

GUIDELINES ON THE MANAGEMENT OF PAEDIATRIC PATIENTS DURING COVID-19 PANDEMIC

March, 2020















Foreword

The Pediatric guidelines and protocols for SARS-CoV 2 and COVID 19 have been developed in response to the new Coronavirus disease 2019 (COVID 19). COVID-19 is a serious respiratory viral infection caused by a novel corona virus recently named SARS-COV2. Towards December 2019 this virus was identified as a cause of upper and lower respiratory tract infections in Wuhan, a city in the Hubei province of China. It has since rapidly spread globally to more than 188 countries and resulted in over 460,000 and 20,000 infections and deaths respectively.

The pediatric population requires special consideration because of the relatively milder disease progression and atypical presentation in them compared to adults. These guidelines cover 5 unique considerations for children; Isolation Requirements, Triaging and Prioritizing Care of Those With Respiratory Tract Infections In Out-patient-departments, Managing The New Born Units (NBU) and Kangaroo Mother Care (KMC) Facilities, Optimizing Utilization of Paediatric Outpatient Clinics (POPC) and Routine Immunization Services in the Kenyan context. Considerable information has been extracted from various related international documents.

I expect every clinician and health care worker to adhere to these guidelines to aid them in provision of quality and effective screening and management of children suspected or diagnosed to have COVID-19.

As experience and knowledge on COVID-19 is rapidly evolving, these interim guidelines will be updated periodically.

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Acknowledgment

This guideline has been developed through the contribution of a group of experts, many individuals and supporting partners who are committed to ensuring effective management of pediatric patients during this pandemic of COVID-19.

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Management Of Paediatric Patients During COVID-19 Pandemic.

Preamble

This guidance seeks to advice health workers in paediatric arena during this COVID-19 outbreak. The evidence is rapidly changing and this guidance will be updated to reflect the same as evidence becomes available. This guidance should be used alongside all existing infection prevention control guidelines (GUIDANCE FOR INFECTION PREVENTION AND CONTROL FOR CORONA VIRUS DISEASE IN HOMES AND RESIDENTIAL COMMUNITIES Interim Guidance March 18th 2020) and case management guidance in the health facilities see INTERIM GUIDELINES ON MANAGEMENT OF COVID-19 IN KENYA.

Specifically, this guidance provides advice on 5 areas;

- I. Isolation Facilities for children in Health Institutions
- II. Triaging of children with respiratory tract infections in Out-Patient-Departments
- III. Adjustments required for managing New Born Units and Kangaroo Mother Care Facilities
- IV. Paediatric Outpatient Clinics
- V. Routine Immunization Services

To address the above issues, we undertook a desk review of available evidence.

There was also an online platform which enabled health care workers involved in child health to provide their input into the process and content of the guideline.

Background.

Coronaviruses (CoVs) comprise a large family of enveloped, single-stranded, zoonotic RNA viruses belonging to the family Coronaviridae. CoVs mostly cause respiratory and gastrointestinal symptoms ranging from the common cold to more severe disease such as bronchitis, pneumonia, acute respiratory distress syndrome (ARDS), coagulopathy, multi-organ failure and death(Zhu et al., 2020). They can also cause exacerbations of chronic obstructive pulmonary disease, cystic fibrosis and asthma (N. Chen et al., 2020; Huang et al., 2020).

The 2019 novel CoV (SARS-CoV-2) originated in Wuhan China and is currently causing outbreaks globally including Kenya. There has been an increase in the number of confirmed cases since the first case on 12th March 2020 to the current 25 cases as of 25th March 2020. The main drivers of the outbreak seem to be symptomatic and asymptomatic humans infected with SARS-CoV-2 from whom the virus can spread to others through respiratory droplets or direct contact with contaminated surfaces. The infective period is on average 14 days (2-21 days) (CDC, 2019).

The term COVID-19 is used for the clinical disease caused by SARS-CoV-2. The disease mainly affects adults. The data on children is scarce and where available it shows they account for only 0.9% in China, 1.2% in Italy and 5% in USA of the diagnosed cases (Ludvigsson, 2020). The disease seems to present with milder symptoms and consequently lower fatality among children(Dong et al., 2020; Ludvigsson, 2020; Zimmermann & Curtis, 2020). Amongst, children, the more severe symptoms like acute respiratory distress syndrome and organ failure were described in those who were less than 12 months(Cui et al., 2020; Dong et al., 2020). Available low quality evidence suggests that the incubation period could be up to ten days and children are likely to shed the virus even though they have mild symptoms(Cai et al., 2020).

Summary of currently available evidence.

- 1. Children get less severe disease than adults. Mortality and critical illness are very rare (close to 0%) (Dong et al., 2020).
- 2. Children probably acquire the COVID-19 less often than adults. They mainly acquire the disease from family contacts. (Mizumoto, Omori, & Nishiura, 2020; So, 2020)
- 3. Cough and fever are the most common symptoms in children, followed by sore throat, runny nose. Some children only get diarrhoea or vomiting. (Dong et al., 2020; Lu et al., 2020; Wei, 2020)
- 4. Common investigations including white cell count, inflammatory markers and X-rays may differ between children and adults in reliability to identify COVID-19. (Xia et al., 2020). See the case management guidance.
- 5. Neonates do not seem to get severe disease and there is no evidence for vertical transmission. The virus has not yet been identified in amniotic fluid, placenta, cord blood (H. Chen et al., 2020). However, one 30 hour old neonate has been found positive for COVID-19. (Wang et al., 2020).
- 6. There is currently no evidence on the following:
 - a. The role of asymptomatic children in transmission of the virus
 - b. Faecal oral transmission given that the virus has been detected in stool up to 4 weeks post symptomatic phase (Cui et al., 2020).
 - c. Why children are less affected though there are several hypotheses as postulated by the International Pulmonologists Consensus Group(IPCG). These include:
 - i. Most children in the affected countries were on a scheduled school holiday during the start of the outbreak in Wuhan.
 - ii. The less mature immune system of children may be one of the mechanisms that lead to the absence of severe immune responses after viral infection.
 - iii. As SARS-CoV-2 virus exploits the ACE2 receptors to gain entry inside the cells, less mature of ACE2 receptors in children is another hypothesis in this regard.
 - iv. Recurrent exposure to respiratory viruses in children may give them some immunity to emerging new pathogens.

Specific guidance

I. Isolation Facilities for children in Health Institutions

Available evidence

Evidence suggests that some physical interventions may reduce the spread of respiratory viruses, particularly handwashing and wearing of masks, gowns, and/or gloves, but most evidence is of very low quality¹(Burch & Bunt, 2020; Jefferson et al., 2011). The consensus report on COVID-19 gives guidance on isolation areas to contain transmission(IPCG, 2020).

Quarantine and isolation may have negative effects on the children's physical and mental health. It can greatly increase the risk of post-traumatic stress disorder (Sprang & Silman, 2013). Therefore, as the isolation facilities are set up, there is need to have interventions to circumvent this including counselling and play areas(Royal College of Paeditrics and Child Health, 2020).

Guidance

- 1.All counties to identify isolation facilities fit for children including a play area.
- 2. The facility should have all the Infection Prevention and Control (IPC) requirements as set out in the national guidelines. See GUIDANCE FOR INFECTION PREVENTION AND CONTROL FOR CORONA VIRUS DISEASE IN HOMES AND RESIDENTIAL COMMUNITIES Interim Guidance March 18th 2020.
- 3.It is desirable that this facility have in-built oxygen ports but if not available, there should be designated portable oxygen
- 4. The isolation of children should be as follows as they await laboratory results:

¹Definitions of quality of evidence

High quality: Further research is very unlikely to change our confidence in the estimate of effect.

Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.

Low quality. Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.

Very low quality. We are very uncertain about the estimate.

Table 1 Parent/Child management for suspected or confirmed cases

Child	Parent/caregiver	Management
*Well	Well	Home isolation ²
**Unwell	Well	Parent/ caregiver accompanies the child/children in a paediatric inpatient isolation facility
Well	**Unwell	Home isolation for the child with one alternative caregiver who is provided with standard Personal Protective Equipment

^{*}Well: deemed clinically stable and suitable for outpatient management

Note: Parents and caregivers admitted with their child should remain isolated with their child until discharge.

II. Triaging of children with Respiratory Tract Infections in Out-Patient-Departments

Available evidence

Clinical guidelines from WHO on management of suspected COVID -19 cases (WHO, 2020) and the census report by international pulmonology working group (IPCG, 2020) recommend triaging of all children with respiratory tract infections. With the most common symptoms being coughing and fever (Zimmermann & Curtis, 2020), then triaging children with any Respiratory Tract Infections is mandatory.

Guidance

Group all children identified at the point of triage to have respiratory symptoms
to one area at least six feet away from the other children in the waiting area and
process them rapidly ensuring that social distancing is observed in the waiting
area.

^{**}Unwell: meets criteria for inpatient care

²Where the pair have restricted contact with the rest of the household members

- 2. Screen and isolate all children with suspected COVID-19 as per the case definitions.
- 3. Children with indrawing pneumonia as per Integrated Management of Childhood Illness should be prioritized for COVID-19 testing.

 The following case definitions shall apply during triaging as per WHO and IPCG guidance (WHO, 2020)

a) Suspected Case

A child with acute respiratory tract infection (sudden onset of at least one of the following: cough, fever, shortness of breath) AND with no other aetiology that fully explains the clinical presentation AND with a history of travel or residence in a country/area reporting local or community transmission* during the 14 days prior to symptom onset;

OR

A child with any acute respiratory illness AND having been in close contact with a confirmed or probable COVID-19 case in the last 14 days prior to onset of symptoms;

OR

A child with severe acute respiratory infection (fever and at least one sign/ symptom of respiratory disease (e.g., cough, fever, shortness breath) and requiring hospitalisation (SARI) and with no other aetiology that fully explains the clinical presentation.

b) Probable Case

A suspected case for whom testing for virus causing COVID-19 is inconclusive (according to the test results reported by the laboratory) or for whom testing was positive on a pan-coronavirus assay.

c) Confirmed Case

A child with laboratory confirmation of virus causing COVID-19 infection, irrespective of clinical signs and symptoms

d) Close Contacts is defined as any of the following

- 1. A child living in the same household as a COVID-19 case;
- 2. A child having had direct physical contact with a COVID-19 case (e.g. shaking hands);
- A child having unprotected direct contact with infectious secretions of a COVID-19 case (e.g. being coughed on, touching used paper tissues with a bare hand);
- 4. A child having had face-to-face contact with a COVID-19 case within2 metres and for more than 15 minutes;
- 5. A child who was in a closed environment (e.g. classroom, meeting room, hospital waiting room, etc.) with a COVID-19 case for 15 minutes or more and at a distance of less than 2 metres;
- 6. A healthcare worker (HCW) or other person providing direct care for a COVID-19 case, or laboratory workers handling specimens from a COVID-19 case without recommended personal protective equipment (PPE) or with a possible breach of PPE.
- 7. A contact in an aircraft sitting within two seats (in any direction) of the COVID-19 case, travel companions or persons providing care, and crew members serving in the section of the aircraft where the index case was seated (if severity of symptoms or movement of the case indicate more extensive exposure, passengers seated in the entire section or all passengers on the aircraft may be considered close contacts).
- 8. A contact in a public service vehicle where it cannot be confirmed that the sitting arrangement is as per government requirements.

III. Adjustments Required for New Born Units and Kangaroo Mother Care Facilities

Available evidence

No vertical transmission has been documented. Amniotic fluid from six mothers positive for COVID-19 and cord blood and throat swabs from their neonates who were delivered by caesarean section all tested negative for SARS-CoV-2 by RT-PCR. Breastmilk samples from the mothers after the first lactation were also all negative for SARS-CoV-2(Cui et al., 2020; Zhu et al., 2020). However, there is need for caregivers and healthcare workers to take precaution so as not to transmit the virus to the newborns.

Breastfeeding protects against death and morbidity also in the post-neonatal period and throughout infancy and childhood. The protective effect is particularly strong against infectious diseases that are prevented through both direct transfer of antibodies and other anti-infective factors and long-lasting transfer of immunological competence and memory.

Guidance

- 1. Infants born to mothers with suspected, probable or confirmed COVID-19 infection, should be breastfed while applying necessary precautions for IPC.
- 2. Symptomatic mothers who are breastfeeding or practising skin-to-skin contact or kangaroo mother care should practise respiratory hygiene (for example, use of a medical mask when near a child if with respiratory symptoms), perform hand hygiene before and after contact with the child, and routinely clean and disinfect frequently used surfaces.
- Breastfeeding counselling and basic psychosocial 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 or confirmed COVID-19.
- 4. In situations when severe illness in a mother due to COVID-19 or other complications prevent her from caring for her infant or prevent her from continuing direct breastfeeding, mothers should be encouraged and supported to express milk, and safely provide breastmilk to the infant, while applying appropriate IPC measures.
- In the event that the mother is too unwell to breastfeed or express breastmilk, appropriate breastmilk substitutes can be used.

- 6. Mothers and infants should be enabled to remain together and practise skin-to-skin contact, kangaroo mother care and to remain together and to practise rooming-in throughout, whether they or their infants have suspected, probable or confirmed COVID-19 virus infection.
- 7. Health workers with respiratory tract illness (regardless of COVID 19 infection status) should be exempted from duties in NBU till recovery
- 8. Only one caregiver should be designated for the entire duration of admission in the NBU.
- 9. No visitors should be allowed the NBUs.
- 10. Reduce the number of students going into the NBUs.

IV. Paediatric Outpatient Clinics

Available evidence

Available evidence suggests that to reduce transmission, we need to minimize the exposure by staying away from hospitals for non-urgent matters. This evidence is mainly for the adult population but is also applicable for paediatric populations (Lin et al., 2020). This is not only protective to the child but also reduces the overstretching of the health systems when cases surge.

This has been provided as a general guidance by the Royal College of Paediatrics and Child Health (RCPCH)in the UK (RCPCH, 2020) the US (CDC, 2019) and as a recommendation by the International Pulmonologist Consensus (IPCG, 2020).

Guidance

- 1. Routine paediatric outpatient clinics should be postponed but ensure that those who can get refills for medications of chronic illnesses are well covered.
- 2. Where possible, a designated caregiver should refill the prescription of the child without going with them to the health facility.
- 3. Where the child is unwell:
 - a. One designated caregiver should bring the child to the hospital.
 - b. The contact time with the child should be as minimal as possible but adequate for quality service provision.
 - c. There should be provision of protective gear for all the health care workers attending to children in line with the IPC guidelines.
 - d. Provision of hand hygiene and disinfectants for equipment/devices and surfaces examination areas

VI. Routine Immunization Services

Available evidence

During the 2014 Ebola outbreak on routine immunization in Sierra Leone the routine immunization literally collapsed. The country already had low baseline coverage in all antigens hence the drop must have had severe consequences. No measures were directed to protecting the routine immunization hence post outbreak response was employed to ameliorate the coverage gaps (Sun et al., 2017).

A fully vaccinated child is more likely to be protected from vaccine preventable diseases and possible complications of COVID-19.

Guidance

- 1. Routine immunization services should continue countrywide with preferential use of smaller less crowded levels 2 and 3 facilities to reduce exposure of children and care givers.
- 2. High volume health facilities should also continue routine immunization. To minimize risk these facilities should set up separate space akin to an out-reach post service
- 3. As much as possible mothers should be given specific scheduled appointments for routine immunization.
- Infants and caregivers coming for immunization services should be triaged for possible exposure and appropriately directed to a point of care
- 5. Community Health Workers should also be deployed to mobilize mothers to continue seeking immunization services.
- Preparation for possible catch-up immunization activities upon the end of COVID- 19 outbreak
- 7. There should be continuous communication of these emergency immunization strategies at all levels

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COVID-19

Most people who are infected with COVID 19 will only have a mild illness. They may have a high temperature, sore throat, a runny nose or a cough. So far there have not been many reported cases in children across the world.







COVID-19 is spread by droplets.

That means you need to be very close to someone with COVID-19 who is coughing to become infected. You can help protect yourself and other people by preventing the spread of the virus. Washing your hands with soap and water and avoiding touching your face will help.



If you have a cough. difficulty breathing or fever you may have an infection. Do not worry. You need to try and avoid contact with other people. Children will looked after at home. The helpline can give you support and advice while you are at home. Avoid going in to areas where the infection may be passed to other people who may become more seriously unwell. If your condition is worsening, call 0729471414 or 0732353535 for further guidance.



Some children will need to be tested for COVID-19 infection. The test is simple and painless. It is a swab of your nose and throat. Some children will need to stay in hospital for treatment. Other children will be able to go home and wait for the results while avoiding contact with other people.



The doctors who will look after you if you are unwell need to wear funny clothes to protect you, to protect them and to protect other people. They need to make sure they are not spreading any infections. They are just normal people under the funny masks and gowns.





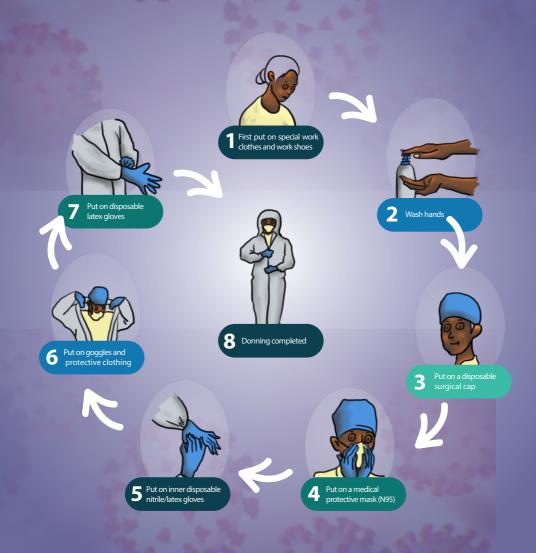








Guidance on Wearing Personal Protective Equipment (PPE) to manage COVID-19 Patients



Guidance on Removing Personal Protective Equipment (PPE) to manage COVID-19 Patients

