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Commentary

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Introduction

COVID-19 was declared as a pandemic by the World Health Organization (WHO) in 2020 (1). The majority of countries in the Eastern Mediterranean Region (EMR) have crossed the initial three phases of transmission (as characterized by WHO) and are now heading towards the community/local transmission phase of the virus. Numerous countries within the Region have followed WHO's guidelines on containment by prioritizing the development of testing, isolation, treatment, contact tracing, and isolating close contacts (2).

As the disease evolves rapidly, new information is appearing that suggests pregnant women diagnosed as having coronavirus disease are likely to suffer high levels of morbidity (1). They are susceptible to respiratory infections due to reduced lung function, increased oxygen consumption, and alteration in immunological function due to pregnancy. The evidence indicates that if women do not attend antenatal services then they are at risk of maternal death, stillbirth and other adverse perinatal outcomes (3,4). In addition, all pregnant women, together with those with confirmed or suspected COVID-19 infections, have the right to high-quality care before, during and after childbirth (3).

However, pregnant women and their families are likely to encounter greater tension and stress due to the COVID-19 pandemic within the community (5), therefore maternity services should be prioritized as fundamental core health service (3). Antenatal care (ANC) is the most cost-effective approach for the prevention of neonatal deaths; if 90% of women receive ANC, 14% of neonatal deaths could be avoided (6). The United Nations Population Fund (UNFPA) emphasized the development of a sustainable ANC service delivery model according to the context of different countries, which defines how services will be organized to deliver a core ANC package. It focuses, specifically, on which set of interventions by whom (cadre), where (system level), and how (platform) should be provided at each ANC contact (2). Also, during the current COVID-19 pandemic, care planning needs to take into consideration the risk factors identified, the context and the woman’s preferences (7).

Support models of care that provide maximum level of continuity of care are “midwifery continuity of care, case management, as well as models of cares provided by midwife navigator, general practitioner (GP), private practice midwives, also cultural support models of care such as supports by healthcare workers or a community organization” (7,8). Maternity systems need a process to triage women to the most appropriate models of care based on low risk and high-risk criterion. Models of care in low risk cases is limited to midwifery care only, however, in high risk cases is could be provided by GPs, obstetricians or obstetricians and midwifery Group Practice, if available(7,8). Maternity care experts (including midwives and all other health care workers providing pregnancy and infant care), whether based in health centers or within the community, are basic health care providers and must be protected and prioritized to continue providing of care to childbearing women and their infants (8).

Models of care in pandemic crisis, like the pandemic of COVID- 19, for pregnant women include: home visiting, Self-quarantine/ Isolation, community clinics and hybrid models.

Home visiting

In relation to home visits, it should be considered whether visits are necessary or can be delayed. The home visit is planned based on the risk management for women and staff. Also, consultations using telehealth, SMS and phone should be taken into account. It may be preferable, as providing care for the woman and everyone in her household is ideal (3,7-9) .General principles in home visiting during COVID-19 pandemic include: preparing the cares which likely to be required during the home visit, minimizing equipment to be taken into the home and maintaining infection prevention and control standards (e.g. hand hygiene, disposal of consumables, equipment cleaning, social distancing) (5). The required schedule and mode of care should be reassessed at each visit according to individual needs and current risks (7).

Health care experts attending homes should be mindful of exposure to COVID-19 in a home visit and should adhere to strict infection control procedures when entering and leaving homes. It has been declared that the coronavirus can survive on surfaces for up to 17 days. Health care providers should be provided with convenient personal protection equipment (PPE) based on relevant guidelines when providing care for women with suspected infection or when entering homes, where other family members of pregnant women have Covid-19 symptoms (9).

Self-quarantine

Self-quarantine means that pregnant women must be isolated as much as possible and not go out, except for seeking medical care. This model is recommended when hospitalization or other clinical care of pregnant women is not required according to current recommendations. It is also recommended when pregnant women have had close contact with a confirmed or suspected case within the past 14 days. Close contact means more than 15 minutes face-to-face contact and more than 2 hours in a closed space (including households) (7,8). Self-isolation is defined as strictly avoiding contact, or residing only with other positive cases. It is recommended if positive COVID-19 is confirmed (7,8). Women with suspected or confirmed COVID-19 should be advised not to attend in clinics. In cases of self-quarantine and self-isolation, routine antenatal care should be postponed fortwo weeks if it is safe to do so (7,9,10).

For pregnant women who are self-quarantine at home, it should be guarantee that they remain well hydrated and are mobile during this period. Additionally, women with some chronic diseases such as diabetes and deep vein thrombosis should be identified as ‘extremely vulnerable’ to the severe effects of COVID-19 and be ‘shielded’. Shielding refers to adults with co-morbidities stay at home at all times and should be supported to do so by members of family, friends and the local community. Pregnant women who fall into this group are advised to attend only those GPs and hospital visits, which are necessary (10). Also, if necessary, their prescriptions should be sent through the post along with a video link of how to self-inject drugs, or a video appointment following receipt (9,10). Records should be made electronically, making them accessible for future care (10).

Community clinics

In community clinics appointment scheduling, avoidance of patients awaiting and also ensuring of maintaining social distance (1.5-metre distance from others) should be considered. In this model, it should be encouraged to women to arrive on time (not early) for appointment and women with suspected or affirmed COVID-19 to not attend (9). In these clinics, social distancing rule need to be observed in the consulting room using appropriate technology and the obstetricians and physicians need not be in the same room (10). This reduces the chance of Covid-19 transmission to the maternity care providers and other women attending for care (4). Physicians rapidly become involved into acute or intensive care medicine and their availability will be increasingly limited (8). Women who have symptoms of COVID-19 and are suffering from pregnancy complications need to be seen separately in an isolated room or at the beginning or end of clinic when no other patients remain (8). The details of the antenatal care (ANC) models are shown in Table 1 (3,7,9).

Hybrid models

Hybrid models of care delivery refers to a combination of elements of community health services building, phone or Video Call (VC) and home visit. It is also may assist to minimize contact duration (3,7,9). Telehealth and telemedicine were integrated into maternity practices early on, in response to the needs of pregnant female for prenatal appointments outside of traditional health-care facilities in the COVID-19 outbreak (3). Subject to determining the most appropriate models for providing medical services, health care providers should use clinical judgment and consider the individual circumstances of pregnant women (3,7,9). It should be noted that, the required schedule and the models of care should be reassessed at each visit according to the individual needs and current risks. In hybrid models results of test should be given over the phone or by secure messaging and abnormal results should be given face-to-face or via secure video. Booking in and risk definition process for pregnant women have to achieved with a clinician (e.g. midwife) (3,7,9). One gainful result of this model could be that pregnant females frightful of entering health care centers could now get the care they required outside of the health facilities.

Schedule appointments

Given that, most instances of COVID-19 have resulted from human-to-human transmission, so decreased schedule of antenatal consideration visits at the facility is proper to minimize overcrowding in facilities and therefore the risk of virus transmission (3,4). In general, low risk pregnant women should have a minimum of six antenatal visits (8). Health department of some countries noted that visits in 28 weeks, 37 weeks and 40-41 weeks to be face-to-face and other visits could be done by phone or video call (3,7). During every face-to-face contact usual clinical assessment (e.g. measuring blood pressure, fundal height, fetal heart rate, weight, as well as urinalysis) should be done. Also fetal movements, mental wellbeing and domestic violence should be checked (8). In cases that ANC is not provided in pregnant women at the clinic, it can

be undertaken on the phone, via what's app, skype, facetime (where available). It is best utilized for occasions when the person does not require physical clinical assessments and/or tests/investigations (3).

At present, additional face-to-face visits take place when there are significant risk factors in pregnant women (7). It is recommended that face to face visits be limited to less than 15 minutes and conducted with attendance of minimum number of people (preferably woman only), which could lead to minimizing time in appointment waiting areas (8). Some women with co-morbidities (e.g. obesity, gestational diabetes, and preeclampsia) have a condition or complication that may increase their risk for severe COVID-19 disease. Also, they may need to additional visits or multi-disciplinary care in pregnancy (10,11). Those visits that do not need measure of fundal height, blood or urine tests, or ultrasonography, should be performed remotely by video or teleconferencing. It is suggested that the hybrid models be considered in the management of prenatal care sessions based on women's needs and available health facilities (3,10,11). Current WHO guidance advises at least of eight antenatal care for low risk pregnant women. Because there is a shortage of evidence about rationalizing visit numbers, but evidence from lower and middle income countries suggests that attendance at five visits or less is associated with an increased risk of perinatal mortality (RR 1.15; 95% CI 1.01 to 1.32, three trials) (12).

Therefore, the number of visits and interval between them has not changed and only the method of delivery care has altered. Where efficient technology and facilities are available, some of these visits could be done through a remote contact. It is also recommended based on the guidelines WHO and UNFPA that the hybrid models could be considered in the management of prenatal care sessions based on women's needs and available health facilities (3,8). This guidance does not support disruption or reduction of care but different ways should be considered for women to have access to evidence-based prenatal care during the current COVID-19 pandemic (3). If necessary, services should develop a process for integrating remote contact documentation in women's hand-held records (3). The model expressed by WHO is also a hybrid model, because methods of care delivery are combined. Table 2 according to a statement from WHO shows the schedule of prenatal care including three face to face and three remote visits during the COVID-19 pandemic (3).

The general content of the ANC remains unchanged in the context of COVID-19. However, maternity care providers need to be aware of the increased risk of antenatal anxiety and depression and domestic violence due to the economic and social impacts of the COVID19 pandemic. These issues add to the normal stresses of pregnancy so that maternity care providers need to have guidance/referral mechanisms in place to support these women (3,7).

Conclusion

The long-term effects of maternal morbidity and mortality on families and communities should not be underestimated. Currently, concentrating on COVID-19 would possibly distract pregnant women from routine antenatal care. Also, it is important that they take precautions to protect themselves against COVID-19 and report symptoms of infection to healthcare workers. Therefore, it is necessary to provide appropriate antenatal care models for pregnant women depending on their circumstances and available facilities, in order to prevent its complications in the current pandemic.

In the current situation, home based care model can be considered when pregnant women are stable enough to receive care and enough midwifes and adequate health care are available. Also, referral to community clinics should be limited to emergency cases with significant risk factors. On the other hand, self-quarantine/isolation should not lead to missing of prenatal care, especially in high risk pregnant women. It is important for mothers to be informed enough about the warning signs to go to the relevant centers when they feel threatened. Generally, it seems that the hybrid model can be an efficient and preferred model to manage prenatal care in pregnant women.

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