Received: 11 May 2020 | Revised: 15 May 2020 | Accepted: 22 May 2020 | First published online: 17 Jun 2020

DOI: 10.1002/ijgo.13240

CLINICAL ARTICLE

Gynecology

WILEY | International Journal of Gynecology & Obstetrics | FIGO

Challenges and solutions for maternity and gynecology services during the COVID-19 crisis in Jordan

Ibrahim Alsharaydeh* | Hasan Rawashdeh | Noura Saadeh | Basil Obeidat | Nail Obeidat

Department of Obstetrics and Gynecology, Faculty of Medicine, King Abdullah University Hospital, Jordan University of Science and Technology, Irbid, Jordan

*Correspondence
Ibrahim Alsharaydeh, 6 Crown Circus, Inverness, IV2 3NQ, Scotland.
Email: ibrahim.alsharaydeh@nhs.net

Abstract

Objective: To describe regional experiences and measures implemented to safely maintain obstetrics and gynecology services during the COVID-19 pandemic at King Abdullah University Hospital in Jordan.

Methods: All policies and measures were implemented in keeping with World Health Organization and other international recommendations and guidelines.

Results: With concerted effort and a multidisciplinary approach, most maternity and gynecology services were provided and all other training and educating responsibilities were maintained.

Conclusion: COVID-19 caused an unprecedented global healthcare crisis. Our institution addressed the challenges and implemented several measures at different levels to maintain services and facilitate the training and teaching of trainees and medical students.

KEYWORDS

Aerosol-generating procedures; Cesarean delivery; Coronavirus; COVID-19; Jordan; Personal protective equipment; Telemedicine

1 | INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic began a global healthcare crisis during the early months of 2020. COVID-19 is an infectious disease that can spread, directly or indirectly, from one person to another. It affects the respiratory tract and is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) first identified in Wuhan, China, in December 2019. As of May 20, 2020, nearly 4.8 million people across the globe have been infected with the virus, with approximately 323 000 confirmed deaths globally.[1,2]

Jordan is an upper-middle-income country in the Middle East with a population of approximately 10 million people. According to the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University[1] and the World Health Organization (WHO) website,[3] the first case in Jordan was reported on March 2, 2020. The total number of confirmed COVID-19 cases in Jordan as of May 20 was 672, with 9 deaths and 446 patients having recovered from the disease.

Jordan is a predominately Muslim country, in which extended family, relatives and friends, and large gatherings are culturally important, especially during wedding ceremonies, religious and national festivals, condolence services, and during the holy month of Ramadan. Accordingly, the Jordanian government made swift and strict changes to address the crisis. From March 14, 2020, Jordan suspended study in schools and universities, stopped gatherings in places of worship, closed its borders, and stopped all incoming and outgoing flights. This was later followed by an enforced complete lockdown. Five thousand Jordanians, who later flew into Jordan, were placed in quarantine in hotels in the Dead Sea region and in Amman for 14 days. The Ministry of Health assigned a number of major hospitals in Jordan as referral centers for patients with COVID-19; one in the north—King Abdullah University Hospital (KAUH)—and others in the middle and southern parts of the country.

KAUH is a tertiary center with 683 beds that can be expanded to 800 beds during emergencies.[4] It is the teaching hospital affiliated with Jordan University of Science and Technology (JUST) School of Medicine, one of the leading medical schools in Jordan and the region.[5] KAUH is the only referral center for COVID-19 patients in the north of Jordan, serving five large cities (a total of 3–4 million people) and the Zaatari refugee camp for Syrian refugees. As of May 20, 2020 KAUH has admitted 169 patients diagnosed with COVID-19; 116 of them have recovered and have been discharged.

As the government announced the state of emergency and later the lockdown, KAUH outpatient clinics were closed and elective procedures and surgeries were rescheduled. The obstetrics and gynecology department made multiple adjustments to confront the challenges of COVID-19. These challenges included limited mobility of patients because of the lockdown, limited number of medical and nursing staff, and limited access to theatres, imaging services, blood banks, and laboratory services. To combat these challenges, changes were implemented at four levels: (1) patient care; (2) staff governance; (3) residency programs; and (4) medical student teaching program.

2 | PATIENT CARE

After closing routine prenatal and gynecology clinics along with other specialty clinics, the hospital system kept some clinics open to refill prescriptions for patients with chronic diseases. During the lockdown our aim was to continue providing care for all our patients (Table 1).

Patients with acute obstetric and gynecologic complaints were advised by official authorities, national TV, social media, and front desk personnel to attend the emergency department, where an in-house team was available 24/7 to evaluate patients. In general, patients were hospitalized for the lowest number of days possible without compromising their care to decrease their chance of becoming infected with hospital-acquired COVID-19.

TABLE 1 Measures implemented for maternity and gynecology services at King Abdullah University Hospital, Jordan, during the COVID-19 pandemic.

Patient group	Measures
Confirmed COVID-19 patients	Four patients cared for in the special COVID-19 ward Maternal and fetal monitoring performed as routine Two mothers delivered by cesarean
Maternity services	Patient triage system using red and green pathways to protect staff and other patients
Acute obstetrics	Service maintained
Acute gynecology	Service maintained
Cancer patients	Maintained cancer patient care Major cancer surgeries Open rather than laparoscopic approach used to reduce the risk of generating aerosols Shorten length of stay in hospital
Routine gynecology services	Deferred until further notice

2.1 | Visiting

As is tradition in Muslim and Arabic countries, patients often present to hospital accompanied by a large number of family members to show sympathy and support. Hence, KAUH cancelled visiting hours and created a clear and strict policy to limit access to hospital to patients with only one or a maximum of two family members granted access if their presence was necessary.

2.2 | Pregnant women

We admitted four pregnant women with positive nasopharyngeal swab PCR COVID-19 test. None of these patients had severe symptoms and all were cared for on a special COVID-19 ward in keeping with recommendations from WHO and the Royal College of Obstetricians and Gynaecologists (RCOG).[6] The frequency of fetal and maternal observation remained as normal.

Two of these patients were delivered by cesarean at term. Both deliveries were performed for obstetric reasons: previous cesarean delivery and maternal request. Spinal anesthesia was used to reduce the risk of staff exposure. All staff took the necessary precautions and wore personal protective equipment (PPE). Multiple swabs were taken from the amniotic fluid and the neonates, and all results were negative. Breast feeding is normally promoted at KAUH; however, because full knowledge about virus transmission is lacking and, in joint consultation with the neonatology team, we decided to isolate the newborns from their mothers to reduce the risk of acquiring infection. Both deliveries were uneventful, and the babies were healthy. Both mothers recovered from COVID-19 and were discharged home.

Although prenatal clinics were deferred and rescheduled, previously arranged induction of labor and elective cesarean deliveries continued without delay.

Pregnant women with urgent questions about their conditions were able to reach consultants and residents by telephone, as their numbers were available at the front desk and were given to patients and their families who contacted the hospital. Consultants and residents also used messaging via social media to address some of the patients' issues. Patients whose problems were not resolved over the phone were directed to the emergency department for further evaluation. Our midwifery team created a Facebook page (Facebook Inc, Menlo Park, CA, USA) to facilitate contact with all pregnant women registered at KAUH; the page was also open to nonregistered pregnant women. The page gained 3000 followers. Questions and enquiries were addressed by both midwives and consultants.

2.3 | Triage system

We developed a triaging system based on COVID-19 risks. Risk factors covered the risk of exposure to COVID-19, including women

living in closed endemic areas, history of travel to endemic areas, or being in contact with someone with confirmed COVID-19 infection.

A pathway color-coded red was designated for pregnant women considered high risk (women living in closed areas, history of travel to endemic areas, contact with virus-positive patients, or mild respiratory symptoms). These patients were admitted to isolation rooms and were cared for by a separate team, taking all necessary precautions and wearing appropriate PPE.

A pathway color-coded green was designated for low-risk pregnant women who were cared for per the normal routine.

2.4 | Gynecologic procedures

Although routine gynecology clinics were deferred, we managed to maintain our care for cancer patients. Several measures were taken to reduce the risk of spreading infection and to protect patients and staff; for example, laparoscopic procedures such as total laparoscopic hysterectomy were converted to an open approach, and length of hospital stay was shortened by utilizing telephone follow-up.

3 | STAFF GOVERNANCE

Regarding the work schedule of maternity consultants and trainees, the emergency policy put forth by the hospital's administration—to minimize the exposure of healthcare providers to COVID-19—was applied. Of the 10 consultants on the unit, each one covered the service for 1 day, with no weekend block, to reduce the risk of viral exposure with high viral load.

We also modified the rota for residents who covered the in-house 24-hour call service. Furthermore, we reduced resident numbers and assigned fewer duties for trainees at high risk themselves (e.g. pregnant trainees). All consultants were available by phone to answer queries from both patients and hospital staff, and to help reading cardiotocograph traces.

The number of midwives and nursing staff was also reduced to the minimum number required to maintain the service safely.

4 | RESIDENCY PROGRAMS

Multiple adjustments were introduced to residency programs. Before the lockdown, we canceled the morning report to avoid the gathering of residents and consultants and adhere to the social distancing rule. We used messaging applications to send learning materials to residents and e-learning apps (such as Zoom [Zoom Video Communications Inc, San Jose, CA, USA] and Microsoft Teams [Microsoft Corp, Redmond, WA, USA]) for consultants to participate in lectures and meetings.

5 | MEDICAL STUDENT TEACHING PROGRAM

The medical student teaching program has also been facilitated by technology. Coordinators for fifth- and sixth-year medical students uploaded course materials through an e-learning program, which is hosted by the official website of JUST. Clinical case discussions were also conducted via Zoom for these students. The process of distance learning is continuously monitored and assessed by the Center for E-Learning and Open Educational Resources of JUST. The feedback has been excellent.

Use of telemedicine could be beneficial during this pandemic because it facilitates care of patients through video consultation while they are isolated at home. Some countries like the USA, UK, and France have adopted and promoted the use of telemedicine during this pandemic.[7] In our hospital, work is ongoing to overcome technical and financial blockers hindering the full utilization of telemedicine. We also adopted ordering via the internet and phone, and a home delivery system.

As the government planned for reduced restrictions and relaxed the level of lockdown, we prepared several measures to implement once routine outpatient clinics were restored (Table 2).

TABLE 2 Outpatient department measures implemented at King Abdullah University Hospital, Jordan, during the COVID-19 pandemic.

Purpose	Measures
Reduce risk of patient crowding and exposure	• One clinic at a time • Assess women for COVID-19 risk factors prior to arrival (call invited patients in the morning of the clinic or the day before), defer high-risk reviews • Appointments per limited clinic template. 60-minute slots to allow deep room cleaning between patients • Maximum of 3 patients in the waiting area at a time with 2 m distance • Reduce patient wait times to less than 15–20 minutes • Appointments per booking only; no walk-in patients • Posters in waiting area to advise regarding social distancing
Reduce risk of staff exposure	• Only patients allowed inside clinics • Reduce number of the clinic's medical staff • Reduce number of nursing staff • Reduce number of reception staff • All clinic staff to use PPE (medical masks, gloves, aprons)
Reduce risk of transmitting infection	• Clinic: ultrasound probes to be cleaned following every review • Clinic: deep cleaned following review

6 | CONCLUSION

COVID-19 caused an unprecedented global healthcare crisis with significant impact on intensive care units, emergency departments, and all other healthcare specialties. Infection with COVID-19 is not a contraindication for vaginal delivery; cesarean delivery is only indicated for obstetric indications. At the present time, we feel that breast feeding is best avoided to reduce the risk of newborns acquiring infection from their mothers.

Until there is solid evidence, all aerosol-generating procedures, including laparoscopic procedures, should be avoided if possible. Laparoscopic procedures should be avoided unless the clinical advantages substantially exceed the risks of viral transmission to surgical and theater teams.

Our institution addressed the challenges, learned several lessons, and implemented several measures at different levels using a multidisciplinary approach to serve our patients, ensure patient and staff safety, and facilitate the teaching of trainees and medical students.

AUTHOR CONTRIBUTIONS

IA was the principal investigator and author. HA contributed to data analysis. BO and NS edited the manuscript. NO contributed to analysis and manuscript editing.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

REFERENCES

1. Johns Hopkins University and Medicine. Coronavirus Resource Center [website]. https://coronavirus.jhu.ed. Accessed May 21, 2020.
2. Jordan Ministry of Health. Corona Virus-2019 Disease [website]. https://corona.moh.gov.jo/en. Accessed May 20, 2020.
3. World Health Organization. COVID-19 Dashboard. https://covid19.who.int/. Accessed May 21, 2020.
4. King Abdullah University Hospital [website]. https://www.kauh.jo. Accessed May 20, 2020.
5. Jordan University of Science and Technology. [website]. https://www.just.edu.jo. Accessed May 20, 2020.
6. College Royal of Obstetricians and Gynaecologists. Coronavirus (COVID-19) Infection in Pregnancy. Information for healthcare professionals. Version 8: Published Friday 17 April 2020. https://www.rcog.org.uk/globalassets/documents/guidelines/2020-04-17-coronavirus-covid-19-infection-in-pregnancy.pdf. Accessed May 1, 2020.
7. NHS Highland. NHS Near Me [website]. https://www.nhshighland.scot.nhs.uk/NHSNEARME/Pages/Welcome.aspx. Accessed May 1, 2020.