EVIDENCE SYNTHESIS BRIEFING NOTE

TOPIC: COHORTING IN COMMUNITY HOSPITALS DURING COVID-19

Information finalized as of February 19, 2021.[a] This Briefing Note was completed by the Research, Analysis, and Evaluation Branch (Ministry of Health) based on information provided by members of the COVID-19 Evidence Synthesis Network. Please refer to the Methods section for further information.

- **Purpose**: This document presents findings from the research literature, grey literature, and relevant websites on topics pertaining to cohorting patients in community hospitals.
- **Key Findings**: Seven research articles on patient cohorting were identified from Canada, the United States (US), the United Kingdom (UK), Singapore, and other international jurisdictions. In addition, nine guidance documents provide best practices for cohorting patients: Canada, British Columbia (BC), Alberta, Saskatchewan, Manitoba, Ontario, the UK and Australia.
  - **Cohorting Rationales**: Several articles, including an international survey of hospitals, suggest that the rationales for cohorting in hospitals during the COVID-19 pandemic include mitigating the spread of infection, limiting the number of exposed health care workers, and conserving supplies (i.e., personal protective equipment).
  - **Cohorting Principles/Recommendations**: The recommendations for patient cohorting during COVID-19 in hospitals are mixed. Guidelines from the World Health Organization (WHO), US Centers for Disease Control and Prevention (CDC), and European Centres for Disease Control (ECDC) recommend that COVID-19 patients be placed in single isolation rooms, when possible. When this is not feasible, the WHO recommends cohorting patients according to their status as either confirmed, probable, or suspected COVID-19 cases. Other recommendations include:
    - Consult Infection Prevention and Control (IPAC) Experts: Several jurisdictions stated that the decision to cohort patients in a health care facility should be made in consultation with IPAC experts.
    - Testing: Widespread point-of-care testing will allow for clearer distinctions between areas and patients by COVID-19 status.
  - **Hospital Settings**: The research literature describes differing approaches to cohorting patients in various health care settings, including COVID-19 units/risk-based zoning in wards; segregated isolation wards for COVID-19 cases and general multi-bed cohorted wards; and designated critical care units. Most jurisdictions cohort patients in inpatient units, floors, or wards. For example, Manitoba's Health Sciences Centre's 30-bed orthopedic surgery unit is one of six units that were converted to units dedicated to COVID-19 patients.
  - **Flow of Patients Within Hospitals**: Two guidance documents (Manitoba, UK) recommend enhancing patient flow by either: 1) Moving recovering COVID-19 patients from a COVID-19-dedicated unit to another unit within a single hospital; or, 2) Discharging patients who are well enough to isolate at home.
  - **Evidence on Effectiveness**: Evidence regarding the effectiveness of cohorting patients with suspected or confirmed COVID-19 to reduce the risk of nosocomial transmission is limited. In Singapore, a multi-tiered infection control strategy including patient cohorting was successful in mitigating health care-associated transmission of COVID-19 over a six-month period (January to June 2020) during which there were no documented patient-health care worker transmission, despite caring for more than 1,500 COVID-19 cases.
- **Analysis for Ontario**: The Ontario Medical Association provides cohorting guidance. For example, stipulating designated non-COVID-19, suspect, and COVID-19 areas from admission to discharge.

[a] This briefing note includes current available evidence as of the noted date. It is not intended to be an exhaustive analysis, and other relevant findings may have been reported since completion.

Supporting Evidence

Research evidence on cohorting patients in community hospitals during the COVID-19 pandemic was identified in Canada, the United States (US), the United Kingdom (UK), Singapore, and other international jurisdictions. In addition, nine guidance documents from the following jurisdictions provide best practices for cohorting patients: Canada, Canadian provinces (Ontario, Alberta, British Columbia, Manitoba, Saskatchewan), the UK and Australia. Themes include the rationales for cohorting in hospital settings, and the principles and recommendations for doing so, including the types of settings, and the flow of patients within a single hospital site. Some evidence about the effectiveness of hospital cohorting was also identified. A summary of these findings can be found in Table 1 below.

Additional information can be found in the Appendix. Summaries of the research evidence are in Table 2, and summaries of the best practice guidance are in Table 3, respectively.

Table 1: Cohorting in Community Hospitals During the COVID-19 Pandemic

Scientific Evidence	• The identified scientific evidence on cohorting in hospital settings consists of three articles (Toronto,[1] US,[2] Singapore[3]), one international survey,[4] one review,[5] and two UK-based evaluations.[6,7] Information includes the following themes: ○ **Rationales for Cohorting in Hospitals**: Several articles suggest that the rationale for cohorting in hospitals during the COVID-19 pandemic is to mitigate the spread of infection, limit the number of exposed health care workers, and conserve supplies (i.e., personal protective equipment [PPE]).[1,2,4] ○ **Recommendations for Cohorting in Hospitals**: The following recommendations were identified in the scientific literature: ▪ Single Isolation Rooms: An international review by a group of health care professionals from, or with experience in, low- and middle-income countries (LMICs) recommends that in cases where there are no single isolation rooms, or there is a surge of cases, patients with confirmed COVID-19 should be cohorted together (strong recommendation, low quality of evidence).[b] It is also recommended that patients with suspected COVID-19 be cohorted separately or placed in isolation rooms (strong recommendation, low quality of evidence).[5] ▪ Testing: A team from the University Health Network (UHN) in Toronto, Ontario reported that effective patient cohorting requires readily available and reliable SARS-CoV-2 testing, with rapid return of results.[1] ○ **Hospital Settings**: The identified literature describes cohorting patients across various health care settings, including COVID-19 units/risk-based zoning in wards,[1] segregated isolation wards for COVID-19 cases and general multi-bed cohorted wards,[3] and designated critical care units.[2] For example: ▪ Separate Areas for Confirmed and Suspected Cases: One UK article described the implementation of a triage tool, which involved the creation of confirmed and suspected COVID-19 wards. These ward areas were physically separated from one another by

[b] The process of assessment involved selecting relevant publications, appraising the evidence, and classifying the quality of evidence as high, moderate, low, or very low. Recommendations were rated as strong or weak, depending on the quality of evidence and several other factors such as availability, affordability, and feasibility in LMICs. The recommendations were reviewed by the subgroup in an iterative process and were later reviewed by the entire Task Force in two rounds (Cobb et al., 2021).

constructing doors, with a one-way flow of staff entering and exiting the ward. PPE donning and doffing stations were positioned at these fixed points of entry and exit. Bed spacing within bays was expanded by removing beds to increase the distance between patients, and all non-essential equipment was removed.[6]

- **Flow of Patients**:
  - Vulnerable Patients: One article about cohorting in US hospitals noted that at Michigan Medicine ensuring the ongoing care of vulnerable patients, such as those in the post-transplant and immunocompromised communities, remains imperative. Safe locations and staffing plans that separate vulnerable patients from COVID-19 activities are carefully considered.[2]
  - Triage Tool to Manage Patient Flow: As noted above, a UK article evaluated the use of a triage tool to manage patient flow in the event that there would be insufficient single-occupancy rooms to isolate all suspected cases at admission. To implement this strategy an infectious diseases clinician stationed in the emergency department (ED) applied an isolation and cohorting algorithm to determine priority for single-occupancy room allocation. The authors found that this approach combined with innovative infection prevention and control (IPAC) measures reduced bed pressures without increasing the risk of health care-associated transmission. The triage tool consists of four cohorting categories (see Table 2 for details).[6]
- **Evidence on the Effectiveness of Cohorting Patients in Hospitals During COVID-19**: There is little evidence to suggest that cohorting patients with suspected or confirmed COVID-19 reduces the risk of nosocomial transmission.[5] The international review identified some outcomes for COVID-19 and other respiratory viruses, such as SARS:[5]
  - One study (1990) showed a reduction in nosocomial transmission of respiratory syncytial virus using cohorting with a decrease from 5.33 to 1.23 infections per 1,000/patient days of care.[5]
  - Experience from the 2003 SARS outbreak in Singapore suggests that cohorting on an open ward may be effective in an outbreak setting.[5]
  - Singapore's response to the COVID-19 pandemic included designating "respiratory surveillance wards" for patients with respiratory symptoms. When SARS-CoV-2 cases were confirmed, patients were moved to a separate isolation ward. Among staff and patients exposed to SARS-CoV-2, only one patient developed COVID-19 after exposure.[5]
  - Another article from Singapore describes a multi-tiered infection control strategy that was implemented across a health care campus, which included improved patient segregation and distancing, and heightened IPAC measures. All symptomatic patients were tested for COVID-19 and common respiratory viral infections (RVIs).[3] Reported outcomes include:
    - Testing and Cohorting Pathways: One-third of admissions were first tested in EDs allowing for faster turnaround of results and determination of COVID-19 status upon arrival. Due to improved segregation, less than 1% of COVID-19 cases campus-wide were picked up in multi-bedded cohorted general wards, outside of designated areas for the management of COVID-19 cases.[3]
    - No Patient-HCW Transmission: The multi-tiered infection control strategy was successful in mitigating health care-associated transmission of COVID-19 as well as common RVIs across a large health care campus, over a six-month period (January to June 2020). No documented patient-HCW transmission of COVID-19 occurred, despite caring for more than 1,500 cases of COVID-19 campus-wide.[3]

	▪ The international review also notes several reports on the SARS and MERS outbreaks where entire hospitals or separate hospital wards were designated for the care of SARS or MERS patients. The reports also noted challenges.[5] For example: • Challenges with Designated Hospitals: In Toronto, Ontario, establishing dedicated SARS hospitals proved challenging and instead many hospitals were prepared to care for SARS patients. When the second wave of SARS occurred in Toronto, four hospitals became designated SARS hospitals. In some settings, these strategies also resulted in dedicated teams of health care professionals, including physicians, nurses, and allied health care professions. However, in one report from Canada, HCWs who were employed in more than one hospital transmitted SARS among institutions, demonstrating the risk of transmission from HCWs.[5]
International Scan	• International guidance documents with information about cohorting patients in hospitals during COVID-19 were identified in Australia,[15,16] and the UK,[17] including the following: ○ **Recommendations**: ▪ Single Isolation Rooms: Guidelines from the World Health Organization (WHO), US Centers for Disease Control and Prevention (CDC), and European Centres for Disease Control (ECDC) recommend that COVID-19 patients be placed in single isolation rooms, when possible. When this is not feasible, the WHO recommends cohorting patients according to their status as either confirmed, probable, or suspected COVID-19; probable cases are defined as suspect cases for whom testing is inconclusive or not available.[5] Other recommendations include: • Consult Experts: The decision to cohort patients in a health care facility should be made in consultation with IPAC experts, including infection control specialists.[15,17,16] • Multiple Infections: Patients who have COVID-19 and another infection (e.g., diarrhoea or Methicillin-resistant Staphylococcus aureus) should be nursed in a single room.[17] • Dedicated Units and Staff: The US CDC (2020) recommends that health care facilities designate entire units to COVID-19 patient care, assign dedicated health care professionals to these units, as a measure to limit health care professionals' exposure and conserve PPE.[5] • Planning and Communication: On each hospital site, wards and wards with suitable bed bays will be identified and a pathway agreed from ED to discharge. This will be communicated to the appropriate staff at huddles/briefs to support patient/bed management. Daily updates on bed spaces on cohort wards/bays should be available to support patient transfers from ED and acute receiving.[17] • Setting Up the Cohort: The cohort bay should have dedicated equipment as far as possible such as blood pressure, oxygen saturation and temperature recording devices within the cohort bay. A trolley with fresh linen, tissues, waste bags and commonly used disposable equipment such as oxygen tubing and masks will be useful for staff working in the cohort. Use the IPAC yellow sign at the entrance of the cohort.[17] • Bed Spacing: Patients should be separated by at least two metres from each other in a cohort area, and bed curtains can be drawn as an additional physical barrier if possible.[17] ○ **Guidance on Settings**: In most jurisdictions, patients are cohorted in inpatient units, floors, or wards.[2,15,16,17] For example, in Western Australia, hospitals may consider creating cohort wards, especially in those facilities where heating, ventilation air conditioning systems can be isolated. Cohort wards should be separate from other patient areas and are not to be used as a thoroughfare.[15]

	○ **Guidance on Flow of Patients**: There is little available information on the movement of cohorted COVID-19 (confirmed or suspected) and/or non-COVID-19 patients across hospital sites. In the UK, patients who have confirmed COVID-19 can be nursed in a COVID-19 cohort until they are deemed no longer infectious. Patients who remain symptomatic but are well enough to be discharged can be sent home with advice on how to self-isolate.[17]
Canadian Scan	• Guidance documents with information about cohorting patients in hospitals during COVID-19 were identified in Canada,[8] British Columbia,[10,11] Alberta,[12,18] Saskatchewan,[14] Manitoba,[13] and Ontario.[9] ○ **Principles/Recommendations**: Manitoba and Saskatchewan do not routinely advise cohorting and then only for laboratory-confirmed cases.[13,14] Other principles and/or recommendations include: ▪ Consult Experts: The decision to cohort patients in a health care facility should be made in consultation with IPAC experts, including infection control specialists.[12] ▪ Testing: Effective cohorting of patients requires readily available and reliable testing for SARS-CoV-2, with rapid return of results.[1] ▪ Zones of Risk: Concentric zones of risk can be established around individual patient rooms (red zone, highest risk) to the hallway (green zone, intermediate risk) and to the nursing station (blue zone, lower risk). Principles include minimizing traffic between zones and providing visual barriers to prompt use of full PPE in the red zone.[1] • When cohorting patients who are lab confirmed, recommendations suggest treating each bed space like a private room. Washrooms may only be shared by confirmed positive patients.[18] ○ **Guidance on Settings**: Two Canadian jurisdictions cohort patients in inpatient units, floors, or wards.[9,19] Manitoba's Health Sciences Centre's 30-bed orthopedic surgery unit is one of six units that were converted to units dedicated to COVID-19 patients. As of December 18, 2020, four different Winnipeg hospitals have been managing 120 critical care beds.[19] ○ **Guidance on Flow of Patients**: The Public Health Agency of Canada advises that transfer within and between facilities while patients are suspected to be infectious should be avoided unless medically necessary.[8] In Manitoba, where patients have recovered from COVID-19 infection after having been cohorted (i.e., in the Red Zone with other COVID-19 confirmed cases) can be moved into the Green Zone (within the hospital).[13] For unconfirmed COVID-19 cases, Alberta Health Services note that criteria should be established to move suspect patient who test negative to another space in the facility.[12] ▪ Designated Hospitals: Saskatchewan divided the province into four regions with plans for a mix of COVID-19, non-COVID-19, and mixed hospitals based on a staged response to increased COVID-19 demand in a given geographical area.[9] Island Health[c] (BC) has a regional strategy for cohorting patients such that three facilities have been designated as cohort hospitals. Patients are allocated to one of the facilities according to their geographic location and the medical orders for scope of treatment designation (MOST).[11,d]

[c] Island Health provides health care services through a network of hospitals, clinics, centres, health units, and long-term care locations, serving more than 850,000 people on Vancouver Island, the islands in the Salish Sea and the Johnstone Strait, and the mainland communities north of Powell River and south of Rivers Inlet (Island Health, 2021).

[d] MOST designations are: M1 (Supportive care, symptom management and comfort measures only. Allow natural death); M2 (Medical treatments within current location of care, excluding critical care interventions); M3 (Medical treatments including transfer to higher level of care, excluding critical care interventions); CO (Critical care interventions, excluding CPR and intubation); C1 (Critical care interventions, excluding CPR but including intubation); and C2 (Critical Care interventions, including CPR and intubation) (Island Health, n.d.).

Ontario Scan	• **Cohorting Principles**: Guidance from the Ontario Medical Association (OMA) (May 2020): ○ Designated Hospitals: Designation of COVID-19 hospitals must occur in a phased approach, recognizing that the number of designated hospitals will increase as the number of cases increases in the province.[9] ○ Spaces and Patients Should Be Segregated and Cohorted: Segregating spaces and cohorting patients according to COVID-19 status will be particularly important to enable the safe ramping up of deferred services in hospitals for non-COVID-19 patients while COVID-19 patients are still receiving care in the same facility. Segregating non-COVID-19 patients must be based on accurately identifying confirmed COVID-19 patients from those who may not have COVID-19.[9] ○ Testing: Widespread point-of-care testing will allow for clearer distinctions between areas and patients by COVID-19 status.[9] • **Guidance on Settings**: From the OMA: ○ Designating Non-COVID-19, Suspect, and COVID-19 Areas from Admission to Discharge: Designating these areas includes the principle of "three zones and two channels", which refers to the division of non-COVID-19, suspect, and COVID-19 areas, plus the creation of two separate channels for medical staff and patients to walk through. Designating patients also involves implementing a colour system for three zones throughout all areas of hospital: red (COVID-19 area), yellow (COVID-19 suspected area), green (non-COVID-19 area).[9] ○ Cohorting COVID-19 Patients by Units and by Floor: Cohorting patients involves the separation of COVID-19 patients and non-COVID patients, and further, cohorting among COVID-19 patients (i.e., separation of patients suspected with COVID-19, including those waiting for test results, from those patients confirmed to have COVID-19 [i.e., COVID-19 units and COVID-19-positive units]). COVID-19 patients can be further sub-cohorted, such as pregnant women, patients waiting for quarantine period to end, etc.[9]

Methods

Individual peer-reviewed articles and review articles were identified through PubMed, the Cochrane Library, and Google Scholar. Grey literature was identified through Google and relevant government websites. The search was limited to English sources and therefore may not capture the full extent of initiatives in non-English speaking countries. Full-text results extracted were limited to those available through Open Access or studies made available to the Ministry by our partners.

The COVID-19 Evidence Synthesis Network is comprised of groups specializing in evidence synthesis and knowledge translation. The group has committed to provide their expertise to provide high-quality, relevant, and timely synthesized research evidence about COVID-19 to inform decision makers as the pandemic continues. The following members of the Network provided evidence synthesis products that were used to develop this Evidence Synthesis Briefing Note:

- Evidence Synthesis Unit, Research Analysis and Evaluation Branch, Ministry of Health. February 26, 2021.

For more information, please contact the Research, Analysis and Evaluation Branch (RAEB), Ministry of Health.

APPENDIX

Table 2: Research Evidence on Effectiveness of Cohorting Patients in Hospital Settings During COVID-19

Canada: Principles of Clinical Care of Patients with COVID-19 on Medical Units (June 29, 2020)	
Overview	• This article describes how a team at the University Health Network (UHN) in Toronto (ON) organized clinical care for COVID-19 patients in a hospital setting, which involved delineating zones by risk of contamination using floor markings and signage including: cohorting, restructuring medical teams, and optimizing the use of personal protective equipment (PPE).[1]
Cohorting Principles	• COVID-19 Units: Treating infected patients on COVID-19 units mitigates the spread of SARS-CoV-2 to patients who are not infected. Cohorting also enables changes to a unit's layout to limit the risk of nosocomial outbreaks and infection of health care workers (HCWs). Concentric zones of risk are established around individual patient rooms (red zone, highest risk) to the hallway (green zone, intermediate risk) and to the nursing station (blue zone, lower risk). Principles include minimizing traffic between zones and providing visual barriers to prompt use of full PPE in the red zone, with proper doffing of PPE and hand hygiene before exiting. Because many health care workers interact with potential fomites in the nursing station (e.g., charts, keyboards and telephones), maintaining nursing stations as separate decontaminated zones is critical.[1] • Need for Testing: Effective cohorting of patients requires readily available and reliable testing for SARS-CoV-2, with rapid return of results. Current limitations in the sensitivity of screening tests for SARS-CoV-2 infection necessitate the use of clinical judgment to guide repeat testing to identify patients whose care should be delivered on a COVID-19 unit.[1]
Setting(s)	• COVID-19 Units/Risk-based zoning in wards[1]
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Effectiveness	• No information identified.
International: Cohorting of Non-Critically Ill COVID-19 Patients: A Multicenter Survey Study (pre-print, November 1, 2020)	
Overview	• Purpose: An international multicenter survey study was conducted to identify the strategies that are planned or in place for patients with COVID-19 who are not critically ill. Between March 23-29, 2020, the survey was distributed to general internal medicine (GIM) physicians in Canada, the US, Denmark, Singapore, Hong Kong, and England.[4] • Results: Of the 31 hospitals, 29 (94%) indicated that they plan on cohorting all GIM patients with COVID-19 to one location in the hospital. Among these 29 hospitals, 23 (79%) had implemented the plan at the time of the survey. The primary reasons for this decision were to limit the spread of COVID-19 and conserve PPE use.[4] • Conclusion: In the context of a novel virus, there is near unanimity in the practice of patient cohorting as a potential mitigation strategy.[4]
Cohorting Principles	• Rationale: The main reasons for cohorting were to minimize nosocomial spread of COVID-19 and conserve PPE. Six hospitals did not have any plans to implement patient cohorting. Survey respondents stated this was because there were no admitted individuals with COVID-19 at the time of the survey.[4]
Setting(s)	• No information identified.
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Effectiveness	• No information identified.

United States: How Should US Hospitals Prepare for COVID-19? (May 5, 2020)	
Overview	• This article describes how to develop a strategy for patient volume and complexity in the context of COVID-19 in the US where the need for critical care beds was expected to surpass availability.[2]
Cohorting Principles	• The article suggests that hospitals should attempt to geographically cohort patients with COVID-19 to limit the number of health care personnel exposed and conserve supplies. This type of geographic capacity generation is extremely difficult because many US hospitals run at full capacity. Geographic cohorting options may also be challenged by locations of airborne isolation rooms, with negative pressure being scattered throughout the hospital. It may be necessary to use innovative approaches, such as converting single rooms to double occupancy; expediting discharges; slowing admission rates; and converting spaces like catheterization laboratories, lobbies, postoperative care units, or waiting rooms into patient care venues.[2]
Setting(s)	• Designated Critical Care Units: For example, at Michigan Medicine (Ann Arbor, MI), designated beds in critical care units and non–critical care settings for persons under investigation and patients who test positive for COVID-19 have been identified. A dedicated team of hospitalists and critical care providers have been established, with clinical schedules and roles for leadership, communication, and activation criteria. Contingency plans have been developed, including activation criteria for opening a respiratory intensive care floor where cohorting of both critically ill and noncritically ill patients can occur.[2]
Flow of Patients	• Care of Vulnerable Patients: At Michigan Medicine, ensuring the ongoing care of vulnerable patients, such as those in the posttransplant and immunocompromised communities, remains imperative. Safe locations and staffing plans that separate vulnerable patients from COVID-19 activities have been carefully considered.[2]
Best Practices for Elderly Patients	• No information identified.
Effectiveness	• No information identified.
International: Pragmatic Recommendations for IPC Practices for Healthcare Facilities in Low- and Middle-Income Countries during the COVID-19 Pandemic (January 6, 2021)	
Overview	• An international group of health care professionals from or with experience in low- and middle-income countries (LMICs) searched the literature for relevant evidence. They offer a set of pragmatic recommendations for hospital-based infection protection and control (IPAC) practices in resource-constrained settings of LMICs with an assessment of the quality of evidence supporting each recommendation (in brackets).[5,e]
Recommendations	• Isolation: In LMICs, when cases of COVID-19 are sporadic, it is suggested that persons with suspected or confirmed COVID-19 be placed in single isolation rooms, if available (weak recommendation, very low quality of evidence). • Cohorting: When there are no single isolation rooms or when there is a surge of cases, we recommend that patients with confirmed COVID-19 be cohorted together (strong recommendation, low quality of evidence). ○ In addition, it is recommended that patients with suspected disease be cohorted separately or placed in isolation rooms (strong recommendation, low quality of evidence). • Health Care Workers in LMICs: ○ When possible, it is suggested that teams of dedicated health care professionals be designated to care exclusively for COVID-19 patients (weak recommendation, very low quality of evidence). ○ When it is not possible to have dedicated teams, we recommend strict adherence to local PPE guidelines and hand hygiene to minimize the risk of cross-contamination or transmission between health care personnel and patients (strong recommendation, low quality of evidence). • Visitors for hospitals in LMICs: ○ Where staff can provide all care, it is suggested that visitor restrictions be placed in accordance with local regulations and guidelines (ungraded).

[e] The process of assessment involved selecting relevant publications, appraising the evidence, and classifying the quality of evidence as high, moderate, low, or very low. Recommendations were rated as strong or weak, depending on the quality of evidence and several other factors such as availability, affordability, and feasibility in LMICs. The recommendations were reviewed by the subgroup in an iterative process and were later reviewed by the entire Task Force in two rounds (Cobb et al., 2021).

	○ When visitors are necessary for the care of patients, we recommend keeping the number of visitors to a minimum (strong recommendation, very low quality of evidence). ○ It is also recommended that visitors use appropriate PPE and that education regarding hand hygiene, and donning and doffing of PPE be provided (strong recommendation, very low quality of evidence). ○ Banners should be placed at the entrance of health care facilities to inform visitors about symptoms of COVID-19 and that visitors be screened for symptoms before visiting. Visitor logs should also be maintained (weak recommendation, very low quality of evidence).[5]
Setting(s)	• Single isolation rooms or dedicated wards according to confirmed or suspected cases.
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Effectiveness of Cohorting	• Efficacy of Cohorting: Evidence regarding the efficacy of cohorting patients with suspected or confirmed COVID-19 in reducing the risk of nosocomial transmission is limited. However, cohorting strategies have previously been studied for other respiratory viruses, such as SARS.[5] Studies identified include: ○ One study showed a reduction in nosocomial transmission of respiratory syncytial virus using cohorting with a decrease from 5.33 to 1.23 infections per 1,000/patient days of care (Krasinski et al., 1990).[5] ○ Experience from the 2003 SARS outbreak in Singapore also suggests that cohorting on an open ward may be effective in an outbreak setting. In this observational study, 70 patients exposed to SARS were cohorted for monitoring. Patients who developed symptoms concerning SARS infection were removed from the cohort and isolated. The authors reported that within the cohort, there was no observed secondary transmission (Tan et al., 2004).[5] ○ In Singapore during the COVID-19 pandemic "respiratory surveillance wards" were designated for any patients with respiratory symptoms. When cases of SARS-CoV-2 were confirmed, patients were moved to a separate isolation ward. Among staff and patients exposed to SARS-CoV-2, only one patient developed COVID-19 after exposure (Wee et al., 2020).[5] ○ In the UK, another strategy for COVID-19 relies on the use of a triage tool to assign patients to single-room isolation versus cohorting based on the likelihood of COVID-19 infection and the risk of a poor outcome. In this study of 93 patients, no cases of symptomatic hospital-acquired infections were found among cohorted patients (Patterson et al., 2020).[5] (For more details, see a summary of this study below.[6]) ○ Guidelines from the World Health Organization (WHO), US Centers for Disease Control and Prevention (CDC), and European Centres for Disease Control (ECDC) recommend that patients with COVID-19 be placed in single isolation rooms, when possible. When this is impossible, the WHO recommends cohorting patients according to their status as confirmed, probable, or suspected COVID-19; probable cases are defined as "suspect cases for whom testing is inconclusive or not available."[5] • Designated Hospitals: There are several reports during the SARS and MERS outbreaks in which entire hospitals or separate hospital wards were designated for the care of SARS or MERS patients.[5] ○ For example, in Toronto, Ontario, implementing dedicated SARS hospitals proved challenging and instead many hospitals were prepared to care for SARS patients. When the second wave occurred in Toronto, four hospitals became designated SARS hospitals. In some settings, these strategies also resulted in dedicated teams of health care professionals, including physicians, nurses, and allied health care professions. However, in one report from Canada, HCWs who were employed in more than one hospital transmitted SARS between institutions, demonstrating the risk of transmission from HCWs.[5] ○ The CDC (2020) suggests that facilities should consider designating entire units to care for COVID-19 patients, with dedicated health care professionals, as a measure to limit health care professionals' exposure and conserve PPE.[5]
United Kingdom: A Novel Cohorting and Isolation Strategy for Suspected COVID1-9 Cases during a Pandemic (May 30, 2020)	
Overview	• This study at University College London Hospital (London, UK) evaluated the use of a pragmatic triage tool for prompt isolation or cohorting of patients in the context of the COVID-19 pandemic. The tool was designed to manage patient flow, in the event of insufficient single-occupancy rooms to isolate all suspected cases at admission. The focus was to prevent health care-associated transmission and, to identify and protect individuals at the greatest risk of a poor outcome should a new infection occur.[6]

Cohorting Principles	• Cohorting Categories: ○ Category A represented patients clinically evaluated to have a low likelihood of COVID-19 but significant comorbidities. These patients were given the highest priority for single-occupancy rooms. ○ Categories B and C represented patients considered to have a high probability of COVID-19, with Category B patients having significant comorbidities. Category B patients were therefore second priority for single-occupancy rooms. When such rooms were unavailable these patients were cohorted in reduced-occupancy multi-bedded bays on wards designated for suspected COVID-19 patients. ○ Category C patients had minimal comorbidities thus were typically cohorted in the same reduced-occupancy multi-bedded bays with other Category C or B patients. This maintained availability of single-occupancy rooms for Category A patients. ○ Category D patients were both a low clinical probability of COVID-19 and without significant comorbidities. These individuals were cohorted together on the same ward as suspected COVID-19 patients in a designated low-probability bay.[6]
Setting(s)	• To implement this strategy an infectious diseases clinician stationed in the emergency department applied an isolation and cohorting algorithm. This clinician assisted the admitting medical team in assessing the clinical probability of COVID-19. This assessment combined clinical skills with investigation results and evaluation of the extent of the comorbidities. On occasion, discussion with a radiologist aided the decision-making process. Priority for single-occupancy rooms was determined through the triage category allocation.[6]
Flow of Patients	• Staff and Patient Flow: Key to the implementation of this triage tool was the creation of confirmed and suspected COVID-19 wards areas. Capacity for this was facilitated by cancellation of all elective services. These ward areas were physically separated by constructing doors, with a one-way flow of staff entering and exiting the ward. PPE donning and doffing stations were positioned at these fixed points of entry and exit. In order to maintain strict separation, both patient and staff pathways were redesigned necessitating the closure of communal staff areas. Bed spacing within bays was expanded by removing beds to increase the distance between patients, and all non-essential equipment was removed. Bedside equipment was not shared between bays to reduce the extent of environmental contamination.[6] • Low Risk Patients: Category D patients (low likelihood of infection) were assigned specific bays to minimize their physical proximity to patients in other groups and were placed furthest from the doffing station in the least contaminated areas of the COVID-19 suspect ward. Aerosol-generating procedures were avoided unless in single-occupancy rooms. For all patients, once the nasopharyngeal swab result was available relocation of patients was determined collaboratively by the IPAC team and infection clinicians.[6]
Best Practices for Elderly Patients	• No information identified.
Evidence of Effectiveness	• This evaluation demonstrated that early assessment of patients with suspected COVID-19 by a clinician with appropriate expertise effectively identified a high-risk cohort most appropriate for isolation. This approach combined with innovative IPAC measures reduced bed pressures without increasing the risk of health care associated transmission. This triage tool may be of value more generally in health systems responding to the ongoing COVID-19 pandemic, particularly during sustained transmission of the virus when pre-test probability of COVID-19 positivity is high.[6]
United Kingdom: Reducing Nosocomial Transmission of COVID-19: Implementation of a COVID-19 Triage System (September 2020)	
Overview	• To understand the risk of nosocomial transmission at a National Health Service (NHS) hospital trust in South London (UK), this study assessed clinical features at admission, and time between admission and testing for patients diagnosed with COVID-19 between March 11 and May 12, 2020. A COVID-19 triage system was subsequently implemented, combining a clinical assessment tool with cohorting and targeted rapid SARS-CoV-2 PCR testing to reduce the risk of transmission to susceptible patients in hospital.[7]

Cohorting Principles	• Purpose: To prevent nosocomial transmission, we implemented a clinical assessment tool to improve the effectiveness of COVID-19 triage and cohorting. Since routine SARS-CoV-2 PCR testing has relatively low sensitivity and turnaround times can be prolonged, this tool relies on clinical history and findings, laboratory results and radiology to categorize patients according to clinical likelihood of COVID-19.[7] • Results: One in 15 patients acquired COVID-19 in hospital during the study period.[7] • Conclusion: As hospital services return to a new normal, prevention of nosocomial transmission remains vitally important, particularly since this may coincide with a new wave of COVID-19 related admissions.[7]
Setting(s)	• Separate Wards according to COVID-19 Risk: After clinical assessment, patients are triaged to separate wards; patients with no symptoms or signs of COVID-19 (likelihood score 0) are separated from those with low grade suspicion of COVID-19 (score 1) and those with high grade suspicion (score 2) or confirmed COVID-19 (score 3) are cohorted together on a separate ward.[7] • Isolation Rooms for Low-Grade Risk: Patients with low-grade suspicion (score 1) are cared for in isolation rooms when possible and prioritized for rapid SARS-CoV-2 PCR testing to establish their transfer destination. In this way, positive patients are separated from negative patients as early as possible. Isolation rooms are also prioritized for those with an incongruous clinical presentation (possible test inaccuracy) and those with significant risk factors for severe illness such as immunosuppression. Patients are then re-assessed daily to ensure that anyone incubating infection is identified and transferred to an appropriate ward, minimizing exposure to other patients.[7]
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Effectiveness	• No information identified.
Singapore: Containment of COVID-19 and Reduction in Healthcare-Associated Respiratory Viral Infections Through a Multi-Tiered Infection Control Strategy (November 2020)	
Overview	• Purpose: From January-June 2020, a multi-tiered infection control strategy was implemented across a health care campus in Singapore, comprising the largest acute tertiary hospital as well as four other subspecialty centres, with more than 10,000 HCWs. This strategy included improved patient segregation and distancing, and heightened IPAC measures including universal masking. All symptomatic patients were tested for COVID-19 and common respiratory viral infections (RVIs).[3] • Results: A total of 16,162 admissions campus-wide were screened; 7.1% (1155/16,162) tested positive for COVID-19. Less than 5% of COVID-19 cases (39/1155) were initially detected outside of isolation wards in multi-bedded cohorted wards. Improved distancing and enhanced IPAC measures successfully mitigated onward spread even amongst COVID-19 cases detected outside of isolation. COVID-19 rates amongst HCWs were kept low (0.13%, 17/13,066) and reflected community acquisition rather than nosocomial spread. Rates of health care-associated-RVI amongst inpatients fell to zero and this decrease was sustained even after the lifting of visitor restrictions.[3]
Cohorting Principles	• The key finding of this study is that a multi-tiered infection control strategy was successful in mitigating health care-associated transmission of COVID-19 as well as common RVIs across a large health care campus, over a sustained duration. Over a six-month period, no documented patient-HCW transmission of COVID-19 occurred, despite caring for more than 1,500 cases of COVID-19 campus-wide.[3]
Setting(s)	• Segregated isolation wards for COVID-19 cases and general multi-bed cohorted wards.[3]
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Outcomes	• One-third of admissions were first tested in the Emergency Department (ED), allowing for faster turnaround of results and determination of COVID-19 status from arrival. Furthermore, due to improved segregation, less than 1% of COVID-19 cases campus-wide were picked up in multi-bedded cohorted general wards, outside of designated areas for the management of COVID-19 cases.[3]

Table 3: Best Practice Guidance from Canadian and International Sources: Cohorting Patients in Hospital Settings During COVID-19

Public Health Agency of Canada (PHAC): Infection Prevention and Control for COVID-19: Interim Guidance for Acute Healthcare Settings (January 8, 2021)	
Context	• PHAC develops evidence-informed infection prevention and control (IPAC) guidance to complement provincial and territorial public health efforts in monitoring, preventing, and controlling health care-associated infections. National-level guidance should always be read in conjunction with relevant provincial, territorial and local policies and regulations.[8]
Cohorting Principles	• Inpatient Management for Cohorting Patients: Cohorting patients confirmed to have COVID-19 in adequately ventilated specific units is encouraged. When the number of confirmed COVID-19 cases in the facility is high, consideration should be given to having teams of health care workers (HCWs) dedicated to caring for these patients; this may reduce the risk of transmitting infection in the acute health care setting, and allow highly trained HCWs to develop expertise in caring for these patients.[8]
Setting(s)	• No information identified.
Flow of Patients	• Patients who are suspected or confirmed to have COVID-19 should be restricted to their room until they have met criteria for discontinuation of additional precautions[f] in accordance with facility IPAC protocols and provincial or territorial public health guidance. Patient movement or transport should also be restricted to essential diagnostic tests and therapeutic treatments. **Transfer within and between facilities while patients are suspected to be infectious should be avoided unless medically necessary.**[8]
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
Ontario Medical Association: Guidance for Hospital Preparedness and Management of COVID-19 (May 15, 2020)	
Context	• This guidance is divided into three parts and reflects the need to prepare hospitals for future surges/outbreaks of COVID-19, as well as to enable the graduated re-introduction of deferred services in hospitals. It is intended to support hospitals as they undergo and plan for both streams of work, as well as inform how government and other health system partners can support hospitals in this planning.[9]
Cohorting Principles	• Designating COVID-19 Hospital Sites and Managing COVID-19 within the Primary Hospital Site: Designation of COVID-19 hospitals must be a phased approach, recognizing that the number of designated hospitals will increase as the number of cases increases in the province. For example, Saskatchewan divided the province into four regions and planned for a mix of COVID-19, non-COVID-19, and mixed hospitals based on a staged response to increased COVID-19 demand in a given geographical area.[9] • Spaces and Patients Should Be Segregated and Cohorted: Segregating spaces and cohorting patients by COVID-19 status will be particularly important to enable the safe ramping up of deferred services in hospitals for non-COVID-19 patients while COVID-19 patients are still receiving care in the same facility. Segregation of non-COVID-19 patients must, however, be mindful of potentially asymptomatic or pre-symptomatic patients. As a result, patients as well as health care providers and other hospital staff that screen negative for COVID-19 symptoms cannot conclusively be designated as non-infectious. It is nonetheless essential to segregate confirmed COVID-19 patients from those who may not have COVID-19. Widespread point-of-care testing will allow for clearer distinctions between areas and patients by COVID-19 status.[9]
Setting(s)	The OMA advises that patients should be segregated and cohorted to reduce the risk of spreading COVID-19 within the hospital considering the following factors: • Designating non-COVID-19, suspect, and COVID-19 areas from admission to discharge: This includes the principle of "three zones and two channels" - the division of non-COVID-19, suspect, and COVID-19 areas, plus the creation of two separate channels for medical staff and patients to walk through. It also

[f] Additional precautions: A minimum of droplet and contact precautions should be implemented for all patients who are considered exposed to, diagnosed with, or who are presenting with signs or symptoms of COVID-19 (i.e., gloves, gown, medical mask, and eye protection) (PHAC, 2021).

	involves implementing a colour system for three zones throughout all areas of hospital – red (COVID-19 area), yellow (COVID-19 suspected area), green (non-COVID-19 area). Point-of-care testing should be utilized when available to confirm COVID-19 status of patients in green areas. • Cohorting COVID-19 Patients by Units and by Floor: This involves the separation of COVID-19 patients and non-COVID patients, and further, cohorting among COVID-19 patients (i.e., separation of patients suspected with COVID-19, including those waiting for test results, from those patients confirmed to have COVID-19 [i.e., COVID-19 units and COVID-19-positive units]). COVID-19 patients can be further sub-cohorted, such as pregnant women, patients waiting for quarantine period to end, etc.[9]
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
Island Health, British Columbia[g] COVID-19 Cohorting and Higher Level of Care Process (2021)	
Context	• Island Health describes a regional strategy to manage suspect or confirmed COVID-19 patients who require admission to local, tertiary acute care and critical care units that includes determining when patients would require transfer to a higher level of care.[10] ○ Guidelines for: Adult COVID-19 Site Planning, Cohorting, HLOC Transport and Repatriation Procedures (January 2021)
Cohorting Principles	• Island Health[h] in BC have a regional strategy for cohorting patients where three facilities have been designated as cohort hospitals to support surge capacity planning. Patients are allocated according geographic location and the medical orders for scope of Treatment designation (MOST)[i]: ○ Comox Valley Hospital Cohort receives all COVID-19 positive admissions with M1-M3 and CO MOST status. ○ Nanaimo Regional and General Hospital Cohort receives all COVID-19 positive admissions from Geography Two and C1/2 MOST status patients from Geography One. ○ Royal Jubilee Hospital Cohort receives all COVID-19 positive admissions from Geography three and four.[11]
Setting(s)	• Inpatient Outbreak Unit: When there are two or more patients confirmed with COVID-19 at a site, the Pandemic Response Coordination Committee will direct a designated Cohort Hospital(s) to create a closed Respiratory Investigation Unit, which will function as an "Outbreak Unit."[11]
Flow of Patients	• Each Island Health hospital will have Two Isolation Plans: ○ Respiratory Isolation Beds for all admitted patients requiring droplet/contact additional precautions, including those waiting for a differential diagnosis pending nasopharyngeal (NP) swab results. ▪ Persons under Investigation (PUI) can stay at their current location unless there is a need for Higher Level of Care (HLOC) transport. ○ COVID-19 Beds for All Admitted Patients Who Are PUI or Confirmed for COVID-19. ▪ COVID-19 positive patients can stay at their current location if they are expected to be admitted for less than 24 hours, are imminently dying, or require HLOC.[11]

[g] Island Health provides health care services through a network of hospitals, clinics, centres, health units, and long-term care locations, serving more than 850,000 people on Vancouver Island, the islands in the Salish Sea and the Johnstone Strait, and the mainland communities north of Powell River and south of Rivers Inlet (Island Health, 2021).
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[i] MOST designations are: M1 (Supportive care, symptom management and comfort measures only. Allow natural death); M2 (Medical treatments within current location of care, excluding critical care interventions); M3 (Medical treatments including transfer to higher level of care, excluding critical care interventions); CO (Critical care interventions, excluding CPR and intubation); C1 (Critical care interventions, excluding CPR but including intubation); and C2 (Critical Care interventions, including CPR and intubation) (Island Health, n.d.).

Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
Shared Health Manitoba: COVID-19 Specific Disease Protocol (Winnipeg) – Acute and Community Settings (November 2020)	
Context	• This guidance is informed by currently available scientific evidence and expert opinion and is subject to change as new information on transmissibility and epidemiology becomes available. It consists of infection prevention and control practices for Orange and Red Zones including recommendations for cohorting.[13]
Cohorting Principles	• **Principles**: Do not cohort COVID-19 suspects. Cohorting is only possible for patients with confirmed COVID-19 infection. If cohorting is necessary, consult Infection Prevention and Control.[13]
Setting(s)	• **Designated Units for Cohorted COVID-19 Patients**: There are at least 14 COVID-19 units for patients in hospitals across Winnipeg, MB. ○ **Orthopedic Surgery Unit**: According to a CTV news article, at Manitoba's Health Sciences Centre the 30-bed orthopedic surgery unit is one of six that has been converted to a Red Zone unit dedicated to COVID-19 patients. There are eight more COVID-19 units in hospitals across Winnipeg, as well as one in the Prairie Mountain Health Region and one in the Southern Health region. Four different hospitals are managing 120 critical care beds.[19]
Flow of Patients	• **ED/Isolation Area for Asymptomatic Patients**: Asymptomatic patients screened for COVID-19 wait in a specialized isolation area for up to eight hours for test results, which can sometimes cause bottlenecks in the emergency department (ED).[19] • **Red Zone:** for COVID-19 patients • **Green Zone**: Where patients with confirmed COVID-19 infection have been cohorted and one has recovered, this patient may be moved into the Green Zone as required.[13]
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
Saskatchewan Health Authority: Infection Prevention and Control Recommendations for Cohorting Patients on Additional Precautions in Acute Care During the COVID-19 Pandemic	
Context	• This document is intended to provide guidance on IPAC best practice recommendations when cohorting inpatients on additional precautions. These measures should apply during intense bed shortages during COVID-19 pandemic only.
Cohorting Principles	• **Principles**: ○ IPAC does not routinely recommend cohorting of patients. ○ Cohorting may be necessary if patient requirements for private rooms exceed capacity. ○ The following are not eligible for cohorting: 1) Patients with more than one transmissible disease or organism; 2) Patients on airborne precautions; and 3) Patients who are Carbapenemase-Producing Organism (CPO)[j] positive. ○ Overcapacity spaces should not be used for patients with suspect or lab confirmed transmissible diseases. ○ Consult with local IPAC department with questions or for assistance with placement of patients.[14]
Setting(s)	• No information identified.
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.

[j] CPO refers to bacteria such as Escherichia coli (E. coli) that are found in normal human intestines. In some parts of the world, this group of bacteria have acquired genes that make them resistant to a broad spectrum type of antibiotics including those known as carbapenem (BC Centre for Disease Control, 2014).

Alberta Health Services (AHS): IPC Cohorting Recommendations for COVID-19 in Acute Care (December 1, 2020)	
Context	• The following guidelines provide direction for the safe cohorting of confirmed or probable COVID-19 positive patients within AHS acute care facilities.
Cohorting Principles	• **Principles**: AHS is not considering dedicated COVID-19 hospitals due to the downstream impact to specialty care services and geographic considerations. Based on site-specific capacity, facility design, and patient population, each site can develop their own cohorting plan using guiding principles and considerations including: ○ The decision to cohort must be made in consultation with IPAC. ○ A staged approach to cohorting is based on minimizing risk to the most patients while adhering to IPAC principles and practices. ○ Strict adherence to IPAC point-of-care risk assessment, hand hygiene, appropriate use of PPE (donning, doffing) by health care providers, adequate spatial separation and appropriate cleaning and disinfection is required. ○ When cohorting patients, consideration should also be given to: 1) Underlying patient conditions (e.g., immunocompromised); 2) Vaccination status, especially for Influenza with respect to co-infection; and 3) Co-infection with other diseases (e.g., influenza). ○ Each zone shall develop decision trees/algorithms based on local infrastructure (e.g., decisions regarding the cohorting of suspect and confirmed patients versus COVID-19 only patients on a dedicated unit).[12] • Additional Precautions in Acute Care Facilities: If cohorting is necessary, only patients who are lab confirmed to have COVID-19 should be cohorted. Treat each bed space like a private room. Washrooms may only be shared by confirmed positive patients. Patients with signs and symptoms and exposure criteria consistent with COVID-19 should maintain at least a two-metre separation between all other inpatients.[18]
Setting(s)	• **Cohorted Units**: ○ Small Numbers of Admitted COVID-19 Patients ○ Designated Units for Large Numbers of COVID-19 Positive Patients: Having a designated unit may allow for separation of confirmed or probable COVID-19 patients from other patients within an acute care facility.[12] It may also allow for preservation of PPE amongst health care providers and may include the following: ▪ Consider utilizing areas that have more single-bed rooms. ▪ Determine how patients with confirmed or probable COVID-19 will be triaged and admitted. ▪ Units may be designated as COVID-19 positive only or COVID-19 positive and suspect based on facility infrastructure, and local decision making. ▪ Units which house both suspect and confirmed COVID-19 patients should use staff cohorting to minimize the risk of transmission. ▪ Where staffing levels allow, separate staff groups should care for suspect and positive patients. ▪ If staffing levels cannot support this, then care should be done in a sequential fashion (care for suspect patients first, then move to confirmed patients). ▪ PPE can be used for multiple patient encounters.[12]
Flow of Patients	• Criteria should be established to move suspect patient who test negative to another space in the facility. Contact and Droplet Precautions should be maintained regardless of testing until the patient is asymptomatic.[12]
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
Western Australia: COVID-19: IPAC in Western Australian Healthcare Facilities (August 31, 2020)	
Context	• These guidelines are based on the current available evidence, the current status of COVID19 in Australia, current knowledge of the transmission of coronaviruses and may change as more evidence becomes available.[15]
Cohorting Principles	• **Principles**: ○ The decision to create cohort wards will need to be undertaken in discussion with health care facility (HCF) (i.e., public hospitals) executives, clinical leads, infectious diseases physicians and the IPAC team.

	○ Patients with confirmed COVID-19 are not to be cohorted with patients who have not yet been diagnosed with COVID-19.[15]
Setting(s)	• HCFs may consider creating cohort wards, especially in those facilities where heating, ventilation air conditioning (HVAC) systems can be isolated. Cohort wards should be separate from other patient areas and are not to be used as a thoroughfare.[15] ○ Clear signage indicating the appropriate transmission-based precautions and required PPE is to be placed at the entrance of the cohort ward. ○ In a cohorted unit, gowns, masks and eye protection may remain insitu between patients providing they are not soiled. Gloves must be changed between patients and adherence to the '5 Moments of Hand Hygiene' is essential. Upon leaving the cohorted unit all PPE must be removed and discarded. • Where possible dedicated HCWs that have been assessed as competent in donning and doffing the appropriate PPE should be allocated to work in cohort wards.[15]
Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
Queensland Government, Australia: Interim IPAC Guidelines for the Management of COVID-19 in Healthcare Settings (October 4, 2020)	
Context	• This guideline provides IPAC recommendations for managing patients with suspect, probable or confirmed COVID-19 in health care settings. These guidelines aim to prevent transmission of COVID-19 in health care settings through the implementation of appropriate infection prevention and control measures.[16]
Cohorting Principles	• **Principles**: ○ Cohorting of suspect, probable or confirmed cases must only be undertaken following consultation with local experts, such as infectious diseases physicians and local infection prevention and control service. Where practicable, managing patients with mild illness in their own home is the preferred approach rather than cohorting patients. ○ Cohorting should not be undertaken in settings/for patients where a caregiver is required for patient support (e.g., in paediatrics where a parent will be present). ○ Consideration should be given to the location and requirements for quarantine and isolation wards and separate staffing for these.[16]
Setting(s)	• Confirmed Cases: ○ Prioritize patients who have symptoms of severe pneumonia for placement in single rooms with negative pressure air handling. ○ Consider the patient's ability to perform hand hygiene and follow appropriate cough and personal hygiene etiquette. ○ Care should be taken to ensure that probable and suspect cases are not cohorted with confirmed cases. ○ Care should be taken to ensure that confirmed COVID-19 cases co-infected with influenza or other respiratory viruses are not cohorted. ○ A suitable ward should be identified for the exclusive use of cohorting confirmed COVID-19 patients considering such factors as ventilation, the ability to limit entry/access to the ward, spatial separation of greater than 1.5 metres between bed spaces, patient populations of adjacent areas (e.g., separated from patients who are potentially at greater risk of complications of COVID-19 such as haematology, oncology and transplant services), and wherever possible, curtains, privacy screens or barriers to physically separate patients to help reduce transmission).[16] • Suspect Cases: ○ The decision to cohort suspect cases needs to be taken following consultation with local experts, such as infectious diseases physicians and infection control practitioners. Cohorting suspect cases is not recommended if it can be avoided. ○ Where suspect cases must be cohorted, epidemiological and clinical suspicion should be considered when deciding which suspect case are placed together. Physical distancing measures must always be adhered to with a minimum of 1.5 metres distance maintained between patients. ○ In addition to the requirements outlined above for cohorting suspect cases, curtains, privacy screens or barriers should be used at all times to physically separate patients. This will help to reduce the potential for transmission of infection. The curtains or barriers between patients must remain in place whenever a patient is present. Probable and suspect cases should not be cohorted with confirmed cases.[16]

Flow of Patients	• No information identified.
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.
National Health Service Greater Glasgow and Clyde, United Kingdom: COVID-19 Cohort in General Ward Cohort Information V.1.6 (April 16, 2020)	
Context	• This guidance from the National Health Service Greater Glasgow and Clyde (NHSGGC) provides recommendations regarding establishing a COVID-19 ward in a general ward, including the following aspects: planning and communication; decision to create a COVID-19 ward; setting up the cohort; staffing; bed spacing; patients, and equipment.[17]
Cohorting Principles	• **Principles**: ○ Planning and Communication: On each hospital site, wards and wards with suitable bed bays will be identified and a pathway agreed from ED to discharge. This will be communicated to the appropriate staff at huddles/briefs to support patient/bed management. Daily updates on bed spaces on cohort wards/bays should be available to support patient transfers from ED and acute receiving. Wards with cohort bays will not be closed to other admissions. ○ Decision to Create a COVID-19 Cohort: If a ward has bed bays and several confirmed COVID-19 patients, those patients should be nursed in a single bay as a cohort. If there are empty beds in that cohort, they can be used for COVID-19 patients from other areas. The decision to set up a cohort should be discussed with infectious disease consultants/local IPAC. ○ Setting Up the Cohort: The cohort bay should have dedicated equipment as far as possible such as blood pressure, oxygen saturation and temperature recording devices within the cohort bay. A trolley with fresh linen, tissues, waste bags and commonly used disposable equipment such as oxygen tubing and masks will be useful for staff working in the cohort. Use the IPAC yellow sign at the entrance of the cohort. ○ Staffing: Cohort nursing (dedicated teams) should be implemented to minimise the risk of contamination between groups of symptomatic and non-symptomatic patients if staff resource allows. If not, contact the local IPAC who will help to undertake a risk assessment. ○ Bed Spacing: Patients should be separated by at least two metres from each other in a cohort area, and bed curtains can be drawn as an additional physical barrier if possible.[17]
Setting(s)	• General wards/bays.
Flow of Patients	• Patients who have confirmed COVID-19 can be nursed in a COVID-19 cohort until they have been deemed no longer infectious. However, it should be noted that patients being nursed together in a cohort should all have confirmed COVID-19. • Patients who remain symptomatic but are well enough to be discharged can be sent home with advice on how to self-isolate. • Patients who have COVID-19 and another infection; e.g., diarrhoea or Methicillin-resistant Staphylococcus, should be nursed in a single room.[17]
Best Practices for Elderly Patients	• No information identified.
Outcomes	• No information identified.

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