McMaster University | HEALTH FORUM

RISE Rapid-Improvement Support and Exchange

# COVID-19 Rapid Evidence Profile #19 (24 September 2020)

## Questions

1) What is the risk of transmission in hospital, both in general and in priority settings, and in long-term care homes?
2) What are the impacts on quadruple-aim metrics of visitor restrictions in hospitals and long-term care homes?
3) What are the impacts on quadruple-aim metrics of visitor restrictions that are adjusted based on the public-health measures that are in place within the institution to mitigate the potential risks of visitors (e.g., screening at entry; adherence to mask wearing and physical distancing), and/or based on the state of the pandemic (e.g., low rate of new infection) or adherence to public-health measures (e.g., mask wearing and physical distancing) in the local community?
4) What are the impacts on quadruple-aim metrics of measures that can be put in place to mitigate any potential harms associated with visitor restrictions (e.g., alternative communication modalities such as iPad 'visits')?

## What we found

### Organizing framework

- Setting
  - Hospital
    - Intensive-care unit (ICU)
    - General medicine
    - Labour and delivery
    - Mental health and addictions
    - Palliative care
  - Long-term care homes
- Rate of transmission
- Restriction to visitors (and exceptions)
  - No visitors, no exceptions
  - Limited visitors with specific exceptions (e.g., end of life, ICU, labour and delivery, and language barriers)
  - Other restrictions
- Accompanying public-health measures
  - In institution

**Box 1: Our approach**

We identified evidence addressing the question by searching the COVID-END guide to COVID-19 evidence sources from 21 to 23 September 2020 (www.mcmasterforum.org/find-evidence/guide-to-covid-19-evidence-sources). We identified experiences by searching jurisdiction-specific sources of evidence listed on the same website. Jurisdictions were chosen based on those prioritized by the requestor of this rapid evidence profile.

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 rapid evidence response was prepared in three business days to inform next steps in evidence synthesis, guideline development and/or decision-making related to the question that was posed.

    - In community (but only when intersecting with visitor policies for institutions)
- Alternative communication modalities
    - Video calls
    - Telephone calls
    - Other
- Quadruple-aim metrics
    - Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium)
    - Health-related harms to patients, families and caregivers from restriction of visitors (e.g., worsened mental health)
    - Experiences of patients, families and caregivers (e.g., help with care and support, help with translation, less worry, and less sedatives/constraints)
    - Experiences of providers (e.g., many stressful calls with families)
    - Per capita costs or resource consumption more generally (e.g., reduced personal protective equipment (PPE) consumption, staffing and iPad constraints, reduced sedative use)

We identified 26 evidence documents that provide highly relevant evidence in relation to one or more of the above categories, which include:

- five guidelines developed using a robust process (e.g., GRADE);
- two full systematic reviews;
- seven rapid reviews; and
- 12 primary studies with additional insights.

We **outline in narrative form below our key findings** related to the risk of transmission of COVID-19 (question 1) and about visitor policies (questions 2-4) from highly relevant evidence documents, and based on experiences from other countries and from Canadian provinces and territories. **We provide hyperlinks to the relevant evidence documents in Table 1**. Because there was such a dearth of studies examining impacts on quadruple-aim metrics, we merged the original columns that had been proposed into one single column for all findings related to hospitals and a second single column for all findings related to long-term care homes. **We outline key findings from the jurisdictional scans about visitor policies in Table 2**.

For those who want to know more, we provide additional details in Table 3 (the type and number of all documents that were identified), Table 4 (for experiences from other countries), and Table 5 (for experiences from Canadian provinces and territories). In addition, we provide a detailed summary of our methods in Appendix 1, the full list of included evidence documents (including those deemed of medium and low relevance) in Appendix 2, abstracts for highly relevant documents in Appendix 3, and hyperlinks for documents excluded at the final stage of reviewing in Appendix 4.

**Key findings related to risk of transmission of COVID-19 in hospitals and long-term care homes (question 1)**

One guideline using a robust process, two full systematic reviews, and five primary studies included findings about the risk of transmission of COVID-19 in hospitals and in long-term care homes. None of these provided evidence about rates of transmission attributable to visitors, but rather focused on overall transmission rates in these settings.

The guideline described the routes of transmission of COVID-19, which occurs primarily through direct, indirect and close contacts with infected people. Two systematic reviews provided estimates of transmission rates, with one focused on hospitals and one on long-term care facilities. For hospitals, the proportion of nosocomial infections in patients with COVID-19 was found to be 44% in the early outbreak. In long-term care, significant variability was found, with incidence rates between 0.0% and 72% among residents, and between 1.5% and 64% among staff. Two primary studies examined features of long-term care homes in Ontario and nursing homes in the U.S. that contribute to COVID-19 outbreaks, and the two studies yielded some conflicting results. In Ontario, the for-profit status of long-term care facilities was associated with the extent of COVID-19 outbreaks and the number of deaths, with key factors including older design standards and chain ownership. In contrast, in the U.S., nursing homes that were not part of a chain, were in urban locations and had a greater percentage of African-American residents had an increased probability of COVID-19 infections.

**Key findings related to the impacts on quadruple-aim metrics of hospital-visitor restrictions in institutions (questions 2 and 3)**

*Key findings related to visitor restrictions*

Two guidelines developed using a robust process, one rapid review, and three primary studies included findings related to visitor restrictions. Little information was found relating directly to the quadruple aim, with the exception of findings relating to the health-related benefits of public health measures (e.g., preventing transmission of COVID-19) and one finding related to patient experience.

No documents were found relating to 'no visitors' (with no exceptions) restrictions for either hospitals or long-term care homes. With respect to hospitals, two primary studies examined visitor restrictions in Taiwan, noting that hospice units, in general, maintained their visiting policies as did other wards where less vulnerable patients were admitted. Instead of restricting access, hospitals in Taiwan used approaches such as limiting the number of visitors, limiting the length of visits, and checking identification and screening for symptoms. With respect to long-term care homes, the two guidelines, rapid review and primary study all highlighted the importance of restricting visitors to protect residents, while also noting the importance of visitors to residents' well-being, particularly for those nearing end of life or in other compassionate-care circumstances.

*Key findings related to visitor restrictions and accompanying public-health measures*

Two guidelines developed using a robust process noted the importance of adjusting visitor policies in long-term care facilities based on the active COVID-19 cases, trends in the local area, availability of PPE and testing supplies. No evidence documents addressed explicitly adjusting visitor policies in hospitals.

Five rapid reviews and four primary studies provided findings relating to public-health measures that are in place within institutions to mitigate the potential risks of visitors in hospitals and long-term care facilities.

In hospitals, the rapid review highlighted the importance of ensuring visitors had no suspicion of having been in contact with someone with COVID-19, limiting the number of visitors allowed to be at the hospital and requiring visitors to wear PPE. The three primary studies highlighted the following strategies:

- protecting medical staff through PPE and tracking of possible exposure;
- restricting visitors to select areas;
- taking a detailed history of all visitors;
- implementing temperature and symptom screening;
- enhancing hand hygiene;
- prohibiting the wearing of PPE leaving a contaminated area;
- disinfecting work areas; and
- enhancing ventilation.

In relation to long-term care facilities, four rapid reviews and one primary study found the following infection-control measures had been put in place:

- limiting the number of visitors;
- maintaining visitor logs;
- screening visitors for temperature and symptoms;
- daily cleaning of frequently touched surfaces and weekly deep cleans;
- PPE wearing for staff and masks for visitors;
- diagnostic testing in the case of suspected exposure;
- contact tracing for confirmed cases; and
- immediate shutdown of visitors should a case of COVID-19 be confirmed within the facility.

**Measures that can be put in place to mitigate any potential harms associated with visitor restrictions (question 4)**

One guideline developed using a robust process, two rapid reviews and one primary study included findings related to measures that can be put in place to mitigate any potential harms associated with visitor restrictions. However, only the primary study evaluated findings related to patient satisfaction and well-being. Related to hospitals, one rapid review noted that with strict visitor policies having been put in place, many hospitals in Australia are making use of Skype, WhatsApp and Facetime to connect patients with families and friends. However, studies included in the rapid review documented bacterial contamination of mobile handheld devices used for this purpose, and advised that strict infection-prevention and control programs accompany the use of these devices.

Similarly, the guideline and one rapid review noted that where visitors have been restricted alternatives should be explored including video and audio calls with family members. The primary study focused on electronic family meetings for inpatient palliative care and found these to be both feasible and acceptable as an alternative to visitors during the COVID-19 pandemic.

**Key findings from the jurisdictional scan**

We examined experiences with visitor-restriction policies in nine other countries (China, Germany, Italy, Singapore, South Korea, Spain, Sweden, Switzerland, and the U.S. in general and New York state in particular) as well as in all provinces and territories in Canada.

*Key findings from visitor policies in hospitals*

We found no examples of countries or Canadian provinces or territories where no visitors, with no exceptions was the policy in place in hospitals. Though early in the pandemic many countries began

with strict enforcement of no-visitor policies, those restrictions have since loosened as COVID-19 cases have decreased. This includes in China, Germany, South Korea and New York, all of whom took a regional approach to regulation, whereby more permissible visitor policies were allowed based on regional COVID-19 rates. Institutional public-health measures that have been put in place to mitigate the potential risks of visitors include:

- conducting symptom and temperature checks for visitors at the entrance (China, South Korea and New York);
- having visitors sign in using a visitors log (China and South Korea);
- requiring visitors wear masks while in the hospital (China, South Korea and New York);
- limiting the number of visitors at any given time (China and New York);
- limiting visiting times (New York);
- restricting visitors to specific locations within hospitals (China);
- maintaining physical distancing (South Korea); and
- disinfecting hands upon entrance and exit to the hospital (New York).

In Canada, B.C., Manitoba, New Brunswick, Nova Scotia, Newfoundland and Labrador, and the Northwest Territories have strict policies in place, whereby general visiting is not permitted or may be limited to one individual where deemed medically necessary. Common exceptions to this are for exceptional circumstances including palliative-care units, for pediatric patients, and in labour and delivery suites. Other provinces including Alberta and Saskatchewan have asked that patients designate two visitors who, so long as they adhere to public-health measures, are permitted to see the patient throughout their admission. As an alternative approach, Quebec and the Yukon are both allowing general visitors in most areas of the hospital, but have designated specific areas where additional restrictions apply, including the emergency department, oncology department and ICU, as well as for select patients such as those receiving bone marrow transplants.

*Key findings from visitor policies in long-term care facilities*

In Sweden there is an ongoing ban on visits to long-term care homes, however, as of 31 August, consultations were taking place with the National Board of Health and Welfare to develop a program to assess how exemptions can be made. In Germany, where active COVID-19 cases are present, visitors are not allowed in long-term care homes except for relatives of persons at the end of life. In both Spain and Singapore, a staged approach is being used where residents are now allowed to designate a limited number of visitors. Common public-health practices in place to help mitigate the potential risks of visitors include:

- maintaining physical distance (Germany);
- washing or disinfecting hands upon entry and exit (Germany and Singapore);
- putting in place physical barriers between residents and their families in visiting spaces (i.e., plexiglass or alternative) (Germany);
- requiring residents to designate select visitor(s) (Singapore);
- screening of visitors for symptoms prior to entry (Singapore);
- time limits on visits (Singapore); and
- requiring appointment times for visitors (Singapore).

In Canada, provinces including Alberta, Manitoba, Ontario, Newfoundland and Labrador and Nunavut are limiting the number of designated visitors to between one and five. In addition, in Nunavut, there is a requirement that the visitors are immediate family, including grandchildren and

great-grandchildren. Common public-health practices in place to help mitigate the potential risks of visitors include:

- designating one (or two) individuals to be visitors (B.C., Ontario, New Brunswick, and Yukon);
- washing or disinfecting hands upon entry and exit (B.C., Ontario and Northwest Territories);
- assigning social areas to see visitors within the facilities (B.C.);
- maintaining physical distance (B.C., Ontario, Yukon and Northwest Territories);
- wearing a mask or other PPE during visit (Ontario, Yukon and Northwest Territories);
- scheduling visits in advance (Ontario, New Brunswick, Yukon); and
- limiting the number of visitors at a given time and on a given day (New Brunswick).

Many provinces and territories have put in place alternatives to visitors on an institutional basis, however, in Nova Scotia, long-term care facilities across the province are providing virtual options for visits including video calls. In addition, many other provinces and territories are recommending that visitors make use of outdoor space to see residents and are increasing visitor limits outdoors so long as physical distancing guidelines are followed. For example in the Yukon, outdoor visits can now be scheduled in advance.

**Table 1: Key findings from highly relevant evidence documents on transmission risk and visitor policies**

| Questions | Key findings related to hospitals | Key findings related to long-term care homes |
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| **Risk of transmission (question 1)** | *Key findings from guidelines using a robust process*<br>• Transmission of COVID-19 occurs primarily between people through direct, indirect, or close contact with infected people through infected secretions such as saliva and respiratory secretions, or through their respiratory droplets, which are expelled when an infected person coughs, sneezes, talks or sings (WHO technical guidance; last updated 9 July 2020)<br><br>*Key findings from full systematic reviews*<br>• Proportion of nosocomial infection in patients with COVID-19 was found to be 44% in the early outbreak (AMSTAR rating 9/11; literature last searched 31 March 2020)<br><br>*Key findings from primary studies*<br>• Nosocomial SARS-CoV-2 infection in an orthopedic and traumatology department was 6.5% (published 11 September 2020)<br>• Overall risk of hospital-acquired COVID-19 was low in a cohort study of 9,149 patients admitted to a large U.S. academic medical center over a 12-week period where 697 COVID-19 cases were identified (published 9 September 2020)<br>• A total of 303 hospital staff members and patients were exposed to 29 confirmed COVID-19 patients in a South Korean hospital, of whom three were found to have COVID-19, which was largely as a result of poor adherence to public-health measures (published 3 July 2020) | *Key findings from full systematic reviews*<br>• Outbreak investigations in long-term care facilities found COVID-19 incidence rates of between 0.0% and 72% among residents, and between 1.5% and 64% among staff (AMSTAR rating 6/10; literature last searched 26 June 2020)<br><br>*Key findings from primary studies*<br>• An analysis of profit status of all long-term care homes in Ontario, Canada and outbreaks in them (including the extent of outbreaks and number of deaths from COVID-19) found that for-profit status is associated with the extent of a COVID-19 outbreak and the number of deaths among residents, but not the likelihood of an outbreak occurring (published 17 August 2020)<br>• Older design standards and chain ownership explained most of the differences between for-profit and not-for-profit long-term care homes (published 17 August 2020)<br>• Nursing homes with an increased probability of having a COVID-19 infection in the U.S. include those that are larger, in urban locations, with a greater percentage of African-American residents, and those that are not part of a chain of facilities (published 2 June 2020)<br>• High-quality ratings, prior infection violations, dependency on Medicaid funding and status of ownership were not found to be associated with having at least one COVID-19 case among U.S. nursing homes (published 2 June 2020) |
| **Visitor restrictions** (and exceptions) **in general and in priority settings** | **No visitors, no exceptions**<br>• No findings from highly relevant evidence documents were identified | **No visitors, no exceptions**<br>• No findings from highly relevant evidence documents were identified |

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| **(question 2)** | **Limited visitors with specific exceptions (e.g., end of life, ICU, labour and language barriers)**<br><br>*Key findings from primary studies*<br>• During the COVID-19 pandemic, nearly all hospice units in Taiwan changed their visitation policies, with:<br>o One-quarter instituting differing visitor policies than the ordinary wards in the same hospital;<br>o most wards restricting access in terms of the number of visitors allowed and the length of visits; and<br>o others checking identity and screening (published 21 April 2020)<br><br>**Other types of restrictions**<br><br>*Key findings from primary studies*<br>• In Taiwan, about three-fifths of hospitals posted new visiting policies as a result of the pandemic, many of which still allowed visitors to ordinary wards, but restricted the number of visitors at a time, and the times within which they could visit (published 4 May 2020) | **Limited visitors with specific exceptions (e.g., end of life, ICU, labour and language barriers)**<br><br>*Key findings from guidelines developed using a robust process*<br>• Visiting for patients with dementia who are distressed or patients who are approaching the end of life should be considered as early as possible, which requires that personal protective equipment be made available for visitors following national guidance (Scottish Intercollegiate Guidelines Network; last updated 29 May 2020)<br>• Ethical frameworks and principles should be applied to the issue of family presence at the time of death during the COVID-19 pandemic (Scottish Academy of Medical Royal Colleges, the Royal College of Physicians of Edinburgh, Marie Curie and Scottish Care; last updated April 2020)<br><br>*Key findings from rapid reviews*<br>• Effectiveness of infection-control measures is dependent on combinations of strategies and visitors should be temporarily restricted to only emergency or critical cases (AMSTAR rating 1/9; literature search date not provided)<br><br>*Key findings from primary studies*<br>• Long-term care facilities should take proactive steps to protect the health of staff and residents, through restricted visitation except in compassionate-care circumstances, early recognition of potentially infected patients and appropriate infection-prevention and control measures (published 18 March 2020)<br><br>**Other types of restrictions**<br>• No findings from highly relevant evidence documents were identified |
| **Visitor restrictions that are adjusted based on the public-health measures that are in place within the** | **Public-health measures based on the state of the pandemic in the local community**<br>• No findings from highly relevant evidence documents were identified | **Public-health measures based on the state of the pandemic in the local community**<br><br>*Key findings from guidelines developed using a robust process*<br>• The decision to allow general visitation in aging services is dependent on many factors, including: local and state government |

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| **institution to mitigate the potential risks of visitors** (e.g., screening at entry; adherence to mask wearing and physical distancing) **and/or based on the state of the pandemic in the local community** (e.g., low rate of new infection) **or adherence to public-health measures** (e.g., mask-wearing and physical distancing) (question 3) | **Public-health measures that are in place within the institution to mitigate the potential risks of visitors**<br><br>*Key findings from rapid reviews*<br>• Considerations for allowing visitors for patients in hospital include: having no suspicion of COVID-19, limiting the number of patients, and limiting the time that visitors are allowed to be at the hospital, as well as requiring visitors to wear PPE (AMSTAR 4/9; literature last searched 2 September 2020)<br><br>*Key findings from primary studies*<br>• Nosocomial transmission of COVID-19 from accidental exposure in a South Korean hospital's emergency department was found to be successfully prevented through isolation and surveillance policies, and comprehensive PPE use (published 30 July 2020)<br>• Key infection-prevention and control measures in one Chinese hospital included protecting medical staff (e.g., screening and tracking for possible exposures, use of PPE, encouraging hand hygiene), prohibiting the wearing of PPE leaving a contaminated area, disinfecting work areas, ventilation and social distancing (published 8 May 2020)<br>• Hospitals also took histories of visitors (e.g., travel history, occupation, contacts), and many of those who changed their visitation policies also implemented temperature screening, hand-hygiene measures and identity checks (published 4 May 2020) | mandates; active COVID-19 cases and trends in the local area; and available personal protective equipment and testing supplies (ECRI Guidelines Trust; last updated 2 June 2020)<br>• In areas where COVID-19 transmission has been documented, access to visitors in long-term care facilities should be restricted and avoided as much as possible (WHO technical guidance; last updated 21 March 2020)<br><br>**Public-health measures that are in place within the institution to mitigate the potential risks of visitors**<br><br>*Key findings from rapid reviews*<br>• Many countries are easing restrictions on visitor policies using general recommendations which include: limiting the number of visitors; maintaining visitor logs; screening visitors; maintaining physical distancing when visiting; implementing strict hand-hygiene measures among visitors; and in the case of COVID-19 being confirmed within the facility, immediately stopping visitation (AMSTAR 2/9; literature last searched 2 September 2020)<br>• Hand-hygiene facilities should be provided throughout the facility alongside daily cleaning of frequently touched surfaces, and weekly deep cleans of the institution should be completed (AMSTAR rating 1/9; literature search date not provided)<br>• Public-health measures to avoid secondary transmission include hand-hygiene practices, disinfecting surfaces, diagnostic testing to confirm cases, respiratory hygiene and cough etiquette, providing cleaning supplies to residents, education of staff and/or residents, consulting or notifying health professionals, appropriate ventilation practices, and cohorting residents (AMSTAR rating 7/9; published 16 March 2020)<br>• Infection-control measures employed at a long-term care facility included screening and regularly testing all staff, residents and visitors, contact tracing for confirmed cases of COVID-19, additional training for staff on infection control and use of PPE, and reviews of environmental cleaning and disinfection practices (AMSTAR rating 6/9; literature search date not provided) |

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| | | *Key findings from primary studies*<br>• Once a COVID-19 case is identified in a long-term care facility, facilities need to implement a broad range of strategies to reduce transmission, including restricting resident-to-resident interactions, universal face-mask use, and use of PPE for the care of all residents, and if testing capacity is available, additional testing should be used to detect cases and inform additional prevention strategies such as forming resident cohorts (published 3 April 2020) |
| **Measures that can be put in place to mitigate any potential harms associated with visitor restrictions** (e.g., alternative communication modalities such as iPad 'visits') (question 4) | **Video calls**<br>*Key findings from rapid reviews*<br>• Where strict visitor policies are in place, many hospitals in Australia are using Skype, WhatsApp and Facetime to support individual care, however providers have been asked to notify patients that their use may introduce privacy risks (AMSTAR rating 2/9; literature last searched 2 April 2020)<br>• Studies have documented bacterial contamination of mobile handheld devices being used to facilitate visitations, so it is imperative that infection-prevention and control programs be put in place including routine use of UV irradiation or germicidal wipes, use of waterproof/resistant and non-porous cases for devices, and disinfection of the device before and after patient/family use (AMSTAR rating 2/9; literature last searched 2 April 2020)<br><br>**Telephone calls**<br>• No findings from highly relevant evidence documents were identified<br><br>**Other**<br>• No findings from highly relevant evidence documents were identified | **Video calls**<br>*Key findings from guidelines developed using a robust process*<br>• Where visitors to long-term care facilities have been reduced, alternatives to in-person visiting should be explored such as support video and audio calls with family members (WHO technical guidance; last updated 21 March 2020)<br><br>**Telephone calls**<br>• No findings from highly relevant evidence documents were identified<br><br>**Other**<br>*Key findings from rapid reviews*<br>• Those working in long-term care facilities should plan for frequent communication between residents, caregivers, friends, volunteers and community organizations providing support, and should speak to residents about their preferred means of communicating with friends and family, offering user assistance as needed (AMSTAR 2/9; published 31 March 2020)<br><br>*Key findings from primary studies*<br>• Inpatient palliative care electronic family meetings were found to be feasible and acceptable during the COVID-19 pandemic (published 4 June 2020) |

**Table 2: Key findings from jurisdictional scans related to visitor policies in hospitals and long-term care homes**

| Interventions | Key findings from the jurisdictional scans related to hospitals | Key findings from the jurisdictional scans related to long-term care facilities |
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| **Visitor restrictions** (and exceptions) **in general and in priority settings** | **No visitors, no exceptions**<br>• No experiences identified<br><br>**Limited visitors with specific exceptions (e.g., end of life, ICU, labour and language barriers)**<br><br>*Findings from experiences in Canadian provinces and territories*<br>• In B.C., visits to acute-care settings are permitted for compassionate care, assistance with care and well-being, or for those who are registered hospital volunteers<br>o Though essential visitors are limited to one individual, additional exceptions have been made in palliative-care units<br>o In birthing suites, visitors are limited to the spouse or partner and are recognized as an essential visitor, while doulas are being recognized as part of the care team<br>• In Manitoba, Shared Health has stated that patients can have a single visitor at a time, however exceptions may be made for two visitors for labour and delivery as well as in pediatric settings<br>o Up to four visits may be allowed in palliative care, however these requests are reviewed on a case-by-case basis<br>• In New Brunswick, hospitals limit contact to a single visitor with the exception of two visitors and a spiritual/pastoral care advisor for palliative units<br>• In Nova Scotia, no general visitors are allowed, but family members and a primary support person are allowed to visit patients<br>• In Newfoundland and Labrador, general visiting to all acute-care facilities is limited to one support person and | **No visitors, no exceptions**<br><br>*Findings from experiences of other countries*<br>• In Sweden there is an ongoing ban on visits to long-term care homes, however ongoing consultations are taking place with the National Board of Health and Welfare to develop a program for assessing how exemptions can be made from the ban on visits in exceptional circumstances<br><br>**Limited visitors with specific exceptions (e.g., ICU, end of life, labour and language barriers)**<br><br>*Findings from experiences of other countries*<br>• In states in Germany with long-term care facilities where there are active COVID-19 cases, visitors are not allowed in long-term care homes with the exception of relatives of people at the end of life<br>o In these circumstances visitors must adhere to protective measures including maintaining physical distancing, wearing a protecting gown and mask, and disinfecting hands upon entering and leaving the resident's room<br>• A phased approach has been applied in Singapore and in Spain, where during stage 1 visitors were not allowed except in cases of critical illness or end of life<br><br>*Findings from experiences in Canadian provinces and territories*<br>• In Yukon, visitors for those nearing end of life and those who provide essential care when staff cannot meet a resident's quality of life and/or care needs are being supported<br><br>**Other types of restrictions** |

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| | five designated visitors, however hospital pediatric patients are allowed to have both parents visit at once; otherwise visits are limited to a single individual<br>• In Northwest Territories, a maximum of two visits are allowed per stay for each patient with the exception of pediatric patients who may have two visitors present per visit<br><br>**Other types of restrictions**<br><br>*Findings from experiences in Canadian provinces and territories*<br>• In Alberta, two types of visitors have been created, those who are designated family/support person and social visitors<br>o Those who are a designated family/support person are classified as an individual involved in ongoing care and support of a patient, and these individuals can accompany a birthing mother, as well as into inpatient, pediatric and palliative settings<br>o Up to three people may visit outdoors for other inpatients<br>• In Saskatchewan, patients may designate two individuals to act as support persons with their Health Authority, however only one may accompany a patient at any given time<br>o Palliative, pediatric, maternal, and intensive-care units may be permitted to have two individuals present at a given time so long as physical distance can be maintained and is practised<br>• In Ontario, visitors are now allowed in hospitals, however, guidance has been issued from the Ontario Hospital Association related to length and frequency of visits<br>o In addition, individual hospitals and hospital networks have put in place specific restrictions around visitors, including, in some circumstances, | *Findings from experiences of other countries*<br>• In stage 2 of recovery in Singapore, each resident is allowed a total of two designated visitors, however only one of the two may visit on a given day and appointments must be made in advance<br>• In Switzerland, while visits are permitted to long-term care facilities they are not recommended, and those who are in need of a visit may set up an arrangement to do so with the individual facility<br>o Facilities differ on the precautions, rules of conduct and visiting times permitted<br><br>*Findings from experiences in Canadian provinces and territories*<br>• In Alberta, restrictions on visitors in long-term care facilities differ based on indoor or outdoor settings<br>o For indoor settings, two visitors can be designated, while up to five, including the resident, may be allowed for outdoor visits<br>o Rare exceptions may apply to the indoor rules for those in palliative care<br>• In Manitoba, Shared Health has stated that patients can have up to two visitors at a time, however the two visitors are required to be the same throughout the duration of the pandemic<br>o Care levels have been designated as being one of critical, restricted or caution, each one of which has its own set of visitor restrictions that apply<br>• In Ontario, different restrictions have been made for essential visitors (e.g., caregivers, support workers and those providing services) and general visitors<br>o A maximum of two caregivers per resident are allowed at any one time, and a single caregiver during an outbreak or if the resident is self-isolating<br>o A maximum of two general visitors per resident if the resident is not self-isolating and there is no outbreak within the facility |

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| | limits on the number of visitors, designation as a care partner, and limits on the time of visiting<br>• In Quebec, while visiting is now allowed within hospitals there are special regulations for particular departments, including:<br>o in the emergency department, only one person is allowed to accompany a patient<br>o in oncology patients may only be accompanied when it is medically necessary or when it is for a pediatric patient<br>o for bone marrow transplantation and cell therapy, no visitors are allowed<br>o for each obstetric care and neonatal care, all reasonable measures need to be made by the hospitals to get parents to visit, with the exception of if they are showing signs or have a confirmed case of COVID-19<br>• In Yukon, hospital visitors are restricted from entering the emergency department and ICU, but may be exempt if patients are under 18 years of age, have a disability, require a substitute decision maker or are at the end of life | • In Newfoundland and Labrador, general visiting to long-term care homes currently is limited to one support person and five designated visitors, with only two visitors allowed to attend per day<br>• In Northwest Territories, long-term care residents are allowed to have one designated essential visitor with only five visitors allowed in the facility at one time<br>• In Nunavut, continuing care centres and elder's homes are now allowing visitors, however, residents are only allowed to have a maximum of two visitors who can only be immediate family members including grandchildren and great-grandchildren |
| **Visitor restrictions that are adjusted based on the public-health measures that are in place within the institution to mitigate the potential risks of visitors** (e.g., screening at entry; adherence to mask wearing and physical distancing) **and/or based on the state of the pandemic in the local community** (e.g., | **Public-health measures based on the state of the pandemic in the local community**<br><br>*Findings from experiences of other countries*<br>• Though many countries began with strict enforcement of a no-visitor policy, those restrictions have been loosened in some countries as COVID-19 cases have gone down, including China, Germany, South Korea, and in New York<br>• Many of these jurisdictions (including China,) took a regional approach to regulation whereby more permissible visitor policies were allowed based on rates of COVID-19 | **Public-health measures based on the state of the pandemic in the local community**<br><br>*Findings from experiences of other countries*<br>• In Germany, visits to long-term care facilities are dependent on whether there are active COVID-19 cases in the facilities in each state<br>• In Italy, allowing external visitors of long-term care homes is up to the discretion of the clinical director of each organization<br><br>*Findings from experiences in Canadian provinces and territories*<br>• In B.C. social visits are currently allowed in long-term care facilities, however if a COVID-19 outbreak is declared within |

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| low rate of new infection) **or adherence to public-health measures** (e.g., mask wearing and physical distancing) | **Public-health measures that are in place within the institution to mitigate the potential risks of visitors**<br><br>*Findings from experiences of other countries*<br>• Institutional public-health measures that have been put in place to mitigate the potential risks of visitors include:<br>o conducting symptom and temperature checks for visitors at the entrance (China; South Korea; New York)<br>o having visitors sign in using a visitor's log (China; South Korea)<br>o requiring visitors wear masks while in the hospital (China; South Korea; New York)<br>o limiting the number of visitors at any given time (China; New York)<br>o limiting visiting times (New York)<br>o restricting visitors to specific locations within hospitals (China)<br>o maintaining physical distancing (South Korea)<br>o disinfecting hands upon entrance and exit to the hospital (New York)<br><br>*Findings from experiences in Canadian provinces and territories*<br>• Institutional public-health measures that have been put in place to mitigate the potential risks of visitors include:<br>o maintaining physical distance (B.C.; Ontario; Quebec; New Brunswick; Nova Scotia; Newfoundland and Labrador)<br>o washing or disinfecting hands upon entry and exit (B.C.; Saskatchewan; Ontario; Nova Scotia; Newfoundland and Labrador)<br>o wearing a mask and other PPE (B.C.; Saskatchewan; Ontario; New Brunswick: Nova Scotia)<br>o pre-screening for symptoms, including temperature checks (Saskatchewan; Nova Scotia; Newfoundland and Labrador; Nunavut)<br>o registration of visitors for contact tracing (Manitoba) | the facility or community rates rise significantly, social visits are no longer permitted<br>• In Quebec, the government relaxed restrictions related to visitors given the reduction in community cases, but these may be tightened should there be a resurgence of COVID-19 cases<br><br>**Public-health measures that are in place within the institution to mitigate the potential risks of visitors**<br><br>*Findings from experiences of other countries*<br>• Common public-health practices in place to help mitigate the potential risks of visitors include:<br>o maintaining physical distance (Germany)<br>o washing or disinfecting hands upon entry and exit (Germany; Singapore)<br>o putting in place physical barriers between residents and their families in visiting spaces (i.e., plexiglass or alternative) (Germany)<br>o requiring residents to designate select visitor(s) (Singapore)<br>o screening of visitors for symptoms prior to entry (Singapore)<br>o time limits on visits (Singapore)<br>o requiring appointment times for visitors (Singapore)<br><br>*Findings from experiences in Canadian provinces and territories*<br>• Common public-health practices in place to help mitigate the potential risks of visitors include:<br>o designating one (or two) individuals to be visitors (B.C.; Ontario; New Brunswick; Yukon)<br>o washing or disinfecting hands upon entry and exit (B.C.; Ontario; Northwest Territories)<br>o assigning social areas to see visitors within the facilities (B.C.)<br>o maintaining physical distance (B.C.; Ontario; Yukon; Northwest Territories) |

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| | ○ not permitted to eat or drink while visiting (New Brunswick)<br>○ must stay in a patient's room when visiting (Nova Scotia) | ○ wearing a mask or other PPE during visit (Ontario; Yukon; Northwest Territories)<br>○ scheduling a visit in advance (Ontario; New Brunswick)<br>○ limiting the number of visitors at a given time and on a given day (New Brunswick) |
| **Measures that can be put in place to mitigate any potential harms associated with hospital-visitor restrictions** (e.g., alternative communication modalities such as iPad 'visits') | **Video calls**<br><br>*Findings from experiences of other countries*<br>• In Switzerland, one nursing-care centre is choosing to support residents by supporting relatives via Skype and Facetime calls while visits to long-term care homes have been reduced<br><br>**Telephone calls**<br>• No experiences identified<br><br>**Other**<br>*Findings from experiences in Canadian provinces and territories*<br>• Many provinces (B.C.; Alberta; Saskatchewan; Manitoba) are recommending that inpatients should make use of outdoor hospital space to see visitors if they are able to<br>○ Visitor limits for outdoors differ by province but are capped at between two and five | **Video calls**<br><br>*Findings from experiences in Canadian provinces and territories*<br>• In Nova Scotia, long-term care facilities are providing virtual options for visits including video calls with remote scheduling support with the family members<br>○ In addition, the province is allowing offsite passes for residents to be able to stay with family members provided that no one is exhibiting COVID-19 symptoms<br><br>**Telephone calls**<br>• No experiences identified<br><br>**Other**<br>• Many provinces (B.C.; Alberta; Saskatchewan; Manitoba; Nova Scotia; Yukon) are recommending that residents who are able to, make use of outdoor long-term care facility space to see visitors<br>○ Visitor limits for outdoors differ by province but are capped at between two and five |

**Table 3: Overview of type and number of documents that were identified**

| Type of document | Total | Setting | | Rate of transmission | Restrictions to visitors | Accompanying public-health measures | Alternative communication modalities | Quadruple-aim metric |
|---|---|---|---|---|---|---|---|---|
| | | Hospital | Long-term care | | | | | |
| Guidelines developed using a robust process (e.g., GRADE) | 6 | 4 | 5 | 3 | 4 | 4 | 1 | 4 |
| Full systematic reviews | 8 | 7 | 1 | 8 | - | - | - | - |
| Rapid reviews | 13 | 7 | 6 | 4 | 6 | 8 | 2 | 5 |
| Guidelines developed using some type of evidence synthesis and/or expert opinion | 0 | - | - | - | - | - | - | - |
| Protocols for reviews that are underway | 3 | 3 | 1 | 2 | - | - | - | - |
| Titles/questions for reviews that are being planned | 0 | - | - | - | - | - | - | - |
| Single studies in areas where no reviews were identified | 42 | 24 | 18 | 34 | 10 | 19 | 1 | 4 |

**Table 4: Visitor restrictions in hospitals and long-term care homes in other countries**

| Country | Visitor restrictions |
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| China | • National Health Commission of China issued the health protection guidelines in key places and units during COVID-19 epidemic on 20 July 2020<br>  o For nursing homes and mental health institutions in low-risk regions, the following strategies should be considered:<br>  ▪ conducting temperature checks for visitors at the entrance<br>  ▪ visitors should wear masks<br>  ▪ limiting number of visitors, restricting area and frequency of visits<br>  ▪ registering visitors and implementing appointment management when necessary<br>  o For nursing homes and mental health institutions in medium- and high-risk regions:<br>  ▪ not allowing visitors<br>  ▪ encouraging video calls<br>• Medical institutions should intensify management over wards and forbid visits to patients by their family members or friends unless necessary |
| Germany | • Regulation and recommendations around care homes visitors have been put in place across federal states in Germany.<br>  o For most states, ban of visitors maintained and visitation can be allowed for relatives of a person at the end of their life<br>  o Social contacts should be maintained as far as possible via telecommunication<br>  o Visitors with symptoms of a cold or who are a contact person to someone with COVID-19 should stay away<br>  o In the case where visitors are allowed, every visitor (name, date of visitor, name of resident visited) should be registered, visits should be minimal and there should be a time limit<br>  o Visitors must adhere to protective measures that involve maintaining a distance of at least 1.5-2 metres from the resident, wearing a protective gown and mouth-nose protection, and disinfecting their hands when leaving the resident's room<br>• From 6 May 2020, people at hospitals and nursing homes, as well as in facilities for the elderly and the disabled, may once again receive visitors, as long as there are no active COVID-19 cases<br>  o Older people and people with pre-existing conditions are being urged to avoid direct contact with others<br>  o Distance should be maintained, or barriers should be erected between residents and visitors<br>  o Wearing a non-medical face mask (community mask) are generally required<br>  o Family members can generally stay in contact via regular (video) calls or via the internet |
| Italy | **Long-term care**<br>• The Italian government required care homes to suspend visitations on 9 March 2020<br>• On 26 April 2020, external visitors of care homes can be accepted upon the decision by the clinical director of each organization |
| Singapore | **Long-term care**<br>• Face-to-face visitations at residential facilities for the elderly (including nursing homes, welfare homes, sheltered homes and adult disability homes) will resume when the second phase of reopening the economy starts (from 19 June 2020)<br>  o All nursing homes need additional precautionary measures to protect their residents, such as setting aside dedicated visitation areas or safe-distancing precautions<br>  o Each resident will be allowed a total of two designated visitors, and only one may visit each day, with each visit limited to 30 minutes<br>  o Visitors will be screened prior to entry, and should not visit if unwell |

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| | ○ The total number of visitors allowed each day in a home will also be capped through appointments<br>○ Caregivers are encouraged to work with the nursing homes to make appointments in advance<br>• In Phase 1, face-to-face visits were suspended in nursing homes, and the following strategies should be considered:<br>○ facilitating interactions via phone and video calls<br>○ allowing face-to-face visits in exceptional circumstances (e.g., critically ill) |
| South Korea | **Hospital**<br>• The following strategies should be considered for visitation at hospitals and clinics:<br>○ shunning in-person visits and opting for telephone calls/video calls<br>○ minimizing the number of visitors and shortening visiting time<br>○ checking in advance if visiting is allowed<br>○ cancelling visit if visitors have risk factors such as a fever or respiratory symptoms (cough, soar throat, etc.) or exposure to someone with COVID-19<br>○ upon entry and exit, cooperating with COVID-19 prevention and control measures including heath checks (temperature and respiratory symptoms screening, etc.), entry logs (digitally or in handwriting), and information management (retention and destruction after four weeks)<br>○ prior to and after visit, washing hands with soap and running water for at least 30 seconds or using hand sanitizer<br>○ preferably staying two meters (but at least one meter) away from patients and keeping a mask on while talking to each other<br>**Long-term care**<br>• Entry of visitors at senior-care facilities is restricted<br>○ A family member, relative, or caregiver who has respiratory symptoms or feels unwell should avoid visiting the elderly and persons in high-risk groups |
| Spain | **Long-term care**<br>• A staged approach is being applied in Spain based on case counts, with those regions that are in stage 1 not currently permitted to have visitors in long-term care facilities<br>• Those jurisdictions that have moved forward into stage 2 are permitting visitors to long-term care facilities |
| Sweden | **Long-term care**<br>• The Government of Sweden introduced a clear rule for the whole country on April 1 2020, placing a ban on any visits to care homes for older people, but the operators of such homes may grant exemptions from the ban on an individual basis<br>• The government extended the ban on visits to care homes for older people to August 31 2020, and is consulting with the National Board of Health and Welfare to develop a program for assessing how exemptions can be made from the ban on visits |
| Switzerland | **Long-term care**<br>• The Swiss Federal Office of Public Health recommends reducing visits to retirement homes and nursing homes, however visits inside and outside these homes can be arranged, with visitors asked to contact the facilities directly for more information on special precautions, rules of conduct and visiting times<br>• One facility called the Kreuzlingen Nursing Care Center is choosing to support residents in communicating with relatives via Skype or Facetime Calls, which allows their residents to discuss end-of-life plans with their loved ones while still maintaining proper distancing measures; this facility also wrote to relatives encouraging them to discuss covid-19 and the potential health consequences that could arise due to the disease |
| U.S. | |
| New York | **Hospital** |

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| | • On 10 April 2020, the New York State Department of Health issued a health advisory which suspended visitation within hospitals and described the necessary requirements for the allowance of patient-support persons<br>• The Department made updates to this announcement to address the need for sustainable hospital visitation policies for the next phase of the pandemic<br>• Beginning on 19 June 2020 all 11 public hospitals will allow one visitor at a time per patient for four hours a day, which is a rule that applies to patients from any department<br>• Visitors are advised to perform regular hand hygiene, required to wear personal protective equipment, and undergo symptom and temperature checks upon entering the hospital |

**Table 5: Visitor restrictions in hospitals and long-term care homes in Canadian provinces and territories**

| Province/territory | Visitor restrictions |
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| British Columbia | **Hospitals**<br>• In conjunction with the BC Centre for Disease Control, the Ministry of Health has put forward several visitor-restriction guidelines to help prevent the spread of COVID-19 in acute-care settings<br>o Essential visits, such as visiting a patient to provide compassionate care, assistance with care and well-being, and assistance as a registered volunteer are still permitted<br>o Although the provincial guidelines limit essential visits to one individual, palliative-care units will accommodate for more than one essential visitor at a given time<br>o All visitors are to be screened prior to their stay, and must adhere to appropriate physical distancing, hand hygiene, and respiratory etiquette guidelines<br>o As it relates to maternity care, a birthing woman's spouse or partner will be classified as an essential visitor, while her doula will be recognized as part of her care team<br>**Long-term care homes**<br>• The Ministry of Health of British Columbia has released its visitation policy for long-term care. These guidelines permit both essential and social visits, though certain restrictions still apply<br>o Essential visits, with a similar policy to acute care settings, are still permitted<br>o Social visits are restricted to one designated individual (whether a family member or friend), and visitors must arrange their own appointment beforehand, wear masks, adhere to the appropriate hand-hygiene and physical-distancing measures, and stay within the assigned "socializing" areas<br>o If a COVID-19 outbreak is declared, social visits will no longer be permitted at long-term care facilities |
| Alberta | **Hospitals and long-term care homes**<br>• On 12 August 2020, Alberta Health Services updated its guidance on patient visitation regulations in hospital and long-term care settings<br>o Guidelines are structured based on two distinct categories of visits from a designated family/support person, and a visitor<br>o A designated family/support person is a classified as an individual (e.g., family member or friend) who is involved in the ongoing care and support of a patient, while a visitor is not directly involved with the patient's needs but temporarily visits to "socialize"<br>**Hospitals**<br>• Restrictions in hospital settings vary based on the care or service that is provided<br>o As it relates to maternity care, up to two designated family/support persons can accompany the birthing mother, while additional supports (e.g., doula) will require further approval<br>o In inpatient, pediatric, and palliative settings, two designated family/support persons can accompany a patient, and there is a possibility for all three individuals to be present in the same room at once if physical distancing measures can be maintained<br>o In acute-care settings, outdoor visits are limited to three individuals (including the patient)<br>**Long-term care homes**<br>• Restrictions in long-term care settings vary based on indoor or outdoor settings<br>o Up to two designated family/support persons can be designated for indoor visits, while up to a maximum of five individuals (including the resident) may engage in outdoor visits |

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| | • Under certain circumstances, such as palliative care or legal matters, rare exceptions may apply (e.g., allowing additional visitors and having up to three individuals for indoor visits) |
| Saskatchewan | **Hospitals and long-term care homes**<br>• The following visitor restrictions have been implemented across all Saskatchewan Health Authority facilities, including acute and long-term care<br>o A maximum of two individuals (e.g., family members) can be designated as support persons, though it is worth noting that only one may accompany the patient or resident in the facility at a given time<br>o Patients in palliative, pediatric, maternal services, or intensive-care units may be permitted to have two individuals present at a given time as long as physical distancing can be practised<br>o Additional support persons can be designated in the case of palliative or end-of-life patients<br>o Several health and safety measures are in place for visitors, including pre-screening for symptoms, performing temperature checks, practising appropriate hand-hygiene techniques, and wearing medical-grade masks<br>• Outdoor visits are recommended as an alternative option to indoor visits; these gatherings may consists of a larger number of visitors as long as public-health protocols can be maintained |
| Manitoba | **Hospitals**<br>• Shared Health (Manitoba) has released guidelines that aim to help expand the province's inpatient-visit regulations<br>o Visitor restrictions highlighted in this document include inpatient visits being limited to one visitor at a given time, and, under certain circumstances, a second designated support person may be permitted to accompany a patient (e.g., labour and delivery, and pediatrics settings)<br>o Approval of additional patient visitors (up to a maximum of four) in palliative care will be reviewed on a case-by-case basis<br>o If possible, outdoor visits (of up to two people) are recommended<br>o All visitors are required to sign in when arriving to a healthcare facility<br>**Long-term care homes**<br>• In addition, Shared Health (Manitoba) has released guidance on visitor restrictions for long-term care settings<br>o Key features from this document consist of allowing each resident to designate two caregivers who will help provide regular support for their needs, and permitting visitors to interact with residents (limits on these gatherings will vary depending on community rates of COVID-19 transmission and available outdoor space)<br>• Also, specific regulations may vary depending on the severity of COVID-19 transmission in the community (i.e., care levels are classified as critical, restricted, or caution, and each one of these stages has its own set of visitor restrictions) |
| Ontario | **Hospitals**<br>• The Ministry of Health recommended that public and private hospital resume allowing visitors (including family, caregivers, and other types of visitors) for acute-care settings, with public-health measures set in place such as proper hand hygiene, masking, and physical distancing, in addition to infection control and prevention practices (memorandum from 15 June 2020)<br>• The Ontario Hospital Association recently released guidance for hospitals on visits from care partners (family caregivers)<br>o Care partners should follow public-health measures such as undergoing screening before entering the hospital, performing proper hand hygiene (hand washing and/or |

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| | use of hand sanitizer) before and after hospital and patient room visits, wearing a mask, and limiting movement within common areas in the hospital<br>o Additional guidance is provided on length and frequency of visits, use of care partner identification badges, and other ways to connect care partners and patients (e.g., virtual care, outdoor visits)<br>• London Health Sciences Centre is limiting family/caregiver visits, and provides guidance on the number of allowable family/caregivers and length/duration of visits for specific patient populations (e.g., children, women in labour, palliative, major surgery, stays longer than seven days, and emergency department) and situations (e.g., patients experiencing a mental health crisis, actively dying, outpatient appointments)<br>• Effective 19 August 2020, hospitals within the University Health Network will allow inpatients to have one essential care partner visit the hospital per day (with a few exceptions)<br>o There is no access for the public and other visitors with no pre-approval<br>o Outpatients are allowed one essential care partner<br>o Care partners must follow public-health measures such as self-screen for COVID-19 symptoms the day before and morning of visit, perform proper hand hygiene before, during, and after visit, wear a mask, screen for symptoms at the hospital entrance, limit movement within the hospital, and practise physical distancing<br>• The Ottawa Hospital permits patients to identify two visitors, but they can only have one visit with one person each day for one hour, and visitors must schedule a visit in advance, wear a mask, screen for symptoms at the hospital entrance, perform proper hand hygiene, and go directly to the patient's room (limit movement within the hospital)<br>**Long-term care homes**<br>• Effective 9 September, 2020, there are distinct visitation restrictions for: 1) essential visitors including caregivers, support workers, and those providing essential services (e.g., food delivery, inspector maintenances, healthcare service providers, or individuals visiting palliative residents); 2) and general visitors (e.g., who provide non-essential services, or for social reasons such as family members or friends not involved in direct care)<br>• Restrictions for essential visitors include:<br>o any number of support workers may visit<br>o maximum of two caregivers (at least 18 years of age and designated by the resident and/or decision-makers) per resident at a time, or one caregiver per resident during an outbreak or if the resident is self-isolating or symptomatic at a long-term care home during an outbreak<br>o a caregiver may not visit any other resident for 14 days after visiting another resident who is self-isolating, symptomatic, or there is an outbreak at the long-term care home<br>• A maximum of two *general visitors* per resident are permitted if the resident is not self-isolating or symptomatic and when there is no outbreak (visitors under the age of 14 years of age should be accompanied by an adult)<br>• Accompanying public-health measures for essential and general visitors include verbally attesting to testing negative for COVID-19 within the previous two weeks, sanitizing hands upon arrival and departure, wearing a mask during the entire visit, and maintaining physical distance (at least two metres)<br>• During outbreaks, essential visitors must be screened and wear PPE during the visit (in addition to the measures)<br>• Long-term care homes do not require restrictions for length or frequency of visits by essential visitors; however, general visitors may be required to schedule visits in advance and limit the length or frequency of the visit |

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| | • Long-term care homes may temporarily prohibit a visitor due to repeated violations to visiting policies |
| Quebec | **Hospitals**<br>• On 26 June 2020, visits to hospital centres have been allowed under certain conditions<br>• Each hospital centre may modify these guidelines on an exceptional basis in the event of an outbreak or during busier times at the centre<br>• Centres must continue to facilitate the patient's virtual communication with family and friends<br>**Long-term care homes**<br>• On 18 June 2020, the government relaxed restrictions regarding visitations in long-term care facilities based on the epidemiological situation that prevailed, but these measures could be tightened if there is a resurgence of COVID-19 |
| New Brunswick | **Hospitals**<br>• Hospitals and health care facilities within the Horizon Health Network generally limit one visitor at a time between 2 p.m. and 8 p.m. daily, with public-health measures (e.g., must wear a mask, physical distancing, limit interaction outside of patient room)<br>o Patients in palliative care may have two visitors at a time, and for those receiving end-of-life care may have an additional pastoral/spiritual care visitor<br>o Patients in critical care may have one visitor at a time (limited to close family members)<br>o Emergency and outpatient-department visits are restricted to one support person<br>• The Vitalité Health Network limits patients to one visitor at a time with public-health measures (e.g., mask, physical distancing, not permitted to eat or drink in the room)<br>o No visitors for patients with COVID-19 or in isolation with suspected COVID-19 cases<br>o Two visitors plus a spiritual/pastoral care visitor is permitted for palliative care units<br>o One support person for visits at the emergency department, outpatient services, oncology services, and ultrasound services<br>**Long-term care homes**<br>• Residents are permitted to have family or friend visits with proper public-health measures (e.g., physical distancing, wear a mask, proper hand hygiene, self-screen question before entering the facility)<br>• As of 25 August 2020, specific guidance and public-health measures are available for visitors at nursing homes and adult residential facilities, including:<br>o indoor or outdoor visits with family or friends (two visitors at a time while maintaining physical distancing)<br>o designated support persons, which can include but not limited to a family member, friend, companion, support worker (up to two support persons per resident)<br>o offsite passes for residents (overnight and weekend)<br>o virtual (e.g., video calls, phone calls, remote scheduling support)<br>o general visitors (maximum visitors equivalent to 20% of residents within a facility)<br>o visits to patients in palliative care |
| Nova Scotia | **Hospitals**<br>• No general visits are allowed at Nova Scotia hospitals, however, family members and primary support persons/caregivers are allowed to visit patients<br>o All visitors will be screened upon entry, and are required to physically distance, as well as wear a mask<br>o Visitors must stay in the patient's room and are asked not to use the patient's washroom or personal belongings<br>**Long-term care homes**<br>• None identified |

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| Prince Edward Island | **Hospitals**<br>• With respect to hospital, palliative and mental health care, there are no restrictions to the number of people who can visit a patient in one day<br>  o Overnight visits are permitted if allowed by clinical staff<br>  o For patients at the end of life, any number of visitors can be present at bedside at a given time<br>  o Outpatients are allowed to have one support person with them<br>• All visitors will be screened for COVID-19 and have their personal contact information recorded, and will also be asked to practice physical distancing and wear a mask at all times<br>**Long-term care homes**<br>• Within the context of long-term care homes, all residents are allowed to identify three "partners in care", with one of the selected individuals able to visit the resident at all times of the day<br>  o Overnight stays may be permitted if the visitor follows infection-control protocols<br>  o Patients may also leave the facility if they will have limited contact with others |
| Newfoundland and Labrador | **Hospitals**<br>• Hospital pediatric patients are allowed to have both parents visit at once<br>• Similarly, obstetric patients and inpatients are permitted one visitor per visit<br>• Obstetric patients may also have a doula present in addition to a designated visitor<br>• Outpatients may be allowed to have visitors present depending on the circumstance<br>• Religious support persons are considered part of the patient's care team and are allowed to visit the patient alongside a designated visitor<br>• All visitors will be screened and educated about COVID-19 signs and symptoms, personal protective equipment, hand hygiene, and physical distancing, and will also be required to wear a mask and to coordinate their visit with the patient's clinical care team<br>**Long-term care homes**<br>• General visiting to all acute care, long-term care homes, personal-care homes, community-care homes and assisted-living facilities is not permitted currently<br>  o Acute-care patients and long-term care residents are permitted to identify one support person and up to five designated visitors, and designated visitors from outside the province must follow self-isolation requirements<br>  o Only two visitors are allowed to attend a day<br>  o Homes may determine whether a resident has indoor, window or outdoor visits, and may also determine the length, frequency, and location of visits |
| Yukon | **Hospitals**<br>• Hospital visitors are restricted from entering specific areas of the hospital, but may be exempt if they are under 18 years of age, have a disability, require a substitute decision-maker or have had medication administered such that it impairs their decision-making skills<br>• Hospital visitors may be asked by staff to wear a mask depending on the circumstance<br>**Long-term care homes**<br>• While general visits are not permitted in long-term care homes, residents can have indoor visits with two pre-identified general visitors<br>  o LTC residents (who are near the end of life or have special needs which require the presence of a visitor) can identify a designated essential visitor for indoor or outdoor visits, and designated essential visitors can be from outside the territory<br>  o Outdoor visits can now be scheduled with up to three visitors<br>  o Overnight or extended visits are not recommended<br>• A maximum of one consistent visitor is allowed in hospitals for all admitted patients, including those in the obstetrics department, intensive-care unit or the emergency department |

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| | ○ A maximum of two visitors at a time, with a limit of five consistent visitors, is allowed for hospital patients nearing the end of life |
| Northwest Territories | **Hospitals**<br>• A maximum of two visitors per stay are allowed for patients in acute care, including obstetrics and pediatrics<br>• Only one visitor is allowed per visit for patients in outpatient care<br>• This is with the exception of pediatric patients, who can have two visitors present per visit<br>**Long-term care homes**<br>• Long-term care residents are allowed to have one essential visitor above the age of 18 if the territory is in Phase 2 of their COVID-19 plan; only five visitors are allowed to be in a long-term facility at a time<br>○ Visitors who have travelled to see a long-term care resident will be exempt from self-isolation and will work with staff to develop an infection-control plan for visiting<br>○ Visitors will be screened and asked to take precautions, such as wearing a mask and physically distancing, during their visit |
| Nunavut | **Hospitals**<br>• As of September 2020, limited visitors are allowed into the Qikiqtani General Hospital, with all visitors are required to complete a COVID-19 questionnaire, and non-essential visits to mental health patients are not allowed<br>**Long-term care homes**<br>• As of 29 June, 2020, the Department of Health Services in Nunavut announced that Continuing Care Centres and Elders' Homes will be allowing visitors, however, residents are only allowed to have a maximum of two visitors who must be immediate family members, including grandchildren and great-grandchildren |

Waddell K, Wilson MG, Moat KA, Wang Q, Gauvin FP, Ahmad A, Alam S, Bhuiya A, Tchakerian N, Lavis JN. COVID-19 rapid evidence profile #19: What is the risk of transmission of COVID-19 in hospital and long-term care settings, and the impacts of hospital-visitor policies? Hamilton: McMaster Health Forum, 24 September 2020.

The McMaster Health Forum is one of the three co-leads of RISE, which is supported by a grant from the Ontario Ministry of Health to the McMaster Health Forum. To help Ontario Health Team partners and other health- and social-system leaders as they respond to unprecedented challenges related to the COVID-19 pandemic, the Forum is preparing rapid evidence responses like this one. The opinions, results, and conclusions are those of the McMaster Health Forum and are independent of the ministry. No endorsement by the ministry is intended or should be inferred.

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## Appendix 1: Methodological details

We use a standard protocol for preparing each rapid evidence profile (REP) to ensure that our approach to identifying research evidence as well as experiences from other countries and from Canadian provinces and territories are as systematic and transparent as possible in the time we were given to prepare the profile.

### Identifying research evidence

For each REP, we search our continually updated guide to key COVID-19 evidence sources for:
1) guidelines developed using a robust process (e.g., GRADE);
2) full systematic reviews;
3) rapid reviews;
4) guidelines developed using some type of evidence synthesis and/or expert opinion;
5) protocols for reviews or rapid reviews that are underway;
6) titles/questions for reviews that are being planned; and
7) single studies (when no guidelines, systematic reviews or rapid reviews are identified).

Each source for these documents is assigned to one team member who conducts hand searches (when a source contains a smaller number of documents) or keyword searches to identify potentially relevant documents. A final inclusion assessment is performed both by the person who did the initial screening and the lead author of the rapid evidence profile, with disagreements resolved by consensus or with the input of a third reviewer on the team. The team uses a dedicated virtual channel to discuss and iteratively refine inclusion/exclusion criteria throughout the process, which provides a running list of considerations that all members can consult during the first stages of assessment.

During this process we include published, pre-print and grey literature. We do not exclude documents based on the language of a document. However, we are not able to extract key findings from documents that are written in languages other than Chinese, English, French and Spanish. We provide any documents that do not have content available in these languages in an appendix containing documents excluded at the final stages of reviewing.

### Identifying experiences from other countries and from Canadian provinces and territories

For each rapid evidence profile we collectively decide on what countries to examine based on the question posed. For other countries we search relevant sources included in our continually updated guide to key COVID-19 evidence sources. These sources include government-response trackers that document national responses to the pandemic. In addition, we conduct searches of relevant government and ministry websites. In Canada, we search websites from relevant federal and provincial governments, ministries and agencies (e.g., Public Health Agency of Canada).

While we do not exclude countries based on language, where information is not available through the government-response trackers, we are unable to extract information about countries that do not use English, Chinese, French or Spanish as an official language.

## Assessing relevance and quality of evidence

We assess the relevance of each included evidence document as being of high, moderate or low relevance to the question and to COVID-19. We then use a colour gradient to reflect high (darkest blue) to low (lightest blue) relevance.

Two reviewers independently appraise the methodological quality of systematic reviews and rapid reviews that are deemed to be highly relevant. Disagreements are resolved by consensus with a third reviewer if needed. AMSTAR rates overall methodological quality on a scale of 0 to 11, where 11/11 represents a review of the highest quality. High-quality reviews are those with scores of eight or higher out of a possible 11, medium-quality reviews are those with scores between four and seven, and low-quality reviews are those with scores less than four. 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 health-system arrangements or to economic and social responses to COVID-19. Where the denominator is not 11, an aspect of the tool was considered not relevant by the raters. In comparing ratings, it is therefore important to keep both parts of the score (i.e., the numerator and denominator) in mind. For example, a review that scores 8/8 is generally of comparable quality to a review scoring 11/11; both ratings are considered 'high scores.' A high score signals that readers of the review can have a high level of confidence in its findings. A low score, on the other hand, does not mean that the review should be discarded, merely that less confidence can be placed in its findings and that the review needs to be examined closely to identify its limitations. (Lewin S, Oxman AD, Lavis JN, Fretheim A. SUPPORT Tools for evidence-informed health Policymaking (STP): 8. Deciding how much confidence to place in a systematic review. *Health Research Policy and Systems* 2009; 7 (Suppl1):S8.

## Preparing the profile

Each included document is hyperlinked to its original source to facilitate easy retrieval. For all included guidelines, systematic reviews, rapid reviews and single studies (when included), we prepare declarative headings that provide a brief summary of the key findings and act as the text in the hyperlink. Protocols and titles/questions have their titles hyperlinked given that findings are not yet available. We then draft a brief summary that highlights the total number of different types of highly relevant documents identified (organized by document), as well as their key findings, date of last search (or date last updated or published), and methodological quality.

**Appendix 2: Evidence documents that address the question, organized by document type and sorted by relevance to the question and COVID-19**

| Type of document | Relevance to question | Focus | Recency or status |
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| Guidelines developed using a robust process (e.g., GRADE) | • Setting<br>  o Long-term care<br>• Rate of transmission<br>• Restriction to visitors (and exceptions)<br>  o No visitors, no exceptions<br>  o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metric<br>  o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • The decision to allow general visitation in aging services is dependent on many factors, including: local and state government mandates; active COVID-19 cases and trends in the local area; and available personal protective equipment and testing supplies.<br>Source (ECRI Guidelines Trust) | Last updated 2 June 2020 |
| | • Setting<br>  o Hospital<br>  ▪ Palliative care<br>  o Long-term care<br>• Restriction to visitors (and exceptions)<br>  o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metric<br>  o Health-related harms to patients, families and caregivers from restriction of visitors (e.g., worsened mental health)<br>  o Experiences of patients, families and caregivers (e.g., help with care and support, help with translation, less worry, less sedatives/constraints) | • Visiting for patients with dementia who are distressed or patients who are approaching the end of life should be considered as early as possible and requires that personal protective equipment be made available for visitors following national guidance.<br>Source (Scottish Intercollegiate Guidelines Network) | Last updated 29 May 2020 |

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| | • Setting<br>  o Hospital<br>  ▪ ICU<br>  ▪ Palliative care<br>  o Long-term care<br>• Restriction to visitors (and exceptions)<br>  o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metric<br>  o Health-related harms to patients, families and caregivers from restriction of visitors (e.g., worsened mental health)<br>  o Experiences of patients, families and caregivers (e.g., help with care and support, help with translation, less worry, less sedatives/constraints) | • Ethical frameworks and principles should be applied to the issue of family presence at the time of death during the COVID-19 pandemic.<br>Source (Scottish Academy of Medical Royal Colleges, the Royal College of Physicians of Edinburgh, Marie Curie and Scottish Care) | Last updated April 2020 |
| | • Setting<br>  o Long-term care<br>• Rate of transmission<br>• Restriction to visitors (and exceptions)<br>  o No visitors, no exceptions<br>  o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>  o In institution<br>  o In community<br>• Alternative communication modalities<br>  o Video calls<br>  o Telephone calls<br>  o Other<br>• Quadruple aim metric<br>  o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • In areas where COVID-19 transmission has been documented, access to visitors in long-term care facilities should be restricted and avoided as much as possible.<br>• In addition, alternatives to in-person visiting should be explored such as support video and phone calls with family members.<br>Source (WHO technical guidance) | Last updated 21 March 2020 |

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| | • Setting<br>  o Hospital<br>• Rate of transmission | • Transmission of COVID-19 occurs primarily between people through direct, indirect, or close contact with infected people through infected secretions such as saliva and respiratory secretions, or through their respiratory droplets, which are expelled when an infected person coughs, sneezes, talks or sings.<br>Source (WHO technical guidance) | Last updated 9 July 2020 |
| | • Setting<br>  o Hospital<br>  ▪ ICU<br>  ▪ General medicine<br>  ▪ Labour and delivery<br>  ▪ Mental health and addictions<br>  ▪ Pediatrics<br>  ▪ Palliative care<br>  o Long-term care | • Locations with a high risk of transmission include health facilities, nursing homes, and long-term care facilities.<br>• There is limited data on labour and delivery, and other related management of pregnant women.<br>Source (BMJ Best Practice) | Last updated 22 September 2020 |
| Full systematic reviews | • Setting<br>  o Long-term care<br>• Rate of transmission | • Outbreak investigations in long-term care facilities found COVID-19 incidence rates of between 0.0% and 71.7% among residents and between 1.5% and 64.0% among staff.<br>Source (AMSTAR rating 6/10) | Literature last searched 26 June 2020 |
| | • Setting<br>  o Hospital<br>• Rate of transmission | • Proportion of nosocomial infection in patients with COVID-19 was found to be 44% in the early outbreak.<br>• Of the confirmed cases, medical staff and other hospital-acquired infections accounted for 33.0% and 2.0% of COVID-19 cases.<br>Source (AMSTAR rating 9/11) | Literature last searched 31 March 2020 |
| | • Setting<br>  o Hospital<br>  ▪ Labour and delivery<br>• Rate of transmission | • Vertical transmission is possible, but it is unclear whether neonates with COVID-19 are infected in utero, intrapartum or postpartum.<br>Source | Literature last searched 23 May 2020 |
| | • Setting<br>  o Hospital<br>  ▪ Labour and delivery<br>• Rate of transmission | • The evidence identified was uncertain about the possibility of vertical transmission of COVID-19 to newborns.<br>Source | Literature last searched 4 May 2020 |

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| | • Setting<br>o Hospital<br>▪ Labour and delivery<br>• Rate of transmission | • Neonatal COVID-19 infection is uncommon and rarely symptomatic, and the infection rate was found to be no greater when the baby is born vaginally, breastfed or remains with the mother.<br>Source | Literature last searched 6 May 2020 |
| | • Setting<br>o Hospital<br>▪ Labour and delivery<br>• Rate of transmission | • Vertical transmission of COVID-19 to newborns has been observed in some studies, but more RT-PCR tests on amniotic fluid, placenta, breast milk and cord blood are required to confirm.<br>.Source | Literature last searched 1 June 2020 |
| | • Setting<br>o Hospital<br>▪ Labour and delivery<br>• Rate of transmission | • No differences in clinical characteristics of pregnant women and non-pregnant COVID-19 patients were identified.<br>• COVID-19 infection has been found to cause higher incidence of fetal distress and premature labour in pregnant women, but vertical transmission in infected pregnant women is rare with four of the 92 neonates included in the review testing positive for COVID-19.<br>Source | Literature last searched 14 April 2020 |
| | • Setting<br>o Hospital<br>• Rate of transmission | • In efforts to reduce the transmission of COVID-19 during surgery, all personnel should wear PPE, and elective procedures should be postponed to save and mobilize resources for the protection and management of the pandemic.<br>Source | Pre-print (to be published October 2020) |
| Rapid reviews | • Setting<br>o Long-term care<br>• Restriction to visitors (and exceptions)<br>o Other<br>• Accompanying public-health measures<br>o In institution<br>• Quadruple aim metrics<br>o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • Many countries are easing restrictions on visitor policies using general recommendations which include: limiting the number of visitors; maintaining visitor logs; screening visitors; maintaining physical distancing when visiting; implementing strict hand-hygiene measures among visitors; and in the case of COVID-19 being confirmed within the facility immediately stopping visitations. | Literature last searched 2 September 2020 |

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| | | • Scotland, Northern Ireland, England and Ireland are also recommending face coverings while visiting.<br>Source (AMSTAR rating 2/9) | |
| | • Setting<br>o Hospital<br>• Restriction to visitors (and exceptions)<br>o Other<br>• Accompanying public-health measures<br>o In institution | • Considerations for allowing visitors for patients in hospital include: having no suspicion of COVID-19, limiting the number of patients, and limiting the time that visitors are allowed to be at the hospital.<br>• In addition, many hospitals are screening visitors and requiring the wearing of PPE.<br>Source (AMSTAR rating 4/9) | Literature last searched 2 September 2020 |
| | • Setting<br>o Long-term care<br>• Restriction to visitors (and exceptions)<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>o In institution<br>• Quadruple aim metrics<br>o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • Effectiveness of infection-control measures is dependent on combinations of strategies.<br>• Visitors should be temporarily restricted to only emergency or critical cases.<br>• Hand-hygiene facilities should be provided throughout the facility alongside daily cleaning of frequently touched surfaces and weekly deep cleans of the institution.<br>• Staff should be allocated to a single facility to avoid spread across several locations.<br>Source (AMSTAR rating 1/9) | Published 14 April 2020 (literature search date not provided) |
| | • Setting<br>o Hospital<br>• Restriction to visitors (and exceptions)<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>o In institution<br>• Quadruple aim metrics<br>o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • Strict visitor restrictions are in place across hospitals in Australia.<br>• Many hospitals are using Skype, WhatsApp and Facetime to support individual care, however providers have been asked to notify patients that their use may introduce privacy risks.<br>• Studies have documented bacterial contamination of mobile handheld devices at point of care, so it is imperative that infection prevention and control programs be put in place including routine use of UV irradiation or germicidal wipes, use of waterproof/resistant and non-porous cases for devices, and disinfection of the device before and after patient/family use. | Literature last searched 9 April 2020 |

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| | | Source (AMSTAR rating 2/9) | |
| | • Setting<br>  o Long-term care facilities<br>• Alternative communication modalities<br>• Quadruple aim metrics<br>  o Experiences of patients, families and caregivers (e.g., help with care and support, help with translation, less worry, less sedatives/constraints) | • Those working in long-term care facilities should plan for frequent communication between residents, caregivers, friends, volunteers and community organizations providing support.<br>• Facilities should promote access to technologies for residents including video and audio calls.<br>• Staff at long-term care facilities should speak to residents about their preferred means of communicating with family and friends and offer user assistance as needed.<br>• Similarly, facilities should establish different means of communicating, such as emails, social networks or voice recordings, with relatives to keep them informed of any developments.<br>Source (AMSTAR rating 2/9) | Published 31 March 2020 (literature search date not provided) |
| | • Setting<br>  o Long-term care<br>• Restriction to visitors (and exceptions)<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metrics<br>  o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • Restrictions on visits were frequently included as a strategy to avoid secondary transmission.<br>• Other public-health interventions included hand-hygiene practices, disinfecting surfaces, diagnostic testing to confirm cases, respiratory hygiene and cough etiquette, providing cleaning supplies to residents, education of staff and/or residence, consulting or notifying health professionals, appropriate ventilation practices, and cohorting residents.<br>Source (AMSTAR rating 7/9) | Published 16 March 2020 (literature search date not provided) |
| | • Setting<br>  o Long-term care<br>• Accompanying public-health measures<br>  o In institution | • Infection-control measures employed at a long-term care facility included screening and regularly testing all staff, residents and visitors, contact tracing for confirmed cases of COVID-19, additional training for staff on infection control and use of PPE, and reviews of environmental cleaning and disinfection practices.<br>• The most commonly recommended control and prevention measure was establishing surveillance, | Literature search or publication date were not provided |

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| | | monitoring and evaluation within long-term care facilities.<br>Source (AMSTAR rating 6/9) | |
| | • Setting<br>o Hospital<br>• Accompanying public-health measures<br>o In institution | • Temperature screening alone or with a questionnaire have been found to be ineffective for detecting infected persons because of the low number of infected individuals who have a fever at the time of screening, and inconsistent technique by operators.<br>• Modelling studies have found that at best these screenings will miss more than half of infected individuals.<br>• Source | Literature last search 20 April 2020 |
| | • Setting<br>o Hospital<br>• Rate of transmission | • Evidence suggests that COVID-19 can survive on inanimate surfaces for hours or days.<br>• Indirect transmission may occur through surfaces in laboratories or hospitals, however conditions under which this is most likely remain unclear.<br>Source | Published 7 May 2020 |
| | • Setting<br>o Hospital<br>• Restriction to visitors (and exceptions)<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>o In institution | • Strategies identified as part of considerations to support resumption of hospital-based care in the context of COVID-19 include:<br>o regular cleaning and disinfecting, physical distancing, zoning, using personal protective equipment and education and training; and<br>o screening visitors, restricting the number of visitors and how much time they can spend with a patient.<br>Source | Literature last searched 6 May 2020 |
| | • Alternative communication modalities<br>o Video calls | • Very uncertain evidence was identified about the effectiveness of video-call interventions to reduce loneliness in older adults.<br>• Source | Literature last searched 7 April 2020 |
| | • Rate of transmission | • Studies on viral cultures showed that among those with mild-to-moderate disease, the last day on which COVID-19 was cultured occurred within the first 10 days since the onset of symptoms, | Published 15 September 2020 |

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| | | however among 3% of patients it was beyond 10 days and up to 32 days.<br>• Studies also show that those who have a longer period of time being viral-culture positive were immunosuppressed.<br>• Contact tracing studies found no evidence of laboratory-confirmed onward transmission when close contacts were first exposed more than five days after symptom onset.<br>Source | |
| | • Setting<br>o Hospital<br>• Rate of transmission | • Transmission of COVID-19 occurs predominantly through indirect physical contact, but has also been found to take place through aerosol-generating procedures, however exact rates of transmission remain unclear.<br>Source | Published March 2020 |
| Guidance developed using some type of evidence synthesis and/or expert opinion | • No guidance documents developed using some type of evidence synthesis and/or expert opinion were found | | |
| Protocols for reviews that are underway | • Setting<br>o Hospital<br>▪ Labour and delivery<br>• Rate of transmission | • Protocol on the impact of COVID-19 on maternity care and maternal health outcomes including questions related to transmission to healthcare workers and vertical transmission from mother to child<br>Source | Anticipated completion date 30 June 2020 |
| | • Setting<br>o Hospital<br>• Rate of transmission | • Examining the viral transmission risk due to laparoscopic versus open surgery within hospitals<br>Source | Anticipated completion date 31 May 2020 |
| | • Setting<br>o Hospital<br>o Long-term care<br>• Alternative communication modalities<br>• Quadruple aim metric<br>o Health-related harms to patients, families and caregivers from restriction of visitors | • Mental health impacts of infectious disease epidemics on relatives and informal carers of affected individuals and what interventions are available to support them<br>Source | Anticipated completion date 31 August 2020 |

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| Titles/questions for reviews that are being planned | • No relevant titles/questions for reviews that are being planned were found | | |
| Single studies in areas where no reviews were identified | • Setting<br>  o Hospital<br>• Rate of transmission | • Nosocomial SARS-CoV-2 infection in an orthopaedic and traumatology department was 6.48%<br>Source | Published 11 September 2020 |
| | • Setting<br>  o Hospital<br>• Rate of transmission | • Overall risk of hospital-acquired COVID-19 is low.<br>• In a cohort study of 9,149 patients admitted to a large U.S. academic medical centre over a 12-week period, 697 COVID-19 cases were identified.<br>• Only two of these infections were deemed to be acquired in the hospital, of which one was likely infected by a pre-symptomatic spouse before visitor restrictions were implemented, and the other developed symptoms four days after a 16-day hospitalization and with no known exposures in the hospital.<br>Source | Published 9 September 2020 |
| | • Setting<br>  o Long-term care<br>• Accompanying public-health measures<br>  o In institution | • An analysis of profit status of all long-term care homes in Ontario, Canada, and outbreaks in them (including the extent of outbreaks and number of deaths from COVID-19) found that for-profit status is associated with the extent of a COVID-19 outbreak, and the number of deaths among residents, but not the likelihood of an outbreak occurring.<br>• Older design standards and chain ownership explained most of the differences between for-profit and not-for-profit long-term care homes, which highlights the need for these to be a focus for future infection-control efforts.<br>Source | Published 17 August 2020 |
| | • Setting<br>  o Hospital<br>  ▪ Emergency department | • Nosocomial transmission of COVID-19 from accidental exposure in a South Korean hospital's emergency department was found to be | Published 30 July 2020 |

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| | • Rate of transmission<br>• Restriction to visitors (and exceptions)<br>  o No visitors, no exceptions<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metric<br>  o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium)<br>  o Experiences of patients, families and caregivers (e.g., help with care and support, help with translation, less worry, less sedatives/constraints) | successfully prevented through isolation and surveillance policies and comprehensive PPE use.<br>• These measures also resulted in longer ER stays and keeping severely ill patients present during a severe COVID-19 outbreak.<br>Source | |
| | • Setting<br>  o Hospital<br>• Rate of transmission<br>• Restriction to visitors (and exceptions)<br>  o No visitors, no exceptions<br>  o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>  o Other restrictions<br>• Accompanying public-health measures<br>  o In institution | • A total of 303 hospital staff members and patients were exposed to 29 confirmed COVID-19 patients in a South Korean hospital, of which three were found to have COVID-19.<br>• Of the three COVID-19 cases, one was infected because of not wearing a mask during contact with an infected patient, and two became infected due to the hospital not adhering to guidance to the two-week isolation guidelines before permitting an infected patient's request for a multiple-occupancy room.<br>• The findings highlight the importance of consistent implementation of infection-prevention and control guidelines.<br>Source | Published 3 July 2020 |
| | • Setting<br>  o Hospital<br>  ▪ Palliative care<br>• Alternative communication modalities<br>  o Video calls<br>• Quadruple aim metric<br>  o Experiences of patients, families and caregivers (e.g., help with care and support, help with | • Inpatient palliative care electronic family meetings were found to be feasible and acceptable during the COVID-19 pandemic.<br>Source | Published 4 June 2020 |

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| | translation, less worry, less sedatives/constraints) | | |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • Nursing homes with an increased probability of having a COVID-19 infection in the U.S. include those that are larger, in urban locations, with a greater percentage of African-American residents, and those that are not part of a chain of facilities.<br>• High ratings, prior infection violations, dependency on Medicaid funding and status of ownership were not found to be associated with having at least one COVID-19 case.<br>Source | Published 2 June 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission<br>• Accompanying public-health measures<br>o In institution | • Asymptomatic and pre-symptomatic residents may contribute to transmission within seniors' nursing facilities.<br>• Proactive measures such as restricting visitors and non-essential personnel, and staff symptom monitoring should be adopted to prevent the introduction of COVID-19.<br>• Once a COVID-19 case is identified, facilities need to implement a broad range of strategies to reduce transmission, including restricting resident-to-resident interactions, universal face-mask use, and use of PPE for the care of all residents, and if testing capacity is available, additional testing should be used to detect cases and inform additional prevention strategies such as forming resident cohorts.<br>Source | Published 3 April 2020 |
| | • Setting<br>o Hospital<br>• Restriction to visitors (and exceptions)<br>o Other restrictions<br>• Accompanying public-health measures<br>o In institution | • Key infection-prevention and control measures in one Chinese hospital included protecting medical staff (e.g., screening and tracking for possible exposures, use of PPE, encouraging hand hygiene), prohibiting the wearing of PPE leaving a contaminated area, disinfecting work areas, ventilation and social distancing. | Published 8 May 2020 |

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| | | • Other measures included testing incoming patients, visitation registration for families, limits on visitation hours and limits on the number of family members who could accompany patients.<br>• Visitation registration at the entrance and exit of inpatient department was established, and each patient was permitted to be accompanied by a single family member who was required to wear a surgical mask.<br>• Visitors were advised to avoid staying with the patient unless necessary, and visiting hours were set and enforced.<br>Source | |
| | • Setting<br>o Hospital<br>• Restriction to visitors (and exceptions)<br>o No visitors, no exceptions<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>o Other restrictions<br>• Accompanying public-health measures<br>o In institution | • In Taiwan, about three-fifths of hospitals posted new visiting policies as a result of the COVID-19 pandemic.<br>• Many hospitals still allowed visitors to ordinary wards, but restricted the number of visitors at a time, and the times within which they could visit.<br>• Hospitals also took histories of visitors (e.g., travel history, occupation, contacts), and many of those who changed their visitation policies also implemented temperature screening, hand-hygiene measures and identity checks.<br>Source | Published 4 May 2020 |
| | • Setting<br>o Hospital<br>▪ Palliative care<br>• Restriction to visitors (and exceptions)<br>o No visitors, no exceptions<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>o Other restrictions | • During the COVID-19 pandemic, nearly all hospice units in Taiwan changed their visitation policies, with one quarter instituting differing visitor policies than the ordinary wards in the same hospital.<br>• A range of responses were implemented, including keeping visitation open and not allowing any visitation.<br>• Most hospice wards assessed restricted access in terms of the number of visitors allowed and the length of visits, with other approaches including checking identity and screening. | Published 21 April 2020 |

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| | | Source | |
| | • Setting<br>o Long-term care<br>• Restriction to visitors (and exceptions)<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>• Accompanying public-health measures<br>o In institution | • Limitations in effective infection-prevention and control measures in nursing facilities, and staff working in multiple facilities can contribute to intra- and inter-facility spread of COVID-19.<br>• Long-term care facilities should take proactive steps to protect the health of staff and residents, through restricted visitation except in compassionate-care circumstances, early recognition of potentially infected patients and appropriate infection-prevention and control measures.<br>Source | Published 18 March 2020 |
| | • Setting<br>o Hospital<br>• Rate of transmission<br>• Accompanying public-health measures<br>o In institution | • In an orthopedic and traumatology department, 6.48% met the inclusion criteria to be categorized as nosocomial infection with COVID-19.<br>• Patient age and hospital length of stay were both found to be associated with increased risk for nosocomial infection; as a result carefully choosing patients for elective surgery and engaging patients in early-discharge protocols may be critical to reducing the risk of nosocomial infections.<br>• Source | Published 11 September 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission<br>• Accompanying public-health measures<br>o In institution | • Healthcare workers providing care to older adults might be a source of COVID-19 transmission within long-term care facilities, and structural testing of these healthcare workers (including track and trace of contacts), should be performed.<br>Source | Published 9 September 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • In 16 skilled-nursing facilities, 46 employees tested positive or inconclusive for COVID-19, while 110 (or 9.1%) of residents tested positive or inconclusive.<br>• Employees were often asymptomatic and involved in direct patient care.<br>• Source | Published 01 September 2020 |

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| | • Setting<br>  o Hospital<br>  ▪ General medicine<br>• Rate of transmission<br>• Accompanying public-health measures<br>  o In institution | • The study found nosocomial infections can take place through a number of different transmission routes, including exhaled breath, bedside air, surfaces (public and private), and feces-related air/surface/water samples.<br>• To mitigate nosocomial infections, hospitals should ensure good ventilation for each ward, routine disinfection of surfaces, and perform ventilation and disinfection after using the toilet.<br>• Source | Published 25 August 2020 |
| | • Setting<br>  o Long-term care<br>• Rate of transmission<br>• Restriction to visitors (and exceptions)<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metric<br>  o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • A model was used to assess COVID-19 transmission in long-term care facilities by quantifying the impact of asymptomatic transmission and the performance of different approaches (no intervention, symptom mapping, polymerase chain reaction testing, and manual and digital contact tracing) to control outbreaks.<br>• The simulation included in the model found that symptom-based monitoring was the least effective method, and that while manual contact tracing was better, the staff-time required was prohibitive to its use as a successful approach.<br>• The speed and efficiency of digital contact tracing yielded up to 52% fewer cases than conventional methods, and was recommended as the best approach.<br>• Source | Published 25 August 2020 |
| | • Setting<br>  o Hospital<br>  ▪ Labour and delivery<br>• Rate of transmission | • An analysis of the association between the number of in-person healthcare visits and COVID-19 infection in obstetrical patients in the Boston area found no meaningful association between the number of in-person healthcare visits and the rate of COVID-19 infection.<br>• Of the 2,968 deliveries analyzed, all but five were tested for COVID-19 and 111 patients were found to be infected, of which 45 tested positive | Published 14 August 2020 |

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| | | antenatally and 66 tested positive at the time of admission for labour and delivery.<br>Source | |
| | • Setting<br>o Hospital<br>▪ ICU<br>▪ General medicine<br>• Rate of transmission | • In a two-month time period at a teaching hospital in London, U.K., rates of COVID-19 among healthcare workers were found to rise and fall alongside the number of cases in the broader community.<br>• Overall, 2.8% of staff tested positive for COVID-19, with the highest numbers among clinical staff, particularly medical, dental, nursing and midwifery staff, as compared to non-clinical staff members.<br>• Rates of COVID-19 among staff varied based on location in the hospital with the highest numbers reported among acute medicine (ICU) and emergency medicine (emergency department).<br>Source | Published 27 July 2020 |
| | • Setting<br>o Hospital<br>▪ ICU;<br>▪ General medicine;<br>▪ Labour and delivery;<br>▪ Mental health and addictions;<br>▪ Pediatrics<br>• Rate of transmission | • Air and environmental surface samples were collected and tested for SARS-CoV-2 RNA from six different sites (i.e., hemodialysis, general clinic, COVID-19 investigation ward, laboratory, COVID-19 patient ward, and ICU) in three hospitals in China.<br>• There were high positive rates of SARS-CoV-2 RNA in the air and on surfaces within ICUs treating patients with COVID-19, but low positive rates in other areas of the hospitals.<br>Source | Published 22 July 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission<br>• Accompanying public-health measures<br>o In institution | • Facility-wide testing of each of the nine long-term care facilities in Pasadena, California at the end of April 2020 found a high proportion (40.7%) of asymptomatic infections among residents and staff members, with an average of 25% of staff and 50% of residents having asymptomatic infection.<br>• Based on this data, the study recommended that mass testing alongside symptoms screening should be conducted in congregate settings. | Published 2 July 2020 |

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| | • Setting<br>o Hospital<br>▪ ICU<br>▪ General medicine<br>• Rate of transmission<br>• Restriction to visitors (and exceptions)<br>o No visitors, no exceptions<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier)<br>o Other restrictions<br>• Accompanying public-health measures<br>o In institution | • A six-month study of COVID-19 carriage and seroprevalence of staff in healthcare units with high COVID-19 exposure found an infection rate of 12.6% among 326 participants.<br>• Universal screening was identified as allowing for the identification of asymptomatic and potentially contagious infected workers, and subsequent self-isolation.<br>Source | 25 June 2020 |
| | • Setting<br>o Hospital<br>▪ General medicine<br>o Long-term care<br>• Rate of transmission | • Prevalence of COVID-19 infection in general practitioners and nurses in primary care and nursing homes is low.<br>Source | Published 6 June 2020 |
| | • Setting<br>o Hospital<br>▪ ICU;<br>▪ General medicine;<br>▪ Labour and delivery;<br>▪ Mental health and addictions;<br>▪ Pediatrics<br>• Rate of transmission | • The study was conducted in Wuhan, China, where the researchers took air samples and environmental surface samples for SARS-CoV-2 RNA within one hospital treating patients with COVID-19.<br>• SARS-CoV-2 RNA was not detected in the air but was found on environmental surface samples, especially on beepers, water machine buttons, elevator buttons, computer mouses, and telephones.<br>• Strict environmental surface and hand hygiene are recommended for individuals at hospitals.<br>Source | Published 11 May 2020 |
| | • Setting<br>o Hospital<br>▪ Palliative care<br>• Restriction to visitors (and exceptions)<br>o Limited visitors with specific exceptions (e.g., end of life; ICU; labour; language barrier) | • The following strategies were taken to mitigate isolation during end-of-life care:<br>o offering "compassionate exceptions" to strict visitation policies;<br>o providing personal protective equipment to visitors; and | Published May 2020 |

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| | • Accompanying public-health measures<br>  o In institution<br>• Alternative communication modalities | o facilitating virtual visitation.<br>Source | |
| | • Setting<br>  o Hospital<br>  ▪ General medicine<br>• Rate of transmission<br>• Restriction to visitors (and exceptions)<br>• Accompanying public-health measures<br>  o In institution | • In a large hospital in Germany, 27 index cases of hospital-associated COVID-19 were identified, of which 23 were healthcare workers while four were inpatients.<br>• The overall attack rate of the outbreak was 1.3%.<br>• Infection control mechanisms were established afterwards which could help to control future spread, including use of facemasks in common areas, reduction in bed occupancy, and restriction to the number of visitors.<br>• Source | Published 8 September 2020 |
| | • Setting<br>  o Long-term care<br>• Rate of transmission | • Higher nurse-aide hours and total nursing hours help contain the number of cases and deaths in nursing homes.<br>Source | Published 8 August 2020 |
| | • Setting<br>  o Hospital<br>  ▪ General medicine<br>• Rate of transmission | • Antibody testing in Germany's general population shows an inconsistent picture related to the infections of COVID-19.<br>• In testing for IgA and IgG antibodies among 45 members of the cleaning staff at a hospital and 20 members in the oncology ward, two individuals were found to have elevated antibody levels.<br>• Swabs from both individuals came back as negative for COVID-19, however the presence of antibodies indicates the need for strict surveillance in this group.<br>Source | Published 23 July 2020 |
| | • Setting<br>  o Hospital<br>• Rate of transmission | • The seroprevalence of IgM/IgG antibodies to SARS-CoV-2 of hospital visitors (including inpatients and their healthy visitors) at two hospitals (one in Wuhan and the other in Guangzhou, China) was analyzed.<br>• While all study participants had tested negative for COVID-19 RNA, and most had no COVID-19- | Published 20 July 2020 |

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| | | related symptoms in the previous three months, the seroprevalence of IgM/IgG was 2.1% in Wuhan and 0.6% in Guangzhou.<br>Source | |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • Larger skilled-nursing facilities (SNFs) and SNFs in areas of high COVID-19 prevalence are at high risk for outbreaks.<br>Source | Published on 16 July 2020 |
| | • Setting<br>o Hospital<br>▪ General medicine<br>• Rate of transmission | • In a large public hospital in Italy cumulative incidence was found to be 4.0% of health workers (equivalent to 238 workers).<br>• Risk for COVID-19 was found to be higher in medical wards and in health services, though lower in surgical wards and administration areas.<br>• No differences in risk were found between gender, age or job.<br>• Source | Published 15 July 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission<br>• Accompanying public-health measures<br>o In institution | • Using information from electronic health records, 22% of residents at 179 long-term care facilities in the U.K. developed COVID-19 symptoms, however 10.2% of residents and 5.0% of staff had laboratory-confirmed infections.<br>• Lower staffing ratios and higher occupancy rates were found to be risk factors for higher levels of COVID-19 infections.<br>• Control mechanisms to reduce spread in long-term care facilities should include active surveillance, ongoing testing, and changes to staffing and care-home occupancy.<br>• Source | Published 15 July 2020 |
| | • Setting<br>o Long-term care<br>• Accompanying public-health measures<br>o In institution | • Surfaces were analyzed for COVID-19 infection in three licensed long-term care facilities (each with 150 more residents receiving room and board care for medical conditions and assistance with activities of daily living) with outbreaks in a large Canadian city. | Published 6 July 2020 |

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| | | • Medical equipment that was used throughout the facilities was found to be contaminated and identified as a possible route for transmission during outbreaks.<br>• Blood-pressure cuffs were frequently found to be contaminated.<br>Source | |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • Mass testing was conducted in 28 long-term care facilities and while 13 of the facilities did not have a known active case of COVID-19 at the time of testing, 28.6% of residents and 9.4% of staff screened were confirmed to have COVID-19.<br>• In facilities where testing was conducted only after a case had been identified, a dramatically greater proportion of residents and staff were found to be infected.<br>• One concern with serial testing is the uncertainty of whether those who test positive are actually infected and infectious, or whether the test is reacting to non-viable material.<br>Source | Pre-print (published 2 July 2020) |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • Nursing home crowding is associated with higher incidence of COVID-19 infection and mortality.<br>Source | Published on 23 June 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • In a 127-person nursing facility, 35 individuals were diagnosed with COVID-19, of whom only 26 were symptomatic.<br>• Particular considerations from this study are to be mindful of staff who work at multiple facilities and may contribute to cross-facility transmission.<br>Source | Published 16 June 2020 |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • An analysis of the quality of nursing homes (based on a five-star rating from Nursing Home Compare from Medicare.gov) and COVID-19 cases in skilled-nursing facilities in California found that lower star ratings and greater percentage of residents from different racial and | Published 15 June 2020 |

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| | | ethnicity groups had a significantly higher probability of having a COVID-19 case or death among residents.<br>• The nursing homes with a five-star quality rating were found to be less likely to have COVID-19 cases and deaths after adjusting for size of the nursing home and patient race.<br>Source | |
| | • Setting<br>o Long-term care<br>• Rate of transmission | • In testing of 80 residents at a long-term care facility in Seattle, COVID-19 was detected in three, leading to a transmission rate of 3.8% among residents and 3.2% in staff.<br>• Detection of asymptomatic residents and staff remains a significant challenge, particularly for congregate settings.<br>• Source | Published 21 May 2020 |
| | • Setting<br>o Hospital<br>• Rate of transmission | • An assessment of COVID-19 contamination in healthcare settings in Wuhan, China found that the most contaminated zones were the intensive-care unit where people with COVID-19 were receiving care, obstetric isolation wards for pregnant women with COVID-19, and the isolation ward for COVID-19.<br>• The most contaminated objects were self-service printers, desktop/keyboard, and doorknobs, with hand-sanitizer dispensers and gloves being the most contaminated PPE.<br>Source | Published 30 April 2020 |
| | • Setting<br>o Hospital<br>▪ Pediatrics<br>• Rate of transmission<br>• Accompanying public-health measures<br>o In institution | • Forty-eight cases were involved in a hospital outbreak of COVID-19 on a pediatric dialysis unit including patients and healthcare workers.<br>• During the outbreak contacts between exposed individuals were classified by duration and severity of exposure, however it was found that this was insufficient to discriminate high-risk from no-risk contacts. | Published 27 April 2020 |

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| | | • Control of these types of outbreaks in hospitals can be effectively managed with contact tracing, assessment of exposure and optimal symptom-based testing strategies.<br>• Source | |
| | • Setting<br>  o Hospital<br>  ▪ Emergency department<br>• Rate of transmission<br>• Accompanying public-health measures<br>  o In institution<br>• Quadruple aim metric<br>  o Health-related benefits to patients, families and caregivers of visitors (e.g., reduced infections in facility or in community, reduced delirium) | • All admissions to the emergency department at Singapore General Hospital with respiratory syndromes over a three-month period were tested for COVID-19, and during the study period 1,841 cases presented with respiratory syndromes that required admission, of which 70 cases of COVID-19 were confirmed.<br>• Providing front-line physicians with leeway to decide on possible cases based on clinical suspicion during an ongoing outbreak of COVID-19 was identified as important for case identification and preventing further transmission (e.g., through isolation units and PPE to minimize nosocomial transmission).<br>Source | Published 12 April 2020 |
| | • Setting<br>  o Long-term care<br>• Rate of transmission | • Serologic prevalence for antibodies for COVID-19 in the general population was found to be 3-4%, however rates from one nursing home are significantly higher at 17% of residents and 20% of nursing staff.<br>• Number of residents and staff with antibodies was not found to be consistent across the nursing home, with more populated wards having higher numbers of positive antibody tests.<br>• Similarly, a significant difference was seen between hospital rates of antibodies and nursing home which is largely attributable to the lack of public-health measures taken in the first few weeks of the pandemic.<br>Source | Pre-print (posted online 22 May 2020) |

## Appendix 3: Abstracts for highly relevant documents

Note that the table below only includes the abstracts for the documents that we identified on page 1 as being highly relevant to the question.

| Type of document | Abstract and link to full text |
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| Full systematic reviews | COVID-19 related mortality and spread of disease in long-term care : A living systematic review of emerging evidence<br><br>**Abstract**<br>Background: Policy responses to mitigate the impact of the COVID-19 pandemic on long-term care (LTC) require robust and timely evidence on mortality and spread of the disease in these settings. The aim of this living systematic review is to synthesize early international evidence on mortality rates and incidence of COVID-19 among people who use and provide LTC.<br>Methods: We report findings of a living systematic review (CRD42020183557), including studies identified through database searches up to 26 June 2020. We searched seven databases (MEDLINE; Embase; CINAHL Plus; Web of Science; Global Health; WHO COVID-19 Research Database; medRxiv) to identify all studies reporting primary data on COVID-19-related mortality and incidence of disease among LTC users and staff. We excluded studies not focusing on LTC. Included studies were critically appraised and results on number of deaths and COVID-19-related mortality rates, case fatality rates, and excess deaths (co-primary outcomes), as well as incidence of disease, hospitalizations, and ICU admissions were synthesized narratively.<br>Findings: A total of 54 study reports for 49 unique primary studies or outbreak reports were included. Outbreak investigations in LTC facilities found COVID-19 incidence rates of between 0.0% and 71.7% among residents and between 0.4% and 64.0% among staff at affected facilities. Mortality rates varied from 0.0% to 17.1% of all residents at outbreak facilities, with case fatality rates between 0.0% and 33.7%. In included studies of outbreaks, no LTC staff members had died. Studies of wider LTC populations found that between 0.4% and 40.8% of users, and between 4.0% and 23.8% of staff were infected, although the generalizability of these studies is limited. There was limited information on the impact of COVID-19 on LTC in the community.<br>Interpretation: Long-term care users have been particularly vulnerable to the COVID-19 pandemic. However, we found wide variation in spread of disease and mortality rates between outbreaks at individual LTC facilities. Further research into the factors determining successful prevention and containment of COVID-19 outbreaks is needed to protect long-term care users and staff. |
| | Nosocomial infections among patients with COVID-19, SARS, and MERS: A rapid review and meta-analysis<br><br>**Abstract**<br>Background: COVID-19, a disease caused by SARS-CoV-2 coronavirus, has now spread to most countries and regions of the world. As patients potentially infected by SARS-CoV-2 need to visit hospitals, the incidence of nosocomial infection can be expected to be high. Therefore, a comprehensive and objective understanding of nosocomial infection is needed to guide the prevention and control of the epidemic.<br>Methods: We searched major international and Chinese databases: Medicine, Web of Science, Embase, Cochrane, CBM (China Biology Medicine disc), CNKI (China National Knowledge Infrastructure) and Wanfang database for case series or case reports on nosocomial infections of COVID-19, SARS (severe acute respiratory syndromes) and MERS (Middle East respiratory syndrome) |

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| | from their inception to March 31st, 2020. We conducted a meta-analysis of the proportion of nosocomial-infection patients in the diagnosed patients, occupational distribution of nosocomial infection medical staff.<br>Results: We included 40 studies. Among the confirmed patients, the proportions of nosocomial infections with early outbreaks of COVID-19, SARS, and MERS were 44.0%, 36.0%, and 56.0%, respectively. Of the confirmed patients, the medical staff and other hospital-acquired infections accounted for 33.0% and 2.0% of COVID-19 cases, 37.0% and 24.0% of SARS cases, and 19.0% and 36.0% of MERS cases, respectively. Nurses and doctors were the most affected among the infected medical staff. The mean numbers of secondary cases caused by one index patient were 29.3 and 6.3 for SARS and MERS, respectively.<br>Conclusions: The proportion of nosocomial infection in patients with COVID-19 was 44% in the early outbreak. Patients attending hospitals should take personal protection. Medical staff should be aware of the disease to protect themselves and the patients. |
| Rapid review | Rapid review of public health guidance for residential care facilities in the context of COVID-19<br><br>**Abstract**<br>• Some countries are relaxing the protective measures previously put in place in residential care facilities (RCFs), for example, allowing outings, communal activities, removing the requirement for residents to wear face masks and allowing visits to resume.<br>• Guidance for when RCFs reopen has been published by the Centers for Medicaid and Medicare Services (CMS) and adopted by the Centers for Disease Control and Prevention (CDC). This outlines a three-phase plan with criteria for implementing each phase and service-provision guidance, including for testing, visitation, communal dining, group activities and medical trips.<br>• Scotland and Northern Ireland have published guidance for phased reintroduction of visitation. These outline various levels of visitor restrictions that should apply, depending on community levels of COVID-19 and individual status of an RCF. Public Health England has published guidance for decision-makers to assist them in deciding whether individual RCFs can open to visitors. This outlines the need for a risk assessment at individual RCF level, taking into account the community context.<br>• Ireland, Hong Kong, New Zealand, the CMS, CDC, Australia, British Columbia, New Zealand, Canada, Northern Ireland, Scotland and England have issued guidance for visits during reopening of RCFs. This generally recommends to limit visitor numbers, maintain visitor logs, screen visitors, maintain physical distancing (except New Zealand), implement strict hand-hygiene measures and to stop visits if a case of COVID-19 is confirmed within the RCF. Scotland, Northern Ireland, England and Ireland additionally recommend face coverings for visitors. |
| | Evidence summary for care pathways support for the resumption of scheduled hospital care in the context of COVID-19<br><br>**Abstract**<br>• Resumption of scheduled care within the hospital setting must occur in a manner which optimizes patient care while minimizing risks to the public, to healthcare staff, and to the wider health service. A key challenge will be in maintaining adequate capacity to deal with a potential resurgence of COVID-19 cases.<br>• The systematic search identified 45 relevant documents for review. These documents were mostly based on expert opinion and, other than one document, did not report a systematic approach to identifying and producing guidance. |

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| | • Despite coming from a broad range of medical disciplines, some consistencies were found across the included documents. These were categorized into three measure themes; organizational management, physical space, and patient flow.<br>• Guidance documents issued by Ministries for Health were mainly high level in nature and consistently referred to a gradual increase in activities with a requirement for adequate capacity, infection control and personal protective equipment (PPE) supplies. Detail was provided on patient prioritization, suggested approaches to elective surgery, minimum requirements to restore scheduled treatment, and the use of pathways to separate planned versus emergency care.<br>• Guidance documents from professional societies covered a number of specialties including surgery, endoscopy, reproductive medicine, urology, cardiology, ophthalmology, gastroenterology, and radiology. The level of detail and breadth of the guidance varied considerably although most referred to prioritization of care and a gradual resumption of service. Several documents described considerations for various stages of surgery and endoscopy, i.e., patient pathways.<br>• As more regions continue to ease restrictions related to COVID-19, it is anticipated that further guidance will be published, although, given the scope of guidance identified to date, additional novel recommendations are less likely.<br>• As the pandemic progresses, national organizations are likely to increasingly consider a broader population perspective, including issues such as cost-effectiveness, resource considerations and budget impact.<br>• Guidance documents emphasize the requirement for local data collection to assess the effectiveness of any measures introduced and to inform decisions around their escalation or de-escalation. |
| | Tools to support communication between patients and families<br><br>**Abstract**<br>• Strict visitor restrictions are in place across hospitals.<br>• While data are scarce, there is significant activity on Twitter, suggesting hospitals around the world are using bespoke solutions to connect patients and their families during the COVID-19 pandemic.<br>• Hospitals are using virtual visiting solutions, apps and smart devices. This includes hospitals from Australia, the U.K., the U.S. and Canada.<br>• The NHS in the U.K. and the Department of Health and Human Services in the U.S. have issued advice that Skype, WhatsApp and Facetime can be used to support individual care. Providers are required to notify patients that these third-party applications could introduce privacy risks and recommend enabling all privacy and encryption settings. These applications all use end-to-end encryption. However, the human component of these applications affects compliance levels and software exists that can record the calls.<br>• The ways in which communication tools are being deployed and implemented are rapidly evolving: from devices being used in plastic covers, tripods for mounting smart devices and bespoke virtual visiting solution for families of critical-care patients.<br>• Wollongong Hospital is working with a company called Taleka and the University of Wollongong to install software in the intensive-care unit so that patients have access to iPads.<br>• A number of studies have documented the bacterial contamination and recommendations for infection control.<br>• This is a topic that is quickly evolving and changing; therefore not all examples will be included in the review. |

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| | • The quality of evidence is low. Most of the information is from Twitter with limited details.<br>• The scope of the review did not include (1) communication between health professionals and patients including virtual health consultations, telemonitoring or telehealth; or (2) risks and issues. |
| | Guidelines for preventing respiratory illness in older adults aged 60 years and above living in long-term care<br><br>**Abstract**<br>Background: The overall objective of this rapid review was to identify infection protection and control recommendations from published clinical practice guidelines (CPGs) for adults aged 60 years and older in long-term care settings.<br>Methods: Comprehensive searches in MEDLINE, EMBASE, the Cochrane Library, and relevant CPG publishers/repositories were carried out in early March 2020. Title/abstract and full-text screening, data abstraction, and quality appraisal (AGREE-II) were carried out by single reviewers.<br>Results: A total of 17 relevant CPGs were identified, published in the U.S. (n=8), Canada (n=6), Australia (n=2), and the United Kingdom (n=1). All of the CPGs dealt with infection control in long-term care facilities (LTCF) and addressed various types of viral respiratory infections (e.g., influenza, COVID-19, severe acute respiratory syndrome). Ten or more CPGs recommended the following infection control measures in LTCF: hand hygiene (n=13), wearing personal protective equipment (n=13), social distancing or isolation (n=13), disinfecting surfaces (n=12), droplet precautions (n=12), surveillance and evaluation (n=11), and using diagnostic testing to confirm illness (n=10). While only two or more CPGs recommended these infection control measures: policies and procedures for visitors, staff and/or residents (n=9), respiratory hygiene/cough etiquette (n=9), providing supplies (n=9), staff and/or residents education (n=8), increasing communication (n=6), consulting or notifying health professionals (n=6), appropriate ventilation practices (n=2), and cohorting equipment (n=2). Ten CPGs also addressed management of viral respiratory infections in LTCF and recommended antiviral chemoprophylaxis (n=10), and one CPG recommended early mobilization of residents.<br>Conclusion: The recommendations from current guidelines overall seem to support environmental measures for infection prevention and antiviral chemoprophylaxis for infection management as the most appropriate first-line response to viral respiratory illness in long-term care. |
| | Preventing the transmission of Coronavirus in older adults aged 60 years and above living in long-term care: A rapid review<br><br>**Abstract**<br>A comprehensive literature search of both electronic databases and grey literature sources as well as references leveraged from a prior review resulted in one ongoing trial, one primary study and five clinical practice guidelines (CPG) addressing infection control and prevention for COVID-19 or SARS in long-term care facilities. Results of the primary study suggested preventing entry of COVID-19 into facilities and screening/testing all staff, residents, and visitors is the best first-line approach. The five CPGs most commonly recommended strategies such as establishing surveillance monitoring and evaluation systems, consulting with health professionals, regular or increased disinfection of surfaces, educating individuals on infection control and hand or respiratory |

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| | hygiene, mandating use of personal protective equipment (PPE), ensuring adequate supplies for facilities, and employing social distancing/isolation or cohorting for residents. |
| Single studies in areas where no reviews were identified | Nosocomial infection with SARS-CoV-2 and main outcomes after surgery within an orthopedic surgery department in a tertiary trauma centre in Spain<br><br>**Abstract**<br>Aims: The purpose of the present study is to analyze clinical data of a series of cases who developed nosocomial infection with SARS-CoV-2 in an orthopedic and traumatology department.<br>Patients and methods: In this non-interventional retrospective study, carried out at a tertiary hospital within the Spanish National Health System, all adult patients who were admitted in the Orthopaedic Surgery and Traumatology Department between March 9th and May 4th, 2020, were included. Clinical, biological and radiological data, as well as mortality rates, were collected from hospital medical records.<br>Results: A total of 293 periods of hospitalization were analysed in 288 patients. Mean age was 66.1 years and 57.3% were females. Nineteen patients (6.48%) met the inclusion criteria to be categorized as a nosocomial infection with SARS-CoV-2. In a comparison between patients with and without nosocomial infection, age, mortality and hospital length of stay were statistically significant ($p < 0.05$). The median time from admission to diagnosis of SARS-CoV-2 infection in our cohort was 16 days (6-86 days). No statistically significant differences were found in sex, living situation, reason of admission or period of admission (even if we observed that most of the nosocomial infections (78.9%) occurred in March).<br>Conclusion: We have found a 6.48% of nosocomial infection with SARS-CoV-2, but with an important reduction of it after undergoing preventing protocols that included screening RT-PCR test for COVID-19. Age and hospital length of stay were statistically significant risk factors for nosocomial infection with SARS-CoV-2. For the progressive restoration of the surgical activity, we recommend to correctly select the patients in elective surgery and to encourage fast-track programs and early discharge of patients with fractures. |
| | Incidence of nosocomial COVID-19 in patients hospitalized at a large U.S. academic medical center<br><br>Objective: To assess the incidence of COVID-19 among patients hospitalized at a large U.S. academic medical center in the 12 weeks after the first inpatient case was identified.<br>Design, Setting, and Participants: This cohort study included all patients admitted to Brigham and Women's Hospital (Boston, Massachusetts) between March 7 and May 30, 2020. Follow-up occurred through June 17, 2020. Medical records for all patients who first tested positive for severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by reverse-transcription polymerase chain reaction (RT-PCR) on hospital day three or later, or within 14 days of discharge were reviewed.<br>Exposures: A comprehensive infection-control program was implemented that included dedicated COVID-19 units with airborne-infection isolation rooms, personal protective equipment in accordance with US Centers for Disease Control and Prevention recommendations, personal protective equipment donning and doffing monitors, universal masking, restriction of visitors, and liberal RT-PCR testing of symptomatic and asymptomatic patients.<br>Main Outcomes and Measures: Whether infection was community or hospital acquired based on timing of tests, clinical course, and exposures. |

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| | Over the 12-week period, 9,149 patients (mean [SD] age, 46.1 [26.4] years; median [IQR] age, 51 years [30-67 years]; 5,243 female [57.3%]) were admitted to the hospital, for whom 7,394 SARS-CoV-2 RT-PCR tests were performed; 697 COVID-19 cases were confirmed, translating into 8,656 days of COVID-19–related care. Twelve of the 697 hospitalized patients with COVID-19 (1.7%) first tested positive on hospital day three or later (median, four days; range, three-15 days). Of these, only one case was deemed to be hospital acquired, most likely from a pre-symptomatic spouse who was visiting daily and diagnosed with COVID-19 before visitor restrictions and masking were implemented. Among 8,370 patients with non–COVID-19–related hospitalizations discharged through June 17, 11 (0.1%) tested positive within 14 days (median time to diagnosis, six days; range, one-14 days). Only one case was deemed likely to be hospital acquired, albeit with no known exposures.<br>Conclusions and Relevance: In this cohort study of patients in a large academic medical center with rigorous infection-control measures, nosocomial COVID-19 was rare during the height of the pandemic in the region. These findings may inform practices in other institutions and provide reassurance to patients concerned about contracting COVID-19 in hospitals. |
| | For-profit long-term care homes and the risk of COVID-19 outbreaks and resident deaths<br><br>**Abstract**<br>Background: Long-term care (LTC) homes have been the epicentre of the coronavirus disease 2019 (COVID-19) pandemic in Canada to date. Previous research shows that for-profit LTC homes deliver inferior care across a variety of outcome and process measures, raising the question of whether for-profit homes have had worse COVID-19 outcomes than non-profit homes.<br>Methods: We conducted a retrospective cohort study of all LTC homes in Ontario, Canada, from 29 March to 20 May, 2020, using a COVID-19 outbreak database maintained by the Ontario Ministry of Long-Term Care. We used hierarchical logistic and count-based methods to model the associations between profit status of LTC homes (for-profit, non-profit or municipal) and COVID-19 outbreaks in LTC homes, the extent of COVID-19 outbreaks (number of residents infected), and deaths of residents from COVID-19.<br>Results: The analysis included all 623 Ontario LTC homes, comprising 75,676 residents; 360 LTC homes (57.7%) were for-profit, 162 (26.0%) were non-profit, and 101 (16.2%) were municipal homes. There were 190 (30.5%) outbreaks of COVID-19 in LTC homes, involving 5,218 residents and resulting in 1,452 deaths, with an overall case fatality rate of 27.8%. The odds of a COVID-19 outbreak were associated with the incidence of COVID-19 in the public-health unit region surrounding an LTC home (adjusted odds ratio [OR] 1.91, 95% confidence interval [CI] 1.19–3.05), the number of residents (adjusted OR 1.38, 95% CI 1.18–1.61), and older design standards of the home (adjusted OR 1.55, 95% CI 1.01–2.38), but not profit status. For-profit status was associated with both the extent of an outbreak in an LTC home (adjusted risk ratio [RR] 1.96, 95% CI 1.26–3.05) and the number of resident deaths (adjusted RR 1.78, 95% CI 1.03–3.07), compared with non-profit homes. These associations were mediated by a higher prevalence of older design standards in for-profit LTC homes and chain ownership.<br>Interpretation: For-profit status is associated with the extent of an outbreak of COVID-19 in LTC homes and the number of resident deaths, but not the likelihood of outbreaks. Differences between for-profit and non-profit homes are largely explained by older design standards and chain ownership, which should be a focus of infection-control efforts and future policy. |

| Type of document | Abstract and link to full text |
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| | How to keep patients and staff safe from accidental SARS-CoV-2 exposure in the emergency room: Lessons from South Korea's explosive COVID-19 outbreak<br><br>**Abstract**<br>Objectives: We report our experience with an emergency room (ER) shutdown related to an accidental exposure to a patient with coronavirus disease 2019 (COVID-19) who had not been isolated.<br>Setting: A 635-bed, tertiary-care hospital in Daegu, South Korea.<br>Methods: To prevent nosocomial transmission of the disease, we subsequently isolated patients with suspected symptoms, relevant radiographic findings, or epidemiology. Severe acute respiratory coronavirus 2 (SARS-CoV-2) reverse-transcriptase polymerase chain reaction assays (RT-PCR) were performed for most patients requiring hospitalization. A universal mask policy and comprehensive use of personal protective equipment (PPE) were implemented. We analyzed effects of these interventions.<br>Results: From the pre-shutdown period (10–25 February, 2020) to the post-shutdown period (28 February to 16 March, 2020), the mean hourly turnaround time decreased from 23:31 ±6:43 hours to 9:27 ±3:41 hours (P < .001). As a result, the proportion of the patients tested increased from 5.8% (N=1,037) to 64.6% (N=690) (P < .001) and the average number of tests per day increased from 3.8±4.3 to 24.7±5.0 (P < .001). All 23 patients with COVID-19 in the post-shutdown period were isolated in the ER without any problematic accidental exposure or nosocomial transmission. After the shutdown, several metrics increased. The median duration of stay in the ER among hospitalized patients increased from 4:30 hours (interquartile range [IQR], 2:17–9:48) to 14:33 hours (IQR, 6:55–24:50) (P < .001). Rates of intensive-care unit admissions increased from 1.4% to 2.9% (P = .023), and mortality increased from 0.9% to 3.0% (P = .001).<br>Conclusions: Problematic accidental exposure and nosocomial transmission of COVID-19 can be successfully prevented through active isolation and surveillance policies, and comprehensive PPE use despite longer ER stays and the presence of more severely ill patients during a severe COVID-19 outbreak. |
| | Strategies for the prevention of the intra-hospital transmission of COVID-19: A retrospective cohort study<br><br>**Abstract**<br>Coronavirus disease (COVID-19) has spread rapidly worldwide. We aimed to review the strategies used by our university hospital in Daegu (South Korea) to prevent the transmission of COVID-19 within our institution. We also investigated the actual situation at our hospital against the recommended guidelines. We conducted a survey among patients and staff in our hospital. Additionally, patients' electronic medical records were reviewed along with closed-circuit television (CCTV) recordings. Various strategies and guidelines developed by our hospital have been implemented. A total of 303 hospital staff and patients had exposure to 29 confirmed COVID-19 patients. Of them, three tested positive for COVID-19 without further transmission. The intra-hospital infection of the disease occurred when the recommended strategies and guidelines such as wearing a mask and isolating for two weeks were not followed. In conclusion, the implementation of robust guidelines for preventing the intra-hospital transmission of COVID-19 is essential. |
| | Feasibility and acceptability of inpatient palliative care e-family meetings during COVID-19 pandemic<br><br>**Abstract** |

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| | Family meetings are fundamental to the practice of palliative medicine and serve as a cornerstone of intervention on the inpatient palliative-care consultation service. The COVID-19 pandemic disrupted the structure and process of inpatient family meetings, owing to necessary but restrictive visitor policies that did not allow families to be present in the hospital. We describe implementation of telemedicine to facilitate electronic family (e-family) meetings to facilitate inpatient palliative care. Of 67 scheduled meetings performed by the palliative-care service, only two meetings were aborted for a 97% success rate of scheduled meetings occurring. On a five-point Likert-type scale, the average clinician rating of the e-family meeting overall quality was 3.18 (SD, .96). Of the 10 unique family participants who agreed to be interviewed, their overall ratings of the e-family meetings were high. Over 80% of respondent family participants reported that they agreed or strongly agreed that they were able to ask all of their questions, felt comfortable expressing their thoughts and feelings with the clinical team, felt like they understood the care their loved one received, and that the virtual family meeting helped them trust the clinical team. Of patients who were able to communicate, 50% of family respondents reported that the e-family meeting helped them understand their loved one's thoughts and wishes. |
| | Hospital visiting policies in the time of coronavirus disease 2019: A nationwide website survey in Taiwan<br><br>**Abstract**<br>Background: Coronavirus disease 2019 (COVID-19), a novel infectious coronavirus disease, has become a worldwide pandemic. Infection-control precautions for hospital visitors are needed to avoid cluster outbreaks, so this study investigated the visiting policies of all the hospitals in Taiwan in the time of COVID-19.<br>Methods: From March 15, 2020, to March 18, 2020, we searched the official websites of all 472 National Health Insurance-contracted hospitals to determine their visiting policies. For those hospitals that had posted new visiting policies and still allowed visits to ordinary wards, we recorded the relevant details shown on their websites, including the number of visitors allowed at one time, the number of visiting slots per day, the total visiting hours per day, and the rules provided to visitors before visiting.<br>Results: During the study period, 276 (58.5%) hospitals had posted new visiting policies on their websites, with higher proportions of academic medical centers (92.0%, 23/25) and metropolitan hospitals (91.5%, 75/82) than local community hospitals (48.8%, 178/365) doing so. Visits to ordinary wards were forbidden in 83 hospitals among those. Among the 193 hospitals that had new visiting policies and still allowed visits to ordinary wards, 73.1% (n = 141) restricted visitors to two at a time and 54.9% (n = 106) restricted visits to two visiting slots per day. Furthermore, history taking regarding travel, occupation, contacts, and cluster information was mentioned by 82.4% (n = 159) of these 193 hospitals, body temperature monitoring by 78.2% (n = 151), hand hygiene by 63.2% (n = 122), and identity checks by 51.8% (n = 100).<br>Conclusion: In the time of COVID-19 covered by this study, about three-fifths of the hospitals in Taiwan had posted their visiting policies for ordinary wards on their websites. Furthermore, the thoroughness with which such visiting policies have been enforced also requires investigation. |
| | Visiting policies of hospice wards during the COVID-19 pandemic: An environmental scan in Taiwan<br><br>**Abstract** |

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| | During an epidemic, almost all healthcare facilities restrict the visiting of patients to prevent disease transmission. For hospices with terminally ill patients, the trade-off between compassion and infection control becomes a difficult decision. This study aimed to survey the changes in visiting policy for all 76 hospice wards in Taiwan during the COVID-19 pandemic in March 2020. The altered visiting policies were assessed by the number of visitors per patient allowed at one time, the daily number of visiting slots, the number of hours open daily, and requisites for hospice-ward entry. The differences in visiting policies between hospice wards and ordinary wards were also investigated. Data were collected by reviewing the official website of each hospital and were supplemented by phone calls in cases where no information was posted on the website. One quarter (n = 20) of hospice wards had different visiting policies to those of ordinary wards in the same hospital. Only one hospice ward operated an open policy, and in contrast, nine (11.8%) stopped visits entirely. Among the 67 hospice wards that allowed visiting, at most, two visitors at one time per patient were allowed in 46 (68.6%), one visiting time daily was allowed in 32 (47.8%), one hour of visiting per day was allowed in 29 (43.3%), and checking of identity and travel history was carried out in 12 wards (17.9%). During the COVID-19 pandemic, nearly all hospice wards in Taiwan changed their visiting policies, but the degree of restriction varied. Further studies could measure the impacts of visiting policy changes on patients and healthcare professionals. |

**Appendix 4: Documents excluded at the final stages of reviewing**

| Type of document | Focus |
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| Guidelines developed using a robust process (e.g., GRADE) | Not applicable |
| Full systematic reviews | Not applicable |
| Rapid reviews | Not applicable |
| Guidance developed using some type of evidence synthesis and/or expert opinion | Not applicable |
| Protocols for reviews that are underway | Not applicable |
| Titles/questions for reviews that are being planned | Not applicable |
| Single studies in areas where no reviews were identified | A conceptual discussion about the basic reproduction number of severe acute respiratory syndrome coronavirus 2 in healthcare settings |
| | Environmental and aerosolized SARS-CoV-2 among hospitalized COVID-19 patients |