

Recommendations addressed to the family responsible for the home care of a patient diagnosed with covid-19

Recomendaciones dirigidas a los familiares responsables del cuidado domiciliario de un paciente diagnosticado con Covid-19

Oscar O. Alcázar-Aguilar^{1,a,*}, Javier E. Castro-Yanahida^{1,a,#}, Martha C. Rodríguez-Vargas^{1,a,%}, Silvia L. Gil-Cueva^{2,a,&}, Enrique L. Cebrian-Centeno^{3,b}

Abstract

The crisis that is causing the disease called COVID-19 is severely affecting the health system of many countries, which require alternative measures to care this large number of patients who are not able to be treated at medical centers. This is the reason why home care is considered an alternative, for which it must be very rigorous with the care of the sick person, since if it is not done in a proper way, the other members of the family home are under risk of contamination, which would increase the saturation of the health system. Indications such as the stay of the patient in one place, the use of protective barriers when entering this area, or the constant sanitization of hands, among other measures, can lead to the success of this type of actions, favoring the prompt recovery of the patient and the preservation of the health of the other members at home.

Keywords: Covid-19, SARS-CoV-2, home management.

Resumen

La crisis que está ocasionando la enfermedad denominada COVID-19 está afectando severamente al sistema sanitario de diversos países, lo que obliga a tomar medidas alternativas para poder atender a una gran cantidad de pacientes que no pueden acceder a los centros de atención médica. Es por esta razón que se considera como una alternativa la atención domiciliar para lo cual se debe ser muy riguroso en el cuidado de la persona afectada con COVID 19, ya que, si esto no se realiza de forma adecuada, los demás integrantes del hogar corren el riesgo de contaminarse, lo que incrementaría la saturación de los establecimientos de salud. Indicaciones como la permanencia del enfermo en un solo lugar, el uso de barreras de protección cuando se ingresa a esta área o la constante práctica de la higiene de manos, entre otras medidas, puede encaminar al éxito de este tipo de atención favoreciendo la pronta recuperación del paciente y la preservación de la salud de los demás habitantes del hogar.

Palabras clave: Covid-19, SARS-CoV-2, manejo domiciliario.

¹Universidad Nacional Mayor de San Marcos, Lima, Perú

²Universidad Privada Norbert Wiener, Lima, Perú

³Universidad Inca Garcilaso de Vega, Lima, Perú

^aDental surgeon

^bBoarding school student

ORCID:

¹<https://orcid.org/0000-0002-6430-122X>

²<https://orcid.org/0000-0002-9399-5427>

³<https://orcid.org/0000-0002-7986-8085>

⁴<https://orcid.org/0000-0002-0332-6458>

Corresponding author:

Oscar Omar Alcázar Aguilar

Postal Address: Calle la Paz 124 Santa Patricia La Molina. Lima 12, Lima-Perú.

Email: omaralcazar35@gmail.com

Reception date: 12 de octubre de 2020

Approval date: 30 de diciembre de 2020

Quote as: Alcázar-Aguilar O, Castro-Yanahida J, Rodríguez-Vargas M, Gil-Cueva S, Cebrian-Centeno E. Recomendaciones dirigidas a los familiares responsables del cuidado domiciliario de un paciente diagnosticado con Covid-19. Rev. Peru. Investig. Salud. [Internet]; 5(1): 40-49. Available from: <http://revistas.unheval.edu.pe/index.php/repis/article/view/790>

2616-6097/©2020. Peruvian Journal of Health Research. This is an Open Access article under the CC-BY license (<https://creativecommons.org/licenses/by/4.0>). It allows copying and redistributing the material in any medium or format. You must give credit appropriately, provide a link to the license, and indicate if changes have been made.



Introducción

In recent decades, new diseases have appeared, each with a different degree of aggressiveness and expansion around the world. According to the World Health Organization (WHO), 31 cases of pneumonia were reported in December 2019 in the city of Wuhan, China, although journalistic information indicates that on November 17, 2019, the first case 32 was reported. Initially, 41 cases were reported with a balance of 6 patients in serious condition and one deceased up to that time. It was a respiratory pathogen of the coronavirus family, which was isolated for the first time on January 7, 2020. Evidence suggests that the outbreak of this new virus would be associated with exposures in a market in the city of Wuhan, China(1).

Officially, the virus responsible for the disease called COVID-19 is known as type 2 coronavirus, which causes severe acute respiratory syndrome (SARS-CoV-2) since it is related to the coronavirus responsible for the 2003 SARS outbreak, although it is about two different viruses (2,3).

On January 30, 2020, the director general of the WHO declared that the outbreak of this disease

constitutes a public health emergency of international importance (ESPII) and is on March 11, 2020, due to its alarming levels of spread and severity, which is declared a pandemic (4).

This new coronavirus has been shown to interact with respiratory epithelial cells through the viral protein "S" (spike protein), which is found on its surface, and the receptor for angiotensin-converting enzyme 2 (ACE2) found in human cells(5) which would demonstrate its predilection for affecting the respiratory tract.

The transmission capacity of this virus (SARS-CoV-2) has a basic reproductive number or R0 greater than 1 (1.4 - 2.5), which indicates the need to use measures to limit its extension(6). Transmission by droplets, which occurs when one is at a distance of less than one meter from a person with symptoms such as coughing, sneezing, etc., should not be confused with airborne transmission, because the latter is caused by "droplet nuclei" smaller than 5 µm, those that have the capacity to remain suspended in the air for a long time, which can cause the contagion of people who are more than one-meter away(7). Aerosol transmission can also occur, which can happen when drops that come from the respiratory system combine with the air to

form aerosols, this having a higher incidence in centers where medical procedures such as endotracheal intubation, cardiopulmonary resuscitation, are performed, etc. (8)

It is known that there is the possibility of acquiring the virus from asymptomatic patients, as well as from infected people who are in the incubation period (9). Additionally, indirect transmission, by contact with surfaces, is another possibility to contract this virus, since investigations have determined that SARS-CoV-2 can persist on inert surfaces such as plastic and stainless steel for up to 72 hours (10).

Signs and Symptoms of COVID 19

Regarding the signs and symptoms of COVID 19, in a report carried out by the WHO in China 11, the most frequent manifestations were described in 55,924 patients, which were fever (87.9%), dry cough (67.7%), asthenia (38.1%), expectoration (33.4%), dyspnea (18.6%), sore throat (13.9%), headache (13.6%), myalgia or arthralgia (14, 8%), chills (11.4%), nausea or vomiting (5%), nasal congestion (4.8%), diarrhea (3.7%), hemoptysis (0.9%) and conjunctival congestion (0, 8%) (11). In Europe, the European Surveillance System (TESSy), reported that the most recurrent were: fever (47%), dry or productive cough (25%), sore throat (16%), asthenia (6%) and pain. (5%) (12). Thus, we can deduce that fever and dry cough are the most frequent manifestations of this disease, so attention should be paid if they occur.

COVID 19 diagnosis

Regarding the diagnostic methods of COVID-19, and according to WHO (35), we have the following tests:

- Reverse transcriptase polymerase chain reaction (PCR), a method in which a microbiological diagnosis is made based on detecting the RNA of the virus from samples of the respiratory system. This is the test of choice for the detection of COVID-19 (41).
- Antibody detection test (IgG and IGM) and total antibodies (Ab), a rapid method that is based on the detection of human antibodies that are produced in response to infection.
- Antigen detection test in nasopharyngeal exudate or other upper / lower respiratory tract samples, which detects the presence of antigens in samples of the respiratory system of a person.

According to the American Academy of Otolaryngology, Food and Drug Agency (FDA) and Centers for Disease Control and Prevention (CDC) (14,15,16), agencies of the United States, diagnostic evaluation using computed tomography is also possible, since it has been shown that there are manifestations such as ground glass opacities that can be observed on tomographic images even before the onset of clinical symptoms.

Number of cases nationally and globally.

According to the Data Repository by the Center for Systems Science and Engineering (CSSE) of the Johns Hopkins University, as of December 20, 2020, the number of cases diagnosed in Peru was 1 million, while the number of deaths was 37,218. Worldwide, the number of people with confirmed cases was 78.7 million, while the number of deaths was 1.73 million (36). With figures as alarming as those mentioned above, it is not surprising that the health system of various countries is severely affected (20,21), which is why For which it is opting to use alternative ways of managing confirmed COVID-19 patients, such as care outside of hospitals, following strict measures to prevent the spread of this disease and preserve the health of healthy people.

The objective of this narrative review article is to compile recommendations for the management of patients diagnosed with COVID-19 at the household level.

Clinical classification of patients with COVID 19

The Ministry of Health of Peru (MINSA) published Ministerial Resolution 139-2020 MINSA 37 in which the clinical classification of COVID 19 was established, in order to determine the level of severity of suspected and confirmed cases, in order to determine the management of these patients. This classification is as follows:

Mild case: Any case with acute respiratory infection with at least 2 of the following symptoms:

- Cough
- general discomfort
- throat pain
- fever
- general discomfort

Moderate case: Any person with an acute respiratory infection and who has some of the following criteria:

- dyspnea
- respiratory rate greater than 22 breaths per minute
- Alteration of the level of consciousness
- high blood pressure or shock
- clinical or radiological signs of pneumonia
- lymphocyte count less than 1000 cells per μL .

Severe case: Any case with acute respiratory infection and that has some of the following criteria:

- respiratory rate greater than 22 breaths per minute or $\text{PaCO}_2 < 32 \text{ mmHg}$
- Alteration of the level of consciousness
- systolic blood pressure $< 100 \text{ mmHg}$ or $\text{MAP} < 65 \text{ mmHg}$
- $\text{PaO}_2 < 60 \text{ mmHg}$ or $\text{PAFi} \text{ PaCO}_2 < 300$
- clinical signs of muscle fatigue such as nasal flaring, use of accessory muscles, chest abdominal imbalance
- serum lactate $> 2 \text{ mosm/L}$

The WHO (44) indicates that the symptoms of the majority of patients are fever, cough, fatigue, anorexia, dyspnea and myalgia. In addition, there

are nonspecific symptoms such as sore throat, nasal congestion, headaches, diarrhea, nausea and vomiting, anosmia and ageusia before the onset of respiratory symptoms that occur at all levels of severity of the disease. The difference is that in mild cases there is no viral pneumonia or hypoxia, in moderate cases there are clinical signs of pneumonia with $\text{SpO}_2 \geq 90\%$, while in severe cases, new or worsening respiratory symptoms appear the week after the pneumonia of the existing ones and that at the radiological level bilateral opacities appear that are not fully explained by volume overload, lobar or pulmonary collapse, nodules and poor oxygenation and, in addition, acute respiratory distress syndrome.

In all cases, the WHO recommends the isolation of the sick patient, regardless of their level of severity, but, as of May 27, 2020, said institution updated the criteria to end the isolation. These criteria apply to all patients regardless of the level of severity of their disease and without requiring them to undergo other tests. These are criteria (43).

- For symptomatic patients: 10 days after the appearance of symptoms, plus at least another 3 days without symptoms (including without the presence of fever or respiratory symptoms)
- For asymptomatic cases: 10 days after testing positive for SARS-CoV-2

Patients who may opt for home care

MINSA indicates that mild cases do not require hospitalization, recommending home isolation and monitoring. In moderate and severe cases, the procedure to be followed is hospitalization (37).

Regarding this point, the WHO points out that, if the health centers cannot cope, patients with symptoms such as fever, fatigue, dry or productive cough, anorexia, general malaise, muscle pain, congestion may be cared for at home. runny or headache; that is, the patients that are part of the "mild" clinical classification of this disease. In addition, these patients should not suffer from chronic diseases, such as heart disease or lung disease, kidney failure or disorders associated with immunosuppression, because the possibility of complications is increased (25).

Additionally, the manual prepared by the Ministry of Health of Argentina recommends that patients with mild symptoms should not have risk factors such as being over 60 years of age, suffering from diabetes, immunosuppression or being a pregnant woman (26).

Symptomatic Treatment for Mild COVID-19 Cases

The WHO recommends that patients classified as mild receive symptomatic treatment, such as analgesics and antipyretics, since fever is very characteristic of this disease. This institution does not recommend treatment or prophylaxis with antibiotics in mild cases as resistance rates may

increase, with the consequent repercussions on the burden of disease and mortality in the population (23). With regard to hydroxychloroquine, it has been shown that it is safe to take it to treat autoimmune diseases and malaria, but if used without medical indication it can cause serious side effects (24).

Finally, with respect to dexamethasone, a drug with anti-inflammatory and immunosuppressive properties, it has been observed that in certain doses it can improve the health of some patients with COVID-19 connected to respirators, but it has been proven that it does not improve the health of patients with mild symptoms so it should be used by patients who need it most (24).

The pulse oximeter for home use

The report carried out by ESSALUD, which aimed to evaluate the effectiveness of the pulse oximeter as a tool for monitoring oxygen saturation at home in patients with COVID-19, initially classified as mild cases and with risk factors for complications, provides the following aspects to consider during the home care of this group of patients:

- Many cases of COVID-19 with severe hypoxemia, but without notable respiratory difficulties have been reported until the moment in which they go to health facilities with advanced stages of lung injury. For this reason, the use of the pulse oximeter to measure oxygen saturation levels is postulated, in order to detect early cases of "silent" hypoxemia, that is, without respiratory distress, which would lead to a search for care and treatment timely. Consequently, the use of this device could reduce the risk of complications, such as admissions to intensive care units, hospital stay, invasive mechanical ventilation and mortality (27).
- This instrument also has limitations during home use, such as the inaccuracy of certain brands not approved by the FDA or misinterpretations associated with pre-existing clinical conditions, which can be overcome with proper patient education in the use of the oximeter. pulse, the use of medical devices certified by the competent national authority and close monitoring of the patient by health personnel (27).
- Education by health personnel on the correct use of the pulse oximeter should emphasize aspects that favor reliable monitoring, such as removing nail polish, heating cold extremities, keeping the finger motionless during measurement and the correct recording of daily saturation values (27).
- As described in the technical document called Outpatient Management of People Affected by COVID-19 of the MINSA, the frequency of remote monitoring is every 24 hours and the face-to-face every 72 hours, or earlier if the clinical evolution requires it, during the 14 days after onset of symptoms (28).
- It is recommended that the monitoring of oxygen

saturation carried out at home be accompanied by close monitoring by medical personnel, establishing a reliable means of communication in order to report and seek hospital care if necessary (27).

- According to the Pan American Health Organization (PAHO) 45, in the case of initial remote triage of suspected patients or patients with a definitive diagnosis of COVID-19, these people must receive a pulse oximeter to use it for 14 days from the start of the symptoms, plus a diary in which they record their measurements three times a day. Likewise, it is indicated that the health professional should contact the patient or their caregiver to obtain the measurements and make the appropriate clinical decisions. It is indicated that saturation determines the level of severity and the behavior to be followed in each case. If a patient's oxygen saturation falls by $\geq 3\%$, even if it is still within the target range, immediate evaluation should be performed as it may herald an acute deterioration in the patient's condition.

Interpretation of oxygen saturation results with pulse oximetry in the confirmed or suspected outpatient of COVID-19

According to PAHO, these are the behaviors to be followed in the case of patients with home care according to their oxygen saturation levels detected by the pulse oximeter (45).

- $SpO_2 > 96\%$, with $RR < 20$ and without emergency signs: Prescribe acetaminophen in case of fever or pain, adequate hydration and nutrition, and identify emergency signs. Do not administer antibiotics.
- SpO_2 94-96%, with $RR < 20$ and without emergency signs: Assess the need for a closer evaluation or referral to a health center. The patient may also be asked to do a brief exercise, such as walking for one minute, to assess for desaturation.
- SpO_2 90-94%: Refer to the second level of care and consider supplemental oxygen treatment. The PAHO and WHO guidelines for the management of patients with COVID-19 indicate the administration of supplemental oxygen therapy to all patients with signs of emergency or without signs of emergency with $SpO_2 < 90\%$.
- Drop in $SpO_2 \geq 3\%$: Referral to a health center due to possible progressive clinical deterioration.

Protocol to follow in the case of home care of patients diagnosed with Covid-19

Entities from different countries indicate criteria and recommendations to take into account when choosing to manage a patient at home with this infection, whether they are indications related to the patient himself or his environment.

Next, a compilation of protocols of entities and ministries of health of countries such as Spain, Peru, Colombia, Paraguay, Mexico, among others,

is presented, grouped in the following aspects:

Indications for the isolated patient

- The patient must be installed in an individual and ventilated room, that is, with open windows. In addition, shared spaces such as kitchen and toilets should be minimized 23.
- Try not to leave the room, except for the use of the toilet or any emergency that causes the deterioration of health or compromises life. In both cases, a surgical mask should be used (25).
- The sick person should wash their hands before and after going to the toilet and use hydroalcoholic solutions in the room (29).
- Regarding the hygienic service, if possible, the patient must have one for personal use; If this is not possible, this place should be completely disinfected with household bleach at least twice a day if it is an independent service or three times a day if it is shared (46).
- Use individual hygiene utensils, these include soap and hydroalcoholic solution (26).
- Hand washing should be done with soap and water for a period of at least 40 seconds, after any physical activity and when they are visibly dirty 31. Disinfection of the hands should be done with gel or 70% alcohol (30).
- Regarding the use of the disposable surgical mask, the WHO recommends its use for as long as possible 32. It should cover the mouth and nose, and it should also be thrown away every time it is wet or dirty. It is advisable to change it daily (31). Regarding the use of the mask by children, the WHO suggests that in children under 5 years of age its use should not be mandatory because they cannot use it properly without minimal assistance (32).
- Drink liquids properly such as water, broth, etc. to avoid dehydration (28) and eat healthy (34).
- Ensure that the conversation with the other members of the family is through the telephone or other similar means for the exclusive use of the patient to avoid leaving the room (26).
- In the cases of lactating mothers with suspected COVID-19, it is recommended to maintain breastfeeding from birth, maintaining isolation measures such as hand hygiene and use of a surgical mask, or to express milk and that it is administered by a healthy caregiver (36).
- It is recommended that you have an agenda of numbers of the health services to which to contact in case of presenting worsening of the disease (26).
- Regarding the symptomatic treatment in mild cases of COVID-19, the WHO recommends that, in places with endemic febrile infections such as dengue or malaria, the usual diagnosis and treatment be carried out for these infections, which can coexist with COVID-19. In the case of a patient diagnosed as a mild case of COVID-19, the WHO recommends symptomatic treatment with analgesic antipyretics, adequate nutrition and rehydration (41). Regarding symptomatic treatment with NSAIDs, the existence of a

controversy about its use in patients with COVID-19. However, until more evidence is available, the use of paracetamol to control temperature is suggested. Likewise, the use of antivirals is not suggested for mild cases to be treated at home (42).

Indications for the caregiver

- When the patient has an intellectual or motor disability, such as children, disabled people, etc., it will be essential to follow the recommendations previously indicated for the isolated patient (29).
- This person must understand the instructions well in order to help the sick person in following the recommendations provided (37). If there is any doubt about the procedure, it is suggested to communicate with the health system in your country.
- Ideally, this care should be carried out by a single person, who is in good health and without chronic diseases that affect their immune response (25).
- When you are in the same room as the patient, you should use a mask that covers the mouth and nose, which should not be manipulated or touched during use. If it gets wet or receives secretions, it should be replaced with a new mask. When removing the mask to be discarded, do not touch the front part. Once eliminated, hand hygiene measures should be applied (25).
- You should avoid direct contact with body fluids, especially with oral and respiratory secretions and with feces. If maneuvers are carried out near the patient's airways or waste is handled, gloves and a mask should be used, trying to apply hand hygiene before and after putting on the protective barriers (25). Do not reuse masks or gloves (31).
- The hand washing to be carried out must be with soap and water for a period of 40 seconds before and after contact with the patient, consumption or handling of food and after touching commonly used surfaces. Disinfection should be done with gel or 70% alcohol (30).
- Avoid touching your face, mouth, nose and eyes (31).
- It is recommended to communicate with the patient through the telephone or intercom (29).
- Avoid standing in front of the sick person and as long as it is not required to maintain a distance of at least two meters. Furthermore, the environment must be ventilated especially during the presence of the caregiver (32).
- Dispose of materials used, such as masks and gloves, in a garbage can with a bag exclusively for this type of waste (37).
- The sick person should not receive visits during isolation except for controls carried out by health personnel (36).
- If it is necessary for the caregiver to leave the home where the patient is isolated, they must use clean clothes, as well as footwear that they have not used in the patient's environment, in turn they must leave all the clothes and shoes

that they have been using in a container with detergent for subsequent washing (30).

- This person should carry out self-monitoring of the appearance of symptoms such as fever, cough, sore throat, difficulty breathing, and in the presence of anyone, they should consult with the local health service (26).

Indications for other household members

- They should be informed in a clear and simple way about the situation and precautionary measures to consider to minimize anxiety (36).
- Whenever possible, family members should stay in a different room (36); otherwise, they must maintain a minimum distance of two meters from the patient (25), for example, when using common areas (32).
- Carry out hand hygiene after any type of contact with the patient or their environment, as well as before eating, after going to the bathroom and whenever dirt is observed. If this is not possible, a hydroalcoholic gel (25) can be used constantly. It is preferable to dry your hands with disposable paper towels (31).
- Contact with contaminated objects in the patient's environment such as toothbrush, dishes, cutlery, drinks, towels, sponge, bedding, etc. should be avoided (25). These should be set apart from those used by the rest of the family group (37).
- Avoid touching body fluids such as respiratory secretions, saliva and feces (29).
- The sick patient should not be visited during isolation (30).
- The home should be constantly cleaned with regular cleaning products such as detergent and bleach (26).
- To disinfect materials that have been in contact with the person in isolation, such as a table, electronic equipment, a bed, etc. 70% alcohol can be used (30).
- Ventilate the home, including the patient's room, by opening the windows (30).
- Family members should be constantly self-vigilant in the event of symptoms such as fever, cough, sore throat, altered taste or smell, diarrhea, and shortness of breath. In case of presenting it, you should contact the health services (36).

Precautions with the patient environment

- The patient's room must have a garbage can, preferably with a pedal-operated lid, and it must contain inside a plastic bag to deposit exclusively the waste generated by the patient (29) and must be washed and disinfected with bleach afterwards having discarded the waste bag (32).
- When cleaning and disinfecting surfaces, wear a mask, household or disposable gloves and an apron. If household gloves are reused, they should be washed with soap and water as well as disinfected with bleach after each use (38).
- If the mask becomes wet or stained with

secretions, it should be removed without touching the front to dispose of it, followed by hand hygiene and a new one (31).

- If the patient is in good condition, it is recommended that the room be cleaned himself (26).
- Regarding the use of bleach, it should be handled with gloves, and it is recommended to follow the manufacturer's instructions regarding the amount to use and the time the product must act to ensure its effectiveness. In addition, mixing it with any other product such as vinegar, detergent or hot water should be avoided, as it can lose its disinfectant power and / or result in a toxic substance. It is also recommended to avoid using it on metal surfaces as it can be corrosive; Likewise, it should be ensured that the place where it is used is ventilated as it produces gases that can irritate the mucous membranes. Regarding its storage, this must be done in its original container, well covered and away from heat to ensure its effectiveness (37).
- The clothes, sheets, towels, dishes and cutlery used by the patient must be washed with soap and water and then stored in a specific place (25). In addition to this, it is advisable to fill a container with four liters of water and a tablespoon (2ml) of bleach, then place the washed dishes and cutlery so that they rest for at least two minutes and ensure disinfection. There is no need to rinse after this process (37). The clothing, sheets and towels used by the patient should be stored in a container (avoid being made of plastic material because the virus has a longer life on this surface) closed until time to wash them and they should not be shaken, nor should they be in direct contact with the skin; For this, they must be handled using gloves, a mask and a plastic apron. The washing will be with soap and water or common detergent and then let it dry in the open (25).
- In the isolated patient's room, everyday surfaces such as the bedside table, bed frame and other furniture should be cleaned and disinfected daily. Initially it should be cleaned with soap or common detergent and, after the surface looks clean, it will be disinfected with bleach, following the manufacturer's instructions. After having finished cleaning and immediately after removing the protective barriers, perform the hand sanitization (25).
- The surfaces of the bathroom and toilet should be cleaned and disinfected at least once a day, if it is for the exclusive use of the patient and after each use if it is a shared bathroom. Cleaning should begin with soap or common detergent and once it is visibly clean it will be disinfected with bleach, following the manufacturer's instructions (25).

Waste management

- No object used by the patient should leave the home without being disinfected (36).
- It is also important to use protective barriers,

such as gloves or masks, when contacting the patient's waste, as well as to practice hand sanitization after they have been removed (36).

- The waste generated by the patient must be deposited in the bin (bag 1) located in his room (25).
- A second garbage bag (bag 2) will be placed at the exit of the patient's room, where the waste generated by the caregiver will be stored. Furthermore, this second bag will be inserted into bag 1 (36).
- Bag 2, already closed, will be placed in the bag for all household waste (bag 3), which must be properly sealed (36). It will then be stored in a safe place, out of the reach of children and pets, in a time of not less than 72 hours to be eliminated (30).
- For no reason should bag 3 be mixed or located together with the usable waste because this will limit the possibility that it can be manipulated (31).
- Avoid direct contact with the waste generated by the patient and the face, mouth, eyes should not be touched without first washing hands (36).

Duration of isolation

- Evidence suggests that in patients with a mild course of infection, the highest peak in viral load in nasal and oropharyngeal samples occurs within 5-6 days after the onset of symptoms. After day 10, this viral load is 100 - 10,000 times lower, which is interpreted as a progressively decreasing transmission capacity (36).
- The CDC recommends ending the isolation after ten days have passed since the onset of symptoms and 24 hours have passed without fever, and other symptoms of COVID-19 should be improving, for example, loss of taste and smell, which can persist for weeks or months after recovery, so it should not be a reason to delay the suspension of isolation since the prolongation can have negative effects on mental health (39).
- If the isolation was due to the positive result of a COVID-19 test but did not have symptoms, the isolation can be completed 10 days after the viral test was positive (39).
- The best indication in the vast majority of cases is to maintain isolation until discharge from the health institution or the treating physician (36).

When to go to a health center

- MINSA recommends going to the hospital if there is difficulty breathing, disorientation, confusion, fever (temperature greater than 38 ° C) for more than two days, chest pain, bluish discoloration around the lips, hands or feet, and if the oxygen saturation, which is measured with a pulse oximeter, is less than 95% (36). If the oximeter gives us results ≤ 93 or 92%, it may be indicative of a severe progression of the disease, therefore You should go immediately to the nearest emergency service. These saturation levels are considered taking the altitude at sea

level as a reference.

- The patient must be transported wearing a surgical mask (36).

Conclusions

Home care for patients diagnosed with COVID-19 is a reality that various countries are going through, and for this reason it is necessary to acquire the knowledge to help the speedy recovery of these people, as well as to preserve the health of the population. usually. If recommendations are followed such as monitoring oxygen saturation periodically, treating symptoms in order to improve quality of life, locating the patient in the most isolated way possible, practicing frequent hand hygiene, going to hospitals when necessary present criteria of aggravation of the disease and, finally, being in constant communication with health personnel, will favor the arrest of the sequence of infections that is so affecting the availability of health systems worldwide.

Contribution of the authors

All authors participated in the entire research process.

Interest conflict

We declare that we have no conflict of interest.

Financing sources

The study was self-financed.

References

1. WHO. Novel Coronavirus – China. Preparación para emergencias, respuesta. [Consultado el 15 de julio 2020]. Accesible en: <https://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/>
2. WHO. Los nombres de la enfermedad por coronavirus (COVID-19) y del virus que la causa. [Consultado el 15 de julio 2020]. Accesible en: [https://www.who.int/es/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-\(covid-2019\)-and-the-virus-that-causes-it](https://www.who.int/es/emergencies/diseases/novel-coronavirus-2019/technical-guidance/naming-the-coronavirus-disease-(covid-2019)-and-the-virus-that-causes-it)
3. OPS. 14 de febrero de 2020: Nuevo coronavirus (COVID-19) - Actualización Epidemiológica. [Consultado el 15 de julio 2020]. Accesible en: https://www.paho.org/hq/index.php?option=com_content&view=article&id=15725:14-february-2020-novel-coronavirus-ncov-epidemiological-update&Itemid=42346&lang=es
4. WHO. COVID-19: cronología de la actuación de la OMS. [Consultado el 15 de julio 2020]. Accesible en: <https://www.who.int/es/news-room/detail/27-04-2020-who-timeline---covid-19>
5. Xu X, Chen P, Wang J, Feng J, Zhou H, Li X, et al. Evolution of the novel coronavirus from the ongoing Wuhan outbreak and modeling of its spike protein for risk of human transmission. *Sci China Life Sci* [Internet]. 2020 [citado el 20 de julio de 2020]; 63(3):457–60. Disponible en: <https://link.springer.com/article/10.1007%2Fs11427-020-1637-5>
6. Trilla A. One world, one health: The novel coronavirus COVID-19 epidemic. *Med Clin (Barc)* [Internet]. 2020 [citado el 20 de julio de 2020]; 154(5):175–7. Disponible en: <https://doi.org/10.1016/j.medcli.2020.02.002>
7. WHO. Vías de transmisión del virus de la COVID-19: repercusiones para las recomendaciones relativas a las precauciones en materia de prevención y control de las infecciones. [Consultado el 25 de julio 2020]. Accesible en: <https://www.who.int/es/news-room/commentaries/detail/modes-of-transmission-of-virus-causing-covid-19-implications-for-ipc-precaution-recommendations>
8. Tang S, Mao Y, Jones RM, Tan Q, Ji JS, Li N, et al. Aerosol transmission of SARS-CoV-2? Evidence, prevention and control. *Environ Int* [Internet]. 2020 [citado el 11 de diciembre de 2020]; 144:1–10. Disponible en: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7413047/>
9. Rothe C, Schunk M, Sothmann P, Bretzel G, Froeschl G, Wallrauch C, et al. Transmission of 2019-NCoV infection from an asymptomatic contact in Germany. *N Engl J Med* [Internet]. 2020 [citado el 30 de julio de 2020]; 382(10):970–1. Disponible en: <https://www.nejm.org/doi/full/10.1056/NEJMc2001468>
10. van Doremalen N, Bushmaker T, Morris D. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. *N Engl J Med* [Internet]. 2020 [citado el 1 de agosto de 2020]; 382(16):1546–67. Disponible en: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7121658/>
11. WHO. Report of the WHO-China Joint Mission on Coronavirus Disease 2019 (COVID-19). [Consultado el 1 de agosto 2020]. Accesible en: <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf>
12. ECDC. Coronavirus disease 2019 (COVID-19)

- pandemic: increased transmission in the EU/EEA and the UK – seventh update. [Consultado el 1 de agosto 2020]. Accesible en: <https://www.ecdc.europa.eu/sites/default/files/documents/RRA-seventh-update-Outbreak-of-coronavirus-disease-COVID-19.pdf>
13. BMJ. Covid-19: identifying and isolating asymptomatic people helped eliminate virus in Italian village. [Consultado el 13 de diciembre 2020]. Accesible en: <https://www.bmj.com/content/368/bmj.m1165>
 14. American Academy of Otolaryngology – Head and Neck Surgery. Anosmia, Hyposmia, and Dysgeusia Symptoms of Coronavirus Disease. [Consultado el 13 de diciembre 2020]. Accesible en: <https://www.entnet.org/content/aao-hns-anosmia-hyposmia-and-dysgeusia-symptoms-coronavirus-disease>
 15. CDC. Síntomas de la enfermedad del coronavirus. [Consultado el 13 de diciembre 2020]. Accesible en: <https://espanol.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>
 16. FDA. Conceptos básicos para las pruebas para la enfermedad del coronavirus en 2019. [Consultado el 13 de diciembre 2020]. Accesible en: <https://www.fda.gov/media/138239/download#:~:text=Actualmente%20existen%20dos%20tipos%20de,detectan%20prote%C3%ADnas%20espec%C3%ADficas%20del%20virus.>
 17. Shi H, Han X, Jiang N, Cao Y, Alwalid O, Gu J, et al. Radiological findings from 81 patients with COVID-19 pneumonia in Wuhan, China: a descriptive study. *Lancet Infect Dis* [Internet]. 2020 [citado el 5 de agosto de 2020]; 20(4):425–34. Disponible en: [http://dx.doi.org/10.1016/S1473-3099\(20\)30086-4](http://dx.doi.org/10.1016/S1473-3099(20)30086-4)
 18. Sánchez-Oro R, Torres Nuez J, Martínez-Sanz G. Radiological findings for diagnosis of SARS-CoV-2 pneumonia (COVID-19). *Med Clin (Barc)* [Internet]. 2020 [citado el 6 de agosto de 2020]; 155(1):36–40. Disponible en: <https://doi.org/10.1016/j.medcli.2020.03.004>
 19. Ye Z, Zhang Y, Wang Y, Huang Z, Song B. Chest CT manifestations of new coronavirus disease 2019 (COVID-19): a pictorial review. *Eur Radiol* [Internet]. 2020 [citado el 7 de agosto de 2020]; 30(8):4381–9. Disponible en: <https://doi.org/10.1007/s00330-020-06801-0>
 20. Asianews.it. Hospitales de Wuhan al borde del colapso. El silencio de Xi Jinping. [Consultado el 10 de agosto 2020]. Accesible en: [http://www.asianews.it/news-en/Wuhan-hospitals-on-brink-of-collapse.-Xi-Jinping's-silence-\(Video\)-49109.html](http://www.asianews.it/news-en/Wuhan-hospitals-on-brink-of-collapse.-Xi-Jinping's-silence-(Video)-49109.html)
 21. Gestión. Ciro Maguiña sobre el sistema de salud: “Hemos llegado a un límite, el colapso está ad portas”. [Consultado el 12 de agosto 2020]. Accesible en: <https://gestion.pe/peru/coronavirus-peru-ciro-maguina-sobre-el-sistema-de-salud-hemos-llegado-a-un-limite-el-colapso-esta-ad-portas-covid-19-nndc-noticia/?ref=gesr>
 22. Liang T, Cai H, Chen Y, Chen Z, Fang Q, Han W, et al. Handbook of COVID-19 Prevention and Treatment. [Consultado el 12 de agosto 2020]. Accesible en: https://covid-19.conacyt.mx/jspui/bitstream/1000/25/1/Handbook_of_COVID_19_Prevention_en_Mobile.pdf
 23. OMS. Manejo clínico de la COVID-19. [Consultado el 16 de diciembre 2020]. Accesible en: <https://apps.who.int/iris/bitstream/handle/10665/332638/WHO-2019-nCoV-clinical-2020.5-spa.pdf>
 24. OMS. Consejos para la población acerca de los rumores sobre el nuevo coronavirus (2019-nCoV). [Consultado el 16 de diciembre 2020]. Accesible en: https://www.who.int/es/emergencies/diseases/novel-coronavirus-2019/advice-for-public/myth-busters?gclid=CjwKCAIA_eb-BRB2EiwAGBnXXiPI17ulG6AjGOhwvbJcwPGWrdagEWQkFHNjrGnu_i-2F32--oJL3hoChggQAvD_BwE#medicines
 25. OMS. Atención en el domicilio a pacientes con COVID-19 que presentan síntomas leves, y gestión de sus contactos. [Consultado el 12 de agosto 2020]. Accesible en: <https://apps.who.int/iris/bitstream/handle/10665/331528/WHO-nCov-IPC-HomeCare-2020.3-spa.pdf?sequence=1&isAllowed=y>
 26. MINSA Argentina. Atención domiciliaria de casos sospechosos y confirmados de COVID-19. [Consultado el 15 de agosto 2020]. Accesible en: <http://www.msal.gob.ar/images/stories/bes/graficos/0000001942cnt-covid-19-recomendaciones-para-atencion-domiciliaria-de-casos-sospechosos-y-confirmados.pdf>
 27. ESSALUD. Pulsoxímetro para uso domiciliario en pacientes con COVID-19 catalogados como casos leves y con factores de riesgo. [Consultado el 16 de diciembre 2020]. Accesible en: http://www.essalud.gob.pe/ietsi/pdfs/covid_19/RB33_PULSEOXIMETER_14jul2020.pdf
 28. Ministerio de Salud del Perú. Documento técnico: Manejo ambulatorio de personas

- afectadas por COVID-19. [Consultado el 16 de diciembre 2020]. Accesible en: <https://www.gob.pe/institucion/minsa/informes-publicaciones/674121-documento-tecnico-manejo-ambulatorio-de-personas-afectadas-por-covid-19>
29. Ministerio de sanidad España. Manejo en atención primaria y domiciliaria del COVID-19. [Consultado el 16 de agosto 2020]. Accesible en: https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/documentos/Manejo_primaria.pdf
 30. Gobierno de Ecuador. Protocolo para el aislamiento preventivo obligatorio en personas con sospecha y positivo a la COVID-19. [Consultado el 17 de agosto 2020]. Accesible en: <https://www.salud.gob.ec/wp-content/uploads/2020/04/Protocolo-para-el-aislamiento-preventivo-obligatorio-en-personas-con-sospecha-y-positivo-a-COVID-19-v-2.1.pdf>
 31. Minsalud Colombia. LINEAMIENTOS PARA EL MANEJO DEL AISLAMIENTO DOMICILIARIO, FRENTE A LA INTRODUCCIÓN DEL SARS-CoV-2 (COVID-19) A COLOMBIA. [Consultado el 18 de agosto 2020]. Accesible en: https://www.minsalud.gov.co/Ministerio/Institucional/Procesos_y_procedimientos/GIPS06.pdf
 32. MINSA Perú. Manejo ambulatorio de personas afectadas por COVID-19 en el Perú. [Consultado el 18 de agosto 2020]. Accesible en: https://cdn.www.gob.pe/uploads/document/file/829755/RM_375-2020-MINSA.PDF
 33. Sociedad Española de Medicina de Urgencias y Emergencias. Manejo del paciente con COVID-19. [Consultado el 19 de agosto 2020]. Accesible en: <https://www.semes.org/wp-content/uploads/2020/05/Píldora-3-Manejo-del-paciente-con-COVID-19.pdf>
 34. MINSA Chile. Indicaciones para personas en aislamiento domiciliario por COVID-19. [Consultado el 19 de agosto 2020]. Accesible en: https://www.minsal.cl/wp-content/uploads/2020/03/2020.03.13_INDICACIONES-EN-CUARENTENA.pdf
 35. OMS. Preguntas y respuestas sobre los niños y las mascarillas en el contexto de la COVID-19. [Consultado el 15 de diciembre 2020]. Accesible en: <https://www.who.int/es/news-room/q-a-detail/q-a-children-and-masks-related-to-covid-19>
 36. Consejería de Salud Asturias. Procedimiento de atención y seguimiento domiciliario de casos de COVID-19 en Asturias. [Consultado el 19 de agosto 2020]. Accesible en: <https://www.astursalud.es/documents/31867/1002704/Procedimiento+de+atención+y+seguimiento+domiciliario+de+casos+confirmado+COVID19.pdf/57a088d2-e672-39fd-0537-5185d1b752ff>
 37. Ministerio de Salud Pública y bienestar social Paraguay. PLAN DE RESPUESTA NACIONAL AL EVENTUAL INGRESO DEL CORONAVIRUS (COVID-19) v1.0. [Consultado el 20 de agosto 2020]. Accesible en: <https://www.mspbs.gov.py/dependencias/porta/adjunto/78806d-PlandeRespuestaNacionalaleventualingresodelCoronavirusV1.0.pdf>
 38. Gobierno de México. Atención domiciliaria de pacientes sospechosos o confirmados de COVID-19. [Consultado el 20 de agosto 2020]. Accesible en: http://www.calidad.salud.gob.mx/site/docs/atencion_domiciliaria_pacientes_covid19.pdf
 39. CDC. Cuando se puede estar cerca de las personas. [Consultado el 16 de diciembre 2020]. Accesible en: <https://espanol.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/end-home-isolation.html>
 40. Organización Mundial de la Salud. Consejos para la población sobre el nuevo coronavirus (2019-nCoV): cuándo y cómo usar mascarilla. Disponible en: <https://www.who.int/es/emergencies/diseases/novel-coronavirus-2019/advice-for-public/when-and-how-to-use-masks>
 41. Centros para el Control y la Prevención de Enfermedades. Pruebas de detección del COVID-19: visión general. Disponible en <https://espanol.cdc.gov/coronavirus/2019-ncov/symptoms-testing/testing.html>
 42. COVID-19: tratamiento ambulatorio ES (1.1) Clinical Overview Sinopsis. Disponible en: https://www.google.com/search?q=signo+de+micras&rlz=1C1CHBD_esPE914PE914&oq=signo+de+micras&aqs=chrome..69i57.2662j0j15&sourceid=chrome&ie=UTF-8
 43. OMS. Criterios para poner fin aislamiento de los pacientes de COVID-19. Disponible en: https://apps.who.int/iris/bitstream/handle/10665/332997/WHO-2019-nCoV-Sci_Brief-Discharge-From_Isolation-2020.1-spa.pdf
 44. OMS. Manejo clínico de la COVID-19. Orientaciones provisionales 20 de mayo 2020. Disponible en: <https://apps.who.int/iris/bitstream/handle/10665/332638/WHO-2019-nCoV-clinical-2020.5-spa.pdf>

45. OPS. Aspectos técnicos y regulatorios sobre el uso de oxímetros de pulso en el monitoreo de pacientes con COVID-19. Disponible en: https://iris.paho.org/bitstream/handle/10665.2/52551/OPSHSSMTCOVID-19200029_spa.pdf?sequence=1&isAllowed=y

46. OMS. Limpieza y desinfección de las superficies del entorno inmediato en el marco de la COVID-19. Orientaciones al 15 de mayo de 2020. Disponible en <https://apps.who.int/iris/bitstream/handle/10665/332168/WHO-2019-nCoV-Disinfection-2020.1-spa.pdf>