

COVID-19 Living Evidence Profile #2

(Version 2: 31 March 2021)

Question

What is known about preventing and managing COVID-19, outbreaks of COVID-19 and about supporting renewal in long-term care homes?

Background to the question

The long-term care sector has been hard hit by the COVID-19 pandemic in Canada and in many other high-income countries. This has led to many questions about how long-term care homes can improve the prevention and management of COVID-19 outbreaks, as well as how to support the renewal in long-term care homes as a whole based on lessons learned from the pandemic and about challenges that preceded it. As such, there are many activities that crisis management and renewal plans will need to consider, which we summarize in the framework below. We use this framework to organize key findings from evidence documents and experiences from other countries and from Canadian provinces and territories. We have not made any changes to the framework since the first version of our LEP.

Organizing framework

- **Preventing infections**
 - Vaccinating staff and residents (e.g., allocation rules, communications, administration, and monitoring)
 - Adhering to infection-prevention measures (e.g., washing hands, wearing masks, physical distancing, temporal distancing, and disinfecting surfaces)
 - Adjusting resident accommodations, shared spaces and common spaces (e.g., single-occupancy rooms, no or minimally shared bathrooms, meals taken in rooms not dining hall, and improvement to HVAC systems)

Box 1: Our approach

We identified research evidence addressing the question by searching the COVID-END [inventory of best evidence syntheses](#) and the COVID-END [guide to key COVID-19 evidence sources](#) in the 22-29 March 2021 period. We also searched: 1) [HealthEvidence](#); and 2) [Health Systems Evidence](#) (see Appendix 1 for the search terms used). We identified jurisdictional experiences by searching jurisdiction-specific sources of evidence listed in the same COVID-END guide to key COVID-19 evidence sources, and by hand searching government and stakeholder websites. We selected eight countries (Australia, France, Finland, Germany, Netherlands, New Zealand, United Kingdom, United States) that are advanced in their thinking or are good comparators to the Canadian provincial and territorial approaches to long-term care.

We searched for guidelines that were developed using a robust process (e.g., GRADE), full systematic reviews (or review-derived products such as overviews of systematic reviews), rapid reviews, protocols for systematic reviews, and titles/questions for systematic reviews or rapid reviews that have been identified as either being conducted or prioritized to be conducted. Single studies were only included if no relevant systematic reviews were identified.

We appraised the methodological quality of full systematic reviews and rapid reviews using AMSTAR. Note that quality appraisal scores for rapid reviews are often lower because of the methodological shortcuts that need to be taken to accommodate compressed timeframes. AMSTAR rates overall quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. It is important to note that the AMSTAR tool was developed to assess reviews focused on clinical interventions, so not all criteria apply to systematic reviews pertaining to delivery, financial or governance arrangements within health systems or to broader social systems.

This update of the living evidence profile was prepared in the equivalent of two days of a ‘full-court press’ by all involved staff, and will be updated monthly to provide evidence updates that can support COVID-19 vaccine roll-out.

- Adjusting service provision (e.g., cohorting residents and staff and providing PT/OT services in resident rooms rather than clinics)
- Restricting and screening staff and visitors (e.g., visitor policy changes, approach to and frequency of screening)
- Testing of residents and staff (e.g., approach to and frequency of testing)
- Isolating suspected or confirmed cases among residents (within same or different facility) and staff (at home or in alternative settings like hotels)
- Contact tracing among staff and visitors
- Supporting staff and residents (e.g., phones/tablets and internet connections for online interactions between residents and their families and caregivers, financial support to staff who must quarantine or isolate)
- **Managing outbreaks**
 - Adding or replacing administrators and staff (e.g., secondment of hospital administrators and medical or IPAC ‘swat’ teams, rotating in staff to avoid burn-outs)
 - Adhering to infection-control measures (e.g., donning and doffing personal protective equipment)
 - Making additional spatial, service, screening, testing, isolation and support changes
 - Transferring residents when their care needs exceed capacity in the home
- **Renewing delivery, financial and governance arrangements**
 - Improving access to care (e.g., number of homes and beds, waitlist management)
 - Improving safety and quality of care, and more generally improving quadruple-aim metrics (e.g., quality standards, regular resident/family and staff surveys)
 - Changing service-delivery models (e.g., case management and care coordination, regular primary-care services, referral services)
 - Improving physical infrastructure (e.g., private rooms only, rooms grouped into ‘pods’ with dedicated staff, improving common areas and greenspace access, modern HVAC systems, and internet access for residents and staff)
 - Altering funding arrangements (e.g., overall funding model, targeted payments and penalties based on performance, and changes to covered providers, services and products)
 - Adjusting governance arrangements (e.g., licensure provisions, including whether for-profit entities can be licensed, accreditation standards, and reporting and auditing requirements)
 - Supporting greater integration of long-term care with other sectors (e.g., collaborative leadership and pooled funding for an attributed population)
- **Supporting residents (and their families and caregivers) and staff (and volunteers)**
 - Engaging residents, families and caregivers in self-management, care choices, care delivery, and organizational and policy decision-making (e.g., shared decision-making about care, patient, family and caregiver advisory councils, complaints-management processes)
 - Ensuring culturally appropriate living among residents (e.g., for Black, Indigenous and other people of colour)
 - Supporting technology-enabled living among residents (e.g., communication with family and caregivers, with staff, and with outside providers)
 - Ensuring an adequate supply of staff (e.g., staffing ratios, recruitment and retention initiatives, contracts with external agencies)
 - Optimizing skill mix among staff (e.g., training, task shifting or substitution, role expansion or extension, multi-disciplinary teams)
 - Ensuring the safety and satisfaction of staff and volunteers (e.g., workplace safety assessments, workplace violence-prevention initiatives, interventions to reduce burn-out)
 - Supporting technology-enabled care by staff (e.g., interoperable electronic health records, telehealth services, eConsultations and eReferrals)

- Remunerating staff (e.g., remuneration models for different types of staff, including full-time employment offers, reasonable wages, and paid sick leave, wage parity or other approaches to avoid unnecessary staff movements between sectors)
- **Promoting alternatives to long-term care**
 - Engaging residents, families and caregivers in shared decision-making about whether to enter long-term care
 - Enhancing the breadth and intensity of home- and community-care services to delay or avoid entry to long-term care
 - Supporting technology-enabled care at home (e.g., telehealth, remote monitoring systems, patient reminders)
 - Providing financial supports to avoid or delay entry into long-term care (e.g., retrofitting homes, expanding family and caregiver benefits)

What we found

We identified 51 new evidence documents since the last update of this LEP, of which we deemed 38 to be highly relevant. Of these, 10 documents were published during or prior to the last version of the LEP, but were not captured in it. As a result we have included these newly identified documents in this version. Findings from older documents have been explicitly noted. The newly added highly relevant evidence documents are:

- one new guideline developed using a robust process (e.g., GRADE);
- three full systematic reviews;
- seven rapid reviews;
- one new guideline developed using some type of evidence synthesis and/or expert opinion;
- one protocol for an upcoming systematic review; and
- 25 new single studies that provide additional insight.

This LEP also includes evidence documents from the previous version that we deemed to still be highly relevant, for a total of 90 highly relevant documents.

We outline insights from the most salient newly identified highly relevant evidence documents and from the jurisdictional scans in narrative form below. This is accompanied by Table 1, which provides more details about key findings from each of the newly identified evidence documents and new insights from the jurisdictional scans. In Table 2, we provide findings from still-relevant evidence documents and jurisdictional scans from the previous version of our LEP. We also outline the type and number of all documents that were identified in Table 3.

For those who want to know more about our approach, we provide a detailed summary of our methods in Appendix 1. In addition, we provide highly relevant evidence documents identified from the updated searches in this LEP version in Appendix 2a, all highly relevant documents that were identified in previous versions in Appendix 2b (including their relevance to the categories in the organizing framework, key findings, and when they were conducted or published), and medium- and low-relevance documents identified from the updated searches in this LEP version in appendix 2c. We also provide detailed summaries of preventing and managing COVID-19, outbreaks of COVID-19, and about supporting renewal in long-term care homes from other countries in Appendix 3, and from Canadian provinces and territories in Appendix 4. Documents excluded at the final stages of reviewing are provided in Appendix 5.

Key findings from highly relevant evidence documents

Preventing infection

Three rapid reviews and 15 primary studies were found that focused on preventing infections, many of which reiterated key messages related to infection, prevention and control measures that have been well-established throughout the pandemic. However, since the last version of this LEP, studies are beginning to emerge related to vaccinating staff and residents in long-term care homes. Two primary studies focused on the effectiveness of the Pfizer-BioNTech vaccine finding that [partial vaccination was 63% effective against infection](#), and [an increase in effectiveness following the second dose](#). One primary study evaluated the transmission of the B.1.1.7 variant and found that [ongoing successful surveillance, testing and vaccination of residents in long-term care homes](#) successfully reduced the spread of the variant in long-term care homes. The final study focused on vaccine hesitancy among staff in long-term care homes in Liverpool and found [commonly cited reasons for not receiving the vaccine included concerns about the lack of vaccine research, staff being off-site during vaccination sessions, pregnancy and fertility concerns, and concerns about allergic reactions](#).

In addition, one rapid review and three primary studies (one of which was published late last year and not captured in the first version of the LEP) examined the effects of preventive measures on residents, reporting [high levels of loneliness and depression](#), [worsened neuropsychiatric symptoms among residents with dementia](#), [an increase in episodes of incontinence](#) and [significant weight loss](#).

Managing outbreaks

The Ontario Ministry of Health released an updated guideline focused on [case, contact and outbreak management for confirmed cases of COVID-19 and for variants of concern](#). For long-term care homes, this includes:

- variant-of-concern screening among staff and residents;
- enhanced application of infection, prevention and monitoring of infection prevention and control measures, which may include repeated prevalence testing of previously negative individuals to assess the spread of infection;
- restricting staff from working in other locations; and
- use of isolation facilities, quarantine measures and associated supports for positive cases and case contacts.

Renewing delivery, financial and governance arrangements

A high-quality systematic review found that [for-profit ownership was not consistently associated with a high probability of COVID-19 outbreak](#), however it also found evidence that [for-profit homes had worse outcomes for cumulative infections and mortality following an outbreak](#). The review also found that [for-profit status of homes was associated with shortages in personal protective equipment which may contribute to increased infection and deaths](#).

Supporting residents and staff

Two primary studies described the effects of the pandemic on managers and staff at long-term care homes. One study reported [an association between the demands of the job and intention to leave the profession](#), while the other described [staff experiencing feelings of burnout due to increased workloads, staffing shortages, and the emotional weight of caring for residents](#). A third primary study described [a new model of long-term care homes that operates with fewer residents, and uses universal workers operating on a flat staffing model to work closely with a defined group of](#)

[residents](#). This model of long-term care home had [significantly fewer infections and deaths than its counterparts, as well as reporting greater levels of staff, resident and family satisfaction than traditional long-term care homes](#).

Promoting alternatives to long-term care

Only one primary study was identified related to alternatives to long-term care and it was published in December 2020 but not included in the previous LEP. The study describes [the use of technology to enable the hospital-at-home model to support older adults to remain in their own homes throughout the duration of an acute illness and recovery](#).

Key findings from the jurisdictional scan

We identified several new insights based on the experiences with the roll-out of the COVID-19 vaccine in eight countries (Australia, France, Finland, Germany, the Netherlands, New Zealand, the United Kingdom, and the United States), as well as all provinces and territories in Canada.

Key insights from preventing and managing COVID-19, and renewing long-term care in other countries

In terms of preventing infections, we found that:

- Australia and New Zealand began administering vaccines to long-term care staff and residents and all other countries have continued vaccine roll-out in these populations;
- in the Netherlands, extra vaccines allocated to long-term care homes are being provided to designated caregivers to support safe and regular visits;
- during March 2021, the Aged Care Quality and Safety Commission in Australia performed 2,924 visits to long-term care homes as part of an infection-control monitoring program; and
- as vaccine roll-out continues, the U.K. and the U.S. have continued to update guidance documents for admitting residents to long-term care homes and visitations in long-term care homes.

For managing outbreaks, we found that Australia developed the [Victorian Aged Care Response Centre](#) and has invested in emergency response teams to help adequately respond to COVID-19 outbreaks in long-term care homes.

In terms of renewing delivery, financial and governance arrangements, we found that:

- in Australia, the Royal Commission into Aged Care Quality and Safety published a [report with 148 recommendations to support fundamental and systemic long-term care reform](#);
- on 14 March 2021, Australia announced an additional \$1.1 billion to support the national COVID-19 response strategy, a portion of which will be allocated to supporting long-term care homes; and
- commencing in April 2021, Australian residents gaining admission into government-funded long-term care homes will be mandated to complete an assessment to facilitate the transition to the Australian National Aged Care Classification funding model, pending government approval.

For supporting residents and staff, we found that the Netherlands has assigned medical students and interns to help relieve pressure in long-term care homes.

We did not find any insights related to promoting alternatives to long-term care.

Key insights from preventing and managing COVID-19, and renewing long-term care in other Canadian provinces and territories

In terms of preventing infections, we found that:

- Some provinces have administered at least a first dose of a COVID-19 vaccine to all long-term homes (Alberta and New Brunswick), while some others have more than 90% of all long-term home residents vaccinated with at least their first dose (B.C. and Saskatchewan);
- in February 2021, the Canadian Association for Long Term Care released a summary of recommendations including a call for the federal government to provide \$93.2 million to support the recruitment and retention of infection prevention and control experts in long-term care homes;
- some provinces have created or updated guidelines for infection prevention in long-term care homes (Quebec and New Brunswick); and
- Manitoba and Ontario have updated testing requirements for staff and residents in long-term care homes.

For managing outbreaks, we found that:

- New Brunswick published a [COVID-19 management guide for long-term care homes](#) which addresses outbreak management; and
- Nova Scotia Health released a [clinical pathway for COVID-19 patients from long-term care homes](#) to guide patient management and transfers.

In terms of renewing delivery, financial and governance arrangements, we found that:

- in [February 2021](#), the Canadian Association for Long Term Care released a summary of recommendations for system planning, which included mandating a standardized system for collecting residential and financial performance data in long-term care homes as part of the Canada Health Accord agreements signed with each of the provinces and territories;
- the Canadian Association for Long Term Care also called on the federal government to expand projects eligible for infrastructure funding to include long-term care homes to meet current design standards by 2025;
- On 29 March 2021, the Ontario government announced that it will invest [\\$77 million to help long-term care homes improve their technologies for medication safety](#);
- The Institut national de santé publique du Québec submitted a memo about '[Preventing maltreatment for healthy aging](#)' as part of the 'Governmental action plan to combat maltreatment against elderly people 2022-2027'; and
- Ontario and the Northwest Territories announced additional funding to develop long-term care infrastructure, support access to long-term care home beds and improve staff training.

For supporting residents and staff, we found that:

- in [February 2021](#), the Canadian Association for Long Term Care released a summary of recommendations for long-term system planning, which includes calling on the federal government to include private designated learning institutions that offer recognized and equivalent training programs for healthcare aides as eligible programs under the Post Graduate Work Permit, and in the upcoming micro-credentials program through Employment and Skills Development of Canada;

- Ontario plans to invest \$4.9 billion over four years to increase the average direct care per long-term care resident from 2.75 to four hours a day, and \$121 million will also be spent on accelerated training for nearly 9,000 personal-support workers (PSW), and financial grants will be offered to attract PSWs and nurses to work in long-term care homes; and
- as of 15 February 2021, applications were closed for Saskatchewan’s temporary wage supplement program for health workers who care for vulnerable citizens, but legislation was changed on 18 March 2021 to allow for paid time off from work for employees when they are getting vaccinated for COVID-19.

In terms of promoting alternatives to long-term care, we found that:

- the Ministry of Health and Social Services in Quebec published [guidance regarding how to adapt the delivery of home-based care to the COVID-19 pandemic context](#), including stratified guidance according to the public-health alert of the region and specific measures for adapting service delivery.

Table 1: Highlights from new highly relevant evidence documents and experiences

Preventing and managing COVID-19, outbreaks of COVID-19, and supporting the renewal in long-term care homes	New evidence	New experiences
General/cross-cutting insights	<ul style="list-style-type: none"> • One rapid review examines the range of guidance for long-term care homes across various jurisdictions in comparison to guidance that in Ireland with some variations noted between the guidance documents, including differences in asymptomatic testing, differences in monitoring systems for residents with symptoms, and changes in visitation rules in long-term care homes following vaccinations, among others (AMSTAR rating 2/9) • One rapid review conducted earlier this year of government and expert guidance documents aimed to produce research-based tips to respond to questions and concerns emerging in the long-term care sector during the early stages of the COVID-19 pandemic, however the review revealed gaps in research evidence which found that available guidance provided details on what staff should do, but very little guidance was provided on how they should do it (Last updated October 2020; AMSTAR rating 3/9) 	<ul style="list-style-type: none"> • None identified
Preventing infections	<p><i>Vaccinating staff and residents</i></p> <ul style="list-style-type: none"> • A cohort analysis in one primary study of residents in a long-term care home found that partial vaccination with Pfizer-BioNtech COVID-19 vaccine was 63% effective against infection, however pre-existing immunity may strengthen the response to a single dose (last updated March 2020) • One primary study of staff in Liverpool long-term care homes found that the mean staff vaccination rate was 51.4% per home with commonly cited reasons for not receiving the vaccine being: concerns about the lack of vaccine research, 	<p>Key insights from preventing and managing COVID-19, and renewing long-term care in other countries</p> <p><i>Vaccinating staff and residents</i></p> <ul style="list-style-type: none"> • Australia and New Zealand began administering vaccines to long-term care staff and residents, and all other countries have continued vaccine roll-out in these populations • In Germany, vaccine delays have resulted in mobile units that visit long-term care homes operating at only 67% capacity

	<p>staff being off-site during vaccination sessions, pregnancy and fertility concerns, and concerns about allergic reactions (last updated March 2021)</p> <ul style="list-style-type: none"> • The same study suggested methods to combat hesitancy which included providing evidence and literature to staff to dispel misinformation, as well as hosting meetings and one-on-one conversations with staff (last updated March 2021) • One primary study found no significant increase in vaccine effectiveness among residents between the first and second doses of the Pfizer-BioNTech vaccine, however vaccine effectiveness increased to 52% from days 0-7 after the second dose and 64% from seven days after the second dose (last updated March 2021) • One primary study evaluated the transmission of the COVID-19 variant B.1.1.7 and found that the ongoing successful surveillance, testing and vaccination of residents in long-term care homes curtailed the variants spread in long-term care homes in Israel (last updated February 2021) <p><i>Adhering to infection-prevention measures</i></p> <ul style="list-style-type: none"> • One rapid review conducted last year mapped the evidence related to isolation measures imposed in long-term care homes as a result of the COVID-19 pandemic and found that despite significant discussion of their negative impact, few specific solutions to mitigate the negative effects of isolation were mentioned (last updated August 2020; AMSTAR rating 2/9) • One primary study documented the range of infection-prevention measures put in place in a Taiwanese long-term care home that were found to reduce COVID-19 transmission <ul style="list-style-type: none"> ○ These included measures for those entering the facility, those entering wards, staff working in wards, and residents in wards, such as education for staff and residents about COVID-19, regular hand sanitizing, cleaning of frequently used equipment, universal masking, and having specific vehicles and staff responsible for medical visits and acute-care transfer (last updated March 2021) 	<ul style="list-style-type: none"> • In the Netherlands, extra vaccines allocated to long-term care homes are being provided to designated caregivers to support safe and regular visits <p><i>Adhering to infection-prevention measures</i></p> <ul style="list-style-type: none"> • During March 2021, the Aged Care Quality and Safety Commission in Australia performed 2,924 visits to long-term care homes as part of an infection control monitoring program <p><i>Restricting and screening staff and visitors</i></p> <ul style="list-style-type: none"> • As vaccine roll-out continues, the U.K. and U.S. have continued to update guidance documents for admitting residents to long-term care homes and visitations in long-term care homes <p>Key insights from preventing and managing COVID-19, and renewing long-term care in other Canadian provinces and territories</p> <p><i>Vaccinating staff and residents</i></p> <ul style="list-style-type: none"> • As of 19 February 2021, more than 30,000 residents (91%) of long-term care homes in B.C. have received at least a first dose of a COVID-19 vaccine • As of 2 March 2021, in Saskatchewan, 91% of all long-term facility residents have received at least one dose of a COVID-19 vaccine <ul style="list-style-type: none"> ○ Although Saskatchewan extended the interval between first and second doses of COVID-19 vaccines to up to four months, as of 5 March 2021 long-term care staff and residents are exempt and will receive second doses as originally recommended • In Alberta and New Brunswick, a first dose of a COVID-19 vaccine has been administered to all long-term care homes <p><i>Adhering to infection-prevention measures</i></p> <ul style="list-style-type: none"> • In February 2021, the Canadian Association for Long Term Care released a summary of recommendations including a call for the federal government to provide \$93.2 million to support
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	<ul style="list-style-type: none"> • One primary study implemented a three-part infection prevention and control assessment consisting of a screening tool, telephone checklist, and a COVID-19 video assessment that found observations that would have been missed using other approaches, including personal protective equipment that was not easily accessible, redundant or improperly donned and doffed (last updated March 2021) • One primary study used a game to test willingness to make behavioural infection, prevention and control changes and found that factors underlying the willingness to change included the feeling of playing an important role in fighting the epidemic, the information given in the training materials, the probability of infecting a relative, and the obligation to follow procedures (last updated March 2021) • One primary study explored adherence to prevention and control guidelines in 484 long-term care homes in China and found an average rate of 80% compliance (last updated January 2021) • The same study found compliance was associated with the number of medical staff, the education level of the manager, long-term care home size, and establishment of a quarantine room/unit (last updated January 2021) • One primary study evaluated changes in social distancing restrictions in long-term care homes nationally in the United States and found that strong social distancing measures were associated with lower weekly rates of COVID-19 cases and related deaths among staff and residents (last updated February 2021) <p><i>Testing of residents and staff</i></p> <ul style="list-style-type: none"> • One study found that the comprehensive use of PCR testing in long-term care homes on all residents and staff following the identification of a single case and strict cohorting of residents who tested positive were effective in controlling the COVID-19 outbreak (last updated March 2021) • One study conducted last year evaluated current testing pathways in long-term care homes and identified that swab- 	<p>the recruitment and retention of infection prevention and control experts in care homes</p> <ul style="list-style-type: none"> • Shared Health Manitoba maintains a library of COVID-19 resources, including informational posters, FAQs and tools, for healthcare providers working in long-term and personal-care homes during the pandemic • A 29 March 2021 directive from the Ministry of Health and Social Services in Quebec establishes COVID-19 safety guidelines for long-term care homes based on the public-health alert level of the facility (orange - level 3 alert, red - level 4 alert, or grey - preventive isolation or outbreak) <ul style="list-style-type: none"> ○ The Ministry of Health and Social Services has published an information sheet regarding the measures applicable to caregivers and visitors to residents of private retirement homes, with measures stratified based on the public-health alert level of the region • New Brunswick published a COVID-19 management guide for adult residential homes and nursing homes <p><i>Restricting and screening staff and visitors</i></p> <ul style="list-style-type: none"> • In B.C., long-term care homes will be allowed up to two visitors at a time while adhering to public health measures such as masks and sanitization practices as of 1 April 2021 • Nova Scotia has released guidance for long-term care visits, including social visitors and designated caregivers • As of 12 March 2020, visiting restrictions for long-term care homes have been limited to one essential visitor, and group/external activities have been suspended in P.E.I. and Newfoundland and Labrador <p><i>Testing of residents and staff</i></p> <ul style="list-style-type: none"> • Released on 12 March 2021, Manitoba's infection prevention and control guidance for personal-care homes states that testing for COVID-19 is recommended for all newly admitted or readmitted residents upon entry, except for those who have tested positive within the last 90 days
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	<p>based testing was organizationally complex and resource intensive, requiring additional staff who were familiar to residents, whereas point-of-care tests could give homes greater flexibility (last updated January 2021)</p> <ul style="list-style-type: none"> • One primary study found that the use of routine weekly COVID-19 PCR testing among staff in Israeli long-term care homes prevented hospitalizations and mortality (last updated January 2021) <p><i>Restricting and screening staff and visitors</i></p> <ul style="list-style-type: none"> • Another primary study conducted last year examining the consequences of COVID-19 measures found high levels of loneliness, depression and a significant exacerbation in mood and behavioural problems during the implementation of a ban on visitors (last updated September 2020) <p><i>Supporting staff and residents</i></p> <ul style="list-style-type: none"> • One rapid review found that during lockdowns residents in long-term care homes with dementia experienced worsened neuropsychiatric symptoms, cognitive decline and a greater use of antipsychotics (last updated February 2021; AMSTAR rating 5/9) • One primary study found that long-term care home outcomes worsened for residents on a broad array of measures, including: increased prevalence of depressive symptoms; increased share of residents with unplanned substantial weight loss; significant increases in episodes of incontinence; and significant reductions in cognitive functioning (last updated March 2021) • One primary study conducted in 2020 found significant weight loss among both COVID-19-positive and COVID-19-negative residents in a long-term care home population after a widespread COVID-19 outbreak, suggesting that long-term care homes should proactively ensure residents receive adequate mealtime support, symptoms management, weight monitoring, and comprehensive nutrition assessments (last updated November 2020) • One primary study suggested roles that clinical students can undertake in long-term care homes during the COVID-19 pandemic that can provide mutually beneficial and safe 	<ul style="list-style-type: none"> • In Ontario, according to a directive of the Minister of Long Term Care effective 15 March 2021, every licensed long-term care home must ensure that caregivers, staff, student placements, and volunteers working in or visiting a long-term care home take a COVID-19 antigen or PCR test at specific frequencies
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	<p>opportunities, including gardening and general grounds beautification, record transfer, resident biography, and window entertainment (last updated March 2021)</p>	
<p>Managing outbreaks</p>	<p><i>Making additional spatial service, screening, testing, isolation and support changes</i></p> <ul style="list-style-type: none"> • A guideline developed using a robust process provides guidance for public-health units on case, contact and outbreak management of all confirmed cases of COVID-19 and for variants of concern with priority given to variants of concern in efforts to interrupt transmission to the community (last updated February 2021; Ontario Ministry of Health) • One full systematic review found that residents of long-term care homes had on average a single-facility attack rate of 45% and a case fatality rate of 23% points to the need for early identification and rapid diagnostics of cases within homes (last updated September 2020; AMSTAR rating 9/11) • One full systematic review suggested that genomics can help to understand the initial seedings and routes of transmission in outbreaks at long-term care homes, though most were found to link to a single strain and likely a single introductory source (last updated November 2020; AMSTAR rating 5/9) • One rapid review compared the impact of initial government policies for long-term care homes between the U.K. and Australia and found that while both prioritized hospital resourcing over long-term care homes, early lockdown and availability of viral testing to the public contributed to lower absolute number of fatalities (last updated March 2021; AMSTAR rating 3/9) • One rapid review summarized evidence on strategies that can be implemented to mitigate the risk of COVID-19 outbreaks in long-term care homes, including: comprehensive surveillance, monitoring and evaluation of staff and resident symptoms; limiting movement into and between long-term care homes; physical distancing; proper provision and use of personal protective equipment; 	<p>Key insights from preventing and managing COVID-19, and renewing long-term care in other countries</p> <p><i>Making additional spatial service, screening, testing, isolation and support changes</i></p> <ul style="list-style-type: none"> • Australia developed the Victorian Aged Care Response Centre to help adequately respond to COVID-19 outbreaks in long-term care homes • Australia has developed emergency response teams to support long-term care homes if a COVID-19 outbreak occurs <p>Key insights from preventing and managing COVID-19, and renewing long-term care in other Canadian provinces and territories</p> <p><i>Adhering to infection-control measures</i></p> <ul style="list-style-type: none"> • New Brunswick published a COVID-19 management guide for adult residential homes and nursing homes, which addresses outbreak management <p><i>Transferring residents when their care needs exceed capacity in the home</i></p> <ul style="list-style-type: none"> • Nova Scotia Health released a clinical pathway for COVID-19 patients from long-term care homes to guide patient management and transfers

	<p>cohorting of residents; and infection-control auditing (AMSTAR rating 8/10)</p> <ul style="list-style-type: none"> • One rapid review examined the continued use of asymptomatic testing in long-term care homes and found that given the high rates of protection from vaccines, the harms and challenges of routine asymptomatic testing may outweigh the benefits when all staff and residents have been vaccinated (last updated March 2021; AMSTAR rating 2/9) • One primary study conducted earlier in the year described the successful control of a COVID-19 outbreak in a long-term care home through the use of general screening and consistent cohorting of residents who tested positive (last updated January 2021) • One primary study describes the treatment plan implemented in response to a COVID-19 outbreak in a large long-term care home in Johannesburg which included: repeatedly enforcing preventive measures; ensuring high-protein nutritional supplementation; monitoring residents' levels of oxygen saturation; educating staff on the importance of consistent vital checking; educating staff on frailty; continuous hydration of patients; and encouraging residents to have an advance directive and care plan (last updated February 2021) 	
Renewing delivery, financial and governance arrangements	<p><i>Altering funding arrangements</i></p> <ul style="list-style-type: none"> • A full systematic review found that for-profit ownership was not consistently associated with a higher probability of a COVID-19 outbreak, however it did find evidence that these homes had worse outcomes for cumulative infections and mortality following an outbreak in the long-term care home (last updated January 2021; AMSTAR rating 8/10) • The same review found that for-profit owned homes were associated with shortages of personal protective equipment which may have contributed to increased infection and deaths in these homes (last updated January 2021; AMSTAR rating 8/10) • One guidance document published earlier this year and developed using some type of evidence synthesis and/or expert opinion provides guidance for people leaving hospital 	<p>Key insights from preventing and managing COVID-19 and renewing long-term care in other countries</p> <p><i>Improving safety and quality of care and more generally improving quadruple-aim metrics</i></p> <ul style="list-style-type: none"> • In Australia, the Royal Commission into Aged Care Quality and Safety published a report with 148 recommendations to support fundamental and systemic long-term care reform <p><i>Altering funding arrangements</i></p> <ul style="list-style-type: none"> • On 14 March 2021, Australia announced an additional \$1.1 billion to support the national COVID-19 response strategy, a portion of which will be allocated to supporting long-term care homes

	<p>and being transferred to care homes, including testing residents 48 hours prior to hospital discharge, those who are likely to be infected with COVID-19 are to be discharged to an isolation facility for 14 days, and long-term care homes should have been designated by the Care Quality Commission (last updated February 2021; NHS England, Public Health England, and Care Quality Commission)</p>	<ul style="list-style-type: none"> • Commencing in April 2021, Australian residents gaining admission into government-funded long-term care homes will be mandated to complete an assessment to facilitate the transition to a new funding model, pending government approval <p>Key insights from preventing and managing COVID-19, and renewing long-term care in other Canadian provinces and territories</p> <p><i>Improving safety and quality of care</i></p> <ul style="list-style-type: none"> • In February 2021, the Canadian Association for Long Term Care released a summary of recommendations for system planning, which included mandating a standardized system for collecting residential and financial performance data in long-term care homes as part of the Canada Health Accord agreements signed with each of the provinces and territories • On 29 March 2021, the Ontario government announced that it will invest \$77 million to help long-term care homes improve their technologies for medication safety • The Institut national de santé publique du Québec submitted a memo about ‘Preventing maltreatment for healthy aging’ as part of the ‘Governmental action plan to combat maltreatment against elderly people 2022-2027’ <p><i>Improving physical infrastructure</i></p> <ul style="list-style-type: none"> • The Canadian Association for Long Term Care called on the federal government to expand projects eligible for infrastructure funding to include seniors housing, which includes long-term care, to invest in the construction, renovation and retrofit of 780 long-term care homes so that they meet current design standards by 2025, and to increase capacity by committing to fund an additional 42,000 new long-term care resident beds across the country by 2025 • The Ontario government announced on 24 March 2021 that it is making additional investments in long-term care to improve existing infrastructure and access to care
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Supporting residents and staff	<p><i>Ensuring adequate supply of staff</i></p> <ul style="list-style-type: none"> One primary study described a new model of long-term care homes that operate with fewer residents (maximum 140) and uses a flat staffing model that relies on a group of universal workers as well as nurses who provide about an hour of care a day to each of the residents (last updated March 2021) <p><i>Ensuring the safety and satisfaction of staff and volunteers</i></p> <ul style="list-style-type: none"> One primary study conducted interviews with managers of long-term care homes in the U.S. and found an association between the perceived pandemic-specific and general demands of the job and intention to leave the profession (last updated March 2021) The same study found that the association was significantly stronger in the second round of interviews later in the pandemic (last updated March 2021) Interview data from one primary study conducted earlier this year found that administrators working in long-term care homes described the challenge of tracking and implementing confusing and sometimes contradictory guidance from different agencies, while care staff described being fearful of infection and experiencing feelings of burnout due to increased workloads, staffing shortages, and the emotional weight of caring for residents facing isolation, illness and death (last updated January 2021) <p><i>Optimizing skill mix among staff</i></p> <ul style="list-style-type: none"> One primary study published earlier this year described the introduction of a new role of a geriatric liaison in long-term 	<p>Key insights from preventing and managing COVID-19, and renewing long-term care in other countries</p> <p><i>Ensuring adequate supply of staff</i></p> <ul style="list-style-type: none"> The Netherlands has assigned medical students and interns to help relieve pressure in long-term care homes <p>Key insights from preventing and managing COVID-19, and renewing long-term care in other Canadian provinces and territories</p> <p><i>Engaging residents, families and caregivers in self-management, care choices, care delivery, and organization and policy decision-making</i></p> <ul style="list-style-type: none"> The Nova Scotia Health Authority and the Palliative and Therapeutic Harmonization Program published guidance on and a worksheet about goals-of-care discussions with residents' substitute decision-makers during the COVID-19 pandemic <p><i>Ensuring adequate supply of staff</i></p> <ul style="list-style-type: none"> In February 2021, the Canadian Association for Long Term Care released a summary of recommendations for long-term system planning, which included calling on the federal government to include private designated learning institutions that offer recognized and equivalent training programs for healthcare aides as eligible programs under the Post Graduate Work Permit, and in the upcoming micro-credentials program through Employment and Skills Development of Canada

	<p>care homes in Madrid during the pandemic who were responsible for the coordination of care between hospital, long-term care homes, and other members of a resident's care team (Last updated January 2021)</p> <ul style="list-style-type: none"> • One primary study identified four roles that nurse practitioners can play to support resident care during the pandemic: containing the spread of COVID-19; stepping in where additional staff are needed; supporting staff and families; and establishing links between fragmented systems of care by acting as a liaison (last updated February 2021) <p><i>Supporting technology-enabled living among residents</i></p> <ul style="list-style-type: none"> • One primary study conducted earlier this year described volunteers' shift to online tools to support visiting with residents of a long-term care home, and reported that they were generally well received, though a few residents reported challenges hearing while others felt uncomfortable using the technology (last updated January 2021) 	<ul style="list-style-type: none"> • The Ontario government plans to invest \$4.9 billion over four years to increase the average direct care per long-term care resident from 2.75 to four hours a day • \$121 million will also be spent on accelerated training for nearly 9,000 personal-support workers, and financial grants will be offered to attract personal-support workers and nurses to work in long-term care homes • Despite the province's efforts to incentivize employment in long-term care, the Ontario Long-Term Care Association has indicated that long-term care in Ontario is losing staff to other industries <p><i>Remunerating staff</i></p> <ul style="list-style-type: none"> • Saskatchewan launched a Temporary Wage Supplement Program in March 2020 to financially support health workers who care for vulnerable citizens, including workers at long-term care homes, at the rate of \$400 every four weeks <ul style="list-style-type: none"> ○ Applications for the latest phase of this program were closed after 15 February 2021 • On 18 March 2021, the Government of Saskatchewan amended legislation to allow for paid time off from work for employees when they are getting vaccinated for COVID-19, including staff of long-term and personal-care homes
Promoting alternatives to long-term care	<p><i>Supporting technology-enabled care at home</i></p> <ul style="list-style-type: none"> • One primary study conducted earlier in the year described a rapid-response and treatment service that uses technology and the hospital-at-home model to provide short-term, targeted interventions at the acute hospital level within the home, and was found to support older adults to remain in their own homes throughout the duration of their illness (last updated December 2020) 	<p>Key insights from preventing and managing COVID-19, and renewing long-term care in other Canadian provinces and territories</p> <ul style="list-style-type: none"> • Although \$2.88 billion in funding was provided to home care in Ontario in the 2019-20 budget, according to the Ministry of Health and Long-Term Care, there was no similar funding allocated in the proposed 2020-21 budget • In Quebec, The Ministry of Health and Social Services has published guidance regarding how to adapt the delivery of home-based care to the COVID-19 pandemic context <ul style="list-style-type: none"> ○ The guidance is stratified based on the public-health alert level of the region • General infection-prevention and safety measures are outlined, as well as specific measures for adapting service delivery

Table 2: Key findings from highly relevant documents identified in previous versions related to one or more COVID-19 vaccine roll-out elements

Preventing and managing COVID-19, outbreaks of COVID-19 and supporting the renewal in long-term care homes	Evidence from previous versions	Experiences from previous versions
Preventing infections	<p><i>Vaccinating staff and residents</i></p> <ul style="list-style-type: none"> • Canada’s phased approach to immunization will prioritize residents and staff of congregate-living arrangements including long-term care homes (last updated December 2020; Public Health Agency of Canada) • Prioritization of COVID-19 vaccination in a guideline from the Department of Health and Social Care in the U.K. is given to residents in care homes for older adults and their carers (last updated 6 January 2021; Department of Health and Social Care) <p><i>Adhering to infection-prevention measures</i></p> <ul style="list-style-type: none"> • Guidance from the Centres for Medicare and Medicaid emphasize working with state and local health departments to ensure a continuous supply of PPE for long-term care homes, as well as implementing requirements for staff to wear personal protective equipment and residents to wear masks that cover the nose and mouth (when it is safe to do so) whenever they are in shared spaces (last updated April 2020) • WHO guidance recommends ensuring standard infection prevention is practised, including wearing PPE, hand hygiene, enhanced cleaning, and in areas with known or suspected transmission of COVID-19 to implement universal masking policies for staff, visitors and residents (last updated January 2021) • Mixed results were found for the implementation of hand hygiene and personal protective equipment among older adults in long-term care settings, however the authors note that the absence of evidence does not imply that these measures should 	<p>Key insights from preventing and managing COVID-19 and renewing long-term care in other countries</p> <ul style="list-style-type: none"> • For many countries priority in vaccine campaigns was provided to long-term care residents (Australia, France, Finland, Germany, Netherlands, U.K., U.S.) <ul style="list-style-type: none"> ○ New Zealand differed somewhat in its vaccine prioritization, developing three different vaccine roll-out plans with different priority rankings depending on the level of community transmission of COVID-19 at the time of deployment <ul style="list-style-type: none"> ▪ High-risk frontline health workers, such as those working in long-term care homes, are prioritized in the second or first groups depending on whether community transmission is low • All countries have placed restrictions or protocols on visitations and external providers in long-term care homes during the pandemic (Australia, France, Finland, Netherlands, Germany, New Zealand, U.K., U.S.) • Many countries’ national or regional health authorities have produced guidelines to prevent infections in long-term care homes, specifically by addressing issues such as screening protocols, using personal protective equipment (PPE), hygiene and sanitization practices, quarantining or restricting access when residents are symptomatic, and training staff in infection prevention and control practices (Australia, Finland, Germany, New Zealand, U.K., U.S.)

[not be implemented during the pandemic](#) (last updated March 2020; AMSTAR rating 3/9)

- The most common recommendations in clinical practice guidelines on the prevention and control of COVID-19 include: [establishing surveillance and monitoring systems; mandating the use of personal protective equipment; physically distancing or cohorting residents; environmental cleaning and disinfection; promoting hand and respiratory hygiene among residents, staff, and visitors; and providing sick-leave compensation for staff](#) (last updated July 2020; AMSTAR rating 6/9)
- [Surveillance, monitoring and evaluation of staff and resident symptoms and the diligent use of PPE were found to mitigate the risk of outbreaks and mortality within long-term care homes, as were other interventions including the promotion of hand hygiene and enhanced cleaning measures](#) (last updated November 2020; AMSTAR rating 7/10)
- [Significant reductions in the prevalence of COVID-19 infection among staff and residents were attributed to the use of PPE](#) (last updated October 2020; AMSTAR rating 5/9)
- [Education and training in proper wearing of PPE, ensuring an adequate supply of PPE, and adhering to strict hand hygiene were best practices for support staff in long-term care homes](#) (last updated October 2020; AMSTAR rating 5/9)
- The effectiveness of infection-control measures is dependent upon several factors and a combination of strategies, with the most significant being: access to hand hygiene facilities in the workspace; restricting visitation; rapid identification of cases among both staff and residents through testing; environmental decontamination; allocating staff to one facility for reducing spread across several locations; and providing psychosocial support for staff (internal document published June 2020 – available upon request; AMSTAR rating 0/9)
- [Most clinical practice guidelines for adults aged 60 years and older in long-term care settings recommended hand hygiene practices, wearing personal protective equipment, social distancing or isolation, disinfecting surfaces, droplet precautions, surveillance and evaluation, and using diagnostic testing to confirm illnesses](#) (published March 2020; AMSTAR rating 7/9)

Key insights from preventing and managing COVID-19 and renewing long-term care in other Canadian provinces and territories

- All provinces and territories draw from and build on federal guidance on the care of residents in long-term care homes during COVID-19 to develop recommendations for prevention and control measures for long-term care
- All provinces and territories have implemented visiting restrictions and protocols in long-term care homes
- All provinces and territories prioritize long-term care facility staff and residents in their COVID-19 vaccination roll-out plans
- In January 2021, British Columbia began a pilot project for COVID-19 contact tracing using wearable devices to deliver real-time information to isolate individuals as necessary
- In Manitoba, automated contact tracing follow-up systems were established for healthcare workers including those in long-term care homes
- Employers and healthcare unions in Saskatchewan signed to support the creation of a labour pool to assist with staff cohorting

- [The National Institute on Ageing \(NIA\) in Canada recommends an 'Iron Ring' set of actions including requiring the use of appropriate PPE by care providers and residents, and providing training to support its use](#) (last updated April 2020; National Institute on Ageing)

Adjusting resident accommodations, shared spaces and common spaces

- [Social distancing and cohorting of residents may help to mitigate the risk of outbreak and mortality in long-term care homes](#) (last updated November 2020; AMSTAR rating 7/10)
- [Increased facility size, greater number of beds and number of staff \(and who work in multiple homes\) were associated with an increase in the probability of COVID-19 cases and size of outbreak](#) (last updated November 2020; AMSTAR rating 7/9)
- [Increases in the prevalence of COVID-19 infection among staff and residents was associated with inability to isolate infected residents, and infrequent cleaning of communal areas](#) (last updated October 2020; AMSTAR rating 5/9)
- [Further measures that can be effective at preventing future outbreaks, hospitalizations, and deaths from COVID-19 in long-term care homes include disallowing three- and four-resident rooms while increasing temporary housing to support crowded homes](#) (last updated January 2021; AMSTAR rating 0/9)
- [Guidelines describe using single rooms when available, and to cohort patients with positive cases of COVID-19 into units, floor, or a wing](#) (last updated April 2020)
- [Avoid shared activities within the same space, but if this is not possible, residents and staff should perform hand hygiene before, during and after activities, with adequate spacing between residents](#) (last updated March 2020; Vancouver Coastal Health Authority)
- [During meal times, residents should be distanced at least two metres apart and not facing each other, and when this is not possible, consider tray service or providing meals in shifts with appropriate sanitization between residents](#) (last updated March 2020; Vancouver Coastal Health Authority)
- [Seating in TV/media lounges should be arranged in theatre style with maximum spacing between chairs \(two metres on each side](#)

	<p>is ideal) (last updated March 2020; Vancouver Coastal Health Authority)</p> <ul style="list-style-type: none"> • Long-term care homes should consider designating different zones including a transition zone for residents going to an acute-care facility, a COVID-19 free zone, and a COVID-19 positive zone (if patients are being cared for within the facility) each with their own patterns of traffic and a hand sanitizing station between (last updated June 2020) <p><i>Adjusting service provision</i></p> <ul style="list-style-type: none"> • Increase in the prevalence of COVID-19 infection among staff and residents was associated with hiring temporary staff and not assigning staff to care separately for infected and uninfected residents (last updated October 2020; AMSTAR rating 5/9) • Ensuring adequate staff-to-patient ratios (though no estimate is provided), limiting staff work locations, and cohorting of staff and residents are all best practices to prevent infection in long-term care homes (Last updated October 2020; AMSTAR 5/9) • Key aspects of palliative care were largely unaddressed in guidance provided to long-term care homes during the COVID-19 pandemic, including protocols for holistic assessment and management of symptoms and needs at the end of life (including stockpiling medications), education of staff concerning palliative care, referral to specialist palliative care or hospice, advance-care planning communication, support for family including bereavement care, and support for staff (last updated May 2020; AMSTAR rating 7/9) • A rapid review described the need to support advance-care planning and provide psychological care for residents with dementia by, for example, providing information and explanations if concern is expressed, using reminders and visual instructions to explain the current situation, using reassuring language and gestures to help residents follow safety regulations, ensuring frequent interactions with residents and taking time to listen to how they are doing, maintaining consistent schedules whenever possible, stimulating movement and exercise, and avoiding the use of negative language related to the pandemic (last updated September 2020; AMSTAR rating 7/9) 	
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- [National Institute on Ageing recommends limiting movement of LTC care providers to one care setting wherever possible, and simultaneously introducing incentives to do so, such as top-ups on pay](#) (last updated April 2020; National Institute on Ageing)

Restricting and screening staff and visitors

- [Guidance from the Centres for Medicare and Medicaid suggest using symptom screening for every individual that enters a long-term care facility](#) (last updated April 2020)
- [WHO guidance recommends the use of symptom surveillance and/or regular laboratory testing of all staff, residents and visitors in areas with cluster or community transmission](#) (last updated January 2021; World Health Organizations)
- [Guidance from the Government of Canada for Indigenous long-term care homes recommends active screening for any new admissions or re-admissions, as well as any visitors and staff entering the building](#) (last updated April 2020)
- [No evidence was found to suggest that visitors have introduced COVID-19 infections to care homes, however this finding may reflect that most care homes did not allow visitors during peaks of the pandemic](#) (last updated November 2020; AMSTAR rating 0/9)
- [It was found that there was a severe impact on the well-being of residents in care homes during the period of visitor bans as demonstrated by high levels of loneliness, depression, and worsening mood of residents](#) (last updated November 2020; AMSTAR rating 0/9)
- [Visitor restrictions should balance the risks of COVID-19 infection with the risks of well-being and quality of life of the resident, and should be frequently and transparently communicated to all residents and family members](#) (last updated August 2020)
- [Measures to minimize the introduction of COVID-19 infection during visitations from relatives and caregivers should be implemented and may include requiring the wearing of masks and testing visitors if local incidence is high \(more than 50/100,000 per week\)](#) (last updated January 2021)

Testing of residents and staff

- [There is emerging evidence that early detection of index cases through systematic testing of all residents and staff can support the prevention of outbreaks in long-term care homes](#) (last updated December 2020; AMSTAR rating 3/9)
 - [Mass testing was a primary measure implemented in long-term care homes to reduce COVID-19 transmission, and the effect on morbidity and mortality of residents, staff, and visitors](#) (Last updated 3 November 2020; AMSTAR rating 7/9)
- Isolating suspected or confirmed cases among residents and staff*
- [WHO guidance recommends isolating suspected or confirmed cases of COVID-19 into single rooms, or if not possible, to cohort residents with other confirmed cases as well as a 14-day quarantine for any staff who have been exposed](#) (last updated January 2021)
 - [Residents who are suspected or confirmed to have COVID-19 should be isolated into separate wards](#) (last updated December 2020; AMSTAR rating 3/9)
 - [Though no research evidence was found in a rapid review on the effectiveness of cohorting residents, expert opinion suggests cohorting suspected or confirmed cases of COVID-19 when single rooms are not available](#) (last updated June 2020; AMSTAR rating 8/10)
 - [Significant reduction in the prevalence of COVID-19 among residents and staff were attributed to self-confinement of staff who were suspected to have contracted COVID-19](#) (last updated October 2020; AMSTAR rating 5/9)
 - [Isolation of staff suspected of contracting COVID-19 alongside promoting and enforcing sick leave with adequate compensation is a best practice for support staff in long-term care homes](#) (last updated October 2020; AMSTAR rating 5/9)
 - [The National Institute on Ageing recommends implementing testing and isolating procedures that include staff and residents who may be asymptomatic or have atypical presentations](#) (last updated April 2020; National Institute on Ageing)
 - [Guidance from the European Geriatric Medicine Society recommends isolating those infected or have been in contact](#)

	<p>with those that are infected with COVID-19 (Last updated November 2020; European Geriatric Medicine Society)</p> <p><i>Contact tracing among staff and visitors</i></p> <ul style="list-style-type: none"> • Digital technologies for contact tracing systems, including wrist-worn technologies, have shown to be promising in reducing infection rates and mortality (last updated December 2020; AMSTAR rating 3/9) <p><i>Supporting staff and residents</i></p> <ul style="list-style-type: none"> • Prior to the pandemic there was evidence of substantial provision of unpaid care by volunteers in care homes, suggesting that visitor bans and restrictions may have resulted in a reduction in the quality and quantity of care provided to residents during the pandemic (last updated November 2020; AMSTAR rating 0/9) • The National Institute on Ageing (NIA) in Canada recommends an ‘Iron Ring’ set of actions including implementing flexible admission and discharge policies for LTC settings to give residents and their families the flexibility to defer a placement offer, or leave and return to a care setting quickly based on what would best support their overall health and well-being (last updated April 2020; National Institute on Ageing) • The National Institute on Ageing encourages staff and family members to look for safe ways to engage with residents without entering the home, such as using tablets to communicate with residents or visiting residents through the window of their rooms (last updated April 2020; National Institute on Ageing) 	
Managing outbreaks	<p><i>Adding or replacing administrators and staff</i></p> <ul style="list-style-type: none"> • The American Geriatrics Society recommends authorizing the Department of Defense to work with the federal and state governments to coordinate the delivery and sharing of scarce resources across states, as well as working with local hospitals to provide additional supports to long-term care facility staff (last updated 29 April 2020; American Geriatric Society) • Access to infection prevention and control specialists and outbreak response teams were found to reduce the size of outbreaks in long-term care homes (last updated October 2020; AMSTAR rating 5/9) 	<p>Key insights from preventing and managing COVID-19 and renewing long-term care in other countries</p> <ul style="list-style-type: none"> • Protocols for contact tracing/reporting cases in long-term care homes were delegated to regional authorities in five countries (France, Germany, New Zealand, UK, U.S) • In Finland, operation of long-term care facilities was transferred to the municipal health and social-care association when severe outbreaks occurred • Additional protocols to mitigate the transmission within the facility and to the community, such as minimizing transfers, restricting resident movement and using additional PPE were

	<ul style="list-style-type: none"> • Guidance from the European Geriatric Medicine Society recommends appointing an infection prevention and control focal point in each long-term care facility (Last updated November 2020; European Geriatric Medicine Society) <i>Adhering to infection-control measures</i> • No highly relevant synthesized evidence identified <i>Making additional spatial, service, screening, testing, isolation and support changes</i> • Guidance from the Centres for Medicare and Medicaid recommend using a separate team of staff when caring for residents who are suspected to have or have been in contact with COVID-19, as well as separating and moving residents into COVID-suspected and COVID-negative cohorts (last updated April 2020; Centres for Medicare and Medicaid) • Advance-care planning should be undertaken with residents who have been diagnosed with COVID-19 and should include discussions about preferences for mechanical ventilation, and prescriptions to support pain management in a palliative approach should be made in advance for the problems that may arise (including that sub-cutaneous forms of prescription drugs as oral dosages may not be possible) (last updated March 2020) <i>Transferring residents when their care needs exceed capacity in the home</i> • Limited evidence was found about the effectiveness of moving residents to hospital during a long-term care outbreak, though two countries (Canada and Taiwan) and two geriatric societies (Canada and U.S.) have recommended moving residents to hospital or other setting when isolation is not possible in a long-term care home in the event of a COVID-19 outbreak (internal document published November 2020 – available upon request; AMSTAR rating 0/9) 	<p>implemented in several countries (Australia; France, Finland, Germany, Netherlands, New Zealand, U.K., U.S.)</p> <p>Key insights from preventing and managing COVID-19 and renewing long-term care in other Canadian provinces and territories</p> <ul style="list-style-type: none"> • In addition to guidance on outbreak control based on the Government of Canada’s guidance on the care of residents in long-term care homes during COVID-19, many provinces (B.C., Alberta, Saskatchewan, Ontario and Quebec) have formed specialized outbreak response teams to support long-term care homes experiencing outbreaks • In Ontario, the Long-term Care Incident Management System was established to make rapid decisions to organize efforts across providers and government to better coordinate support for long-term care homes facing challenges related to COVID-19
<p>Changing governance, financial and delivery arrangements</p>	<p><i>Improving access to care</i></p> <ul style="list-style-type: none"> • No highly relevant synthesized evidence identified <p><i>Improving safety and quality of care and more generally improving quadruple-aim metrics</i></p> <p>No highly relevant synthesized evidence identified</p> <p><i>Changing service-delivery models</i></p>	<p>Key insights from preventing and managing COVID-19 and renewing long-term care in other countries</p> <ul style="list-style-type: none"> • Increased or supplementary funding for long-term care homes to prepare for or cover costs of expenses related to COVID-19 was provided in three countries (Australia, France, U.K.)

- [Implementing end-of-life supports within long-term care homes and condition-specific pathways such as for pneumonia and dehydration, were found to reduce hospitalizations and emergency-department admissions among residents](#) (last updated February 2019; AMSTAR rating 7/9)
- [A rapid review identified a variety of models of care and interventions to improve quality of life, quality of care, and health outcomes for residents living in long-term care homes, which included many studies on dementia care, oral care, exercise/mobility, overall resident care, and optimal/appropriate medication use, and relatively fewer studies on hearing care, vision care, and foot care](#) (last updated June 2020; AMSTAR rating 5/9)

Improving physical infrastructure

- [Long-term care facility characteristics such as non-profit status, rural homes and homes with a higher percentage of private rooms may be associated with higher quality of life](#) (last updated March 2012; AMSTAR 4/9)
- [The most important risk factors for outbreaks in long-term care homes were the incidence rates of infections in the surrounding communities of the homes, older design of certain homes, chain ownership, and crowding](#) (last updated January 2021; AMSTAR rating 0/9)

Altering funding arrangements

- [The American Geriatrics Society recommends increasing payment to nursing homes caring for residents with COVID-19 and providing tax relief for nursing homes that provide paid family leave to homecare workers and support staff caring for older adults and people with disabilities](#) (last updated April 2020; American Geriatric Society)
- [For-profit nursing homes were found to have worse outcomes in both employee and client well-being compared to not-for-profit nursing homes](#) (last updated October 2015; AMSTAR rating 7/9)
- [For-profit status long-term care homes had increased odds of case outbreaks than non-profit status long-term care homes](#) (last updated November 2020; AMSTAR rating 7/9)

Adjusting governance arrangements

- The additional funding ranged from £600 million for infection control for long-term care homes (in addition to more than £4 billion since March 2020 for councils to allocate towards COVID-19 response, including in long-term care homes) in the U.K., to \$560 million in additional investments in the long-term care sector more broadly in Australia
- New funding models and programs to better facilitate payment or reimbursement to long-term care homes were established in three countries (Australia, Netherlands; U.S.)
- Changes have been introduced to regulations, quality standards and monitoring systems in three countries (Australia, France, New Zealand)
- France's Act about Adapting Society to an Aging Population addresses quality standards, surveillance, enforcement, and quality monitoring in long-term care
- The New Zealand Ministry of Health's action plan for the recommendations of the Independent Review of COVID-19 Clusters in Aged Residential Care includes strengthening communication and reporting systems, establishing continuous learning supports, and aligning regulatory and contractual obligations for long-term care homes
- In the U.K., guidance was released to strengthen supply chains for PPE and necessary supplies in long-term care homes, and a U.K. study recommended that long-term care homes be reconfigured or create self-contained units to keep staff and resident movement low

Key insights from preventing and managing COVID-19 and renewing long-term care in other Canadian provinces and territories

- All provinces and territories received supplementary funding (a total of \$740 million) from the federal government to support long-term care, home care and palliative care during the pandemic as part of the Safe Restart Agreement announced by the Government of Canada in September 2020

	<ul style="list-style-type: none"> • No highly relevant synthesized evidence identified <i>Supporting greater integration of long-term care with other sectors</i> • No highly relevant synthesized evidence identified 	<ul style="list-style-type: none"> • A national task force was convened to provide advice on preventing COVID-19 infection and improving outcomes in long-term care homes <ul style="list-style-type: none"> ○ The report identified five long-standing challenges in Canada’s long-term care sector and options for addressing these challenges • In addition to funding infection and control initiatives, Saskatchewan announced investments of \$73 million towards the construction of two new long-term care homes and another \$7.2 million in priority renewal projects in existing homes <ul style="list-style-type: none"> ○ Ontario also made investments to long-term care facility renovations and minor repairs as part of their efforts to protect vulnerable seniors • In Ontario, the government committed to increasing hours of direct care for each long-term care facility resident to an average of four hours per day by 2025 • To support stable operations and facilitate agile decision-making to improve service quality and resident well-being, Quebec has implemented co-management models that allow leadership to draw on administrative and medical expertise in long-term care homes • Manitoba Health conducted modified reviews of all 125 licensed long-term care homes to assess minimum standards of safety and care
Supporting residents and staff	<p><i>Engaging residents, families and caregivers in self-management, care choices, care delivery, and organizational and policy decision-making</i></p> <ul style="list-style-type: none"> • Practical interventions to support shared decision-making were found to have good outcomes for persons living with cognitive impairments, although implementing these types of resources in extended care environments such as long-term care homes would require workers to be given the time and authority to develop the skills to use these types of aids (last updated October 2016; AMSTAR 8/11) • Family caregivers value their role in decision-making and want to maintain this role even when individuals are placed in a residential setting; critical to this is frequent communication 	<p>Key insights from preventing and managing COVID-19 and renewing long-term care in other countries</p> <ul style="list-style-type: none"> • Countries have developed various systems for strengthening the long-term care workforce, including health worker registries (Germany, Netherlands), enhancing training systems to meet staffing needs (Germany, Netherlands, U.S.) and changes to provider remuneration or incentives (Australia, Germany, Netherlands, U.S.) • Finland is currently in the process of reforming legislation governing care for older adults, including in response to COVID-19 such as minimum thresholds for nurse/client ratios in long-term care homes

[between staff and health professionals at the long-term care homes](#) (last updated 2013; AMSTAR 8/10)

Ensuring culturally appropriate living among residents

- No highly relevant synthesized evidence identified

Supporting technology-enabled living among residents

- No highly relevant synthesized evidence identified

Ensuring an adequate supply of staff

- [No consistent evidence was found in examining the relationship between staffing levels and quality of care, with the exception of pressure ulcers where an increase in staff led to fewer ulcers among residents regardless of the staff member delivering care](#) (last updated April 2013; AMSTAR rating 6/10)

- [An association was found between low staffing levels and increased job strain and emotional exhaustion, as well as between a poor work environment \(both physical infrastructure and job culture\) and staff burnout](#) (last updated August 2017; AMSTAR rating 4/10)

- [No evidence suggested that the mix of licensed vocational nurses, registered nurses and licensed practical nurses, and total nursing staff had no significant relationship with quality of life](#) (last updated March 2012; AMSTAR 4/9)

- [At the organizational level, increased staffing, particularly registered nurse \(RN\) staffing was consistently associated with reduced risk of COVID-19 infections](#) (last updated November 2020; AMSTAR rating 7/10)

Optimizing skills mix among staff

- [The use of advance-practice nurses and extended-care paramedics in long-term care homes to respond to acute-care issues were found to reduce hospitalizations and emergency-department visits among residents](#) (last updated February 2019; AMSTAR 7/9)

Ensuring the safety and satisfaction of staff and volunteers

- [Empowerment and autonomy at work as well as facility resources \(such as the equipment and supplies available for caring\) and staff workload were all factors associated with job satisfaction and burnout among staff at long-term care homes](#) (last updated May 2013; AMSTAR rating 7/10)

- New Zealand's National Outbreak Management Policy includes psychosocial support policies to protect staff, residents, extended families (whānau) and communities

Key insights from preventing and managing COVID-19 and renewing long-term care in other Canadian provinces and territories

- Across provinces and territories, efforts to support the long-term care workforce have included increases in provider remuneration or other financial incentives (B.C., Alberta, Saskatchewan, Manitoba, Ontario, Nunavut), training initiatives (B.C.; Manitoba, Ontario) and registries to facilitate staff matching with long-term care homes (Ontario),
- Several provinces and territories have developed initiatives to support socialization and care of residents through technology (Alberta, New Brunswick, Prince Edward Island, Yukon, Northwest Territories)
- From August to October 2020, the Health Quality Council of Alberta conducted surveys and interviews with long-term care residents and family members to better understand and respond to their experiences during the COVID-19 pandemic
- In the Northwest Territories, every long-term care facility increased staffing with the addition of two licensed practical nurses and two personal-support workers

	<p><i>Supporting technology-enabled care by staff</i></p> <ul style="list-style-type: none"> • Electronic health records demonstrated enhanced quality outcomes, improved management of clinical documentation and facilitated better decision-making (last updated April 2017; AMSTAR rating 4/9) • Facilitators to the adoption of electronic health records in long-term care homes include access and transfer of resident information and reduced errors, while barriers include the initial investment cost and professional push-back on implementing a new system(last updated 2014; AMSTAR 4/9) • Health information technology has been increasingly adopted by long-term care homes, but many homes do not employ systematic processes to implement health information technology, under-invest in staff training, and lack necessary infrastructure to implement the technology (last updated 2018; AMSTAR rating 3/9) • Health information technology may facilitate teamwork and communication, but does not appear to have an impact on quality of care or resident health outcomes (last updated 2018; AMSTAR rating 3/9) <p><i>Remunerating staff</i></p> <ul style="list-style-type: none"> • One of the most common recommendations in clinical practice guidelines on the prevention and control of COVID-19 was providing sick-leave compensation for staff (last updated July 2020; AMSTAR rating 6/9) • Fewer staff sick-leave days were associated with the probability of COVID-19 cases (last updated November 2020; AMSTAR 7/9) • Significant reductions in the prevalence of COVID-19 infection among staff and residents were in part attributed to sick pay to staff (last updated October 2020; AMSTAR rating 5/9) 	
Promoting alternatives to long-term care	<p><i>Engaging residents, families and caregivers in shared decision-making about whether to enter long-term care</i></p> <ul style="list-style-type: none"> • Dyadic counselling and communication tools such as talking mats can help to facilitate discussions and decision-making about older adults with dementia entering long-term care homes (last updated August 2018; AMSTAR rating 5/9) 	<p>Key insights from preventing and managing COVID-19 and renewing long-term care in other countries</p> <ul style="list-style-type: none"> • Programs to support residents transitioning from long-term care facility to community care have been established in three countries (Australia, Finland, U.S.)

	<p><i>Enhancing the breadth and intensity of home- and community-care services to delay or avoid entry to long-term care</i></p> <ul style="list-style-type: none"> • Having a multidisciplinary home palliative-care team, early referral to palliative care, and an expressed interest to die at home increased the likelihood of individuals dying at home, as did early referral to palliative-care services (last updated 2013; AMSTAR rating 8/11) • When comparing those receiving home-based care services and those in long-term care, there was significant overlap in the distribution of physical and cognitive function, indicating that people could be cared for using either approach (last updated March 2012; AMSTAR 9/10) • Little evidence was found on how primary care and community nursing services for older adults can adapt during a pandemic, however findings suggested the need for timely communications of protocols and infection-prevention measures among the care team, need for psychosocial, financial, and emotional support, training and skills development, and debriefing with staff to ensure resilience (last updated June 2020; AMSTAR rating 3/9) <p><i>Supporting technology-enabled care at home</i></p> <ul style="list-style-type: none"> • Older adults living at home can benefit from combining virtual visits with in-person visits to remain at home longer and to enhance feelings of independence, social inclusion and medication compliance (Last updated April 2013; AMSTAR rating 5/9) <p><i>Providing financial supports to avoid or delay entry into long-term care</i></p> <ul style="list-style-type: none"> • No highly relevant synthesized evidence identified 	<ul style="list-style-type: none"> • Financial supports or professional respite services for family caregivers were established throughout the COVID-19 pandemic (Germany, Netherlands, U.K.) • While New Zealand continues accepting referrals to long-term care homes during COVID-19, specific protocols have been developed to delay admission to long-term care homes and instead provide care through home support agencies and/or community nursing services while waiting for COVID-19 test results • The U.K. developed a number of supports to strengthen the home and community-care workforce, including advice to local health authorities and NHS to support home-care provision during COVID-19, remote training programs for paid and volunteer social care workers, and better supporting live-in-care, care-room (support for discharged patients by approved home owners in the community), and assisted-living models of care <p>Key insights from preventing and managing COVID-19 and renewing long-term care in other Canadian provinces and territories</p> <ul style="list-style-type: none"> • In September 2020, the federal government announced a commitment to work with provinces and territories to help people stay in their homes longer • Several provinces (B.C., Alberta, Manitoba, Ontario) have provided additional support for home and community care services • In Alberta, a private model of care called Community Care Cottages houses 10-12 residents to provide around-the-clock care • The Manitoba government has invested \$250 million to improve access to health services including moving 21,000 days of care from acute homes into local communities • In Newfoundland and Labrador, the Centre for Health Information has expanded their telehealth care services during the pandemic
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Table 3: Overview of type and number of documents related to preventing and managing COVID-19, outbreaks of COVID-19, and about supporting renewal in long-term care homes *

Type of document	Total (n= 232)**	Preventing infections (n= 133)	Managing outbreaks (n=51)	Renewing delivery, financial and governance arrangements (n= 37)	Supporting residents and staff (n= 45)	Promoting alternatives to long-term care (n= 13)
Guidelines developed using a robust process (e.g., GRADE)	12	10	5	3	4	-
Full systematic reviews	34	3	2	14	18	5
Rapid reviews	35	24	6	8	3	3
Guidelines developed using some type of evidence synthesis and/or expert opinion	12	10	3	1	-	-
Protocols for reviews that are underway	22	10	9	2	7	2
Titles/questions for reviews that are being planned	7	5	-	-	-	2
Single studies that provide additional insight	110	71	26	9	13	1

*The table includes all newly identified evidence documents and all highly relevant evidence documents identified in previous versions of this LEP that continue to be deemed highly relevant.

**Some documents were tagged in more than one category so the column total does not match the total number of documents.

Waddell KA, DeMaio P, Wilson MG, Bain T, Wang Q, Al-Khateeb S, Alam S, Sharma K, Whitelaw S, Gauvin FP, Lavis JN. COVID-19 living evidence profile #2 (version 2.2): What is known about preventing and managing COVID-19, outbreaks of COVID-19, and about supporting renewal in long-term care homes? Hamilton: McMaster Health Forum, 31 March 2021.

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