

The following information resources have been selected by the National Health Library and Knowledge Service Evidence Virtual Team in response to a request to collate the best available evidence and guidance pertaining to the general management of COVID-19 infections. The resources are listed in our estimated order of relevance to practicing healthcare professionals confronted with this scenario in an Irish context. In respect of the evolving global situation and rapidly changing evidence base, the Evidence Team has provided link-outs to continually updating sources of information rather than prescriptive or static statements of evidence; it is therefore advised to use the hyperlinks in this document to ensure that the information you are disseminating to the public is the most current, valid and accurate.

- CONTROL: BASIC ADVICE
- RISK-ASSESSMENT OF SUSPECTED CASES
- HOME MANAGEMENT
- HOSPITAL MANAGEMENT
- TRANSMISSION DYNAMICS
- SELF-ISOLATION
- CONTACT TRACING

CONTROL: BASIC ADVICE

World Health Organization

<u>Infection prevention and control during health care when novel coronavirus</u> (nCoV) infection is suspected¹

The WHO recommends standard, contact, and droplet precautions, with eye or face protection. The addition of airborne precautions is warranted during aerosol-generating procedures, such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy.

Centres for Disease Control and Prevention

Interim Infection Prevention and Control Recommendations for Patients with Suspected or Confirmed Coronavirus Disease 2019 (COVID-19) in Healthcare Settings²

The CDC recommends standard, contact, and airborne precautions, with eye protection. If an airborne infection isolation room – ie a single patient negative pressure room – is not readily available, the patient should wear a mask and be placed in a private room with the door closed, and any personnel entering the room should wear the appropriate personal protection equipment.

¹ https://www.who.int/publications-detail/infection-prevention-and-control-during-health-care-when-novel-coronavirus-(ncov)-infection-is-suspected-20200125

² https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html.



BMJ Best Practice

COVID-19: Prevention³

Includes general prevention measures; medical masks; screening and quarantine; and secondary prevention measures.

RISK-ASSESSMENT OF SUSPECTED CASES

Patients with suspected or confirmed COVID-19 who require hospitalization should be cared for in a facility that can provide an airborne infection isolation room.

Centres for Disease Control and Prevention

Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease 2019 (COVID-19) Exposures⁴

European Centre for Disease Prevention and Control

Rapid risk assessment: Novel coronavirus disease 2019 (COVID-19) pandemic⁵

A strategic approach based on early and rigorous application of these measures will help reduce the burden and pressure on the healthcare system, and in particular on hospitals, and will allow more time for the testing of therapeutics and vaccine development.

HOME MANAGEMENT

UpToDate

Coronavirus Disease 2019 (COVID-19).6

... from section "Management: Home Care"

Home management is appropriate for patients with mild infection who can be adequately isolated in the outpatient setting. Management of such patients should focus on prevention of transmission to others, and monitoring for clinical deterioration, which should prompt hospitalization.

Outpatients with COVID-19 should stay at home and try to separate themselves from other people and animals in the household. They should wear a facemask when in the same room or vehicle as other people and when presenting to health care settings.

³ https://bestpractice.bmj.com/topics/en-gb/3000168/prevention.

⁴ https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html.

⁵ https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-novel-coronavirus-disease-2019-covid-19-pandemic-increased.

⁶ McIntosh, K et al. "Coronavirus disease 2019 (COVID-19)." In: Post, TW (ed.), *UpToDate*: Waltham, MA. https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19. [Accessed 06 March 2020].



World Health Organization

 Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts.⁷

A rapid advice note on the provision of safe care at home to patients with suspected COVID-19 presenting with mild symptoms and public health measures relating to the management of asymptomatic contacts.

HOSPITAL MANAGEMENT

UpToDate

Coronavirus Disease 2019 (COVID-19).8

... from section "Management: Hospital Care"

Hospital care: some patients with suspected or documented COVID-19 have severe disease that warrants hospital care. Management of such patients consists of ensuring appropriate infection control ... and supportive care. Patients with severe disease often need oxygenation support. High-flow oxygen and non-invasive positive pressure ventilation have been used, but the safety of these measures is uncertain, and they should be considered aerosol-generating procedures that warrant specific isolation precautions.

Some patients may develop acute respiratory distress syndrome and warrant intubation with mechanical ventilation; extracorporeal membrane oxygenation may be indicated in patients with refractory hypoxia.

The WHO and CDC recommend glucocorticoids not be used in patients with COVID-19 pneumonia unless there are other indications: eg exacerbation of chronic obstructive pulmonary disease. Glucocorticoids have been associated with an increased risk for mortality in patients with influenza and delayed viral clearance in patients with Middle East respiratory syndrome coronavirus infection. Although they were widely used in management of severe acute respiratory syndrome (SARS), there was no good evidence for benefit, and there was persuasive evidence of adverse short- and long-term harm.

World Health Organization

Coronavirus Disease Technical Guidance: Patient Management⁹

A rapid advice note on the provision of safe care at home to patients with suspected COVID-19 presenting with mild symptoms and public health measures relating to the management of asymptomatic contacts.

⁷ World Health Organization. Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts. Updated February 4, 2020. https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts. [Accessed 06 March 2020].

⁸ McIntosh, K et al. "Coronavirus disease 2019 (COVID-19)." In: Post, TW (ed.), *UpToDate*. Waltham, MA. https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19. [Accessed 06 March 2020].

⁹ https://www.who.int/emergencies/diseases/novel-coronavirus-2019/technical-guidance/patient-management.



Public Health England

COVID-19: Infection Prevention and Control Guidance¹⁰

Public Health England advise:

- patients with possible or confirmed COVID-19 should be managed in negative pressure single room if available. If this is not possible then a single room with en-suite facilities should be used. Room doors should be kept closed
- positive-pressure, single rooms must not be used
- the nature of the area adjoining the side room should be taken in to account to minimise the risk of inadvertent exposure (such as high footfall areas, confused patients, vulnerable and high risk patient groups)
- if on a critical care unit, the patient should be nursed in a negative-pressure single or side room where available, or, if not available, a neutral-pressure side room with the door closed
- if there is no en-suite toilet, a dedicated commode (which should be cleaned as per local cleaning schedule) should be used with arrangements in place for the safe removal of the bedpan to an appropriate disposal point
- provide dedicated equipment, such as blood pressure machine, peak flow meter and stethoscope, where possible
- avoid storing any extraneous equipment or soft furnishings in the patient's room
- display signage to control entry into room

TRANSMISSION DYNAMICS

World Health Organization

Responding to Community Spread of COVID-19: Interim Guidance¹¹
 Provides guidance for responding to community transmission of COVID-19.

European Centre for Disease Prevention and Control

Rapid risk assessment: Novel coronavirus disease 2019 (COVID-19) pandemic: Increased transmission in the EU/EEA and the UK¹²

¹⁰ Public Health England. COVID-19: Interim Guidance for Primary Care. https://www.gov.uk/government/publications/wn-cov-guidance-for-primary-care. [Accessed 06 March 2020].

 $[\]bar{1}^1$ https://www.who.int/docs/default-source/coronaviruse/20200307-responding-to-covid-19-communitytransmission-final.pdf.

https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-novel-coronavirus-disease-2019-covid-19-pandemic-increased.



Primary Literature

<u>Kucharski et al. Early dynamics of transmission and control of COVID-19:a</u> <u>mathematical modelling study</u>¹³

An outbreak of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has led to 95333 confirmed cases as of March 5, 2020. Understanding the early transmission dynamics of the infection and evaluating the effectiveness of control measures is crucial for assessing the potential for sustained transmission to occur in new areas. Combining a mathematical model of severe SARS-CoV-2 transmission with four datasets from within and outside Wuhan, we estimated how transmission in Wuhan varied between December, 2019, and February, 2020. We used these estimates to assess the potential for sustained human-to-human transmission to occur in locations outside Wuhan if cases were introduced. Based on our estimates of reproduction number, assuming SARS-like variation, we calculated that in locations with similar transmission potential to Wuhan in early January, once there are at least four independently introduced cases, there is a more than 50% chance the infection will establish within that population. Our results show that COVID-19 transmission probably declined in Wuhan during late January, 2020, coinciding with the introduction of travel control measures. As more cases arrive in international locations with similar transmission potential to Wuhan before these control measures, it is likely many chains of transmission will fail to establish initially, but might lead to new outbreaks eventually.

BMJ Best Practice

<u>COVID-19: Pathophysiology</u>.¹⁴

Comprehensive topic review including background information on epidemiology and aetiology. ... from section "Pathophysiology"

Preliminary reports suggest that the reproductive number is approximately 2.2. However, as the situation is still evolving, the r₀ may actually be higher or lower. The secondary attack rate for SARS-CoV-2 is estimated to be 0.45% for close contacts of US patients. While the pathophysiology of this condition is currently unknown, it is thought that the virus binds to the angiotensin-converting enzyme-2 (ACE2) receptor in humans, which suggests that it may have a similar pathogenesis to SARS. However, a unique structural feature of the spike glycoprotein receptor binding domain of SARS-CoV-2 confers potentially higher binding affinity for ACE2 on host cells compared to SARS-CoV. It is thought that the viral shedding pattern may be similar to that of patients with influenza. An asymptomatic patient was found to have a similar viral load compared with symptomatic patients.

¹³ https://www.thelancet.com/action/showPdf?pii=S1473-3099%2820%2930144-4.

¹⁴ BMJ Best Practice. "COVID-19." BMJ Best Practice. https://bestpractice.bmj.com/topics/en-gb/3000168/. [Accessed 06 March 2020].



SELF-ISOLATION

Health Protection Surveillance Centre

Provides short guidance documents for self- isolation at home:

- Patient Information Sheet for Home Isolation¹⁵
- <u>Information for People Who Live in the Same House as a Person¹⁶ Waiting for the</u> Result of a Test of COVID-19

BMJ Best Practice

COVID-19.¹⁷

It is recommended that in a patient with confirmed SARS-CoV-2 infection without pneumonia or comorbidities to consider home care and isolation first plus supportive care plus monitoring.

Consider home care in patients who have mild symptoms only (eg low-grade fever, cough, fatigue, rhinorrhoea, sore throat), with no warning signs (eg shortness of breath or difficulty breathing, haemoptysis, increased sputum production, gastrointestinal symptoms, mental status changes), and no underlying health conditions. Otherwise, hospital admission is required.

Infection prevention and control procedures are still important during home care. Recommend patients use a single room and a single bathroom, if possible; minimise contact with other household members; and wear a surgical mask if contact is necessary. At this time, there is no evidence that pets can spread COVID-19. However, patients in home isolation should be advised to limit their interaction, and avoid direct contact with pets and other animals, especially while they are symptomatic.

Public Health England

 Stay at Home: Guidance for People with Confirmed or Possible Coronavirus (COVID-19) Infection.¹⁸

Document published on 12 March 2020 providing guidance intended for people with symptoms of coronavirus (COVID-19), including those with a diagnosis of coronavirus (COVID-19) infection, who must remain at home until they are well.

z/respiratory/coronavirus/novelcoronavirus/guidance/selfisolationathome/Patient%20information%20sheet%20for%20home%20isolation_v1.0.pdf. [Accessed 13 March 2020].

z/respiratory/coronavirus/novelcoronavirus/guidance/selfisolationathome/Advice%20sheet%20for%20people%20who%20live%20in%20the%20same%20home%20as%20a%20person%20waiting%20for%20the%20result%20of%20a%20test%20for%20COVID_v1.0.pdf. [Accessed 13 March 2020].

17 https://bestpractice.bmj.com/topics/en-gb/3000168/. [Accessed 13 March 2020].

¹⁵ https://www.hpsc.ie/a-

¹⁶ https://www.hpsc.ie/a-

¹⁸ Public Health England. COVID-19: Stay at home: guidance for people with confirmed or possible coronavirus (COVID-19) infection. https://www.gov.uk/government/publications/covid-19-stay-at-home-guidance/stay-at-home-guidance-for-people-with-confirmed-or-possible-coronavirus-covid-19-infection. [Accessed 13 March 2020].



World Health Organization

Home Care for Patients with Suspected Novel Coronavirus (nCoV) Infection
 Presenting with Mild Symptoms and Management of Contacts¹⁹

A rapid advice note on the provision of safe care at home to patients with suspected COVID-19 presenting with mild symptoms and public health measures relating to the management of asymptomatic contacts.

UpToDate

Coronavirus Disease 2019 (COVID-19)²⁰

... from section "Management: Home Care"

"Home management may be appropriate for patients with mild infection who can be adequately isolated in the outpatient setting. Management of such patients should focus on prevention of transmission to others, and monitoring for clinical deterioration, which should prompt hospitalization."

"Outpatients with COVID-19 should stay at home and try to separate themselves from other people and animals in the household. They should wear a facemask when in the same room (or vehicle) as other people and when presenting to health care settings."

... from section "Prevention - Managing Asymptomatic Individuals with Potential Exposure"

"Individuals who have had travel to high-risk areas or are contacts of patients with suspected or confirmed COVID-19 should be monitored for development of consistent symptoms and signs (fever, cough, or dyspnea). Such clinical manifestations should prompt at least self-isolation with social distancing and clinician assessment for the need for medical evaluation. "In the United States, the level of risk (based on the travel location or the type of contact) informs whether monitoring and isolation are done by the individual or with the involvement of public health personnel. Categories of risk and the suggested monitoring and isolation strategies can be found on the CDC website."

...from section "Special Situations: COVID-19 Testing Not Readily Available"

In the United States, there is limited official guidance for this situation, and the approach may depend on the prevalence of COVID-19 in the area. If the clinician has sufficient concern for possible COVID-19 (eg, there is community transmission), it is reasonable to advise the patient to self-isolate at home (if hospitalization is not warranted) and alert the clinician about worsening symptoms. The optimal duration of home isolation in such cases is uncertain. Clinicians should contact their local public health department for guidance. In the state of Washington, the Department of Public Health suggests that individuals with compatible symptoms without exposure to a diagnosed case should continue home isolation until 72 hours after fever and symptoms have resolved.

¹⁹ World Health Organization. Home care for patients with suspected novel coronavirus (nCoV) infection presenting with mild symptoms and management of contacts. Updated February 4, 2020. https://www.who.int/publications-detail/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts. [Accessed 06 March 2020].

²⁰ McIntosh, K et al. "Coronavirus disease 2019 (COVID-19)." In: Post, TW (ed.), *UpToDate*. Waltham, MA. https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19. [Accessed 13 March 2020].



ClinicalKey

Coronavirus: Novel Coronavirus (COVID-19) Infection.²¹

... from section "Patients Managed at Home"

- The patient is encouraged to stay at home except to seek medical care, to self-isolate to a single area of the house (preferably with a separate bathroom), to practice good hand and cough hygiene, and to wear a face mask during any contact with household members.
- The patient should be advised that if a need for medical care develops, they should call their health care provider in advance so that proper isolation measures can be undertaken promptly on their arrival at the healthcare setting.

Household members and/or caregivers should:

- Wear face masks, gowns, and gloves when caring for patient; remove and discard all when leaving the room and do not reuse
- Dispose of these items in a container lined with a trash bag that can be removed and tied off or sealed before disposal in household trash.
- Wash hands for at least 20 seconds after all contact; an alcohol-based hand sanitizer is acceptable if soap and water are not available.
- NOT share personal items such as towels, dishes, or utensils before proper cleaning.
- Wash laundry and "high-touch" surfaces frequently.
- Wear disposable gloves to handle dirty laundry and use highest possible temperatures for washing and drying, based on washing instructions on the items.
- Clean surfaces with diluted bleach solution or an EPA-approved disinfectant.
- Restrict contact to minimum number of caregivers and, in particular, ensure that persons with underlying medical conditions are not exposed to the patient.

European Centre for Disease Prevention and Control

<u>Leaflet: Information on Self-Isolation and Quarantine after Exposure to</u>
 COVID-19²²

This leaflet provides basic information on novel coronavirus disease (COVID-19), how it spreads, symptoms, how to avoid catching or spreading the virus, and some specific advice and rules on self-isolation or quarantine when presenting mild symptoms of COVID-19 or after exposure to the SARS-CoV-2 virus.

 <u>Discharge Criteria for Confirmed COVID-19 Cases</u>—When is it safe to discharge COVID-19 cases from the hospital or end home isolation?

This document suggests criteria to be considered when deciding whether a confirmed COVID-19 case can be safely discharged from hospital or released from home isolation.

²¹ ClinicalKey. "Coronavirus: Novel Coronavirus (COVID-19) Infection." https://www.clinicalkey.com/#!/content/clinical_overview/67-s2.0-0e7112a3-e94d-4136-94ba-cfdf9242ea43. [Accessed 13 March 2020].

European Centre for Disease Prevention and Control. "Leaflet: information on self-isolation and quarantine after exposure to COVID-19." https://www.ecdc.europa.eu/en/publications-data/leaflet-information-self-isolation-and-quarantine-after-exposure-covid-19. [Accessed 13 March 2020].
 European Centre for Disease Prevention and Control. "Novel coronavirus (SARS-CoV-2): Discharge criteria for confirmed COVID-19 cases -When is it safe to discharge COVID-19 cases from the hospital or end home isolation?." https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-Discharge-criteria.pdf. [Accessed 13 March 2020].



Centres for Disease Control and Prevention

 Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV).²⁴

Interim guidance on the coordination of home care and isolation of people with confirmed or suspected 2019-nCoV infection.

Interim Guidance for Persons Who May Have 2019 Novel Coronavirus
 (2019-nCoV) to Prevent Spread in Homes and Residential Communities²⁵

Interim guidance that may help to prevent 2019-nCoV from spreading among people in homes and communities.

 Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease 2019 (COVID-19) Exposures: Geographic Risk and Contacts of Laboratory-confirmed Cases.²⁶

Recommendations in this document for actions by public health authorities apply primarily to US jurisdictions that are not experiencing sustained community transmission. CDC will provide separate guidance for US jurisdictions with sustained community transmission.

CONTACT TRACING

Lancet Global Health

<u>Feasibility of controlling COVID-19 outbreaks by isolation of cases and contacts</u>²⁷

In most scenarios, highly effective contact tracing and case isolation is enough to control a new outbreak of COVID-19 within 3 months. The probability of control decreases with long delays from symptom onset to isolation, fewer cases ascertained by contact tracing, and increasing transmission before symptoms. This model can be modified to reflect updated transmission characteristics and more specific definitions of outbreak control to assess the potential success of local response efforts.

Eurosurveillance

<u>First cases of coronavirus disease 2019 (COVID-19) in France: surveillance, investigations and control measures, January 2020</u>²⁸

As at 12 February, the contacts of the three first confirmed cases of COVID-19 in France have been followed up for the whole 14 days follow-up time after the cases isolation. No secondary transmission event has been detected so far despite active follow-up. Given the first estimations of the SARS-CoV-2 incubation period, the probability of secondary cases originating from those three cases is negligible.

²⁴ Centers for Disease Control and Prevention. Interim Guidance for Implementing Home Care of People Not Requiring Hospitalization for 2019 Novel Coronavirus (2019-nCoV). Updated January 31, 2020. https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-home-care.html. [Accessed 13 March 2020]

²⁵ Centers for Disease Control and Prevention. Interim guidance for persons who may have 2019 Novel Coronavirus (2019-nCoV) to prevent spread in homes and residential communities. https://www.cdc.gov/coronavirus/2019-ncov/hcp/guidance-prevent-spread.html#First_heading. [Accessed 12 March 2020].

²⁶ Centers for Disease Control and Prevention. Interim US Guidance for Risk Assessment and Public Health Management of Persons with Potential Coronavirus Disease 2019 (COVID-19) Exposures: Geographic Risk and Contacts of Laboratory-confirmed Cases. https://www.cdc.gov/coronavirus/2019-ncov/php/risk-assessment.html. [Accessed 13 March 2020].

²⁷ https://www.ncbi.nlm.nih.gov/pubmed/32119825.

²⁸ https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2020.25.6.2000094.



Health Protection Surveillance Centre

Novel Coronavirus 2019 (COVID-19). National interim guidelines for public health management of contacts of cases of COVID-19, including healthcare workers²⁹

This document summarises interim recommendations for contact management for COVID-19. It is the first national guidance issued for COVID-19. It is based on the current knowledge of the situation in China and experiences with SARS-CoV and MERS-CoV. It is guidance suitable for a high containment phase, when no or limited number of cases have been identified in Ireland. It may change if and when we move to a mitigation phase.

Contact tracing should be initiated IMMEDIATELY after a confirmed case of COVID-19, or a highly likely suspected case is identified in Ireland. Close contacts of a confirmed case should undergo active follow-up for 14 days after the last possible exposure to a confirmedCOVID-19case. Contact should be made with them on a daily basis to ask about relevant symptoms for 14 days after the last possible exposure to aconfirmedCOVID-19case. The lead team undertaking this can make an operational decision as how best to manage this such as use of telephone calls, text messages or emails on a daily basis.

Casual contacts should undergo passive follow-up for 14 days after the last possible exposure to a confirmedCOVID-19 case.

MedRXIV [Preprints]

<u>Keelingatal. The Efficacy of Contact Tracing for the Containment of the 2019</u> <u>Novel Coronavirus (COVID-19)</u>³⁰

For contact tracing to be an effective public health measure requires secondary cases to be discovered before they become infectious; hence the time from the primary case becoming infectious to the tracing of their contacts needs to be shorter than the incubation period. Longer time scales would allow tertiary cases to be infected and would snowball the tracing process. In addition, those contacts that are traced either need to be effectively screened for infection and quarantined or otherwise isolated so that they do not pose a risk to others. Therefore, while contact tracing has the potential to control COVID-19 (and other close-contact pathogens) the ultimate success relies on the speed and efficacy with which suspect contacts can be contained.

²⁹ https://www.hpsc.ie/a-



Produced by the members of the National Health Library and Knowledge Service Evidence Team. Current as at 06 March 2020. This evidence summary collates the best available evidence at the time of writing. Emerging literature or subsequent developments in respect of COVID-19 may require amendment to the information or sources listed in the document. Although all reasonable care has been taken in the compilation of content, the National Health Library and Knowledge Service Evidence Team makes no representations or warranties expressed or implied as to the accuracy or suitability of the information or sources listed in the document. This evidence summary is the property of the National Health Library and Knowledge Service and subsequent re-use or distribution in whole or in part should include acknowledgement of the service.

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