PRESBYTERIAN CHURCH OF GHANA
GUIDELINES TO CONGREGATIONS ON THE PARTIAL LIFTING OF THE BAN ON CHURCH ACTIVITIES

To all Presbyteries

Introduction
On Sunday, 31st May 2020, the President of the Republic of Ghana addressed the nation on the measures taken by the Government to combat the spread of the Coronavirus Disease (COVID-19) in the country. In his address, the President announced the ease of some restrictions or measures. These included the reopening of churches under strict directives.

In light of this, the General Assembly Council (GAC) Standing Committee, acting on behalf of the GAC, has developed these guidelines to aid Congregations during this time of the pandemic, in order to ensure that Churches create a safe environment for members to worship God without contracting or spreading the virus (COVID-19).

General Guidelines
1. This is really a sensitive time and we must all be cautious of our actions and inactions.
2. Discipline is the name of the engagement. Agents and Presbyters will be held responsible for any breach.
3. There should be pretesting for all church programmes.
4. Members permitted at each service should be a maximum of 25% of the total worship auditorium capacity up to a 100 members only.
5. Chapels should be disinfected/fumigated before services resume.
6. Resumption of Church services should proceed as follows:
   
   District Head Stations 14th June, 2020
   All Pastoral Stations 21st June, 2020
   Other Congregations and Preaching Points 28th June, 2020

   Presbyteries should assist Districts and Congregations that are unable to meet the conditions for the resumption of services on the given dates.

7. All Courts of the Church should form a COVID-19 Task Force out of the existing Health and Environment Committees to ensure that the directives and guidelines on the disease are strictly adhered to.
8. Agents and members with underlying medical conditions or who are 65 years and above should stay away from churches during this period.
10. Multiple services are encouraged. Congregations may consider holding services along the Generational Groups except for children and members with underlying medical conditions.
11. Congregations are to ensure that they observe at least one hour break after each service to make room for sanitization.
12. The Ministry of Health protocols must strictly be adhered to.
13. Religious Affairs must be adhered to. (Appendix 3)
14. Provision of hand washing facilities with running water and soap and or Food and Drugs Authority (FDA) approved alcohol-based hand sanitizers.
15. Provision of Thermometer Guns, Veronica buckets with clean water, liquid soaps, disposable towels or tissue paper and sanitizers. (re-usable towels are not permitted)
16. Designate a holding room or area where a person who becomes sick at the church premises can be isolated from others while making arrangements for evacuation.
17. Display approved health promotion materials on COVID-19 at visible points to remind congregants to keep social distancing protocols, among others.
18. All microphones must be sanitized at every change-over. Preferably only one person should handle one microphone.
19. Microphones must be fixed as much as possible. Limit the number of people who use the microphone.
20. Social distancing of at least one meter apart must strictly be enforced.
21. At all times putting on of face masks must be enforced. Members without face masks /nose masks will be barred from entering the Church.
22. There should be no congregational singing except ministration by a soloist accompanied by an instrumentalist. The use of wind instruments (Sax, trumpet etc.) is strictly prohibited. The playing of pre-recorded hymns/songs are encouraged.
23. There should be no crowd dancing or waving of handkerchiefs during services.
24. All church services must last for **ONE hour only**.
25. Hymn Books, Bibles, tablets and other Books should not be shared.
26. There should be mandatory re-orientation for ushers, greeters and security personnel.
27. In addition to the services in the Church buildings, Congregations using media (e.g. Facebook) to reach out to members should continue with the practice.

28. No Church Service should be held in Air-conditioned auditoriums.

29. Only the Preacher is expected to stand by the lectern.

30. Recession after Church Service or retiring from a meeting should be properly managed and at all times social distancing should be maintained.

31. Breach of common sense is a breach of the law.

2. Guidelines for Adult Services
   - Depending on the size of the Congregation, there may be the need to organize multiple services.
   - Multiple Communion Services may be organized on Sunday afternoons.
   - Church Services should not be limited to Sundays only but may be organized during the weekdays.
   - Congregational Bible Study may be held but not in groups.
   - No congregational Deliverance, Revival, All Night, Half Night service or Crusade is permitted under any circumstances during this period.
   - Church Choirs and other singing Groups should not robe during church services. There should be no procession or recession or presentation of Colours by the Brigade.
   - The Preacher should be least two meters away from the nearest congregant.
   - Strictly, there should be no handshaking at any time.
   - Offerings and Tithes should be taken during the service. The Congregational leadership should ensure safe distancing. Alternatively, offertory pouches with about one meter long handles could be used. Members should be encouraged to subscribe to electronic payments for Offerings and Tithes.
   - Counting of offertories should be done by a few designated members who should wear gloves whilst handing the offertories. Social distancing must be maintained.
   - There should be no whole congregational loud prayers.
   - All worshippers should fill a very simple Attendance Form at every service. Congregations should explore the use of electronic means to make the collection of data much easier. The attendance records must be kept properly. The forms should be filled by members of the Congregational Covid-19 Task Force. See Appendix 1 for the Attendance Form.
• Until otherwise directed, all Congregations should use the attached order of service suited for an hour only. (See Appendix 2)
• Announcements at Church Services should under no circumstance be overly long.

3. There should be guidelines for other specialized services:
   i. **Guidelines for Communion Service:**
      • Communion service be organized within one hour.
      • Congregations may consider holding Prayer Services on Communion days
      • Already packaged Communion elements should be used.
   ii. **Guidelines for Baptism and Confirmation:**
      Baptism and Confirmation are suspended until after August, 2020
   iii. **Guidelines for Naming Ceremonies:**
      • Christian Heads of families should be encouraged to perform naming ceremonies at home.
   iv. **Guidelines for Weddings**
      • Only 25% capacity of the church auditorium up to 100 persons is permitted.
      • The service must be organized within a period of one hour.
      • The sharing or serving of food and savories is not permitted.
      • Social distancing must be encouraged between the Minister and the couple.
      • All other rules and protocols must be followed.
   v. **Guidelines for Burial Services:**
      • Only 25% capacity of the church auditorium up to 100 persons is permitted.
      • Still private burials only.
      • The service must be organized within a period of one hour only.
      • The sharing or serving of food and savories is not permitted.
      • All other rules and protocols must be followed.

4. **Guidelines for Junior Youth and Children’s Service**
   In line with the Government’s directive, Congregations should not organize Chapel services for the Junior Youth and the Children’s Service during the period. We encourage all Congregations to arrange Online or other digital media services for the children and JY members.

5. **Guidelines for weekly Church Group meetings**
Apart from the singing groups, all other group meetings must be held in adherence to the above-mentioned Guidelines and directives from the Government.

**Conclusion:** We ask for your cooperation and prayers with the leadership of the Church at this rather challenging time. Stay well.

Rev. Dr. Godwin Nii Noi Odonkor  
Clerk of the General Assembly
Appendix 1

PRESBYTERIAN CHURCH OF GHANA
CHURCH ATTENDANCE FORM
(To be filled in by all who attend the service, including Ministers and Presbyters)

Congregation ........................................................................................................................................

Sunday (Date) ……….. (Month)…………………………, 2020

1. Name:........................................................................................................................................

2. Telephone......................................................................................................................................

3. Residential Address.........................................................................................................................

4. Church Group.................................................................................................................................

Temperature............

APPENDIX 2

PRESBYTERIAN CHURCH OF GHANA
ORDER OF SERVICE FOR SUNDAYS

1. Salutation
2. Hymn of Praise (Soloist & Organist only)
   (5 Minutes)
3. Prayer of Approach (Adoration, Confession, Supplication)
   (10 Minutes)
4. Hymn
   (5 Minutes)
5. Bible Reading & Sermon (All by the Preacher)
   (20 Minutes)
6. Announcement/Tithes/Offering
   (7 Minutes)
7. Prayer of Intercession
   (8 Minutes)
8. Doxology ‘Yehowa Yehowa, Yehowa’ or an alternative (one verse only)
   (3 Minutes)
9. Benediction and Dismissal
   (2 Minutes)
Republic of Ghana
Ministry of Health

Provisional Standard Treatment Guidelines for Novel Coronavirus Infection
COVID-19 for Guidelines
Republic of Ghana
Ministry of Health

Provisional Standard Treatment Guidelines for Novel Coronavirus Infection

COVID-19 Guidelines for Ghana
Special Note:

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Preface

On 31\textsuperscript{st} December 2019, the World Health Organization (WHO) was informed of cases of pneumonia of unknown cause detected in Wuhan City, Hubei Province of China. On 7\textsuperscript{th} January 2020, the causative pathogen was identified as a novel coronavirus (2019-nCoV). On 12\textsuperscript{th} February 2020, the novel coronavirus was named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The associated disease is now referred to as Corona Virus Disease (COVID-19) and was declared a pandemic by WHO on 11\textsuperscript{th} March 2020. There is limited knowledge about the characteristics of SARS-CoV-2, regarding person-to-person spread, severity of resulting infections as well as treatment. New information about this virus keeps emerging, hence the need to keep up with current information to inform important decisions.

The first two cases of COVID-19 in Ghana were confirmed on 12\textsuperscript{th} March 2020. This called for immediate intensive actions towards the containment of the disease across the country. Preventive measures including effective hand hygiene, respiratory hygiene as well as other Infection Prevention and Control (IPC) practices like social distancing, the use of Personal Protective Equipment (PPEs) were instituted at all treatment centres and in the community.

As part of efforts to mitigate the pandemic, a multi-disciplinary panel of experts was convened to develop evidence-based country-specific guidelines.

This provisional guideline provides recommendations for the management of patients with COVID-19. It is intended to ensure the best possible chances of survival through optimized supportive care for all patients. Due to the novel nature of this virus, this provisional guideline is also intended to serve as a basis for research into treatments that are showing promise.

According to the WHO, the United States (US) Center for Disease Control and Prevention (CDC) and the US Food and Drug Administration (US-FDA), there are currently (as at the time of developing this guideline) no vaccines that have proven to be effective for the prevention of COVID-19. Additionally, there is insufficient clinical trial evidence globally to support the efficacy and/or safe use of any medicines or blood products (e.g. convalescent plasma) in the
prevention (including pre- and post-exposure prophylaxis) or treatment of COVID-19.

There are currently a number of ongoing clinical trials which may warrant review of this provisional guideline on a periodic basis. This guideline is therefore a living document and will continue to be updated in response to emerging evidence.

The general public must avoid statements that stigmatize people with or are suspected to have COVID-19 and any of their contacts as this potentially could prevent or delay reporting.

Kwaku Agyeman-Manu (MP)
Minister for Health
# Acknowledgement

## MOH/GHS Executives and Stakeholders

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<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Designation</th>
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<tbody>
<tr>
<td>1</td>
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<td>Hon. Minister for Health</td>
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<tr>
<td>2</td>
<td>Alexander K.K. Abban</td>
<td>Hon. Deputy Minister for Health</td>
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<tr>
<td>3</td>
<td>Tina A. Mensah</td>
<td>Hon. Deputy Minister for Health</td>
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<tr>
<td>4</td>
<td>Nana Kwabena Adjei-Mensah</td>
<td>Chief Director, Ministry of Health</td>
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<tr>
<td>5</td>
<td>Dr. Patrick Kumah Aboagye</td>
<td>Director General, Ghana Health Service</td>
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<tr>
<td>6</td>
<td>Dr. Mrs. Martha Gyansa-Lutterodt</td>
<td>Director Technical Coordination, Ministry of Health</td>
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<tr>
<td>7</td>
<td>Mrs. Joycelyn Azeez</td>
<td>Chief Programme Officer, Pharmacy Directorate, Ministry of Health</td>
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## Emergency National Medicines Selection Committee of Experts

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<tbody>
<tr>
<td>1</td>
<td>Prof. Francis W. Ofei (Chairman)</td>
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<td>Mrs. Delese Mimi Darko</td>
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<td>4</td>
<td>Dr. Peter Puplampu</td>
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<td>5</td>
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<td>National AIDS Control Programme/Ghana Health Service (NACP/GHS)</td>
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<tr>
<td>12</td>
<td>Prof. Kwame Ohene Buabeng</td>
<td>College of Health Sciences/Kwame Nkrumah University of Science and Technology (CHS/KNUST)</td>
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<tr>
<td>13</td>
<td>Dr. Mary Eyram Ashinyo</td>
<td>Institutional Care Division / Ghana Health Service (ICD/GHS)</td>
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<td>14</td>
<td>Dr. Marc Kwame Dzradosi</td>
<td>International Maritime Hospital (IMaH)</td>
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<td>15</td>
<td>Dr. Radha Hackman</td>
<td>Dua Clinic</td>
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<td>16</td>
<td>Mr. Nicholas Adjimani</td>
<td>Drug Policy Unit, MOH</td>
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**Editorial Group and Reviewers**

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<td>5</td>
<td>Dr. Edith Andrews Annan</td>
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<tr>
<td>6</td>
<td>Dr. Angela Ama Ackon</td>
<td>Drug Information and Resource Centre (DIRC), MOH</td>
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Comments should be sent to:
Unit Head,
Drug Policy Unit, Pharmacy Directorate,
Technical Coordination, Ministry of Health
PO Box MB 582
Accra, Ghana
Coronavirus Disease (COVID-19)

Preamble

Coronavirus Disease (COVID-19) is a newly identified Severe Acute Respiratory Infection (SARI) caused by a novel corona virus named Severe Acute Respiratory Syndrome Corona virus 2 (SARS-CoV-2) that was first reported to the World Health Organization (WHO) on 31st December 2019. The disease has spread rapidly among human populations on all continents around the world since it was first identified. It was initially declared by WHO as a Public Health Emergency of International Concern (PHEIC) on 30th January, 2020 and subsequently declared a pandemic on 11th March, 2020.

Although the virus is widely believed to have originated from animals, there is insufficient scientific evidence to identify the specific animal reservoir or the original mode of transmission of the disease to humans. The spread of the disease in humans, however, is currently known to be from person to person, mainly through droplets arising from people sneezing, coughing, speaking or exhaling, which deposit on surfaces. The virus may be transferred from contaminated surfaces to mucosal surfaces (eyes, nose, mouth), via the hands. Aerosol transmission is also possible when people have prolonged exposure to high concentrations of droplets in relatively closed spaces.

The incubation period for COVID-19 (i.e. the time between exposure to the virus and onset of symptoms) is currently estimated to be between 2 and 14 days. Persons infected by this virus may either exhibit no symptoms, or experience an illness which may range from mild to severe. However, asymptomatic and symptomatic persons are equally capable of transmitting the infection.
The experience from observation of patients presenting to health centres around the world suggests that, over 80% of symptomatic individuals with COVID-19 develop mild or uncomplicated illness, and approximately 14% develop severe disease requiring hospitalization and oxygen support, while 5% may have very severe illness requiring admission to an Intensive Care Unit (ICU) with ventilators for care.

The global evidence also suggests that, whereas symptomatic individuals may initially have mild symptoms and physical signs, there may be clinical deterioration during the second week of illness.

Risk factors for severe illness and higher case fatality include old age and presence of chronic underlying medical conditions such as cardiovascular disease, diabetes, chronic respiratory disease, hypertension and immunosuppression. The clinical course of COVID-19 in pregnant patients from recent studies is similar to that for non-pregnant individuals of the same age. The symptoms in children are often relatively mild.

Complications of the disease include acute respiratory distress syndrome (ARDS) leading to acute respiratory failure, secondary bacterial and other microbial infection, septic shock, cardiac injury, cardiac arrhythmia, liver failure, acute kidney injury, metabolic acidosis, coagulation dysfunction or multi-organ failure.

Suspected persons should be held in quarantine for testing. If confirmed, patients should be transferred, by special arrangement with the National Ambulance Service and the COVID-19 case management teams (call emergency phone number 112 on all networks), to designated treatment centres with effective isolation and disease control capacity. Confirmed cases can be treated with multiple patients in the same isolation room. Patients who are severely or critically ill should be admitted to an Intensive Care Unit (ICU) as early as possible.

There are currently (as at the time of developing this guideline) no well-researched and approved vaccines, medicines or blood-products (e.g. convalescent plasma) specifically for the prevention and treatment of patients with COVID-19.
At present clinical management includes infection prevention and control (IPC) measures and supportive care. A number of medicines which were tried in previous outbreaks of coronavirus infections, as well as in the current COVID-19 outbreak, together with some investigational drugs are presently being studied at different research and treatment centres all over the world for use as preventive and/or treatment options.

In the absence of proven medicines for prevention and treatment of persons with COVID-19, keeping suspected cases in quarantine while awaiting test results, isolation of confirmed cases and tracing of contacts of confirmed cases for early detection of the disease are therefore paramount in preventing the spread of the disease.


All treatments opted for from this guideline for patients with COVID-19 must be based on the clinical judgement of a multi-disciplinary COVID-19 case management team. Any treatments opted for must be fully documented and submitted to the appropriate authorities through the District Health Information Management System-2 (DHIMS2) platform.

Furthermore, all adverse drug reactions (ADRs) must be reported to the Food and Drugs Authority (FDA) by completing the appropriate FDA ADR Form and submitting it directly to the FDA or through the institutional contact person (Details provided below under section for ‘Relevant Contacts’).

### Causes
- Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

### Symptoms
- Adults
  - May be asymptomatic
  - Fever
  - Cough (commonly dry but may be productive)
  - Fatigue
• Myalgia
• Sore throat
• Shortness of breath or difficulty in breathing
• Nasal congestion
• Nasal discharge
• Loss or reduced sense of smell (anosmia or hyposmia)
• Anorexia
• Diarrhoea

• Children
• Fever
• Cough
• Nasal congestion
• Rhinorrhea (runnynose)

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<th>Signs</th>
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<td>• Fever (body temperature ( \geq 37.5^\circ C ))</td>
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<td>• Tachypnea</td>
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<td>• Tachycardia</td>
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<td>• Cyanosis</td>
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<td>• Flaring of nostrils</td>
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<td>• Use of accessory muscles of respiration (plus intercostal drawing etc.)</td>
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<td>• Restricted chest wall movement (unilateral or bilateral)</td>
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<td>• Signs of consolidation on chest examination</td>
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<td>• Drowsiness</td>
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<td>• Restlessness or confusion</td>
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<tr>
<td>• Low blood oxygen saturation by pulse oximeter (( \text{SPO}_2 &lt; 93% ))</td>
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<th>Clinical Presentations of COVID-19 according to severity</th>
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<td><strong>Mild</strong></td>
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as dyspnoea, fever, GI-symptoms or fatigue may overlap with COVID-19 symptoms.

| Pneumonia | Adult with pneumonia but no signs of severe pneumonia and no need for supplemental oxygen.  
Child with non-severe pneumonia who has cough or difficulty breathing and fast breathing: fast breathing (in breaths/min): < 2 months: ≥ 60; 2-11 months: ≥ 50; 1-5 years: ≥ 40, and no signs of severe pneumonia. |
|---|---|
| Severe pneumonia | Adolescent or adult: fever or suspected respiratory infection, plus one of: respiratory rate > 30 breaths/min; severe respiratory distress; or SpO$_2$ ≤ 93% on room air  
Child with cough or difficulty in breathing, plus at least one of the following: central cyanosis or SpO$_2$ < 90%; severe respiratory distress (e.g. grunting, flaring alae nasi, very severe chest in-drawing); clinical signs of pneumonia with a general danger sign such as inability to breastfeed or drink, lethargy or unconsciousness, or convulsions. Other signs of pneumonia may be present such as intercostal in-drawing, fast breathing (in breaths/min): < 2 months: ≥ 60; 2-11 months: ≥ 50; 1-5 years: ≥ 40.  
Note: While the diagnosis is made on clinical grounds, chest imaging is necessary to exclude some pulmonary complications or changes suggestive of ARDS. |
| Acute respiratory distress syndrome | Onset: within 1 week of a known clinical insult or new or worsening respiratory symptoms.  
Chest imaging (radiograph, CT scan, or lung ultrasound): diffuse bilateral opacities, not fully explained by volume overload, lobar or lung collapse, or nodules.  
Origin of pulmonary infiltrates: pulmonary oedema not fully explained by cardiac failure or fluid overload. May need |
Objective assessment (e.g. echocardiography) to exclude hydrostatic cause of infiltrates/oedema if no obvious cardiovascular risk factor present.

**Oxygenation impairment in adults:**
- **Mild ARDS:** $200 \text{ mmHg} < \frac{\text{PaO}_2}{\text{FiO}_2} \leq 300 \text{ mmHg}$ (with PEEP or CPAP $\geq 5 \text{ cm H}_2\text{O}$, or non-ventilated)
- **Moderate ARDS:** $100 \text{ mmHg} < \frac{\text{PaO}_2}{\text{FiO}_2} < 200 \text{ mmHg}$ (with PEEP $\geq 5 \text{ cm H}_2\text{O}$, or non-ventilated)
- **Severe ARDS:** $\frac{\text{PaO}_2}{\text{FiO}_2} < 100 \text{ mmHg}$ (with PEEP $\geq 5 \text{ cm H}_2\text{O}$, or non-ventilated)
- When PaO$_2$ is not available, SpO$_2$/FiO$_2$ $\leq 315$ suggests ARDS (including in non-ventilated patients).

**Oxygenation impairment in children:**

**Note:**
- $\text{OI} = \text{Oxygenation Index}$, $\text{OSI} = \text{Oxygenation Index using SpO}_2$. Use PaO$_2$-based metric when available. If PaO$_2$ not available, wean FiO$_2$ to maintain SpO$_2$ $\leq 97\%$ to calculate OSI or SpO$_2$/FiO$_2$ ratio

- **On NIV (BiPAP or CPAP) $\geq 5 \text{ cm H}_2\text{O}$ via full face mask:** $\text{PaO}_2/\text{FiO}_2 \leq 300 \text{ mmHg}$ or $\text{SpO}_2/\text{FiO}_2 \leq 264$
- **Mild ARDS (Non-invasive mechanical ventilation):** $4 \leq \text{OI} < 8$ or $5 \leq \text{OSI} < 7.5$
- **Moderate ARDS (Non-invasive mechanical ventilation):** $8 \leq \text{OI} < 16$ or $7.5 \leq \text{OSI} < 12.3$
- **Severe ARDS (on invasive mechanical ventilation):** $\text{OI} \geq 16$ or $\text{OSI} \geq 12.3$

**Sepsis**

**Adults:** life-threatening organ dysfunction caused by a dysregulated host response to suspected or proven infection.$^b$ Signs of organ dysfunction include: altered mental status, difficult or fast breathing, low oxygen saturation ($< 93\%$), reduced urine output, fast heart rate, weak pulse, cold extremities or low blood pressure, skin mottling, or laboratory evidence of coagulopathy, thrombocytopenia, acidosis, high lactate or hyperbilirubinaemia.
<table>
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<tr>
<th>Children: suspected or proven infection and 2 or more age-based systemic inflammatory response syndrome (SIRS) criteria, of which one must be abnormal temperature or white blood cell count.</th>
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<tr>
<td><strong>Septic shock</strong></td>
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| **Adults:** persisting hypotension despite volume resuscitation; requiring vasopressors to maintain $\text{MAP} \geq 65 \text{ mmHg}$; serum lactate level $> 2 \text{ mmol/L}$.

**Children:** any hypotension ($\text{SBP} < 5^{\text{th}} \text{ centile or } > 2 \text{ SD below normal for age}$) or two or three of the following: altered mental state; tachycardia or bradycardia ($\text{HR} < 90 \text{ bpm or } > 160 \text{ bpm in infants and } \text{HR} < 70 \text{ bpm or } > 150 \text{ bpm in children}$); prolonged capillary refill ($> 2 \text{ sec}$) or feeble pulse; tachypnea; mottled or cool skin or petechial or purpuric rash; increased lactate; oliguria; hyperthermia or hypothermia.

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*a* If altitude is higher than 1000 m, then correction factor should be calculated as follows: $\frac{\text{PaO}_2}{\text{FiO}_2} \times \text{barometric pressure}/760$.

*b* The SOFA score ranges from 0 to 24 and includes points related to six organ systems: respiratory (hypoxemia defined by low $\text{PaO}_2/\text{FiO}_2$); coagulation (low platelets); liver (high bilirubin); cardiovascular (hypotension); central nervous system (low level of consciousness defined by Glasgow Coma Scale); and renal (low urine output or high creatinine). Sepsis is defined by an increase in the sepsis-related SOFA score of $\geq 2$ points. Assume the baseline score is 0 if data are not available.

Abbreviations: ARI acute respiratory infection; BP blood pressure; bpm beats/minute; CPAP continuous positive airway pressure; $\text{FiO}_2$ fraction of inspired oxygen; MAP mean arterial pressure; NIV non-invasive ventilation; OI Oxygenation Index; OSI Oxygenation Index using $\text{SpO}_2$; $\text{PaO}_2$ partial pressure of oxygen; PEEP positive end-expiratory pressure; SBP systolic blood pressure; SD standard deviation; SIRS systemic inflammatory response syndrome; SOFA sequential organ failure assessment; $\text{SpO}_2$ oxygen saturation.

*Adopted from WHO Guidelines for clinical management of severe acute respiratory infection when COVID-19 is suspected 13 March 2020*
### Case definitions

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<tr>
<th>1. SUSPECTED CASE</th>
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</thead>
</table>
| Any person with fever (body temperature \( \geq 37.5^\circ C \)) And/Or cough And/Or difficulty in breathing | And who within 14 days before the onset of illness had any of the following exposures.  
- History of travel to/been in any country with confirmed and ongoing community transmission of SARS-CoV-2  
Or  
- Close contact with a confirmed case of COVID-19  
Or  
- Exposure to a healthcare facility where COVID-19 case(s) have been reported |

<table>
<thead>
<tr>
<th>2. PROBABLE CASE</th>
</tr>
</thead>
</table>
| A suspected case for whom testing for the COVID-19 virus is inconclusive:  
A. Inconclusive being the result of the test reported by the laboratory  
Or  
B. A suspected case for whom testing could not be performed for any reason |

<table>
<thead>
<tr>
<th>3. CONFIRMED CASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A person with laboratory confirmation of SARS-CoV-2 infection</td>
</tr>
</tbody>
</table>

*Adapted from WHO Coronavirus Disease 2019 (COVID-19) Situation Report-50, (10th March 2020)*

### Investigations

**Identification of SAR-CoV-2:**
- Real Time-Polymerase Chain Reaction (RT-PCR) for SARS-CoV-2 using a minimum of one (1) sample from each site
  - Nasopharyngeal swab
  - Oropharyngeal swab

**Additional tests that may be required:**
- A blood sample for SARS-CoV-2 serology is recommended only when RT-PCR is not available as it has a relatively low sensitivity (a venous blood sample should be put into two separate plastic tubes, one with EDTA, the other with no EDTA)
- Endotracheal secretions (for severe cases admitted to ICU)
• Broncho-alveolar lavage (for severe cases admitted to ICU)
• Expectorated sputum (this should only be taken at the treatment center to minimise aerosol spread)

Note:
For the exclusion of COVID-19 as the probable cause of death in patients who are dead on arrival or die at a facility, a blood sample (if feasible) into two separate plastic tubes, one with EDTA, the other with no EDTA or a mouth swab (using approved swabs and procedures) can be collected and dispatched accordingly.

Tests for supportive care and for identification of impending complications:
• Full Blood Count
  • May show
    • leukopaenia, lymphopaenia
    • leukocytosis (suspect secondary infection)
    • thrombocytopenia
• Erythrocyte Sedimentation Rate (ESR)
• C-Reactive Protein (CRP)
• BUE & Creatinine
• Liver Function Test
  • May show elevated ALT and AST levels
• Blood culture & sensitivity
• Sputum culture & sensitivity
• Prothrombin time, INR
• D-Dimer
• Troponin
• CK-MB
• LDH
• Ferritin
• Electrocardiograph (ECG)
• Chest X-Ray
  • May be normal in non-severe disease and within first 48 hours in severe disease or show multiple areas of consolidation and ground glass opacities (bilateral involvement in most patients)
• Chest CT
  • May be normal in non-severe disease and within first 48 hours in severe disease or show multiple areas of consolidation and ground glass opacities (bilateral involvement in most patients)

### Procedure for sample collection

Sample collection requirements: PPE (apron, gloves, face shield, N95 masks, coverall), viral transport medium, centrifuge tube, ziploc bag, biohazard label, secondary container, hard frozen gel packs, Giostyle carrier, sample transportation form, marker, disinfectant and hard card box/transport box.

- Assemble materials (collection tubes, swabs, tongue depressor) for respiratory specimen collection
- Label sample tubes with person's name, date of sample collection and time
- Fill in Case investigation form
- Perform hand hygiene
- Put on an appropriate PPE - allowing a trained observer to mirror you for ideal donning
- Collect at least 1 nasopharyngeal sample, inserting swab into the nostril parallel to the palate. Swabbing each nostril for 10-15 seconds, swabbing each nostril with the same swab
- Collect at least 1 oropharyngeal sample. Using a tongue depressor, depress the tongue and swab each tonsil and the posterior pharynx for 10-15 seconds, avoiding the tongue.
- Place nasopharyngeal and oropharyngeal swabs in a single sterile tube containing 2-3 ml of Viral Transport Media (VTM) immediately after collection
- If person is coughing, ask them to inhale deeply and cough to expel sputum sample into a leak-proof screw cap sputum collection cup or sterile-dry collection bottle
- In severely ill persons, consider a bronchoalveolar lavage or tracheal aspirate
- If collecting whole blood or serum sample, do not use glass tubes. Use plastic tubes for blood collection. Do not use Heparin as an anti-coagulant. EDTA plastic tubes should be used.
- All samples should be packaged under triple packaging system
- Discard sample collection materials in a properly labelled biohazard bin
- Decontaminate work surfaces with 0.5% hypochlorite solution
- Take off the PPE, following the appropriate procedure
- Perform hand hygiene
- Send samples under cold chain to Noguchi Memorial Institute for Medical Research or the Kumasi Centre for Collaborative Research or any other designated testing centre for COVID-19
- Notify the Institutional Public Health Unit (IPHU) or Disease Control Officer (DCO) of the facility of the suspected case, and aid in completing the case base/investigation form/laboratory sample pickup. The IPHU or Disease Control Officers should notify the facility head and District Health Management Team (DHMT)
- At the Regional/District level, notify the IPHU and DCO in the facility/District and the Director of Health Service (DDHS) immediately. The DDHS/RRT will in turn inform the RDHS/RRT and then the DSD/National EOC
- Results of laboratory testing will be delivered to the Director of the facility where the patient is isolated through the DSD/EOC, RDHS, DDHS

**Treatment**

**Treatment objectives**

- To identify suspected cases early and promptly initiate appropriate management, including infection prevention and control (IPC)
- To identify confirmed cases for isolation and appropriate treatment
- To identify confirmed cases at greater risk, who require management in hospital or who on hospitalization require therapy
- To prevent person to person transmission
- To alleviate symptoms of the disease
- To identify progression of the disease early
- To prevent and/or manage complications of the disease
- To treat secondary bacterial or other infections
- To eradicate the COVID-19 infection
- To arrange transfer of confirmed cases to a designated treatment centre
Non-pharmacological treatment

- Early quarantine of suspected cases and self-quarantine of all contacts of confirmed cases with follow up (Refer to Case Management Manual for COVID-19, Ministry of Health-Ghana, March 2020)
- Psycho-social support by counselling patients and contacts
- Chest physiotherapy, lung expansion and sputum clearance exercises
- Aspiration or drainage of pleural fluid (pleural effusion) if present

For Children
- Tepid sponging to control fever i.e. children < 5 years
- Adequate fluids e.g. breast milk, porridge, coconut water
- Feed as can be tolerated during the episode. Give an extra meal per day for two weeks after recovery

Useful adjunctive measures for all age groups
- Cessation of smoking
- Physical exercise
- Cover the mouth and nose during coughing and sneezing; using surgical masks, cloth mask, tissues or flexed elbow followed by hand hygiene
- Good nutrition and hydration
- Adequate rest with good ventilation
- Humidified air or steam inhalation
- Lukewarm salt solution gargle 3 to 4 times daily

Infection prevention and control
- Early recognition and isolation is critical for containing COVID-19
- All health facilities must institute appropriate pre-triage and triage systems
- Limit entry of other healthcare providers to designated treatment areas
- Ensure appropriate use of personal protective equipment (PPEs) for patients, healthcare providers and heavy-duty purposes
- Encourage hand washing:
  - before and after any direct contact with patients
  - immediately after removal of gloves
  - before a non-surgical procedure (catheters),
  - after touching body fluids / non-intact skin and contaminated items
Pharmacological treatment

A. Management of asymptomatic contacts of confirmed cases

Management of asymptomatic contacts of confirmed cases should follow contact tracing principles and IPC measures. Both private and public health facilities should work with the District Health Directorate. No pharmacological treatment is recommended for this category of individuals.

- after using lavatory
- after moving inanimate objects in patient environment
- Patient care environments and surfaces, patient-care equipment, linen/laundry and eating utensils should be cleaned and disinfected using standard hospital disinfectants (such as chlorine) according to national IPC guidelines
- All suspected cases should be immediately quarantined and must wear a surgical mask while awaiting results
- All confirmed cases should be immediately isolated
- Visitors and families must be restricted from entering treatment areas

Note:

At the time of developing this provisional guideline, there were no approved vaccines or medicines for the prevention or treatment of COVID-19.

All suspected or confirmed cases of COVID-19 who have other co-morbidities (e.g. diabetes, heart disease, COPD, asthma, etc.) or require prophylaxis or treatment with anticoagulants for deep vein thrombosis, should be managed following the principles stated in the 7th edition of the Standard Treatment Guidelines for these conditions while awaiting test results for confirmation of COVID-19 and during treatment.
B. Management of exposures of healthcare workers

C. Management of confirmed cases who are asymptomatic

Note:
All treatments selected from this section for patients with COVID-19 must be based on the clinical judgement of a multi-disciplinary COVID-19 case management team.
Caution:

Hydroxychloroquine and Chloroquine may be associated with
- Cardiac arrhythmias and QT-prolongation on ECG.
  - They must be used with caution in patients with pre-existing heart disease who would need additional clinical and/or ECG monitoring.
- Blood glucose fluctuations
  - Use with caution in diabetic patients; hypoglycemia may occur. Anti-hyperglycaemic medication (oral agents or insulin) requirements may decrease requiring individual dose adjustment
- Intravascular haemolysis in persons with G6PD deficiency.
  - However, the risk of haemolysis is low, therefore it is reasonable to start Hydroxychloroquine/Chloroquine while awaiting G6PD testing in most patients.

1<sup>st</sup> line treatment
Evidence Rating [C]
- Hydroxychloroquine, oral,
  Adults
  200 mg 8 hourly for 10 days
  Children
  3 mg/kg 8 hourly (max: 200 mg/dose) for 10 days

Or
2<sup>nd</sup> line treatment
Evidence Rating [C]
- Chloroquine phosphate, oral,
  Adults
  500 mg (300 mg base) 12 hourly for 5 days
  Children
  > 60 kg; 500 mg (300 mg base) 12 hourly for 5 days
  < 60 kg; 5 mg base per kg 12 hourly for 5 days

Or (if available)
- Remdesivir, IV, Evidence Rating [B]
Note:
Remdesivir may be used as a substitute for hydroxychloroquine or chloroquine, in cases with contra-indications for or in patients who are not able to tolerate hydroxychloroquine or chloroquine.

**Adult**
- 200 mg IV load then 100 mg IV 24 hourly for 7 to 10 days

**Children**
- > 40 kg; 200 mg IV load then 100 mg IV 24 hourly for 2 to 10 days
- < 40 kg; 5 mg/kg IV load then 2.5 mg/kg 24 hourly

D. **Management of confirmed cases with mild and moderate symptoms**

Note:
All treatments selected from this section for patients with COVID-19 must be based on the clinical judgement of a multi-disciplinary COVID-19 case management team.

Caution:
Hydroxychloroquine and Chloroquine may be associated with

- Cardiac arrhythmias and QT-prolongation on ECG.
- Blood glucose fluctuations.
- Use with caution in diabetic patients; hypoglycaemia may occur. Anti-hyperglycaemic medication (oral agents or insulin) requirements may decrease requiring individual dose adjustment.
- Intravascular haemolysis in persons with G6PD deficiency.
- However, the risk of haemolysis is low, therefore it is reasonable to start Hydroxychloroquine/Chloroquine, while awaiting G6PD testing, in most

Note:
Remdesivir can be used as a substitute for hydroxychloroquine or chloroquine as detailed in section C above, in cases with contra-indications for or in patients who are not able to tolerate hydroxychloroquine or chloroquine.
1<sup>st</sup> line treatment
Evidence Rating [C]

- Hydroxychloroquine, oral,
  - <strong>Adults</strong>
    - 200 mg 8 hourly for 10 days
  - <strong>Children</strong>
    - 3 mg/kg 8 hourly (max: 200 mg/dose) for 10 days

And

- Azithromycin, oral,
  - **Caution:**
  - To be used with caution in patients with pre-existing cardiac disease or at risk of developing cardiac arrhythmias especially when given together with Hydroxychloroquine. Consider instead, combining Hydroxychloroquine with Doxycycline.
  - <strong>Adults</strong>
    - 500 mg for day 1, then 250 mg daily from day 2 to day 5
  - <strong>Children</strong>
    - 10 mg/kg body weight daily for 3 days
    - (not recommended for children below 6 months due to risk of pyloric stenosis)

Or

- Doxycycline, oral,
  - <strong>Adults</strong>
    - 100 mg daily for 5 days
  - <strong>Children and pregnant women</strong>
    - Not recommended

2<sup>nd</sup> line treatment
Evidence Rating [C]

- Chloroquine phosphate, oral,
  - <strong>Adults</strong>
    - 500 mg (300 mg base) 12 hourly for 5 days
  - <strong>Children</strong>
    - > 60 kg; 500 mg (300 mg base) 12 hourly for 5 days
    - < 60 kg; 5 mg base per kg 12 hourly for 5 days
And

- Azithromycin, oral,

**Caution:**

To be used with caution in patients with pre-existing cardiac disease or at risk of developing cardiac arrhythmias especially when given together with Chloroquine. Consider instead, combining Chloroquine with Doxycycline.

**Adults**
- 500 mg for day 1, then 250 mg daily from day 2 to day 5

**Children**
- 10 mg/kg body weight daily for 3 days
  (not recommended for children below 6 months due to risk of pyloric stenosis)

*Or*

- Doxycycline, oral,

**Adults**
- 100 mg daily for 5 days

**Children and pregnant women**
- Not recommended

---

**Recommendations on the use of Hydroxychloroquine/Chloroquine and Azithromycin combination therapy:**

- **Monitor patient** (ECG or clinical - palpitations and syncope)
- **Withhold Azithromycin, Hydroxychloroquine/Chloroquine** in patients with baseline QT prolongation (e.g. QTc > 500 msec) or with known congenital long QT syndrome
- **Monitor cardiac rhythm and QT interval** and withdraw Hydroxychloroquine and Azithromycin if QTc exceeds 500 msec
- **Correct hypokalaemia** to levels greater than 4 mmol/L and hypomagnesaemia to more than 2 mmol/L before starting therapy
- **Avoid use** of other QTc-prolonging medicines where possible
E. Management of confirmed cases with severe disease WITHOUT Acute Respiratory Distress Syndrome (ARDS), Cytokine Release Syndrome (CRS) or Disseminated Intravascular Coagulation (DIC)/Coagulopathy

- Hydroxychloroquine or Chloroquine And Azithromycin or Doxycycline as in ‘Pharmacological treatment, sub-section D’ above.

And (if available)

- Convalescent plasma, Evidence Rating [C]
  200 to 250 ml (once) of plasma from a COVID-19 recovered patient with significant levels of anti-SARs-CoV-2 antibodies (IgG and IgM) and neutralizing antibody titre. (Contact National Blood Service [NBS] and see NBS Guidelines. Contacts for NBS provided under section for ‘Relevant Contacts’ below)

Note:

If frozen plasma is being used for transfusion, it should be thawed in a water bath between +30°C and +37°C or other suitable thawing device before use and infused using a blood administration set as soon as possible after thawing.

And

- Methylprednisolone, IV, Evidence Rating [C]
  Adults
  80 mg - 120 mg or 1-2 mg/kg daily for 3 - 5 days
  Children
  Initial dose: 0.5 - 1.6 mg/kg body weight per day in 3 or 4 divided doses
  (Based on disease severity, response of patient and clinical judgement)

Note:

IV steroid (Methylprednisolone) therapy is indicated early in severe disease day 5 - 7 only if early evidence of cytokine release syndrome (CRS) with rise in IL-6 and inflammatory markers is noted. Steroid therapy may have adverse effects in the presence of sepsis and some other clinical situations.
F. **Management of confirmed cases with severe disease WITH Acute Respiratory Distress Syndrome (ARDS) or Cytokine Release Syndrome (CRS) or Disseminated Intravascular Coagulation (DIC)/Coagulopathy**

- Treat as in **‘Pharmacological treatment sub-section E’** (which includes sub-section D) above

And

- Tocilizumab, IV, (single dose), Evidence Rating [C]
  - **Adults**
    - 400 mg or 8 mg/kg (max: 800 mg)
  - **Children**
    - > 30 kg; dosage same as adults
    - < 30 kg; 12 mg/kg body weight

**Note:**

Treatment should only be initiated after discussions in a multidisciplinary team of specialists.

And (if available)

- Remdesivir, IV, Evidence Rating [B]
  - **Adult**
    - 200 mg IV load then 100 mg IV 24 hourly for 7 to 10 days
  - **Children**
    - > 40 kg; 200 mg IV load then 100 mg IV 24 hourly for 2 to 10 days
    - < 40 kg; 5 mg/kg IV load then 2.5 mg/kg 24 hourly

G. **Treatment of Bacterial Co-infections**

**Note:**

Culture and sensitivity testing should guide definitive treatment. Meanwhile, empirical treatment can be initiated while awaiting results based on local bacterial culture and sensitivity patterns.
H. **Supportive treatment for all persons under investigation (PUI) for COVID-19 or confirmed cases who have comorbidities**

**Note:**

For persons who have other co-morbidities (e.g. diabetes, heart disease, COPD, asthma, etc.) or require prophylaxis or treatment with anticoagulants for deep vein thrombosis and are under investigation for COVID-19 (persons under investigation-PUI) or are being treated, follow standard management principles as stated in the 7th edition of the Standard Treatment Guidelines while awaiting test results for confirmation of COVID-19 and during treatment.
Flowcharts and Diagrams

Identification of patients and management flowchart

GHANA HEALTH SERVICES COVID-19 CLINICAL MANAGEMENT PROTOCOL

SUSPECTED COVID-19 PATIENT
A patient with acute respiratory illness (fever and at least one sign/symptom of respiratory disease (e.g., cough, shortness of breath):
- AND a history of travel to or residence in a country/area reporting local transmission of COVID-19 disease during the 14 days prior to symptom onset.
- OR having been in close contact with a confirmed COVID-19 case in the last 14 days prior to onset of symptoms;
- OR with severe acute respiratory infection AND requiring hospitalization AND with no other cause that fully explains the clinical presentation.
- OR workers in Health facilities exposed to COVID-19 confirmed patients and they develop symptoms of acute respiratory illness
- OR was a traveler or close contact in self quarantine

- Wear appropriate personal protective equipment
- Observe IPC practices
- If patient is coughing and stable give them a surgical mask to wear

MILD ILLNESS
fever, fatigue, cough (with or without sputum production), anorexia, malaise, muscle pain, sore throat, dyspnea, nasal congestion, or headache.
- Hold patient in isolation
- Organise for COVID-19 test
- Offer supportive treatment (analgesics/antipyretics)
  Paracetamol avoid ibuprofen
- Treatment for common local causes of pneumonia

PNEUMONIA
Adult patient with pneumonia and no signs of severe pneumonia.
Child with non-severe pneumonia has
- cough or difficulty breathing
- fast breathing: fast breathing (in breaths/min): >2 months, 260; 2–11 months, ≥50; 1–5 years, ≥40 and
  no signs of severe pneumonia.
- Laboratory confirmation
  Organise for laboratory testing

SEVERE ILLNESS
SEVERE PNEUMONIA, ARDS
Adolescent or adult:
- respiratory rate ≥30 breaths/min,
- SpO2<90% on room air.
Child with:
- central cyanosis or SpO2 <90%;
- severe respiratory distress (e.g. grunting, very severe chest in drawing);
- inability to breastfeed or drink, lethargy or unconsciousness, or convulsions.
- chest in drawing,
- fast breathing (in breaths/min): >2 months, ≥60; 2–11 months, ≥50; 1–5 years, ≥40.

SEPSIS/SEPTIC SHOCK
- altered mental status,
- difficult or fast breathing, low oxygen saturation, reduced urine output,
- fast heart rate,
- weak pulse,
- cold extremities or
- low blood pressure, skin mottling
- qSOFA Score for Septic Shock
  - Altered mental status (GCS ≤15)
  - Respiratory rate ≥22 per minute
  - Systolic blood pressure <100 mmHg

ADMIT IN ISOLATION WARD/HDU/ICU
- Empirical treatment and other routine management of the condition
- Organise for COVID-19 testing

COVID-19 DISCHARGE CRITERIA
A combination of the following:
- Resolution of fever, without use of antipyretics
- Improvement in illness signs and symptoms as indicated on patient and clinical judgement
- Negative results of laboratory testing for COVID-19 from at least two consecutive sets of paired nasopharyngeal and oropharyngeal (throat swabs) specimens collected ≥24 hours apart (total of four negative specimens—two nasopharyngeal and two throat).

NB: Clinical judgement/patient condition is used to transfer patient within isolation center from ICU/HDU to ward and vice versa. Laboratory confirmation advises need for discharge home. Follow-up as outpatient as need be.
Suspected or confirmed COVID-19 cases should not be referred from the health facility to which they first present, or leave their home to go to a treatment centre. Instead a phone call should be placed to the National Ambulance Service (Phone number 112 on all networks) following which a designated ambulance would be provided to transport the suspected or confirmed case from the holding facility or their home, to an appropriate treatment centre.

For guidance on referrals and arranged transportation of patients refer to MOH/GHS COVID-19 Case Management Manual page 51-52.

**Transfer from Non COVID-19 treatment centre**

In non-designated treatment centres without a holding bay, arrangements should be made for the suspected patient to be transferred to a nearby facility with a holding area in line with MOH COVID-19 Case Management procedures.

In non-designated treatment centres with a holding bay (holding area), keep the patient, arrangement should be made to transfer patients to a designated treatment centre in line with COVID-19 Case Management procedures.

**Criteria for declaration of recovery from COVID-19 / Discharge from a treatment centre:**

SARS-CoV-2 positive patients (whether managed at home or admitted to a treatment centre) can be considered recovered and discharged from the treatment centre, if on admission, whenever they satisfy the following criteria after they have been ascertained by the COVID-19 case management team:

1. Absence of fever, without use of antipyretic medication
2. Absence of symptoms and signs
3. Two negative paired samples from the naso-pharyngeal and oro-pharyngeal sites for SARS-CoV-2 taken 24 hours apart
Relevant contacts

COVID-19 Case Management Hotlines:
- 0552222004
- 0552222005

Ghana Health Service COVID-19 Case Surveillance Telephone Numbers:
- 0509497700
- 0558439868

Noguchi Memorial Institute for Medical Research
- 0244 296 984 - Dr. Ivy Asantewaa

Kumasi Centre for Collaborative Research
- 020 914 0451 - Prof. Richard Phillips

Emergency Number
- 112

Ridge Hospital
- 0509497700
- 0558439868

Food and Drugs Authority
- Food and Drugs Authority (P. O. Box CT 2783, Cantonments – Accra, Ghana)
- 0800 151000 - Toll free
- 0299 802932, 0299 802933 – Call (Hotline)
- 0302 233200, 0302 235100, 0302 229794 - Call
- 0244 310 297 - Mobile/WhatsApp
- +233 302 229794, +233 302 229794 - Fax
• Email: fda@fda.gov.gh, drug.safety@fda.gov.gh
• Website: www.fdaghana.gov.gh
National Blood Service

- 0800 501010 - Toll free
- 0302 428940 - Call
- 0277 501010 - WhatsApp

**Relevant Forms**

- Case Investigation form - COVID-19 (2019-nCoV)
- FDA ADR Reporting Forms