

GUIDELINES FOR THE MANAGEMENT OF **PEDIATRIC PATIENTS DURING THE COVID-19 PANDEMIC**

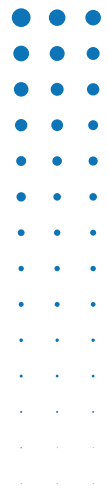
MATERNAL, NEWBORN, CHILD, ADOLESCENT HEALTH AND NUTRITION
DIRECTORATE, MINISTRY OF HEALTH, ETHIOPIA

May 2020, Version I



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MINISTRY OF HEALTH-ETHIOPIA

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HEALTHIER CITIZENS FOR PROSPEROUS NATION!



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Acronyms

ACT	Artemisinin-based Combination Therapy
ANC	Antenatal Care
CAPA	Continuous Positive Airway Pressure
ENC	Essential newborn Care
EPSA	Ethiopian Pharmaceuticals Supply Agency
ETAT	Emergency Triage Assessment and Treatment
HC	Health Centre
HCW	Health Care Worker
HEW	Health Extension Worker
HP	Health Post
HW	Health Workers
ICCM	Integrated Community Case Management
ICMNCI	Integrated Management of Newborn and Childhood Illnesses
IMNCI	Integrated Management of Newborn and Childhood Illnesses
IPC	Infection Prevention Control
MOH	Ministry of Health
MUAC	Mid-Upper Arm Circumference
NICU	Newborn Intensive Care Units
NRP	Neonatal Resuscitation Program
OPD	Outpatient Patient Department
PNC	Postnatal Care
PPE	Personal Protective Equipment
RDT	Rapid Diagnostic Test
RHB	RHB- Reginal Health Bureau
RUSF	Ready to Use Supplementary Food
RUTF	Ready to Use Therapeutic food
U5	Under Five
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WorHO	Woreda Health Office



Foreword

Pneumonia, diarrhea, malaria, and malnutrition will continue to be the primary killers of children under five in Ethiopia. As COVID-19 expands and potentially overloads higher level facilities, primary hospitals, health centres and health posts will play a larger role in helping communities respond to COVID-19, continue to access regular health services as well as to address these key child killers.

The pediatric guidelines for COVID 19 has been developed in response to the COVID-19. COVID-19 is a serious respiratory viral infection caused by a novel coronavirus recently named SARS-COV2. The pediatric population requires special consideration because of the relatively mild progression of the disease, and its atypical presentation in comparison with adults.

These guidelines will be reviewed and updated regularly, based on any additional evidence regarding the severity and magnitude of the pandemic and its effect on children in Ethiopia. Any changes or modifications to the Integrated Community Case Management (iCCM), Integrated Management of Newborn and Childhood Illnesses (IMNCI) and hospital care protocols should be guided by the epidemiological scenario and COVID-19 containment and mitigation measures of the federal government and regional states.

This is not a standalone guideline. However, it will be implemented and harmonized with the National Comprehensive COVID-19 Management Handbook, guidelines for the continuity of primary healthcare and other infection prevention protocols.

I expect every frontline healthcare provider in charge of assessing and managing sick children at all levels of the healthcare system to adhere to these guidelines in order to provide quality and effective case management of pediatric patients, regardless of their COVID-19 status.

H.E Dr Dereje Duguma

A handwritten signature in black ink, appearing to read 'Dereje Duguma'. The signature is written in a cursive style and is positioned above the printed name.

State Minister, Ministry of Health Ethiopia



Acknowledgements

The Ministry of Health (MoH) would like to acknowledge members of the National Newborn and Child Survival Technical Working Group for their valuable contributions to the development and review of these guidelines. The MoH wishes to thank the following experts, in alphabetical order:

S.No	Name of the participants	Organization	Remarks
1	Abeba Bekele (Dr)	Jhpiego	
2	Abebe Gebremariam (Dr)	Emory University	
3	Abiy Seifu	AAU	
4	Abraham Tariku (Dr)	MoH	Chair
5	Adebabay Wale	SCI	
6	Bogale Worku (Prof.)	EPS	
7	Bizuhan Gelaw Birhanu (Dr)	UNICEF	Technical lead and coordinator
8	Dessalew Emaway	JSI/L10K 2020	
9	Ephrem Teferi (Dr)	USAID-TPHC	
10	Lisanu Tadesse (Dr)	HaSET	
11	Meseret Zelalem (Dr)	MoH	Director
12	Mesfin Nigussie	SCI	
13	Miraf Abebe	MoH	
14	Muluwork Tefera (Dr)	AAU	
15	Nesibu Agonafir	PATH	
16	Rahel Argaw (Dr)	AAU	
17	Solomie Deribessa (Dr)	AAU	
18	Solomon Gebeyehu	MoH	
19	Tina Asnake	MoH	
20	Wegen Shiferaw Shirka (Dr)	WHO	
21	Yayeh Negash (Dr)	UNICEF	
22	Yenealem Tadesse (Dr)	Jhpiego	
23	Yirdachew Semu	MoH	
24	Yunis Mussema (Dr)	USAID	



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Dr Meseret Zelalem

Director, MNCAH-N Directorate, Ministry of Health Ethiopia



Disclaimer

These guidelines for the management of pediatric patients during COVID-19 were developed based on the available information and knowledge of the effect of COVID-19 on children up to May 2020. However, it will be reviewed regularly based on additional global technical guidance, evidence from the global, regional and national levels on the severity and magnitude of the COVID-19 pandemic and its effect on the pediatric population



Background

The COVID-19 global pandemic, caused by a novel coronavirus, SARS-CoV2, requires precautionary measures and adaptations of health service delivery in each country. The pandemic is challenging health systems across the world. Rapidly increasing demand for care of people with COVID-19 is compounded by fear, misinformation and limitations on the movement of people and supplies — which in turn disrupt the delivery of frontline healthcare. When health systems are overwhelmed and people fail to access needed services, both direct mortality and indirect mortality from preventable and treatable conditions increase (WHO, UNICEF & IFRC, 2020).

Frontline healthcare providers in hospitals, HCs and HPs have an important role to play in ensuring equitable access and providing lifesaving treatments for the major causes of illness and death in children — namely malaria, pneumonia, diarrhea and acute malnutrition. In addition, a keystone of HEWs work includes supporting caregivers and families to make decisions on appropriate and timely care-seeking, adhering to public health advice and limiting direct and indirect mortality (UNICEF, 2020a).

This guidance addresses the specific role of frontline healthcare providers both at community and facility-based health care services in the pandemic context, and outlines the adaptations needed to keep people safe, maintain continuity of essential services and ensure an effective response to COVID-19.

1.1. COVID-19 in children

The symptoms of COVID-19 in children are non-specific and overlap with symptoms of common childhood illnesses, especially pneumonia caused by other viral and bacterial pathogens, and malaria. This must be considered in the context of IMNCI, iCCM and hospital care of pediatric patients. Many children with COVID-19 may have non-specific symptoms such as fever, fatigue, cough or difficulty breathing. Rarely, children may present with diarrhea and vomiting as the only signs (WHO & UNICEF, 2020). According to the limited data, children tend to have the disease less severely than adults, and tend to show lower mortality and critical illnesses (Dong et al., 2020). Children seem to mainly acquire the disease from family contacts (Omori, Mizumoto, & Nishiura, 2020). Cough and fever are the most common symptoms in children, followed by sore throat and runny nose. Some children only get diarrhea or vomiting (Dong et al., 2020; Huang et al., 2020; Xia et al., 2020), and common investigations including white cell count, inflammatory markers and X-rays may differ between children and adults in reliability for identifying COVID-19 (Xia et al., 2020).

However, children might still have other illness. Care-seeking and treatment of malaria, pneumonia, diarrhea, malnutrition and other conditions should continue following local protocols, including appropriate IPC measures. The clinical presentation of COVID-19 in children has to be considered when adapting iCCM, IMNCI and the pocketbook of hospital care for children guidelines and protocols in areas with localized clusters or widespread community transmission. According to early and limited data, the majority of children with COVID-19 have asymptomatic, mild or moderate disease with the risk for more severe disease being higher in pre-school children and infants (UNICEF, 2020a). Although clinical manifestations of COVID-19 among children is generally less severe than those of adult patients, young children, particularly infants, are vulnerable to infection (Dong et al., 2020). Among 345 children with laboratory-confirmed COVID-19 and complete information about underlying conditions, 23% had an underlying condition, with chronic lung disease (including asthma), cardiovascular disease, and immunosuppression most commonly reported (Bialek et al., 2020).

The risk of severe COVID-19 and death is higher among older people and those with underlying conditions (UNICEF, 2020a). A majority of children are expected to have only a mild form of the disease and can be managed in the primary healthcare system, and in the community, adhering to the national guidelines for COVID-19 patients (WHO, 2020c). However, in Ethiopia, pneumonia alone accounted for 17% of child deaths, or killed more than 32,000 children under-five in 2018 and it is the biggest killer of children under-five. Continuity of care should be strengthened in order to minimize deaths due to non-COVID causes. This document provides basic guidance for ensuring uninterrupted continuation of the provision of essential life-saving services for children through iCCM, IMNCI, and hospital care. This is on the basis that malaria pneumonia and diarrhea, as well as under-nutrition, continue to be the leading causes of death among children under five and 6-18 years of age (UNICEF, 2020a).

1.2. Infection prevention and control measures

Based on available evidence, COVID-19 is transmitted between people through close contact and droplets (even those, including children, who are asymptomatic and those with mild symptoms can still spread the disease). Preventive and mitigative measures are therefore key to ensure the health and wellbeing of Health Extension Workers (HEWs) and the community. It is important to follow recommended best practices in the prevention and control of COVID-19, and in maintaining essential routine services (WHO, 2020b, 2020d).

In order to keep health workers and communities safe, initial screening and appropriate infection prevention and control (IPC) measures should be incorporated into all healthcare provision facilities. Adherence to the use of standard precautions for all patients at all times should be strengthened, particularly regarding hand hygiene, surface and environmental cleaning and disinfection, and the appropriate use of personal protective equipment (PPE). The choice of additional IPC measures needed will depend on the local COVID-19 transmission scenario and the type of contact required by each activity. Physical distancing should be implemented as much as possible (WHO & UNICEF, 2020).

In the context of the COVID-19 pandemic, the following standard IPC precautions should be strengthened during all healthcare encounters (WHO & UNICEF, 2020).

- **Hand hygiene:** Using WHO's five moments approach, always clean hands before and after direct patient contact, after the risk of exposure to body fluids and after interactions with the environment (for example, after touching surfaces). Hand hygiene includes cleaning hands either with an alcohol-based hand rub (if hands are not visibly dirty) or with soap and water and drying them with a single-use or clean towel, if available.
- **Use of gloves:** Gloves are required only if direct contact with blood or other body fluids is expected, including secretions or excretions, mucous membranes or broken skin (for example, while performing a rapid diagnostic test for malaria or during certain antenatal and postnatal examinations).
- **Equipment and surfaces:** Equipment and surfaces should be cleaned with water and soap or a detergent, followed by a disinfectant; safe waste management protocols must be followed.
- **Medical masks:** Whether medical masks should be used depends on the task performed (for example, if splashes are expected), and the context and transmission scenario.

In addition, HWs and HEWs should ensure that patients and workforce members adhere to respiratory hygiene, and when sneezing or coughing cover their nose and mouth with a tissue or bent elbow, and then dispose of the tissue safely in a bin (ideally, one with a lid).

1.3. Tackling COVID-19 in the three-tier healthcare system

Health service delivery in Ethiopia is organized in a three-tier system each expected to provide primary, secondary, and tertiary level care. At the bottom of the tier system are Primary Health Care Units (PHCU) supported by a primary hospital. A PHCU is composed of one health centre serving populations of 25,000 to 40,000 people, and five HPs each serving 3,000 to 5,000 people. A primary hospital provides more comprehensive primary level care for 60,000 to 100,000 people. The second tier includes general hospitals, which serve as referral centres for PHCUs. Each general hospital is expected to serve 1-1.5 million people. The top tier consists of specialized hospitals which serve as referral centres for general hospitals and serve 3.5-5 million people (MOH, 2015a). Therefore, the pediatric patient management is equally important in the three-tier healthcare system (HP, HC and hospital) to improve the quality and access for case management, minimizing the risk of COVID-19 transmission in the context of patient care, and to protect HWs. These guidelines are not meant to replace the iCCM and IMNCI, or specialist consultation, but rather to strengthen safe clinical management of these patients and provide to up-to-date guidance in the context of COVID-19.

1.4. Case definitions for COVID-19

The case definition of COVID-19 has three categories: suspected, probable, and confirmed cases (MOH & EPHI, 2020b).

1. Suspected case:

- 1.1 A patient with acute respiratory illness (fever or history of fever **AND** at least one sign/symptom of respiratory diseases, e.g., cough, shortness of breath) regardless of a history of travel to or residence in a location in community transmission of COVID-19 diseases; **OR**
- 1.2 A patient with acute respiratory illness (fever or history of fever **AND** at least one sign/symptom of respiratory diseases, e.g., cough, shortness of breath) regardless of having contact history with confirmed or probable COVID-19 cases; **OR**
- 1.3 A patient with severe acute respiratory illness (fever **and** at least one sign/symptom of respiratory diseases, e.g., cough, shortness of breath, and requiring hospitalization) **AND** the absence of alternative diagnosis that fully explains the clinical presentation

2. Probable case:

- 2.1 A suspected case for whom testing for COVID-19 is inconclusive; **OR**
- 2.2 A suspected case for whom testing could not be performed for any reason

3. Confirmed case: A person with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

NB: Those individuals who claim to have been in contact with a confirmed or probable COVID-19 case will be communicated with contact tracing teams under all respective health system structures, urgently.

Screening and triage for COVID-19 infection

Establishing effective patient flow (including screening, triage, and targeted referral of COVID-19 and non-COVID-19 cases) is essential at all levels. In the absence of PPE and based on the COVID-19 transmission scenario, providers may be forced to maintain spatial distance of at least 1 meter, screen both caregiver and child for symptoms and triage them (WHO, 2020g, 2020i). All frontline sites will need to be ready to assess and refer patients appropriately and safely to reduce transmission and ensure rational use of scarce advanced care resources. Providers need to adhere to national guidelines for testing for COVID-19 suspected cases and house-to-house screening during community level transmission, in order to improve case detection as much as possible (UNICEF, 2020a) **(Table 1 and figure 1)**.

Recommendations for isolation of patients suspected to have COVID-19:

WHO recommends that all patients suspected to have COVID-19 in all settings should be isolated to prevent ongoing transmission of the disease. The recommended location for isolation is in a health facility or, if that is not available, a repurposed community facility or at home. If isolation is to occur at home, then clear instructions about the precautions to be taken should be given to the caregiver or family member accompanying the patient. Appropriate, nurturing care for children needs to be ensured in isolation facilities (WHO & UNICEF, 2020).

COVID-19 screening should be conducted at the sick patient's first point of contact with the health care system (MOH & EPHI, 2020b), preferably at the main entrance point where the child and the caregivers are reviewed as per the national COVID-19 case definition and screening protocol **(Table 2)**. The non-COVID-19 cases (unknown cases) pass through the national standards at the health center for under-five (U5) clinics as per IMNCI guidelines and at the hospitals outpatient departments (OPDs) as per the emergency triage assessment and treatment (ETAT) triage algorithm (as E-emergency, P-priority and Q- stable/que cases). Both the screening for COVID-19 and triages are conducted before the administrative procedure. Instituting targeted referral and counter-referral criteria and processes will be crucial to keep the system from becoming overwhelmed.

Key actions at all health facilities (WHO, 2020g):

- Disseminate information to prepare the public and guide safe care-seeking behaviour.
- Establish screening of all patients on arrival at all sites using the most up-to-date COVID-19 guidance and case definitions.
- Establish mechanisms for isolation of COVID-19 suspected and confirmed cases in all care sites using the most up-to-date COVID-19 guidance.
- Ensure acuity-based triage at all sites providing acute care.
- Establish clear criteria and protocols for targeted referral (and counter-referral) pathways.

Table 1: Planning for triage, key clinical and IPC activities for different transmission scenarios at all levels

	No case	Sporadic cases	Clusters of cases	Community transmission
Facility space, including for triage	Usual space. Enhanced universal screening and isolation of all patients presenting to a health facility using the most up to date COVID-19 case definition IPC – Appropriate PPEs must be used in context; contact and droplet Step 2 – Proper triage with local standard for non COVID-19 or unknown status (WHO, 2016)	Universal screening and isolation in dedicated COVID-19 patient care areas within health facility (e.g. infectious disease ward, isolation rooms in emergency or ICU wards). Or use primary health care unit's isolation area until referral to COVID-19 dedicated centers Step 2 – proper triage with local standard for non-COVID-19 or unknown emergency cases. Appropriate PPEs must be used in context; contact and droplet At HP, HC and hospital levels keep 1m distance and hold examination outside, or in well ventilated space	Universal screening and isolation. More patient care areas repurposed for COVID-19 within the hospital or COVID-19 dedicated hospital especially for severe cases. Active isolation and referral, especially for severe cases from primary hospital, HCs or HPs. Appropriate PPEs must be used in context; Contact and droplet and aerosol producing procedure. At HP, HC and Hospital levels keep 1m distance and Hold examination outside, or in well ventilated space	Universal screening and isolation. Admit to temporary COVID-19 hospital facility or referral to COVID-19 dedicated centres. Referral especially for severe cases. IPC – Appropriate PPEs must be used in context. Contact and droplet and aerosol producing procedure Standard triage for all non-COVID-19 children At HP, HC and hospital levels keep 1m distance and hold examination outside, or in well ventilated space
Staff	Usual staff. Train all staff for safe COVID-19 recognition and care. Activate / establish IPC task force.	Additional staff from non-essential service area called in and trained. More staff requested from the regional/zonal health department	Engage staff in extra hours and expanded care team model with task shifting or task sharing, and relevant changes in responsibility.	Make every effort to ensure sufficient staff available. Expanded care team model and additional emergency medical teams (EMTs).

Figure 1: Flow Chart for sick child algorithm with unknown COVID-19 status in line with the COVID response guideline

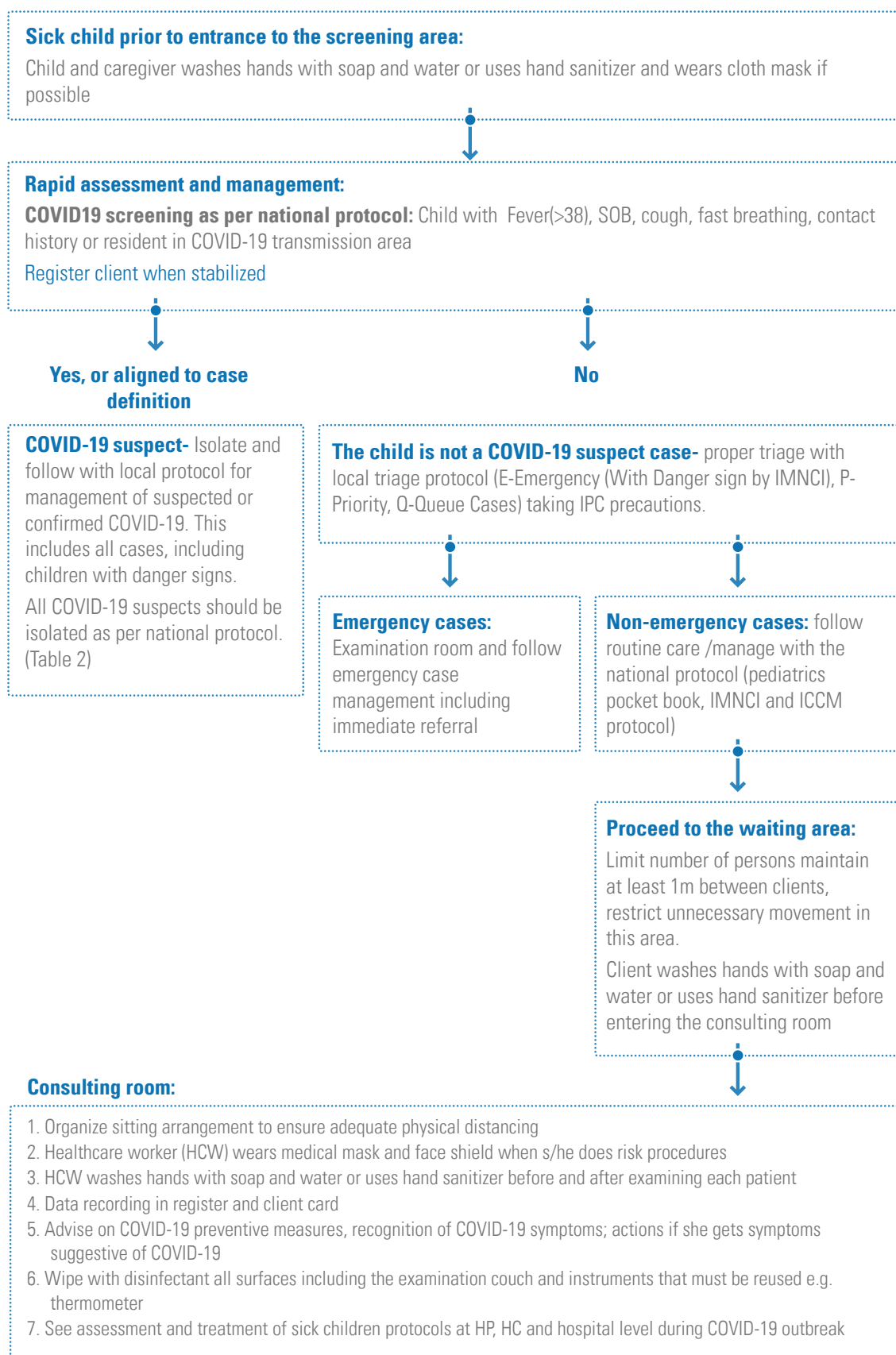
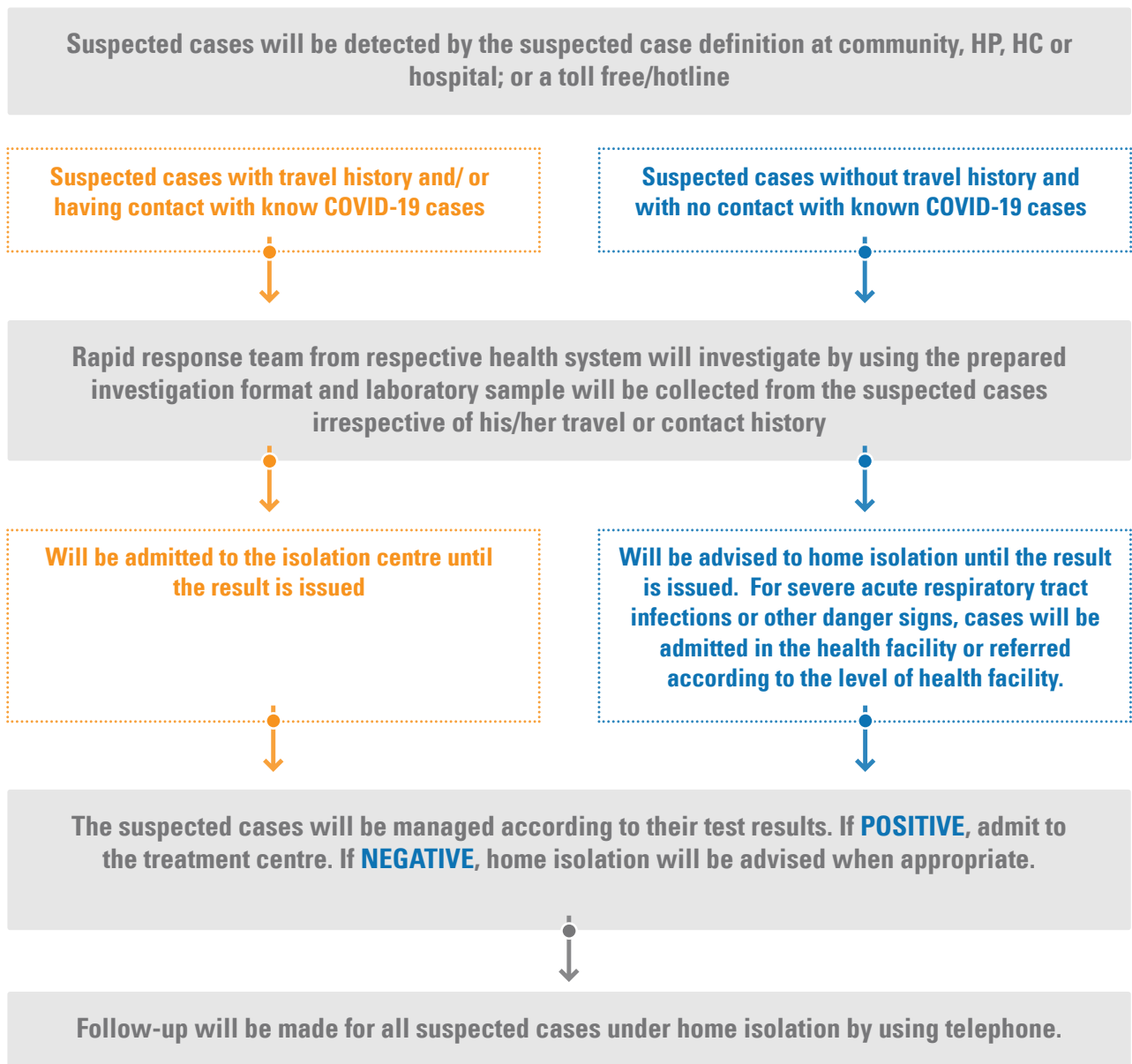


Table 2: Protocol for managing suspected cases by using the suspected case definition, revised on May 20, 2020 (MOH & EPHI, 2020b)



Case management of pediatric cases screened negative for COVID-19

Pediatric case management is one of the essential health services that should be maintained during the current COVID-19 pandemic. As mentioned above, this guideline is intended for health care workers managing pediatric cases at all levels in the era of COVID-19. This section refers to patients with no COVID-19. COVID-19 suspected /confirmed cases will be managed based on the National Comprehensive COVID-19 Management Handbook and triage protocol, and managed accordingly at first point of contact with the healthcare system (MOH & EPHI, 2020b). The main principle is to maintain safe, equitable, quality case management for newborn and childhood illness at all levels while identifying children with possible COVID-19 as much as possible and minimizing the risk of COVID-19 transmission in the context of patient care (UNICEF, 2020a). This guideline further strengthens the need to **follow existing protocols** at all levels for pediatric management but observe the following additional precautions. Case management at all levels should be comprehensive and integrated as per existing guidelines e.g. refer child for immunization of not up-to-date, nutritional counselling, deworming, etc. Case management should be provided in a respectful and client-centered approach while maintaining at least **1m distance**, unless necessary for physical examination or procedures. However, 1m might have to be considered for the duration of respiratory rate counting.

Continued care-seeking for sick children should be encouraged for the management of major causes of childhood illness, as an essential facility and community-based service in the context of COVID-19, including for malaria, pneumonia, diarrhea and wasting (WHO & UNICEF, 2020). All sick children should be assessed and treated as per iCCM, IMNCI and hospital pediatric management guidelines. However, children with fever or respiratory symptoms or cough or shortness of breath, or a combination of these, may have COVID-19, particularly in settings with community transmission, and coinfections may occur (WHO & UNICEF, 2020). Health workers, as per the national guide for rational use of PPE for COVID-19, will use medical mask, long sleeved isolation gown, glove and eye protection while seeing patients with respiratory symptoms while adhering to standard precautions and risk assessment and physical distancing. (MOH & EPHI, 2020a).

All facilities need to ensure that at least minimum requirement for IPC are in place with application of standard precautions such as cough and hand hygiene. HCWs should apply hand hygiene approach:

- before touching a patient,
- before any clean or aseptic procedure is performed,
- after exposure to body fluid, after touching a patient, and
- after touching a patient's surroundings, using soap and water or alcohol-based hand rub.

It is also important that environmental cleaning and disinfection procedures are followed consistently and correctly including devices such as thermometers, respiratory timers, MUAC tape, etc. All children that screen negative for COVID-19; airborne precautions should be in place for aerosol-generating procedures such as tracheal intubation, non-invasive ventilation, tracheotomy, cardiopulmonary resuscitation, manual ventilation before intubation, and bronchoscopy, including use of ventilated room, limiting number of staff and use of eye protection in addition to clean long-sleeved gown and gloves. Special consideration for specific diseases is described in the section below (UNICEF, 2020a; WHO & UNICEF, 2020).

3.1. Disease-specific considerations

In settings with no or sporadic (closely localized and contained) cases of COVID-19, existing IMNCI, iCCM, integrated management of newborn and childhood illnesses (IMNCI), pocketbook of hospital care for children protocols should all be adhered to without changes or modifications, except for increased screening, IPC measures and consideration of standard PPE. The COVID-19 transmission situation should be actively monitored, IPC measures strengthened (hand and cough hygiene, surface and equipment sanitization) and modifications to the protocol prepared.

3.1.1. Management of fever/Malaria (WHO, 2020h)

- Fever is a common symptom of COVID-19, in some cases combined with cough.
- Clinical response to treatment with artemisinin-based combination therapy (ACTs) for cases treated for malaria and is expected within 48hrs after the start of treatment. If there no response to ACT treatment (absence of fever clearance within 48hrs) malaria is virtually excluded as the cause of fever and strengthens the likelihood of other febrile illnesses, including COVID-19 and/or other bacterial/virologic agents.
- Confirming malaria infection with a diagnostic test does not rule out that the patient could also be suffering from COVID-19; similarly, having presumed or confirmed COVID-19 does not mean that the individual does not also have malaria infection.
- Standard malaria diagnosis and treatment protocols at all levels (IMNCI in the HC, iCCM in the HP) should be maintained as long as possible including the continued use of microscopic tests and rapid diagnostic tests (RDTs) for malaria by HWs and HEWs.
- Proper IPC and PPE should be available and utilized (gloves are required in standard protocols due to handling of blood products; in situations of increased risk of COVID-19 transmission, add a facemask for protection (WHO, 2020a)

3.1.2. Management of respiratory illness/pneumonia

- Cough is a common symptom of COVID-19, often in combination with fever.
- The HEWs and HWs should continue to classify and treat suspected pneumonia as per national iCCM/ICMNC and IMNCI protocol based on fast breathing.
- Respiratory rate counting, using age specific cut-offs and respiratory rate timers will be impacted by distancing rules if no PPE available. Ensure a location for better visibility and ask the caregiver to lift the child's clothing and count the respiratory rate from at least 1m distance.
- Treat with Dispersible Amoxicillin tablet for childhood pneumonia, as per standard IMNCI and ICMNC protocol.

3.1.3. Management of diarrhea

- Children with diarrhea and vomiting, especially in combination with respiratory symptoms, might have COVID-19.
- HEWs and HWs should make proper assessment based on the ICMNCI and IMNCI protocol and continue to provide oral rehydration therapy (ORS) and zinc to all children with diarrhea with a strict adherence to IPC precautions.

3.1.4. Management of acute malnutrition

- Treatment of acute malnutrition by HEWs and HWs is part of the ICMNCI and IMNCI protocol.
- HPs, HCs and hospitals should assess and treat acute malnutrition based on the existing treatment protocols.
- Capacity building of HEWs and HWs to provide treatment for acute malnutrition at the HP and HC level is important.
- During assessment, in order to adhere to distancing guidelines and in the absence of PPE, caregivers should be actively included in the assessment and guided by the HEW and HW to perform mid-upper arm circumference (MUAC).
- If MUAC tapes must be re-used, they should be sanitized after each use with alcohol or soap and water.
 - If possible, consider providing each family with a MUAC tape.
 - Reduce exposure by shifting to MUAC only for anthropometric measurements and encourage caregivers to carry out MUAC and edema assessments.
- Use simplified case definitions (e.g., MUAC and edema only) (<115mm MUAC and/or edema).
- Advocate for continuation of breastfeeding (regardless of COVID-19 status of the mother or the child) as the benefits of breastfeeding far outweigh risks while educating mothers about IPC measures. Link to relevant guidance for breastfeeding if mother is a COVID-19 case.
- Reduce the frequency of follow-up visits to once per two weeks for children with uncomplicated severe acute malnutrition and once per month for children with moderate wasting by increasing the take-home ration of RUTF, RUSF, super-cereal and other nutrition commodities.
 - If all services are temporarily suspended, distribute RUTF, RUSF/nutrition commodities for up to eight weeks.
 - Maintain frequency of provision of specialized nutrition foods or other preventative supplementation to children and Pregnant and Lactating Women (PLW) to one per month adhering to recommended hygiene and safety measures, avoiding any mass groupings of people.

Outpatient and inpatient care during COVID-19 pandemic

4.1. Outpatient care

Continuity of primary healthcare is essential but facility-based utilization may decline because of fear, stigma, mistrust, misinformation or other restrictions on access. HEWs and other community platforms should encourage continued care-seeking of essential services and facilitate referrals to primary healthcare facilities. Analyses from the 2014-2015 Ebola outbreak suggest that the increased number of deaths caused by measles, malaria, HIV/AIDS, and tuberculosis attributable to health system failures exceeded deaths from Ebola (Elston, Cartwright, Ndumbi, & Wright, 2017; Parpia, Ndeffo-Mbah, Wenzel, & Galvani, 2016). With a relatively limited COVID-19 caseload, the health system should have the capacity to maintain routine service delivery in addition to managing COVID-19 cases. However, health facilities have started to shift their focus to COVID-19 prevention and control measures, and an overwhelming fear exists among healthcare providers due to lack of PPE. At the same time parents and guardians hesitate to bring their children to health facilities due to fear of contracting COVID-19 and the belief that they may not get other outpatient services. However, the continuity of care for sick pediatric children is critically important to reduce deaths due to non-COVID-19 causes.

Optimize service delivery settings and platforms especially at hospital level:

- Averting child morbidity and mortality through care of vulnerable children.
- Managing emergency conditions that require time-sensitive interventions.
- Availability of referral services may be limited in the context of increasing demands on the health system associated with COVID-19, all health workers should be prepared through targeted in-service training to tackle uncomplicated child health problems within their own facility.
- Existing service locations may be unavailable because they have been designated for the exclusive care of people affected by COVID-19.
- Routine health service delivery may need to be adapted.
- Need to limit the number of provider encounters due to increased demand and decreased staff.
- The primary venue for maintaining acute care services may be shifted to first-level hospital emergency units in order to concentrate services in a setting suited to high-volume high-acuity care available 24 hours per day.
- The working hours essential care of children should include weekends also, in order to increase the service.
- Request part-time staff to expand hours and full-time staff to work remunerated overtime.
- Re-assign staff from non-affected areas (ensuring alignment of clinical indemnity arrangements where necessary).
- Identify mechanisms to maintain availability of essential medications, equipment, and supplies.

- Priority resource lists should be developed (or adapted from existing lists), and planning should be executed in coordination with the overall outbreak response.
- Suppliers and pharmacies (public and private) can be networked to allow dynamic inventory assessment and coordinated re-distribution.

4.2. Inpatient care

- As the case loads of COVID-19 patients increase, facilities will be stretched to meet the rise in demand in human resources and supplies for essential care.
- Preferably all suspected and probable cases should be isolated until proof of infection is refuted with RT-PCR test.
- All COVID-19 positive children should be managed in COVID-19 treatment centres or designated areas within the health facilities.
- Until community spread of the virus is confirmed, health facilities should be able to provide care for all children requiring inpatient care, and plan for phased reduction of service based on national recommendations.
- It is advisable to limit the number of visitors, and every visitor should be pre-screened before entrance to the health facilities.
- Visitors should respect the physical distancing principle and abide to the facilities policy on hand hygiene practice and respiratory hygiene.
- Facilities should clean inanimate surface and floors, beds regularly with hospital disinfectants.
- Otherwise the following high priority health care services should always be available in facilities depending their tier of care:
 - Maternal and child health services
 - Emergency services including trauma care
 - Emergency surgical cases
 - Critical inpatient therapies
 - Inpatient nutritional rehabilitation treatment
 - Inpatient care for acute exacerbations of chronic illnesses
 - Dialysis services
 - Oncology services
 - Mental health services including acute mental health service
 - Auxiliary services, such as basic diagnostic imaging, laboratory services, and blood bank services

Newborn health in the context of COVID-19

5.1. Newborn health

Facility-based maternal and newborn health services, including ANC, PNC and the management of maternal and neonatal complications should continue to be prioritized throughout the pandemic. In pregnant or postnatal women with mild COVID-19 symptoms and not requiring hospitalization, routine ANC or PNC can be provided through alternative delivery platforms (such as telemedicine, mobile phone and home visits) or can be postponed until after the period of self-isolation, provided the following actions are taken:

- Focus community efforts on promoting care-seeking, addressing concerns about the potential risks of COVID-19 transmission at health facilities and supporting self-care and family care practices.
- Engage trained HEWs and Women Development Armies to support basic ANC or PNC through home visits, ensuring that they use IPC measures, including PPE, depending on context and tasks performed.
- Prioritize PNC contacts for women and babies during the first week after birth and to follow up on babies born preterm or with low birth weight.
- Maintain maternity waiting homes where they exist, ensuring that appropriate IPC guidance is followed in the context of COVID-19.
- Clarify information regarding the risks for pregnant and breastfeeding women and their newborns in relation to COVID-19 and address any fears about maintaining breastfeeding and skin-to-skin practices.
- Encourage the mother to express breast milk while applying appropriate IPC measures if she has a severe illness that prevents her from caring for her infant or from continuing direct breastfeeding.
- Ensure that all pregnant and lactating women continue to receive nutritional care as part of their ANC and PNC. After the baby is born, continue counselling about infant and young child feeding, as well as offering lactation support.
- HWs with respiratory tract illness (regardless of COVID-19 infection status) should be exempted from duties in labour ward until recovery.
- Only one caregiver should be designated for the entire duration of admission in the labour ward. No visitors should be allowed in the labour ward.
- Where feasible, provide virtual support to pregnant women and parents via established support groups.

5.2. Newborns and SARS-COV-2 Infection

- SARS-COV-2 has been identified in respiratory sections, fomites and faeces but not in vaginal secretions, amniotic fluid, placental tissues and breast milk; vertical transmission of the virus from mother to infant is therefore not documented as yet. However, transmission to a newborn/infant is possible during postnatal through respiratory droplets or direct contact from the mother, other family member or a HCW who is infected (MOH [Kenya], 2020).

5.3. Essential Newborn Care (ENC)

All steps of ENC have to be employed including the initial doses of the routine immunization to all babies born to a mother who is suspected, probable or confirmed COVID-19. Mothers and infants should be enabled to remain together and practice skin-to-skin contact, kangaroo mother care and to remain together and practice rooming-in throughout the day and night, especially immediately after birth during establishment of breastfeeding, whether they or their infants have suspected, probable, or confirmed COVID-19.

5.4. Breastfeeding and other cares provided to the newborn

Breastfeeding counselling, basic psychosocial support and practical feeding support should be provided to all pregnant women and mothers with infants and young children, whether they or their infants and young children have suspected, probable or confirmed COVID-19.

Infants born to mothers with suspected, probable or confirmed COVID-19 infection, should be fed according to standard infant feeding guidelines. Breastfeeding should be initiated within one hour of birth irrespective of maternal COVID status. Mothers should be advised to continue exclusive breastfeeding for six months with timely introduction of adequate, safe and properly fed complementary foods at age six months, while continuing breastfeeding up to two years of age or beyond. In situations where severe illness in a mother with COVID-19 or other complications prevents her from caring for her infant or prevents her from continuing direct breastfeeding, mothers should be encouraged and supported to express milk, and safely provide breastmilk to the infant. However, in the event that the mother is too unwell to breastfeed or express breastmilk, appropriate breastmilk substitutes can be used.

All mothers who are suspected, probable or confirmed COVID-19 cases who are breastfeeding or practicing skin-to-skin contact or kangaroo mother care should practice respiratory hygiene (for example, by using medical or face mask when near a child if with respiratory symptoms), perform hand hygiene before and after contact with the baby, and routinely clean and disinfect surfaces with which the mother has been in contact.

5.5. Care for small and sick newborns

For babies born to mothers with COVID-19:

There should be a separate room adjacent to the delivery room for neonatal resuscitation, with keeping the golden minute, or if not possible, make sure to keep the baby 2 meter away from the delivery coach where the infected or suspected mother is lying separated by curtain. Standard neonatal resuscitation measures should be followed (Balasubramanian, Rao, Goenka, Roderick, & Ramanan, 2020). Resuscitation equipment including infant warmer and all other equipment and medications based on neonatal resuscitation programme (NRP) guidelines must be available and functional for every delivery, and continuous positive airway pressure (CPAP) should be ready for preterm deliveries.

The newborn may become infected after birth, either from their mother, another family member or within the health care setting. COVID-19 appears generally to be a fairly minor illness in young infants and may be asymptomatic. Infected infants will, however, be potentially infectious and there are concerns that illness could potentially be more severe in preterm or otherwise immune compromised babies. The admission to the newborn intensive care units (NICUs) should be assessed in a designated area in the NICU by an appropriately skilled neonatal team member wearing appropriate PPE. If a newborn with COVID-19 exhibits respiratory symptoms, a chest X-ray is indicated. There should be a separate isolation room for such newborns in the NICU with dedicated separate staff in the unit preferably in a COVID-19 treatment unit (Zeng et al., 2020).

Healthy babies born to suspected/confirmed COVID-19 mothers and who require additional care (e.g. intravenous antibiotics) should be assessed. For babies born to suspected/confirmed COVID-19 positive mothers who require to be admitted to the NNU, repeated clinical investigations should be minimized while maintaining standards of care.

All babies requiring respiratory support should be assessed properly including hypoxemia measurement, and modalities of oxygen administration should be decided, including use of CPAP and ventilation. Intubation should only be undertaken by staff with appropriate competencies. In the context of COVID-19, the evidence in favor of early intubation is limited to adults and older children.

Although the risk of transmission within the first 24 hours after birth is thought to be low, staff should follow guidance regarding use of appropriate PPE, even in an emergency. With emerging evidence, recommendations for management of newborn with COVID-19 continue to evolve. These recommendations are subject to change as more evidence becomes available.

Children with HIV/AIDS, TB and children with chronic illnesses

6.1. HIV/AIDS

The nature of the interaction between COVID-19 and HIV or viral hepatitis is not known. During the COVID-19 pandemic, communities and community-based services will play important roles in facilitating the continuation of essential prevention, testing and treatment services for HIV, viral hepatitis and STIs and in ensuring that people are not further marginalized through stigma and discrimination. Patient-centred outreach and community-based care may be preferred over facility-based services when COVID-19 control measures limit movement and visits to clinics (WHO & UNICEF, 2020). Currently there is no evidence suggesting that children and adolescents living with HIV have higher propensity for COVID-19 than other children without HIV as long as they take their medications correctly and do not have any opportunistic diseases. However, children living with HIV if their immune system is depressed/low CD4 count (CD4 percent for under five) or if they have cardiovascular and pulmonary complications, they may be at risk of severe/critical COVID-19 disease (Ogimi et al., 2019). It is therefore recommended that children with uncontrolled HIV viral load, immunologic and clinical failure, should be closely monitored.

Children and adolescents living with HIV and/or their parents and caregivers, if they appear to have suspected COVID-19, should automatically be linked to local testing and COVID-19 management centers as per the national COVID-19 guidelines.

Antiretroviral therapy (ART) follow-up:

- Children and adolescents with HIV on ART should continue their ART without any interruption. If adherence is good, and no side effects observed, it is suggested to refill drugs for at least three months.
- Children who do not require admission for HIV related severity can be provided with three months Multi-Month Dispensing; they should have proper linkage with the nearby ART centre and the pharmacist (if they were not attending the nearby clinics), as taxi/bus/train travel is one risk factor for transmission of COVID-19.
- However, children on Nevirapine-based regimens should be transitioned to a more effective regimen as soon as possible. Viral load monitoring should not be a rate limiting step to optimizing ART in children. Children on NVP based regimens who weigh <20 kg should be on a LPV/r regimen and children/adolescents who weigh 20+kg can be transitioned to DTG-based regimen (MOH, 2020).
- Children and adolescents with human immunodeficiency viruses (HIV) on ART should continue without any interruption. If the adherence is good, and no side effects observed, it is suggested to refill drugs for at least three months.
- They should maintain at least 30 days' supply and if possible 90 days' supply of antiretroviral drugs; they should have proper linkage with the nearby ART center and the pharmacist (if they were not attending the nearby clinics), as taxi/bus/train travel is one risk factor for transmission of COVID-19.
- Children and adolescents for whom a regimen switch is planned should consider delaying switch until close follow up and monitoring is possible. The current DTG rollout plan should be also postponed in stable patients with controlled viral loads, this is to ensure that patients are tolerating the drugs well and keeping their adherence optimal (MOH, 2019).

- Children and adolescents should switch ARV regimens or add to it for the purpose of preventing and treating COVID-19 infection (e.g. in case of Lopinavir/Ritonavir)

HIV exposed infant follow-ups:

- Follow up of HIV exposed infants should continue as per the guideline (including having DNA PCR test for HIV) to ensure early identification of those whose status may be positive. Infants who are found to be DNA-PCR test positive should be started on ART as soon as possible (MOH, 2018).
- All HIV exposed/infected infant monitoring and interventions such as anthropometry measurements, nutritional assessments, immunization, refill of drugs (Cotrimoxazole, ARTs) and managements of sick babies should continue as per the IMNCl guideline (MOH, 2015b).
- In case HIV exposed, or HIV infected, infants are identified as COVID-19 suspects, they should be linked to the local COVID-19 test and management center (MOH & EPHI, 2020b).
- HIV exposed infant follow-up clinics should not be postponed but should continue as per the usual guidelines.

Laboratory investigations:

- Laboratory investigations need the person to come to the facility; this should be weighed depending on the burden of local transmission of COVID-19. If the risk outweighs the benefit, and if the patient does not have significant complaints related with toxicity and/or failure, we should be opting for postponing it.
- However, if laboratory tests are mandatory, both patient and care givers should be triaged for COVID-19, should wear masks, keep their hand hygiene and social distancing to avoid any chance of acquiring/transmitting the virus during the clinic/laboratory visit. On the other hand, the laboratory personnel should also take all precautions when approaching patients to take blood sample (look at the national COVID-19 guideline).

6.2. Childhood tuberculosis

It is anticipated that people ill with both tuberculosis (TB) and COVID-19 may have poorer treatment outcomes, especially if TB treatment is interrupted. TB patients should take precautions as advised by health authorities to be protected from COVID-19 and continue their TB treatment as prescribed. People ill with COVID-19 and TB show similar symptoms such as cough, fever and difficulty breathing, hence screening for both TB and COVID-19 is recommended. Both diseases attack primarily the lungs and although both biological agents transmit mainly via close contact, the incubation period from exposure to disease in TB is longer, often with a slow onset (WHO, 2020e). TB contact screening should continue as per national guideline to identify children and other contacts in need of preventive therapy or for TB diagnostic work-up.

TB clinic and follow-up:

- All measures should be taken to ensure continuity of services for people who need preventive and curative care for TB. It is critical that TB services are not disrupted during the COVID 19 response.
- All the protocols for childhood TB prevention, diagnosis and treatment should continue to be practiced with the addition of robust infection prevention protocols.

- In most cases TB treatment is the same with or without COVID 19 infection. If there are complications related to either, it should be referred to higher centres for treatment. It is critical that people who need treatment continue taking it during the pandemic, even if they acquire COVID-19, to increase chances of cure and reduce transmission and the development of drug-resistance.
- Sample handling and transport should be done with maximum precaution
- Whenever a child is suspected for both COVID 19 and TB, test should be performed for both.
- During the COVID-19 pandemic, communities and community-based services will play important roles in supporting the delivery of TB services while ensuring that affected communities are not further marginalized through stigma and discrimination (WHO, 2020e)

Child-centred case management – an ECD perspective

During this uncertain time child development does not pause. Children are still learning, growing and developing, while additional stress factors might be experienced due to the COVID-19 context. Supporting children, parents and caregivers is more crucial than ever.

Possible implications of COVID-19 on ECD includes:

- Increased psychosocial distress among parents/caregivers due to socio-economic or other issues caused or exacerbated by COVID-19.
- Distress of children due to death, illness, not being able to go to school or go out to play, separation from loved ones or fear of the impacts of the pandemic on themselves and on their family and friends (tension in their home, too much exposure to news on COVID-19).
- Increase in child abuse, neglect.
- Risk of injuries to children/accidents from insufficient supervision (due to consumption/misuse of toxic disinfectants and alcohol).
- Less play, activity and learning time, and not being able to play with friends.

Proposed ECD interventions in the context of COVID-19 (The Alliance for Child Protection in Humanitarian Action, 2019):

S.N	Interventions	Responsible body
1	Advocacy on access to healthcare through different platforms, particularly in the hard-to-reach areas.	Health leaders at each level
2	Counselling the parents/caregiver to take care of their own physical and socio-emotional well-being, keep routine in daily life, practice responsive caregiving to meet the children's needs, provide psychosocial support for their young children, and engage their children in play-based early stimulation and early learning activities.	HWs including HEWs
3	Integrate and provide counselling of caregivers on care for child development through Maternal and Child health services (both at the facility and household level), particularly on the importance of responsive caregiving and play-based early stimulation and early learning for the small and sick newborn, sick children, malnourished children, and children with developmental delays and disabilities. Advise families to think of alternative care for their children if they (caregivers) are affected by the pandemic.	HWs including HEWs
4	Integrate counselling (in MCH services) for parents on the nature of the pandemic and motivate caregivers to communicate with their children without administering fear/stress to the child	HWs including HEWs
5	Identify potential child abuse and neglect cases and provide health services for abused children and link/refer them to the child protection services/centers. The services include specific information about who HWs should contact for referral and contact information.	HWs (including HEWs) in collaboration with and Health leaders at each level

Assessment and treatment of sick children at HP and HC level during COVID-19 outbreaks in setting with no transmission, sporadic cases or community transmission

All sick children in primary hospital, HC and HP should be assessed and treated as per IMNCI and iCCM guidelines. However, children with fever or respiratory symptoms or cough or shortness of breath, or a combination of these, may have COVID-19, particularly in settings with community transmission, and coinfections may occur. The HWs and HEWs delivering IMNCI and iCCM should be trained in national screening protocols and should know the definition of suspected cases of COVID-19 (Table 2). The IMNCI and iCCM protocol should be completed for all children, irrespective of screening result, and treatment should be initiated as per IMNCI and iCCM national guidelines but ensuring that IPC precautions are used as appropriate.

After the IMNCI and iCCM assessment are completed and the child is treated, the local protocol for COVID-19 should be activated for all children suspected to have COVID-19.

HWs and HEWs delivering IMNCI and iCCM should (WHO & UNICEF, 2020) (Figure 2 and 3):

- Maintain distance of at least 1m, except when performing a malaria RDT or measuring mid-upper arm circumference (MUAC). Visits should be held outside or in a well-ventilated space, and gatherings of people should be avoided.
- Screen all children, screening is done for both the caregiver and the child and includes inquiring about symptoms as well as possible exposure to COVID-19 in the household or beyond.
- Implement standard precautions for IPC, including hand hygiene, using WHO's five moments for hand hygiene protocol, routine cleaning and disinfection of materials and surfaces and respiratory etiquette.
- Use PPE, ideally, all HWs and HEWs should be provided with PPE. The type of PPE required in settings with community transmission depends on the outcome of the COVID-19 screening.
- In children who are not suspected to have COVID-19, wearing a medical mask is the minimum required when in close or direct contact with the child; gloves are required when performing a malaria RDT.
- In children who are suspected to have COVID-19, full PPE (that is, mask, eye protection, gown and gloves) should be used if available (see Box 2), and standard IMNCI and iCCM protocols should be followed, given that direct physical contact between the HW or HEW and the child may be required to perform a malaria RDT, measure MUAC and to press both feet to test for edema;

Use full PPE when physical contact may occur with a person suspected to have COVID-19 WHO recommends that full PPE (that is, a medical mask, gloves, eye protection and a gown) should be worn for all interactions that involve direct physical contact with patients suspected or confirmed to have COVID-19. It is important to ensure that community HWs performing community case management are equipped with sufficient quantities of PPE and have been trained how to use it.

If full PPE is not available, in children identified as COVID-19 suspects, a modified distance IMNCI and iCCM protocol, which allows the HW and HEW to maintain distance and does not involve direct contact, should be implemented with children who are suspected to have COVID-19.

- HWs or HEWs should maintain a distance of at least 1m throughout the visit and avoid direct contact with the child.
- Hand hygiene should be performed before and after each visit.
- malaria RDTs should not be performed, and, in children with fever, malaria treatment should be given on a presumptive basis.
- HWs/HEWs should ask the caregiver to hold up the child's clothing and then they should count the respiratory rate from 1m away to ensure there is no contact.
- HWs/HEWs should guide the caregiver to measure the MUAC and check for edema.
- HWs/HEWs should guide the caregiver to provide the first dose of treatment or any pre-referral treatment.

Due to the overlap between symptoms of COVID-19 and those of common childhood illnesses, a significant number of children may be identified as suspected to have COVID-19 during screening. Those identified as suspected cases will require isolation at home or isolation centre as per (Table 2), but other causes of acute symptoms should be evaluated and treated as needed.

HEWs are encouraged to work with other community actors to maintain and encourage timely care-seeking practices for childhood illness and maintain community trust in the HEWs ability to provide care for their children. This may also help to ease demand on health facility resources (UNICEF, 2020a).

Follow up of children is encouraged as per standard protocol. If done via vation this should be with adhering to containment and infection control measures. It is advisable that HEWs identify a well-ventilated location outdoors for the consultation instead of entering the house and maintaining distance, wearing PPE if available (UNICEF, 2020a).

Figure 2: Assessment and treatment of sick children at community or HP level during COVID-19 outbreak: In the context of community transmission, when screening for COVID-19 has been activated

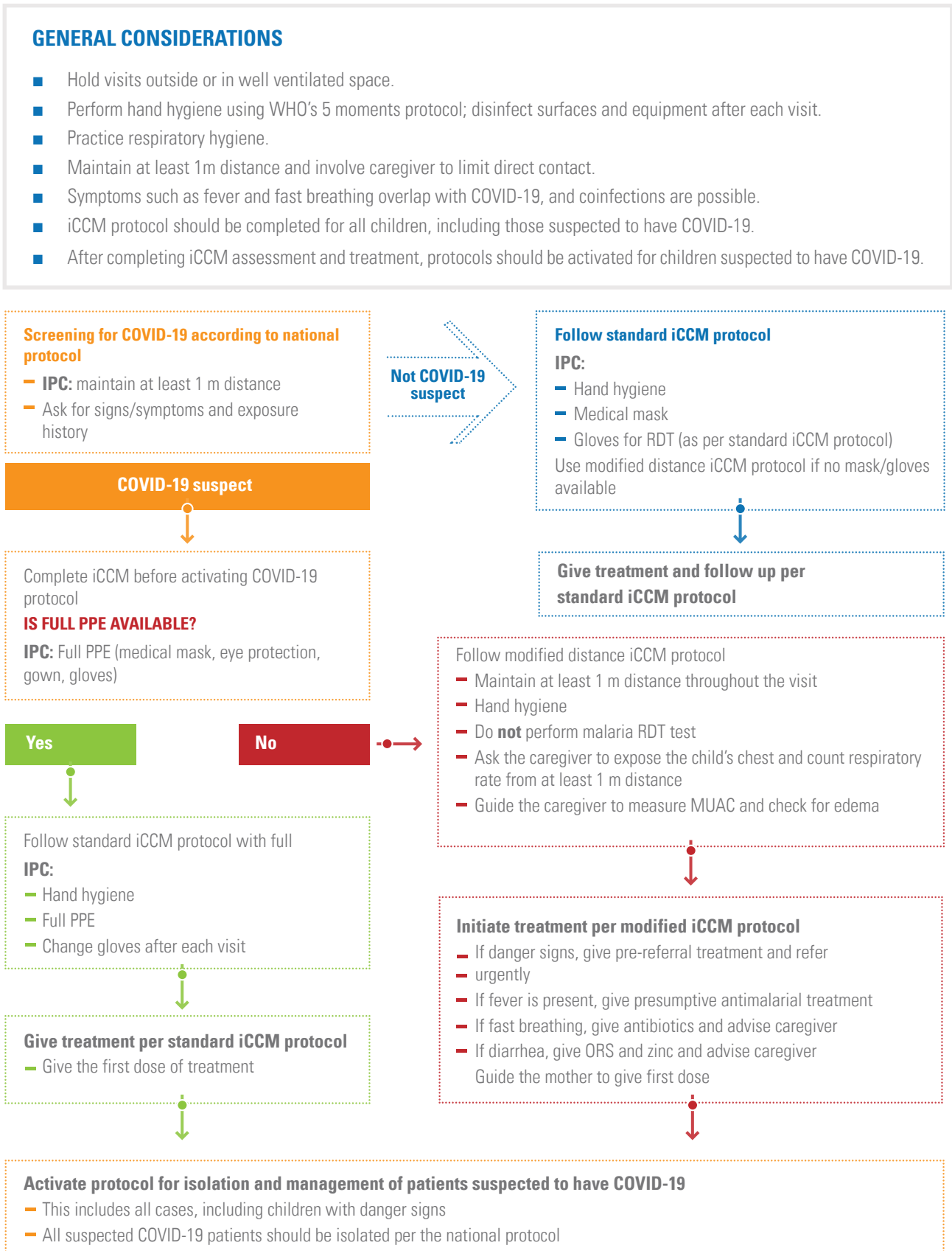
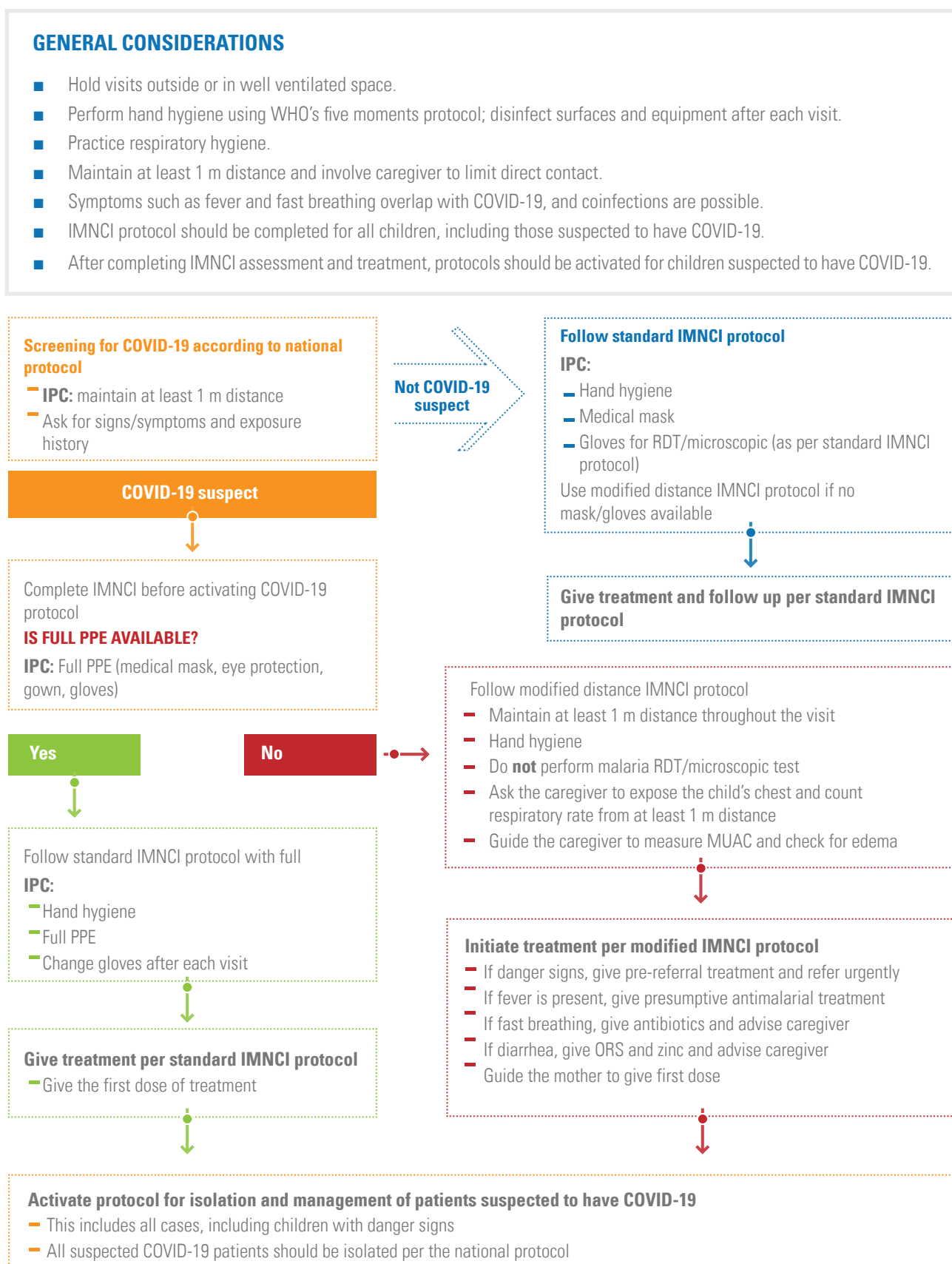


Figure 3: Assessment and treatment of sick children at HC and primary hospital during COVID-19 outbreak: In the context of community transmission, when screening for COVID-19 has been activated



Multisystem inflammatory syndrome in children and adolescents with COVID-19

According to a recent WHO scientific brief clusters of children and adolescents have been identified in Europe and North America requiring admission to intensive care units with a multisystem inflammatory condition with some features similar to those of Kawasaki disease and toxic shock syndrome reports. Case reports and small series have described a presentation of acute illness accompanied by a hyperinflammatory syndrome, leading to multiorgan failure and shock. Initial hypotheses are that this syndrome may be related to COVID-19 based on initial laboratory testing. Children have been treated with anti-inflammatory treatment, including parenteral immunoglobulin and steroids (WHO, 2020f).

Preliminary case definition:

Children and adolescents 0–19 years of age with fever > three days

AND two of the following:

1. Rash or bilateral non-purulent conjunctivitis or muco-cutaneous inflammation signs (oral, hands or feet).
2. Hypotension or shock.
3. Features of myocardial dysfunction, pericarditis, valvulitis, or coronary abnormalities (including ECHO findings or elevated Troponin/NT-proBNP),
4. Evidence of coagulopathy (by PT, PTT, elevated d-Dimers).
5. Acute gastrointestinal problems (diarrhea, vomiting, or abdominal pain).

AND

Elevated markers of inflammation such as Erythrocyte Sedimentation Rate (ESR), C-reactive protein, or procalcitonin.

AND

No other obvious microbial cause of inflammation, including bacterial sepsis, staphylococcal or streptococcal shock syndromes.

AND

Evidence of COVID-19 (RT-PCR, antigen test or serology positive), or likely contact with patients with COVID-19.

The case definition will be revised by WHO as more data become available. This syndrome in children with features of typical or atypical Kawasaki disease or toxic shock syndrome shall be considered. In addition, it requires to the collection of standardized data describing clinical presentations, severity, outcomes, and epidemiology. The case report form is available in the WHO scientific brief on clinical care made on 15 May 2020 (WHO 2020f).

Harmonization and collaboration with private healthcare facilities

Ministry of Health (MoH) is striving to urgently increase the capacity to test, trace and treat COVID-19 patients while maintaining the essential health services. Engaging the private healthcare facilities and pharmaceutical companies, pharmacies and drug stores is crucial.

10.1. Private sector engagement for COVID 19 response

In addition to the efforts of the private health sector engagement in COVID-19 prevention and control mitigation plan, they will have also a significant contribution in the management of pediatric patients and ensuring a sustainable availability of lifesaving health commodities (essential medicines, medical supplies and equipment). Therefore, a strong collaboration mechanism shall be established at all levels.

Supply chain

11.1. Coordination of the supply chain

The need to redirect supplies to the treatment of patients with COVID-19, compounded by general supply chain inefficiencies, disruptions of services, stockouts of health commodities and resources limitation will be among major risk that the supply chain system will face. Hence, strengthening of selection, quantification/forecasting and supply planning, procurement, end-to-end distribution and the rational use of essential supplies and medicines for newborn and children is more important during the COVID-19 crisis management than ever. In order to minimize risks strong coordination among different stakeholders within the supply chain system need to be well strengthen and interventions are proactively developed and implemented throughout.

Recommended actions:

- WorHOs and HCs will be provided for their four months of stock from Ethiopian Pharmaceuticals Supply Agency (EPSA) hubs to their respective HCs and HPs under their catchment.
- This will minimize the risk of stock out and system disruption due to the pandemic.
- For any accidental emergency stock out, EPSA will be responsible to re-supply requested emergency items on time.
- EPSA will aggregate child health commodities re-supply request from Report and Request Form (RRF) from WorHOs and HC and ensure stocks are availability at their warehouse, if not facilitate stock transfer from central as short as possible.
- EPSA Central will conduct child health commodities stock assessment and revise supply planning to identify commodities for immediate procurement initiation (if required) and communicate the list with MOH and relevant implementing for resource mobilization and allocation.
- Furthermore, EPSA with close coordination with MoH and implementing partners like UNICEF, CHAI & R4D facilitate procurement of Child Health commodities with high risk of stock as short as possible through utilizing different procurement methodologies to expedite procurement and overall shipment arrival process. For those products that are already on pipeline, strong measures will be taken to facilitate the shipment process and product in country arrival.

11.2. Oxygen and pulseoximeter

The ability to detect and treat hypoxemia is critical to patient care in all medical care units and ensures quality of services, especially for children and neonates. Oxygen should be available in all hospitals and health centres. Medical oxygen and pulseoximeter are vital health commodities to combat pneumonia and other causes of neonatal and child mortality and morbidity, for treatment of many obstetric emergencies, including cardiac arrest, acute blood loss, shock, dyspnea (breathlessness), pulmonary edema, unconsciousness, convulsions (eclampsia), fetal distress during labor and for COVID-19 management. High requirement of oxygen for COVID-19 response will create a pressure on the system while responding to the emergency situation and accommodating the need at non-COVID centres for basic health services. As a result, there needs to be strong collaboration with regional health bureaus (RHBs) and private sector owned plants in ensuring the required amount of high-quality oxygen production by applying different expansion strategies and strengthening small scale production at the health facility level.

Resource mobilization

MoH and EPSA continue coordination on ensuring resource are mobilized on directly from donors/ implementing partners if available or through MoH managed pool of sources and from domestically mobilized funds including Revolving Drug Fund (RDF) as short as possible. This guideline will be useful to mobilize resources for the MoH to provide the required capacity building through innovative approaches to healthcare providers at all level, avail essential medicines, supplies and equipment, strengthening the health system, monitoring and evaluation of the program including mentorship/coaching and supportive supervision.

Monitoring and evaluation (M&E) of supply chain management

The COVID-19 pandemic could result in a critical shortage of essential health commodities for the health system; establishing a stringent M&E system for supply chain management while strengthening the existing routine M&E is very demanding. Hence, there will be a weekly, monthly, bi-monthly and quarterly stock monitoring system as required using different approaches/communication mechanisms (physical visit at selected health facilities, communicating with virtually).

Risk communication and demand creation in the community in the context of COVID-19 for children and others

Fear of acquiring the disease from visiting health facilities or contacting HWs had led to a breakdown in trust in health systems and avoidance of services by the public during infectious disease epidemics. Hence, trust in the health facilities hangs in the balance and meeting the essential needs of patients by controlling infection risk at health facilities is key to increasing the confidence of clients to seek health services and adherence to public health advices. In addition, clear communication and community engagement strategies are crucial to adequately inform, debunk misconceptions and involve communities in epidemic control (WHO, 2020b). In maintaining the essential child health services, employing an appropriate and integrated risk communication and community engagement activities would be very important. This will be through strengthening the community platforms for effective community engagement in the prevention and control measures against the COVID-19 pandemic. The levels of intervention for protecting essential health services requires multi-level and multi-pronged approaches.

- **Health system level interventions** - the health system at federal, regional, zonal and woreda levels shall establish/strengthen a team (non-COVID-19 team) that deals with maintaining essential services at all level of the trier system. The essential services task force shall coordinate and provide overall support to health care facilities in order that they have the necessary orientation and guidelines in how to protect and maintain essential services amidst the COVID-19 response. Specific task may include:
 - Make sure that teams (could be sub-team under the COVID taskforce) established at all levels.
 - The team at MOH/RHBs shall closely work with national and regional RCCE team to coordinate and integrate messages and communication strategies as maintaining essential services are part of the overall COVID-19 response.
 - Adapt and develop guides to orient health care providers at all levels.
 - Design training/orientation modality to reach each facility and care providers including the HEWs and Women Development Armies (WDAs).
 - Make sure that essential supply side equipment is available and mobilized to ensure the safety of both providers and clients/patients at facilities.
 - Track the uptake of routine essential services.
- **Facility based interventions:** health care facilities are supposed to work on readiness for protecting essential routine services during the COVID-19 pandemic. Communications interns at health care facilities and HWs shall focus on providing accurate information during the facility-based group educations and interpersonal communications.

- **Community level interventions:** Health center staff and HEWs shall integrate key messages to communicate with the communities during the COVID-19 response. Guided and coordinated by the respective WorHOs, community engagement activities, community outreach and house-to-house surveillance activities shall integrate identification of household health needs, health education and link with the health system for appropriate healthcare. Apart from COVID-19 response messages, communication may be integrated to address the needs of families and communities to continue to seek care from facilities, avoiding stigma and discrimination against individual and families of suspected COVID-19 cases and health care providers. Developing well-tailored guides for HEWs and WDAs would help them convey messages to the families and communities in their community based and house-house engagements.
- **Media Interventions:**
 - Mass media: The existing mainstream media is significantly contributing to disseminating messages for COVID-19 response. Using the existing opportunity and organizing different shows or programmes will help in framing and reinforcing the message that essential services are being critical affected by the attention shift and need to be addressed immediately before it costs lots of lives.
 - Social media: The identified essential health services should be communicated to the public through the existing major social media platforms that the RCCE team is using for COVID-19 response.

Key topics for communication include (WHO & UNICEF, 2020):

- COVID-19 transmission, public health actions to reduce the risk of transmission and risk factors associated with severe illness.
- Continued care-seeking for essential services, how care can be sought safely and any changes in service delivery settings or points of care.
- Self-care and family care practices in the home, which should be provided to all members of the household to address their health needs and avoid reinforcing traditional gender roles.
- Share information about who to contact and where to seek care in case the patient has danger signs.
- The role of the community health workforce as trusted actors in protecting the community.
- mental health and psychosocial well-being, addressing the increased risks of domestic violence against women, children, adolescents, persons with disabilities and older people, and providing information about accessible services.
- Community resources may help to identify trusted family, friends and neighbours who can keep in touch with, and support, persons subjected to violence.

Partnership and coordination at all level for routine programmes and impact of COVID-19

In the COVID-19 context, partnership and coordination is crucial to maintain provision of essential routine child health care services as well as to mitigate the impact of the pandemic. Aligned with the high-level ministerial taskforce's effort to coordinate the national response to the pandemic, the efforts and resources of key actors at different levels need to be effectively coordinated at different levels of the health system. This includes mapping and engagement of civil societies, professional associations, private sectors and the community at large.

Advocacy and programme communication

According to the weekly report from the continuity of primary healthcare in the context of COVID-19, in some areas the routine provision of healthcare services (maternal, newborn and child health care such as antenatal, skilled delivery and immunization) has been interrupted. In addition, some health facilities are not properly delivering therapeutic feeding and treatment for newborn and childhood illness services. There are also cases where women are delivering at home without the support of health workers. Some regions are reporting malaria, yellow fever and vaccine-preventable measles outbreaks, and other communicable diseases. The MoH in collaboration with development partners including UN agencies are emphasizing the importance of maintaining delivery of essential health services while significant effort is given to the containment of pandemic. Several factors are reported to have contributed to the interruption of health services. This include: redeployment of staff to treat increasing numbers of patients infected with COVID-19; exposure of some health workers to COVID and subsequent quarantine; increased workload for HWs posing a severe strain on the capacity to maintain essential healthcare services; community misconceptions such as that a visit to a health facility increases the risk of contracting COVID, and weak health system governance.

Key advocacy asks:

- MoH strengthens the governance and accountability mechanisms in the health system through the established taskforce from federal to woreda level. This will help regular monitoring to ensure health facilities render the routine health services.
- MoH and RHBs emphasize the continuity of essential health services in addition to preventive and mitigation measures for COVID-19.
- Conduct rigorous awareness raising in order to eliminate misconceptions and rumours regarding COVID-19 and health facilities used for the response; and convince people to seek different health services in the health facilities as normal.
- Maintaining the proper delivery of essential health care services while freeing up resources for the COVID-19 response.
- Mobilize, train and repurpose the health workforce according to priority services. There is a need to identify the HWs available and upskill them for rapid deployment to meet surge capacity demands and maintain essential healthcare services.
- Maintain ongoing communications with HWs.
- Protect the physical and mental health of frontline HWs; ensure the safety and protection of HWs on the frontline of healthcare service delivery and address occupational health concerns relating to COVID-19.
- Donors, development partners, and private sector should provide the necessary PPE to frontline HWs who continue providing essential healthcare services.
- MoH and RHBs, in collaboration with the developing partners, should orient frontline healthcare providers through innovative approaches.

Planning, monitoring and evaluation

Planning, monitoring and evaluation aims at guiding: 1) intervention planning, 2) monitoring implementation and 3) evaluation of the impact of the intervention. It would be helpful to ensure community and stakeholder engagement in the process of planning, monitoring and evaluation.

Planning: The health system-strengthening plan to support pediatric case management should be prepared and costed at each level. Update the plans over the implementation course as needed to address outbreak situations. Communicate the updated plan timely to all the stakeholders. Properly use the plan to guide and monitor the implementation.

Monitoring: To monitor the implementation progress, programme managers and others delivering the intervention should maintain and share data/information on a continuous basis. Ensure real time reporting and communication through the existing DHIS-2 and other platforms created for the emergency response. Ensure regular data analysis and use of data for decision-making and corrective action. Conduct supportive supervision, and performance review meeting using virtual/relevant safe approaches.

In addition to the weekly perinatal and maternal mortality report, the following key indicators will be monitored monthly from DHIS2 with appropriate dashboard.

- # of pregnant women that received ANC at least once, by maternal age
- # of pregnant women that received ANC at least four times, by maternal age
- # of births attended by skilled health personnel
- # of live births
- # of postnatal visits within seven days of delivery
- # of neonates resuscitated and survived
- # of neonatal deaths in the first seven days of life (institutional)
- # of sick young infants zero-two months treated for sepsis
- # neonates admitted to NICU
- # neonates discharged from NICU
- # of newborns weighing <2000gm and/or premature newborns for which KMC initiated
- # of under five children treated for pneumonia
- # of children treated for diarrhea with ORS and zinc
- # of prevention of mother-to-child HIV transmission (PMTCT) and HIV-exposed infants (HEI)

Key monitoring questions:

What is the status of implementation of the pediatric case management during the outbreak?

Indicators of the status of implementation serve as an internal management tool. They are markers for government and partners to identify progress in its implementation and make plans for improvements. They will also help the government and partners to monitor progress in order to respond to needs for technical and other assistance to support national activities.

What is the quality of inputs to the intervention (supplies, training/orientation and supervision/follow up)?

For basic quality assurance, the extent to which the conditions of inputs (supplies, training/orientation and supervision/follow up) are met needs to be monitored against the minimum standard set.

Evaluation: To evaluate the impact of the intervention, supervisors can observe health facilities and service providers during supervisory visit to health facilities. Surveyors can also interview caregivers to identify practices. Periodic observations and interviews (following the intervention) provide the necessary information.

Key evaluation questions:

What is the impact of intervention on health system resilience/pediatric case management by health facilities/service providers?

A structured observation of the case management process permits a direct assessment of health facility and service provider practices. The assessments of the impact of the intervention on the health facility/service can be completed during health facility visit by supervisors using observation tools.

What improvements were seen in caregiver practices?

The assessments of the impact of the intervention on caregiver practices done during health facility visit by supervisors should be done via exit interviews/key informant interviews, or other appropriate methods.

Develop surge plans at facility and community-based responses as part of PHC for each facility linked to district and national response. Monitor caseloads to ensure essential health services can be maintained and surge actions are implemented as caseloads increase. Identify thresholds and link to specific actions and resources. Monitor HPs, HCs and hospitals level health service delivery using pre-existing DHIS2 and CHIS, looking to prioritizing indicators to track continued essential health service delivery (UNICEF, 2020b)

Referral system

These guidelines for the management of pediatric patients during COVID-19 were developed based on the available information and knowledge of the effect of COVID-19 on children up to May 2020. However, it will be reviewed regularly based on additional global technical guidance, evidence from the global, regional and national levels on the severity and magnitude of the COVID-19 pandemic and its effect on the pediatric population

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GUIDELINES FOR THE MANAGEMENT OF PEDIATRIC PATIENTS DURING THE COVID-19 PANDEMIC

MATERNAL, NEWBORN, CHILD, ADOLESCENT HEALTH AND NUTRITION DIRECTORATE,
MINISTRY OF HEALTH, ETHIOPIA

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