Preventing the transmission of Coronavirus (COVID-19) in older adults aged 60 years and above living in long term care

A rapid review

Prepared for The Canadian Frailty Network

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INTRODUCTION

Purpose and Research Questions

The novel coronavirus 2019 (COVID-19) pandemic has made it clear that older adults, with or without pre-existing health conditions, are at a significantly increased risk of severe illness from this infectious disease. The Canadian Frailty Network (CFN) would like to inform long-term care facilities on how to prepare for and respond to a COVID-19 outbreak so they have commissioned the following rapid review.

The overall objective of this rapid review was to examine the control and management of COVID-19, SARS, or MERS in adults 60 years or above living in long-term care facilities. The specific research questions were as follows:

1. What are the infection prevention and control practices for preventing or reducing the transmission of COVID-19, Middle East Respiratory Syndrome (MERS), and Severe Acute Respiratory Syndrome (SARS) in older adults aged 65 years and above living in long-term care?
2. Do the infection prevention and control practices differ for adults aged 65 years and above living in long-term care with severe comorbidities or frailty differ than those without such severe comorbidities/frailty?
3. What are the employment and remuneration policies that may have contributed to the COVID-19 outbreak in adults aged 65 years and above living in long-term care facilities?

METHODS

Protocol

The rapid review conduct was guided by the Rapid Review Guide for Health Policy and Systems Research[1] and the protocol was registered on the PROSPERO database (CRD42020181993).

Literature search

A combination of comprehensive literature searches and automated search and citation screening was used to gather relevant evidence from MEDLINE, EMBASE, Cochrane library, and pre-print servers (biorxiv/medrxiv). Grey (i.e., difficult to locate or unpublished) literature was searched via international clinical trial registries (e.g., clinical trials.gov, WHO international clinical trials register), COVID-19 focused evidence gathering services (e.g., EPPI Mapper, COVID-END), as well as guideline producers/repositories (e.g., NICE guidance, ECRI). The EMBASE search strategy and a full list of the grey literature search are available in Appendices 1 and 2.

The literature search was conducted on April 17, 2020, titles and abstracts from public archives were identified for screening using Gordon V. Cormack and Maura R. Grossman's Continuous Active Learning® ("CAL®") tool, which uses supervised machine learning[2]. For archives that could be retrieved in their entirety (e.g., Medline), the entire archive was processed and searched using CAL®. For those archives that could only be accessed using keywords (e.g. clinicaltrials.gov), relevant search terms were applied (e.g., COVID-19, long-term care). The CAL® tool identifies the titles and abstracts most likely to meet specific inclusion criteria, based

on the screening results that have been previously identified and reviewed. This process continues iteratively, until none of the identified articles meet the inclusion criteria.

Eligibility criteria

The Eligibility criteria followed the PICOST framework and consisted of:

Population: Individuals aged 60 years and above residing in long-term care facilities (e.g., nursing home, long-term care hospital/facility, skilled nursing facility, convalescent home, assisted living facilities)[3]. The definition of long-term care that was used is as follows: "Long-term care homes are home-based health care facilities designed for adults who need access to on-site 24-hour nursing care, frequent assistance with activities of daily living (i.e. eating, bathing, toileting, etc.) and monitoring for safety or well-being. They are also known as nursing homes, charitable homes, or municipal homes for the aged."[4].

Interventions: Any form of infection control and prevention including but not limited to appropriate ventilation, cohorting equipment, communication, consulting/notifying health professionals , diagnostic testing, disinfecting surfaces, droplet precautions, education , hand hygiene, personal protective equipment (for patients and health care providers), policies for visitors, policies for staff/residents, provide supplies, respiratory hygiene/cough etiquette , smoking cessation, social distancing/isolation/cohorting, surveillance/monitoring/evaluation, antiviral prophylaxis for staff/residents, early mobilization, restrictions on resident movement and transportation, restrictions on visitors, restrictions on travel for health care providers and other long-term care facility staff. Only those measures used to prevent COVID-19, MERS or SARS were included, measures related to control and prevention of other infections (e.g., vaccination for influenza, oral care to prevent bacterial pneumonia) were excluded.

Additionally, interventions related to remuneration/compensation policies for long-term care facility staff, staffing models, policies on mixing of staff in long-term care facilities, and policies on staff travelling between long-term care facilities were included.

Comparator: One of the interventions listed above or no intervention

Outcomes: Lab-confirmed respiratory infection [primary outcome], symptoms, secondary transmission (e.g., other patients, healthcare workers), goal concordant care, hospitalization, intensive-care unit (ICU) admission, mortality

Study designs: Clinical practice guidelines (CPGs) and systematic reviews, using the Cochrane definition of a systematic review. Primary human studies of all designs (e.g., experimental studies, quasi-experimental studies, and observational studies excluding case series) that involved patients with COVID-19 only (not including SARS or MERS) were included.

Time periods: All periods of time and duration of follow-up were included.

Other limitations: No other limitations were imposed. Both peer-reviewed and non-peer-reviewed papers were eligible for inclusion, as were papers written in languages other than English.

Study selection

In order to meet the requested timeline of 10 working days, a streamlined approach to study selection was employed. An automated approach to initial screening was used to identify the most relevant citations that were then passed through for full-text screening. A calibration exercise was conducted prior to full-text screening using a random sample of 10 articles.

Subsequently, screening was completed by a single reviewer and verified by a second. A screening form based on the eligibility criteria was prepared for reviewers to aid in making consistent judgements on article relevance.

Data items and data abstraction

Items for data abstraction included study characteristics (e.g., duration of follow-up, study design, country of conduct, multi-center vs. single site), patient characteristics (e.g., mean age, age range, co-morbidities), intervention details (e.g., type of intervention, duration and frequency of intervention, timing of intervention), comparator details (e.g., comparator intervention, duration and frequency of intervention, timing of intervention), and outcome results (e.g., lab-confirmed respiratory infection [primary outcome], symptoms, secondary transmission, hospitalization, ICU admission, mortality) at the longest duration of follow-up. For the clinical practice guidelines, the recommendations and level of evidence for reach recommendation was abstracted. Included studies were abstracted by single reviewers and verified by a second independent reviewer.

Risk of bias appraisal

Risk of bias appraisal was carried out by single reviewers using the AGREE-II tool[5] for clinical practice guidelines, the AMSTAR 2 tool for systematic reviews[6], and the Newcastle Ottawa Scale[7] (NOS) for nonrandomized studies.

Synthesis

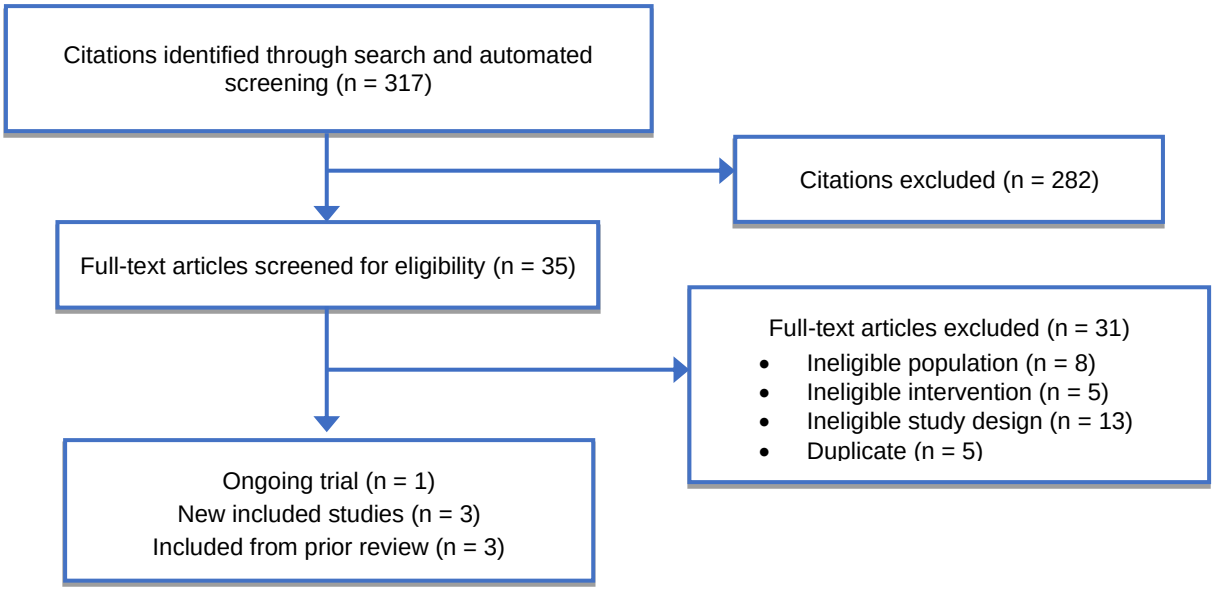
The synthesis involved a descriptive summary of included studies with summary tables and detailed tables of study results. Tables of study results are organized according to interventions of interest and reported outcomes and where available, information on relevant subgroups is presented separately.

RESULTS

Literature Search

The database search and automated screening returned a total of 317 potentially relevant citations for further screening. A total of 282 citations were excluded after further review and 36 articles underwent full-text screening where a further 31 articles were excluded. One ongoing trial[8], one observational study[9], two policy guidelines[10,11], and three CPGs[12-14] found in a prior review of infection control in LTC[15] were included in this review (Figure 1).

Figure 1: Study flow



Characteristics of included articles

Ongoing Study

One registered clinical trial[8] was identified through the search. The clinical trial (NCT04343248) is sponsored by Romark Laboratories, a US based company, and aims to examine the effectiveness of nitazoxanide compared to placebo as post-exposure prophylaxis to prevent COVID-19 infection in older residents of long-term care facilities. The trial is currently registered on clnicaltrials.gov but has not begun recruitment at the time of this writing.

Primary Study

One observational study[9] carried out in a long-term care facility in Washington State, USA was included in this review. The primary site of the study was a skilled nursing facility that first identified a case of COVID-19 among their residents in February 2020 and eventually identified 167 cases among three groups: staff, residents, and visitors to the facility (full details of the study are in Appendix 3). Infection control measures employed in this facility included identifying and testing suspected cases of COVID-19, tracing contacts of confirmed cases, providing education on self-isolation/quarantine, additional training for staff on infection control and PPE use, and reviews of environmental cleaning/disinfection practices.

Clinical Practice Guidelines

The 5 clinical practice guidelines[10-14] included in this review were produced by organizations in the United States (n=4) and Canada (n=1) and sponsored by government agencies[12,14] (n=2), medical associations[10] (n=1), or non-profit research trusts[11,13] (n=2). All of the guidelines were published in 2020 and target audiences included administration, staff, residents, and visitors of long-term care facilities of any type (Appendix 4).

Appraisal Results

Primary Study

The observational study included in this review was of high quality, scoring the highest possible rating (A) on 5 items and the second highest rating (B) on one item out of 9 total (Table 1). The most apparent issues with the study were a lack of a truly representative sample as all study subjects were drawn from the same facility and a lack of details on how comparable the cohorts included in the study were.

Table 1: Results of the Newcastle Ottawa Scale

Appraisal Items	Study: McMichaels, 2020[8]
Representative-ness of the exposed cohort	B - somewhat representative
Selection of the non-exposed cohort	A - same community
Ascertainment of exposure	A - secure record
Demonstration that outcome was not present at start	A - yes
Comparability of cohorts (design or analysis)	D - no description
Assessment of outcome	A - independent or blind
Was follow-up long enough for outcomes to occur	A - yes
Adequacy of follow up of cohorts	A - complete

Clinical practice guidelines

The 5 clinical practice guidelines were of very low quality (Table 1). For the scope and purpose domain, the clinical practice guidelines reported 3 to 6 of the relevant details out of 12 in total. For the stakeholder domain, the guidelines reported 1 to 2 of the relevant details out of 11 in total. For the rigour of development domain, only one guideline reported one relevant detail out of 35 items in total. For the clarity of presentation domain, the guidelines reported 2 to 7 of the relevant details out of 8 in total. For the applicability domain, three guidelines each reported one of the relevant details out of 13 in total. For the editorial independence domain, the guidelines reported 0 to 2 of the relevant details out of 6 in total. The full appraisal results for each included clinical practice guideline can be found in Appendix 5.

Table 2: Summary AGREE-II scores

	AGS, 2020[10]	CDC, 2020[12]	ECRI, 2020a[13]	ECRI, 2020b[11]	MOH, 2020[14]
DOMAIN 1: Scope and Purpose (12 points in total)					
Item 1: Objectives	3	2	1	1	2
Item 2: Questions	1	1	1	1	1
Item 3: Population	2	1	2	1	1
Totals	6	4	4	3	4
DOMAIN 2: Stakeholder Involvement (11 points in total)					

Item 4: Group membership	1	0	0	0	0
Item 5: Target population preferences and views	0	0	0	0	0
Item 6: Target users	1	1	0	1	1
Totals	2	1	0	1	1
DOMAIN 3: Rigour of Development (35 points in total)					
Item 7: Search methods	0	0	0	0	0
Item 8: Evidence selection criteria	0	0	0	0	0
Item 9: Strengths & Limitations of the evidence	0	0	0	0	0
Item 10: Formulation of recommendations	0	0	0	1	0
Item 11: Consideration of benefits and harms	0	0	0	0	0
Item 12: Link between recommendations and evidence	0	0	0	0	0
Item 13: External review	0	0	0	0	0
Item 14: Updating procedure	0	0	0	0	0
Totals	0	0	0	1	0
DOMAIN 4: Clarity of Presentation (8 points in total)					
Item 15: Specific and unambiguous recommendations	3	3	3	1	2
Item 16: Management options	0	0	2	1	1
Item 17: Identifiable key recommendations	0	1	2	0	1
Totals	3	4	7	2	4
DOMAIN 5: Applicability (13 points in total)					
Item 18: Facilitators and barriers to application	0	0	0	0	0
Item 19: Implementation advice/tools	0	1	0	1	1
Item 20: Resource implications	0	0	0	0	0
Item 21: Monitoring/auditing criteria	0	0	0	0	0
Totals	0	1	0	1	1
DOMAIN 6: Editorial Independence (6 points in total)					
Item 22: Funding body	1	1	1	0	1
Item 23: Competing interests	1	0	0	0	0
Totals	2	1	1	0	1

Results

Primary Study

The primary outcome of the observational study[9] was the rate of lab-confirmed COVID-19 infections (tested using the CDC's SARS-CoV-2 rRT-PCR panel) among staff, residents, and visitors to the facility. Secondary outcomes included hospitalization rates and mortality among confirmed COVID-19 cases (Table 3). The median age of residents diagnosed with COVID-19 was 83 years and most residents had one or more chronic underlying conditions including hypertension, cardiac disease, diabetes, cancer, immune compromising conditions, or lung/liver/kidney disease. Health care personnel and visitors diagnosed with COVID-19 were significantly younger, 43.5 and 62.5 years of age, respectively and had fewer chronic conditions (Appendix 3). The authors of the study concluded that infection control and prevention measures must be aimed at preventing the introduction of COVID-19 into healthcare facilities

and that, upon introduction, immediate measures must be taken to control the spread of this illness.

Table 3: Primary Study Outcomes

Outcome	Residents (n)	Staff (n)	Visitors (n)
Lab confirmed COVID-19	101/118	50/--*	16/--*
Hospitalization	Yes: 55 No: 9 Unknown: 37	Yes: 3 No: 44 Unknown: 3	Yes: 8 No: 8 Unknown: 0
Mortality	34	0	1

*total numbers of staff/visitors tested for COVID-19 were not reported

Clinical Practice Guidelines

Three or more of the included clinical practice guidelines recommended the following measures:

- Surveillance, monitoring, and evaluation of symptoms/illness among staff and residents (n=4)
- Consulting with and notifying relevant health professionals to deal with COVID-19 cases (n=3)
- Routine or increased disinfection of surfaces in the facility (n=3)
- Educating staff and/or residents on appropriate infection control, hand, or respiratory hygiene (n=3)
- Promoting and enforcing hand hygiene measures among staff, residents, and/or visitors (n=3)
- Mandating the use of appropriate personal protective equipment (PPE) for staff, residents, and/or visitors (n=3)
- Ensure adequate supplies of PPE, medications, and other medical equipment (e.g., ventilators) to manage COVID-19 outbreaks (n=3)
- Promoting and enforcing respiratory hygiene measures among staff, residents, and/or visitors (n=3)
- Employing social distancing or isolation measures to prevent spread of COVID-19 and/or cohorting (isolating) patients with confirmed or suspected COVID-19 (n=3)

Only one or two of the included clinical practice guidelines recommended the following measures:

- Policies restricting visitor hours or limiting to “essential” visitors only (n=2)
- Promoting and enforcing mandatory sick leave for staff with symptoms or suspected COVID-19 and/or ensuring adequate compensation for staff on sick leave (n=2)
- Cohorting certain equipment to only be used with COVID-19 patients (n=1)
- Ensuring appropriate communication between long-term care facilities and local/regional health authorities (n=1)
- Testing all symptomatic staff and/or residents for COVID-19 (n=1)

- Mandating the use of droplet precautions (including appropriate PPE) when treating any patient suspected or confirmed to have COVID-19 (n=1)
- Policies to restrict the movement of staff and/or residents within or between facilities (n=1)

The full details of the included clinical practice guidelines and a summary of the coding used to categorize each recommendation are available in Appendices 6 and 7.

Table 3: Summary of recommendations from included clinical practice guidelines

Recommendations	AGS, 2020[10]	CDC, 2020[12]	ECRI, 2020a[13]	ECRI, 2020b[11]	MOH, 2020[14]
Cohorting equipment			X		
Communication				X	
Consulting/notifying health professionals	X		X		X
Diagnostic testing					X
Disinfecting surfaces		X	X		X
Droplet precautions					X
Education	X	X		X	
Hand hygiene		X	X		X
Personal protective equipment		X	X		X
Policies for visitors		X			X
Policies for staff/residents					X
Provide supplies	X	X		X	
Respiratory hygiene/cough etiquette		X		X	X
Social distancing/ isolation/cohorting	X	X	X		
Surveillance/monitoring/evaluation	X	X		X	X
Compensation/sick leave policies for staff	X	X			

DISCUSSION

The CFN commissioned a rapid review to address the question of infection control and prevention in long-term care that is especially relevant given the current COVID-19 outbreaks in facilities across Canada. A comprehensive literature search that included electronic sources, grey literature sites, and references from a prior review produced one primary study and 5 clinical practice guidelines dealing specifically with the control and management of COVID-19 and SARS among older adults in long-term care. None of the included articles addressed MERS or addressed infection control and prevention for frail older adults or those with significant comorbidity. Only two of the included CPGs addressed how compensation or leave policies could affect the transmission of COVID-19 in long-term care facilities.

Overall, the results of the included observational study suggest that preventing COVID-19 from entering a facility should be the first-line approach but failing that, immediate measures such as screening staff residents or visitors and conducting extensive diagnostic testing should be taken.

Among the five included CPGs the most commonly recommended strategy was establishing surveillance, monitoring, and evaluation within long-term care facilities, followed by consulting with or notifying relevant health professionals, disinfecting surfaces, educating staff and/or residents on infection control and hygiene, promoting hand hygiene, mandating use of PPE, ensuring adequate supplies for facilities, promoting respiratory hygiene/cough etiquette, and employing social distancing/isolation or cohorting measures among residents of a facility.

There are several limitations to the review methods employed here, the lack of duplicate screening and abstraction for example, however they were selected to thoughtfully tailor our methods according to our knowledge user needs and the urgent nature of the request to provide timely results. There is also a chance that our literature search missed guidance documents from various state and provincial authorities. However, we were unable to perform an exhaustive grey literature search of websites, due to the timelines imposed on this review.

CONCLUSIONS

The current guidelines on preventing transmission of COVID-19 in long-term care facilities seem to suggest that robust surveillance and monitoring programs accompanied with environmental cleaning measures and supporting the use of PPE, hand/respiratory hygiene, and social distancing are the ideal approach to protect older adults.

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APPENDIX 1 – Embase Search Strategy

Database: Embase <1974 to 2020 April 15>
Search Strategy:
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1 exp coronaviridae/ or exp Coronaviridae infection/ or exp Coronavirus infection/ or SARS coronavirus/
2 ((wuhan or hubei or huanan) and (severe acute respiratory or pneumonia* or virus*) and outbreak*).mp.
3 (coronavir* or "corona virus*" or "coronavirus pneumonia" or betacoronavir* or COVID or COVID-19).mp.
4 ("nCoV" or "cov 2" or cov2 or 2019ncov or 2019-nCoV or "2019 ncov" or "2019-ncov" or "2019 novel cov" or "2019 ncov disease*" or "2019 novel coronavirus*").mp.
5 ("severe acute respiratory syndrome coronavirus*" or "wuhan virus*" or "sars cov 2 mers" or "middle east respiratory syndrome*" or "Severe Acute Respiratory" or SARS or SARS-CoV or SARScov2 or MERS-CoV).mp.
6 or/1-5
7 exp communicable disease control/ or exp "prevention and control"/
8 contact examination/
9 exp protective equipment/ or exp surgical attire/
10 exp hygiene/ or exp hand washing/
11 patient isolation/ or contact examination/
12 instrument sterilization/ or exp disinfection/ or decontamination/
13 bleaching agent/
14 ("infection control" or "virus control" or "disease control" or prevent* or handwash* or "hand wash*" or quarant* or isolat* or steril* or disinfect* or fumigat* or decontaminat* or resanitiz* or resanitis* or desaniti* or contaminat* or antisept* or biocid* or steriliz* or sanitize* or bleach* or hypochlor* or ozon* or ultraviolet or UV or "contract tracing" or "disease notification").mp.
15 ("protective equipment" or "protective cloth*" or "protective product*" or "protective gear" or PPE or PPEs or mask* or facemask* or half-mask* or facepiece* or n95* or n99* or shield* or faceshield* or "Particulate filter*" or "gas filter*" or glov* or gown or gowns or "space suits" or "respiratory protect*" or visor or "eye protect* " or "eye spectacle* " or "hand protect* " or "hand wash*" or "handwash*" or google or goggles or "head cover* " or "shoe cover*" or respirator* or ventilator*).mp.
16 (restrict* adj3 (resident* or patient* or visit* or family or travel* or staff or provider* or employee*)).mp.
17 ((respiratory or cough or hand) adj2 (hygiene or etiquette)).mp.
18 exp ventilator/
19 or/7-18
20 6 and 19
21 nursing home/ or home for the aged/ or assisted living facility/
22 ((elder* or senior or nursing or aged or "old age" or "old people" or "old person*" or "long-term care" or "LTC" or "long term care") adj2 (home or homes or hous* or residenc* or facilit* or hospital*)).mp.

23 ("convalescence hom*" or "convalescence hospital*" or "extended care facility*" or "charitable hom*" or " home based health care facilit*").mp.
24 exp long term care/
25 or/21-24
26 20 and 25

APPENDIX 2 – Grey Literature Sources

- US National Library of Medicine
  - https://clinicaltrials.gov/
- WHO International Clinical Trials Registry Platform
  - https://www.who.int/ictrp/en/
- COVID-19 Evidence Alerts
  - https://plus.mcmaster.ca/COVID-19/
- McMaster Evidence Forum – Covid-19 Evidence Network to support Decision-making (COVID-END)
  - https://www.mcmasterforum.org/networks/covidend/lets-collaborate/our-guide-to-covid-19-evidence-sources
- Joanna Briggs Institute – COVID-19 Special Collection
  - https://jbi.global/ebp/covid-19
- Evidence aid – Coronavirus (COVID-19): Evidence Collection
  - https://www.evidenceaid.org/coronavirus-covid-19-evidence-collection/
- National Collaborating Centre for Methods and Tools – COVID-19 Rapid Evidence Reviews
  - https://www.nccmt.ca/knowledge-repositories/covid-19-evidence-reviews
- PROSPERO – International prospective register of systematic reviews
  - https://www.crd.york.ac.uk/prospero/
- EPPI Mapper – COVID-19: living map of the evidence
  - http://eppi.ioe.ac.uk/COVID19_MAP/covid_map_v6.html
- NIPH systematic and living map on COVID-19 evidence
  - https://www.nornesk.no/forskningskart/NIPH_mainMap.html
- ECRI Institute – COVID-19 Resource Center
  - https://www.ecri.org/coronavirus-covid-19-outbreak-preparedness-center/
- WHO Country & Technical Guidance - Coronavirus disease (COVID-19)
  - https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance
- National Institute for Health and Care Excellence (NICE) – COVID-19 guidance
  - https://www.nice.org.uk/covid-19
- BIGG International database of GRADE guidelines
  - https://sites.bvsalud.org/bigg/en/biblio/
- MAGICapp – Guidelines database
  - https://app.magicapp.org/app#/guidelines
- National COVID-19 Evidence Taskforce (Australia)
  - https://covid19evidence.net.au/#living-guidelines

APPENDIX 3 – Primary Study – Detailed Characteristics

Article: McMichaels, 2020[9]; **Country:** USA **Type of Site:** Skilled nursing facility; **Total sample size:** 167			
	Residents n=101	**Staff n=50**	**Visitors n=16**
Age [median (range)]	83 (51–100)	43.5 (21–79)	62.5 (52–88)
Sex [n (%)]	Male: 32 (31.7) Female: 69 (68.3)	Male: 12 (24.0) Female: 38 (76.0)	Male: 11 (68.8) Female: 5 (31.2)
Comorbidities [n (%)]			
Hypertension	68 (67.3)	4 (8.0)	2 (12.5)
Cardiac disease	61 (60.4)	4 (8.0)	3 (18.8)
Renal disease	41 (40.6)	0	2 (12.5)
Diabetes mellitus	32 (31.7)	5 (10.0)	1 (6.2)
Obesity	31 (30.7)	3 (6.0)	3 (18.8)
Pulmonary disease	32 (31.7)	2 (4.0)	2 (12.5)
Cancer	15 (14.9)	0	0
Compromised immune system	9 (8.9)	0	0
Liver disease	6 (5.9)	0	0

APPENDIX 4 – Clinical Practice Guideline Characteristics

Author, Year Country	Evidence Collection	Guideline Development	Participants	Guideline Scope
AGS, 2020[10] USA	NR	Recommendations by the American Geriatrics Society based on guidance set forth in peer-reviewed articles and editorials, as well as ongoing and updated guidance from the Centers for Medicare and Medicaid Services (CMS), the Centers for Disease Control and Prevention (CDC), and other key agencies.	executive officers of the AGS Board of Directors	recommendations to guide federal, state, and local governments when making decisions about how best to care for patients with COVID-19 in nursing homes (NHs) and other long-term care facilities (LTCFs)
CDC, 2020[12] USA	NR	NR	CDC	Preventing COVID in nursing homes. Recommendations are specific for nursing homes, including skilled nursing facilities. Much of this information could be applied in assisted living facilities.
ECRI, 2020a[13] USA	NR	NR	ECRI	Advance preparation to limit the spread of infection
ECRI, 2020b[11] USA	NR	NR	ECRI	Infection control and prevention procedures and procedures during equipment servicing
MOH, 2020[14] Canada	NR	NR	NR	Screening, infection control for COVID-19 in LTC

APPENDIX 5 – Detailed Quality Appraisal Results for Clinical Practice Guidelines

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
Article: AGS, 2020[10]	
DOMAIN 1: SCOPE AND PURPOSE	
1. OBJECTIVES Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.	☒ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☒ Expected benefit(s) or outcome(s) ☒ Target(s) (e.g., patient population, society)
2. QUESTIONS Report the health question(s) covered by the guideline, particularly for the key recommendations	☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate) ☐ Outcome(s) ☒ Health care setting or context
3. POPULATION Describe the population (i.e., patients, public, etc.) to whom the guideline is meant to apply.	☒ Target population, sex and age ☒ Clinical condition (if relevant) ☐ Severity/stage of disease (if relevant) ☐Comorbidities (if relevant) ☐Excluded populations (if relevant)
DOMAIN 2: STAKEHOLDER INVOLVEMENT	
4. GROUP MEMBERSHIP Report all individuals who were involved in the development process. This may include members of the steering group, the research team involved in selecting and reviewing/rating the evidence and individuals involved in formulating the final recommendations	☒Name of participant ☐Discipline/content expertise (e.g., neurosurgeon, methodologist) ☐Institution (e.g., St. Peter's hospital) ☐Geographical location (e.g., Seattle, WA) ☐A description of the member's role in the guideline development group
5. TARGET POPULATION PREFERENCES AND VIEWS Report how the views and preferences of the target population were sought/considered and what the resulting outcomes were.	☐Statement of type of strategy used to capture patients'/publics' views and preferences (e.g., participation in the guideline development group, literature review of values and preferences) ☐Methods by which preferences and views were sought (e.g., evidence from literature, surveys, focus groups)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
	☐Outcomes/information gathered on patient/public information ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
6. TARGET USERS Report the target (or intended) users of the guideline	☒The intended guideline audience (e.g. specialists, family physicians, patients, clinical or institutional leaders/administrators) ☐How the guideline may be used by its target audience (e.g., to inform clinical decisions, to inform policy, to inform standards of care)
DOMAIN 3: RIGOUR OF DEVELOPMENT	
7. SEARCH METHODS Report details of the strategy used to search for evidence.	☐Named electronic database(s) or evidence source(s) where the search was performed (e.g., MEDLINE, EMBASE, PsychINFO, CINAHL) ☐Time periods searched (e.g., January 1, 2004 to March 31, 2008) ☐Search terms used (e.g., text words, indexing terms, subheadings) ☐Full search strategy included (e.g., possibly located in appendix)
8. EVIDENCE SELECTION CRITERIA Report the criteria used to select (i.e., include and exclude) the evidence. Provide rationale, where appropriate.	☐Target population (patient, public, etc.) characteristics ☐Study design ☐Comparisons (if relevant) ☐Outcomes ☐Language (if relevant) ☐Context (if relevant)
9. STRENGTHS & LIMITATIONS OF THE EVIDENCE Describe the strengths and limitations of the evidence. Consider from the perspective of the individual studies and the body of evidence aggregated across all the studies. Tools exist that can facilitate the reporting of this concept.	☐Study design(s) included in body of evidence ☐Study methodology limitations (sampling, blinding, allocation concealment, analytical methods) ☐Appropriateness/relevance of primary and secondary outcomes considered ☐Consistency of results across studies ☐Direction of results across studies ☐Magnitude of benefit versus magnitude of harm ☐Applicability to practice context
10. FORMULATION OF RECOMMENDATIONS Describe the methods used to formulate the recommendations and how final decisions were	☐Recommendation development process (e.g., steps used in modified Delphi technique, voting procedures that were considered)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
reached. Specify any areas of disagreement and the methods used to resolve them.	☐Outcomes of the recommendation development process (e.g., extent to which consensus was reached using modified Delphi technique, outcome of voting procedures) ☐How the process influenced the recommendations (e.g., results of Delphi technique influence final recommendation, alignment with recommendations and the final vote)
11. CONSIDERATION OF BENEFITS AND HARMS Report the health benefits, side effects, and risks that were considered when formulating the recommendations.	☐Supporting data and report of benefits ☐Supporting data and report of harms/side effects/risks ☐Reporting of the balance/trade-off between benefits and harms/side effects/risks ☐Recommendations reflect considerations of both benefits and harms/side effects/risks
12. LINK BETWEEN RECOMMENDATIONS AND EVIDENCE Describe the explicit link between the recommendations and the evidence on which they are based.	☐How the guideline development group linked and used the evidence to inform recommendations ☐Link between each recommendation and key evidence (text description and/or reference list) ☐Link between recommendations and evidence summaries and/or evidence tables in the results section of the guideline
13. EXTERNAL REVIEW Report the methodology used to conduct the external review.	☐Purpose and intent of the external review (e.g., to improve quality, gather feedback on draft recommendations, assess applicability and feasibility, disseminate evidence) ☐Methods taken to undertake the external review (e.g., rating scale, open-ended questions) ☐Description of the external reviewers (e.g., number, type of reviewers, affiliations) ☐Outcomes/information gathered from the external review (e.g., summary of key findings) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations (e.g., guideline panel considered results of review in forming final recommendations)
14. UPDATING PROCEDURE Describe the procedure for updating the guideline.	☐A statement that the guideline will be updated ☐Explicit time interval or explicit criteria to guide decisions about when an update will occur ☐Methodology for the updating procedure
DOMAIN 4: CLARITY OF PRESENTATION	
15. SPECIFIC AND UNAMBIGUOUS RECOMMENDATIONS	☒A statement of the recommended action Intent or purpose of the recommended action (e.g., to improve quality of life, to decrease

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
Describe which options are appropriate in which situations and in which population groups, as informed by the body of evidence.	side effects) ☒Relevant population (e.g., patients, public) ☒Caveats or qualifying statements, if relevant (e.g., patients or conditions for whom the recommendations would not apply) ☐If there is uncertainty about the best care option(s), the uncertainty should be stated in the guideline
16. MANAGEMENT OPTIONS Describe the different options for managing the condition or health issue.	☐Description of management options ☐Population or clinical situation most appropriate to each option
17. IDENTIFIABLE KEY RECOMMENDATIONS Present the key recommendations so that they are easy to identify.	☐Recommendations in a summarized box, typed in bold, underlined, or presented as flow charts or algorithms ☐Specific recommendations grouped together in one section
DOMAIN 5: APPLICABILITY	
18. FACILITATORS AND BARRIERS TO APPLICATION Describe the facilitators and barriers to the guideline's application.	☐Types of facilitators and barriers that were considered ☐Methods by which information regarding the facilitators and barriers to implementing recommendations were sought (e.g., feedback from key stakeholders, pilot testing of guidelines before widespread implementation) ☐Information/description of the types of facilitators and barriers that emerged from the inquiry (e.g., practitioners have the skills to deliver the recommended care, sufficient equipment is not available to ensure all eligible members of the population receive mammography) ☐How the information influenced the guideline development process and/or formation of the recommendations
19. IMPLEMENTATION ADVICE/TOOLS Provide advice and/or tools on how the recommendations can be applied in practice.	☐Additional materials to support the implementation of the guideline in practice. For example: • Guideline summary documents • Links to check lists, algorithms • Links to how-to manuals • Solutions linked to barrier analysis (see Item 18) • Tools to capitalize on guideline facilitators (see Item 18) • Outcome of pilot test and lessons learned

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
20. RESOURCE IMPLICATIONS Describe any potential resource implications of applying the recommendations.	☐Types of cost information that were considered (e.g., economic evaluations, drug acquisition costs) ☐Methods by which the cost information was sought (e.g., a health economist was part of the guideline development panel, use of health technology assessments for specific drugs, etc.) ☐Information/description of the cost information that emerged from the inquiry (e.g., specific drug acquisition costs per treatment course) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
21. MONITORING/ AUDITING CRITERIA Provide monitoring and/or auditing criteria to measure the application of guideline recommendations.	☐Criteria to assess guideline implementation or adherence to recommendations ☐Criteria for assessing impact of implementing the recommendations ☐Advice on the frequency and interval of measurement ☐Operational definitions of how the criteria should be measured
DOMAIN 6: EDITORIAL INDEPENDENCE	
22. FUNDING BODY Report the funding body's influence on the content of the guideline.	☒The name of the funding body or source of funding (or explicit statement of no funding) ☐A statement that the funding body did not influence the content of the guideline
23. COMPETING INTERESTS Provide an explicit statement that all group members have declared whether they have any competing interests.	☐Types of competing interests considered ☐Methods by which potential competing interests were sought ☒A description of the competing interests ☐How the competing interests influenced the guideline process and development of recommendations
Article: CDC, 2020[12]	
DOMAIN 1: SCOPE AND PURPOSE	
1. OBJECTIVES Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.	☒ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☐ Expected benefit(s) or outcome(s) ☒ Target(s) (e.g., patient population, society)
2. QUESTIONS Report the health question(s) covered by the	☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
guideline, particularly for the key recommendations	☐ Outcome(s) ☒ Health care setting or context
3. POPULATION Describe the population (i.e., patients, public, etc.) to whom the guideline is meant to apply.	☒ Target population, sex and age ☐ Clinical condition (if relevant) ☐ Severity/stage of disease (if relevant) ☐Comorbidities (if relevant) ☐Excluded populations (if relevant)
DOMAIN 2: STAKEHOLDER INVOLVEMENT	
4. GROUP MEMBERSHIP Report all individuals who were involved in the development process. This may include members of the steering group, the research team involved in selecting and reviewing/rating the evidence and individuals involved in formulating the final recommendations	☐Name of participant ☐Discipline/content expertise (e.g., neurosurgeon, methodologist) ☐Institution (e.g., St. Peter's hospital) ☐Geographical location (e.g., Seattle, WA) ☐A description of the member's role in the guideline development group
5. TARGET POPULATION PREFERENCES AND VIEWS Report how the views and preferences of the target population were sought/considered and what the resulting outcomes were.	☐Statement of type of strategy used to capture patients'/publics' views and preferences (e.g., participation in the guideline development group, literature review of values and preferences) ☐Methods by which preferences and views were sought (e.g., evidence from literature, surveys, focus groups) ☐Outcomes/information gathered on patient/public information ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
6. TARGET USERS Report the target (or intended) users of the guideline	☒The intended guideline audience (e.g. specialists, family physicians, patients, clinical or institutional leaders/administrators) ☐How the guideline may be used by its target audience (e.g., to inform clinical decisions, to inform policy, to inform standards of care)
DOMAIN 3: RIGOUR OF DEVELOPMENT	
7. SEARCH METHODS Report details of the strategy used to search for evidence.	☐Named electronic database(s) or evidence source(s) where the search was performed (e.g., MEDLINE, EMBASE, PsychINFO, CINAHL) ☐Time periods searched (e.g., January 1, 2004 to March 31, 2008)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
	☐Search terms used (e.g., text words, indexing terms, subheadings) ☐Full search strategy included (e.g., possibly located in appendix)
8. EVIDENCE SELECTION CRITERIA Report the criteria used to select (i.e., include and exclude) the evidence. Provide rationale, where appropriate.	☐Target population (patient, public, etc.) characteristics ☐Study design ☐Comparisons (if relevant) ☐Outcomes ☐Language (if relevant) ☐Context (if relevant)
9. STRENGTHS & LIMITATIONS OF THE EVIDENCE Describe the strengths and limitations of the evidence. Consider from the perspective of the individual studies and the body of evidence aggregated across all the studies. Tools exist that can facilitate the reporting of this concept.	☐Study design(s) included in body of evidence ☐Study methodology limitations (sampling, blinding, allocation concealment, analytical methods) ☐Appropriateness/relevance of primary and secondary outcomes considered ☐Consistency of results across studies ☐Direction of results across studies ☐Magnitude of benefit versus magnitude of harm ☐Applicability to practice context
10. FORMULATION OF RECOMMENDATIONS Describe the methods used to formulate the recommendations and how final decisions were reached. Specify any areas of disagreement and the methods used to resolve them.	☐Recommendation development process (e.g., steps used in modified Delphi technique, voting procedures that were considered) ☐Outcomes of the recommendation development process (e.g., extent to which consensus was reached using modified Delphi technique, outcome of voting procedures) ☐How the process influenced the recommendations (e.g., results of Delphi technique influence final recommendation, alignment with recommendations and the final vote)
11. CONSIDERATION OF BENEFITS AND HARMS Report the health benefits, side effects, and risks that were considered when formulating the recommendations.	☐Supporting data and report of benefits ☐Supporting data and report of harms/side effects/risks ☐Reporting of the balance/trade-off between benefits and harms/side effects/risks ☐Recommendations reflect considerations of both benefits and harms/side effects/risks
12. LINK BETWEEN RECOMMENDATIONS AND EVIDENCE Describe the explicit link between the	☐How the guideline development group linked and used the evidence to inform recommendations ☐Link between each recommendation and key evidence (text description and/or reference

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
recommendations and the evidence on which they are based.	list) ☐Link between recommendations and evidence summaries and/or evidence tables in the results section of the guideline
13. EXTERNAL REVIEW Report the methodology used to conduct the external review.	☐Purpose and intent of the external review (e.g., to improve quality, gather feedback on draft recommendations, assess applicability and feasibility, disseminate evidence) ☐Methods taken to undertake the external review (e.g., rating scale, open-ended questions) ☐Description of the external reviewers (e.g., number, type of reviewers, affiliations) ☐Outcomes/information gathered from the external review (e.g., summary of key findings) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations (e.g., guideline panel considered results of review in forming final recommendations)
14. UPDATING PROCEDURE Describe the procedure for updating the guideline.	☐A statement that the guideline will be updated ☐Explicit time interval or explicit criteria to guide decisions about when an update will occur ☐Methodology for the updating procedure
DOMAIN 4: CLARITY OF PRESENTATION	
15. SPECIFIC AND UNAMBIGUOUS RECOMMENDATIONS Describe which options are appropriate in which situations and in which population groups, as informed by the body of evidence.	☒A statement of the recommended action Intent or purpose of the recommended action (e.g., to improve quality of life, to decrease side effects) ☒Relevant population (e.g., patients, public) ☒Caveats or qualifying statements, if relevant (e.g., patients or conditions for whom the recommendations would not apply) ☐If there is uncertainty about the best care option(s), the uncertainty should be stated in the guideline
16. MANAGEMENT OPTIONS Describe the different options for managing the condition or health issue.	☐Description of management options ☐Population or clinical situation most appropriate to each option
17. IDENTIFIABLE KEY RECOMMENDATIONS Present the key recommendations so that they are easy to identify.	☒Recommendations in a summarized box, typed in bold, underlined, or presented as flow charts or algorithms ☐Specific recommendations grouped together in one section

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
DOMAIN 5: APPLICABILITY	
18. FACILITATORS AND BARRIERS TO APPLICATION Describe the facilitators and barriers to the guideline's application.	☐Types of facilitators and barriers that were considered ☐Methods by which information regarding the facilitators and barriers to implementing recommendations were sought (e.g., feedback from key stakeholders, pilot testing of guidelines before widespread implementation) ☐Information/description of the types of facilitators and barriers that emerged from the inquiry (e.g., practitioners have the skills to deliver the recommended care, sufficient equipment is not available to ensure all eligible members of the population receive mammography) ☐How the information influenced the guideline development process and/or formation of the recommendations
19. IMPLEMENTATION ADVICE/TOOLS Provide advice and/or tools on how the recommendations can be applied in practice.	☒Additional materials to support the implementation of the guideline in practice. For example: • Guideline summary documents • Links to check lists, algorithms • Links to how-to manuals • Solutions linked to barrier analysis (see Item 18) • Tools to capitalize on guideline facilitators (see Item 18) • Outcome of pilot test and lessons learned
20. RESOURCE IMPLICATIONS Describe any potential resource implications of applying the recommendations.	☐Types of cost information that were considered (e.g., economic evaluations, drug acquisition costs) ☐Methods by which the cost information was sought (e.g., a health economist was part of the guideline development panel, use of health technology assessments for specific drugs, etc.) ☐Information/description of the cost information that emerged from the inquiry (e.g., specific drug acquisition costs per treatment course) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
21. MONITORING/ AUDITING CRITERIA Provide monitoring and/or auditing criteria to measure the application of guideline	☐Criteria to assess guideline implementation or adherence to recommendations ☐Criteria for assessing impact of implementing the recommendations

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
recommendations.	☐Advice on the frequency and interval of measurement ☐Operational definitions of how the criteria should be measured
DOMAIN 6: EDITORIAL INDEPENDENCE	
22. FUNDING BODY Report the funding body's influence on the content of the guideline.	☒The name of the funding body or source of funding (or explicit statement of no funding) ☐A statement that the funding body did not influence the content of the guideline
23. COMPETING INTERESTS Provide an explicit statement that all group members have declared whether they have any competing interests.	☐Types of competing interests considered ☐Methods by which potential competing interests were sought ☐A description of the competing interests ☐How the competing interests influenced the guideline process and development of recommendations
Article: ECRI, 2020a[13]	
DOMAIN 1: SCOPE AND PURPOSE	
1. OBJECTIVES Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.	☒ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☐ Expected benefit(s) or outcome(s) ☐ Target(s) (e.g., patient population, society)
2. QUESTIONS Report the health question(s) covered by the guideline, particularly for the key recommendations	☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate) ☐ Outcome(s) ☒ Health care setting or context
3. POPULATION Describe the population (i.e., patients, public, etc.) to whom the guideline is meant to apply.	☒ Target population, sex and age ☒ Clinical condition (if relevant) ☐ Severity/stage of disease (if relevant) ☐Comorbidities (if relevant) ☐Excluded populations (if relevant)
DOMAIN 2: STAKEHOLDER INVOLVEMENT	
4. GROUP MEMBERSHIP Report all individuals who were involved in the development process. This may include members	☐Name of participant ☐Discipline/content expertise (e.g., neurosurgeon, methodologist)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
of the steering group, the research team involved in selecting and reviewing/rating the evidence and individuals involved in formulating the final recommendations	☐Institution (e.g., St. Peter's hospital) ☐Geographical location (e.g., Seattle, WA) ☐A description of the member's role in the guideline development group
5. TARGET POPULATION PREFERENCES AND VIEWS Report how the views and preferences of the target population were sought/considered and what the resulting outcomes were.	☐Statement of type of strategy used to capture patients'/publics' views and preferences (e.g., participation in the guideline development group, literature review of values and preferences) ☐Methods by which preferences and views were sought (e.g., evidence from literature, surveys, focus groups) ☐Outcomes/information gathered on patient/public information ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
6. TARGET USERS Report the target (or intended) users of the guideline	☐The intended guideline audience (e.g. specialists, family physicians, patients, clinical or institutional leaders/administrators) ☐How the guideline may be used by its target audience (e.g., to inform clinical decisions, to inform policy, to inform standards of care)
DOMAIN 3: RIGOUR OF DEVELOPMENT	
7. SEARCH METHODS Report details of the strategy used to search for evidence.	☐Named electronic database(s) or evidence source(s) where the search was performed (e.g., MEDLINE, EMBASE, PsychINFO, CINAHL) ☐Time periods searched (e.g., January 1, 2004 to March 31, 2008) ☐Search terms used (e.g., text words, indexing terms, subheadings) ☐Full search strategy included (e.g., possibly located in appendix)
8. EVIDENCE SELECTION CRITERIA Report the criteria used to select (i.e., include and exclude) the evidence. Provide rationale, where appropriate.	☐Target population (patient, public, etc.) characteristics ☐Study design ☐Comparisons (if relevant) ☐Outcomes ☐Language (if relevant) ☐Context (if relevant)
9. STRENGTHS & LIMITATIONS OF THE EVIDENCE Describe the strengths and limitations of the	☐Study design(s) included in body of evidence ☐Study methodology limitations (sampling, blinding, allocation concealment, analytical

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
evidence. Consider from the perspective of the individual studies and the body of evidence aggregated across all the studies. Tools exist that can facilitate the reporting of this concept.	methods) ☐Appropriateness/relevance of primary and secondary outcomes considered ☐Consistency of results across studies ☐Direction of results across studies ☐Magnitude of benefit versus magnitude of harm ☐Applicability to practice context
10. FORMULATION OF RECOMMENDATIONS Describe the methods used to formulate the recommendations and how final decisions were reached. Specify any areas of disagreement and the methods used to resolve them.	☐Recommendation development process (e.g., steps used in modified Delphi technique, voting procedures that were considered) ☐Outcomes of the recommendation development process (e.g., extent to which consensus was reached using modified Delphi technique, outcome of voting procedures) ☐How the process influenced the recommendations (e.g., results of Delphi technique influence final recommendation, alignment with recommendations and the final vote)
11. CONSIDERATION OF BENEFITS AND HARMS Report the health benefits, side effects, and risks that were considered when formulating the recommendations.	☐Supporting data and report of benefits ☐Supporting data and report of harms/side effects/risks ☐Reporting of the balance/trade-off between benefits and harms/side effects/risks ☐Recommendations reflect considerations of both benefits and harms/side effects/risks
12. LINK BETWEEN RECOMMENDATIONS AND EVIDENCE Describe the explicit link between the recommendations and the evidence on which they are based.	☐How the guideline development group linked and used the evidence to inform recommendations ☐Link between each recommendation and key evidence (text description and/or reference list) ☐Link between recommendations and evidence summaries and/or evidence tables in the results section of the guideline
13. EXTERNAL REVIEW Report the methodology used to conduct the external review.	☐Purpose and intent of the external review (e.g., to improve quality, gather feedback on draft recommendations, assess applicability and feasibility, disseminate evidence) ☐Methods taken to undertake the external review (e.g., rating scale, open-ended questions) ☐Description of the external reviewers (e.g., number, type of reviewers, affiliations) ☐Outcomes/information gathered from the external review (e.g., summary of key findings) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations (e.g., guideline panel considered results of

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
	review in forming final recommendations)
14. UPDATING PROCEDURE Describe the procedure for updating the guideline.	☐A statement that the guideline will be updated ☐Explicit time interval or explicit criteria to guide decisions about when an update will occur ☐Methodology for the updating procedure
DOMAIN 4: CLARITY OF PRESENTATION	
15. SPECIFIC AND UNAMBIGUOUS RECOMMENDATIONS Describe which options are appropriate in which situations and in which population groups, as informed by the body of evidence.	☒A statement of the recommended action Intent or purpose of the recommended action (e.g., to improve quality of life, to decrease side effects) ☒Relevant population (e.g., patients, public) ☒Caveats or qualifying statements, if relevant (e.g., patients or conditions for whom the recommendations would not apply) ☐If there is uncertainty about the best care option(s), the uncertainty should be stated in the guideline
16. MANAGEMENT OPTIONS Describe the different options for managing the condition or health issue.	☒Description of management options ☒Population or clinical situation most appropriate to each option
17. IDENTIFIABLE KEY RECOMMENDATIONS Present the key recommendations so that they are easy to identify.	☒Recommendations in a summarized box, typed in bold, underlined, or presented as flow charts or algorithms ☒Specific recommendations grouped together in one section
DOMAIN 5: APPLICABILITY	
18. FACILITATORS AND BARRIERS TO APPLICATION Describe the facilitators and barriers to the guideline's application.	☐Types of facilitators and barriers that were considered ☐Methods by which information regarding the facilitators and barriers to implementing recommendations were sought (e.g., feedback from key stakeholders, pilot testing of guidelines before widespread implementation) ☐Information/description of the types of facilitators and barriers that emerged from the inquiry (e.g., practitioners have the skills to deliver the recommended care, sufficient equipment is not available to ensure all eligible members of the population receive mammography) ☐How the information influenced the guideline development process and/or formation of the recommendations

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
19. IMPLEMENTATION ADVICE/TOOLS Provide advice and/or tools on how the recommendations can be applied in practice.	☐Additional materials to support the implementation of the guideline in practice. For example: • Guideline summary documents • Links to check lists, algorithms • Links to how-to manuals • Solutions linked to barrier analysis (see Item 18) • Tools to capitalize on guideline facilitators (see Item 18) • Outcome of pilot test and lessons learned
20. RESOURCE IMPLICATIONS Describe any potential resource implications of applying the recommendations.	☐Types of cost information that were considered (e.g., economic evaluations, drug acquisition costs) ☐Methods by which the cost information was sought (e.g., a health economist was part of the guideline development panel, use of health technology assessments for specific drugs, etc.) ☐Information/description of the cost information that emerged from the inquiry (e.g., specific drug acquisition costs per treatment course) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
21. MONITORING/ AUDITING CRITERIA Provide monitoring and/or auditing criteria to measure the application of guideline recommendations.	☐Criteria to assess guideline implementation or adherence to recommendations ☐Criteria for assessing impact of implementing the recommendations ☐Advice on the frequency and interval of measurement ☐Operational definitions of how the criteria should be measured
DOMAIN 6: EDITORIAL INDEPENDENCE	
22. FUNDING BODY Report the funding body's influence on the content of the guideline.	☒The name of the funding body or source of funding (or explicit statement of no funding) ☐A statement that the funding body did not influence the content of the guideline
23. COMPETING INTERESTS Provide an explicit statement that all group members have declared whether they have any competing interests.	☐Types of competing interests considered ☐Methods by which potential competing interests were sought ☐A description of the competing interests ☐How the competing interests influenced the guideline process and development of recommendations

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
Article: ECRI, 2020b[11]	
DOMAIN 1: SCOPE AND PURPOSE	
1. OBJECTIVES Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.	☐ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☒ Expected benefit(s) or outcome(s) ☐ Target(s) (e.g., patient population, society)
2. QUESTIONS Report the health question(s) covered by the guideline, particularly for the key recommendations	☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate) ☐ Outcome(s) ☒ Health care setting or context
3. POPULATION Describe the population (i.e., patients, public, etc.) to whom the guideline is meant to apply.	☒ Target population, sex and age ☐ Clinical condition (if relevant) ☐ Severity/stage of disease (if relevant) ☐Comorbidities (if relevant) ☐Excluded populations (if relevant)
DOMAIN 2: STAKEHOLDER INVOLVEMENT	
4. GROUP MEMBERSHIP Report all individuals who were involved in the development process. This may include members of the steering group, the research team involved in selecting and reviewing/rating the evidence and individuals involved in formulating the final recommendations	☐Name of participant ☐Discipline/content expertise (e.g., neurosurgeon, methodologist) ☐Institution (e.g., St. Peter's hospital) ☐Geographical location (e.g., Seattle, WA) ☐A description of the member's role in the guideline development group
5. TARGET POPULATION PREFERENCES AND VIEWS Report how the views and preferences of the target population were sought/considered and what the resulting outcomes were.	☐Statement of type of strategy used to capture patients'/publics' views and preferences (e.g., participation in the guideline development group, literature review of values and preferences) ☐Methods by which preferences and views were sought (e.g., evidence from literature, surveys, focus groups) ☐Outcomes/information gathered on patient/public information ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
6. TARGET USERS Report the target (or intended) users of the guideline	☒The intended guideline audience (e.g. specialists, family physicians, patients, clinical or institutional leaders/administrators) ☐How the guideline may be used by its target audience (e.g., to inform clinical decisions, to inform policy, to inform standards of care)
DOMAIN 3: RIGOUR OF DEVELOPMENT	
7. SEARCH METHODS Report details of the strategy used to search for evidence.	☐Named electronic database(s) or evidence source(s) where the search was performed (e.g., MEDLINE, EMBASE, PsychINFO, CINAHL) ☐Time periods searched (e.g., January 1, 2004 to March 31, 2008) ☐Search terms used (e.g., text words, indexing terms, subheadings) ☐Full search strategy included (e.g., possibly located in appendix)
8. EVIDENCE SELECTION CRITERIA Report the criteria used to select (i.e., include and exclude) the evidence. Provide rationale, where appropriate.	☐Target population (patient, public, etc.) characteristics ☐Study design ☐Comparisons (if relevant) ☐Outcomes ☐Language (if relevant) ☐Context (if relevant)
9. STRENGTHS & LIMITATIONS OF THE EVIDENCE Describe the strengths and limitations of the evidence. Consider from the perspective of the individual studies and the body of evidence aggregated across all the studies. Tools exist that can facilitate the reporting of this concept.	☐Study design(s) included in body of evidence ☐Study methodology limitations (sampling, blinding, allocation concealment, analytical methods) ☐Appropriateness/relevance of primary and secondary outcomes considered ☐Consistency of results across studies ☐Direction of results across studies ☐Magnitude of benefit versus magnitude of harm ☐Applicability to practice context
10. FORMULATION OF RECOMMENDATIONS Describe the methods used to formulate the recommendations and how final decisions were reached. Specify any areas of disagreement and the methods used to resolve them.	☒Recommendation development process (e.g., steps used in modified Delphi technique, voting procedures that were considered) ☐Outcomes of the recommendation development process (e.g., extent to which consensus was reached using modified Delphi technique, outcome of voting procedures) ☐How the process influenced the recommendations (e.g., results of Delphi technique influence final recommendation, alignment with recommendations and the final vote)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
11. CONSIDERATION OF BENEFITS AND HARMS Report the health benefits, side effects, and risks that were considered when formulating the recommendations.	☐Supporting data and report of benefits ☐Supporting data and report of harms/side effects/risks ☐Reporting of the balance/trade-off between benefits and harms/side effects/risks ☐Recommendations reflect considerations of both benefits and harms/side effects/risks
12. LINK BETWEEN RECOMMENDATIONS AND EVIDENCE Describe the explicit link between the recommendations and the evidence on which they are based.	☐How the guideline development group linked and used the evidence to inform recommendations ☐Link between each recommendation and key evidence (text description and/or reference list) ☐Link between recommendations and evidence summaries and/or evidence tables in the results section of the guideline
13. EXTERNAL REVIEW Report the methodology used to conduct the external review.	☐Purpose and intent of the external review (e.g., to improve quality, gather feedback on draft recommendations, assess applicability and feasibility, disseminate evidence) ☐Methods taken to undertake the external review (e.g., rating scale, open-ended questions) ☐Description of the external reviewers (e.g., number, type of reviewers, affiliations) ☐Outcomes/information gathered from the external review (e.g., summary of key findings) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations (e.g., guideline panel considered results of review in forming final recommendations)
14. UPDATING PROCEDURE Describe the procedure for updating the guideline.	☐A statement that the guideline will be updated ☐Explicit time interval or explicit criteria to guide decisions about when an update will occur ☐Methodology for the updating procedure
DOMAIN 4: CLARITY OF PRESENTATION	
15. SPECIFIC AND UNAMBIGUOUS RECOMMENDATIONS Describe which options are appropriate in which situations and in which population groups, as informed by the body of evidence.	☒A statement of the recommended action Intent or purpose of the recommended action (e.g., to improve quality of life, to decrease side effects) ☐Relevant population (e.g., patients, public) ☐Caveats or qualifying statements, if relevant (e.g., patients or conditions for whom the recommendations would not apply)

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
	☐If there is uncertainty about the best care option(s), the uncertainty should be stated in the guideline
16. MANAGEMENT OPTIONS Describe the different options for managing the condition or health issue.	☒Description of management options ☐Population or clinical situation most appropriate to each option
17. IDENTIFIABLE KEY RECOMMENDATIONS Present the key recommendations so that they are easy to identify.	☐Recommendations in a summarized box, typed in bold, underlined, or presented as flow charts or algorithms ☐Specific recommendations grouped together in one section
DOMAIN 5: APPLICABILITY	
18. FACILITATORS AND BARRIERS TO APPLICATION Describe the facilitators and barriers to the guideline's application.	☐Types of facilitators and barriers that were considered ☐Methods by which information regarding the facilitators and barriers to implementing recommendations were sought (e.g., feedback from key stakeholders, pilot testing of guidelines before widespread implementation) ☐Information/description of the types of facilitators and barriers that emerged from the inquiry (e.g., practitioners have the skills to deliver the recommended care, sufficient equipment is not available to ensure all eligible members of the population receive mammography) ☐How the information influenced the guideline development process and/or formation of the recommendations
19. IMPLEMENTATION ADVICE/TOOLS Provide advice and/or tools on how the recommendations can be applied in practice.	☒Additional materials to support the implementation of the guideline in practice. For example: • Guideline summary documents • Links to check lists, algorithms • Links to how-to manuals • Solutions linked to barrier analysis (see Item 18) • Tools to capitalize on guideline facilitators (see Item 18) • Outcome of pilot test and lessons learned
20. RESOURCE IMPLICATIONS Describe any potential resource implications of applying the recommendations.	☐Types of cost information that were considered (e.g., economic evaluations, drug acquisition costs) ☐Methods by which the cost information was sought (e.g., a health economist was part of

CHECKLIST ITEM AND DESCRIPTION	REPORTING CRITERIA
	the guideline development panel, use of health technology assessments for specific drugs, etc.) ☐Information/description of the cost information that emerged from the inquiry (e.g., specific drug acquisition costs per treatment course) ☐How the information gathered was used to inform the guideline development process and/or formation of the recommendations
21. MONITORING/ AUDITING CRITERIA Provide monitoring and/or auditing criteria to measure the application of guideline recommendations.	☐Criteria to assess guideline implementation or adherence to recommendations ☐Criteria for assessing impact of implementing the recommendations ☐Advice on the frequency and interval of measurement ☐Operational definitions of how the criteria should be measured
DOMAIN 6: EDITORIAL INDEPENDENCE	
22. FUNDING BODY Report the funding body's influence on the content of the guideline.	☐The name of the funding body or source of funding (or explicit statement of no funding) ☐A statement that the funding body did not influence the content of the guideline
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Article: MOH, 2020[14]	
DOMAIN 1: SCOPE AND PURPOSE	
1. OBJECTIVES Report the overall objective(s) of the guideline. The expected health benefits from the guideline are to be specific to the clinical problem or health topic.	☒ Health intent(s) (i.e., prevention, screening, diagnosis, treatment, etc.) ☐ Expected benefit(s) or outcome(s) ☒ Target(s) (e.g., patient population, society)
2. QUESTIONS Report the health question(s) covered by the guideline, particularly for the key recommendations	☐ Intervention(s) or exposure(s) ☐ Comparisons (if appropriate) ☐ Outcome(s) ☒ Health care setting or context
3. POPULATION	☒ Target population, sex and age

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APPENDIX 6 – Clinical Practice Guideline Results

AGS, 2020[9]; Country: USA, Sponsor: American Geriatrics Society Scope: recommendations to guide federal, state, and local governments when making decisions about how best to care for patients with COVID-19 in nursing homes (NHs) and other long-term care facilities (LTCFs)
Increase production and distribution of: - PPE: This includes the masks, face shields, gowns, and gloves that all frontline healthcare professionals and direct care workers need in order to protect themselves against becoming infected. PPE protects health workers' own safety, which is key to ensuring we have access to the healthcare workforce we need during this pandemic. - Testing kits and related laboratory supplies: Supplies for diagnostic and serologic testing are integral to protecting the health and safety of all Americans during a pandemic - Supplies for symptom management and end-of-life care: The federal government should proactively monitor the available supply of medications (including opioids) and equipment commonly used in symptom management and at the end of life, particularly for people who develop the distressful and uncomfortable symptoms of respiratory failure. If shortages are imminent, the President should fully exercise his authorities under the Defense Production Act to prevent a gap in the supply of the medicines and equipment critical to symptom management, especially at the end of life. Supply Chain - coordinate the sharing of scarce resources within and across states, deliver new resources to states and communities, and help to prioritize, NHs, LTCFs, other congregate living settings (e.g., assisted living), and home health care agencies (e.g., Visiting Nurse Association) for the tools and resources they need. - Individuals who test positive for COVID-19 should not be discharged to a mainstream NH unless the facility can safely and effectively isolate the patient from other residents and has adequate infection control protocols and PPE for staff and residents. Such transfers should be in accordance with current CDC guidance. Public health planning - coordination with several important stakeholders such as Geriatrics health professionals, NH leadership teams (e.g., administrators, medical directors, and directors of nursing), Hospice and palliative care experts, and Local collaborations - Hospital discharge also plays an important role in COVID-19 planning. As recommended by the CDC, the first and best option is to discharge to home in isolation with any needed home care. This will involve ensuring that enough home healthcare resources are available to patients who have remaining health needs. It also will involve the use of telemedicine for clinicians to monitor patients discharged to home. Given that this option will likely only be feasible for a small number of patients, the federal government and states should build capacity to care for patients with COVID-19 post hospital-discharge. This includes supporting NHs to readmit their own residents to isolation units or rooms, if available; identifying safe locations for those with wandering behaviors and highly complex care needs; and identifying housing for patients who are not stable enough for discharge to home but who still need support and close monitoring. States should explore "hospital-at-home" models of care, which can provide hospital-level care in the home environment and which should be paid for at parity with institutional hospital care to encourage further

adoption
- Data also is important to our COVID-19 response. Modelling of hotspots, supply of beds, and PPE must include NHs

Workforce considerations
- Paid leave and assistance for frontline healthcare workers
- NHs should implement policies and procedures for screening staff aligned with guidance from the CDC and updated regularly to account for situational change. Infection among staff may be a source of exposure for post-acute patients and long-term residents in NHs. Quarantine rules must be carefully considered so as not to quarantine staff unnecessarily or for too long a period, which could decimate the NH workforce.
- All NH staff caring for residents who test positive for COVID-19 should be trained in infection control, the use of PPE, and recognition of COVID-19 symptoms. They also should receive any other training in accordance with federal, state, or local guidance. Resources—including rapidly developed online training tools—should be provided to support innovative training and mentoring for healthcare professionals and workers who are being quickly mobilized into new settings of care
- State and local governments should include nursing homes in their emergency personnel distribution deployment considerations. This will ensure adequate and safe staffing ratios for all disciplines providing care to NH residents
  CMS should increase payment to NHs caring for residents with COVID-19, so that payment is commensurate with the added costs of enhancing staffing skills, the need for quarantine, and quantities of PPE and other supplies to care for this complex and vulnerable population appropriately

CDC, 2020[11]; Country: USA, Sponsor: Centres for Disease Control
Scope: Preventing COVID-19 in nursing homes

Nursing homes must act now to implement ALL COVID-19 preparedness recommendations, even before cases are identified in their community

Address asymptomatic and pre-symptomatic transmission, implement source control for everyone entering a healthcare facility (e.g., healthcare personnel, patients, visitors), regardless of symptoms.

Cloth face coverings are not considered personal protective equipment (PPE) because their capability to protect healthcare personnel (HCP) is unknown. Facemasks, if available, should be reserved for HCP.

For visitors and residents, a cloth face covering may be appropriate. If a visitor or resident arrives to the facility without a cloth face covering, a facemask may be used for source control if supplies are available.

Dedicate an area of the facility to care for residents with suspected or confirmed COVID-19; consider creating a staffing plan for that specific location

Educate Residents, Healthcare Personnel, and Visitors about COVID-19, Current Precautions Being Taken in the Facility, and Actions They Can Take to Protect Themselves
- Provide information about COVID-19 (including information about signs and symptoms) and strategies for managing stress and anxiety.
- Review CDC's Interim Infection Prevention and Control Recommendations for Patients with Confirmed Coronavirus Disease 2019 (COVID-19) or Persons Under Investigation for COVID-19 in Healthcare Settings
- Educate and train HCP

  - Reinforce sick leave policies; remind HCP not to report to work when ill
  - Educate them about new policies for source control while in the facility.
  - Reinforce adherence to standard infection prevention and control measures including hand hygiene and selection and use of personal protective equipment (PPE). Have HCP demonstrate competency with putting on and removing PPE and monitor adherence by observing resident care activities
- Educate both facility-based and consultant personnel (e.g., wound care, podiatry, barber) and volunteers who provide care or services in the facility. Inclusion of consultants is important, since they commonly provide care in multiple facilities and can be exposed to or serve as a source of pathogen transmission
- Educate residents and families including, information about COVID-19; actions the facility is taking to protect them and/or their loved ones, including visitor restrictions; and actions they can take to protect themselves in the facility, emphasizing the importance of social distancing, hand hygiene, respiratory hygiene and cough etiquette, and wearing a cloth face covering.
- Have a plan and mechanism to regularly communicate with residents, family members and HCP, including if cases of COVID-19 are identified among residents or HCP.

Evaluate and Manage Healthcare Personnel with Symptoms Consistent with COVID-19

- Facilities should implement sick leave policies that are non-punitive, flexible and consistent with public health policies that allow ill HCP to stay home.
- Create or review an inventory of all volunteers and personnel who provide care in the facility. Use that inventory to determine which personnel are non-essential and whose services can be delayed.
- Review current resident services and restrict non-essential healthcare personnel, such as elective consultations, and volunteers from entering the building.
  - Consider implementing telehealth to offer remote access to care activities
- As part of source control efforts, HCP should wear a facemask or cloth face covering at all times while they are in the healthcare facility. When available, facemasks are generally preferred over cloth face coverings for HCP as facemasks offer both source control and protection for the wearer against exposure to splashes and sprays of infectious material from others. If there are shortages of facemasks, facemasks should be prioritized for HCP and then for residents with symptoms of COVID-19 (as supply allows). Guidance on extended use and reuse of facemasks is available. Cloth face coverings should NOT be worn instead of a respirator or facemask if more than source control is required.
  - All HCP should be reminded to practice social distancing when in break rooms or common areas.
- As part of routine practice, HCP (including consultant personnel and ancillary staff such as environmental and dietary services) should be asked to regularly monitor themselves for fever and symptoms of COVID-19.
  - HCP should be reminded to stay home when they are ill.
  - If HCP develop fever ($T \geq 100.0^{o}$ F) or symptoms of COVID-19 while at work they should keep their facemask on, inform their supervisor, and leave the workplace.
  - HCP with suspected COVID-19 should be prioritized for testing.
- Screen all HCP at the beginning of their shift for fever and symptoms of COVID-19
  - Actively take their temperature and document absence of shortness of breath, new or change in cough, sore throat, and muscle aches. If they are ill, have them keep their cloth face covering or facemask on and leave the workplace. Fever is either measured

temperature >100 F or subjective fever.
    - HCP who work in multiple locations may pose higher risk and should be encouraged to tell facilities if they have had exposure to other facilities with recognized COVID-19 cases.
- Facilities should develop (or review existing) plans to mitigate staffing shortages from illness or absenteeism.
    - CDC has created guidance to assist facilities with mitigating staffing shortages.
    - For guidance on when HCP with suspected or confirmed COVID-19 may return to work refer to Criteria for Return to Work for Healthcare Personnel with Confirmed or Suspected COVID-19 (Interim Guidance)

Enforce Policies and Procedures for Visitors

- Because of the ease of spread in a long-term care setting and the severity of illness that occurs in residents with COVID-19, facilities should immediately restrict all visitation to their facilities except for certain compassionate care reasons, such as end-of-life situations.
    - Send letters or emails to families advising them that no visitors will be allowed in the facility except for certain compassionate care situations, such as end of life situations.
    - Use of alternative methods for visitation (e.g., video conferencing) should be facilitated by the facility.
    - Post signs at the entrances to the facility advising that no visitors may enter the facility.
    - Decisions about visitation for compassionate care situations should be made on a case-by-case basis, which should include careful screening of the visitor for fever or symptoms consistent with COVID-19. Those with symptoms should not be permitted to enter the facility. Any visitors that are permitted must wear a cloth face covering while in the building and restrict their visit to the resident's room or other location designated by the facility. They should also be reminded to frequently perform hand hygiene.
    - Ask visitors to inform the facility if they develop fever or symptoms consistent with COVID-19 within 14 days of visiting the facility.

Provide Supplies Necessary to Adhere to Recommended Infection Prevention and Control Practices

- Hand Hygiene Supplies:
    - Put alcohol-based hand sanitizer with 60-95% alcohol in every resident room (ideally both inside and outside of the room) and other resident care and common areas (e.g., outside dining hall, in therapy gym).
    - Make sure that sinks are well-stocked with soap and paper towels for handwashing.
- Respiratory Hygiene and Cough Etiquette:
    - Tissues and trash cans are available in common areas and resident rooms for respiratory hygiene and cough etiquette and source control.
- Personal Protective Equipment (PPE):
    - Assess current PPE supply. Identify health department or healthcare coalition contacts for getting assistance during PPE shortages. Monitor daily PPE use to identify when supplies will run low; use the PPE burn rate calculator or other tools
    - Implement strategies to optimize current PPE supply even before shortages occur Bundling resident care and treatment activities to minimize entries into resident room (e.g., having clinical staff clean and disinfect high-touch surfaces when in the room)
    - Extended use of respirators, facemasks, and eye protection, which refers to the practice of wearing the same respirator or facemask and eye protection for the care of more than one resident (e.g., for an entire shift). Extreme care must be taken to avoid touching the respirator, facemask or eye protection. If this must occur, HCP should perform hand hygiene immediately before and after contact to

prevent contaminating themselves or others.
    - Prioritizing gowns for activities where splashes and sprays are anticipated (including aerosol generating procedures) and high-contact resident care activities that provide opportunities for transfer of pathogens to hands and clothing of HCP.
    - Developing a process for decontamination and reuse of PPE such as face shields and goggles
- Make necessary PPE available in areas where resident care is provided.
    - Consider designating staff responsible for stewarding those supplies and monitoring and providing just-in-time feedback promoting appropriate use by staff.
    - Facilities should have supplies of facemasks, respirators (if available and the facility has a respiratory protection program with trained, medically cleared, and fit tested HCP), gowns, gloves, and eye protection (i.e., face shield or goggles).
- Position a trash can near the exit inside the resident room to make it easy for staff to discard PPE, prior to exiting the room, or before providing care for another resident in the same room.
- Consider implementing a respiratory protection program that is compliant with the OSHA respiratory protection standard for employees if not already in place. The program should include medical evaluations, training, and fit testing.
- Environmental Cleaning and Disinfection:
    - Develop a schedule for regular cleaning and disinfection of shared equipment, frequently touched surfaces in resident rooms and common areas;
    - Ensure EPA-registered, hospital-grade disinfectants are available to allow for frequent cleaning of high-touch surfaces and shared resident care equipment.
    - Refer to the EPA website for EPA-registered disinfectants that have qualified under EPA's emerging viral pathogens program for use against SARS-CoV-2.

Dedicate Space in the Facility to Monitor and Care for Residents with COVID-19

- Dedicate space in the facility to care for residents with confirmed COVID-19. This could be a dedicated floor, unit, or wing in the facility or a group of rooms at the end of the unit that will be used to cohort residents with COVID-19. Assign dedicated HCP to work only in this area of the facility.
- Have a plan for how residents in the facility who develop COVID-19 will be handled (e.g., transfer to single room, prioritize for testing, transfer to COVID-19 unit if positive).
    - Closely monitor roommates and other residents who may have been exposed to an individual with COVID-19 and, if possible, avoid placing unexposed residents into a shared space with them.
- Create a plan for managing new admissions and readmissions whose COVID-19 status is unknown. Options may include placing the resident in a single-person room or in a separate observation area so the resident can be monitored for evidence of COVID-19. Residents could be transferred out of the observation area to the main facility if they remain afebrile and without symptoms for 14 days after their exposure (or admission). Testing at the end of this period could be considered to increase certainty that the resident is not infected.
- If an observation area has been created, residents in the facility who develop symptoms consistent with COVID-19 could be moved from their rooms to this location while undergoing evaluation.
- All recommended PPE should be worn during care of residents under observation; this includes use of an N95 or higher-level respirator (or facemask if a respirator is not available), eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face),

gloves, and gown. Cloth face coverings are not considered PPE and should not be worn by HCP when PPE is indicated.

Evaluate and Manage Residents with Symptoms of COVID-19

- Ask residents to report if they feel feverish or have symptoms consistent with COVID-19.
- Actively monitor all residents upon admission and at least daily for fever (T≥100.0 oF) and symptoms of COVID-19 (shortness of breath, new or change in cough, sore throat, muscle aches). If positive for fever or symptoms, implement Transmission-Based Precautions as described below.
- Older adults with COVID-19 may not show typical symptoms such as fever or respiratory symptoms. Atypical symptoms may include new or worsening malaise, new dizziness, or diarrhea. Identification of these symptoms should prompt isolation and further evaluation for COVID-19.
- The health department should be notified about residents or HCP with suspected or confirmed COVID-19, residents with severe respiratory infection resulting in hospitalization or death, or ≥ 3 residents or HCP with new-onset respiratory symptoms within 72 hours of each other.
- Contact information for the healthcare-associated infections program in each state health department is available.
- Information about the clinical presentation and course of patients with COVID-19 is described in the Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease 2019 (COVID-19). CDC has also developed guidance on Evaluating and Reporting Persons Under Investigation (PUI).
- If COVID-19 is suspected, based on evaluation of the resident or prevalence of COVID-19 in the community, follow the Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings. This guidance includes detailed information regarding recommended PPE, which includes use of an N95 or higher-level respirator (or facemask if a respirator is not available), eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face), gloves, and gown. Cloth face coverings are not considered PPE and should not be worn by HCP when PPE is indicated.
    - Residents with suspected COVID-19 should be prioritized for testing. Residents with known or suspected COVID-19 do not need to be placed into an airborne infection isolation room (AIIR) but should ideally be placed in a private room with their own bathroom.
    - Residents with COVID-19 should, ideally, be cared for in a dedicated unit or section of the facility with dedicated HCP (see section on Dedicating Space).
    - As roommates of residents with COVID-19 might already be exposed, it is generally not recommended to place them with another roommate until 14 days after their exposure, assuming they have not developed symptoms or had a positive test.
    - Increase monitoring of ill residents, including assessment of symptoms, vital signs, oxygen saturation via pulse oximetry, and respiratory exam, to at least 3 times daily to identify and quickly manage serious infection.
    - Consider increasing monitoring of asymptomatic residents from daily to every shift to more rapidly detect any with new symptoms.
    - If a resident requires a higher level of care or the facility cannot fully implement all recommended infection control precautions, the resident should be transferred to another facility that is capable of implementation. Transport personnel and the receiving facility should be notified about the suspected diagnosis prior to transfer.
    - While awaiting transfer, residents should wear a cloth face covering or facemask (if tolerated) and be separated from others (e.g., kept in their room with the door closed)
    - All recommended PPE should be used by healthcare personnel when coming in contact with the resident.
- For decisions on removing residents with COVID-19 from Transmission-Based Precautions refer to the Interim Guidance for Discontinuation

of Transmission-Based Precautions and Disposition of Hospitalized Patients with COVID-19

Additional Measures:

- Cancel communal dining and all group activities, such as internal and external activities.
- Remind residents to practice social distancing and perform frequent hand hygiene.
- Have residents wear a cloth face covering or facemask whenever they leave their room, including for procedures outside of the facility.
- In addition to the actions described above, these are things facilities should do when there are COVID-19 cases in their facility or sustained transmission in the community:
    - Healthcare Personnel Monitoring and Restrictions: Because of the higher risk of unrecognized infection among residents, universal use of all recommended PPE for the care of all residents on the affected unit (or facility-wide depending on the situation) is recommended when even a single case among residents or HCP is identified in the facility; this should also be considered when there is sustained transmission in the community. The health department can assist with decisions about testing of asymptomatic residents.
    - Resident Monitoring and Restrictions: Encourage residents to remain in their room. If there are cases in the facility, restrict residents (to the extent possible) to their rooms except for medically necessary purposes. If they leave their room they should wear a cloth face covering or facemask, perform hand hygiene, limit their movement in the facility, and perform social distancing (stay at least 6 feet away from others)

ECRI, 2020a[12]; Country: USA, Sponsor: ECRI
Scope: Infection control and prevention procedures and procedures during equipment servicing

ECRI has established the following levels of concern related to the risks of infection associated with the circumstances described:

No infection concern. There is no concern about infection from external surfaces that have been cleaned and disinfected.

Minimal infection concern. If the interior of a device is exposed to SARS-CoV from room air—most likely air drawn into the device by a cooling fan—there may be some concern about contamination. Until more is known about the transmission of SARS, we suggest that hospitals err on the side of caution and use simple protective measures for even such minimal-risk situations. These measures are readily implemented (see Specific Protective Steps, below). Note, however, that the warm air that is generally circulating inside a device with a cooling fan promotes drying and dilution of contaminants, which may reduce the viability of some viruses.

Higher infection concern. Surfaces that have been in contact with the patient's oral secretions or other excretions and cannot be readily disinfected pose a bigger concern. This is because, although the infection risk is still likely to be extremely low on these surfaces, there is a greater probability that the virus has remained viable. Such surfaces include the following:
Breathing circuits (including ventilator accessories and any portions of the breathing circuit inside ventilators), suction devices and systems, or any other devices that are exposed to the patient's oral secretions (including contaminated condensate), urine, feces, and other excretions
HEPA filtration systems, which are installed systems or portable systems (i.e., mobile high-efficiency-filter air cleaners [MHEFACs]) used to control room air contamination levels and ensure negative pressure in isolation rooms
Any handheld items or other items that can be found in beds, including nurse call buttons, remote controls for televisions, pillow speakers, blood

pressure cuffs, and telemetry transmitters

Highest infection concern. The highest level of concern is posed by entering the room of a SARS patient without appropriate personal protective equipment (PPE). This is because of the close proximity to the patient, the potential risk of exposure to droplet secretions from coughs and sneezes, exposure to contaminated surfaces, and possible exposure associated with aerosol-generating procedures.
Keep in mind that even the highest level of risk is not an insurmountable concern as long as servicing personnel take the protective steps listed in the next section.

Specific Protective Steps
The following practices should be implemented to protect personnel while they are maintaining and repairing equipment that has been used on—or that has been in the same room as—patients who have or who are suspected of having SARS. For the most part, these represent good infection control practices that should be followed when servicing any device, independent of SARS concerns.

1. Do not enter the room of a SARS patient
Access to such rooms should be restricted to essential personnel only. This is to ensure the safety of personnel and to minimize disease transmission. However, if you must enter the room, follow relevant hospital procedures to minimize the exposure risks.

2. Minimize exposure of medical equipment to SARS
Before a patient with SARS is brought into a room, remove any unessential equipment. Use breathing-circuit filters to protect exhalation valves and other ventilation components from contamination (for more on this topic, see the Guidance Article Mechanical Ventilation of SARS Patients: Lessons from the 2003 SARS Outbreak). Use disposable devices or accessories for SARS patients whenever possible.

3. Observe proper hand hygiene
Frequent and thorough handwashing with soap and water is essential. Alcohol-based handrubs can be used when hands are not visibly soiled and handwashing facilities are not immediately available. Personnel should not rub their eyes or touch their mouth, nose, or other mucous membranes while working on exposed equipment. While wearing gloves, personnel should also avoid touching other surfaces in the room that are not involved in the equipment repair (e.g., doorknobs, telephones, test equipment, computer terminals, keyboards, manuals). In addition, personnel should not eat, drink, chew gum, smoke, or apply cosmetics until they have removed all protective wear and washed their hands.

4. Use proper decontamination and transport procedures
Equipment should not be transported until it has been cleaned and disinfected and disposables have been removed by housekeeping, central processing, or other appropriate personnel. (Note that commonly used disinfectants are effective against the SARS virus.) If equipment from the room of a SARS patient must be removed before the exterior can be cleaned and disinfected, follow any hospital policies on transporting contaminated devices.

5. Choose an appropriate work area
Equipment that poses particular infection concerns should be worked on in designated areas where servicing can be performed without the risk of

infecting patients or other employees. These areas should not be near any patient care areas, food preparation or storage areas, medication areas, or other clean areas.

6. Wear protective equipment when appropriate
For personnel working on minimal-risk surfaces, we recommend using the following PPE:

Gloves
Clean, nonsterile gown, apron, or laboratory coat
Eye protection (e.g., goggles)
A face shield is an alternative form of eye protection. Although a face shield should provide adequate protection against an occasional minor splatter that may occur during servicing, the U.S. Occupational Safety and Health Administration (OSHA) requires the use of goggles (or special protective eyeglasses) when eye protection is used. CDC, on the other hand, recommends goggles or a face shield for protection against a splash or spray of body fluids.

Respiratory protection
Update: As of February 3, 2020, CDC recommends, in the case of the COVID-19 outbreak, that staff "use respiratory protection (i.e., a respirator) that is at least as protective as a fit-tested NIOSH-certified disposable N95 filtering facepiece respirator before entry into the patient room or care area." That recommendation matches the guidance ECRI Institute initially issued (in June 2003) in the case of the 2003 SARS outbreak.

Note, however, that respiratory protection recommendations can evolve over time. For example, as new information about airborne transmission of SARS became available and as concern lessened, we updated our recommendations for that circumstance: In February 2004, we specified that it would be prudent for personnel working with the equipment to wear a surgical mask, but that there was no significant benefit to using an N95 respirator for that application, particularly in light of the considerable time and effort that respirator use entails. (For additional information about respirator types and implementation challenges, see Selecting Respiratory Protection for Equipment Servicers and Other Hospital Personnel: Lessons from the 2003 SARS Outbreak.) It is unknown at this time if similar changes will develop in the case of the COVID-19 outbreak.

7. Before starting work . . .
If there is any question about whether the exterior surfaces of the equipment were adequately disinfected, including the bottom and back, disinfect those surfaces immediately. Also, if disposable components have not already been discarded, do that right away as well. If the equipment is not needed immediately, ECRI suggests allowing time—several hours to overnight—for viruses to die before servicing is carried out. (Note, however, that this waiting period should not be seen as a substitute for other infection control procedures.)

8. If the interior of the equipment is dusty . . .
Use a vacuum cleaner with a HEPA filter to remove dust as soon as adequate access is gained during disassembly and before working on the interior. Never blow on the equipment or use compressed air to remove dust or other particulates.

9. Clean up when done.

Clean and disinfect the work area after servicing is complete. 10. If an exposure occurs . . . If you believe you have been exposed to SARS-CoV while unprotected, consult with the hospital's infection control practitioner, epidemiologist, or employee health staff for the procedures to follow.
ECRI, 2020b[10]; Country: USA; Sponsor: ECRI Scope: Advance preparation to limit the spread of infection
Recommendations for SARS that are also relevant to COVID-19 - Develop or improve the planning and decision-making structure for SARS detection and response. - If one is not already in place, develop a written SARS preparedness and response plan. - Assess the facility's ability to respond to SARS. - Establish an effective surveillance, triage, and clinical evaluation system. - Reinforce basic infection control practices. - Train staff to recognize potential SARS patients, know what actions to take when SARS is suspected, proficiently don and use personal protective equipment (PPE), and recognize and apply precautions during aerosol-generating procedures. - Reinforce the use of "respiratory hygiene/cough etiquette," including educating patients on respiratory hygiene (such as using hand-hygiene solutions and facial tissues and properly disposing of expended tissues) and providing surgical masks and/or tissues to patients to minimize droplet generation. - Use engineering controls (e.g., designated waiting rooms for patients with respiratory symptoms and/or Plexiglas barriers at the point of triage) and administrative controls and work practices (e.g., droplet precautions) to manage patients until the cause of their respiratory symptoms is determined. - Develop a patient transport and isolation plan. - Implement the proper design, operation, and maintenance of isolation rooms that will house SARS patients. - Implement a mechanism to report and evaluate exposures and apparent healthcare illness caused by SARS-CoV. - Have a strategy to meet increased staffing needs and clinical and protective equipment and supplies needs (e.g., ventilators for SARS patients) in the event of a SARS outbreak. - Develop strategies to limit access to the hospital. - Have a mechanism to ensure effective communication with public health departments and the public. - Establishment of adequate airborne infection isolation facilities. While the role of airborne transmission of SARS has not been fully established, CDC recommends that healthcare facilities admit patients with possible SARS to airborne infection isolation rooms (AIIRs) or specially adapted SARS units or wards, where patients can be safely managed. - Equipment procurement and training. Hospitals need to assess availability and anticipated need for consumable and durable medical equipment resources. Consumable supplies mentioned by CDC include hand hygiene supplies (antimicrobial soap and alcohol-based, waterless hand-hygiene products), disposable particulate respirators (N95 or higher), powered air-purifying respiratory (PAPR) hoods and battery packs (if applicable), goggles and face shields (disposable or reusable), gowns, gloves, and surgical masks. Durable equipment includes ventilators, portable high-efficiency particulate-air (HEPA) filtration units, and portable x-ray units ECRI recommends that clinical engineering personnel assist in these preparations, especially for durable equipment, by doing the following:

Locating and approving suppliers (preferably those suppliers that can reliably provide the models that staff are familiar with) and obtaining guarantees that supplies will be available; making sure that users receive training on models that are new to staff; developing procedures that ensure that rental or other temporary devices are logged in and are safe and functional before clinical use. Clinical engineering personnel should be prepared to conduct safety and functionality checks (including 24-hour on-call availability), should arrange with the device supplier (e.g., rental agency) to inspect devices according to an agreed-upon protocol, or should assist clinical staff in preparing an inspection protocol that they will use before using the devices.
MOH, 2020[13]; Country: Canada; Sponsor: Ministry of Health Scope: screening, infection control for COVID-19 in long-term care
Screening Passive screening: - As part of routine measures for the respiratory season, signage should be visible and remind all persons in the LTCH to perform hand hygiene and follow respiratory etiquette. - Signage should indicate signs and symptoms of COVID-19 and steps that must be taken if COVID-19 is suspected or confirmed in a staff member or a resident. Active screening for staff: - LTCHs should instruct all staff to self-monitor for COVID-19 at home. All persons should be made aware of signs and symptoms of COVID-19 infection, as listed in the COVID-19 Provincial Testing Guidance Update document. - LTCHs must conduct active screening for COVID-19 symptoms of all staff, essential visitors, and anyone else entering the home. Screening must include twice daily (at the beginning and end of the day or shift) symptom screening, including temperature checks. This excludes emergency first responders - Essential visitors include a person performing essential support services (e.g., food delivery, maintenance, family providing care services, and other health care) or a person visiting a very ill or palliative resident. If an essential visitor is admitted to the home, precautions must be taken as outlined in Directive #3 for Long-Term Care Homes under the Long-Term Care Homes Act, 2007. - LTCHs should have a screener at the entrance who is able to conduct screening during business hours and change of shift. Outside of these times, the home's charge nurse/administrator should develop processes and procedures to ensure that all persons entering the home are screened and visits are logged. These procedures are to be applied seven days a week and 24 hours a day. Active screening for residents: - LTCHs should conduct active screening of all residents, at least twice daily (at the beginning and end of the day) to identify if any resident has symptoms of COVID-19, including temperature checks. Residents with symptoms (including mild respiratory symptoms or atypical symptoms) must be isolated and tested for COVID-19. Active Screening for Resident Admissions, Resident Re-Admissions: - LTCHs should screen new admissions and re-admissions for symptoms and potential exposure to COVID-19. All new residents must be placed in isolation under contact and droplet precautions upon admission to the home and tested within 14 days of admission. If test results are negative, the resident must remain in isolation for 14 days from arrival. If test results are positive, refer to the Testing for COVID-19

section below.

- Hospitals are being asked by the ministry to temporarily stop transfers to long-term care and retirement homes. However, in the unlikely event that a transfer is still required, patients transferred from a hospital to a long-term care home or retirement home must be tested, and results received, prior to transfer. A negative result does not rule out the potential for incubating illness and all patients should remain under droplet and contact precautions for a 14-day isolation period following transfer.
- For information regarding new admissions and re-admissions during an outbreak, please refer to the Outbreak Guidance for Long-Term Care Homes document as well as the Control of Respiratory Infection Outbreaks in Long-Term Care Homes document.

Positive Screening: What to do

- Anyone showing symptoms of COVID-19 should not be allowed to enter the LTCH and should go home immediately to self-isolate.
- Residents with symptoms of COVID-19 must be isolated in droplet and contact precautions and tested.
- Staff should provide care to residents with suspect or confirmed COVID-19 using the precautions outlined in Directive #1 for Health Care Providers and Health Care Entities, as well as Public Health Ontario's Technical Brief on IPAC Recommendations for Use of Personal Protective Equipment for Care of Individuals with Suspect or Confirmed COVID-19.

Summary of Required Precautions

Preventing spread from staff or essential visitors who may be asymptomatic/pre-symptomatic while working in the LTCH or visiting the LTCH:

- Use a surgical/procedure mask at all times during shift or visit.
- For staff who are taking breaks, the surgical/procedure mask may be removed but a minimum two metre distance should be maintained from others.

Before providing care to a resident:

- Staff must conduct a point-of-care risk assessment to determine the precautions required.

Providing care to residents with suspect or confirmed COVID-19, including collection of nasopharyngeal and oropharyngeal swabs:

- Droplet and Contact Precautions, including:
    - Surgical/procedure mask
    - Isolation gown
    - Gloves
    - Eye protection (goggles/face shield)

Providing CPAP and/or open suctioning to resident with suspect or confirmed COVID-19:

- Droplet and Contact precautions plus use of N95 respirator.
- Manage in single room with door closed.
- Keep the number of people in the room during the procedure to a minimum.

Testing for COVID-19

- LTCHs should implement a very low threshold for COVID-19 testing. Testing must be conducted on every symptomatic resident and staff member in the LTCH as outlined in the COVID-19 Provincial Testing Guidance Update document.
- LTCHs must consider a single, laboratory confirmed case of COVID-19 in a resident or staff member as a confirmed COVID-19 outbreak in the LTCH. In a new admission or re-admission who tests positive, it may not be necessary to declare an outbreak if they have been in isolation under contact and droplet precautions since entering the LTCH. Outbreaks should be declared in collaboration between the home and health unit to ensure an outbreak number is provided.
- LTCHs that are testing patients for COVID-19 should review PHO's guidelines for testing including Specimen Collection and Handling procedures, and how to prepare samples prior to transport.
- For information regarding testing during an outbreak, please refer to the Outbreak Guidance for Long-Term Care Homes document and the Control of Respiratory Infection Outbreaks in Long-Term Care Homes document.

Reporting of Positive Screening

- COVID-19 is a designated disease of public health significance (O. Reg. 135/18) and thus reportable under the Health Protection and Promotion Act.
- The LTCH should contact their local public health unit to report a staff member or resident suspected to have COVID-19. The local public health unit will provide specific advice on what control measures should be implemented to prevent further spread and how to monitor for other possible infected residents and staff members. LTCHs must also follow the critical incident reporting requirements in section 107 of O. Reg 79/10 under the Long-Term Care Homes Act.
- All referrals to hospital should be made through emergency department triage. If a resident is referred to a hospital, the LTCH should coordinate with the hospital, local public health unit, paramedic services, and the resident to ensure safe travel that maintains the resident in appropriate isolation precautions. Patient transfer services should not be used to transfer a resident with suspect or confirmed COVID-19.

Occupational Health & Safety

Staff Exposure/Staff Illness:

- All staff who have been advised to self-monitor for 14 days from an exposure should discuss with their supervisor.
- All staff who are required to self-isolate must not come to work. Anyone with symptoms compatible with COVID-19 must not come to work, must get tested, and must report their symptoms to the LTCH. Staff responsible for occupational health at the LTCH must follow up on all staff who have been advised to self-isolate. For details on work self-isolation please see COVID-19 Outbreak Guidance for Long-Term Care Homes (LTCH).
- Staff who test positive for COVID-19 should report their illness to their manager/supervisor or to Employee Health/Occupational Health and Safety as per usual practice. The manager/supervisor or Employee Health/Occupational Health designate must promptly inform the Infection Control Practitioner or designate of any cases or clusters of staff including contract staff who are absent from work.
- If COVID-19 is suspected or diagnosed in a staff, return to work should be determined in consultation with their health care provider and the local public health unit. Staff must report to Occupational Health and Safety prior to return to work. Detailed general occupational health and safety guidelines for COVID-19 are available on the MOH COVID-19 website.

Personal Protective Equipment:

- LTCHs must following the precautions outlined in Directive #1 for Health Care Providers and Health Care Entities.

Mask Use for Source Control:

- LTCHs should immediately implement that all staff and essential visitors wear a surgical/procedure mask at all times for the duration of full shifts or visits in the LTCH. Staff may remove their surgical/procedure mask during breaks but must remain at least two metres away from others to prevent any potential transmission of COVID-19. LTCHs should have written procedures, instruction, and training for staff on mask use (e.g. how to wear and remove a mask).

Limiting Work Locations:

- Wherever possible, LTCH employers should work with staff, contractors, and volunteers to limit the number of work locations that staff, contractors, and volunteers are working, to minimize risk to residents and other staff of exposure to COVID-19.
- LTCH employers must also comply with Ontario Regulation 146/20 made pursuant to the Emergency Management and Civil Protection Act.

Environmental Cleaning:

- Patient-contact surfaces (i.e., areas within 2 metres of the person who has screened positive) should be disinfected as soon as possible (refer to PIDAC Routine Practices and Additional Precautions in All Health Care Settings for more information about environmental cleaning).

APPENDIX 7 – CPG Coding Summary and Supporting Text

Category	Supporting Text
Cohorting equipment	Choose an appropriate work area: Equipment that poses particular infection concerns should be worked on in designated areas where servicing can be performed without the risk of infecting patients or other employees
Communication	Have a mechanism to ensure effective communication with public health departments and the public
Compensation/sick leave policies for staff	Reinforce sick leave policies; remind HCP not to report to work when ill
	Paid leave and assistance for frontline healthcare workers
Consulting/notifying health professionals	If an exposure occurs If you believe you have been exposed to SARS-CoV while unprotected, consult with the hospital's infection control practitioner, epidemiologist, or employee health staff for the procedures to follow.
	If COVID-19 is suspected or diagnosed in a staff, return to work should be determined in consultation with their health care provider and the local public health unit.
	coordination with several important stakeholders such as Geriatrics health professionals, NH leadership teams (e.g., administrators, medical directors, and directors of nursing), Hospice and palliative care experts, and Local collaborations
Diagnostic testing	LTCHs should implement a very low threshold for COVID-19 testing. Testing must be conducted on every symptomatic resident and staff member
Disinfecting Surfaces	Use proper decontamination and transport procedures
	Patient-contact surfaces (i.e., areas within 2 metres of the person who has screened positive) should be disinfected as soon as possible
	Before starting work If there is any question about whether the exterior surfaces of the equipment were adequately disinfected, including the bottom and back, disinfect those surfaces immediately. Also, if disposable components have not already been discarded, do that right away as well. If the equipment is not needed immediately, ECRI suggests allowing time—several hours to overnight—for viruses to die before servicing is carried out. (Note, however, that this waiting period should not be seen as a substitute for other infection control procedures.)
	If the interior of the equipment is dusty Use a vacuum cleaner with a HEPA filter to remove dust as soon as adequate access is gained during disassembly and before working on the interior
	Clean up when done (Clean and disinfect the work area after servicing is complete.)

Category	Supporting Text
	Develop a schedule for regular cleaning and disinfection of shared equipment, frequently touched surfaces in resident rooms and common areas; Ensure EPA-registered, hospital-grade disinfectants are available to allow for frequent cleaning of high-touch surfaces and shared resident care equipment.
Droplet precautions	Providing CPAP and/or open suctioning to resident with suspect or confirmed COVID-19: Droplet and Contact precautions plus use of N95 respirator.
Education	Educate Residents, Healthcare Personnel, and Visitors
	All NH staff caring for residents who test positive for COVID-19 should be trained in infection control, the use of PPE, and recognition of COVID-19 symptoms
	Train staff to recognize potential SARS patients, know what actions to take when SARS is suspected, proficiently don and use personal protective equipment (PPE), and recognize and apply precautions during aerosol-generating procedures
Hand hygiene	Reinforce adherence to standard infection prevention and control measures including hand hygiene
	As part of routine measures for the respiratory season, signage should be visible and remind all persons in the LTCH to perform hand hygiene and follow respiratory etiquette
	Observe proper hand hygiene
Policies for Visitors	Visitor Restrictions
	Consider New Policies and Procedures for Visitors
	Policies and Procedures for Visitors
Personal Protective Equipment	Wear protective equipment when appropriate
	Use a surgical/procedure mask at all times during shift or visit; Providing care to residents with suspect or confirmed COVID-19, including collection of nasopharyngeal and oropharyngeal swabs, droplet and Contact Precautions, including: Surgical/procedure mask; Isolation gown; Gloves; Eye protection (goggles/face shield)
	All recommended PPE should be worn during care of residents under observation; this includes use of an N95 or higher-level respirator (or facemask if a respirator is not available), eye protection (i.e., goggles or a disposable face shield that covers the front and sides of the face), gloves, and gown
Policies for staff/residents	Wherever possible, LTCH employers should work with staff, contractors, and volunteers to limit the number of work locations that staff, contractors, and volunteers are working, to minimize risk to residents and other staff of exposure to COVID-19.
Policies for visitors	LTCHs must conduct active screening for COVID-19 symptoms of all staff, essential visitors, and

Category	Supporting Text
	anyone else entering the home; Anyone showing symptoms of COVID-19 should not be allowed to enter the LTCH and should go home immediately to self-isolate
	LTCHs should immediately implement that all staff and essential visitors wear a surgical/procedure mask at all times for the duration of full shifts or visits in the LTCH
Provide supplies	Provide Supplies for Recommended Infection Prevention and Control Practices; assess current PPE supply and implement strategies to optimize current supply
	[provide] masks, face shields, gowns, and gloves that all frontline healthcare professionals and direct care workers need in order to protect themselves against becoming infected
	Supplies for diagnostic and serologic testing are integral to protecting the health and safety of all Americans during a pandemic
	Have a strategy to meet increased staffing needs and clinical and protective equipment and supplies need
Respiratory hygiene/cough etiquette	Reinforce the use of "respiratory hygiene/cough etiquette," including educating patients on respiratory hygiene (such as using hand-hygiene solutions and facial tissues and properly disposing of expended tissues) and providing surgical masks and/or tissues to patients to minimize droplet generation
	As part of routine measures for the respiratory season, signage should be visible and remind all persons in the LTCH to perform hand hygiene and follow respiratory etiquette
	Respiratory Hygiene and Cough Etiquette: Tissues and trash cans are available in common areas and resident rooms for respiratory hygiene and cough etiquette and source control
Social distancing/ isolation/cohorting	Individuals who test positive for COVID-19 should not be discharged to a mainstream NH unless the facility can safely and effectively isolate the patient from other residents
	Minimize group activities inside the facility or field trips outside of the facility.
	Develop criteria for halting group activities and communal dining, closing units or the entire facility to new admissions, and restricting visitation.
	Create a plan for cohorting residents with symptoms of respiratory infection, including dedicating HCP to work only on affected units.
	Do not enter the room of a SARS patient
Surveillance/monitoring/ evaluating	Evaluate and Manage HCP with Symptoms of Respiratory Illness
	Evaluate and Manage Residents with Symptoms of Respiratory Infection
	Healthcare Personnel Monitoring and Restrictions

Category	Supporting Text
	Resident Monitoring and Restrictions
	Screen all HCP at the beginning of their shift for fever and symptoms of COVID-19
	NHs should implement policies and procedures for screening staff aligned with guidance from the CDC and updated regularly to account for situational change
	Establish an effective surveillance, triage, and clinical evaluation system.
	LTCHs must conduct active screening for COVID-19 symptoms of all staff, essential visitors, and anyone else entering the home.