

COVID-19 Evidence Update

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Useful Links

Dynamed Plus - COVID-19 (Novel Coronavirus)

Latest updates

7 Mar 2020

95,333 confirmed cases of coronavirus disease 2019 (COVID-19) including 3,282 deaths in 86 countries worldwide reported by World Health Organization (WHO) as of March 5, 2020 (WHO Situation Report 2020 Mar 5 PDF)

[View in topic](#)

5 Mar 2020

history of smoking and older age associated with deterioration in hospitalized patients with COVID-19 pneumonia in China (Chin Med J (Engl) 2020 Feb 28 early online)

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5 Mar 2020

older age and preexisting cardiovascular disease associated with increased mortality in patients hospitalized with COVID-19 (Intensive Care Med 2020 Mar 3 early online)

[View in topic](#)

4 Mar 2020

on African continent, Egypt, Algeria, and South Africa estimated to have highest import risk of COVID-19 from China and moderate-to-high vulnerability to epidemic emergency (Lancet 2020 Feb 20 early online)

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4 Mar 2020

overall mortality rate 2.3% for earliest patients with COVID-19 in China, with higher mortality in patients with advanced age (Zhonghua Liu Xing Bing Xue Za Zhi 2020 Feb 17)

[View in topic](#)

24 Feb 2020

doubling time of 6.4 days estimated based on COVID-19 infections exported from Wuhan, China, as of January 25, 2020 (Lancet 2020 Jan 31 early online)

[View in topic](#)

14 Feb 2020

fever, fatigue, and cough most common clinical features in adults with 2019-nCoV pneumonia (JAMA 2020 Feb 7 early online)

[View in topic](#)

11 Feb 2020

2019-nCoV reported to have mean incubation period of 5.2 days with each case estimated to transmit infection to mean 2.2 other people in Wuhan, China (N Engl J Med 2020 Jan 29 early online)

[View in topic](#)

5 Feb 2020

FDA issues emergency use authorization for 2019-nCoV real-time PCR diagnostic panel at qualified laboratories designated by CDC (FDA News Release 2020 Feb 4)

[View in topic](#)

28 Jan 2020

fever and cough most common clinical features in patients with 2019-nCoV pneumonia (Lancet 2020 Jan 24 early online)

[View in topic](#)

Public Health England – information for the public

Number of cases

As of 9am on 9 March 2020, 24,960 people have been tested in the UK, of which 24,641 were confirmed negative and 319 were confirmed as positive. Three patients who tested positive for COVID-19 have died.

World Health Organisation – Rolling Updates

Interim guidance on critical preparedness, readiness and response actions

8 March 2020

Drawing on existing materials, this guidance describes the preparedness, readiness and response actions for four different transmission scenarios:

1. No cases
2. Sporadic cases: 1 or more cases, imported or locally detected
3. Clusters of cases in time, geographic location and/or common exposure
4. Community transmission: larger outbreaks of local transmission

Every country should urgently take all necessary measures to slow further spread and to protect health systems from becoming overwhelmed with patients seriously ill with

#COVID19 <https://t.co/4QQ7VcQPe4#coronavirus> pic.twitter.com/mO1gBlzVGz

— World Health Organization (WHO) (@WHO) **March 7, 2020**

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WHO publishes draft R&D blueprint draft for COVID-19

6 March 2020

"Research—implemented as policy and practice—can save lives and needs to be integrated into the response from the start."

The R&D roadmap for COVID-19 outlines research priorities in 9 key areas. These include the natural history of the virus, epidemiology, diagnostics, clinical management, ethical considerations and social sciences, as well as longer-term goals for therapeutics and vaccines.

The [@WHO @rd_blueprint](#) draft is on our website. Was developed by a global network of scientists and outlines knowledge gaps and key research priorities for [#COVID—19](#)
<https://t.co/rfni25Yg22>

— Soumya Swaminathan ([@doctorsoumya](#)) **March 7, 2020**

Novel Coronavirus Information Center – Elsevier

COVID-19 Podcasts and Webinars

Relevant [webinars and audio podcasts by subject matter experts](#) compiled by the Center for Infectious Disease Research and Policy (CIDRAP) at the University of Minnesota. Each focuses on a different area of interest. [View the list here](#)

Elsevier Clinical Solutions

We've selected content from ClinicalKey, Clinical Solutions Nursing, Interprofessional Practice and Patient Education collections to share what we know to date about the novel coronavirus.

Clinical Overviews on ClinicalKey

Clinical Overviews are easy-to-scan clinically focused medical topic summaries designed to match the clinician workflow. Elsevier's Point-of-Care Editorial team develops Clinical Overviews through a process that includes review and revision by a medical editor; peer reviews performed by subject matter experts; a production review to ensure consistency in style, grammar, and punctuation; and a final evaluation by the editor-in-chief.

- [Novel coronavirus \(2019-nCoV\) infection](#)

Clinical Skills for Nursing

Clinical Skills for Nursing provides the highest quality evidence for nursing practice procedures for nurses to care for patients. Our Isolation Precautions and Personal Protective Equipment checklists align with CDC and OSHA guidelines:

- [Skills checklist "Isolation Precautions and Personal Protective Equipment"](#)

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- [Extended text: “Isolation Precautions: Personal Protective Equipment”](#)
- [FAQ based the recommendations made by the CDC and WHO for nurses and patients](#)

Interprofessional Care Plans

These Interprofessional Care Plans provide an evidence-based and individualizable Interprofessional plan of care to manage fever and the possible development of pneumonia, which is consistent with the presentation of this virus. Using an interprofessional approach to patient care that aligns current evidence with the individual needs of the patient results in improved patient care outcomes.

- [Care Plan Guide: Fever — Adult](#)
- [Care Plan Guide: Fever — Pediatric](#)
- [Care Plan Guide: Pneumonia — Adult](#)
- [Care Plan Guide: Pneumonia — Pediatric](#)

Patient engagement resources

Patient engagement resources use plain language to support shared decision-making between patients and healthcare providers. The goal is to deliver the right message in the right way at the time the patient is most ready to learn. The following resources provide an overview of the novel coronavirus to help patients and their families understand their risk, identify signs and symptoms, and prevent it from spreading:

- [Patient Education document “Novel Coronavirus Infection”](#)
- [Video on hand hygiene](#)
- [Video on pneumonia](#)

Wiley Online Library Coronavirus & News

[Development and Clinical Application of A Rapid IgM-IgG Combined Antibody Test for SARS-CoV-2 Infection Diagnosis](#)

“We have developed a rapid and simple point-of-care lateral flow immunoassay which can detect IgM and IgG antibodies simultaneously against SARS-CoV-2 virus in human blood within 15 minutes which can detect patients at different infection stages. With this test kit, we carried out clinical studies to validate its clinical efficacy uses. The clinical detection sensitivity and specificity of this test were measured using blood samples collected from 397 PCR confirmed COVID-19 patients and 128 negative patients at 8 different clinical sites.”

[COVID-19: Lessons from SARS and MERS](#)

“The SARS and MERS epidemics have put us in a better position to respond to COVID-19. The transparency demonstrated in the rapid sharing of the SARS-CoV-2 genetic information has been critical in mediating a global approach to minimise the spread of disease.”

[Clinical characteristics of 50466 hospitalized patients with 2019-nCoV infection](#)

Fever and cough are the most common symptoms in patients with 2019-nCoV infection, and most of these patients have abnormal chest CT examination. Several people have muscle soreness or fatigue as well as ARDS. Diarrhea, hemoptysis, headache, sore throat, shock, and other symptoms only occur in a small number of patients. The case fatality rate of patients with 2019-nCoV infection is lower than that of Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS).

[Coronavirus disease \(COVID-19\) and neonate: What neonatologist need to know](#)

“The treatment strategy for children with Coronavirus disease (COVID-19) is based on adult experience. Thus far, no deaths have been reported in the paediatric age group. This review describes the current understanding of COVID-19 infection in newborns and children.”

[Novel coronavirus infection and pregnancy](#)

“Currently, there is no evidence that pregnant women are more susceptible to COVID-19 infection and that those with COVID-19 infection are more prone to developing severe pneumonia. There is also no evidence of vertical mother-to-baby transmission of COVID-19 infection when the maternal infection manifests in the third trimester.”

[Clinical and CT features in pediatric patients with COVID-19 infection: Different points from adults](#)

“Procalcitonin elevation and consolidation with surrounding halo signs were common in pediatric patients which were different from adults. It is suggested that underlying coinfection may be more common in pediatrics, and the consolidation with surrounding halo sign which is considered as a typical sign in pediatric patients.”

[Transmission dynamics of the COVID-19 outbreak and effectiveness of government interventions: A data-driven analysis](#)

“More rigorous government control policies were associated with slower increase of the infected population. Isolation and protective procedures would be less effective as more cases accrue, so the optimization of treatment plan and the development of specific drugs would be of more importance”

Cochrane Library

Respiratory support and mechanical ventilation

Patients with severe acute respiratory infection may require supplemental oxygen and mechanical ventilatory support.

[High-flow nasal cannulae for respiratory support in adult intensive care patients](#)

High-flow nasal cannulae (HFNC) deliver high flows of blended humidified air and oxygen via wide-bore nasal cannulae and may be useful in providing respiratory support for adult patients experiencing acute respiratory failure in the intensive care unit (ICU). This review assesses the safety and efficacy of HFNC versus comparator interventions in terms of treatment failure, mortality, adverse events, duration of respiratory support, hospital and ICU length of stay, respiratory effects, patient-reported outcomes, and costs of treatment. *Associated CCA:* [How does a high-flow nasal cannula compare with low-flow oxygen for adults in intensive care requiring respiratory support?](#)

[Airway physical examination tests for detection of difficult airway management in apparently normal adult patients](#)

Unsuccessful management of the airway is associated with serious morbidity and mortality. The four descriptors of the difficult airway are: difficult face mask ventilation, difficult laryngoscopy, difficult tracheal intubation, and failed intubation. Several bedside screening tests are used in clinical practice to identify those at high risk of a difficult airway, although their accuracy and benefit remains unclear. This review characterizes and compares the diagnostic accuracy of the Mallampati classification and other commonly used airway examination tests for assessing the physical status of the airway in adult patients with no apparent anatomical airway abnormalities.

Managing hypoxaemia

Acute or chronic hypoxaemia is a common reason for admission to intensive care and for provision of mechanical ventilation. Various refinements of mechanical ventilation or adjuncts are employed to improve patient outcomes.

[Higher versus lower fraction of inspired oxygen or targets of arterial oxygenation for adults admitted to the intensive care unit](#)

The mainstay treatment for hypoxaemia is oxygen therapy, which is given to most adults admitted to the intensive care unit. Oxygen administration has been liberal, which may result in hyperoxaemia. Some studies have indicated an association between hyperoxaemia and mortality, whilst other studies have not. Oxygen administration is widely recommended in international clinical practice guidelines, despite a lack of robust evidence. The potential benefit of supplemental oxygen must be weighed against the potentially harmful effects of hyperoxaemia, and this review assesses the benefits and harms of higher versus lower fraction of inspired oxygen or targets of arterial oxygenation for adults admitted to the intensive care unit. *Associated CCA:* [For adults admitted to the intensive care unit \(ICU\), how do different oxygenation levels compare?](#)

[Prone position for acute respiratory failure in adults](#)

Mortality from acute respiratory distress syndrome, one of the main contributors to the need for mechanical ventilation for hypoxaemia, remains approximately 40%. Ventilation in the prone position may improve lung mechanics and gas exchange and could improve outcomes. This review determines whether prone ventilation offers a mortality advantage when compared with traditional supine or semi recumbent ventilation in patients with severe acute respiratory failure requiring conventional invasive artificial ventilation. *Associated CCA:* [How does prone positioning compare with supine positioning for ventilation in adults with severe acute respiratory failure?](#)

[Extracorporeal membrane oxygenation for critically ill adults](#)

Extracorporeal membrane oxygenation (ECMO) is a form of life support that targets the heart and lungs, but its use is associated with several risks. ECMO for severe respiratory failure accesses and returns blood from the venous system and provides non-pulmonary gas exchange. Patient-related adverse events include haemorrhage or extremity ischaemia; circuit-related adverse effects may include pump failure, oxygenator failure and thrombus formation. This review aims to determine whether use of veno-venous or venous-arterial ECMO in adults is more effective in improving survival compared with conventional respiratory and cardiac support.

Healthcare Databases

[Audio Interview: What Clinicians Need to Know in Diagnosing and Treating Covid-19](#)

New England Journal of Medicine

Editorial: In this audio interview conducted on March 3, 2020, the editors discuss the current state of SARS-CoV-2 diagnostic testing in the United States and what clinicians can do for patients who test positive.

[A Chinese Case of COVID-19 Did Not Show Infectivity During the Incubation Period: Based on an Epidemiological Survey](#)

Journal of preventive medicine and public health

Accepted manuscript: "The author had the opportunity to examine the infectivity of COVID-19 during the incubation period by conducting an epidemiological survey on a confirmed patient who had visited Jeju Island during the incubation period. The epidemiological findings support the claim that the COVID-19 virus does not have infectivity during the incubation period"

[An updated estimation of the risk of transmission of the novel coronavirus \(2019-nCov\)](#)

Infectious Disease Modelling

Volume 5, 2020, Pages 248-255

"Our updated findings suggest that the best measure is persistent and strict self-isolation. The epidemics will continue to grow, and can peak soon with the peak time depending highly on the public health interventions practically implemented."

[Clinical characteristics and intrauterine vertical transmission potential of COVID-19 infection in nine pregnant women: a retrospective review of medical records](#)

The Lancet

"The clinical characteristics of COVID-19 pneumonia in pregnant women were similar to those reported for non-pregnant adult patients who developed COVID-19 pneumonia. Findings from this small group of cases suggest that there is currently no evidence for intrauterine infection caused by vertical transmission in women who develop COVID-19 pneumonia in late pregnancy."

[The 2019-new coronavirus epidemic: Evidence for virus evolution](#)

Journal of Medical Virology

"From these results, the new 2019-nCoV is distinct from SARS virus, probably transmitted from bats after mutation conferring ability to infect humans."

[COVID-19: a novel coronavirus and a novel challenge for critical care](#)

Intensive Care Medicine

"Preparedness activities must include examining surge capacity, reviewing infection control protocols, and evaluating laboratory diagnostics."

[Imaging changes in severe COVID-19 pneumonia](#)

Intensive Care Medicine

Case Study of a 75 year old male: "In dynamic imaging, these white lines are clearly visible, which provides evidence for us to judge severe COVID-19 pneumonia. In the three-dimensional imaging system, three-dimensional reconstruction of bilateral lung lesions provided a key clue for early identification of the disease."

[CT Imaging and Differential Diagnosis of COVID-19](#)

Thoracic and Cardiac Imaging

"Since the beginning of 2020, coronavirus disease 2019 (COVID-19) has spread throughout China. This study explains the findings from lung computed tomography images of some patients with COVID-19 treated in this medical institution and discusses the difference between COVID-19 and other lung diseases."

[Novel Coronavirus disease 2019 \(COVID-19\): The importance of recognising possible early ocular manifestation and using protective eyewear](#)

British Journal of Ophthalmology

"At this time of limited information, we will need to stay highly vigilant to recognise early manifestation of COVID-19 including consideration of viral conjunctivitis as a possible presentation. Healthcare professionals should take the full recommended measures including

strict hand hygiene and protecting the exposed mucous membranes, including wearing goggles or face masks.”

[Coronavirus infections and immune responses](#)

Journal of Medical Virology

“In this review, we provide an update on CoV infections and relevant diseases, particularly the host defense against CoV-induced inflammation of lung tissue, as well as the role of the innate immune system in the pathogenesis and clinical treatment.”

[Updated understanding of the outbreak of 2019 novel coronavirus \(2019-nCoV\) in Wuhan, China](#)

Journal of Medical Virology

“The 2019-nCoV infection is spreading and its incidence is increasing nationwide. The first deaths occurred mostly in elderly people, among whom the disease might progress faster. The public should still be cautious in dealing with the virus and pay more attention to protecting the elderly people from the virus.”

[Novel Coronavirus Pneumonia Outbreak in 2019: Computed Tomographic Findings in Two Cases.](#)

Korean Journal of Radiology

“Here, we report two confirmed cases of 2019-nCoV pneumonia with chest computed tomography findings of multiple regions of patchy consolidation and ground-glass opacities in both lungs. These findings were characteristically located along the bronchial bundle or subpleural lungs”

[Chest CT Findings in Coronavirus Disease-19 \(COVID-19\): Relationship to Duration of Infection](#)

Radiology

In press: “The hallmarks of COVID-19 infection on imaging were bilateral and peripheral ground-glass and consolidative pulmonary opacities. Notably, 20/36 (56%) of early patients had a normal CT. With a longer time after the onset of symptoms, CT findings were more frequent, including consolidation, bilateral and peripheral disease, greater total lung involvement, linear opacities, “crazy-paving” pattern”

[A well infant with coronavirus disease 2019 \(covid-19\) with high viral load](#)

Clinical infectious diseases

In Press: “A well 6-month-old infant with coronavirus disease 2019 (COVID-19) had persistently positive nasopharyngeal swabs to day 16 of admission. This case highlights the difficulties in establishing the true incidence of COVID-19 as asymptomatic individuals can excrete the virus. These patients may play important roles in human-to-human transmission in the community.”

[Time Course of Lung Changes On Chest CT During Recovery From 2019 Novel Coronavirus \(COVID-19\) Pneumonia](#)

Radiology

“In patients recovering from COVID-19 infection, four stages of evolution on chest CT were identified early stage (0-4 days); progressive stage (5-8 days); peak stage (10-13 days); and absorption stage (≥ 14 days).”

[Occupational risks for COVID-19](#)

Occupational Medicine

“All health personnel should be alert to the risk of COVID-19 in a wide variety of occupations, and not only HCWs. These occupational groups can be protected by good infection control practices. These at-risk groups should also be given adequate social and mental health support, which are needed but which are sometimes overlooked.”

[Q&A: The novel coronavirus outbreak causing COVID-19](#)

BMC Medicine

“In terms of therapeutics there is no known effective pharmaceutical agent. There are over 200 registered clinical trials registered in China alone. Putative agents include antivirals; Griffithsin, a spike protein inhibitor, nucleoside analogues eg. remdesivir, ribavirin and protease inhibitors such as lopinavir/ritonavir. Immunomodulatory and other host targeted agents include interferon, chloroquine and immunoglobulins. Corticosteroids will potentially have benefit for immune

mediated lung damage late in the course of disease [6]. Much of the theory stems from what we have learnt from limited trials in other corona viruses”

[Convalescent plasma as a potential therapy for COVID-19](#)

The Lancet

Comment: “One possible explanation for the efficacy of convalescent plasma therapy is that the antibodies from convalescent plasma might suppress viraemia.”

[Latest updates on COVID-19 from the European Centre for Disease Prevention and Control](#)

Eurosurveillance

Infographic, summary of guidelines from ECDPC.

[Responding to Covid-19 — A Once-in-a-Century Pandemic?](#)

New England Journal of Medicine

Perspective – Bill Gates

[Preparing for the Most Critically Ill Patients With COVID-19 : The Potential Role of Extracorporeal Membrane Oxygenation](#)

JAMA

“With the WHO recommendation for ECMO in place and the tropism of the COVID-19 virus for severe respiratory illness, the number of cases in which ECMO is used may increase over the course of this outbreak. However, there may come a tipping point. Should the case volume in any given region increase beyond the ability to provide routine care, any earlier increase in ECMO use may give way, with utilization later decreasing in proportion to the overwhelming demands on the system as a whole.”

[Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus \(2019-nCoV\) patients](#)

Canadian Journal of Anesthesiology

“Unfortunately, the positive pressure airflow environment of the operating room can create risk of viral spread when managing a patient infected with 2019-nCoV. Hospitals should consult with their biomedical engineers to see if any operating rooms can be converted to negative pressure environments with airflow changes.”

[Intensive care during the coronavirus epidemic](#)

Intensive Care Medicine

Experience from China: “As part of the national response to inadequate local intensive care resources, 31 deployed support medical teams including 598 intensivists and 2319 ICU nurses from other cities have been dispatched to ICUs of the designated hospitals since early January 2020. However, it is not uncommon for them to spend some time to get familiar with colleagues, environment, and local hospital administration before working as a team. Furthermore, different personal experience and lack of knowledge of this novel disease often result in different, and sometimes conflicting, treatment plans within the same team.”

[2019 novel coronavirus infection and gastrointestinal tract](#)

Journal of digestive diseases

Accepted article: “Although no specific antiviral treatment is recommended up to now, we speculate that probiotics could modulate the gut microbiota to favourably alter the gastrointestinal symptom and may also exert respiratory protection”

[Coronavirus Disease 2019: Coronaviruses and Blood Safety](#)

Transfusion Medicine Reviews

Experience from China: “Although coronaviruses cause primarily mild to severe respiratory infections, the potential for transmission by transfusion is worthy of consideration. In China, most of blood centers or blood banks have taken the following measures during the current outbreak: (1) taking body temperature before blood donation; (2) additional questions in the donor screening questionnaire regarding whether the donor or relatives have related symptoms, have traveled to areas with local transmission of SARS-CoV-2 (Wuhan or Hubei province) within 28 days, or are donors with high risk; (3) calling back all blood donors and asking the donors and their family about their current physical condition after donation; and (4) recalling untransfused blood products from infected donors”

[First imported case of 2019 novel coronavirus in Canada, presenting as mild pneumonia](#)
The Lancet
Case report

[Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement](#)

World Journal of Pediatrics

"The present consensus statement summarizes current strategies on diagnosis, treatment, and prevention of 2019-nCoV infection in children."

[Coronavirus epidemic: preparing for extracorporeal organ support in intensive care](#)

The Lancet

"However the 2019-nCoV epidemic evolves, ICU personnel must be prepared and trained to apply early and optimal interventions. Extracorporeal organ support therapies might represent an important part of the response and clinicians and other health-care professionals need to be familiar with this sophisticated therapy."

[Abnormal Coagulation parameters are associated with poor prognosis in patients with novel coronavirus pneumonia](#)

Journal of thrombosis and haemostasis

"The present study shows that abnormal coagulation results, especially markedly elevated D-dimer and FDP are common in deaths with NCP."

Useful Links

[BMJ – latest news and resources for COVID-19](#)

[European Centre for Disease Prevention and Control](#)

[Health protection Scotland](#)

[NHS UK](#)

[Patient.Info](#)

The Clinical Librarian team are here to help with evidence searches, current awareness and training with information seeking skills, critical appraisal and referencing. We can assist you remotely, at your place of work or in the library at the QuAD Centre.

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