ Recommendations
PHAC, 2017	CAN	G	HCW IPAC Prof	*All HCs	Guide routine practices and additional precautions for preventing transmission of HAIs.	Healthcare workers should educate visitors on IPAC practices as indicated. Visitors participating in care should be educated about PPE.
Stefanacci, 2020	USA	OP	PM	LTCF	Discuss a 4S process for safer visitations based on CDC recommendations.	The 4S process for safer visitations to LTC includes scheduling and education, screening, social distancing and PPE, and an outside setting.
Bergman, 2020	USA & CAN	Consensus	LTC experts	LTCF	Generate consensus to guide visitation by essential family caregivers and visitors during the COVID-19 pandemic.	Consensus was reached on 12 statements related to visitor guidance including IPAC strategies.
RCCL, 2020	USA	ER	V	ALF	Describe and evaluate methods to mitigate the spread of COVID-19, e.g., visitor education resources.	Visitor education package provides information on COVID-19 IPAC practices.
Tupper, 2020	CAN	OP	PM	LTCF	Describe importance of visitors & indications for clinical practice.	Prioritization of IPAC without ensuring resident psychosocial needs are protected is a short-sighted approach that will lead to harm.
AUS Gov, 2021	AUS	G	HCW	Comm-unity, LTCF	Guide IPAC practices based on COVID-19 status in the community.	Visitors are essential to aged care to prevent resident deconditioning. IPAC education should be provided to visitors during all phases of COVID-19 outbreaks.
Augustin, 2021	CAN	PS	IPAC Prof	LTCF	Describe and recommended IPAC practices.	IPAC education should be provided to all visitors of LTC homes.

Author, Year	Country	Document Type	Audience/ Sample	Setting	Phenomena of interest/ Purpose	Relevant Findings/ Recommendations
PHAC, 2021	CAN	G	LTCF	LTCF	Update and guide IPAC for COVID-19.	Visitors should be instructed on IPAC practices and refrain from visiting if sick.
WHO, 2021	INTL	G	V, HCW	LTCF	Guide IPAC to prevent COVID-19 & support safe visiting for residents' wellbeing.	Adequate visitor IPAC training and education by an IPAC professional is essential to reduce the risk of COVID-19 among LTC residents.
MOLTC, 2021	CAN	G	LTCF	LTCF	Guide implementation of IPAC programs in LTC.	IPAC programs need to contain education for visitors.
OPH, 2022	CAN	P	V, HCW	LTCF	Visitor policy during COVID-19 pandemic.	All visitors to Ontario LTC homes are to be educated on IPAC practices.
OH, 2022	CAN	S	LTCF IPAC Prof	LTCF	Standard of current evidence-based IPAC practices in LTC.	LTC should have IPAC professional and IPAC program that includes educating visitors.
UC, 2022	CAN	P	LTCF	LTCF	Policy for pandemics, epidemics, and outbreaks.	Visitors to LTC homes need to be educated and trained on IPAC and be compliant with practices.
CDC, 2022	USA	G	HC org, PM	*All HC	Core IPAC guidelines for safe healthcare delivery in all healthcare settings.	Visitors to all healthcare facilities should be provided with IPAC education.
AIC, 2023	SING	ER	Family	LTCF Adult day centers	Training course for family and caregivers on providing safe care.	The course requires attendees to understand standard precautions to prevent infection spread.
CDC, 2023	USA	G	HCW	*All HC	Introduce a framework to guide selection and implementation of specific IPAC practices based on individual circumstances (e.g., universal source control	Facilities should provide instruction before a visitor enters a patient's room on IPAC practices and should refrain from visiting if sick.

Author, Year	Country	Document Type	Audience/ Sample	Setting	Phenomena of interest/ Purpose	Relevant Findings/ Recommendations
					according to levels of community respiratory virus transmission).	
CLRI, 2023	CAN	ER	V, HCW	LTCF	Educate and practice applying IPAC principles to care.	Focus on breaking the chain of transmission through routine practices, best practices, and hand hygiene.
Siegel, 2023	USA	G	HCW DM	*All HC	Guide isolation precautions, IPAC program development, implementation & evaluation.	Visitors are sources of many HAIs (ie., pertussis, influenza, SARS-CoV). Visitors should be educated on IPAC practices.
AUS Gov, 2023	AUS	ER	V	LTCF	Education on key practices to do when visiting LTC during an infectious outbreak.	Visitors are prompted on what to do before, during, and after a visit for safety during an infectious outbreak.

Note. All document titles are abbreviated by the first letter of each word or by the first author's name.
*All HC includes LTC facilities
Legend. CAN = Canada, USA = United States of America, AUS = Australia, INTL = International, SING = Singapore, G = Guideline, R = Report, P = Policy, OP = Opinion Paper, ER = Educational Resource, PS = Position Statement, S = Standard, HAI = Healthcare-associated infections, HCW = Healthcare Worker, LTCF = Long-Term Care Facility, PM = Policy-makers, V = Visitors, HC = Healthcare, DM = Decision-makers

Review Findings

The main review question was: what IPAC education and training have been recommended and/or implemented for visitors in LTC homes? To address this, the findings are presented in five sections according to each sub-question.

Review Question One: What IPAC Education and Training Policies and Guidelines Exist Related to Visitation in LTC?

Concerning IPAC education and training for visitation in LTC, as shown in Table 1, thirteen (n = 13; 50.0%) included documents were IPAC guidelines addressing specific infectious diseases, including four on COVID-19 (Australian Government, 2021; CDC, 2023; PHAC, 2021; WHO, 2021), one on influenza (PHAC, 2011), one on C. difficile (PHAC, 2013b), and one on healthcare-associated infections (HAIs) (PHAC, 2017). Six guidance documents (n = 6; 23.1%) addressed core guidelines for IPAC and/or implementing IPAC programs in all healthcare facilities including LTC (CDC, 2022; Fraser Health, 2013; MDHS, 2005; Ministry of LTC, 2021; PICN, 2011; Siegel et al., 2023). Three (n = 3; 11.5%) policy documents were included on preparing for infectious disease outbreaks in LTC (AHCA, 2015; UC, 2022) and LTC visitation during the COVID-19 pandemic (OPH, 2022). No documents describing what LTC homes specifically implemented to provide IPAC education and training for visitors were located. Overall, none of the included documents addressed every aspect of IPAC education and training (i.e., provider, frequency, timing, mode of delivery, and content).

Review Question Two: How is Education and Training Related to IPAC Delivered to Visitors of LTC Residents, Including Frequency, Timing, and Mode of Delivery?

Information on the frequency, timing, and mode of the delivery of education and training related to IPAC delivered to visitors of LTC residents was provided in all (n = 26; 100.0%) of the included documents. Table 2 identifies the education and training described in documents before 2020 and Table 3 identifies the education and training described in documents from the years 2020 and beyond.

Frequency of Delivery. The frequency of education and training for visitors to LTC was described by authors of six (n = 6; 23.1%) documents (Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2021; Siegel et al., 2023; WHO, 2021). Infection Prevention and Control Canada (Augustin & Barry, 2021), Ontario Health (2022), and the CDC (2023) recommend education and/or training be provided to visitors of LTC during resident admission and when precautions are implemented (n = 3; 11.5%). The WHO (2021), Ministry of Long-Term Care (2021), Ontario Public Health (2022), and Ontario Health (2022) recommend education and training be repeated (n = 4; 15.4%). Ontario Public Health (2022) also states general visitors should complete IPAC education and training before the first visit; essential caregivers should complete training every six months; and visitors should retrain if they are observed as being non-compliant.

Timing of Delivery. Recommendations for the timing of education and training were provided in seven (n = 7; 26.9%) of the documents (Australian Government, 2021; Australian Government, 2023; CDC, 2023; OPH, 2022; PHAC, 2011; Stefanacci, 2020; Tupper et al., 2020). Seven documents (n = 7; 26.9%) (Australian Government, 2021;

Australian Government, 2023; CDC, 2023; OPH, 2022; PHAC, 2011; Stefanacci, 2020; Tupper et al., 2020) state visitor education and training for IPAC should be provided before visiting on upon arrival to an LTC home. Two documents (n = 2; 7.7%) (Australian Government, 2023; CDC, 2023), recommended education is provided to visitors when scheduling visitation appointments (i.e., by telephone) and when a visitor has had a positive COVID-19 test, is symptomatic, or has been in close contact with a positive case.

Mode of Delivery. The mode of delivery of education and training was discussed in twenty-three (n = 23; 88.5%) of the documents (AHCA, 2015; AIC, 2023; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CDC, 2023; CLRI, 2023; MDHS, 2005; Fraser Health, 2013; OH, 2022; OPH, 2022; PHAC, 2011; PHAC, 2013a; PHAC 2013b; PHAC, 2017; PHAC, 2021; RCCL, 2020; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021). The most frequently recommended delivery mode of education and/or training was in-person delivery (n = 18; 69.2%) (AHCA, 2015; AIC, 2023; Australian Government, 2021; Bergman et al., 2020; CDC, 2022; CLRI, 2023; OH, 2022; OPH, 2022; PHAC, 2011; PHAC, 2013a; PHAC 2013b; PHAC, 2017; PHAC, 2021; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) followed by signage (n = 13; 50.0%) (AHCA, 2015; Australian Government, 2021; Australian Government, 2023; CDC, 2022; CDC, 2023; Fraser Health, 2013; OPH, 2022; PHAC, 2011; PHAC, 2021; Siegel et al., 2023; Stefanacci, 2020; UC, 2022; WHO, 2021). Other delivery modes recommended were discussion and information sessions (n = 5; 19.2%) (AIC, 2023; Australian

Government, 2023; Bergman et al., 2020; Siegel et al., 2023; Tupper et al., 2020), printed information such as pamphlets (n = 4; 15.4%) (PHAC, 2011; PHAC, 2021; RCCL, 2020; Siegel et al., 2023), online sources such as videos, websites, and eLearning modules (n = 4; 15.4%) (CLRI, 2023; OPH, 2022; RCCL, 2020; Tupper et al., 2020) and demonstrations (n = 3; 11.5%) (Bergman et al., 2020; Stefanacci, 2020; WHO, 2021). The CDC (2022) notes education and materials should be culturally diverse and according to visitors' language comprehension and education level.

Table 2

Overview of Processes Addressed and Recommended for LTC Visitor Education and Training for IPAC Before 2020 (n=8)

Category & Recommended Processes	MDHS, 2005	PICN, 2011	PHAC, 2011	FH, 2013	PHAC, 2013a	PHAC, 2013b	AHCA, 2015	PHAC, 2017	Total Recommend-ations Addressed n (%)	**Total Documents Addressing Categories n (%)**
Person Responsible										**3 (37.5)**
HC Staff			X					X	2 (25.0)	
IPAC/ Designated Staff		X							1 (12.5)	
Frequency										**0**
With Admission/ Precaution Implementation									-	
Recommend Repeated Education									-	
Timing										**1 (12.5)**
Before Visit / On Arrival			X						1 (12.5)	
Mode										**7 (87.5)**
In-Person			X		X	X	X	X	5 (62.5)	
Telephone									-	
Printed Info	X								1 (12.5)	
Demonstration									-	
Discussion/Info Session									-	
Online Modes									-	
Signage			X	X			X		3 (37.5)	
Total Recommendations Addressed per Document n (%)	1 (25)	1 (25)	3 (75)	1 (25)	1 (25)	1 (25)	1 (25)	2 (50)		

Note. All document titles are abbreviated by first letter of each word

Table 3

Overview of LTC Visitor Education and Training Recommended Processes for IPAC for 2020 and Beyond (n=18)

Category & Recommended Processes	Stefanacci. 2020	Bergman. 2020	RCCL. 2020	Tupper. 2020	AUS Gov. 2021	Augustin. 2021	PHAC. 2021	WHO. 2021	MOLTC. 2021	OPH. 2022	OH. 2022	UC. 2022	CDC. 2022	AIC. 2023	CDC. 2023	CLRI. 2023	Siegel. 2023	AUS Gov. 2023	Total Recommendation n (%)	**Total Documents Addressing Categories n (%)**
Person Responsible																				**13 (72.2)**
HC Staff		X		X													X		3 (16.7)	
IPAC/Designate Staff						X	X	X	X		X	X		X	X	X	X		10 (55.6)	
Frequency																				**6 (33.3)**
On Admission/Precaution Implementation							X				X						X		3 (16.7)	
Recommend Repeated Education								X	X	X	X								4 (22.2)	
Timing																				**6 (33.3)**
Before Visit/On Arrival	X			X	X					X					X			X	6 (33.3)	
Mode																				**16 (88.9)**
In-person	X	X		X	X		X	X		X	X	X	X	X	X		X		13 (72.2)	
Telephone															X			X	2 (11.1)	
Printed Information							X						X				X		3 (16.7)	
Demonstration	X	X						X											3 (16.7)	
Discussion/Info Session		X		X										X			X	X	5 (27.8)	
Online Modes			X	X						X						X			4 (22.2)	
Signage	X				X		X	X		X		X	X		X		X	X	10 (55.6)	
Total Recommendations Addressed per Document n (%)	3 (75)	2 (50)	1 (25)	3 (75)	2 (50)	1 (25)	3 (75)	3 (75)	2 (50)	3 (75)	3 (75)	2 (50)	2 (50)	2 (50)	2 (50)	1 (25)	3 (75)	2 (50)		

Note. All document titles are abbreviated by first letter of each word or by first author's name.

Review Question Three: What Content is Included in the IPAC Education and Training Provided to Visitors of LTC Residents?

As identified in Tables 4 and 5, a variety of content was included for IPAC education and training provided to visitors to LTC in the included documents. Visitor education and/or training on hand washing information was included in 25 of the 26 documents (n = 25; 96.2%) (AHCA, 2015; AIC, 2023; Augustin & Barry, 2021; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CDC, 2023; CLRI, 2023; Fraser Health, 2013; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PICN, 2011; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PHAC, 2021; RCCL, 2020; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021). Twenty-one documents (n = 21; 80.8%) (AIC, 2023; AHCA, 2015; Augustin & Barry, 2021; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PICN, 2011; PHAC, 2011; PHAC, 2017; PHAC, 2021; RCCL, 2020; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) included education and/or training on respiratory hygiene. Nineteen (73.1%) (AIC, 2023; Augustin & Barry, 2021; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2023; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2011; PHAC, 2013b; PHAC, 2017; PHAC, 2021; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) included education and/or training on PPE usage.

Sixteen (61.5%) (AIC, 2023; AHCA, 2015; Augustin & Barry, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CDC, 2023; CLRI, 2023; Fraser Health, 2013; RCCL, 2020; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PHAC, 2021; PICN, 2011; WHO, 2021) documents included information on infection transmission, and 12 (46.2%) (Augustin & Barry, 2021; Australian Government, 2021; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2021; RCCL, 2020; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) included education for visitors on social distancing.

Eleven (42.3%) (AHCA, 2015; Australian Government, 2021; Bergman et al., 2020; CDC, 2022; MDHS, 2005; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PICN, 2011; Siegel et al., 2023; UC, 2022) documents included other IPAC education and/or training for visitors to LTC that was not discussed in detail in the documents, such as "appropriate" (CDC, 2022; OH, 2022), "other" (AHCA, 2015; Siegel et al., 2023; UC, 2022), or "specific" IPAC practices (Provincial, 2011). Ten documents (n = 10; 38.5%) (Augustin & Barry, 2021; Australian Government, 2023; CDC, 2022; CLRI, 2023; PHAC, 2011; RCCL, 2020; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) included education on self-screening or symptoms of infectious diseases, and nine (n = 9; 34.6%) (Augustin & Barry, 2021; CLRI, 2023; Fraser Health, 2013; PHAC, 2013b; PHAC, 2017; PHAC, 2021; RCCL, 2020; Siegel et al., 2023; WHO, 2021) included education on the indications or rationale for implementing IPAC precautions. Six documents (n = 6; 23.1%) (Augustin & Barry, 2021; CLRI, 2023; PHAC, 2013b; PHAC, 2021; Siegel et al., 2023; WHO, 2021) contained recommendations to provide

education and training to visitors on transmission-based or additional IPAC precautions as the precautions are implemented and three (11.5%) (Australian Government, 2021; CDC, 2023; Siegel et al., 2023) included education on vaccination.

Table 4

IPAC Content Included in LTC Visitor Education and Training Before 2020 (n=8)

Education & Training Recommended Content	MDHS, 2005	PICN, 2011	PHAC, 2011	FH, 2013	PHAC, 2013a	PHAC, 2013b	AHCA, 2015	PHAC, 2017	Total Documents Addressed Content n (%)
Infection Transmission		X		X	X	X	X	X	6 (75.0)
Symptoms/Self-Screening			X						1 (12.5)
Vaccination									0
Hand Hygiene		X	X	X	X	X		X	6 (75.0)
Respiratory Hygiene		X	X				X	X	4 (50.0)
Directions for Donning/Doffing PPE			X			X		X	3 (37.5)
Indication /Rationale for Precautions						X		X	2 (25.0)
Social Distancing									0
Transmission/Additional Precautions						X			1 (12.5)
Unspecified IPAC Practices[a]	X	X					X		3 (37.5)
Content Included Per Document n (%)	1 (10)	4 (40)	4 (40)	3 (30)	2 (20)	5 (50)	4 (40)	5 (50)	

Note. All document titles are abbreviated by first letter of each word.

[a] Unspecified IPAC practices included ambiguous statements about visitor education/training such as all applicable visitor restrictions, other IPAC practices, other IPAC requirements, or appropriate IPAC practices.

Table 5

IPAC Content Included in LTC Visitor Education and Training for 2020 and Beyond (n=18)

Education & Training Recommended Content	Stefanacci, 2020	Bergman, 2020	RCCL, 2020	Tupper, 2020	AUS Gov, 2021	Augustin, 2021	PHAC, 2021	WHO, 2021	MOLTC, 2021	OPH, 2022	OH, 2022	UC, 2022	CDC, 2022	AIC, 2023	CDC, 2023	CLRI, 2023	Siegel, 2023	AUS Gov, 2023	Total Documents Addressed Content n (%)
Infection Transmission		X	X			X	X	X					X	X	X	X		X	10 (55.6)
Symptoms/Self Screening	X		X	X		X		X				X	X			X		X	9 (50.0)
Vaccination					X										X		X		3 (16.7)
Hand Hygiene	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	18 (100.0)
Respiratory Hygiene	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X	17 (94.4)
Directions for Donning/Doffing PPE	X	X		X	X	X	X	X	X	X	X	X		X	X	X	X	X	16 (88.9)
Indication/ Rationale for Precautions			X			X	X	X							X	X	X		6 (33.3)
Social Distancing	X		X	X	X	X	X	X	X	X	X	X			X	X			13 (72.2)
Transmission/ Additional Precautions						X	X	X							X	X	X		5 (27.8)
Unspecified IPAC Practices[a]		X			X				X	X	X	X	X				X		8 (44.4)
Content Included Per Document n (%)	5 (50)	5 (50)	6 (60)	5 (50)	6 (60)	8 (80)	7 (70)	8 (80)	5 (50)	5 (50)	5 (50)	6 (60)	5 (50)	4 (40)	4 (40)	8 (80)	7 (70)	5 (50)	

Note. All document titles are abbreviated by first letter of each word or by first author's name.

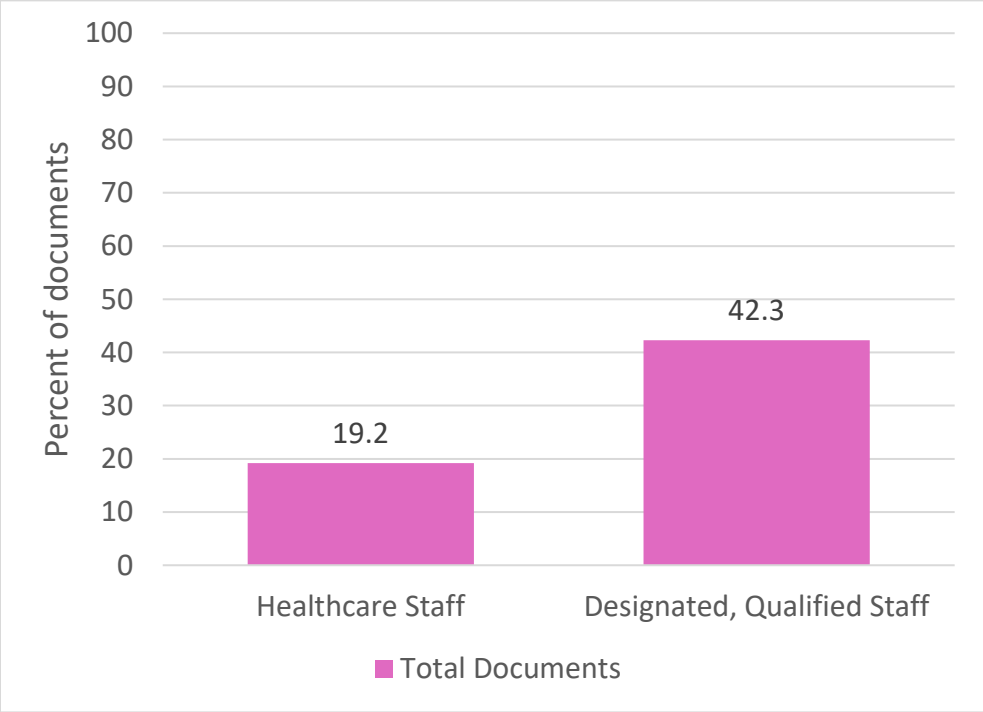
[a] Unspecified IPAC practices included ambiguous statements about visitor education/training such as all applicable visitor restrictions, other IPAC practices, other IPAC requirements, or appropriate IPAC practices.

Review Question Four: What Qualifications are Required by Staff Who Provide Education and Training to Visitors of LTC Residents?

As shown in Tables 2 and 3, half of the documents (n = 13; 50.0%) (PHAC, 2011; Provincial Infection Control, 2011; PHAC, 2017; Bergman et al., 2020; Tupper et al., 2020; Augustin & Barry, 2021; PHAC, 2021; WHO, 2021; Ministry, 2021; OH, 2022; UC, 2022; Agency for Inte, 2023; Siegel et al., 2023) included information on the qualifications of individuals who are responsible for providing education and training to visitors to LTC residents. As shown in Figure 2, in five documents (n = 5; 19.2%) (Bergman et al., 2020; PHAC, 2011; PHAC, 2017; Siegel et al., 2023; Tupper et al., 2020), healthcare workers were responsible for providing visitor education and training, whereas authors of eleven documents (n = 11; 61.1%) (AIC, 2023; Augustin & Barry, 2021; CDC, 2023; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; PHAC, 2021; PICN, 2011; Siegel et al., 2023; UC, 2022; WHO, 2021) stated IPAC Professionals and/or qualified designated individuals should be responsible for educating and training visitors.

Figure 2

Recommended Qualifications of Person Responsible for LTC Visitor IPAC Education and Training (N = 26)



Review Question Five: How has the Education and Training Provided to Visitors Evolved Over Time (i.e., pre-pandemic, throughout the pandemic)?

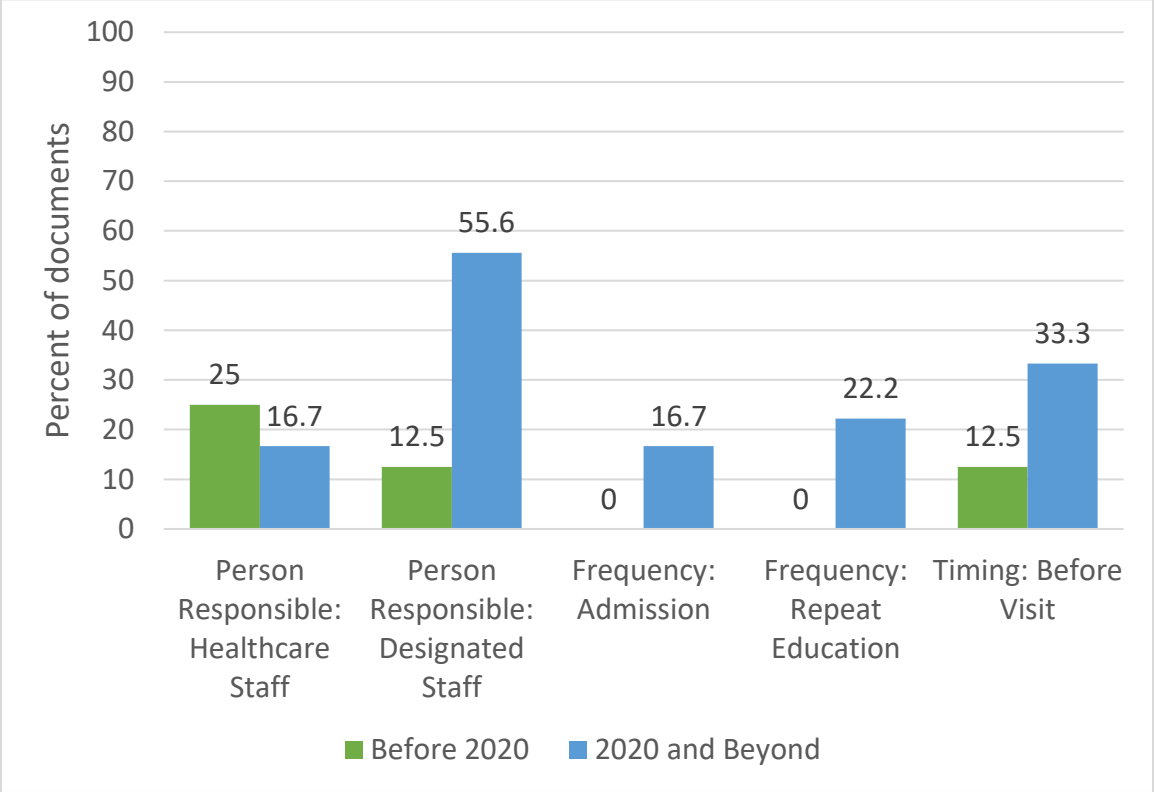
As demonstrated in each table, eight (n = 8; 30.8%) of the included documents were published before 2020 and 18 (n = 18; 69.2%) were published in 2020 or later (i.e., after COVID-19 was declared a pandemic). Data collected for this research sub-question are presented in bar graphs.

Evolution of Person Responsible, Timing, and Frequency of Delivery. As displayed in Figure 3, authors of before 2020 documents more frequently recommended

healthcare workers, such as nurses, (n = 2; 25.0%) (PHAC, 2011; PHAC, 2017) should be responsible for providing visitors with education and training for IPAC in LTC as opposed to IPAC professionals (n = 1; 12.5%) (PICN, 2011). In contrast, during and after COVID-19, the majority of authors (n = 10; 55.6%) (AIC, 2023; Augustin & Barry, 2021; CDC, 2023; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; PHAC, 2021; Siegel et al., 2023; UC, 2022; WHO, 2021) recommended that designated, qualified individuals, such as IPAC professionals, be responsible rather than healthcare workers (n = 3; 16.7%) (Bergman et al., 2020; Siegel et al., 2023; Tupper et al., 2020). None of the documents before 2020 included information on the recommended frequency of education and training for visitors, whereas authors of three (n = 3; 16.7%) (OH, 2022; PHAC, 2021; Siegel et al., 2023) of the 2020 and beyond documents recommended that visitors should be educated and trained upon a resident's admission and when precautions are implemented. The authors of four (n = 4; 22.2%) (Ministry of LTC, 2021; OH, 2022; OPH, 2022; WHO, 2021) documents recommended education for visitors should be repeated. Ontario Public Health (2022) included in their LTC visitation policy that general visitors must complete IPAC education and training before an initial LTC visit, essential caregivers must repeat education and training every six months, and any visitor would require re-training if found to be non-compliant.

Figure 3

Evolution of Recommended LTC IPAC Visitor Education and Training Processes (N = 26)

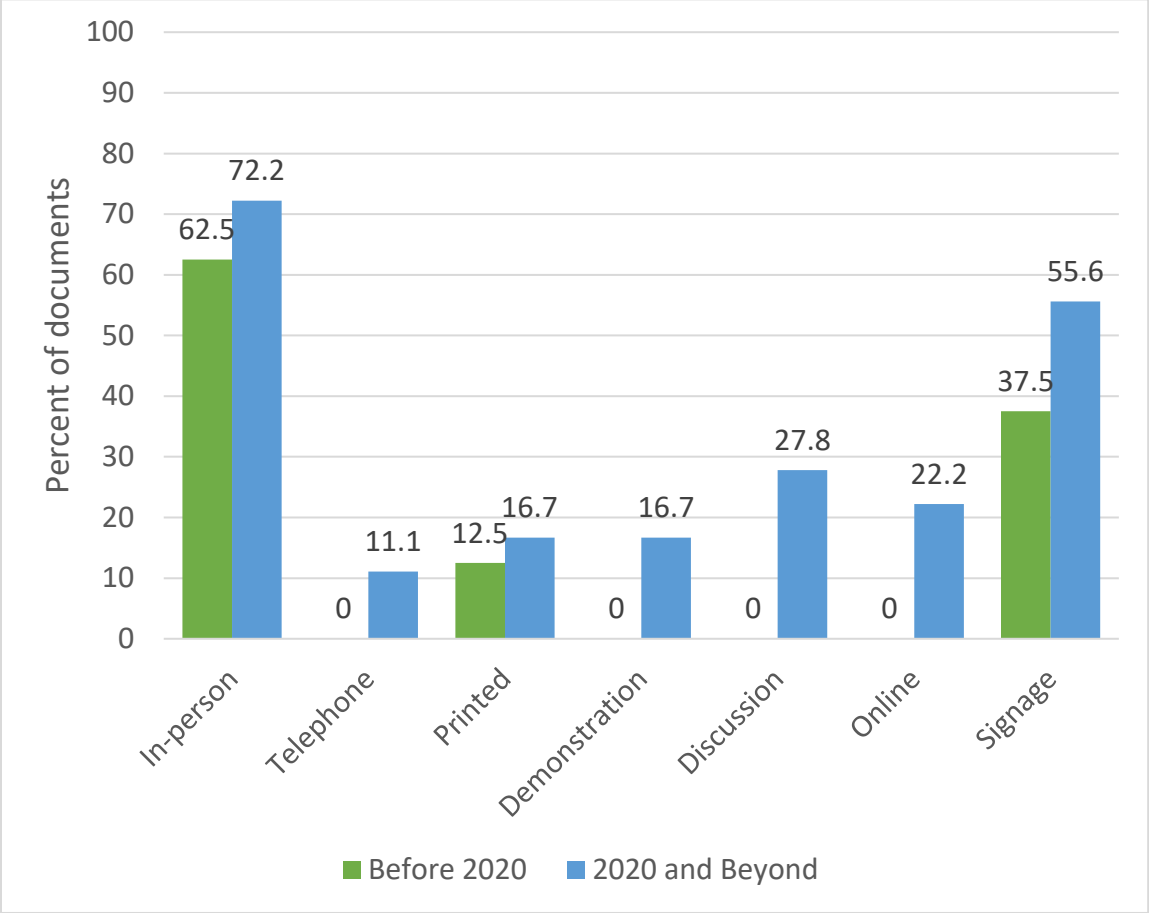


Evolution of Mode of Delivery. As displayed in Figure 4, the authors of five (n = 5; 62.5%) (AHCA, 2015; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017) documents before COVID-19 recommended that visitor education and training be delivered in-person, and another (AHCA, 2015) stated visitors should be provided education on the disease and the facility's response strategy according to their information needs and at an appropriate level. The authors of 13 (n = 13; 72.2%) (AIC, 2023; Australian Government, 2021; Bergman et al., 2020; CDC, 2022; CDC, 2023; OH, 2022; OPH, 2022; PHAC, 2021; Siegel et al., 2023; Stefanacci, 2020; Tupper et al.,

2020; UC, 2022; WHO, 2021) 2020 and beyond documents recommended visitor education be in-person, with the CDC (2022) stating the education materials and delivery mode to be provided according to visitor language comprehension, cultural diversity, and education level. Other modes of education and training delivery from authors of the before COVID-19 documents included printed information (n = 1; 12.5%) (MDHS, 2005) and signage (n = 3; 37.5%) (AHCA, 2015; Fraser Health, 2013; PHAC, 2011). Other modes of education and training delivery recommended by authors of the 2020 and beyond documents included telephone (n = 2; 11.1%) (Australian Government, 2023; CDC, 2023), printed information (n = 3; 16.7%) (CDC, 2022; PHAC, 2021; Siegel et al., 2023), demonstrations (n = 3; 16.7%) (Bergman et al., 2020; Stefanacci, 2020; WHO, 2021), discussion or information session (n = 5; 27.8%) (AIC, 2023; Australian Government, 2023; Bergman et al., 2020; Siegel et al., 2023; Tupper et al, 2020), online modes such as videos (n = 4; 22.2%) (CLRI, 2023; OPH, 2022; RCCL, 2020; Tupper et al., 2020), and signage (n = 10; 55.6%) (Australian Government, 2021; Australian Government, 2023; CDC, 2022; CDC, 2023; OPH, 2022; PHAC, 2021; Siegel et al., 2023; Stefanacci, 2020; UC, 2022; WHO, 2021).

Figure 4

Evolution of Recommended LTC IPAC Visitor Education and Training Modes of Delivery (N = 26)



Evolution of Content. The content included in visitors' IPAC education and training evolved over time, as demonstrated in Figure 5. Six authors (n = 6; 75.0%) (AHCA, 2015; Fraser Health, 2013; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PICN, 2011) from the before 2020 documents and ten authors (n = 10; 55.6%) (AIC, 2023; Augustin & Barry, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CDC, 2023; CLRI, 2023; PHAC, 2021; RCCL, 20; WHO, 2021) of the 2020 and beyond documents recommended including education and training on infection

transmission. Only one author (n = 1; 12.5%) (PHAC, 2011) of a before 2020 document and nine authors (n = 9; 50.0%) (Australian Government, 2023; Augustin & Barry, 2021; CDC, 2022; CLRI, 2023; RCCL, 2020; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) of 2020 and beyond documents recommended including education and training on recognizing symptoms of illness and self-screening. No before 2020 document authors and three (16.7%) (Australian Government, 2021; CDC, 2023; Siegel et al., 2023) 2020 and beyond authors recommended including education on vaccination to visitors. Six (75.0%) (Fraser Health, 2013; PHAC, 2011; PHAC, 2013a; PHAC, 2013b; PHAC, 2017; PICN, 2011) authors of before 2020 documents recommended including education and training on hand hygiene, while all (n = 18; 100.0%) authors of 2020 and beyond documents recommended it.

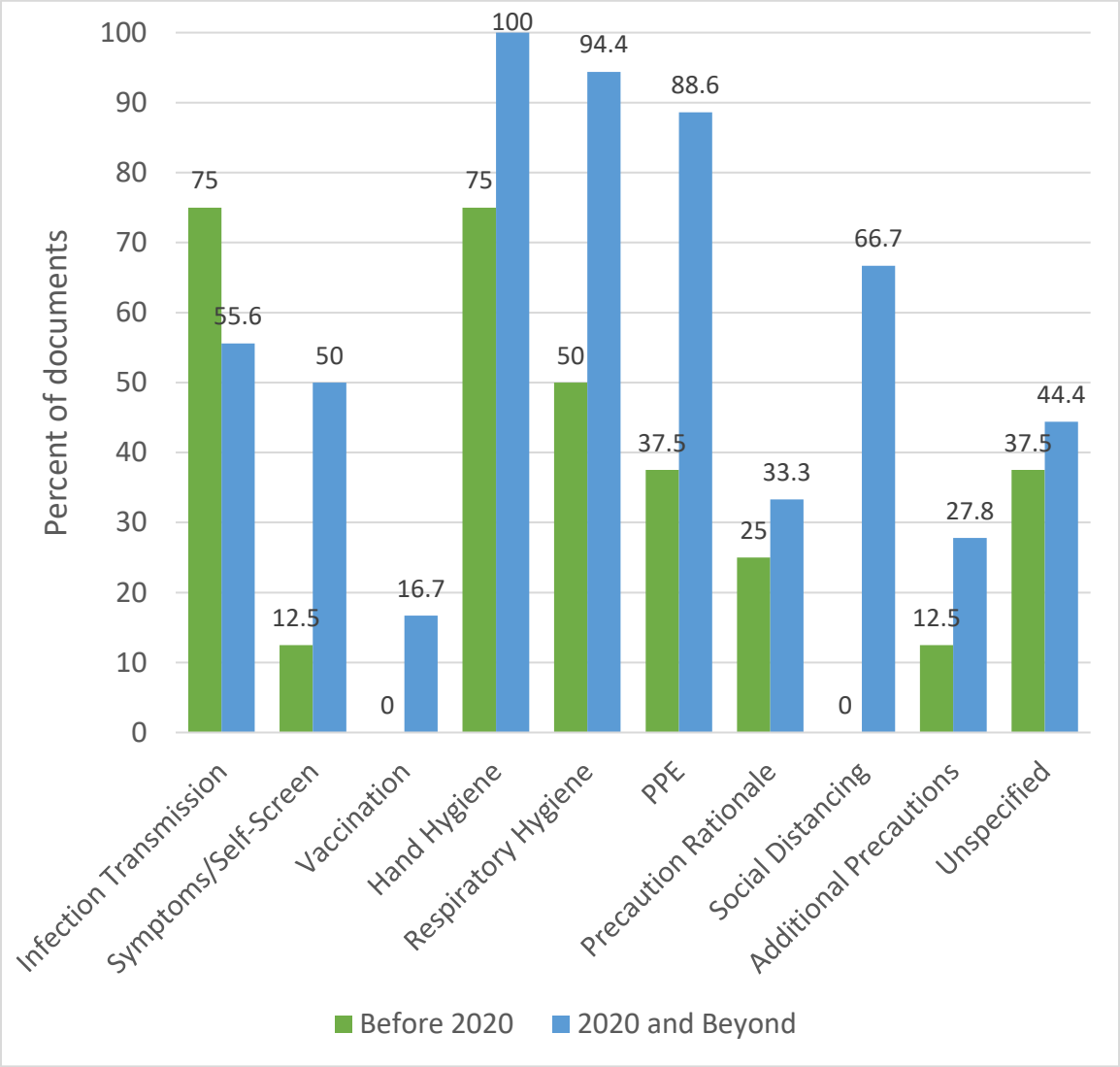
Four (50.0%) (AHCA, 2015; PHAC, 2011; PHAC, 2017; PICN, 2011) authors from before 2020 documents recommended education and training on respiratory hygiene and 17 (94.4%) (AIC, 2023; Augustin & Barry, 2021; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2022; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2021; RCCL, 2020; Tupper et al., 2020; Siegel et al., 2023; Stefanacci, 2020; UC, 2022; WHO, 2021) recommended it from the 2020 and beyond group. Three (37.5%) (PHAC, 2011; PHAC, 2013b; PHAC, 2017) authors of before 2020 documents and 16 (88.9%) (AIC, 2023; Augustin & Barry, 2021; Australian Government, 2021; Australian Government, 2023; Bergman et al., 2020; CDC, 2023; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2021; Siegel et al., 2023; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) authors of 2020 and beyond documents recommended including education and training on

donning and doffing PPE. Two (25.0%) (PHAC, 2013b; PHAC, 2017) before 2020 document authors and six (33.3%) (Augustin & Barry, 2021; CLRI, 2023; PHAC, 2021; RCCL, 2020; Siegel et al., 2023; WHO, 2021) 2020 and beyond authors recommended providing education on the rationales for IPAC precautions.

None of the before 2020 authors recommended educating visitors on social distancing and 12 (66.7%) (Augustin & Barry, 2021; Australian Government, 2021; CLRI, 2023; Ministry of LTC, 2021; OH, 2022; OPH, 2022; PHAC, 2021; RCCL, 2020; Stefanacci, 2020; Tupper et al., 2020; UC, 2022; WHO, 2021) of the 2020 and beyond authors recommended including it. One (12.5%) (PHAC, 2013b) before 2020 author and five (27.8%) (Augustin & Barry, 2021; CLRI, 2023; PHAC, 2021; Siegel et al., 2023; WHO, 2021) 2020 and beyond authors recommended visitor education about transmission-based or additional IPAC precautions be completed when those precautions are implemented. Three (37.5%) (AHCA, 2015; MDHS, 2005; PICN, 2011) before 2020 authors and eight (44.4%) (Australian Government, 2021; Bergman, 2020; CDC, 2022; Ministry of LTC, 2021; OH, 2022; OPH, 2022; Siegel et al., 2023; UC, 2022) 2020 and beyond authors included educating and training visitors on unspecified IPAC practices, such as education on “appropriate IPAC” (WHO, 2021).

Figure 5

Evolution Recommended LTC IPAC Visitor Education and Training Content (N = 26)



The included documents contained recommended education and training for ten IPAC areas. As demonstrated by the bottom rows in Tables 4 and 5, all the documents before COVID-19 recommended five (50%) or less of these IPAC areas. Sixteen of the eighteen 2020 and beyond authors recommended five (50%) or more IPAC areas. This

demonstrates how the IPAC content for educating and training visitors of LTC became more detailed after the onset of the COVID-19 pandemic.

Discussion

This scoping review identified, examined, and mapped literature describing IPAC education and training for visitors to LTC homes. A key finding in this review was the paucity of available evidence, especially research studies, on the topic, resulting in inadequate descriptions of processes, content, and measurable outcomes of IPAC training and education for visitors. Even so, visitor education and training were recommended in 24 (92.3%) of the included documents. In general, visitor education and training delivery was recommended during an outbreak or on admission, before visiting or upon arrival to an LTC home, in person, and by a qualified IPAC individual. The recommended education and training content most frequently included hand washing, respiratory hygiene, and PPE usage. Future research, policies, and practice should aim at developing comprehensive education and training teaching plans including information about the person responsible for the education as well as the timing, frequency, and mode of delivery, and major IPAC content areas. However, significant gaps related to both processes and content for IPAC education and training for visitors were noted throughout the included documents.

Major Gaps in IPAC Processes

None of the included documents contained information on all four processes of IPAC education and training (i.e., person responsible, timing, frequency, and mode). On average, documents created before 2020 addressed 34.4% of the education and training process categories and documents from 2020 and beyond addressed 55.6% of the process categories. As demonstrated in Tables 2 and 3, 62.5% of the before 2020 documents and

44.4% of the 2020 and beyond documents did not indicate who is responsible for delivering education and training to visitors. Before the COVID-19 pandemic, IPAC education and training for visitors to LTC was primarily left to the responsibility of healthcare workers, including nurse leadership (Bergman et al., 2020; PHAC, 2011; PHAC, 2017; Tupper et al., 2020). However, in 2021, part-way through the pandemic, documents that included information on the education and training of visitors began to identify designated, qualified individuals, such as specialized IPAC professionals, to be responsible for the educating of visitors (AIC, 2023; Augustin & Barry, 2021; Ministry of LTC, 2021; OH, 2022; PHAC 2021; Siegel et al., 2023; UC, 2022; WHO, 2021). This shift in responsibility could be due to increased healthcare staff workload and stress from new procedures (Iyamu, 2022; Koopmans, 2022) as well as increasingly detailed and frequently updated IPAC recommendations (Ministry of LTC, 2021), and is supported by IPAC Canada. In Canada, many healthcare facilities have started to employ certified IPAC professionals responsible for educatating all employees and visitors, and developing, implementing, and evaluating policies, practices, and procedures impacting infection prevention in their facilities (IPAC, n.d.).

The timing and frequency of delivery were not included in 73.1% of the included documents. Specifically, none of the before 2020 documents included the frequency of delivery and 87.5% did not include timing and frequency and timing of education and training delivery were not included in 66.7% of the 2020 and beyond documents. Although the frequency of education and training delivery did not emerge in the included documents until 2021, part-way through the COVID-19 pandemic, we know repeated

IPAC education improves people's knowledge and reduces multi-drug resistant organism infections in LTC homes (Lee et al., 2019). IPAC Canada suggests all LTC residents, staff, visitors, and volunteers undergo IPAC education and training before visiting, on a regular basis, and as needed, such as during an outbreak (Augustin & Barry, 2021). Frequently and repeatedly educating and training visitors to LTC on IPAC would instill constant mindfulness in them, rendering consistent behaviour (Bolcato et al., 2021).

The mode of education and training delivery was included in 87.5% of before 2020 documents and 94.4% of 2020 and beyond documents. 2020 and beyond documents included an average of 2.2 modes of delivery, which is twice as many as the 1.1 average of before 2020 documents. After the onset of COVID-19, varied modes of education and training delivery emerged in documents, such as the use of telephone (Australian Government, 2023; CDC, 2023), demonstrations (Bergman et al., 2020; Stefanacci, 2020; WHO 2021), and online sources (OPH, 2022; RCCL, 2020; Tupper et al., 2020). While the increased variation in delivery modes suggests facilities and organizations are giving more consideration to diverse LTC visitor populations and learning needs for IPAC education and training, quantitative investigations warn variability in the delivery of education and training for IPAC across organizations leads to a lack of confidence in IPAC skills, confusion, and ultimately unsafe practice for visitors (Barratt & Gilbert, 2021; Srigley et al., 2023).

A great proportion of visitors to LTC are older adults. This is especially true in Canada where an estimated one in four older adults are caregivers to a family member (i.e., spouse) or friend (Arriagada, 2020). The older adult learning theory of critical

geragogy posits older adults learn best when they are enabled to be self-directed and autonomous and the education material is person-centered (i.e., meaningful and practical), fellow-centered (i.e., social responsibility), and matter-centered (i.e., a new challenge) (Creech & Hallam, 2015). Aligning with this theory, researchers of a recent scoping review about older adult education material preferences in healthcare found print, online, and audio-visual formats were preferred modes of education delivery among older adults, and group classes and online courses were the least preferred (Goodman & Lambert, 2022). These older adult education delivery modes differ from LTC staff education preferences. For example, researchers of a systematic review of IPAC programs in LTC found IPAC education and training for healthcare workers often includes delivery modes such as videos, demonstrations, and structured observations (Lee et al., 2019). The findings of this thesis scoping review do not align with findings in the literature where the mode of IPAC education and training delivery recommended across documents tended to be in-person and through educational signage. However, the findings are supported by critical geragogy where in-person and signage modes enable the autonomy of older adults in learning about IPAC practices for safe visitation to LTC, which is person-centerd, fellow-centered, and matter-centered.

Major Gaps in IPAC Content

On average, the before 2020 documents contained 35.0% of the education and training content areas, whereas the 2020 and beyond documents contained 57.8%. Of all documents, 92.3% included education and training content on hand hygiene, 80.8% included content on respiratory hygiene, and 61.5% included content on infection

transmission. Although vaccination is effective in reducing infectious disease transmission in LTC, as evidenced by the COVID-19 vaccine reducing LTC resident COVID-19 infection and death rates by over 90% (CIHI, 2021), 88.5% of all included documents did not contain education content on vaccination. Additionally, 76.9% of all included documents did not include education on transmission-based/additional precautions, and 69.2% did not include information on indications or rationales for implemented precautions. The exclusion of these IPAC content areas for visitors could be influenced by public health promotional campaigns focusing efforts on IPAC areas such as hand and respiratory hygiene, like with the CDC's ongoing *Clean Hands Save Lives* campaign (CDC, 2023).

Evolution of Recommendation Trends

The recommended IPAC education and training for visitors to LTC homes has evolved since the COVID-19 pandemic including more details regarding the content needed and the ways it should be delivered. This evolution aligns with findings from other sectors globally. For example, participants from more than 70 Canadian developmental services (e.g., respite and transitional care for individuals living with developmental disabilities and complex care needs) attended online IPAC education in 2021. Researchers surveyed the education participants in 2022 and noted 77% of respondents reported the education content resulted in changes to their cleaning and disinfecting practices, 62% reported feeling better prepared for handling infectious outbreaks, 61% reported making changes to their hand hygiene practices, and 51% stated they felt safer in their workplace (Bisaillon et al., 2023). Researchers in Japan surveyed

healthcare workers in 2020, 2021, and 2023 and noted an increase in the implementation rate and amount of adequate IPAC practices after learning of infections (Mori et al., 2024).

Interesting trends were identified in this review that demonstrate how the approaches to educating and training visitors to LTC changed over time. Documents from before COVID-19 were targeted mainly at healthcare workers for educating/training visitors on various aspects of IPAC practices according to any current infectious outbreaks. For example, a report from the PHAC (2013a) more than 10 years ago on HAIs stated visitors spread common infections, including in LTC facilities, and recommended they be educated on practices, such as hand hygiene, as they have a responsibility to prevent pathogenic spread. Over time, documents included in this review became more detailed regarding what education and training should be provided to visitors, such as transmission prevention, respiratory and hand hygiene with rationales, and PPE usage (PHAC 2013a; PHAC, 2017). After the onset of COVID-19, the target audiences of the documents changed to primarily LTC facilities and visitors, suggesting a shift in the responsibility, expectation, and standard of visitor IPAC education and training in LTC facilities. This trend is perhaps due to the increased calls for strategies for safe visitation in LTC, including visitor education and training, after the detrimental impacts of visitor bans, social isolation, and poor IPAC compliance early in the COVID-19 pandemic became apparent (Low et al., 2021; Park et al., 2022; Tupper et al., 2020). Additionally, documents from before COVID-19 and early in the pandemic tended to be government guidelines including information for educating and training visitors to LTC

on IPAC, whereas documents later in the pandemic tended to be specific visitor education resources and policies for LTC homes, suggesting education and training for visitors to LTC on IPAC is being incorporated into facilities.

The IPAC content and amount of content included in visitor education and training tended to increase in frequency after the onset of the COVID-19 pandemic. The routine practices of hand hygiene and respiratory hygiene increased in frequency by 25.0% and 44.4% respectively, resulting in hand hygiene being recommended in 100% and respiratory hygiene in 94.4% of 2020 and beyond documents. The 2020 and beyond documents also indicate a 15.3% increase in recommended education on additional/transmission-based precautions and a 51.4% increase in donning and doffing of PPE. While standard or routine IPAC practices are well embedded in modern healthcare settings and policies (Gilbert & Kerridge, 2022), additional and transmission-based precautions were increasingly utilized throughout the COVID-19 pandemic (CDC, 2021), resulting in increased IPAC education for visitors, especially visitors to LTC, to minimize infection risk to residents (Bergman et al., 2020; Low et al., 2021; Rocard et al., 2021).

None of the documents from before COVID-19 contained educational content for visitors on social distancing, whereas 66.7% of documents after the onset of the COVID-19 pandemic included education on social distancing. Although social distancing has been practiced in various forms throughout history, such as with tuberculosis and Ebola (Huremovic, 2019), it was left out of education and training content for visitors to LTC, even during infectious outbreaks. However, after the onset of COVID-19, documents

contained information on educating visitors to LTC about social distancing. Social distancing and other IPAC measures implemented during the pandemic, such as PPE usage, are noted worldwide as efficient ways to slow the spread of COVID-19 and other infectious diseases, such as influenza (Kuo et al., 2020; Lee et al., 2021; Olsen, 2020; Soo et al., 2020; Urrutia et al., 2021).

This review contains a notable lack of international sources. Despite extensive online searches of websites for international LTC organizations and educational institutions as well as Google searches of specific countries, 84.6% of the included documents were of Canadian or American origin. According to a scientometric review, the USA and Canada are the largest contributors to LTC research worldwide, yet collaboration between these countries and others is limited due to differences in LTC systems (Fu et al., 2019). Information was observed on what different countries allowed or required LTC visitors to do during infectious outbreaks, such as Denmark and Austria allowing outside visitation (Rocard et al., 2021) or Germany limiting the number of visitors (Lorenz-Dant et al., 2021), but data on education and training provided to visitors to LTC globally was not attainable. Despite advancements in LTC research since the 1960s, there is a stark gap in international collaboration and access to international information due to foundational knowledge and measurement gaps (Lepore & Corazzini, 2019). Of note, there is no internationally accepted definition of LTC (Lepore & Corazzini, 2019; Rocard et al., 2021). Some cultures strive to support older adults in aging at home and have few LTC beds, such as in Italy and Turkey (OECD, 2021), and

measurements of LTC lack standardization, limiting researchers' abilities to compare LTC across countries (Lepore & Corazzini, 2019).

Documents obtained for this review lack data on what strategies/activities LTC homes used to educate and train visitors on IPAC and how the education and training were implemented. While many of the collected documents were guidelines for LTC homes on visitor education and training recommendations, few documents demonstrated what LTC homes implemented and how they did so. In many places in Canada, such as in NB, LTC homes need to have a process in place to educate and train visitors on IPAC to be allowed to operate (Department of Social Development, 2021). However, throughout the pandemic, LTC homes in Canada were left to develop their own IPAC policies and often lacked access to expertise in decision-making on staff management and safety (OCSAC, 2020).

Strengths and Limitations

A strength of this thesis scoping review is its timing. After the widespread impact COVID-19 had on LTC homes across the globe, more attention needs to focus on safe visiting and visitor education. This review is strengthened by being the first to map evidence surrounding IPAC education and training in LTC to give important insight into what has been done and what should be done for visitor education and training. This review is also strengthened by having multiple reviewers work through the article screening and data extraction. This reviewing strategy decreases bias and increases rigor by ensuring all included documents were deemed appropriate to the review's inclusion criteria by at least two people.

This review is limited by the collected documents being only in English. Documents in other languages could have offered additional insight – although the database search included French articles, none met the inclusion criteria of this thesis scoping review. This review is also limited by the nature of scoping reviews. We may have unknowingly excluded relevant sources of information through the article screening process despite following the structured JBI framework and conducting a broad literature search (Peters et al., 2021), and many practices and education and training offered by LTC homes may not have been published. Additionally, the quality of evidence in a scoping review is not rated, therefore we cannot score implications or make recommendations for policy or practice (Peters et al., 2021).

Implications of Findings

Through mapping the literature on IPAC education and training for visitors to LTC homes, implications for policy, practice, and research were identified. First, as noted through the findings of this scoping review, LTC homes should have visitor IPAC education and training policies in place to ensure safe visitation during infectious outbreaks to avoid visitor restrictions. The findings of this review provide important insight into what has been recommended for IPAC education and training for visitors and what should be considered when developing policies. Second, healthcare practitioners and decision-makers in LTC homes can use the findings of this review to inform practice changes within their facility, such as changing visitor IPAC policies or reaching out to organizations, such as IPAC Canada, for guidance. Finally, to ensure visitors are adequately educated and trained in IPAC to keep residents safe, researchers should

conduct studies in LTC homes that have implemented IPAC programs. Infection prevention and control programs reduce HAIs across healthcare settings, and the unique nature of LTC homes and poor IPAC compliance supports the need for IPAC programs (Lee et al., 2019). Education and training of visitors to LTC is highly encouraged to slow and potentially help stop transmission of infectious diseases to a highly vulnerable population, yet evidence, especially research studies, of education and training implementation is lacking in the literature. Future research should aim to understand what education and training is provided to visitors in LTC homes and how, when, and by whom it is delivered. Randomized control trials and international collaborative research are needed to focus on visitors and what they find most effective for IPAC training and to understand the resources required by LTC homes to institute best IPAC practices. Data from these studies can be used to lobby governments for additional supports during outbreaks.

Conclusion

This scoping review mapped the available evidence, standards, guidelines, and policies on what IPAC education and training is used for visitors in LTC, and what, when, and how it is provided. The documents identified in this review allowed us to map the IPAC education and training provided to visitors to LTC as well as identify gaps to be addressed in future research. After the COVID-19 pandemic, the target audience of the included documents shifted to LTC facilities and visitors, and the person responsible for delivering education and training to visitors shifted to designated personnel. Since the onset of COVID-19, the recommended frequency, timing, and modes of education and training delivery as well as the included IPAC content recommendations became more detailed. More research is needed to understand the education and training of visitors to LTC and how visitors perceive their education needs. The results of this review provide information for policymakers and LTC homes tasked with developing visitation practices and policies for visitor IPAC education and training, identify areas where future research is needed, and ultimately serves as an important step in developing universal standards for visitation in LTC during infectious disease outbreaks.

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Appendix A

Database Search Strategy

Embase (Ovid) search conducted on June 15, 2022

Date Limit: 1990 onwards

No	Query	Results
#1	(('old age' OR 'aged care' OR elder* OR nursing) NEAR/1 (care OR residence OR residential OR environment OR home OR facility OR setting)):ab,ti	78055
#2	'long term care':ab,ti	29246
#3	'residential home'/exp	7951
#4	'nursing home'/exp	60556
#5	'home for the aged'/exp	12858
#6	#1 OR #2 OR #3 OR #4 OR #5	142783
#7	handwashing:ab,ti	3859
#8	'hand washing':ab,ti	4255
#9	'hand hygiene':ab,ti	8586
#10	sanitiz*:ab,ti	3988
#11	sanitis*:ab,ti	335
#12	cleanser*:ab,ti	1694
#13	disinfect*:ab,ti	41531
#14	glov*:ab,ti	16240
#15	mask*:ab,ti	115698

#16	'patient isolat*':ab,ti	1815
#17	'no visit*':ab,ti	464
#18	((guest* OR visit*) NEAR/2 ('not allow*' OR 'not permit*' OR prohibit* OR 'closed to')):ab,ti	115
#19	vaccin*:ab,ti	444131
#20	((infection OR virus OR covid OR 'covid 19') NEAR/1 (prevent* OR mitigat* OR control* OR contain* OR manag*)):ab,ti	66115
#21	quarantine*:ab,ti	10420
#22	ppe:ab,ti	8022
#23	'personal protective equipment'	9258
#24	'glove'/exp	12053
#25	'mask'/exp	49690
#26	'patient isolation'/exp	2128
#27	'quarantine'/exp	11859
#28	'infection prevention'/exp	72778
#29	'hand washing'/exp	18847
#30	'hand sanitizer'/exp	1527
#31	#7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30	784537
#32	volunteer*:ti,ab	281888
#33	unpaid:ti,ab	2792

#34	'un paid':ti,ab	9
#35	'non paid':ti,ab	107
#36	'non staff':ti,ab	51
#37	'non employee*':ti,ab	57
#38	visit*:ti,ab	446933
#39	guest*:ti,ab	21467
#40	friend*:ti,ab	135624
#41	famil*:ti,ab	1531670
#42	parent*:ti,ab	592030
#43	mother*:ti,ab	318044
#44	father*:ti,ab	62242
#45	daughter*:ti,ab	34534
#46	sibling*:ti,ab	76960
#47	son:ti,ab	20589
#48	sons:ti,ab	119372
#49	brother*:ti,ab	22333
#50	sister*:ti,ab	49571
#51	husband*:ti,ab	23580
#52	wife:ti,ab	8772
#53	'significant other*':ti,ab	5871
#54	'spouse*':ti,ab	25094

#55	'designated support*'	18
#56	'family'/exp	578542
#57	'friend'/exp	23654
#58	health visitor'/exp	1694
#59	'volunteer'/exp	59662
#60	#32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 OR #44 OR #45 OR #46 OR #47 OR #48 OR #49 OR #50 OR #51 OR #52 OR #53 OR #54 OR #55 OR #56 OR #57 OR #58 OR #59	3369651
#61	#6 AND #31 AND #60	796

Medline R (Ovid) search conducted on June 15, 2022

Date Limit: 1990 onwards

No.	Query	Results
1	(("old age" or "aged care" or elder* or nursing) adj1 (care or residence or residential or environment or home or facility or setting)).ab,ti.	62785
2	"long term care".ab,ti.	23329
3	Long-Term Care/	27749
4	Residential Facilities/ or Homes for the Aged/ or Nursing Homes/	48686
5	1 or 2 or 3 or 4	122825
6	handwashing.ab,ti.	2669
7	"hand washing".ab,ti.	3084
8	"hand hygiene".ab,ti.	5539
9	"sanitiz*".ab,ti.	3416
10	"sanitis*".ab,ti.	276
11	"cleanser*".ab,ti.	1176
12	"disinfect*".ab,ti.	33926
13	"glov*".ab,ti.	12201
14	"mask*".ab,ti.	92883
15	"patient isolat* ".ab,ti.	1401
16	"no visit* ".ab,ti.	279
17	((guest* or visit*) adj2 ("not allow*" or "not permit*" or prohibit* or "closed to")).ab,ti.	96

18	"vaccin*".ab,ti.	371756
19	((infection or virus or covid or "covid 19") adj1 (prevent* or mitigat* or control* or contain* or manag*)).ab,ti.	48381
20	"quarantine*".ab,ti.	10346
21	ppe.ab,ti.	6155
22	"personal protective equipment".ab,ti.	7521
23	masks/ or gloves, protective/	8857
24	Patient Isolation/	4425
25	Quarantine/	5906
26	Infection Control/	28378
27	Hand Disinfection/	6229
28	6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27	598980
29	"volunteer*".ab,ti.	208286
30	unpaid.ab,ti.	2202
31	"un paid".ab,ti.	5
32	"non paid".ab,ti.	60
33	"non staff".ab,ti.	34
34	"non employee* ".ab,ti.	36
35	"visit*".ab,ti.	276560
36	"guest*".ab,ti.	21026
37	"friend*".ab,ti.	111047

38	"famil*".ab,ti.	1203235
39	"parent*".ab,ti.	462426
40	"mother*".ab,ti.	245932
41	"father*".ab,ti.	46440
42	"daughter*".ab,ti.	27679
43	"sibling*".ab,ti.	54316
44	son.ab,ti.	19290
45	sons.ab,ti.	18109
46	"brother*".ab,ti.	14803
47	"sister*".ab,ti.	42602
48	"husband*".ab,ti.	19794
49	"wife*".ab,ti.	6569
50	"significant other* ".ab,ti.	4491
51	"spouse*".ab,ti.	19043
52	"designated support* ".ab,ti.	6
53	Friends/	6333
54	Family/	82568
55	Visitors to Patients/	2267
56	Volunteers/	10571
57	29 or 30 or 31 or 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56	2429737

58	5 and 28 and 57	484

CINAHL with Full-text (EBSCOhost) search conducted on June 15, 2022

Date Limit: 1990 onwards

No	Query	Results
S1	TI ((("old age" or "aged care" or elder* or nursing) N1 (care or residence or residential or environment or home or facility or setting))) OR AB ((("old age" or "aged care" or elder* or nursing) N1 (care or residence or residential or environment or home or facility or setting)))	76,468
S2	TI "long term care" OR AB "long term care"	18,483
S3	(MH "Long Term Care")	27,483
S4	(MH "Residential Care")	7,052
S5	(MH "Residential Facilities+")	34,654
S6	S1 OR S2 OR S3 OR S4 OR S5	122,958
S7	TI handwashing OR AB handwashing	1,431
S8	TI "hand washing" OR AB "hand washing"	1,383
S9	TI "hand hygiene" OR AB "hand hygiene"	4,125
S10	TI sanitiz* OR AB sanitiz*	849
S11	TI sanitis* OR AB sanitis*	86
S12	TI cleanser* OR AB cleanser*	537
S13	TI disinfect* OR AB disinfect*	5,919
S14	TI glov* OR AB glov*	4,200
S15	TI mask* OR AB mask*	19,169
S16	TI "patient isolat*" OR AB "patient isolat*"	263
S17	TI "no visit*" OR AB "no visit*"	129

S18	TI (((guest* or visit*) N2 ("not allow*" or "not permit*" or prohibit* or "closed to"))) OR AB (((guest* or visit*) N2 ("not allow*" or "not permit*" or prohibit* or "closed to")))	354
S19	TI vaccin* OR AB vaccin*	63,340
S20	TI (((infection or virus or covid or "covid 19") N1 (prevent* or mitigat* or control* or contain* or manag*))) OR AB (((infection or virus or covid or "covid 19") N1 (prevent* or mitigat* or control* or contain* or manag*)))	28,224
S21	TI quarantine* OR AB quarantine*	2,151
S22	TI PPE OR AB PPE	2,641
S23	TI "personal protective equipment" OR AB "personal protective equipment"	3,714
S24	(MH "Personal Protective Equipment") OR (MH "Masks") OR (MH "Gloves")	9,309
S25	(MH "Patient Isolation")	2,677
S26	(MH "Quarantine")	1,645
S27	(MH "Infection Control") OR (MH "Handwashing") OR (MH "Immunization") OR (MH "Sterilization and Disinfection")	72,053
S28	S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S27	168,327
S29	TI volunteer* OR AB volunteer*	48,653
S30	TI unpaid OR AB unpaid	1,511
S31	TI "un paid" OR AB "un paid"	5
S32	TI "non paid" OR AB "non paid"	36
S33	TI "non staff" OR AB "non staff"	19

S34	TI "non employee" OR AB "non employee"	7
S35	TI visit* OR AB visit*	119,467
S36	TI guest* OR AB guest*	9,863
S37	TI friend* OR AB friend*	41,910
S38	TI famil* OR AB famil*	309,983
S39	TI parent* OR AB parent*	161,981
S40	TI mother* OR AB mother*	94,869
S41	TI father* OR AB father*	18,984
S42	TI daughter* OR AB daughter*	6,113
S43	TI sibling* OR AB sibling*	11,926
S44	TI son OR AB son	29,077
S45	TI sons OR AB sons	29,077
S46	TI brother* OR AB brother*	2,767
S47	TI sister* OR AB sister*	4,953
S48	TI husband* OR AB husband*	6,118
S49	TI wife* OR AB wife*	2,864
S50	TI "significant other*" OR AB "significant other*"	2,996
S51	TI spouse* OR AB spouse*	10,129
S52	TI "designated support*" OR AB "designated support*"	3
S53	(MH "Family")	45,323
S54	(MH "Visitors to Patients")	2,337

S55	(MH "Volunteer Workers")	14,910
S56	S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50 OR S51 OR S52 OR S53 OR S54 OR S55	727,132
S57	S6 AND S28 AND S56	468

ERIC (EBSCOhost) search conducted on June 15, 2022

Date Limit: 1990 onwards

No	Query	Results
S1	TI ((("old age" or "aged care" or elder* or nursing) N1 (care or residence or residential or environment or home or facility or setting))) OR AB ((("old age" or "aged care" or elder* or nursing) N1 (care or residence or residential or environment or home or facility or setting)))	2,306
S2	TI "long term care" OR AB "long term care"	828
S3	DE "Nursing Homes"	1,246
S4	DE "Residential Institutions"	1,087
S5	DE "Residential Care"	1,268
S6	S1 OR S2 OR S3 OR S4 OR S5	5,041
S7	TI handwashing OR AB handwashing	84
S8	TI "hand washing" OR AB "hand washing"	89
S9	TI "hand hygiene" OR AB "hand hygiene"	28
S10	TI sanitiz* OR AB sanitiz*	120
S11	TI sanitis* OR AB sanitis*	13
S12	TI cleanser* OR AB cleanser*	7
S13	TI disinfect* OR AB disinfect*	132
S14	TI glov* OR AB glov*	248
S15	TI mask* OR AB mask*	2,295
S16	TI "patient isolat*" OR AB "patient isolat*"	1
S17	TI "no visit*" OR AB "no visit*"	6

S18	TI (((guest* or visit*) N2 ("not allow*" or "not permit*" or prohibit* or "closed to"))) OR AB (((guest* or visit*) N2 ("not allow*" or "not permit*" or prohibit* or "closed to")))	94
S19	TI vaccin* OR AB vaccin*	707
S20	TI (((infection or virus or covid or "covid 19") N1 (prevent* or mitigat* or control* or contain* or manag*))) OR AB (((infection or virus or covid or "covid 19") N1 (prevent* or mitigat* or control* or contain* or manag*)))	397
S21	TI quarantine* OR AB quarantine*	100
S22	TI PPE OR AB PPE	61
S23	TI "personal protective equipment" OR AB "personal protective equipment"	65
S24	S7 OR S8 OR S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 OR S20 OR S21 OR S22 OR S23	4,262
S25	TI volunteer* OR AB volunteer*	13,750
S26	TI unpaid OR AB unpaid	552
S27	TI "un paid" OR AB "un paid"	3
S28	TI "non paid" OR AB "non paid"	14
S29	TI "non staff" OR AB "non staff"	6
S30	TI "non employee" OR AB "non employee"	5
S31	TI visit* OR AB visit*	21,111
S32	TI guest* OR AB guest*	2,129
S33	TI friend* OR AB friend*	19,941
S34	TI famil* OR AB famil*	128,316

S35	TI parent* OR AB parent*	126,111
S36	TI mother* OR AB mother*	25,378
S37	TI father* OR AB father*	9,012
S38	TI daughter* OR AB daughter*	2,539
S39	TI sibling* OR AB sibling*	4,082
S40	TI son OR AB son	2,449
S41	TI sons OR AB sons	2,449
S42	TI brother* OR AB brother*	1,412
S43	TI sister* OR AB sister*	1,355
S44	TI husband* OR AB husband*	1,933
S45	TI wife* OR AB wife*	1,261
S46	TI "significant other*" OR AB "significant other*"	957
S47	TI spouse* OR AB spouse*	2,480
S48	TI "designated support*" OR AB "designated support*"	4
S49	DE "Family (Sociological Unit)" OR DE "African American Family" OR DE "Daughters" OR DE "Dependents" OR DE "Heads of Households" OR DE "Homemakers" OR DE "One Parent Family" OR DE "Parents" OR DE "Siblings" OR DE "Sons" OR DE "Spouses" OR DE "Widowed"	26,255
S50	DE "Volunteers" OR DE "Student Volunteers"	6,442
S51	S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 OR S40 OR S41 OR S42 OR S43 OR S44 OR S45 OR S46 OR S47 OR S48 OR S49 OR S50	277,745

S52	S6 AND S24 AND S51	23

AgeLine (EBSCOhost) search conducted on December 14th, 2022

Date Limit: 1990 onwards

No	Query	Limiters / Expanders	Last Run Via	Results
S1	(((TI ((("old age" or "aged care" or elder* or nursing) N1 (care or residence or residential or environment or home or facility or setting))) OR AB ((("old age" or "aged care" or elder* or nursing) N1 (care or residence or residential or environment or home or facility or setting)))) OR (TI "long term care" OR AB "long term care"))) AND ((TI handwashing OR AB handwashing) OR (TI "hand washing" OR AB "hand washing") OR (TI "hand hygiene" OR AB "hand hygiene") OR (TI sanitiz* OR AB sanitiz*) OR (TI sanitis* OR AB sanitis*) OR (TI cleanser* OR AB cleanser*) OR (TI disinfect* OR AB disinfect*) OR (TI glov* OR AB glov*) OR (TI mask* OR AB mask*) OR (TI "patient isolat*" OR AB "patient isolat*") OR (TI "no visit*" OR AB "no visit*") OR (TI (((guest* or visit*) N2 ("not allow*" or "not permit*" or prohibit* or "closed to"))) OR AB (((guest* or visit*) N2 ("not allow*" or "not permit*" or prohibit* or "closed to")))) OR (TI vaccin* OR AB vaccin*) OR (TI (((infection or virus or covid or "covid 19") N1 (prevent* or mitigat* or control* or contain* or manag*))) OR AB (((infection or	Expanders - Apply equivalent subjects Search modes - Boolean/Phrase	Interface - EBSCOhost Research Databases Search Screen - Advanced Search	1,757

	virus or covid or "covid 19") N1 (prevent* or mitigat* or control* or contain* or manag*)))) OR (TI quarantine* OR AB quarantine*) OR (TI PPE OR AB PPE) OR (TI "personal protective equipment" OR AB "personal protective equipment"))) AND ((TI volunteer* OR AB volunteer*) OR (TI unpaid OR AB unpaid) OR (TI "un paid" OR AB "un paid") OR (TI "non paid" OR AB "non paid") OR (TI "non staff" OR AB "non staff") OR (TI "non employee" OR AB "non employee") OR (TI visit* OR AB visit*) OR (TI guest* OR AB guest*) OR (TI friend* OR AB friend*) OR (TI famil* OR AB famil*) OR (TI parent* OR AB parent*) OR (TI mother* OR AB mother*) OR (TI father* OR AB father*) OR (TI daughter* OR AB daughter*) OR (TI sibling* OR AB sibling*) OR (TI son OR AB son) OR (TI brother* OR AB brother*) OR (TI sister* OR AB sister*) OR (TI husband* OR AB husband*) OR (TI wife* OR AB wife*) OR (TI "significant other*" OR AB "significant other*") OR (TI spouse* OR AB spouse*) OR (TI "designated support*" OR AB "designated support*")))			

Appendix B

Studies Ineligible Following Full-Text Review

Ahc, M. (2018). Wash your hands -- or people die. *Hospital Infection Control & Prevention, 45*(4), 12.

Exclusion reason: Not education & training of family

Al Hamad, H., Malkawi, M. M. M., Nooh, M., Al-Mutawa, J. H., Doiphode, S. H., & Sathian, B. (2021). Investigation of a COVID-19 outbreak and its successful containment in a long term care facility in Qatar. *European Geriatric Medicine, 12*(1), 177.

Exclusion reason: Does not address IPC measures

Al Hamad, H., Malkawi, M. M. M., Al Ajmi, J. A. A. A., Al-Mutawa, M. N. J. H., Doiphode, S. H., & Sathian, B. (2021). Investigation of a COVID-19 outbreak and its successful containment in a long term care facility in Qatar. *Frontiers Public Health, 9.*

Exclusion reason: Not education & training of family

American Healthcare Association. (1977). *Infection prevention and control for long term care facilities: handbook.*

Exclusion reason: Unable to obtain full-text

Australian Nursing & Midwifery Federation. (2020). The impact of COVID-19 on aged care. *Australian Nursing & Midwifery Journal, 26*(11),16-16.

Exclusion reason: Does not address IPC measures

Aykaç, N., Yüksel Eryiğit, Ö., & Elbek, O. (2021). Evaluation of the measures taken in

nursing homes of the Istanbul metropolitan municipality during the COVID-19 pandemic. *Turk Geriatri Dergisi, 24*(1), 13-22.

Exclusion reason: Not education & training of family

Backhaus, R., Verbeek, H., de Boer, B., Ulrings, J. H. J., Gerritsen, D. L., Koopmans, R. T. C. M., & Hamers, J. P. H. (2021). From wave to wave: a Dutch national study on the long-term impact of COVID-19 on well-being and family visitation in nursing homes. *BMC Geriatrics, 21*(1),1-7.

Exclusion reason: Does not address IPC measures

Bolcato, M., Aurilio, M., Di Mizio, G., Piccioni, A., Feola, A., Bonsignore, A., Tettamanti, C., Ciliberti, R., Rodriguez, D., & Aprile, A. (2021). The difficult balance between ensuring the right of nursing home residents to communication and their safety. *International Journal of Environmental Research and Public Health, 18*(5), 2484.

Exclusion reason: Not education & training of family

Bouchoucha, S. L., & Bloomer, M. J. (2021). Family-centered care during a pandemic: The hidden impact of restricting family visits. *Nursing & Health Sciences, 23*(1), 4-6.

Exclusion reason: Wrong patient population

Chock, L. (2012). Norovirus outbreak in a long term care facility. *American Journal of Infection Control, 40*(5), e110-e111.

Exclusion reason: Unable to obtain full-text

Christ, G. (2021). CMS loosens visitation restrictions for nursing homes. *Modern Healthcare, 51*(11), 7-7.

Exclusion reason: Not education & training of family

Chung, C. H., Li, Y. C., Wang, Y. F., Liu, Y. C., & Lin, W. C. (2017). Influenza A outbreak investigation and control measures of regional teaching hospital. *International Journal of Antimicrobial Agents, 50,* 144.

Exclusion reason: Not education & training of family

Evans, G. (2020). Clock starts ticking when COVID-19 enters nursing home: Look for any early signs and symptoms. *Hospital Infection Control & Prevention, 47*(6), 1-2.

Exclusion reason: Not education & training of family

Fletcher, K. R., & Cinalli, M. (2007). Identification, optimal management, and infection control measures for Clostridium difficile-associated disease in long-term care. *Geriatric Nursing, 28*(3), 171-181.

Exclusion reason: Does not address IPC measures

Frazer, K., Mitchell, L., Stokes, D., Lacey, E., Crowley, E., & Kelleher, C. (2021). A rapid systematic review of measures to protect older people in long-term care facilities from COVID-19. *BMJ Open, 11*(10), e047012.

Exclusion reason: Not education & training of family

Gilissen, J., Pivodic, L., Unroe, K. T., & van den Block, L. (2021). International COVID 19 palliative care guidance for nursing homes leaves key themes unaddressed. *Palliative Care and Social Practice, 15*.

Exclusion reason: Not education & training of family

Gussin, G., Singh, R., Gohil, S. K., Saavedra, R., Tjoa, T., Pedroza, R., Berman, C., Park,

J., Ghasemian, K., Osalvo, A., His, J., His, E. A., Chun, S., Zahn, M., Fonda, E., & Huang, S. S. (2021). Impact of nursing home (NH) universal decolonization and COVID prevention training on COVID-19 burden during the 2020-2021 winter surge in Orange County (OC), California (CA). *Open Forum Infectious Diseases, 8*(1), 32.

Exclusion reason: Not education & training of family

Hado, E., & Friss Feinberg, L. (2020). Amid the COVID-19 pandemic, meaningful communication between family caregivers and residents of long-term care facilities is imperative. *Journal of Aging & Social Policy, 32*(5), 410-415.

Exclusion reason: Not education & training of family

Ham, C., & Montgomery, P. (2021). Exploring infection prevention challenges and opportunities in adult family homes. *AJICS, 49*(6), S6-S7.

Exclusion reason: Not education & training of family

Hartigan, I., Kelleher, A., McCart, J., & Cornally, N. (2021). Visitor restrictions during the COVID-19 pandemic: An ethical case study. *Nursing Ethic, 28*(7/8), 1111-1123.

Exclusion reason: Does not address IPC measures

Haugen, D. F., Romarheim, E., Solvåg, K., & Sigurdardottir, K. R. (2021). Care for dying patients under the COVID-19 pandemic in Norway: A survey of bereaved relatives. *Palliative Medicine, 35*(1), 34

Exclusion reason: Unable to obtain full-text

HCPro. (n.d.). COVID-19: What SNFs need to know. *Billing Alert for Long-Term Care, 22*(5), 4-6

Exclusion reason: Not education & training of family

Ontario Ministry of Health. (2021). Covid 19 Guidance for long-term care homes in Ontario. 33.

Exclusion reason: Unable to obtain full-text

Ingram, C., Downey, V., Roe, M., Chen, Y., Archibald, M., Kallas, K-A., Kumar, J., Naughton, P., Uteh, C. O., Rojas-Chaves, A., Shrestha, S., Syed, S., Büttner, F. C., Buggy, C., & Perrotta, C. (2021). COVID-19 prevention and control measures in workplace settings: A rapid review and meta-analysis. *IJERPH, 18,* 7847.

Exclusion reason: Not education & training of family

Ingram, C., Downey, V., Roe, M., Chen, Y., Cléirigh Büttner, F., Buggy, C., & Perrotta, C. (2021). COVID-19 prevention and control measures in workplace settings: A rapid review and meta-analysis. *European Journal of Public Health, 31,* 113.

Exclusion reason: Not education & training of family

Iwamoto, Sr. P., & Selvage, D. (2013). Control and containment of a norovirus outbreak in a skilled nursing facility unit. *American Journal of Infection Control, 41*(6), 135.

Exclusion reason: Not education & training of family

Jin, C. (2021). Working together in Seattle, Washington: Impact of a collaboration of providence hospice team and long-term care facility with COVID-19 outbreak on patient care. *Journal of Pain Symptom Management, 61*(3), 659.

Exclusion reason: Does not address IPC measures

Kazawa, K., Kodama, A., Sugawara, K., Hayashi, M., Ota, H., Son, D., & Ishii, S.

(2022). Person-centered dementia care during COVID-19: A qualitative case study of impact on and collaborations between caregivers. *BMC Geriatrics, 22*(1), 1-11.

Exclusion reason: Not education & training of family

Kim, J. J., Coffey, K. C., Morgan, D. J., & Roghmann, C. (2021). Nursing home visitation restrictions during COVID-19—Balancing compassion and safety. *American Journal of Infection Control, 49*(3), 407-407.

Exclusion reason: Not education & training of family

Koopmans, R., Verbeek, H., Bielderman, A., Janssen, M., Persoon, A., Lesman-Leegte, I., Sizoo, E. M., Hamers, J. P. H., & Gerristen, D. L. (2022). Reopening the doors of Dutch nursing homes during the COVID-19 crisis: Results of an in-depth monitoring. *International Psychogeriatrics, 24*(4), 391-398.

Exclusion reason: Not education & training of family

Leaver, M. (2001). Guest editorial: Progress towards infection control programmes in residential aged care (RAC) facilities. *Australian Infection Control, 6*(4), 108 109.

Exclusion reason: Unable to obtain full-text

Lee, D. T. F., Yu, D. S. F., Ip, M., & Tang, J. Y. M. (2017). Implementation of respiratory protection measures: Visitors of residential care homes for the elderly. *American Journal of Infection Control, 45*(2), 197-199.

Exclusion reason: Not education & training of family

Loizeau, A., D'Agata, E., Shaffer, M., Hanson, L., Anderson, R., Tsai, T., Habtemariam,

D. A., Bergman, E. H., Carroll, R. P., Cohen, S. M., Scott, E., Stevens, E., Whyman, J., Bennert, E. H., & Mitchell, S. L. (2019). The trial to reduce antimicrobial use in nursing home residents with Alzheimer's disease and other dementias: Study protocol for a cluster randomized controlled trial. *Trials, 20*(1).

Exclusion reason: Not education & training of family

Low, L. F., Hinsliff-Smith, K., Sinha, S. K., Stall, N. M., Verbeek, H., & Siette, J.(2021). Safe visiting is essential for nursing home residents during the COVID-19 pandemic: An international perspective. *Journal of the American Medical Directors Association, 22*(5), 977-978.

Exclusion reason: Not education & training of family

MacDonald, C. J., & Walton, R. (2007). E-learning education solutions for caregivers in long term care (LTC) facilities: New possibilities. *Education for Health: Change in Learning and Practice, 20(*3):2007.

Exclusion reason: Does not address IPC measures

McMichael, T. M., Clark, S., Pogosjans, S., Kay, M., Lewis, J., Baer, A., Kawakami, V., Lukoff, M. D., Ferro, J., Brostrom-Smith, C., Riedo, F. X., Russell, D., Hiatt, B., Montgomery, P., Rao, A. K., Currie, D. W., Chow, E. J., Tobolowsky, F., Bardossy, A. C., ... CDC COVID-19 Investigation Team. (2020). COVID-19 in a long-term care facility - King County, Washington, February 27-March 9, 2020. *Morbidity & Mortality Weekly Report, 69*(12), 339-342.

Exclusion reason: Not education & training of family

Meehan, A., Uth, R., Gadbois, E., Baier, R., Gravenstein, S., Zullo, A., Kabler, H.,

Loiacono, M., & Bardenheier, B. (2022). Impact of COVID-19 on infection control practices in skilled nursing facilities. *Journal of the American Medical Association, 23(*3), 18

Exclusion reason: Not education & training of family

Mendelsohn, L, & McCleary, L. (2003). Reflections on working with families in long term care during the SARS restrictions. *Perspectives (Gerontological Nursing Association (Canada), 27*(3), 8-12.

Exclusion reason: Not education & training of family

Mitchell, L. L., Albers, E. A., Birkeland, R. W., Peterson, C. M., Stabler, H., Horn, B., Cha, J., Drake, A., & Gaugler, J. E. (2022). Caring for a relative with dementia in long-term care during COVID-19. *Journal of the American Medical Directors Association, 23*(3), 428.

Exclusion reason: Not education & training of family

Mollon, N. (2019). Infection control assessment and response (ICAR)in Michigan: Past, present and future. *American Journal of Infectio Control, 47*(6), 35.

Exclusion reason: Not education & training of family

Morgan, J., & Lavin, M. A. (2016). The infection control assessment and response tool: Is it useful during an outbreak? *American Journal of Infection Control, 44*(6), 125.

Exclusion reason: Not education & training of family

Moussa, C. A. (2009). Lights, camera, action! development of a new educational video for long term care. *American Journal of Infection Control, 37*(5), 154

Exclusion reason: Not education & training of family

Nash, W. A., Harris, L. M., Heller, K. E., & Mitchell, B. D. (2021). "We are saving their

bodies and destroying their souls.": Family caregivers' experiences of formal care setting visitation restrictions during the COVID-19 randemic. *Journal of Age Social Policy, 33*(4-5), 398-413

Exclusion reason: Does not address IPC measures

Nemann, A., & Martin, B. (2020). Pandemic support: The coronavirus may have turned our world upside down, but there are things you can do to keep yourself and your family healthy and safe. *PN, 74*(5), 22-6.

Exclusion reason: Wrong patient population

Nguyen, L. K. N., Howick, S., McLafferty, D., Anderson, G. H., Pravinkumar, S. J., Van Der Meer, R., & Megiddo, I. (2021). Impact of visitation and cohorting policies to shield residents from covid-19 spread in care homes: an agent-based model. *American Journal of Infection Control, 49*(9), 1105-1112.

Exclusion reason: Not education & training of family

Ostrowsky, B., Weil, L., Olaisen, R., Stricof, R., Adams, E., Tsivitis, M., Eramo, A., Giardina, R., Erazo, R., Southwick, K. L., Greenko, J. A., Lutterloh, E. C., Blog, D. S., New York COVID-19 Response Team, Green, C., Carrasco, K., Fernandez, R., Vallabhaneni, S., Quinn, M., Kogut, S. J., & Bennett, J. (2022). Real-time virtual infection prevention and control assessments in skilled nursing homes, New York, March 2020-A pilot project. *Infection Control and Hospital Epidemiology, 43*(3), 351-357

Exclusion reason: Not education & training of family

Petrovic, M., Hickman, S., Mack, L., & Unroe, K. Re-opening nursing facilities to

visitors during a pandemic: An early look at experiences. *Journal of the American Geriatrics Society, 69*(1), 303.

Exclusion reason: Not education & training of family

Rios, P., Radhakrishnan, A., Williams, C., Ramkissoon, N., Pham, B., Cormack, G., Grossman, M. R., Muller, M. P., Straus, S. E., & Tricco, A. C. (2020). Preventing the transmission of COVID-19 and other coronaviruses in older adults aged 60 years and above living in long-term care: A rapid review. *Systematic Reviews, 9*(1).

Exclusion reason: Not education & training of family

Rummukainen, M., Jakobsson, A., Karppi, P., Kautiainen, H., & Lyytikäinen, O. (2009). Promoting hand hygiene and prudent use of antimicrobials in long-term care facilities. *American Journal of Infection Control, 37*(2), 168-171.

Exclusion reason: Not education & training of family

Schlaudecker, J. D. (2020). Essential family caregivers in long-term care during the COVID-19 pandemic. *Journal of the American Medical Association, 21*(7), 983.

Exclusion reason: Does not address IPC measures

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Appendix C

Grey Literature Search Strategy

The following tables outline the long-term care organization and association websites as well as general Google searches I conducted to obtain grey literature. I used search terms from the database searches for consistency between search types. To enhacne confirmability, Dr. Durepos reviewed all identified documents according to the inclusion criteria. Blank cells within the tables indicate no applicable documents were located. The grey literature search was completed in January 2024.

Table C1

Grey Literature Search of Long-Term Care Home Associations in English-Speaking Countries

Association	Country	Relevant Documents Identified
Aged and Community Services Australia	Australia	
Aged Care Guild	Australia	
Agency for Integrated Care	Singapore	Agency for Integrated Care Caregiver Training Course Summary
Alberta Caregivers Association	Canada	
Alberta Continuing Care Association	Canada	
American Health Care Association	USA	Sample Policy for Emergent Infectious Diseases for Skilled Nursing Care Centers
Assisted Living Federation of America	USA	
Association of Healthcare Providers India	India	
British Columbia Care Providers Association	Canada	

Association	Country	Relevant Documents Identified
Canadian Association for Long Term Care	Canada	
Canadian Caregiver Coalition	Canada	
Care England	England	
Caregiver Action Network	USA	
Caregiver India Foundation	India	
Caregiver Saathi	India	
Caregivers Alberta	Canada	
Caregivers Association of Nigeria	Nigeria	
Caregivers Nova Scotia	Canada	
Carers Alliance	Hong Kong	
Carers Australia	Australia	
Carers NSW	Australia	
Carers NZ	New Zealand	
Carers Queensland	Australia	
Carers Trust	United Kingdom	
Carers UK	United Kingdom	
Carers Victoria	Australia	
Centers for Medicare and Medicaid Services	USA	
Eldercare Locator	USA	
Family Caregiver Alliance	USA	
Family Caregivers of British Columbia	Canada	
Family Carers Ireland	Ireland	
HelpAge India	India	
Irish Association of Social Care Worker	Ireland	
Leading Age Services Australia	Australia	
LeadingAge	USA	

Association	Country	Relevant Documents Identified
Long-Term Care Ombudsman Program	USA	
Malaysian Caregivers Association	Malaysia	
Manitoba Association of Residential and Community Care	Canada	
National Alliance for Caregiving	USA	
National Association of Aged Care Providers	Australia	
National Care Association	England	
National Center for Assisted Living	USA	
National Consumer Voice for Quality Long-Term Care	USA	
New Brunswick Association of Nursing Homes	Canada	
New Zealand Aged Care Association	New Zealand	
Northern Ireland Association of Homes for the Aged	Ireland	
Nursing Homes Ireland	Ireland	
Nursing Homes of Nova Scotia Association	Canada	
Ontario Caregiver Organization	Canada	
Ontario Long Term Care Association	Canada	
PEI Association for Community Long Term Care Homes	Canada	
PEI Association of Licensed Community Care Facilities	Canada	
Saskatchewan Association of Long-Term Care Providers	Canada	
Scottish Care	Scotland	
Seniors Newfoundland and Labrador	Canada	
South African Care Forum	South Africa	
South African Care Forum	South Africa	

Association	Country	Relevant Documents Identified
South African Care Workers Association	South Africa	
The Princess Royal Trust for Carers	United Kingdom	
Well Spouse Association	USA	
Yukon Department of Health and Social Services	Canada	
Total Documents Identified		2

Note. USA = United States of America; PEI = Prince Edward Island

Table C2

Grey Literature Search of Long-Term Care Home Organizations in English-Speaking Countries

Organization	Country	Relevant Documents Identified
Agency for Research in Healthcare Quality	USA	
Australian Association of Gerontology	Australia	
Australian Institute of Health and Welfare	Australia	
Brown University Center for Gerontology and Healthcare Research	USA	
Canadian Centre for Elder Law	Canada	
Canadian Institute for Health Information	Canada	
Centers for Disease Control and Prevention	USA	IPAC Recommendations for LTC Updated 2023
Centre for Excellence in Population Ageing Research	Australia	
Centre for Gerontology and Rehabilitation	Ireland	
Centre for Learning, Research and Innovation in LTC	Canada	New IPAC eLearning course
Institute for Health System Solutions and Virtual Care	Canada	
Institute for Research on Aging	Canada	
International Long Term Care Policy Network	International	
Irish Centre for Social Gerontology	Ireland	
Irish Longitudinal Study on Ageing	Ireland	
Manitoba Centre for Health Policy	Canada	
Marcus Institute for Aging Research at Hebrew SeniorLife	USA	
Massey University, Health and Ageing Research Team	New Zealand	

Organization	Country	Relevant Documents Identified
National Ageing Research Institute	Australia	
National Institute on Aging	Canada	
National Institute on Aging	USA	
New Zealand Aged Care Association Research Center	New Zealand	
Rand Corporation Center for the Study of Aging	USA	
South African Medical Research Council	South Africa	
Stanford Center on Longevity	USA	
University of Auckland, School of Nursing	New Zealand	
University of Cape Town, Division of Geriatric Medicine	South Africa	
University of East Anglia, Centre for Research on Ageing and Gender	England	
University of Leeds, Centre for Research in Nursing and Midwifery	England	
University of Otago, New Zealand Institute for Research on Aging	New Zealand	
University of Oxford, Oxford Institute of Population Ageing	England	
University of Sheffield, School of Nursing and Midwifery	United Kingdom	
University of Southampton, Centre for Research on Ageing	England	
World Health Organization	International	Infection Prevention and Control for Long-Term Care Facilities in the Context of Covid 19
Total Documents Identified		3

Note. USA = United States of America; LTC = Long-term care; IPAC = Infection prevention and control

Table C3

Grey Literature Obtained via the Google Search Engine

Website	Country	Relevant Documents Identified
Australian Government	Australia	Visiting an aged care home during an outbreak

Website	Country	Relevant Documents Identified
Centers for Disease Control and Prevention	Canada	Core Infection Prevention and Control Practices for Safe Healthcare Delivery in All Settings
Fraser Health	Canada	Infection Control Manual – Residential Care
Ministry of Long-Term Care	Canada	Infection prevention and control program guidance
Missouri Department of Health Services	USA	Infection Control Guidelines for Long-Term Care Facilities
Ontario Health	Canada	Infection Prevention and Control Standard for Long-Term Care Homes
Ontario Public Health	Canada	Visitors policy long term care homes during COVID-19 pandemic
Provincial Infection Control Network	Canada	Residential care infection prevention and control manual.
Public Health Agency of Canada	Canada	Prevention and Control of Influenza during a Pandemic for All Healthcare Settings
Public Health Agency of Canada	Canada	The Chief Public Health Officer's Report on the State of Public Health in Canada 2013
Public Health Agency of Canada	Canada	Clostridium Difficile Infection
Public Health Agency of Canada	Canada	Routine Practices and Additional Precautions for Preventing the Transmission of Infection in Healthcare Settings Part B

Website	Country	Relevant Documents Identified
Public Health Agency of Canada	Canada	Infection prevention and control for COVID-19: Interim guidance for long-term care homes
ResCare Community Living	USA	Patient & Family Education Package
UniversalCare	Canada	Infection Prevention and Control Policy
Total Documents Identified		15

Note. USA = United States of America

Appendix D

Data Extraction Table

Author, Year	

Country	
Study aim	
Type of study/document	
LTC description	
Education/training content included	
Mode of delivery	
Frequency of delivery	
Timing of delivery	
Where education/training occurred	
Individuals and qualifications responsible for the education/training	
How has the education/training evolved over time?	

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Publications

Durepos, P., MacLean, R., Ricketts, N., Boamah, S., Witherspoon, R., Gould, O., Olthuis, J., Totton, K., Tucker, K., Boulay, I., Robitaille, A., Aquino-Russell, C., & Kaasalainen, S. (2024). Engaging care partners of persons living with dementia in acceptance and commitment therapy (ACT) programs: A scoping review. *Aging and Mental Health, 28*(5), 725-737. http://doi.org/10.1080/13607863.2023.2288864

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Conference Presentations

MacLean, R., Durepos, P., Gibbons, C., Morris, P., Witherspoon, R., Keeping-Burke, L., & McCloskey, R. (2022, September). Education and training in infection prevention and control provided by long-term care homes to family caregivers: A scoping review. Partnerships and Opportunities for Impact: 27th Annual Nursing Research Day, Fredericton, Canada