



Lessons Learned: Treating COVID-19

Disclaimer: This *Quick Response Report* was published on April 6, 2020. Given the rapidly changing nature of the coronavirus pandemic, some of the references included in this report may quickly become out-of-date. We further caution readers that researchers at the Newfoundland & Labrador Centre for Applied Health Research are not experts on infectious diseases and are relaying work produced by others. This report has been produced quickly and it is not exhaustive, nor have the included studies been critically appraised.

Original Inquiry

We are trying to determine the best approach to provide care for COVID patients – both in acute and LTC.

- Providing care for COVID-19 patients
- Acute care and LTC
- Lessons learned from jurisdictions (e.g., Italy)

Comprehensive Sources of Information

- WHO, Interim Guidance, 13 March 2020: **Clinical management of severe acute respiratory infection (SARI) when COVID-19 disease is suspected** ([LINK](#))

From the introduction: “It is intended for clinicians involved in the care of adult, pregnant, and paediatric patients with or at risk for severe acute respiratory infection (SARI) when infection with the COVID-19 virus is suspected. Considerations for paediatric patients and pregnant women are highlighted throughout the text. It is not meant to replace clinical judgment or specialist consultation but rather to strengthen clinical management of these patients and to provide up-to-date guidance. Best practices for infection prevention and control (IPC), triage and optimized supportive care are included.”

Includes information on:

- Management of mild COVID-19: symptomatic treatment and monitoring
- Management of severe COVID-19: oxygen therapy and monitoring
- Management of severe COVID-19: treatment of co-infections
- Management of critical COVID-19: acute respiratory distress syndrome (ARDS)
- Management of critical illness and COVID-19: prevention of complications
- Management of critical illness and COVID-19: septic shock
- Adjunctive therapies for COVID-19: corticosteroids
- Caring for pregnant women with COVID-19
- Caring for infants and mothers with COVID-19: IPC and breastfeeding
- Care for older persons with COVID-19

- Clinical research and specific anti-COVID-19 treatments
- NIH Coronavirus Disease 2019 Healthcare Resources ([LINK](#))
Look under “Health Care Resources” to find information on:
 - Hospital Preparedness and Steps to Prepare
 - Preparation for Long Term Care Facilities
 - Infection Control in Health Care Settings
 - Optimization of Hospital Materials (e.g., gowns, facemasks, respirators, etc.)
 - Implementing Home Care

Research-Based Evidence

Sourced from NCCMT

(Webpage: [LINK](#))

- **Guidelines for preventing respiratory illness in older adults aged 60 years and above living in long-term care: A rapid review of clinical practice guidelines** ([LINK](#))

Background: The overall objective of this rapid review was to identify infection protection and control recommendations from published clinical practice guidelines (CPGs) for adults aged 60 years and older in long-term care settings **Methods:** Comprehensive searches in MEDLINE, EMBASE, the Cochrane Library, and relevant CPG publishers/repositories were carried out in early March 2020. Title/abstract and full-text screening, data abstraction, and quality appraisal (AGREE-II) were carried out by single reviewers. **Results:** A total of 17 relevant CPGs were identified, published in the USA (n=8), Canada (n=6), Australia (n=2), and the United Kingdom (n=1). All of the CPGs dealt with infection control in long-term care facilities (LTCF) and addressed various types of viral respiratory infections (e.g., influenza, COVID-19, severe acute respiratory syndrome). Ten or more CPGs recommended the following infection control measures in LTCF: hand hygiene (n=13), wearing personal protective equipment (n=13), social distancing or isolation (n=13), disinfecting surfaces (n=12), droplet precautions (n=12), surveillance and evaluation (n=11), and using diagnostic testing to confirm illness (n=10). While only two or more CPGs recommended these infection control measures: policies and procedures for visitors, staff and/or residents (n=9), respiratory hygiene/cough etiquette (n=9), providing supplies (n=9), staff and/or residents education (n=8), increasing communication (n=6), consulting or notifying health professionals (n=6), appropriate ventilation practices (n=2), and cohorting equipment (n=2). Ten CPGs also addressed management of viral respiratory infections in LTCF and recommended antiviral chemoprophylaxis (n=10) and one CPG recommended early mobilization of residents. **Conclusion:** The recommendations from current guidelines overall seem to support environmental measures for infection prevention and antiviral chemoprophylaxis for infection management as the most appropriate first-line response to viral respiratory illness in long-term care.

- **Infection Prevention and Control guidance for Long-Term Care Facilities in the context of COVID-19** ([LINK](#))

This interim guidance is for LTCF managers and corresponding IPC focal persons in LTCF. The objective of this document is to provide guidance on IPC in LTCFs in the context of COVID-19 to 1) prevent COVID-19-virus from entering the facility, 2) prevent COVID-19 from spreading within the facility, and 3) prevent COVID-19 from spreading to outside the facility. WHO will update these recommendations as new information becomes available. All [technical guidance for COVID-19 is available online](#).

Sourced from Public Health Ontario
(Webpage: [LINK](#))

- Kimball A, Hatfield KM, Arons M, James A, Taylor J, Spicer K, et al. **Asymptomatic and Presymptomatic SARS-CoV-2 Infections in Residents of a Long-Term Care Skilled Nursing Facility — King County, Washington, March 2020**. MMWR - Morbidity & Mortality Weekly Report. 2020 Mar 27 ([LINK](#))

Summary

What is already known about this topic? Once SARS-CoV-2 is introduced in a long-term care skilled nursing facility (SNF), rapid transmission can occur.

What is added by this report? Following identification of a case of coronavirus disease 2019 (COVID-19) in a health care worker, 76 of 82 residents of an SNF were tested for SARS-CoV-2; 23 (30.3%) had positive test results, approximately half of whom were asymptomatic or presymptomatic on the day of testing.

What are the implications for public health practice? Symptom-based screening of SNF residents might fail to identify all SARS-CoV-2 infections. Asymptomatic and presymptomatic SNF residents might contribute to SARS-CoV-2 transmission. Once a facility has confirmed a COVID-19 case, all residents should be cared for using CDC-recommended personal protective equipment (PPE), with considerations for extended use or reuse of PPE as needed.

Lessons Learned from Health Care Organizations

- Evergreen Health (US). **Lessons Learned: COVID-19. Protocols and Best Practices for addressing COVID-19 in the hospital setting** ([LINK](#))

The EvergreenHealth Hospitalist group offers critical early lessons learned from our experience managing many of the first COVID-19+ patients hospitalized in the U.S. In this

document, you will find consolidated information on what to anticipate and how to prepare for the arrival of COVID-19+ patients, recommendations on maximizing safety in the hospital environment, and key clinical management considerations which incorporate clinical expertise generously shared by colleagues across the globe. We also include a robust list of online resources at the conclusion of this document.

- Institut Montaigne (France). Public Health in the Time of Covid-19: Three Lessons Learned ([LINK](#))

Three assets seem to predict an appropriate response to the crisis: knowing how to use health data and carry out mass screening; having a healthcare sector that is not essentially relying on hospitals; and the capacity to control personal protective equipments' stocks.

- Clinicians' Biosecurity News (Johns Hopkins). What US Hospitals Should Do Now to Prepare for a COVID-19 Pandemic ([LINK](#))

The purpose of this article is to offer to American hospital administrators and clinicians specific judgment on what hospitals should do to prepare for a COVID-19 pandemic. This is an update of a similar perspective related to pandemic influenza, published in 2006.¹ These recommendations derive from the authors' analysis of the consequences of a flu pandemic, review of many existing hospital plans, analysis of the federal government's recommendations, and meetings with a number of leaders in health care, public health, and emergency management. Recognizing that any such recommendations must be based on numerous untestable assumptions, any of which can be reasonably challenged, we propose specific actions and priorities for the purpose of making the discussion of hospital pandemic preparedness issues more operationally useful. This commentary pertains to hospitals, but long-term care facilities, outpatient clinics, medical offices, and other healthcare facilities must also urgently prepare.

From the Articles Sent by Central Health

Admissions Policy

- "The biggest mistake we made was to admit patients infected with COVID-19 into hospitals throughout the region. We should have immediately set up separate structures exclusively for people sick with coronavirus. I recommend the rest of the world do this, to not send COVID patients into health-care facilities that are still uninfected." - Carlo Borghetti, the vice-premier of Lombardy [02/04/2020 CBC Article](#)
- Avoid admitting COVID-19 patients to major hospitals. - [02/04/2020 CBC Article](#)
- "Wholesale reorganizations are needed within hospitals (for example, the creation of Covid-19 and non Covid-19 streams of care)" – [27/03/2020 HBR Article](#)
- Do not use LTC beds for COVID-19 patients. - Carlo Borghetti, the vice-premier of Lombardy [02/04/2020 CBC Article](#)

Contact Tracing

- "We should have extended testing to the relatives of positive people and the contacts of those relatives, at the very least." - Guido Marinoni, president of the Medical Association of Bergamo [02/04/2020 CBC Article](#)
- "The set of policies enacted in Veneto are thought to have considerably reduced the burden on hospitals and minimized the risk of Covid-19 spreading in medical facilities, a problem that has greatly impacted hospitals in Lombardy. The fact that different policies resulted in different outcomes across otherwise similar regions should have been recognized as a powerful learning opportunity from the start." – [27/03/2020 HBR Article](#)

Cognitive Biases

- Confirmation bias: Skepticism of science because everything looks normal, failing to act very early on – [27/03/2020 HBR Article](#)
- Partial solutions: Systemic solutions are needed: "An effective response to the virus needs to be orchestrated as a coherent system of actions taken simultaneously" and "what truly characterizes their effective responses is the multitude of actions that were taken at once. Testing is effective when it's combined with rigorously contact tracing, and tracing is effective as long as it is combined with an effective communication system that collects and disseminates information on the movements of potentially infected people, and so forth." – [27/03/2020 HBR Article](#)

Health Human Resources

- "Specific efforts to monitor and protect health care and other essential workers. They included medical professionals, those in contact with at-risk populations (e.g., caregivers in nursing homes), and workers exposed to the public (e.g., supermarket cashiers, pharmacists, and protective services staff)." – [27/03/2020 HBR Article](#)

Community Health Approach

- "In addition, a shift is urgently needed from patient-centered models of care to a community-system approach that offers pandemic solutions for the entire population (with a specific emphasis on home care)." – [27/03/2020 HBR Article](#)

Methodology

Newfoundland and Labrador Centre for Applied Health Research (NLCAHR) COVID-19 Quick Response reports are initiated by, and shared with, our partners in the provincial health system, including the four Regional Health Authorities, the Departments of Health and Community Services and Children, Seniors and Social Development, and public health officials.

NLCAHR staff work with topic submitters to clarify the research question. We then search for related systematic reviews, meta-analyses, other reviews, interim and other guidance statements, primary research, expert opinion and health and science reporting.

We use several search strategies, with a focus on the following databases:

- [CADTH](#)
- [Canadian Pharmacists Association](#)
- [Campbell Collaboration](#)
- [Cochrane Collaboration](#)
- [Centre for Disease Control](#) (CDC)
- [Centre for Evidence Based Medicine](#) (CEBM)
- [Evidence for Policy and Practice Information and Co-ordinating Centre](#)
- [European Centre for Disease Prevention and Control](#)
- [Health Canada](#)
- [Joanna Briggs Institute](#)
- [Johns Hopkins](#)
- [MedRxiv](#)
- [National Institutes of Health](#) (NIH)
- [National Institute of Allergy and Infectious Diseases](#) (NIAID)
- [National Library of Medicine](#)
- [Public Health Agency of Canada](#)
- [Trip Database](#)
- [World Health Organization](#)

This report was prepared by Pablo Navarro. For more information, contact pnavarro@mun.ca.