Scope of this document
This document provides guidance for planning the discharge and ending of isolation of COVID-19 patients.

Target audience
Public health authorities in European Union/European Economic Area (EU/EEA) countries and the United Kingdom (UK).

Background
Since the publication of the first update of ECDC’s advice on discharge criteria for and ending of isolation of COVID-19 cases [1], and as of October 2020, all EU/EEA countries and the UK continue to experience varying degrees of community transmission of SARS-CoV-2.

In the context of ongoing community transmission of SARS-CoV-2, increasing testing capacity across EU/EEA countries and the UK, and accumulating evidence on the viral shedding and infectiousness, there is a need to update the guidance for discharge and ending of isolation of people with COVID-19 [1].

The current document reflects the information available at the time of publication and may change if more information on the incubation period of SARS-CoV-2 infection and viral shedding becomes available.

Scientific evidence on SARS-CoV-2 shedding

Incubation period and quarantine of close contacts of cases
Based on the known incubation period of 1–14 days, a duration of 14 days is advised for the quarantine of persons who have had contact with confirmed COVID-19 cases [2-5]. A test at day 10 after the last exposure can be performed, and quarantine can be discontinued if the test is negative, although ending quarantine early has a residual risk. Such residual risk is not acceptable in vulnerable population settings, e.g. long-term care facilities (LTCFs), prisons or migrant and refugee reception and detention centres [6, 7].

Viral shedding
The exact duration of infectivity of COVID-19 patients is not yet known with certainty. Several studies have shown that most transmission happens around the onset of symptoms and that SARS-CoV-2 can initially be detected in upper respiratory samples around two days before the onset of symptoms. In studies of non-severe cases, the virus was successfully isolated for 10 days from the onset of symptoms [8-13]. In an analysis of 72 infector-infected pairs in South Korea, the estimated median transmission onset was 1.31 days (standard deviation (SD) 2.64 days) following the onset of symptoms, with a peak at 0.72 days before the onset of
isolation of COVID-19 cases, health authorities should take into account factors such as the existing capacity of the healthcare system, laboratory diagnostic resources and the current epidemiological situation. When deciding on criteria for discharge of COVID-19 patients from hospital and guidance for ending home discharge and ending isolation criteria

SARS-CoV-2 shedding in the various patient groups, and in the context of asymptomatic and pre-symptomatic infections.

The current update reflects the above findings. However, more research is needed on the level and duration of SARS-CoV-2 shedding in the various patient groups, and in the context of asymptomatic and pre-symptomatic infections.

In summary, and based on the still limited evidence indicating that infectious SARS-CoV-2 shedding persists up to 10 days after the onset of symptoms in mild/moderate cases and up to 20 days in severe cases, patients should continue self-isolation at home or in a safe place if they are discharged from hospital earlier than 10 days for mild/moderate cases and earlier than 20 days for severe cases.

Discharge and ending of isolation criteria

When deciding on criteria for discharge of COVID-19 patients from hospital and guidance for ending home isolation of COVID-19 cases, health authorities should take into account factors such as the existing capacity of the healthcare system, laboratory diagnostic resources and the current epidemiological situation.
COVID-19 patients may be discharged based on criteria that take into account the following: a) clinical resolution of symptoms; b) time elapsed since onset of symptoms; c) severity of disease; d) immune status; and e) evidence of viral RNA clearance from the upper respiratory tract (Table 1, Figure 1).

Severely ill patients who need to be discharged from hospital before fulfilling the criteria for discharge and without a negative SARS-CoV-2 RT-PCR test result should self-isolate at home or at a safe place for at least 14 and up to 20 days from the onset of symptoms based on an individual case risk assessment. The assessment needs to take into account the presence of immunosuppression and whether the patient will be in contact with people who are vulnerable to severe COVID-19 or are in settings in which there is a risk of large outbreaks (e.g. residents in LTCFs, prisons or migrant/refugee hosting facilities). Patients should seek medical advice if they develop symptoms again.

Asymptomatic people who have had a positive SARS-CoV-2 test should self-isolate for 10 days from the date the sample was taken.

Criteria for discharge and ending of isolation may be adapted for specific groups of patients. Two consecutive negative SARS-CoV-2 RT-PCR test results, ideally in a 24-hour period, are recommended for the discontinuation of isolation for immunocompromised cases. The second test is needed as confirmatory, to exclude the possibility of a false negative result. Similarly, two consecutive negative SARS-CoV-2 RT-PCR tests can be considered for the discontinuation of isolation of severely ill patients, especially if they will be transferred to other units within the hospital or discharged to a LTCF. All patients who are instructed to complete quarantine at home or another safe place should follow infection prevention and control guidance with personal hygiene precautions in order to protect household contacts [47].

**Contributing ECDC experts (in alphabetical order)**
Agoritsa Baka, Eeva Broberg, Orlando Cenciarelli, Csaba Ködmön, Angeliki Melidou, Diamantis Plachouras, Carl Suetens
### Table 1. Guidance on discharge and ending isolation of people with COVID-19

<table>
<thead>
<tr>
<th>Description</th>
<th>Guidance</th>
</tr>
</thead>
</table>
| **Mild/moderate COVID-19**<br>Probable or confirmed COVID-19 case that is neither immunocompromised nor a resident in a closed vulnerable population setting | The patient can be released from isolation when the following criteria are fulfilled:  
- Resolution of fever for at least three days and clinical improvement of symptoms other than fever  
  - 10 days after the onset of symptoms  
  - two consecutive negative SARS-CoV-2 RT-PCR tests in a 24-hour interval from respiratory specimens.  
Hospitalised patients who are discharged early based on clinical criteria per evaluation of the treating physician should be instructed to self-isolate at home or in a safe place until the above criteria are fulfilled. |
| **Severe COVID-19**<br>Probable or confirmed COVID-19 case that is neither immunocompromised nor a resident in a closed vulnerable population setting | The patient can be released from isolation when the following criteria are fulfilled:  
- Resolution of fever for at least three days and clinical improvement of symptoms other than fever  
  - minimum 14 and up to 20 days after the onset of symptoms  
  - two consecutive negative SARS-CoV-2 RT-PCR tests in a 24-hour interval from respiratory specimens.  
Hospitalised patients who are discharged early based on clinical criteria per evaluation of the treating physician should be instructed to self-isolate at home or in a safe place until the above criteria are fulfilled. |
| **Immunocompromised patient**<br>(e.g. transplant recipient, patient receiving prolonged corticosteroid treatment or another immune-modulating medicine or cancer chemotherapy, patient with HIV and a low CD4 count, patient with an immune deficiency) | The patient can be released from isolation when the following criteria are fulfilled:  
- Resolution of fever for at least three days and clinical improvement of symptoms other than fever  
  - 20 days after the onset of symptoms  
  - two consecutive negative SARS-CoV-2 RT-PCR tests in a 24-hour interval from respiratory specimens. |
| **Resident or staff of closed vulnerable population settings**<br>(long-term care facility, prison, migrant/refugee hosting facility) | The patient can be released from isolation and return to the vulnerable population setting when the following criteria are fulfilled:  
- Resolution of fever for at least three days and clinical improvement of symptoms other than fever  
  - 20 days after the onset of symptoms  
  - two consecutive negative SARS-CoV-2 RT-PCR tests in a 24-hour interval from respiratory specimens.  
Residents of closed vulnerable population settings who are discharged earlier based on clinical criteria per evaluation of the treating physician should be isolated at the facility in a single room until the above criteria are fulfilled. |
| **Asymptomatic COVID-19 case**<br>Person without symptoms who tested positive for SARS-CoV-2 but did not develop symptoms during follow-up | This patient can end isolation 10 days after the sample was taken. |
Figure 1. Algorithm for ending of isolation of people with COVID-19

1. **COVID-19 Case**
   - **Symptoms**
     - Yes → **Isolation**
     - No → End of the isolation

2. **Immunocompromised / Residents of closed vulnerable population settings**
   - **Isolation**
     - Resolution of fever (≥ 3M) and clinical improvement
       - Yes → End of the isolation
       - No → Resolution of fever (≥ 3M) and clinical improvement
         - Yes → End of the isolation
         - No → 2 consecutive negative PCR (24 hours apart)
           - Yes → End of the isolation
           - No → 30 days from the onset of symptoms
             - Yes → End of the isolation
             - No → 2 consecutive negative PCR (24 hours apart)
               - Yes → End of the isolation
               - No → 14 up to 201 days from the onset of symptoms
                 - Yes → End of the isolation
                 - No → Resolution of fever (≥ 3M) and clinical improvement
                   - Yes → End of the isolation
                   - No → 10 days from the sample was taken
                     - Yes → End of the isolation
                     - No → 5 consecutive negative PCR (24 hours apart)
                       - Yes → End of the isolation
                       - No → End of the isolation

3. **Severe**
   - **Isolation**
     - Resolution of fever (≥ 3M) and clinical improvement
       - Yes → End of the isolation
       - No → Resolution of fever (≥ 3M) and clinical improvement
         - Yes → End of the isolation
         - No → 2 consecutive negative PCR (24 hours apart)
           - Yes → End of the isolation
           - No → 14 up to 201 days from the onset of symptoms
             - Yes → End of the isolation
             - No → Resolution of fever (≥ 3M) and clinical improvement
               - Yes → End of the isolation
               - No → 10 days from the sample was taken
                 - Yes → End of the isolation
                 - No → 5 consecutive negative PCR (24 hours apart)
                   - Yes → End of the isolation
                   - No → End of the isolation

4. **Mild / Moderate**
   - **Isolation**
     - Resolution of fever (≥ 3M) and clinical improvement
       - Yes → End of the isolation
       - No → Resolution of fever (≥ 3M) and clinical improvement
         - Yes → End of the isolation
         - No → 2 consecutive negative PCR (24 hours apart)
           - Yes → End of the isolation
           - No → 14 up to 201 days from the onset of symptoms
             - Yes → End of the isolation
             - No → Resolution of fever (≥ 3M) and clinical improvement
               - Yes → End of the isolation
               - No → 10 days from the sample was taken
                 - Yes → End of the isolation
                 - No → 5 consecutive negative PCR (24 hours apart)
                   - Yes → End of the isolation
                   - No → End of the isolation

5. **Asymptomatic**
   - **Isolation**
     - Yes → End of the isolation
     - No → End of the isolation

6. **End of the isolation**
References


