

GUIDELINES FOR COVID-19 IN PREGNANCY



**SOCIETY OF OBSTETRICIANS AND
GYNAECOLOGISTS OF GHANA (SOGOG)**



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FOREWORD

The COVID-19 pandemic continues to wreak havoc on economies and health systems around the world. The human capital lost is estimated in billions of dollars. Global estimates as of 23rd July 2020 indicate 16.3million confirmed cases, 9.41million recoveries and 649 thousand deaths. The corresponding figures for Ghana are 32, 969 confirmed cases, 29,494 recoveries and 168 deaths.

At this point in time, many countries are yielding to popular demands for a full restoration of health services despite increasing levels of community transmission. Giving the current understanding of the transmission risks and the mitigating effects of infection prevention and control protocols, the time is about right for health professionals to continue deliberations on a full restoration of health services. The fluidity of the COVID-19 situation notwithstanding, the Society of Obstetricians and Gynaecologists of Ghana (SOGOG) deemed it appropriate to provide a framework for its members and Clinicians in general, as the demand for restoring health services continues at various levels.

Organized into antenatal, labour and delivery, and postnatal care sections, the SOGOG guidelines apply prevailing evidence to the Ghanaian context in making these our recommendations. It does not replace national guidelines on COVID-19 management but rather



complements it in a context-appropriate specification for the care of women in Ghana. There is significant focus on preventing COVID-19 infection from patients to staff and vice versa. Additionally, there is a deliberate slant towards practical application of this guideline. It is our expectation that members, armed with these set of guidelines will be more willing to open health services in their respective facilities and be more confident in looking after our clientele and service users in this era of the COVID-19 pandemic. The continued emphasis on keeping oneself safe remains a key priority always.

DR. ALI SAMBA

SOGOG PRESIDENT

July 27, 2020.

FOREWORD BY DIRECTOR-GENERAL, GHANA HEALTH SERVICE

This document has been developed by the Obstetricians and Gynaecologists in Ghana as a response to the global pandemic of COVID-19. It is a set of guidelines, suitable for our Ghanaian context. The development of the guidelines by SOGOG is highly commendable as they have risen to the task and demonstrated leadership that demands swift action to augment national efforts at effectively handling the COVID19 in Ghana. The Ghana Health Service lends our support for the use of these guidelines by Clinicians and Care Managers nationwide. We encourage clinicians to make good use of the practical content of the document in the discharge of their duties in line with the broader national provisions and protocols to safeguard the wellbeing of our caregivers and promote favourable outcomes for our dear pregnant women whilst enhancing business continuity in the midst of the COVID-19 pandemic.

DR PATRICK KUMA-ABOAGYE
DIRECTOR GENERAL



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A special appreciation to the National Executive Council for responding to the call from membership for a guideline.

The members of the Committee despite their busy schedules made time to review the literature and came up with this comprehensive guideline. We applaud the Committee chairs, coordinators and members for their timely delivery.

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SOGOG and women living in Ghana remain grateful to all individuals who reviewed the draft manuscript.

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INTRODUCTION

The COVID-19 pandemic is placing enormous stress on health care systems all over the world, even in well-developed health systems. Obstetrics and Gynaecological care services have not been spared. The Society of Obstetricians and Gynaecologists of Ghana (SOGOG) sees the need to provide guidelines which will facilitate the provision of safe quality maternal and women's health care services during this ongoing pandemic in Ghana; from the level of the Community-Based Health Planning and Services (CHPS) compound, private maternity homes, clinics and hospitals, District and Regional/Tertiary hospitals up to the Teaching hospitals. The purpose of this document is thus to provide guidance to maternal health care providers during the COVID-19 pandemic.

GHANA'S SITUATION: Since Ghana recorded its first two cases simultaneously from imports from Norway and Turkey on the 12th of March 2020, the number of COVID-19 cases has continued to increase, and now mainly through community spread of the virus. Currently, the total number of confirmed COVID-19 cases as at 6th July 2020 is 21,077 with 129 mortalities. The total number of pregnant/postpartum women tested positive for COVID-19 in Ghana is forty-eight (48) using data from two treatment centres: University of Ghana Medical Centre (UGMC) and Komfo Anokye Teaching Hospital (KATH) between March and June 2020. Health workers including doctors are increasingly getting infected leading to mortalities and morbidities. According to a press release by the Ghana Medical

Association (GMA) on the 3rd July 2020, over 150 medical doctors and dentists have so far tested positive for the virus out of which four have unfortunately died from complications of COVID-19.

Ghana had initial successes in the management of the COVID-19 pandemic as one of the best in the World and Sub-Saharan Africa in terms of low case fatality ratio of (0.61%) and total tests done per population (313,457 tests). Of the total tests conducted, the current test positivity is 6.72%. The total number of active cases currently stand at 4,878, a 4.2% decrease over previous update (5,093). The total number of recoveries stands at 16,070 representing an 8.1% increase compared with previous update (14,870). Ghana's COVID-19 current recovery rate is 76% (Ghana COVID-19 Sit Rep 03-Jul-2020).

SOGOG members have successfully managed and delivered nine (9) pregnant women with COVID-19 so far without a formal set of guidelines. Moreover, there are real challenges in caring for pregnant women with COVID-19, particularly as a result of inadequate PPE supplies at the health facility level, delays in getting test results, few testing centres, poor adherence of the public to the infection prevention and control (IPC) protocols for COVID-19 (physical distancing, wearing of facemasks and hand hygiene), and stigmatization of infected persons.

During the ongoing pandemic, antenatal care (ANC) must continue to provide quality safe care at all facilities and provide interactions in a manner that reduces COVID-19 transmission and protects the health and well-being of all care providers and clients. Pregnant women

presenting with COVID-19 infection must be promptly identified, isolated and provided with evidence-based care. Interventions for COVID-19 prevention must not compromise quality of antenatal service; a client friendly environment must always be maintained.

Due to the nature of services provided at these points, the labour wards, operating theatres, minor procedure rooms/theatres, maternal intensive care units, antenatal and postnatal wards within maternity units are naturally areas of prolonged and close contact amongst patients, patients' relatives and health care workers. There is therefore high risk of exposure of health care workers and clients to COVID-19. Indeed, maintaining COVID-19 prevention measures in these settings is quite challenging in many facilities due to the high turnover of patients and workload. Additionally, since about 80-90% of COVID-19 cases are asymptomatic, some COVID-19 positive pregnant women may present in labour because they are yet to be tested or awaiting test results. SOGOG thus reminds all maternal health care providers to observe universal IPC principles, regard all persons, oneself inclusive, as infectious and use the appropriate infection prevention protocols at all times.

The Ghana Health Service released the MATERNAL, CHILD HEALTH AND NUTRITION SERVICE DELIVERY GUIDELINES FOR USE IN GHANA DURING COVID-19 OUTBREAK in April 2020, and the CASE MANAGEMENT MANUAL FOR COVID-19 in June 2020. All health care workers in maternity units are charged to apply strictly the recommended droplet, airborne and contact infection prevention and control measures stated in these guidelines. The SOGOG

guidelines recommended in this document complement all the above-mentioned GHS COVID-19 service delivery guidelines. Moreover, irrespective of their COVID-19 status, all clients must always receive respectful and quality antenatal, labour/delivery and postnatal care. Efforts must also be made to protect newborn babies from the risk of exposure to COVID-19.

These SOGOG guidelines are presented according to the three main areas of care in pregnancy: antenatal, labour and delivery, and postnatal.

1.0 ANTENATAL CARE

1.1 Organizing ANC services

The workplace and administrative procedures must reduce transmission within the ANC set up as per the guidelines below:

- 1.1.1 The ANC set-up should be provided with additional needed supplies for COVID-19 prevention for service providers and clients: i.e. Personal Protective Equipment (PPE), disinfectants for surface cleaning, handwashing/hand hygiene and tools for patient screening
- 1.1.2 The ANC environment and all surfaces including floors, doorknobs, tables, chairs, and equipment should be cleaned and disinfected as appropriate before, during and after close of ANC services using IPC guidelines

- 1.1.3 Staff reporting to work must all be screened daily for COVID-19 using the MoH/GHS checklist
- 1.1.4 All ANC providers must don the appropriate PPE as required for client-provider contact (face mask and apron or protective gown). Care providers attending to clients in the COVID-19 holding area must however wear full PPE
- 1.1.5 Appointment systems, scheduling of ANC services at weekends, afternoons, and evenings, use of telephone calls and telemedicine (Zoom) etc. should be promoted, as appropriate to the level of care and client profile, to reduce congestion at ANC service areas
- 1.1.6 Reorganise client waiting areas to ensure social/physical distancing rules. Waiting area capacity may be expanded through erecting canopies or temporary sheds for open-air/well-ventilated seating rather than indoor crowding
- 1.1.7 Establish improved patient flow from a mandatory point of entry into the ANC service area through to exit points. Clearly identify the mandatory entry point(s) and with a **“no face mask no entry”** sign and with facilities for client screening, hand washing (hand hygiene) and resourced with a trained attendant in appropriate PPE to screen and triage all clients

- 1.1.8 Triage clients for both COVID-19 and obstetric emergencies. Clients who triage COVID-19 not suspected or have no acute obstetric emergencies can be allowed into the waiting area
- 1.1.9 Institute measures that will reduce waiting times for ANC at service areas. For example, group counselling activities prior to start of consultation can be replaced by targeted individual counselling within consulting cubicles. Use videos to continuously present education on various ANC topics to clients as they wait
- 1.1.10 Establish or designate a well-ventilated holding area for clients suspected of COVID-19
- 1.1.11 All clients found to meet COVID-19 case definition should be referred to the COVID-19 holding area for further evaluation or management as per the case management protocols
- 1.1.12 Clients with other obstetric emergencies should be rapidly assessed and managed routinely as per protocol for such emergencies
- 1.1.13 Make arrangements with the facility COVID-19 management team or the District Rapid Response Team to take samples for testing and reporting within the shortest possible time with priority for all suspected cases in pregnancy

1.2 Providing Client Care

- 1.2.1 Provide services with privacy and confidentiality in a client-friendly environment.
- 1.2.2 Regularly disinfect surfaces and equipment after every patient contact according to GHS IPC guidelines
- 1.2.3 Carry out all ANC procedures and investigations with strict adherence to IPC guidelines and COVID-19 protocols
- 1.2.4 Follow existing national protocols for all ANC assessments and preventive care unless otherwise indicated
- 1.2.5 Include education on prevention of COVID-19 infection (balanced diet, social distancing, hand hygiene, respiratory hygiene, proper use/wearing of the face mask, having enough rest, recognition of symptoms/signs of infection and actions to taken) in client counselling and self-care (See Appendix 3)
- 1.2.6 Provide all clients with contact numbers of service providers that they may reach when they have health and pregnancy related questions

1.3 Antenatal COVID-19 Case Management (See Appendix 2 for Case Definitions)

- 1.3.1 All suspected/probable/confirmed cases identified at screening upon arrival to the ANC should be immediately transferred to a single occupancy holding areas
- 1.3.2 At the holding area, the client should be given mask to wear and evaluated quickly by a skilled care provider who must also wear appropriate PPE. Assessment of the patient must be aimed at confirming the diagnosis or determining severity of COVID-19 illness and wellbeing of the pregnancy. If not already confirmed, testing should be performed as per local guidelines and recommendations. Pregnancy does not appear to alter test performance
- 1.3.3 Undertake care of the client according to national protocols and in collaboration with facility/district COVID-19 case management team, if available
- 1.3.4 Document COVID-19 infection and health outcomes into the Antenatal record card/book when the patient is confirmed
- 1.3.5 Self-isolation at home or at an isolation center as per local protocols is appropriate in pregnancy for asymptomatic or mild diseases. Care providers should consider delaying routine antepartum care appointments for pregnant patients who have tested positive for COVID-19

- 1.3.6 Pregnant women placed into isolation will still require care and support. Monitor for deterioration in disease severity and/or obstetric complications as much as possible through non-physical contact e.g. such via telephone
- 1.3.7 Continue routine preventive care interventions such as Fe/folate supplementation, TT injection, use of ITN whilst in isolation. Due SP/IPT doses can be deferred during the period of isolation and/or given after consultation with the medical team at the treatment centre
- 1.3.8 Consider empiric antibiotic therapy for superimposed bacterial pneumonia in pregnancy with confirmed COVID-19 infection or severe respiratory disease
- 1.3.9 Avoid stigmatizing clients. Respond promptly to health needs of clients in isolation/treatment centres or clients who have recovered from the disease. Always use the appropriate PPE when attending to clients' needs in isolation/treatment centres and ensure clients wear face masks during all contact periods
- 1.3.10 Consider initiation of antepartum corticosteroids for fetal lung maturation as per national guidelines if preterm delivery is indicated or envisaged based on maternal condition
- 1.3.11 Follow up recovered clients routinely as per national schedules unless otherwise indicated. Continue fetal surveillance, including ultrasound assessment for growth and anatomy at all ANC follow up visits

2.0 LABOUR AND DELIVERY CARE

2.1. Organizing Labour/Delivery Care

The workplace and administrative procedures must reduce transmission within the labour and delivery units as per the guidelines below:

- 2.1.1 Staff reporting to work must all be screened daily for COVID-19 using the MoH/GHS checklist
- 2.1.2 The labour/delivery wards should be provided with adequate supplies for COVID-19 prevention for service providers and clients: i.e. PPE, disinfectants for surface cleaning, handwashing/hand hygiene and tools for patient screening
- 2.1.3 All care providers on the labour wards, operating theatres, minor procedure rooms/theatres, maternal intensive care units, antenatal and postnatal wards should strictly always use the following PPE, as appropriate, whilst at work
 - i. Face shields or eye protective goggles
 - ii. Surgical or N95 face mask
 - iii. Surgical examinations gloves
 - iv. Elbow length examination gloves

- v. Disposable plastic/waterproof reusable gowns or overalls for every health care workers per duty.
 - vi. Disposable plastic/waterproof high ankle boots/covers
 - vii. If aprons are to be used, every individual worker should be provided with an apron with adequate provision for its disinfection before being re-used
- 2.1.4 Space beds within labour/delivery units to meet recommended social distancing guidelines (1.5 metres)
- 2.1.5 Establish a screening point resourced with a skilled care provider to triage clients reporting to the labour ward. Triage for COVID-19 signs/symptoms and for obstetric emergencies. Clients who are well or have no signs/symptoms of COVID-19 or other acute obstetric emergencies can be admitted routinely into the labour unit
- 2.1.6 Establish a well-ventilated isolation room or area within the labour and delivery unit for all clients suspected with COVID-19
- 2.1.7 Refer all clients meeting COVID-19 case definition to the isolation room or area for further labour/delivery care as per case management protocols
- 2.1.8 Handle patient folders and maternal health record using IPC protocols to prevent cross-contamination

- 2.1.9 Provide plastic/waterproof covers, large enough to cover the entire bed and the pillow, for all beds on the labour/delivery room
- 2.1.10 Clean and disinfect all surfaces including delivery beds, floors, doorknobs, tables, chairs, and equipment frequently and/or as appropriate before during and after each patient use per IPC guidelines

2.2 Client care during Labour and Delivery

- 2.2.1 Carefully screen and assess all clients for positive history, signs and symptoms of COVID-19 at the time of reporting to the admission point. Admit only clients negative for COVID-19 screening into general labour ward. Transfer clients with suspected disease immediately to the isolation unit
- 2.2.2 Avoid admitting low risk patients who are not in established labour
- 2.2.3 Ensure all clients admitted into labour wear surgical face mask throughout labour
- 2.2.4 Minimise the number of healthcare personnel contacts to clients in labour
- 2.2.5 Limit the presence of family members to one person at a time per patient anywhere within the maternity area

- 2.2.6 Closely monitor labour per protocol to prevent prolonged labour, reduce duration of stay within labour wards and minimize risk of exposure from asymptomatic cases
- 2.2.7 Practice active management of the third stage to reduce blood loss. (Shortage of blood/blood products is more likely during the COVID-19 pandemic)
- 2.2.8 Treat placenta and fetal tissue as potentially infectious and dispose of appropriately
- 2.2.9 Keep babies with their mothers to minimize risk of getting infected from contaminated items, healthcare workers, other babies, and clients
- 2.2.10 Minimize unnecessary contact with other patients during procedures for patient transfer from labour and delivery to other wards or when being discharged

2.3 Management of COVID-19 Case in Labour and delivery

- 2.3.1 Possible scenarios of COVID-19 cases in the labour and delivery unit are as follows:
 - i. Known COVID-19 positive pregnant woman with symptoms in labour
 - ii. Known COVID-19 positive pregnant woman without symptoms in labour

- iii. Woman in labour with symptoms of obstetric complications such as difficulty in breathing or respiratory distress and fever which meet COVID-19 case definition (see appendix 2)
 - iv. Woman in labour with other symptoms which meet MOH/ GHS case definition of COVID-19 but without any high-risk obstetric condition or complication
- 2.3.2 Inform senior colleagues/specialists and COVID-19 team within facility when a **COVID-19 Suspected Case** is sent to the isolation room at the labour ward following the screening/triage process
- 2.3.3 Share information professionally among health facilities/ various units when a suspected or confirmed COVID-19 case is being referred or moved to other units from the labour /delivery unit
- 2.3.4 Minimise handling of patient's folders/maternal health record books during collection of laboratory samples, reports, or medications from the dispensary/pharmacy (use of Electronic Medical Records highly recommended to reduce folder handling)
- 2.3.5 Manage labour in designated isolation area if patient is a confirmed COVID-19, or suspected COVID-19 patient, using appropriate PPE

- 2.3.6 Full complement of PPE (see below) is needed for delivery rooms, operating theatres, minor procedure rooms/theatres, isolation wards for confirmed or suspected COVID-19 cases. Observe IPC procedures and trigger all the necessary protocols to protect staff and patients from COVID-19 infection
- i. Face shields or eye protective goggles
 - ii. N95 face mask
 - iii. Surgical examinations gloves
 - iv. Elbow length examination gloves
 - v. High ankle waterproof boots slightly oversized
 - vi. Disposable plastic/waterproof high ankle boot covers
 - vii. Infectious disease Personal Protective gowns
- 2.3.7 **Mandatory COVID-19 testing:** Perform COVID-19 test on all suspected COVID-19 cases; and for all obstetrics patients admitted through antenatal, or to the labour and delivery area and who are expected to stay on admission for over 24 hours. Also, all obstetric cases that die within the first 24 hours of admission to any unit within the maternity unit must also be tested, irrespective of other required investigations*
- 2.3.8 Conduct all stages of labour for confirmed and suspected COVID-19 clients in the isolated delivery room, partitioned for single occupancy

- 2.3.9 Mode and timing of delivery should be based on obstetric considerations to ensure optimal maternal and neonatal outcomes
- 2.3.10 Perform elective and emergency caesarean sections on only obstetric indications and aim at short duration of admission of clients
- 2.3.11 Monitor the first stage of labour with partograph and strict adherence to IPC measures per existing Obstetric protocols
- 2.3.12 Monitor patients' vital signs: respiratory rate (RR), oxygen saturation (SpO₂), temperature (T), pulse (P) and blood pressure (BP) throughout labour and delivery
- 2.3.13 Avoid prolonged and active pushing during the second stage of labour.
- 2.3.14 For confirmed cases, the second stage can be shortened if maternal condition is moderate, severe or critical with assist vacuum extraction or forceps delivery, where appropriate
- 2.3.15 If possible, undertake testing the placental tissues for COVID-19 by qRT-PCR
- 2.3.16 Delayed cord clamping in the active management of third stage labour should be reduced to 1min if possible
- 2.3.17 Provide adequate and timely analgesia for all labour

women. Good pain management is vital for calm behaviour and minimising risk of contamination of the delivery room

- 2.3.18 Test all new-borns for COVID-19 at birth if the mother is COVID-19 positive
- 2.3.19 Unless the mother is severely ill and unable to handle her baby, all babies born to mothers with suspected or confirmed cases should remain with their mothers and be breast fed
- 2.3.20 Follow the CASE MANAGEMENT MANUAL FOR COVID-19 for treatment based on case severity
- 2.3.21 Give thromboprophylaxis using low molecular weight heparin (LMWH) and preferably double the dose in severe COVID-19 illness. All severe COVID-19 parturients should receive LMWH for at least 10 days, even in the absence of other risk factors

** The implementation of the provisions under 2.3.7 is subject to the outcomes of SOGOG's advocacy with relevant authorities*

2.4. Induction of Labour

- 2.4.1 Optimize the time from induction to delivery to reduce client contact with the health facility
- 2.4.2 Select appropriate combination of induction methods based on the Bishop score to help achieve this goal

2.5 Caesarean Delivery

- 2.5.1 Regional or neuro-axial anaesthesia is preferred to general anaesthesia which is considered a major aerosol generation procedure (AGP)
- 2.5.2 All staff should wear PPE listed above for theatres for all procedures for confirmed, suspected and probable cases if need for general anaesthesia (GA) arises
- 2.5.3 All patients under GA should have face shield or cover
- 2.5.4 Minimize the number of staff in the theatre as much as possible in COVID-19 cases
- 2.5.5 Encourage all theatres to have installed negative air pressure suction devices to reduce COVID-19 transmission

3.0 POSTNATAL CARE

The postnatal period, also referred to as postpartum period or puerperium, begins immediately after birth of the baby and extends up to six weeks (42 days) after birth.

3.1 Organization of Postpartum care Services

- 3.1.1 Postnatal wards must be reorganized to maintain all COVID-19 prevention strategies such as regular ward disinfection, social distancing, respiratory and hand hygiene

- 3.1.2 Encourage all patients to wear face mask during their stay on the ward
- 3.1.3 Postnatal care set ups must also follow protocols for screening clients on arrival as outlined in the Antenatal care guidelines

3.2 Client Care

- 3.2.1 Maintain appropriate use of PPE by staff and patients at all times
- 3.2.2 Length of hospital stay-
 - i. Expedite discharge for normal vaginal delivery within 12 hours if patient is stable
 - ii. Expedite discharge for healthy caesarean clients after 2 -3 days
 - iii. Asymptomatic, or mild COVID-19 confirmed cases should be on other routine treatment and managed in the designated isolation rooms/ spaces with full adherence and compliance with infection prevention and control protocols
- 3.2.3 Breastfeeding. The benefits of breastfeeding far outweigh the potential risk of COVID-19 transmission via breastmilk which is not yet proven. There is also currently insufficient evidence regarding the need for mother–baby separation

- i. Encourage all mothers to breast feed unless otherwise indicated. Advise all mothers to practice respiratory hygiene during breastfeeding by wearing a facemask, washing hands before and after handling the baby, and routinely cleaning and disinfecting all surfaces touched
 - ii. If the mother is severely or critically ill, separation appears to be the best option. Attempts must be made to express breastmilk to maintain milk production
- 3.2.4 Postpartum pain control. There is inconclusive evidence regarding the use of NSAIDS in COVID-19 cases. Use NSAIDS with caution for COVID-19 women and avoid in severe disease
- 3.2.5 Postpartum Care Visits. Reduce frequency of the postnatal care visits to two (1st week and 6th week), unless there is a justification for additional visits. Encourage telehealth and telephone calls for postpartum consultation and care if feasible
- 3.2.6 Contraception. This should follow the routine schedule provided by the WHO Medical Eligibility Criteria for Contraceptive Use guidelines
- 3.2.7 Infant Immunization. This should be done according to the GHS/MOH schedules for immunization in Ghana

- 3.2.8 Nutrition Support and Physical Exercises. Provision of enhanced nutrition during admission and discharge should be incorporated in the care of pregnant and postpartum women during the COVID-19 pandemic. Multivitamins such as Zinc, vitamin C, vitamin D should be added to the routine prescriptions to boost clients' immune system against the virus. Care providers should especially encourage consumption of local foods rich in these micronutrients. Regular physical exercises to control weight and adequate rest to improve immunity should be reinforced
- 3.2.9 Psychological/Emotional Support. Psychological and emotional support by trained personnel should be provided continuously for all patients /family and especially those who tests positive for the virus. This will help reduce the incidence of associated depression/ stress especially during the period of isolation/recovery. This will also help reduce the stigma associated with the disease in Ghana. Healthcare providers should also guard against discrimination and stigmatization of pregnant women affected with COVID-19.

3.3 Staff Management in Cases of Exposure

- 3.3.1 Despite these IPC measures, if a health care worker is accidentally exposed to COVID-19 infection, the MOH and GHS management of healthcare worker exposure to COVID-19 protocol as outlined in the CASE MANAGEMENT MANUAL FOR COVID-19 should be followed
- 3.3.2 Psychological/Emotional Support- Psychological and emotional support by trained personnel should be provided to all staff who are exposed or test positive for the corona virus. This will help reduce the incidence of depression/stress associated with COVID-19 especially during the period of isolation/recovery

CONCLUSION

These guidelines by SOGOG provides a comprehensive up to date and evidence-based management of pregnant women, fetuses, babies, and healthcare staff during the ongoing COVID-19 pandemic. Because the science and data related to COVID-19 are rapidly evolving during the pandemic, like many past influenza pandemics, this guideline will be updated periodically to reflect current scientific evidence.

APPENDIX 1



BACKGROUND INFORMATION ON COVID 19 AND PREGNANCY

With increasing exposure of healthcare staff and some testing positive for COVID-19, there is significant reduction of available staff to deliver obstetric services. This guideline focuses on how to minimize exposure of both staff and clients without compromising on quality care. It also aims not to aggravate the prevailing high maternal mortality Ghana has worked over the years to improve. Due to increasing COVID-19 cases (suspected/probable/confirmed), there is irrational referrals usually from lower facilities to the higher ones and this has started to generate arguments about these referrals. **Data from only two treatment centres UGMC and KATH between March and June 2020 revealed the following: 48 confirmed COVID-19 Cases in Pregnancy, five deliveries by Caesarean Section, two successful induction of labour, six miscarriages, four vaginal deliveries and 11 mortalities from COVID-19 related complications unfortunately. Some of these cases are still being managed at these centres and majority have been discharged home successfully.** SOGOG believes a streamlined guideline developed systematically from current scientific evidence and already existing guidelines can improve on such decision making among other things.

It is expected that the guidelines will aid health personnel in obstetric and gynaecologic settings to make decisions that will minimize the risk of contracting COVID-19 at health facilities, improve maternal and neonatal well-being and reduce maternal mortality in the presence of the chaos emanating from the pandemic.

This guideline has undergone the following processes before its final presentation: Scoping of existing guidelines, searching the literature, formulating the questions, synthesizing the evidence, grading the evidence, and formulating recommendations. This guideline will be reviewed every quarter or earlier when new information/understanding on COVID-19 becomes available.

EPIDEMIOLOGY: The COVID-19 pandemic is an ongoing outbreak of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The outbreak was first reported in Wuhan, China, in December 2019. The World Health Organization (WHO) declared the outbreak a Public Health Emergency of International Concern (PHEIC) on 30th January 2020, and a pandemic on 11th March 2020. Ghana recorded its first two cases from two travelers who had returned from Norway and Turkey respectively on 12th March 2020. Since then, the number of cases of COVID-19 has continued to increase from both imported cases and through community spread of the corona virus.

As of 9th July 2020, more than 11.84 million cases of COVID-19 have been reported in more than 188 countries and territories, resulting in more than 544,739 deaths; more than 6.1 million people have

recovered (WHO). In Ghana, current figures are 22, 822 confirmed cases, 5,129 active cases, 17,564 recoveries, 854 new cases and 129 deaths (Ghana Health Service, GHS). Of these cases in Ghana, pregnant women in various stages of gestation have been infected and attended to by SOGOG members across the country. Hitherto, these have been managed with no standardized locally agreed clinical guidelines.

The WHO considers reproductive health services, including care during pregnancy and childbirth as essential health service to continue during the COVID-19 pandemic. It is imperative to consider all suspected/probable/confirmed COVID-19 pregnant women as high risk and offer the needed attention to prevent spread of the infection. The protection of healthcare workers in the era of COVID-19 and maximal protection of mother and child must be ensured.

The novel Coronavirus belongs to a group of enveloped, single-stranded, positive RNA viruses with a characteristic spherical shape and surface spike projections. It belongs to the family of human coronaviruses (CoV) composed of four viruses that cause diseases such as “common cold”, Severe Acute Respiratory Syndrome (SARS) CoV and Middle East Respiratory Syndrome (MERS) CoV. The latter two previously caused epidemics with high morbidity and mortality, especially among pregnant women. COVID-19 is most closely related to SARS. It binds to the angiotensin-converting enzyme 2 (ACE2) receptors located on type II alveolar **cells and intestinal epithelia**. **The dynamic nature of the novel coronavirus with the ability of human to human transmission and the high propensity to mutate**

and replicate has led to a global pandemic with associated high complications and deaths the world is grappling with currently.

COVID-19 has an incubation period of 4-14 days. The mode of transmission is by droplet infection and via surface contacts (fomites). Transmission via airborne and aerosolizing modes is uncertain and still being studied. The potential for asymptomatic/pre-symptomatic persons to transmit the virus is the rationale behind the recommendation to wear masks by all in public places. Persons with COVID-19 may be pre-symptomatic, asymptomatic, or symptomatic. The signs and symptoms include myalgia with fever, and typical upper and, less frequently, lower respiratory symptoms (viral pneumonitis). The latter usually presents with cough, dyspnea, and fever. About 10% of cases present initially with gastrointestinal symptoms only (nausea, diarrhea, or both). Anosmia has also been reported to be an early symptom.

Several studies globally are reported of some patient attributes and risk factors/underlying factors leading to poorer outcomes among COVID-19 cases. Advanced age above 60 years, male sex, obesity, hypertension, diabetes, living in nursing homes, pregnancy, multiple end-organ dysfunction, crowded environments, and lowered immunity are some of the factors identified. However, there is currently limited data on pregnancy and COVID-19.

Extrapolations from previous influenza pandemics had earlier suggested a higher risk of infectivity and mortality in pregnant women compared with non-pregnant women. However, data

from limited studies so far has shown no difference between pregnant women and the nonpregnant women of similar age in terms of the clinical course of COVID-19. In fact, pregnant women who develop COVID-19 pneumonia, have similar rates of intensive care unit admissions as their non-pregnant counterparts. The changes associated with normal and high-risk pregnancies (mainly physiological/metabolic) could modify the nature of presentation and progression of COVID-19 in pregnancy. Pregnant women may be at an increased risk for SARS-CoV-2 infection, with more severe COVID-19 symptoms, and worse pregnancy outcomes. Studies to date have demonstrated higher risks of pregnancy complications, including preterm birth, preeclampsia, as well as higher rates of cesarean delivery.

The Renin angiotensin-aldosterone system (RAAS) abnormalities, endothelial dysfunction, complement activation, and the pro-coagulopathic effects of COVID-19 like those occurring in preeclamptic pregnancies, potentially results in progressive vascular damage. Therefore, pregnancy and its complications represent a vulnerable state for invasive infection with SARS-CoV-2 reflecting several overlapping cellular mechanisms. In addition to the direct cytotoxic effect of the virus, tissue injury in COVID-19 is mediated through an excessive inflammatory response, commonly called the cytokine storm.

Currently, data on the immune responses to COVID-19 in pregnancy is limited. During pregnancy, the first and third trimesters are pro-inflammatory whilst the second trimester is anti-inflammatory

due to switch from T-helper 2 to T-helper 1 and vice versa to accommodate the semi-allogenic fetus whilst maintaining the ability to respond to infectious agents. Depending on the gestational age at which a woman is infected with COVID-19, different reactions may ensue from viral clearance to perinatal outcomes. Due to some of these changes, some pregnant women admitted with mild COVID-19 disease in the third trimester rapidly progressed to severe disease after delivery. There is ongoing debate regarding vertical transmission of the virus; however, research on other coronavirus infections during pregnancy suggests that in-utero transmission does not occur.

APPENDIX 2



MANAGEMENT OF PREGNANT CLIENTS WITH SUSPECTED OR CONFIRMED COVID-19 DISEASE

CASE DEFINITIONS

Detection of a COVID-19 case requires the application of a standard case definition to pick cases for follow up actions. In situations where a suspected case cannot be tested or testing is inconclusive, the case may be classified as probable as per the working case definition. The case definition for COVID-19 is as follows:

SUSPECTED CASE

A pregnant woman presenting with fever ($>38^{\circ}\text{C}$) or a history of fever and symptoms of respiratory tract illness e.g. cough, difficulty in breathing AND a **history of travel** to or residence in a **location reporting person to person transmission of COVID-19** during the last 14 days prior to symptom onset

OR

A pregnant woman with fever ($>38^{\circ}\text{C}$) or a history of fever and symptoms of respiratory tract illness e.g. cough, difficulty in breathing AND in the last 14 days before symptom onset, **close contact with a person who is under investigation or confirmed for COVID-19**

OR

A pregnant woman with acute respiratory illness (fever and at least one sign/symptom of respiratory disease, e.g., cough, shortness of breath; AND in the **absence of an alternative diagnosis that fully explains the clinical presentation**.

Probable case

A suspect case for which testing for the COVID-19 virus is **inconclusive**. Inconclusive being the result of the test reported by the laboratory.

OR

A suspect case for which **testing could not be performed** for any reason.

CONFIRMED CASE

A pregnant woman with laboratory confirmation of COVID-19 infection, irrespective of clinical signs and symptoms.

APPENDIX 3



MESSAGES ON COVID-19 FOR ANTENATAL CLIENT EDUCATION

S/No.	Questions	Answers
1.	What is Corona virus?	Corona Viruses are a large family of viruses known to cause illness ranging from the common cold to more severe diseases such as coronavirus disease 2019 (COVID-19), Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS).
2.	What is COVID-19?	COVID-19 is a disease caused by a new strain of corona virus known as SARS-CoV-2.
3.	What are the signs and symptoms of COVID-19?	<p>The common signs and symptoms include</p> <ul style="list-style-type: none"> ● Fever (high body temperature) ● Cough ● Sore throat ● Loss of sense of smell (Anosmia) ● Breathing difficulties. <p>In more severe cases, infection can result pneumonia, severe acute respiratory syndrome, kidney failure and may lead to death.</p>

4.	How does COVID-19 spread?	<p>COVID-19 can be spread from person to person, through direct contact; their air droplets through coughing, sneezing, talking, singing.</p> <p>It can also spread by contact from touching contaminated surfaces and subsequently touching face (mouth, eyes, and nose) with contaminated hands</p>
5.	Can pregnant women get COVID-19	<p>Everybody is at risk of COVID-19; young or old, male, or female.</p> <p>Pregnancy however is a period of low immunity and pregnant women are known to be at higher risk for similar viral infections and have severe consequences. It is therefore important for you to observe COVID-19 prevention recommendations strictly</p>
6.	Can pregnant women transmit the infections to their babies	<p>We do not know to what extent this is possible. Information is still being gathered. Cases of transmission to the baby after birth have been reported.</p>

7. What can I do to protect myself?
- Eating a balanced diet (Especially rich in vitamins C, Zinc)
 - Appropriate wearing of face masks
 - Regular washing of hands with soap under running water
 - Observe social distancing protocol (of at least 1 meter apart from the nearest person)
 - Observing cough etiquette (Avoid coughing without covering your mouth and nose)
 - Coughing and sneezing into tissue and dispose of it into a bin followed by hand washing immediately. Where tissue is not available cough into sleeve or elbow).

7. Is it important to continue to come for antenatal care during this pandemic?
- Yes. It is important that all pregnant women receive antenatal care to ensure they remain healthy throughout their pregnancy and that any complications of pregnancy are detected and managed early.

Provisions have been made for you to receive such care safely at the clinic. You will be required to wear masks, practice hand washing and social distancing at each visit. All clients will also be screened for Covid 19 at each visit.

- | | | |
|-----|--|--|
| 8. | How long does it take after exposure to COVID-19 to develop symptoms? | The time between exposure to COVID-19 and the moment when symptoms start is ranges from 1 – 14 days. |
| 9. | Can I visit the Antenatal clinic if I suspect I am infected with COVID 19? | <p>It is best to call your care provider first for advice and guidance if you feel you have COVID-19. Lookout for signs and symptoms of COVID-19 infection and report these to your midwife via phone. You may also call the short code 112.</p> <p>If you feel severely ill and /or unable to breath you may report to the health facility at any time and inform the first care provider, you first encounter about your symptoms.</p> <p>Do not visit the clinic if you do not feel just mildly ill. This is because we do not want you to infect other pregnant women whiles visiting the clinic.</p> <p>You can however continue with routine AN care after you have recovered.</p> |
| 10. | If I have been infected and recovered, can I be re-infected? | We do not know the answer accurately. You may be protected for a while. You must continue observing the protocols and precautionary measures |

11.	Is there treatment for COVID-19?	Treatment is currently supportive and symptomatic. Currently there is no cure for COVID-19. There is research on going for medicines against the virus (anti-viral agents)
12.	Is there a vaccine for COVID-19?	Currently, there is no vaccine. However, research actively going for vaccine development
13.	Are antibiotics effective in preventing or treating COVID-19?	No. Antibiotics do not work against viruses; they only work on bacteria. COVID-19 is caused by a virus, so antibiotics do not work directly against it. Antibiotics may be given to a severely ill pregnant woman where necessary to treat secondary bacterial infections.
14.	Where can I find more information about known COVID-19?	<ul style="list-style-type: none"> ● Visit the websites of these institutions: ● Ghana Health Service ● Ministry of Health, Ghana ● Ministry of Information, Ghana

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