JORDAN's Emergency Obstetric & Newborn Care (EmONC) Assessment

2022-2023

UNFPA jordan

وزارة الصحة

HCAC
مجلس إعتماد المؤسسات الصحية
HEALTH CARE ACCREDITATION COUNCIL
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Foreword

I am delighted to present the first national Emergency Obstetric and Neonatal Care (EmONC) report, a collaborative effort involving Ministry of Health, Royal Medical Services, university hospitals, and the private sector. This comprehensive report outlines evidence-based recommendations aimed at enhancing EmONC services and reducing maternal mortalities in the Hashemite Kingdom of Jordan.

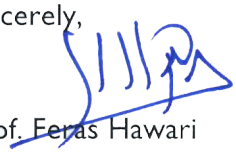
The primary objective of this report is to strengthen emergency obstetric and neonatal care services across the country. By focusing on evidence-based practices, we aim to improve the overall health outcomes of mothers and newborns, and ultimately reduce maternal mortalities in the Kingdom.

Through the collaboration of all stakeholders involved, we have developed a comprehensive set of recommendations that encompass various aspects of EmONC, including infrastructure, staffing, training, protocols, and quality assurance mechanisms. By implementing these recommendations, we aspire to enhance the delivery of emergency obstetric and neonatal care services, ensuring that every mother and newborn receives the highest standard of care.

As Minister of Health, I am committed to working closely with all relevant entities to prioritize the implementation of these recommendations. Together, we will build a robust and sustainable EmONC system that saves lives, promotes the well-being of mothers and newborns, and contributes to the overall improvement of our healthcare sector.

I would like to express my gratitude to all contributors and stakeholders involved in the development and implementation of this report. Your unwavering support and collective efforts are vital in shaping the future of emergency obstetric and neonatal care in Jordan.

Sincerely,



Prof. Feras Hawari

Minister of Health

UNFPA Foreword

Every day in 2020, approximately 800 women died from preventable causes related to pregnancy and childbirth - meaning that a woman dies around every two minutes. Almost 95% of all maternal deaths occurred in low and lower-middle-income countries in 2020[1].

In the context of Jordan, maternal mortality and morbidity take their heavy toll: according to recent estimates documented in the "Jordan's National Maternal Mortality Report 2021", the maternal mortality ratio stood at 85.2 per 100,000 live births[2]. The majority of these maternal deaths -about 75% percent- took place during the postpartum period.

The good news is that nearly all of these lives could be saved. The medical technology to prevent almost all deaths from common obstetric complications has been available for half a century and the key medical interventions have been well defined. They are relatively simple and inexpensive.

However, the key challenge is to ensure that these interventions reach all women. Safe motherhood means ensuring that all women receive the care and opportunities they need to be safe and healthy throughout their lives and throughout pregnancy and childbirth. One of the key interventions is access to emergency obstetric care.

The Sustainable Development Goal (SDG) number 3 calls for achieving universal access to sexual and reproductive health care and reducing global maternal death rates by 2030. Equity is at the heart of SDGs, which is founded on the concept of "Leaving No One Behind." Equity is also founded on the principle of equal access to health services without the risk of financial hardship.

This state-of-the-art report documents the current availability, utilization, and quality of emergency obstetric and newborn care (EmONC) services based on a national cross-sectional facility-based assessment of a total of 66 public hospitals, private hospitals, and a health center within the country. The first of its kind.

We believe in national ownership and evidence-based results orientation, and we are committed to supporting all the involved partners to strengthen the emergency obstetric and newborn care services in Jordan to ensure these services are available, accessible, acceptable to, and utilized by all.

Mr. Himyar Abdulmoghni

Country Representative Himyar Abdulmoghni

The United Nations Population Fund (UNFPA) Jordan

[1]WHO (2023). Available at: https://www.who.int/news-room/fact-sheets/detail/maternal-mortality

[2]Ministry of Health, Jordan (2022). Available at: https://moh.gov.jo/ebv4.0/root_storage/ar/eb_list_page/mmr_2021_feb_26.pdf

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The TWG also extends its sincere gratitude to Jordan's Health Care Accreditation Council (HCAC) for the great undertaking of the EmONC data collection.

Appreciation goes to the National Technical Committee members for their supervision and data collectors for their professional undertaking in the data collection, as well as all the health facility managers and health care workers who contributed to the data collection, without them, this assessment wouldn't have been successful. Special gratitude goes to the following organizations and persons involved in the EmONC assessment:

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Acronyms

AMDD	Averting Maternal Death and Disability Program
AMTSL	Active Management of Third Stage of Labor
ANC	Antenatal Care
APH	Antepartum Hemorrhage
ARI	Acute Respiratory Infection
ARV	Antiretroviral
AVD	Assisted Vaginal Delivery
BEmONC	Basic Emergency Obstetric and Newborn Care
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CPAP	Continuous Positive Airways Pressure
CPD	Cephalo-Pelvic Disproportion
CS	Caesarean Section
CUG	Closed User Group
D&C	Dilatation and Curettage
D&E	Dilatation and Evacuation
DCT	Data Collector's Training
DOCFR	Direct Obstetric Case Fatality Rate
DOS	Department of Statistics
E&C	Evacuation and Curettage
EmNeC	Emergency Newborn Care
EmONC	Emergency Obstetric and Newborn Care
FANC	Focused Antenatal Care
FP	Family Planning
GDP	Gross Domestic Product
GIS	Geographic Information System
GOJ	Government of Jordan
GP	General Practitioner
GPS	Global Positioning System
HBC	Hepatitis C Virus
HBV	Hepatitis B Virus
HC	Health Center
HCAC	Health Care Accreditation Council
HIV	Human Immuno-Deficiency Virus
HMIS	Health Management Information System
IM	Intramuscular
IUD	Intrauterine Device
IV	Intravenous

JMMSR	Jordan's Maternal Mortality and Surveillance Report
KMC	Kangaroo Mother Care
LMIS	Logistics Management Information System
MDG	Millennium Development Goal
MDs	Medical Doctors
MMR	Maternal Mortality Ratio
MNH	Maternal and Newborn Health
MOH	Ministry of Health
MVA	Manual Vacuum Aspiration
NGO	Non-Governmental Organization
NICU	Neonatal Intensive Care Unit
OB/GYN	Obstetrics/Gynecology
OPD	Outpatient Department
OT	Operating Theatre
PAC	Post Abortion Care
PEE	Pre-Eclampsia Eclampsia
PHA	Private Hospitals Association
PMTCT	Prevention of Mother to Child Transmission
PNC	Postnatal Care
PPH	Postpartum Hemorrhage
pPROM	Preterm Premature Rupture of Membranes
PPV	Positive Pressure Ventilation
RDT	Rapid Diagnostic Test
RMC	Respectful Maternity Care
RMNCAH	Reproductive, Maternal, Newborn, Child, and Adolescent Health
RMS	Royal Medical Services
SAC	Safe Abortion Care
STI	Sexually Transmitted Infection
SVDs	Spontaneous Vaginal Deliveries
TWG	Technical Working Group
UN	United Nations
UNDP	United Nations Development Program
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UPS	Uninterrupted Power Supply
USAID	United States Agency for International Development
USD	United States Dollar
VCT	Voluntary counselling and testing
WHO	World Health Organization

Executive Summary

Jordan conducted the first ever comprehensive Emergency Obstetric and Newborn Care (EmONC) assessment in August 2022. The primary objective of the assessment was to generate evidence on the current availability, utilization, and quality of EmONC services in the country. The assessment provides insightful information on the availability of infrastructure, equipment, essential drugs, and supplies; the range of practices related to user fees; availability and current EmONC practices of Human Resources; quality of care and documentation of use of partographs, caesarean deliveries, maternal and newborn morbidities; geographic availability of critical services; status of routine and emergency obstetric and newborn services; availability and use of records for Maternal and newborn health (MNH) services; and the referral system.

The 2022 Jordan EmONC assessment was a national cross-sectional facility-based assessment. A census of all public and private hospitals and a health center that provided maternity services in the last 12 months prior to the assessment, were included in this assessment. A total of 66 public and private hospitals and a health center were assessed. The data collection was held from August 01–October 31, 2022 in all the governorates of the country. Data cleaning and preliminary analysis were done in the last two months of the 2022. A total of 15 data collectors with a minimum qualification of health background participated in the assessment. The data collectors and team leaders received a four-day training that included practical sessions, role plays, and field level pilot testing, and they worked in teams of two with one of them serving as a team leader.

The data analysis for this report used frequencies, percentages, and rates/ratios. In addition, the report accommodates analysis results using graphs and maps to see the distribution of indicators in the country. Tables are found both in the body of the report and in the appendix (A) for further reference to details. The analysis was mostly done by region, facility type, ownership of facilities, and location (urban and rural); and in some instances, by EmONC status and governorates. Key findings from each chapter are summarized below.

Part I: EmONC and EmNeC Indicators

The United Nations (UN) handbook defines Basic EmONC (BEmONC) facilities; as the ones performing all the seven basic signal functions (parenteral antibiotics, anticonvulsants, and uterotonics (all injection), manual removal of placenta, removal of retained products of conception, assisted vaginal delivery-with vacuum extractor, and neonatal resuscitation with bag and mask), While Comprehensive EmONC (CEmONC) facilities are defined as; the ones performing all the basic signal functions in addition to caesarean delivery and blood transfusion in the last 3 months prior to the assessment[3] . Accordingly, the UN recommends a minimum of 5 EmONC facilities for every 500,000 population; with at least one of which functioning as a comprehensive facility.

in the last 3 months prior to the assessment . Accordingly, the UN recommends a minimum of 5 EmONC facilities for every 500,000 population; with at least one of which functioning as a comprehensive facility.

[3]WHO, UNFPA, UNICEF, AMDD. Monitoring emergency obstetric care: a handbook. Geneva: World Health Organization; 2009

Coverage of EmONC facilities:

- Io In 2022, Jordan was required to have 110 EmONC facilities (with at least 22 of them providing CEmONC) for a projected population of 11,057,000. However, the country had only 32 (29%) fully functioning EmONC facilities (with less rigorous criteria) leaving the country with a gap of 79 EmONC facilities at national level. With more rigorous criteria (applying some readiness indices), the country had only 27 fully functioning EmONC facilities (25% from the recommended 110 facilities).

Sub-national geographic distribution of EmONC facilities

- Coverage of EmONC facilities (with less rigorous criteria) varied across regions and governorates with higher coverage in the Southern (68%) and lower in the Middle (24%); Maan, Tafielh, and Aljoun demonstrated higher coverage (100% of the recommended), while Irbid and Zarqa fell below the national average.
- Availability of CEmONC facilities exceeded the recommended in all the three regions. Nine of the 12 governorates surpassed the recommended, while one governorate had no CEmONC facility.

EmONC facilities readiness to provide:

Facility's readiness to provide an EmONC signal function is a composite indicator, that helps to measure facility's preparedness to provide EmONC services. Readiness is defined as the availability of at least one health worker cadre on staff who can provide the signal function, and the availability of a minimum package of drugs, supplies and equipment2.

- More than half of the facilities (52%) were missing only one or two basic EmONC signal functions, that can be upgraded to fully function as BEmONC or CEmONC. These facilities were distributed across all regions and governorates with the highest in Balqa (100%) and lowest in Karak (33%).

Of the 66 facilities, 41% were fully functioning Emergency Newborn Care (EmNeC) facilities (performed all the seven newborn signal functions), and 55%

- More than half of the facilities (52%) were missing only one or two basic EmONC signal functions, that can be upgraded to fully function as BEmONC or CEmONC. These facilities were distributed across all regions and governorates with the highest in Balqa (100%) and lowest in Karak (33%).

- Of the 66 facilities, 41% were fully functioning Emergency Newborn Care (EmNeC) facilities (performed all the seven newborn signal functions), and 55% missed only one or two of the seven EmNeC signal functions, that can easily be upgraded to fully function as EmNeC.
- Overall, facilities were ready to provide 6 of the 7 basic EmONC signal functions. Readiness was lower than actual performance for the manual removal of placenta, cesarean (CS) delivery, and blood transfusion; indicating that performance was made under sub-optimal condition. In these three signal functions, facilities were better staffed than being equipped and supplied, that implies facilities lack some of the equipment or supplies needed to perform these signal functions.

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[4]EmONC availability is classified as a) Less rigorous criteria: functionality based on facility interviews: with performance of either all the seven basic or nine comprehensive EmONC signal functions based on the interviews of the healthcare providers and b) More rigorous criteria: functionality based on interviews and readiness to provide EmONC: performance signal functions, and case management of major obstetric complications, facility open 24/7, and availability of minimum drugs/equipment to perform signal functions.

- Readiness to provide EmONC was better in tertiary-level hospitals than secondary/primary hospitals/centers.
- Readiness to provide the 7 EmNeC signal functions was generally good, except Kangaroo Mother Care (KMC) that was the least to be ready due to policy, and training issues.

Institutional delivery rate (as a proportion of expected births)

- Despite the fact that other studies came up with a higher rate (Jordanian Population and Family Health Survey indicated 98%), the population-based institutional delivery rate in this EmONC turned out to be 68% in all facilities and only 35% in fully functioning EmONC facilities. The low percentage might be due to lack of proper documentation of deliveries, maternal and newborn complications and mortality across the country. The other reason could be methodical differences between Family Health Survey and EmONC assessments, in which the earlier is household- while EmONC is facility-based assessment.

Caesarean section as a proportion of expected births

- Population based caesarean section (CS) rate was 27% in all facilities and 14% in EmONC facilities; both above the recent international average (10%). CS rate in all facilities was higher in Southern region (29%) and lower in the Middle region (11%). CS rate in all facilities was recorded higher than the international average.
- Facility-based CS rate at national level was 41% (in both all and EmONC facilities) with the highest among private-for-profit facilities (46%) than public/government owned (39%) and private-not-for-profit (43%).

Intrapartum and very early neonatal death rate

- Nationally, there were 742 stillbirths with a 4.6 and 3.4 stillbirth rate per 1000 deliveries in all and EmONC facilities, respectively. According to the World Health Organization (WHO) definition of Very Early Neonatal Death (VEND) rate, 207 of the total 440 very early neonatal deaths recorded 2.5 kgs and more and first 24 hours in terms of time of death. Hence, intrapartum and VEND rate in all facilities was 3.2 per 1000 live births. with the highest in the Middle region (3.5), and lowest in Southern region (1.3).

Met Need, Direct Obstetric Case Fatality Rate (DOCFR), and percentage of institutional maternal deaths due to indirect causes

- Met Need, Direct Obstetric Case Fatality Rate (DOCFR), and percentage of institutional maternal deaths due to indirect causes were not analyzed; as facilities did not have complete records on obstetric complications and maternal death due to direct and indirect obstetric causes. To use the data that comes from JMMSR, it was not possible to map the maternal death by cause in each facility.

Availability of EmONC and EmNeC signal functions

- All facilities performed parenteral antibiotics and parenteral uterotonics in the last 3 months prior to the assessment; while the least performed was manual removal of placenta (77%). No indication (88%) was the major reason for the non-performance of manual removal of placenta. CS delivery and blood transfusion were performed in 98% and 97%, respectively.
- Of the seven newborn signal functions, safe administration of oxygen, administration of IV fluids, newborn resuscitation with bag and mask, antenatal corticosteroids, and antibiotics for Preterm

premature rupture of membranes (pPROM) were performed in more than 92% of the facilities. The least administered newborn signal function was KMC, with only 50% of the facilities performing it. Policy issue (82%) was cited as the major deterring factor for the non-performance, followed by training issue (58%), and lack of KMC guideline and other supplies (12%).

Performance of other maternal and newborn health services, procedures, and policy environment

- Over 85% of the total facilities reported having most of the other routine maternal and neonatal services; while adolescent and youth responsive services (14%), treatment of sexually transmitted infections (STIs), (45%) cervical screening (52%), contraceptives (58%), and medical abortion services (62%) were the least available services in the facilities.
- The median length of stay for a woman after delivery was recorded as 24 hours at national level with little variations among facility types.
- Of the total facilities, 77% charged fees before women receive services.
- Nationally, 41% of the facilities charged women separately for bed; 20% for food; and 74% for blood transfusion.
- 47% of the facilities had a formal waived for poor women system and 29% had an informal system.
- 71% of the facilities had routine maternal death case audit.
- Women were allowed to have their companion of choice during labor (41%), during delivery (30%), and during abortion (24%). However, the definition of respectful maternity care, in which a woman's companion is a one of her choices, might not be clear to the providers as demonstrated during the interview.
- Only 33% of the facilities reported their facilities were certified as mother-baby friendly birthing place.

Part II: EmONC/EmNeC readiness components

1. Facility Infrastructure

- The ratio of maternity beds to 1000 institutional deliveries (12) was much lower than the international standards[5] (30-32 per 1000 deliveries).
- Nationally, all the facilities were connected to the grid. However, 11% of the facilities experienced power interruptions in the last 7 days prior to the assessment. Over 85% of the facilities had fuel-operated back-up generator, 52% had Uninterrupted Power Supply (UPS), and 26% had solar-powered generator.
- Nationally, all of the facilities had a functioning toilet for patients, and 86% of them had a functioning toilet for visitors and family use.
- Health Management Information System (HMIS) was in-place in 86% (57) of the facilities. Of the 57 facilities with HMIS, 96% had the practice of compilation and reporting of routine MNH services, and 91% had an MNH responsible person.

[5]WHO. 1991. Essential elements of obstetric care at first referral level. Geneva: 1991

2. Human Resources

2.1 Human Resources availability, roles & responsibilities

- Ratio of midwives to 1000 deliveries stood out at 9, that was clearly above the international average (6 to 7 midwives per 1000 deliveries)[6]. Five of the 12 governorates met the cut-off point, while 7 of the 12 governorates were above the average.
- Across all facilities, health workers were more likely to present on-site during the day than during the night and over the weekends and holidays.
- General practitioners (GPs) and Obstetricians/Gynecologists (Ob/Gyns), were the most likely cadres that provided most of the services in the past three months prior to the assessment, in comparison to Midwives. However, midwives were the most likely to have provided essential newborn care, newborn resuscitation with bag and mask, adult resuscitation, Magnesium Sulphate injection for pre-eclampsia/eclampsia (PEE), and administered Intra Venous (IV) fluids.
- In tertiary hospitals, midwives and staff nurses were the most likely cadres that performed antibiotics, uterotonics, anticonvulsants, and blood transfusion; while GPs and Ob/Gyns were highly likely to perform manual removal of placenta, removal of retained products of conception and CS delivery.
- Regarding EmNeC signal functions, midwives and staff nurses were the most frequent staff category providing them in tertiary-level hospitals. Similarly, GPs, Ob/Gyns, midwives, and staff nurses were the ones that were highly likely performing the EmNeC signal functions in the tertiary-level secondary/primary hospitals including: antenatal corticosteroids, antibiotics for preterm labor, and oxygen for newborns.
- In secondary/primary hospitals, midwives, GPs and Ob/Gyns were the most frequently available cadres that performed EmONC signal functions than the rest of the cadres.
- GPs and Ob/gyns were the most likely staff providing KMC in the tertiary-level hospitals; while midwives were the ones that did so in the secondary/primary hospitals.

2.2 Provider's knowledge and competency

- About 98% each of staff nurse and practical nurses, and 42% of midwives in the tertiary-level hospitals, were not trained on BEmONC.
- Ninety-nine percent of staff nurses, almost all of practical nurses, and 84% midwives in the secondary/primary hospitals, were not trained on BEmONC.
- All health worker cadres scored substantially better on aspects of routine intrapartum and newborn care, than on aspects of care for obstetric or newborn complications.
- A substantial proportion of health workers (over 40%) did not give a loading dose of Magnesium Sulphate; among GPs and midwives, this was 48% and 47% of the respondents, respectively.

[6]The State of the World's Midwifery 2011. New York: United Nations Population Fund, 2011.

- Comparably, all health workers scored better on knowledge of immediate complications of unsafe abortion, than measures to take when treating a victim of violence.
- Only one third (32%) of the 66 providers interviewed received technical support in the last 3 months prior to the assessment. Another 30% of the providers received technical and supervisory support in longer than a year ago. Thirty-eight percent of midwives and 26% of medical doctors received supervisory support in the last 3 months.
- In general, midwives and nurses appeared to be the most motivated than medical doctors, they perceived themselves as well supported.
- Despite the low proportion, sexual violence in the health facilities existed, as 6% of female and 8% of male providers admitted the problem.
- When asked what could be done to improve the quality of the services they provided, more incentives, more knowledge/updates and training, and better-quality supplies were ranked as the top priority by all health worker categories.

3. Availability of drugs, equipment and supplies

- All facilities had either a pharmacy or supply of medicines, with 45% and 36% of them had the private and Ministry of Health (MoH) as their major supplier of drugs/medicines; respectively.
- Drug inventory registers existed, and were up-to-date in all the facilities.
- Gentamicin injection (100%), Ceftriaxone (100%), Metronidazole injection (98%), and Amoxicillin – oral (97%) were the most common antibiotics available in the facilities. While oral Flucloxacillin for newborn (17%), Procaine Benzylpenicillin (29%), Cloxacillin Sodium (32%), and Amoxicillin injection (35%) were the least available antibiotics in the facilities.
- Diazepam (95%%) and Phenytoin (94%) were widely available in the facilities; whereas Magnesium Sulphate – 50% concentration was available in only 48% of the facilities.
- Anesthetics were stocked in all the facilities in the country.
- Dexamethasone and vitamin K (for newborns) were available in all the facilities; while Chlorohexidine – 7% gel for cord cleansing fell short in 62% of the facilities.
- IV fluids were available in all facilities, irrespective of type of facility.
- Management of obstetric complications (82%) and integrated management of pregnancy, childbirth, postpartum, and new-born care (74%) were the most commonly available guidelines in the facilities; while Prevention of Mother To Child Transmission (PMTCT) (32%), treatment of infections for young infants (55%), and care for preterm or low birth weight babies, including KMC (58%) were the least available ones.
- Complete delivery set was available in 97% of the facilities, with average of 13 sets per facility.
- Complete episiotomy set was available in 98% of the facilities.

- Electric vacuum aspiration and manual vacuum aspiration sets were available only in 91% and 70% of the facilities, respectively.
- Some of the critical blood transfusion test kits were not available in many of the facilities: Syphilis test kit was not available in 75% of the facilities, Hepatitis B and C test kits were not available in 47% and 50% of the facilities, respectively. Malaria rapid diagnostic test (RDT) and rapid Human Immuno-deficiency Virus (HIV) test kits were not also available in 94% and 78% of the facilities.
- Most facilities experienced stockout of drugs: 50% of the facilities had stockout of antiretrovirals (ARV), 32% had stockout of Misoprostol. The same is true for Gentamicin (29%), Magnesium Sulphate (27%), Oxytocin (26%), Corticosteroids (24%), Ketamine (23%), Isoflurane (23%).
- The most common cause of delays in supply and resupply of facilities was stockout at central level (71%), followed by inadequate transport (14%).

4. Case reviews

- Partograph was used in 48 of the 66 facilities (73%). Of the 48 facilities where by partographs were reviewed, 77% used modified WHO partograph.
- Among those partographs where augmentation was used (55), 42% recorded unnecessarily on the alert line. The practice in the private facilities was even higher (over 48%). Only 55% had augmentation between alert and action line.
- Of the total CS delivery reviews, over one third (37%) of them were emergency and the rest were elective (62%) and few had no information (1%). Among whose CS were an emergency, only 35% had partograph administered during labor.
- About 89% of the CS performed had taken uterotonics after baby was delivered. In 84% of the CS, antibiotics were used before the CS procedure. About 7% and 3% of the cases had developed complications during operation and after operation, respectively.
- The average time (in minutes) between the decision to perform CS and beginning of surgery was 56 minutes at national level with the highest recorded in the private-not-for-profit facilities (88 minutes) and lowest in the private-for-profit (46 minutes).
- In the post-partum hemorrhage (PPH) reviews (133 cases from all the 66 facilities), vital signs (blood pressure, body temperature, pulse, consciousness, and respiratory rate) were recorded in over 93% of the facilities.
- Of the 137 PEE cases, vital signs were recorded in over 82% of the facilities.
- Vital signs (blood pressure, pulse, consciousness, and body temperature) were documented in over 94% of the facilities with maternal sepsis reviewed. However, urine output was evident in only 61% of the facilities.

- Lack of information was a serious problem in the case notes and patient cards, of those reviewed cases of newborns with breathing difficulties, low birth-weight babies, and infants with infections - 85% of neonates with breathing difficulties had no information on duration of labor, 14% of those with low-birth weight babies did not have information on breastfeeding status; 15% of neonates with infections did not have information on location of delivery.
- Of the 185 cases with breathing difficulties, 47% had Continuous Positive Airway Pressure (CPAP); 41% were resuscitated with bag and mask; 9% received intubation; and 3% had no information on the type of resuscitation.
- Of the 166 preterm and low-birth-weight babies, only 20% received KMC.

5. Referral system

- All the health facilities assessed for this EmONC (except the only health center) have surgical capacity and mostly they handle obstetric surgeries. For the health center, the nearest hospital that provides surgical services was within 25 kilometers radius and 30 minutes away.
- All the facilities had at least one functioning mode of communication system (landline, cell phone owned by facility or staff, and two-way radio communication). Of the 66 facilities, 94% had a closed user group (CUG).
- Of the 66 facilities, only 32% had a computer in their maternity wards and 68% had internet access.
- Sixty-five of the 66 facilities had at least one functioning motor vehicle ambulance on-site. Coverage of ambulance to 100,000 population was within the international standards (2).
- About 26% of the total facilities had portable incubators for newborn referrals.

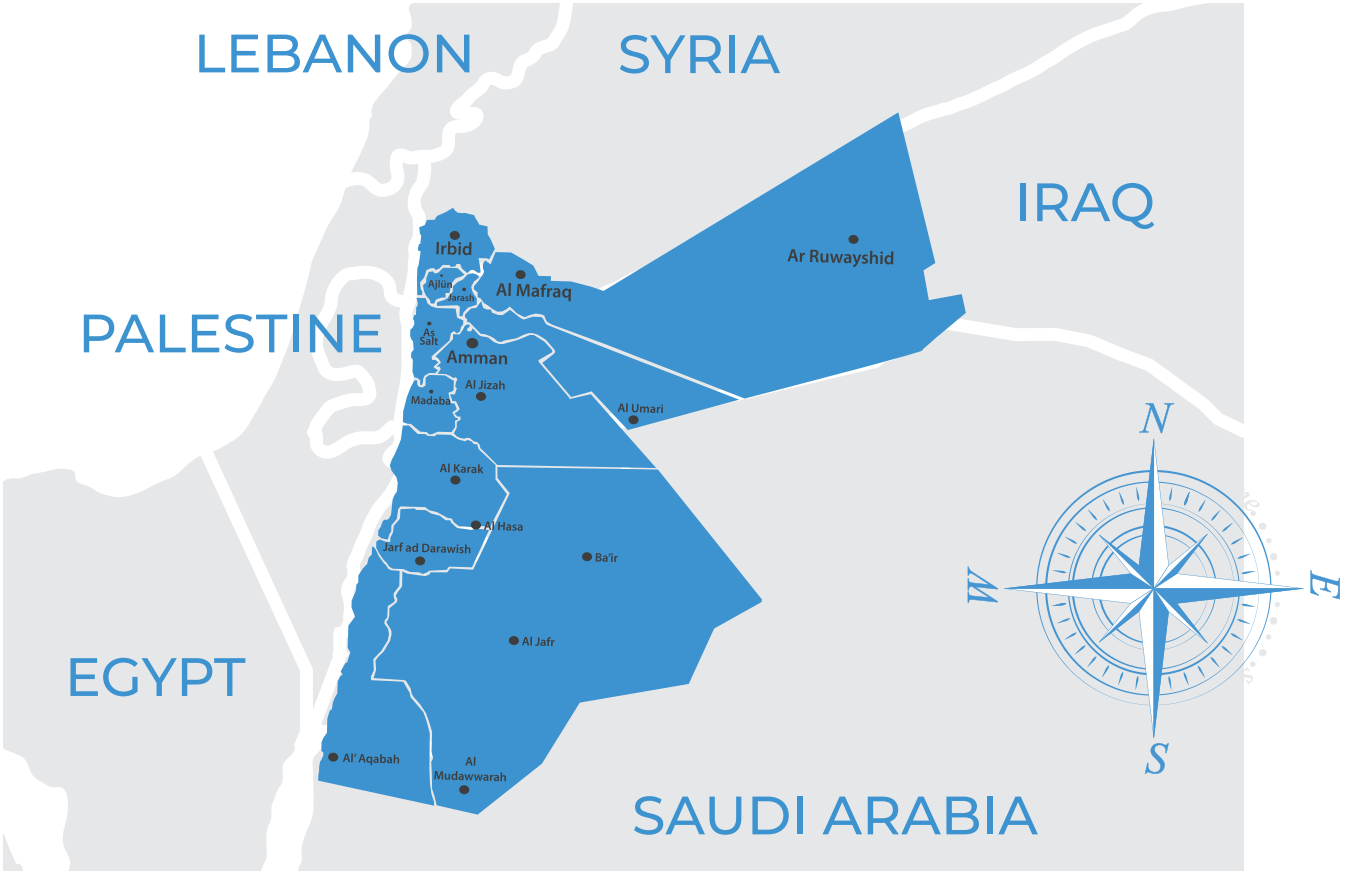
Chapter 1
Introduction & Background

1.1 Country profile

1.1.1 Jordan in brief

Jordan is an Arab country located in the north of the Arabian Peninsula, west of Asia. It occupies an area of 92,300 km2. Bordered by Syria to the north, Iraq to the east, Saudi Arabia to the south and south-east, and Palestine (the West Bank) to the west. Jordan is named to the Jordan river, which passes on its western border, and Amman is the capital. Jordan has an estimated total population of 11 million[7], of which, 42% reside in Amman. Jordan has three regions (North, Middle, and South) and 12 governorates, with the highest population in Amman and lowest in Tafielh. The country's per capita income in 2021 was 4,103 USD[8]. Jordan is renowned for its high-quality health care services and is considered one of the major destinations for medical tourism in the Middle East and North Africa region[9].

Figure 1.1.1: Map of Jordan showing administrative regions, governorates, and neighboring countries



[7]Jordanian Department of Statistics: Population Projections for the Kingdom's Residents during the Period 2015-2050; December 2016

[8]World Bank Data, accessed online on February 20, 2023: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=JO

[9]Research/survey/statistics. Medical tourism and healthcare status from around the world. Medical Tourism Association [cited 2016 Sep 5]. Available from: www.medicaltourismassociation.com/en/research-and-surveys.htm

1.1.2 Health care delivery and maternal and newborn health

The health care system in Jordan consists of two main sectors: the public (including government, university, and Jordanian Royal Medical Services (RMS)) and the private sectors. Both sectors include hospitals at different level of care, primary care clinics, pharmacies, and other ancillary services. Health care programs provided through the UN and non-governmental organizations (NGOs) is also a huge portion in the country's health care delivery system[10]. Jordan's health care expenditure in 2020 accounted for 9% of GDP, estimated as 3.79 billion USD. In 2020, the country had a total of 122 hospitals, 70 of which were private. The total number of hospital beds in both sectors, was 16,057 beds, with 51% of the beds in public hospitals. Bed occupancy rate was 15 per 10,000 people in 2017[11]. However, with the increasing population and the high influx of refugees to Jordan, the current bed rate might be at stake. Jordanians increasingly suffer from asthma, cancer, diabetes, obesity, heart stroke, vascular disease, osteoarthritis, rheumatoid arthritis, and osteoporosis. About 67% of Jordanians have health care insurance coverage. However, there is considerable geographic variation in the population with health care insurance[12]. Jordan has also established and is implementing an e-health system, under the name Hakeem[13].

According to the 2017/18 Family Health Survey, skilled birth attendance in Jordan is almost universal, standing at 98%. Percentage of reproductive age women that received seven or more Antenatal Care (ANC) visits had increased from 45% in 1990 to 79% in 2017/18. Postnatal care coverage was also good as 83% of the mothers and 86% of the newborns had postnatal checks within the first two days after birth. More than 90% of children aged 12 – 23 months received all basic vaccinations in 2017/18. Contraceptive use was 52% among currently married women with Intra-uterine Device (IUD) as the most commonly used contraceptive method. Unmet need for family planning was reported as 14% in 2017/18[14].

In the past two decades, the Government of Jordan (GOJ) had made impressive strides improving maternal and child health. However, measuring and analyzing maternal mortality remained a challenge, with a large discrepancy between data from previous national studies and WHO estimates. The national maternal mortality study in 2018 indicated even a more reduced Maternal mortality ratio (MMR) for Jordan, which stood at 30 per 100,000 live births[15].

Despite the fact that Jordan had managed to reduce MMR by 34% between 2000 and 2017, its MMR (46 per 100,000 live births or the national estimate 30 per 100,000 live births) with a lifetime risk of

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[10]The National Strategy for Health Sector in Jordan 2015-2019. Amman (Jordan): Hashemite Kingdom of Jordan, High Health Council; Accessed on February 20, 2023: www.hhc.gov.jo

[11]World Bank data. Accessed on February 20, 2023: https://data.worldbank.org/indicator/SH.MED.BEDS.ZS?locations=JO

[12]Bietsch, Kristin, Rebecca Rosenberg, John Stover, and William Winfrey. 2020. Determinants of Health Insurance Coverage and Out-of-pocket Payments for Health Care in Jordan: Secondary Analysis of the 2017-18 JPFHS. DHS Further Analysis Reports No. 138. Rockville, Maryland, USA: ICF.

[13]Ahamd Awad Rawabdeh, A. (2007), «An e health trend plan for the Jordanian health care system: a review», International Journal of Health Care Quality Assurance, Vol. 20 No. 6, pp. 516-531. https://doi.org/10.1108/09526860710819459

[14]Department of Statistics (DOS) and ICF. 2019. Jordan Population and Family Health Survey 2017-18. Amman, Jordan, and Rockville, Maryland, USA: DOS and ICF.

[15]Ministry of Health and USAID, 2018. The national Maternal Mortality Report 2018. Jordan's Maternal Mortality Surveillance and Response System, Amman, Jordan.

maternal mortality of 1 in 730 seems low. However, the quality of care in the health facilities with an equitable coverage of quality of EmONC is still unattainable. Between 2012 and 2017/18, there was only a slight decrease in the under-5 mortality, from 21 to 19 deaths per 1,000 live births; only modest reductions in neonatal mortality from 14 to 11; and the infant mortality remained stable at 17 deaths per 1,000 births [16],[17].

Table 1.1.2.1: Trends in maternal mortality from 2000 to 2017 for Jordan and few other countries in the region

MMR point estimates - (maternal deaths per 100,000 live births)	Iran	Iraq	Egypt	Palestine	Lebanon	Saudi Arabia	Syria	Jordan
2000	48	79	64	7	28	24	26	70
2005	34	127	52	5	24	22	25	62
2010	22	70	45	4	23	19	27	53
2005	17	83	39	3	29	17	30	48
2010	16	79	37	3	29	17	31	46
Overall change in MMR (2000-17) (%)								
	16	79	37	3	29	17	31	46

Source: Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2019. License: CC BY-NC-SA 3.0 IGO

In response to such maternal and neonatal problems, the GOJ has decided to conduct a national EmONC assessment that will lay benchmarks to establish a network of EmONC facilities; and monitor performance against such benchmarks. United Nations Population Fund (UNFPA) and other agencies are supporting the government's endeavors to reduce maternal and neonatal mortality. In addition, the country is planning to announce its health sector roadmap in the implementation of Reproductive Health, Maternal, Neonatal, Child, and Adolescent Health (RMNCAH). Jordanian National Sexual and Reproductive Health Strategy (2020-2030) that was launched already will also be included in this EmONC assessment for revision.

[16]Trends in maternal mortality 2000 to 2017: estimates by WHO, UNICEF, UNFPA, World Bank Group and the United Nations Population Division. Geneva: World Health Organization; 2019. License: CC BY-NC-SA 3.0 IGO.

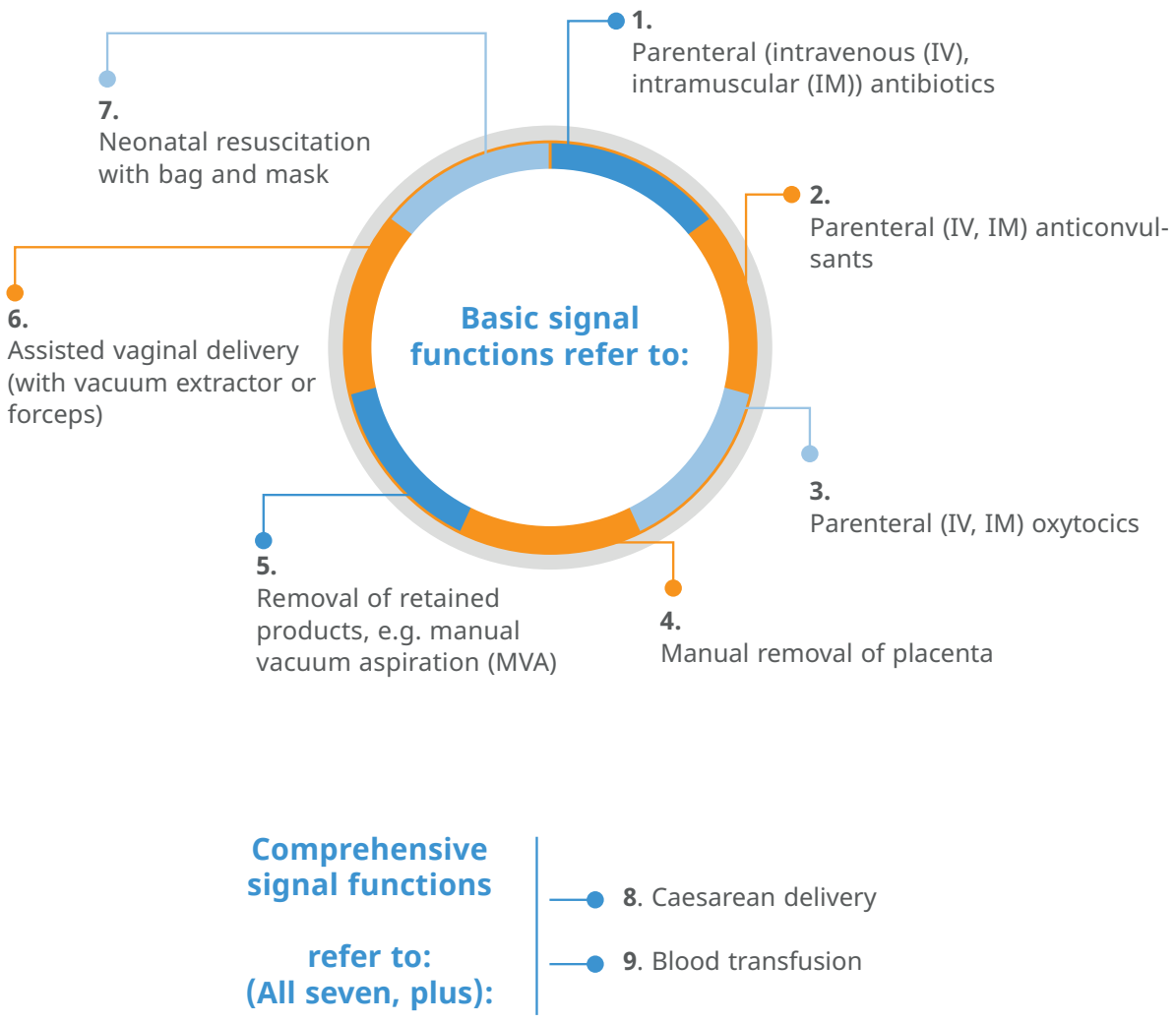
[17]Department of Statistics (DOS) and ICF. 2019. Jordan Population and Family and Health Survey 2017-18. Amman, Jordan, and Rockville, Maryland, USA: DOS and ICF.

1.2 EmONC signal functions and indicato

Emergency obstetric and newborn care (EmONC) refers to the care of women and newborns during pregnancy, delivery, and at the postpartum period. Evidence suggests that up to 15% of expected births are estimated to develop life-threatening complications during pregnancy, delivery or the post-partum period. Providing emergency care is recognized as an essential and effective component of obstetric services[18]. Evidence from a WHO document on facility standards shows that; having a complete and up-to-date data on women and newborns' outcomes, and thereby periodic monitoring and evaluation of progress on availability, accessibility, utilization and quality of routine and emergency care for mothers and children, are critical[19].

The EmONC handbook stipulated that EmONC measurement has nine signal functions that are illustrative life-saving procedures for women experiencing major direct obstetric complications. A facility is considered to be functioning as BEmONC if the seven basic signal functions (mentioned in the figure below) have been performed in the three months prior to the assessment. While a facility is considered to be functioning as CEmONC if CS delivery and blood transfusion services are provided in addition to the seven basic signal functions in the three months prior to the assessment[20].

Figure 1.2.1: Basic and comprehensive EmONC signal function



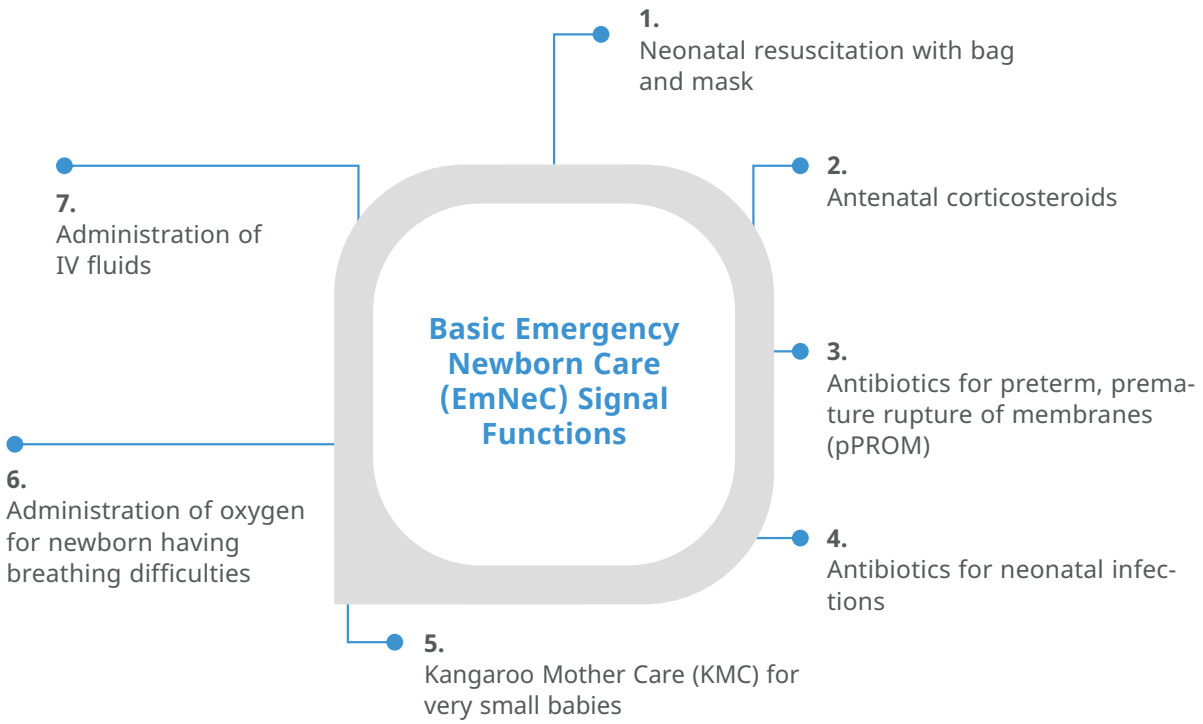
[18]WHO. Managing newborn problems: a guide for doctors, nurses, and midwives. Geneva: World Health Organization; 2003.

[19]World Health Organization. Standards for Improving Quality of Maternal and Newborn Care in Health Facilities. Geneva, Switzerland: WHO, 2016

[20]WHO, UNFPA, UNICEF, AMDD. Monitoring emergency obstetric care: a handbook. Geneva: World Health Organization; 2009.

Globally, the development of EmNeC signal functions has been continued to date. Yet, it is not clearly defined as to which signal functions go to basic and which ones to comprehensive EmNeC. Newborn resuscitation appears in both EmONC and EmNeC signal functions. However, the use of the following set of newborn signal functions has become paramount in the improvement and monitoring of newborn health indicators. In line with this, few countries, including Jordan, have adapted these new set of newborn signal functions in their EmONC assessments.

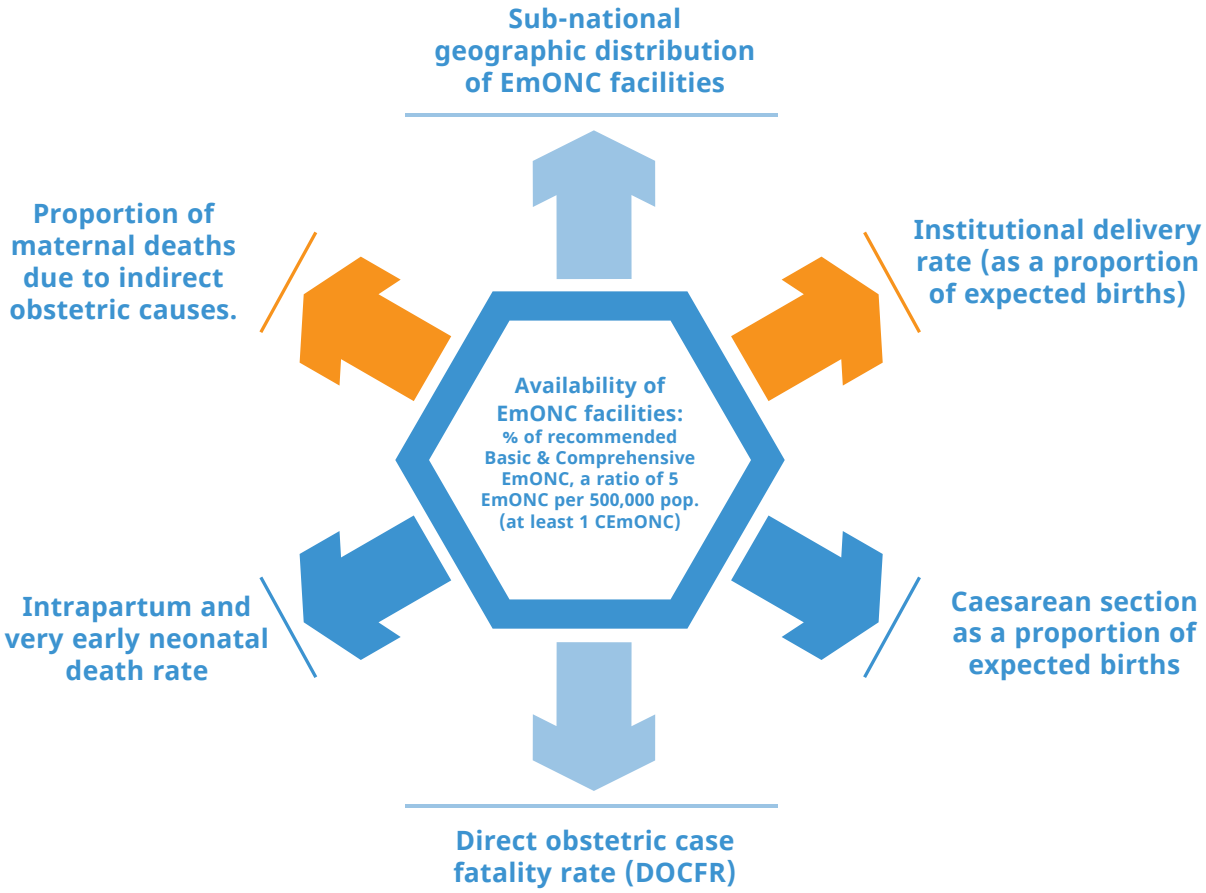
Figure 1.2.2: List of EmNeC signal functions



EmONC indicators

The EmONC handbook also developed the following eight indicators that are measured to monitor and evaluate the performance and quality of EmONC services towards reducing maternal and neonatal mortality and morbidity.

Figure 1.2.3: List of EmONC indicators



1.3 Objectives of the assessment

The overall objective of this rapid assessment is to generate evidence on the current availability, utilization, and quality of EmONC and routine delivery services in Jordan.

Specifically, the EmONC assessment will be able to:

- Measure the availability of infrastructure, equipment, essential drugs, and supplies in health facilities.
- Determine the availability of Human Resources.
- Map EmONC services as part of service availability mapping and estimate the population covered by EmONC services.
- Determine the status of EmONC services and utilization of life-saving procedures.
- Assess the availability and use of records for EmONC services and the completeness of EmONC data.
- Measure knowledge and competency levels of Human Resources regarding obstetric and newborn care.
- Review cases of partograph, caesarean deliveries, women with major obstetric complications, and newborn complications.
- Measure EmONC Indicators to assess the level of availability, utilization, and quality of EmONC services.
- Produce a baseline data to monitor progress towards the set objectives and use the findings as basis for the development of a costed plan for improving access and quality EmONC services.

Chapter 2
Methodology

2.1 Overview of the assessment

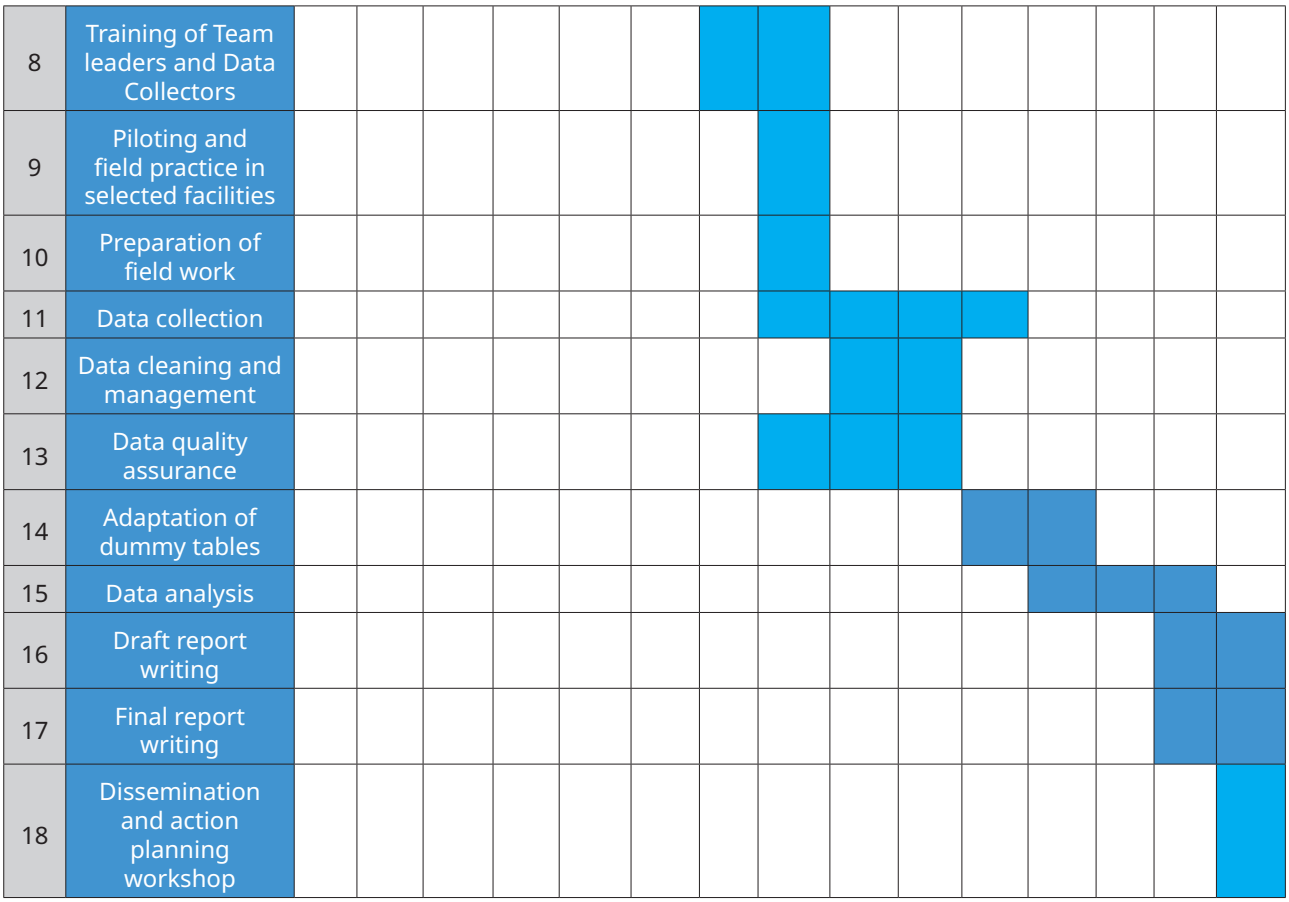
The 2022 Jordan EmONC assessment was a national cross-sectional facility-based assessment. A census of all public and private hospitals, in addition to one health care center that provided maternity services in the last 12 months prior to the assessment, were included in this assessment. A total of 66 public and private hospitals and the health care center were assessed. The data collection took place between August 01 and November 03, 2022 in all the governorates of the country. Data cleaning and preliminary analysis were done in the last two months of the 2022. Please visit Table

2.2.1 for the list of facilities assessed.

The GOJ through MoH and its partners, established a Technical Working Group (TWG), to provide inputs and guidance in the overall assessment process. The TWG was composed of technical representatives from MoH, UNFPA, Health Care Accreditation Council (HCAC), RMS, representatives from the Private Hospitals Association (PHA), representatives from the two university hospitals, as well as clinicians from the private sector. The TWG had regular meetings dedicated to adapting the EmONC assessment protocol, tools, and overall assessment procedures. The assessment was also funded by UNFPA, which hired an international consultant to lead the process in conjunction with a local data collection and management team; to ensure national and international standards are met. UNFPA also contracted out a non-profit independent institution HCAC, to collect data based on the standards set. HCAC managed availing and training of data collectors, besides data collection and quality assurance activities. Details are presented below.

Table 2.1.1: The 2022 Jordan EmONC assessment timeline

#	Activities	Timeline														
		2022												2023		
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	Resource mobilization															
2	Protocol/ToR development															
3	EmONC tools adaptation and finalization															
4	Recruitment of team leaders and data collectors															
5	Logistic, administrative and infrastructure preparation															
6	Recruitment of national and external consultants															
7	Programming of EmONC tools (KOBO) to the tablets															



2.2 Facility selection

The TWG selected all eligible health facilities in the country, based on a prior set of criteria to select both public and private health facilities. In this line, all hospitals (public and private), as well as one health center that had provided maternity services in the last 12 months prior to the date of data collection, were included in this assessment. Table 2.2.1 below shows the number of facilities assessed by region and governorate.

Region	Governorate	Teaching Hospital	Referral/ Specialized Hospital	General Hospital	Health center	Total
Northern	Ajloun	0	0	2	0	2
	Mafraq	0	1	4	1	6
	Irbid	1	2	8	0	11
	Jarash	0	0	1	0	1
Middle	Amman	1	4	24	0	29
	Balqa	0	0	3	0	3
	Madaba	0	0	3	0	3
	Zarqa	0	1	3	0	4
Southern	Karak	0	0	3	0	3
	Aqaba	0	0	1	0	1
	Maan	0	0	2	0	2
	Tafielh	0	0	1	0	1
	Total	2	8	55	1	66

2.3 Selection of cases for review

The unit of analysis for all of the modules was the health care facility. However, four of the modules (partograph, CS delivery, maternal and newborn morbidity reviews) required taking the most recent three cases for each module element. In this case, the data collectors were the ones trained on the proper cases selection.

In the partograph and caesarean reviews, data collectors selected the last 3 partographs of the preceding 12 months period, for women who had a caesarean section but were no longer hospitalized. For the chart review of women with obstetric complications (post-partum hemorrhage – PPH, sepsis, and PEE), charts of the last 3 cases were selected. The same methodology was applied in selecting cases for the newborn morbidities (newborns with breathing difficulties, low birth weight babies – less than 2000 grams, and newborn with sepsis).

Given the objectives of the assessment, there was no attempt to make a random selection. The sample case reviews were convenience samples. For this reason, inferences based on these samples should not be applied to the larger population of facilities or cases.

2.4 Data collection tools and pre-testing

2.4.1 Data collection tools

The TWG adapted the standardized data collection tools from Averting Maternal Death and Disability (AMDD) - EmONC NA tools[21]. The modules used for the 2022 Jordan EmONC assessment were:

- **Module 0:** National data collection tool: It was designed to collect information at the national level. This tool helped the research team gather information such as: national and regional-level populations, lists of health facilities, national drug lists, scope of work for few health workers, information about policies on staffing levels, and availability of educational institutions for midwives, nurses and doctors.
- **Module 1:** Identification of facility and infrastructure: This tool required taking facilities' basic infrastructure information (geographic positioning – Global Positioning System (GPS) coordinates, administrative region and governorates, and other utilities), interviewing a person of authority at the facility, and recording background information on the facility - including size or capacity, overall infrastructure, summary of services provided, cost of services, policies in place at the facility, transportation and communication mechanisms, distance and time required to access the near-by facility with surgical or newborn care services and HMIS reporting.
- **Module 2:** Human Resources: It involved interviewing one or more persons with excellent knowledge of the staffing patterns of health care workers providing obstetric and newborn care at the facility, and which signal functions and essential services the staff provide. It also covered the staffing situation 24 hours a day and 7 days a week in that facility.

[21] https://www.mailman.columbia.edu/research/averting-maternal-death-and-disability-amdd

- **Module 3:** Essential drugs, equipment, and supplies: It examined the availability of medications, equipment, and supplies; laboratory services; as well as clinical management guidelines and protocols necessary for the delivery of EmONC, EmNeC, and routine maternal and newborn services. This module was conducted primarily by interview and observation. The drugs/equipment/supplies data were collected from pharmacy, labour and delivery, maternity, operating theater, newborn care unit, laboratory and blood bank units of the facility.

- **Module 4:** Facility case summary: It was used to collect the necessary data from facility registers and records to calculate the EmONC indicators; these data included the number of deliveries by type, direct and indirect obstetric complications by cause, newborn outcomes including stillbirths and pre-discharge very early neonatal deaths, and referrals. The 12-month time-period covered the period between August 2021 to July 2022. However, due to lack of proper documentation of facility records, the incomplete data collected on direct and indirect obstetric complications, maternal and newborn outcome were not used for analysis and calculation of few EmONC indicators.

- **Module 5**: EmONC and EmNeC signal functions and other essential services: It looked at how facilities actually function and whether they offer all, some, or none of the services necessary to treat and save newborns and women with obstetric complications. It also looked at why these services were not available. Performance information was determined through interview and validation from the registers. This module used a different reference period than the one in Module 4. Instead of the 12 months prior to the assessment, it referred to the three months prior to the day of the visit, a rolling three-month period between May, June, July, August, and September, 2022 was captured.

- **Module 6 (Part 1):** Provider knowledge for maternal and newborn care: Assessed the knowledge of health providers about diagnosis and management of common maternal and newborn conditions; it also reviewed specific training and performance of key services.

- **Module 6 (Part 2):** Health provider supervisory support & motivation

  The objective of this module was to assess the provider's perception of the support provided by his/her immediate supervisor, and to assess the provider's workplace motivation.

- **Module 7:** Partograph review: To assess the quality of partograph completion in the facility and to determine how many facilities use the WHO partographs (modified, simplified, and composite) and which ones. A review took place for the three most recent partographs fulfilling a set criterion (at term, < 8 cm dilatation at first exam, vertex presentation, fetal heart present at first exam, and without obstetric complications at first exam (with multiple gestations considered as a complication)).

- **Module 8:** Caesarean delivery review: It was used to review facility registers and records to evaluate record-keeping for caesareans, indications for CS, fetal well-being, and maternal outcome of the procedure. Last three cases were drawn for review in each facility that had CS delivery in the last 12 months prior to the assessment.
- **Module 9:** Chart reviews for women with obstetric complications: The module was used to assess record-keeping among women who survived PPH, severe PEE, and peripartum infections, and to identify factors that contribute to the quality of care.
- **Module 10:** Chart reviews of newborn complications: It was designed to collect information on three cases each of the following morbidities: difficulties breathing at birth, preterm birth < 2,000 grams, and infections among young infants (< 60 days). The module asked about the status on admission and treatment. Data collectors gathered information from charts identified through the registries or from staff.

2.4.2 Contextualization and pre-testing of the modules

The TWG along with other local teams and the international consultant made the initial revision to adapt the EmONC assessment tools to the Jordan context. The pre-testing and finalization of the modules was conducted during the data collectors training – during field practice as part of the training. The TWG selected two hospitals (Al Abdali hospital in Amman, and Badea hospital in Irbid) for pre-testing of the tools, and practical exercise for the data collectors during their training. The data collected from these two hospitals were part of the actual data collection for the EmONC assessment. The data collection in the rest of the selected health facilities proceeded immediately after the pre-testing exercise and virtual debriefing sessions with the international consultant.

2.5: Recruitment, training, and deployment of data collectors and team leaders

UNFPA Jordan contracted out a local entity - HCAC to manage the data collection and data quality assurance activities. However, the TWG and international consultant were mandated to ensure the data collectors and team leaders recruited by the HCAC were qualified to undertake the sought assessment. With frequent virtual communications between the country TWG and the international consultant, selection criteria and recruitment of the data collectors and team leaders were agreed. Accordingly, HCAC hired individuals with either a Bachelor's degree in nursing, midwifery or medical doctors and specialists to collect EmONC data. Some had prior experience as data collectors. HCAC deployed a total of 15 data collectors (each team had two-three data collectors) to cover the 66 health facilities. One of the two data collectors in the team served as a team leader. In addition to the data collectors, other senior HCAC and the TWG members supported the data collectors based on the recommendations from the international consultant to ensure data quality and overall data collection process.

UNFPA's international consultant, hired as a technical lead for this assessment, led the training of the data collectors and team leaders with support from TWG. HCAC members also co-facilitated the data collectors' training. The data collector training (DCT) took place in Amman from 27 – 31 July 2022, in addition to a virtual debriefing session on August 14, 2022, which entailed a comprehensive discussion on the issues the data collectors faced during the piloting of the tools.

The data collector's training consisted of instruction on interviewing techniques and field procedures, a detailed review of the questionnaire content and instructions, mock interviews between participants in the classroom, and practicing the eleven modules. Two days were dedicated for field practice and pre-testing of tools. In addition, data collectors and team leaders received additional instructions on data quality control procedures and fieldwork coordination. All data collector teams received a special data collection kit including a data collector's manual, an introduction letter (only for team leaders), and a tablet with a soft copy of a blank questionnaire for data collection.

2.6: Data collection and organization of the field work

In collaboration with the MoH, HCAC issued a letter of cooperation to directors to facilitate facility level data collection. Contact persons in facilities were informed about the EmONC assessment. HCAC, with support from MOH, UNFPA, the TWG members, and the international consultant (virtually), arranged field logistics, scheduling and completion of data collection in each governorate. Some TWG members were also supporting field level spot-checking and data quality assurance activities for the first couple of weeks. In consultation with the international consultant, HCAC's management was routinely monitoring the overall data collection process up to the end of data collection. The TWG was also holding several meetings to monitor progress and solve outstanding problems of data collection.

2.7 Data entry, cleaning, and analysis

Since the data collection was programmed using an open-source kit called KOBO, data collection was undertaken using tablets. HCAC hired a local data manager that developed the KOBO data entry screens with the review of the screens by the international consultant. The KOBO screens were tested during the data collector's training and in the beginning of data collection. The international consultant developed an internal consistency checklist for prior programming of the KOBO screens to minimize data entry errors. Data cleaning was conducted in several phases for quality assurance:

1) **Phase I:** The data manager reviews the internal consistency checks using KOBO programming and other outliers, during the actual data collection time, with errors fixed immediately. Communications to the data collectors' team were made to avoid similar errors.

2) **Phase II:** Data collected on weekly basis was shared with the international consultant for review and cleaning any data inconsistencies.

3) **Phase III:** After the data collection was completed the entire dataset was checked for quality issues. The local data manager and the international consultant, both worked on data cleaning. Such cleaning activity was so rigorous and continued during the analysis and write-up of the report as well.

A virtual discussion was also held in December 2022 to agree on analysis strategies. The TWG members participated in this discussion. The TWG had done validation of some of the results and stratification variables for the analysis. These were region, facility type, operating agency, location, and recategorization of "other – specify" variables. The analysis was done using STATA version 17; exporting it from KOBO. Some of the stratification variables used were:

- **Region:** The TWG agreed to use region as the major stratification variable. Jordan has three regions (Northern, Middle, and Southern). While the country has 12 governorates. The analysis was done in regions due to the low population size per governorate.
- **Facility type:** It was collected originally in five categories: Teaching hospitals, referral or specialized hospitals, general hospitals, and others. The "other" group was examined closely and when appropriate a facility was recorded into one of the other four categories, but most of the "others" were general hospitals and a health care center owned by non-governmental organization that provided maternity services. For most of the analyses we collapsed the facilities into two: 1) tertiary hospitals (teaching, referral and specialized hospitals), and 2) secondary level hospitals; that included general hospitals and a health care center.
- **Operating agency:** This stratifying variable was defined initially by four categories: public/government; private-for-profit; private–NGO, and "others". The other category was further reviewed and recategorized to the three already defined categories. For this analysis, the facilities were recategorized into three as follows: 1) public or government, 2) private-for-profit, and 3) private-not-for-profit (including NGO).
- Location, defined as urban or rural: This stratifying variable was captured through interview of facility in-charges. This classification was not verified from any other sources.

2.8 Quality assurance

As discussed in sub-section 2.7, quality assurance activities involve several steps in the spectrum of EmONC assessment. Quality assurance starts during the inception phase of the assessment in proper orientation of the TWG and funding agencies, adaptation of tools, selection of data collectors and team leaders, training, programming of data collection screens, data collection in the field, and data processing at central level. During data collection, a team leader had an additional role of providing support to the data collection teams, providing logistical support where needed, reviewing the modules for completeness, and submission of completed data to the central team. Members of the TWG and the international consultant (virtual debriefing sessions) were involved in supportive supervision, spot-checking and validation of the data. Most of the data quality assurance activities after the data collection were done through calling the facilities directly.

In collaboration with the TWG members and the international consultant, HCAC demonstrated quality assurance by hiring qualified and experienced data collectors with a health background. Data collectors and team leaders took pre- and post-test to assess their learning and knowledge of the assessment guidelines and standards of data collection. Each data collector and team leaders were given both a hard copy and soft copies of the DC manual, assessment modules, and other checklists as a reference.

2.9 Research ethics

During the training of data collectors and team leaders, principles of confidentiality and ethics were introduced. As a result, no person's name, except that of the interviewer, was recorded on any of the modules. Permission to enter each facility, to interview the different employees, and to review registers was requested from the facility in-charge at the beginning of each visit. The response from the facility personnel was always respected. The data collectors carried with them official letters of cooperation from the MOH and HCAC.

2.10 Limitations of the survey

This assessment was challenged by many data acquisition problems. Lack of complete record of complications, maternal and neonatal deaths, and referrals were problematic across all facilities. The TWG anticipated these challenges in advance and maternal deaths due to direct and indirect obstetric complications were not included in the assessment. The assumption was made to receive such data from the Jordan's maternal mortality and surveillance report (JMMSR) system thinking that such data was not available in the health facilities. However, acquisition of such data either from the JMMSR or any other source was not possible. Lack of data on complications and maternal death impacted non-reporting of the complete EmONC indicators. Met need for EmONC, DOCFR, and maternal death due to indirect obstetric causes were the key indicators, in which we could not calculate them in this EmONC report.

Observation of equipment, supplies, and drugs was one of the data collection methods in this assessment. Given the very long list of items assessed, drugs, equipment and supplies may have not been all observed.

Despite the fact that Jordan's EmONC assessment was heavily from hospitals, there might be some other hospitals and health centers that provide maternity services. This may, in turn, affect the true nature of the aggregate deliveries happening in the country, however, it's actual impact could be insignificant.

2.11 Organization of the report

Chapters 3 – 10 cover the results of the assessment. They are organized, to a great degree, as per the different modules administered in this assessment. Chapter 11 describes concluding remarks, programmatic implications and specific recommendations.

Due to the large number of tables in every chapter, many tables are annexed at the end of the report in Appendix A. Tables are numbered sequentially where the first number (to the left of the decimal place) refers to the chapter number, the second number refers section number and the last number refers to a sequential number within the specific section. Table numbers that end with the letter 'A' mean that they are found in Appendix A. For example, Table 3.1.1A will be found in Appendix A, while Table 3.1.2 would be found in the body of the report (Chapter 3, section 1, table 2).

Chapter 3

Emergency Obstetric and Newborn Care (EmONC) Indicators

Chapter 3: Emergency Obstetric and Newborn Care (EmONC) Indicators

Globally, EmONC assessments are guided by the 2009 EmOC handbook[22]. This chapter presents results of the eight EmONC indicators that measure availability, utilization, and quality of life-saving services for the mothers and newborns, in the 2022 Jordan EmONC assessment. The indicators are also useful in setting benchmarks and monitoring performance of EmONC services in the country. These indicators are:

1. Indicator 1: Availability of EmONC services (Basic and Comprehensive EmONC facilities)
2. Indicator 2: Geographic distribution of EmONC facilities
3. Indicator 3: Proportion of all births in EmONC facilities
4. Indicator 4: Met need for EmONC
5. Indicator 5: Caesarean sections as a proportion of all expected births
6. Indicator 6: Direct obstetric case fatality rate (DOCFR)
7. Indicator 7: Intrapartum and very early neonatal death rate
8. Indicator 8: Proportion of maternal deaths due to indirect obstetric causes in EmONC facilities

The data collectors extracted routine service data from register books of the facilities assessed over the 12 months period between August 2021 and July 2022. The register books used were labor and delivery, maternity, operating theatre (OT), discharge, referral, family planning, PMTCT, and other registers. Due to data acquisition problems mentioned in section 2.10 above, three indicators (indicator 4, 6, and 8) were not calculated in this report.

The data used to determine whether a signal function was performed were based on the immediate 3 months[23] prior to the facility visit.

3.1 Indicator 1: Availability of EmONC services

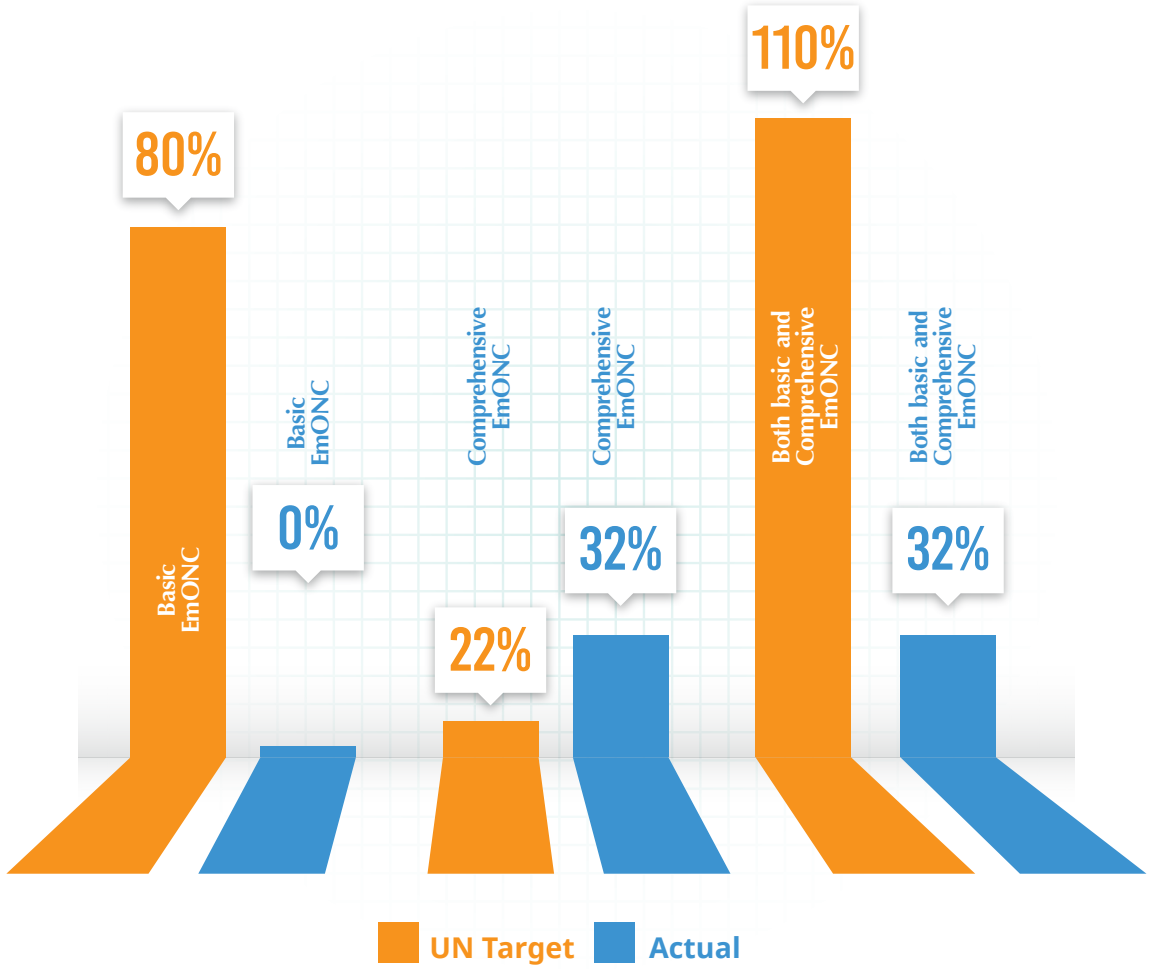
According to the EmONC handbook, a facility qualifies as Basic EmONC if it performs all the seven basic signal functions, while it qualifies as Comprehensive EmONC if it performs all the basic signal functions in addition to caesarean delivery and blood transfusion in the last 3 months prior to the assessment. Based on this definition, the UN recommends a minimum of 5 EmONC facilities for every 500,000 population; with at least one of which is comprehensive.

[22]WHO, UNFPA, UNICEF, AMDD. Monitoring emergency obstetric care: a handbook. Geneva: World Health Organization; 2009

[23]The 3-month reference period was chosen because it provides a snapshot of the functioning of a facility at the time of the visit and recall is more accurate over shorter periods.

Availability of EmONC is further presented in two ways based on additional criteria:1) Less rigorous and 2) More rigorous criteria[23]. Accordingly, Jordan was required to have 110 EmONC facilities for a projected population of 11,057,000 in 2021. However, only 32 (29%) fully functioning EmONC facilities (with less rigorous criteria) were available, leaving the country with a gap of 78 EmONC facilities at national level. In terms of Comprehensive and Basic EmONC, the country was required to have 22 and 88 comprehensive and basic EmONC facilities; respectively. But the country had 32 Comprehensive EmONC facilities (145%); that surpassed the recommended, while there was no single Basic EmONC facility that qualified the definition, leaving a gap of 88 Basic EmONC facilities in the country (Figure 3.1.1 and Table 3.1.1).

Figure 3.1.1: Current EmONC status of facilities and standards/targets with less rigorous criteria, Jordan EmONC, 2022



EmONC availability (with less rigorous criteria) varies across regions with very low (24%) in the Middle region and comparatively high in the Southern region (68%). Variations were also observed in the availability of EmONC facilities across governorates with none in Balqa to the highest in Maan, Tafielh, and Aljoun (100% from recommended). Irbid and Zarqa did also fall

[24] EmONC availability is classified as a) Less rigorous criteria: functionality based on facility interviews: with performance of either all the seven basic or nine comprehensive EmONC signal functions based on the interviews of the healthcare providers and b) More rigorous criteria: functionality based on interviews and readiness to provide EmONC: performance signal functions, and case management of major obstetric complications, facility open 24/7, and availability of minimum drugs/equipment to perform signal functions.

below the national average. All of the available EmONC facilities were qualified as Comprehensive EmONC (Table 3.1.1).

Table 3.1.1: Availability of EmONC facilities (less rigorous criteria), by region (EmONC Indicator 1), Jordan EmoNC, 2022

	Population 1,2	Basic and Comprehensive EmONC facilities				Comprehensive EmONC facilities				Basic EmONC facilities			
		Recommended2	Recommended2	Actual/ recommended	Gap [exceeds minimum]	Recommended2	Actual	Actual/ recommended	Gap [exceeds minimum]	Recommended2	Actual	Actual/ recommended	Gap [exceeds minimum]
		n	n	%	n	n	n	%	n	n	n	%	n
National	11,057,000	110	32	29%	79	22	32	145%	-10	88	0	0	88
Region													
Northern	3,165,800	31	9	28%	23	6	9	142%	-3	25	0	0	25
Middle	7,011,600	70	17	24%	53	14	17	121%	-3	56	0	0	56
Southern	879,600	9	6	68%	3	2	6	341%	-4	7	0	0	7
Governorate													
Irbid	2,050,300	21	3	14%	18	4	3	73%	1	17	0	0	17
Ajloun	204,000	2	2	100%	0	0	2	490%	-2	2	0	0	2
Jarash	274,500	3	1	33%	2	1	1	182%	0	2	0	0	2
Mafraq	637,000	6	3	50%	3	1	3	235%	-2	5	0	0	5
Amman	4,642,000	46	14	30%	32	9	14	151%	-5	37	0	0	37
Zarqa	1,581,000	16	2	13%	14	3	2	63%	1	13	0	0	13
Madaba	219,100	2	1	50%	1	0	1	228%	-1	2	0	0	2
Balqa	569,500	6	0	0%	6	1	0	0%	1	5	0	0	5
Karak	366,700	4	2	50%	2	1	2	273%	-1	3	0	0	3
Tafielh	111,500	1	1	100%	0	0	1	448%	-1	1	0	0	1
Maan	183,500	2	2	100%	0	0	2	545%	-2	2	0	0	2
Aqaba	217,900	2	1	50%	1	0	1	229%	-1	2	0	0	2

1. Source of Population Estimates:[Jordanian Department of Statistics: Population Projections for the Kingdom's Residents during the Period 2015-2050; December 2016]
2. WHO, UNFPA and UNICEF recommend as a minimum the ratio of 5 EmONC facilities per 500,000 where at least 1 is Comprehensive (Monitoring emergency obstetric care: a handbook, 2009).
3. Less rigorous criteria for the EmONC availability was calculated based on the performance of each signal functions as reported by Maternity in-charges.

Tables 3.1.2A and 3.1.3A in the appendix show the actual number and percentage distribution of facilities by EmONC status, region, operating agency, and location. Of all the 10 tertiary-level hospitals, half of them were comprehensive EmONC, and the rest half partially functioning (missing at least one basic signal function). Similarly, of the 56 secondary hospitals, 27 (48%) were qualified as CEmONC, while 29 (52%) were partially functioning EmONC facilities. Availability of CEmONC facilities was high in Southern than Middle and Northern regions. EmONC availability was higher among government health facilities than private facilities. As expected, availability of EmONC was concentrated in Urban areas than rural.

EmONC availability with readiness to provide EmONC and case management of major obstetric complications - more rigorous criteria

The implementation manual for developing a national network of maternity units (UNFPA, published in 2020)[25] defined EmONC availability as a facility qualifying the following four inter-linked indicators:

- A facility is open 24 hours a day and 7 days a week.
- Availability of essential drugs/equipment/supplies[26].
- A facility has at least three midwives working in shifts and a surgical capacity for the CS delivery (availability of a medical doctor, an Obstetrician/Gynecologist, general surgeon, or anesthesiologist/anesthetist).
- Performance of the specific signal function in the last 3 months prior to the assessment (less rigorous criteria).

When applying the more rigorous criteria to the data, the availability of EmONC facilities is obviously reduced from 32 in less rigorous criteria to 27 in more rigorous criteria, while the UN targets remain unchanged. The reason for such a reduction was due to unavailability of minimum set of drugs/equipment for the management of major obstetric complications (Table 3.1.2 and Figure 3.1.2 below).

minimum set of drugs/equipment for the management of major obstetric complications (Table 3.1.2 and Figure 3.1.2 below).

[25]Brun M, Monet JP, Moreira I, Agbigbi Y, Lysias J, Schaaf M, Ray N. Implementation manual for developing a national network of maternity units - Improving Emergency Obstetric and Newborn Care (EmONC), United Nations Population Fund (UNFPA), 2020

[26]Required drugs/equipment/supplies for some of the signal functions: Parenteral antibiotics (ampicillin, metronidazole, gentamicin), Parenteral uterotonics (oxytocin), Parenteral anticonvulsants (magnesium sulphate), Removal of retained products of conception (MVA kit), Assisted vaginal delivery (vacuum extractor), Resuscitation of newborn with bag and mask, and for the rest of the signal functions, no equipment is listed.

Figure 3.1.2: Current EmONC status of facilities and UN targets with more rigorous criteria, Jordan EmONC, 2022

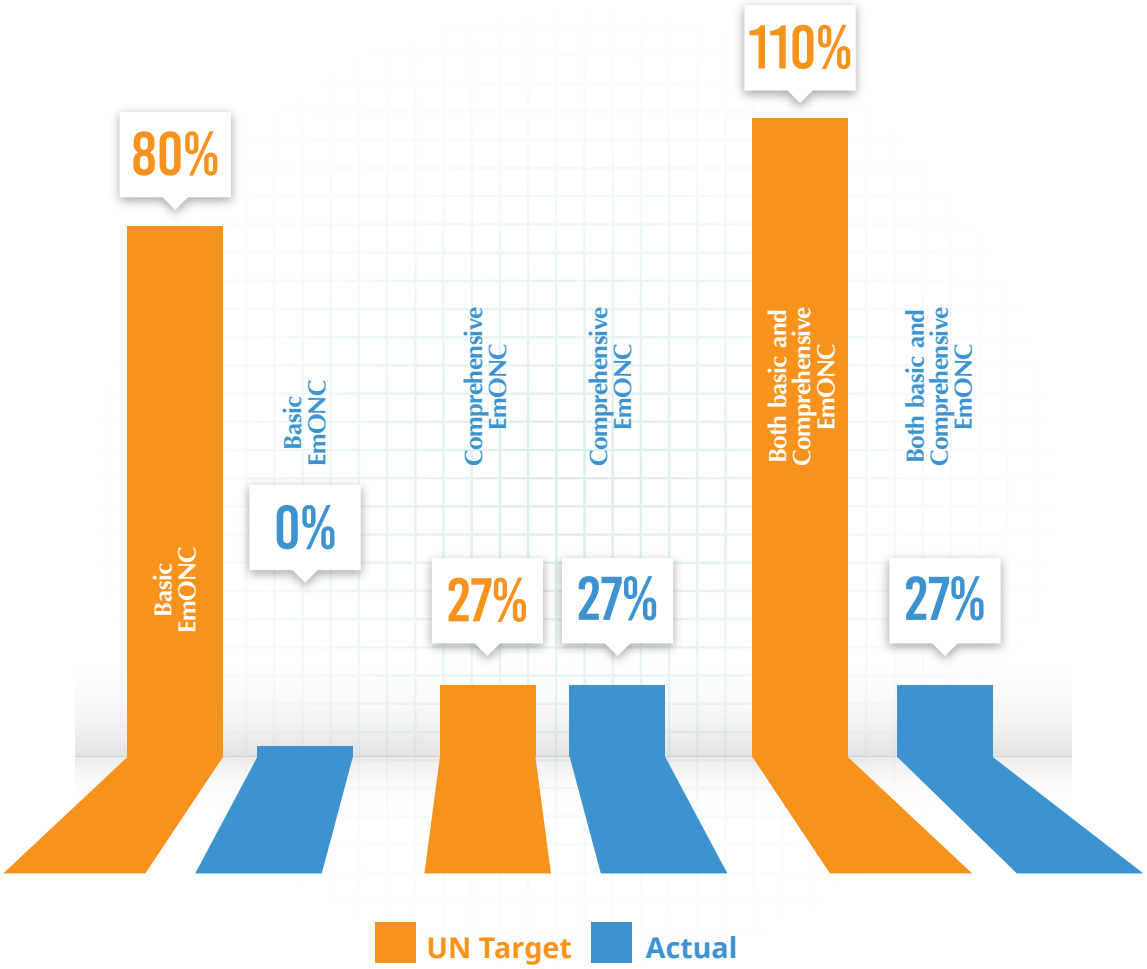


Table 3.1.2: Availability of EmOC facilities, by region (EmONC Indicator 1 - More rigorous criteria3), Jordan EmONC, 2022

	Population 1,2	Basic and Comprehensive EmONC facilities				Comprehensive EmONC facilities				Basic EmONC facilities			
		Recom-mended2	Recom-mended2	Actual/ recom-mended	Gap [exceeds minimum]	Recom-mended2	Actual	Actual/ recom-mended	Gap [exceeds minimum]	Recom-mended2	Actual	Actual/ recom-mended	Gap [exceeds minimum]
		n	n	%	n	n	n	%	n	n	n	%	n
National	11,057,000	110	27	24	84	22	27	122	-5	88	0	0	88
Region													
Northern	3,165,800	32	8	25	24	6	8	100	-2	25	0	0	25
Middle	7,011,600	70	15	21	55	14	15	107	-1	56	0	0	56
Southern	879,600	9	4	25	5	2	4	150	-2	7	0	0	7

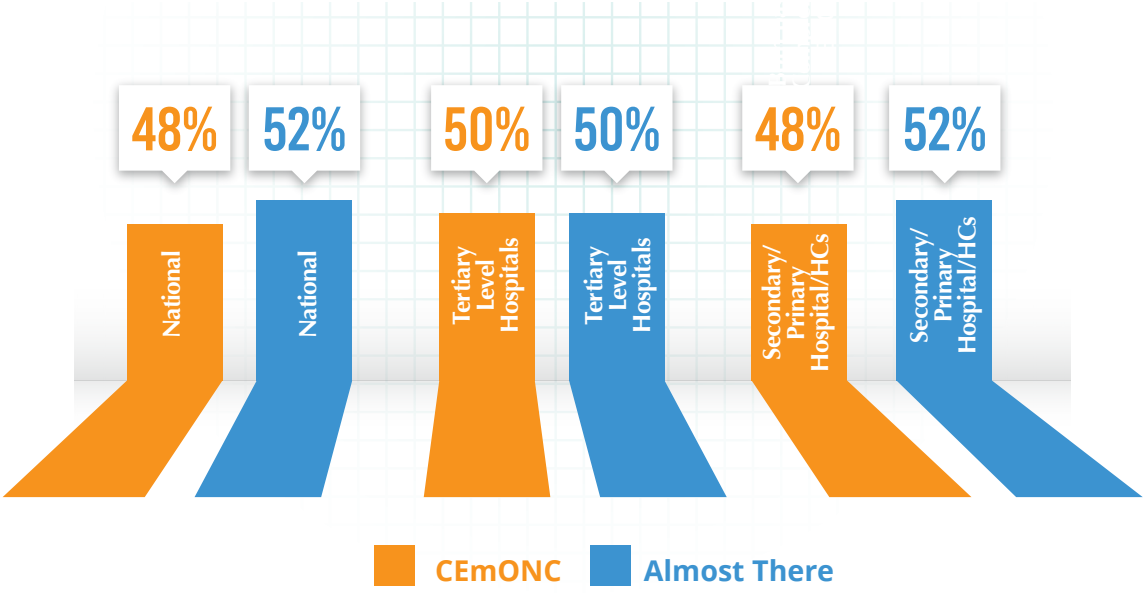
1. Source of Population Estimates: [Jordanian Department of Statistics: Population Projections for the Kingdom's Residents during the Period 2015-2050; December 2016]
2. WHO, UNFPA and UNICEF recommend as a minimum the ratio of 5 EmONC facilities per 500,000 where at least 1 is Comprehensive (Monitoring emergency obstetric care: a handbook, 2009).
3. A more rigorous criteria of defining EmONC availability/functionality at national and subnational level: with a facility open 24/7, has at least three midwives, has essential drugs/equipment/supplies, and that performed the signal functions in the previous 3 months prior to the assessment.

EmONC Grading

The EmONC assessment provides additional information to the government and its partners, to help them plan locally depending on the availability of resources. Upgrading the entire facilities that are partially functioning may require a huge investment; rather analysis of EmONC grading (which group of facilities are missing a set of signal functions that were not functioning as EmONC) provides opportunities to prioritize resources in the short-term, medium- and long-term phases in upgrading or improving health facilities. Figure 3.1.3 below and Table 3.1.4A in the appendix, show that classification of facilities as fully functioning CEmONC, and according to the number of signal functions missing in the 3 months reference period. Harmoniously, EmONC grading is defined as CEmONC – that performs all the nine signal functions, BEmONC – performs all the seven basic signal functions, "Almost there" – missing one or two of the seven basic signal functions, "On the way" – missing 3 or 4 of the seven basic signal functions, "Barely functioning" – providing only 1 or 2 signal functions, and Non-EmONC – facilities that did not provide any of the signal functions. In this assessment, we do not have BEmONC, "On the way", "Barely functioning", and "Non EmONC" facilities. In this definition, we do not tell which of the signal functions are missing.

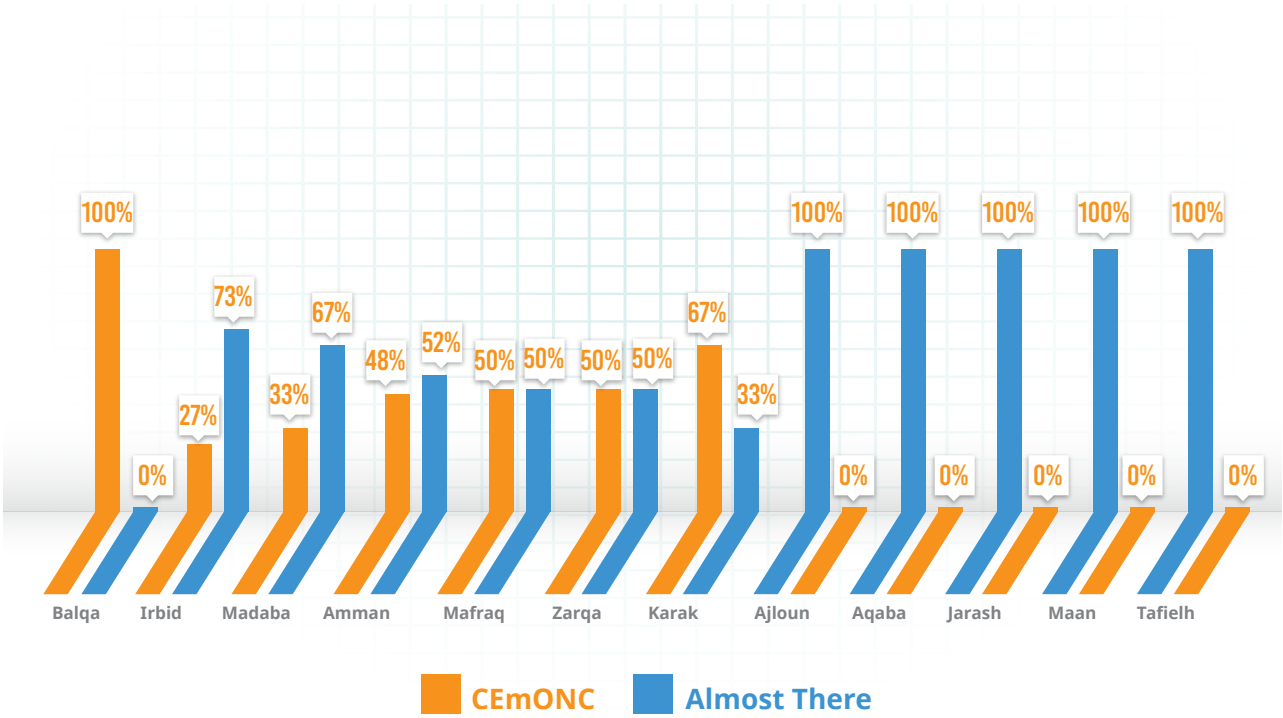
Of the total 66 facilities assessed, nearly half (48%) were CEmONC and the rest 52% were "Almost there"; indicating that the later set of facilities can easily be upgraded to EmONC by fulfilling only the requirements for one or two signal functions.

Figure 3.1.3: Percent of facilities based on EmONC grading by facility type, Jordan EmONC, 2022



EmONC grading was reviewed against each governorate. According to Figure 3.1.4 below, six of the 13 governorates had all their facilities functioning as CEmONC, while Balqa had all of its facilities as "Almost there" (missing one or two of the Basic signal functions). Irbid, Madaba, Mafraq, and Amman had also the majority of their hospitals at "Almost there" situation.

Figure 3.1.4: Percent of facilities with EmONC grading by Governorate, Jordan EmONC, 2022



Facility's Emergency Newborn Care (EmNeC) Status

Tables 3.1.3 below show EmNeC status. Nationally, 41% of the 66 facilities were found to be fully functioning as EmNeC facilities. Half of the tertiary level hospitals and only 39% of the secondary/primary hospitals qualified as EmNeC. The majority of facilities in Northern and Middle regions were partially functioning as EmNeC; while 71% of the 7 secondary/primary hospitals in Southern region were functioning as EmNeC. As expected, fully functioning EmNeC were highly likely available in urban than rural locations.

Table 3.1.3: Availability of EmNeC1 facilities, by region and facility type, Jordan EmONC, 2022

	Tertiary level hospitals			Secondary/primary level facilities			All Facilities		
	Fully EmNeC	Partially functioning	Total number of hospitals	Fully EmNeC	Partially functioning	Total number of hospitals	Fully EmNeC	Partially functioning	Total number of facilities
	%	%		%	%		%	%	
National	50%	50%	10	39%	61%	56	41%	59%	66
Region									
Northern	25%	75%	4	19%	81%	16	20%	80%	20
Middle	67%	33%	6	42%	58%	33	46%	54%	39
Southern	0%	0%	0	71%	29%	7	71%	29%	7
Operating agency									
Government/public	57%	43%	7	43%	57%	28	46%	54%	35
Private-for-profit	50%	50%	2	33%	67%	24	35%	65%	26
Private-not-for-profit	0%	100%	1	50%	50%	4	40%	60%	5
Location									
Urban	50%	50%	10	41%	59%	44	43%	57%	54
Rural	0%	0%	0	33%	67%	12	33%	67%	12

EmNeC refers to Emergency Newborn Care with signal functions: Newborn resuscitation with bag and mask, Antenatal corticosteroids, antibiotics for pPROM, antibiotics for newborn infections, Kangaroo Mother Care (KMC), provision of oxygen, and provision of IV fluids

EmNec Grading

As shown in Table 3.1.4 below, 41% of the total facilities were fully EmNeC and 55% missed only one or two of the basic EmNeC signal functions – "Almost there" and only the remaining 5% were "On the way" – missing 3 or 4 EmNeC signal functions. Northern and Middle regions had most of their hospitals missing one or two basic EmNeC signal functions – "Almost there"; while 5 of the 7 hospitals in Southern region were fully functioning as EmNeC. The majority of public/government and private-for-profit facilities lacked one or two EmNeC signal functions.

Table 3.1.4: Percent distribution of facilities by number of EmNeC1 status, by region, facility type, operating agency and location, Jordan EmONC, 2022

	Total number of facilities	Fully EmNeC		Almost there		On the way	
		Fully EmNeC	Partially functioning	Fully EmNeC	Partially functioning	Fully EmNeC	Partially functioning
	n	%	n	%	n	%	n
National	66	41%	27	55%	36	5%	3
Region							
Northern	20	20%	4	75%	15	5%	1
Middle	39	46%	18	49%	19	5%	2
Southern	7	71%	5	29%	2	0%	0
Type of Facility							
Tertiary level hospitals	10	50%	5	50%	5	0%	0
Secondary/primary hospitals/HCs	56	39%	22	55%	31	5%	3
Operating agency							
Public/Government	35	46%	16	54%	19	0%	0
Private-for profit	26	35%	9	58%	15	8%	2
Private-not-for-profit	5	40%	2	40%	2	20%	1
Location							
Urban	54	43%	23	54%	29	4%	2
Rural	12	33%	4	58%	7	8%	1

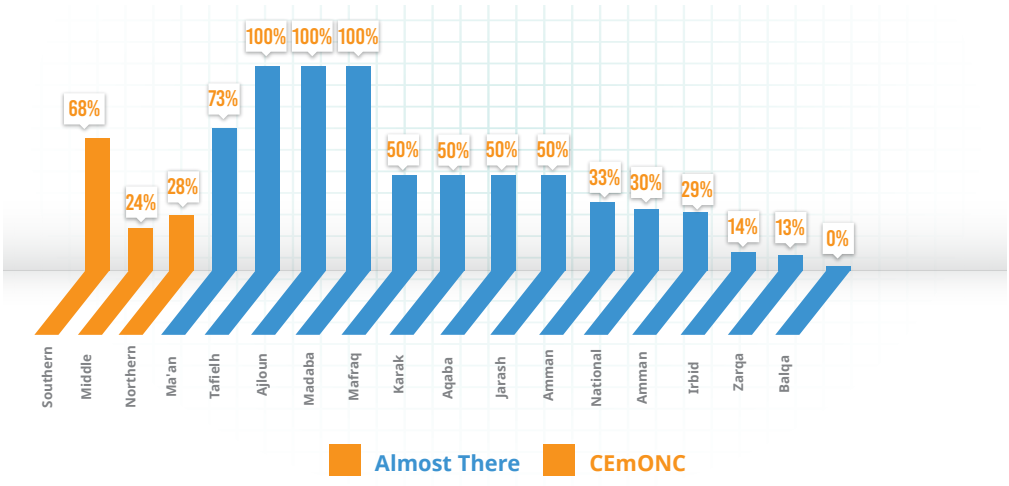
1 EmNeC refers to Emergency Newborn Care with signal functions: Newborn resuscitation with bag and mask, Antenatal corticosteroids, antibiotics for pPROM, antibiotics for newborn infections, Kangaroo Mother Care (KMC), provision of oxygen, and provision of IV fluids

3.2 Indicator 2: Geographic distribution (national and sub-national) of EmONC facilities

This indicator is calculated together with indicator 1 in section 3.1 above. Showing geographic distribution of EmONC facilities at sub-national level. This will help both government and implementers to look at equity of EmONC services.

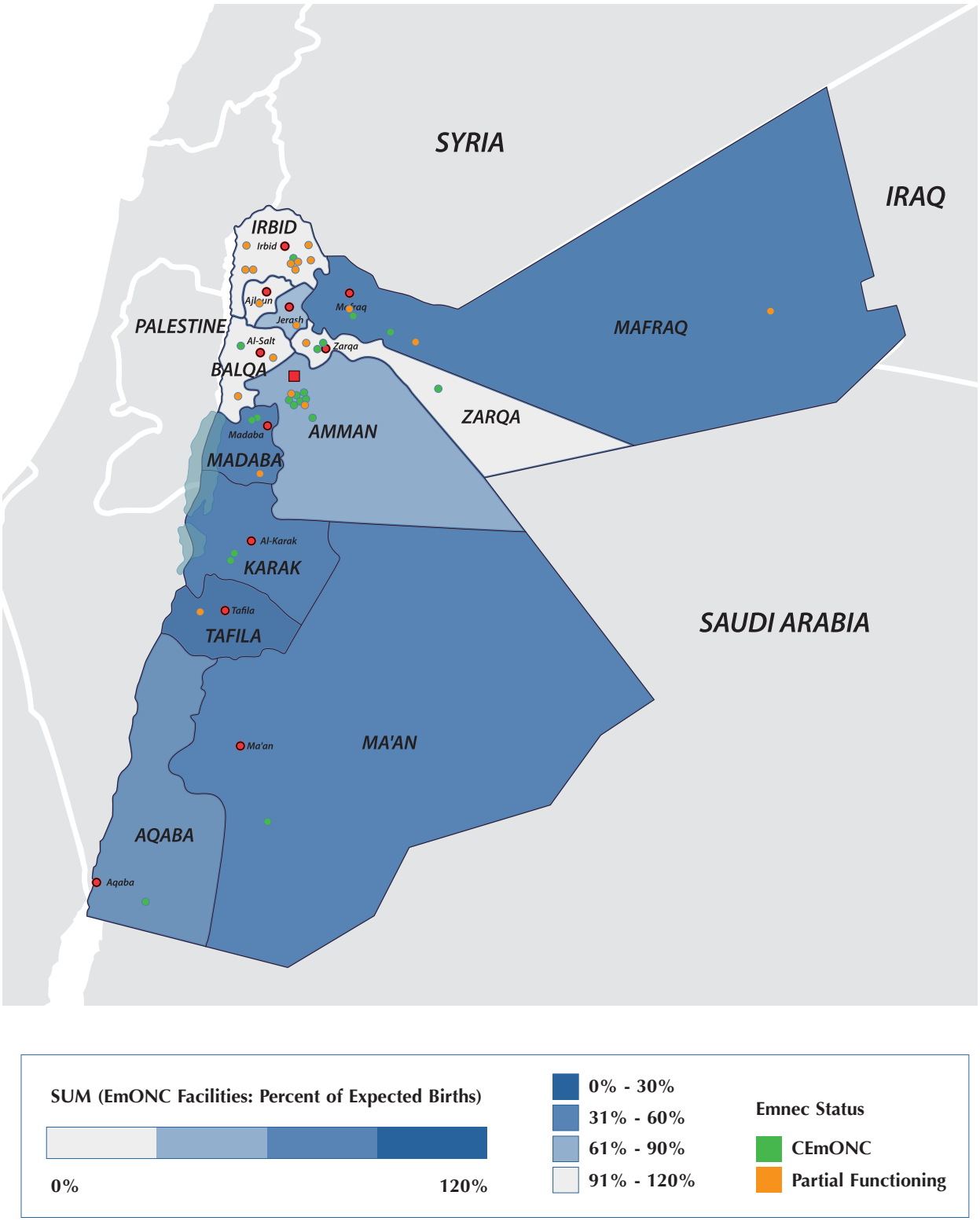
EmONC availability at national level (less rigorous criteria) shows only 29% of what the UN recommended. Availability of EmONC facilities varied across regions and governorates with none in Balqa to the highest in Maan, Tafielh, and Aljoun (100% of recommended). Irbid and Zarqa did also fall below the national average (Table 3.1.1 in section 3.1, and Figure 3.2.1, Map 3.2.1 and Map 3.2.2).

Figure 3.2.1: Percent of EmONC facilities from the UN recommended by governorate, Jordan EmONC, 2022



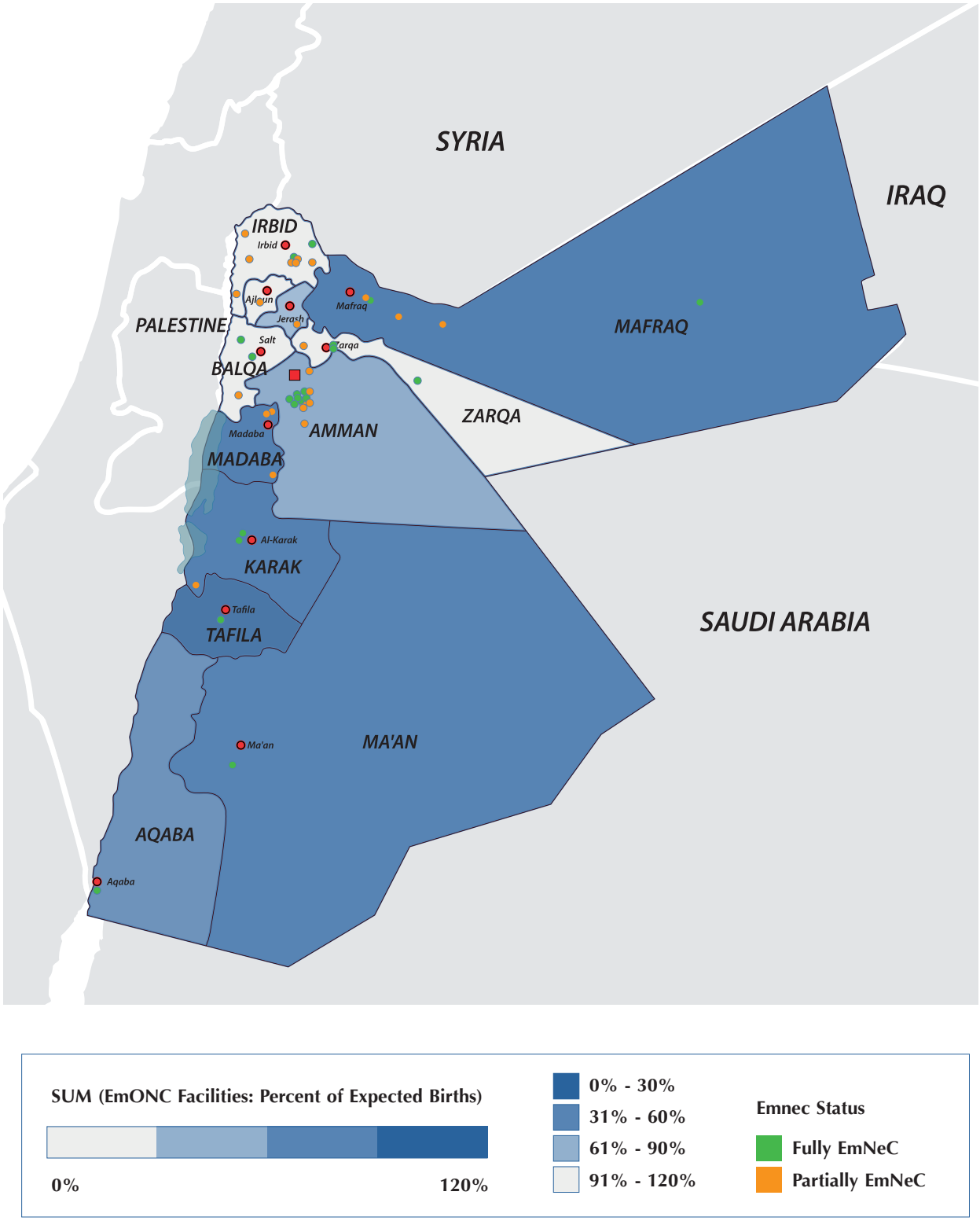
Map 3.2.1 Distribution of fully functioning EmONC facilities (less rigorous criteria) by governorate, Jordan EmONC, 2022

Distribution of fully functioning CEmONC facilities by governorate



Map 3.2.2: Distribution of fully functioning EmNeC facilities by governorate, Jordan EmONC, 2022

Distribution of fully functioning EmNeC facilities by governorate



3.3 Indicator 3: Proportion of all births in EmONC facilities

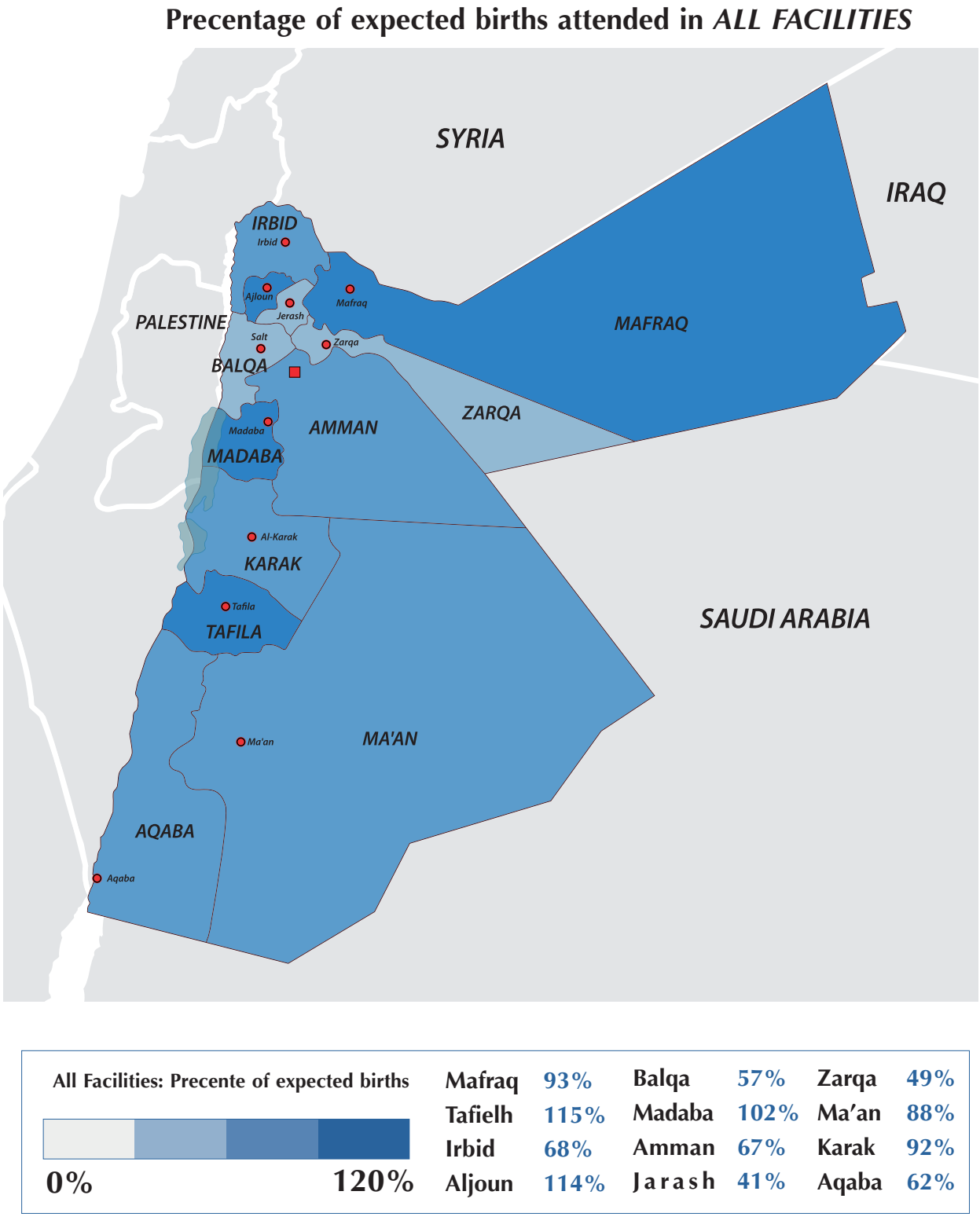
Countries are always keen to increase skilled birth attendance. It is one of the strategies to reduce first and second delay (delay in health seeking behavior, and delay in accessing health facilities). Ideally, all pregnant women should deliver under the care of a skilled birth attendant – 100% institutional delivery rate. Population-based institutional delivery rate is calculated as the proportion of the expected births from the population accessed health facilities to give birth. Accordingly, the total number of expected births for Jordan in 2021 was 238,831 (calculated Crude Birth Rate multiplied by population) . The total births attended in all facilities with maternity services from August 2021 to July 2022 were 161,502. As shown in table 3.3.1 below, the proportion of expected births attended was 68% in all facilities and only 35% in EmONC facilities.

Population based institutional delivery rate varies greatly by region and governorate; with the highest in Southern region (82% and 78% in all and EmONC facilities, respectively) and the lowest in Middle region (63% and 25% in All and EmONC facilities, respectively). Similarly, institutional delivery rate in all facilities was high in Tafielh (115%), Aljoun (114%), and Madaba (102%) and the lowest in Jarash (41%), followed by Zarqa (49%). The higher institutional delivery rate in Tafielh, Aljoun, and Madaba is explained by the fact that they have secondary and primary hospitals that serve neighboring governorates other than their boundaries. Since Balqa did not have EmONC facilities, institutional delivery in EmONC facilities in Balqa is zero (Table 3.3.1 and Map 3.3.1).

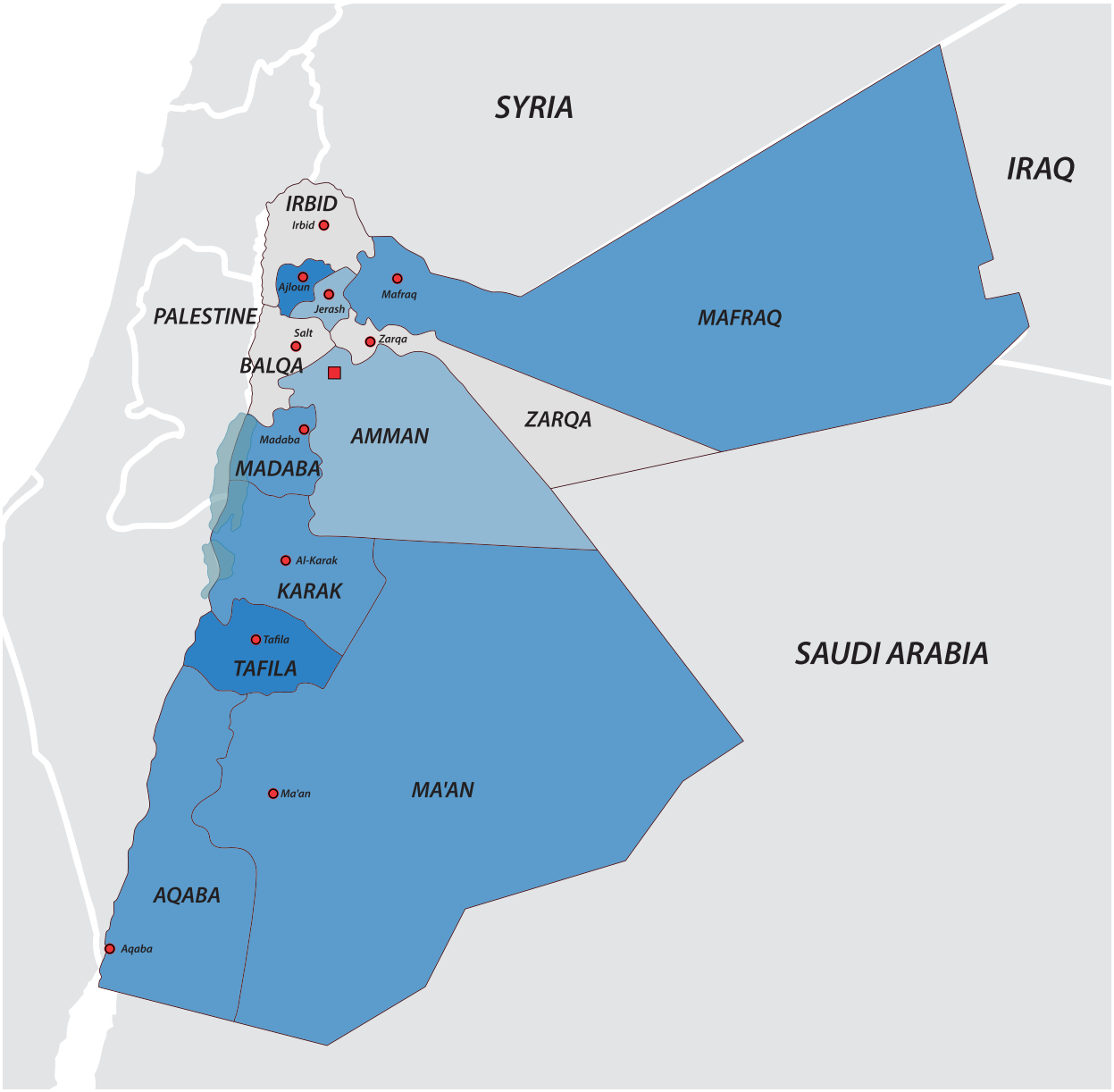
Map 3.3.1: Distribution of Institutional Delivery Rate (IDR) in all facilities by district, Rwanda EmONC, 2021

Population-based Institutional Delivery Rate (IDR)

Percentage of expected births attended in All facilities and EmONC facilities, by region (EmONC Indicator 3), Jordan EmONC, 2022



Precentage of expected births attended in *EmONC FACILITIES*



EmONC Facilities: Precente of expected births

0% 120%

Mafraq	73%	Balqa	0%	Zarqa	13%
Tafielh	115%	Madaba	70%	Ma'an	88%
Irbid	27%	Amman	31%	Karak	71%
Aljoun	114%	Jarash	41%	Aqaba	62%

Table 3.3.1: Percentage of expected births attended in All facilities and EmONC facilities, by region (EmONC Indicator 3), Jordan EmONC, 2022

			All facilities		EmONC facilities	
	Population1,2	Number of Expected Births (CBR*pop)3	Number of births attended in All facilities	Percent of expected births	Number of births attended in EmONC facilities	Percent of expected births
National	11,057,000	238,831	161,502	68%	82,801	35%
Region						
Northern	20	20%	4	75%	15	5%
Middle	39	46%	18	49%	19	5%
Southern	7	71%	5	29%	2	0%
Irbid	2,050,300	44,286	30085	68%	11933	27%
Ajloun	204,000	4,406	5028	114%	5028	114%
Jarash	274,500	5,929	2409	41%	2409	41%
Mafraq	637,000	13,759	12845	93%	10021	73%
Amman	4,642,000	100,267	66950	67%	30720	31%
Zarqa	1,581,000	34,150	16625	49%	4581	13%
Madaba	219,100	4,733	4844	102%	3291	70%
Balqa	569,500	12,301	7068	57%	0	0%
Karak	366,700	7,921	6489	82%	5659	71%
Tafielh	111,500	2,408	2762	115%	2762	115%
Ma' n	183,500	3,964	3491	88%	3491	88%
Aqaba	217,900	4,707	2906	62%	2906	62%

1. Population of Jordan was 11,057,000 in 2021. http://dosweb.dos.gov.jo/population/population-2/
2. Crude birth rate for Jordan was 21 per 1000 people in 2020 Source and date https://data.worldbank.org/indicator/SP.DYN.CBRT IN?locations=JO

Location of institutional deliveries

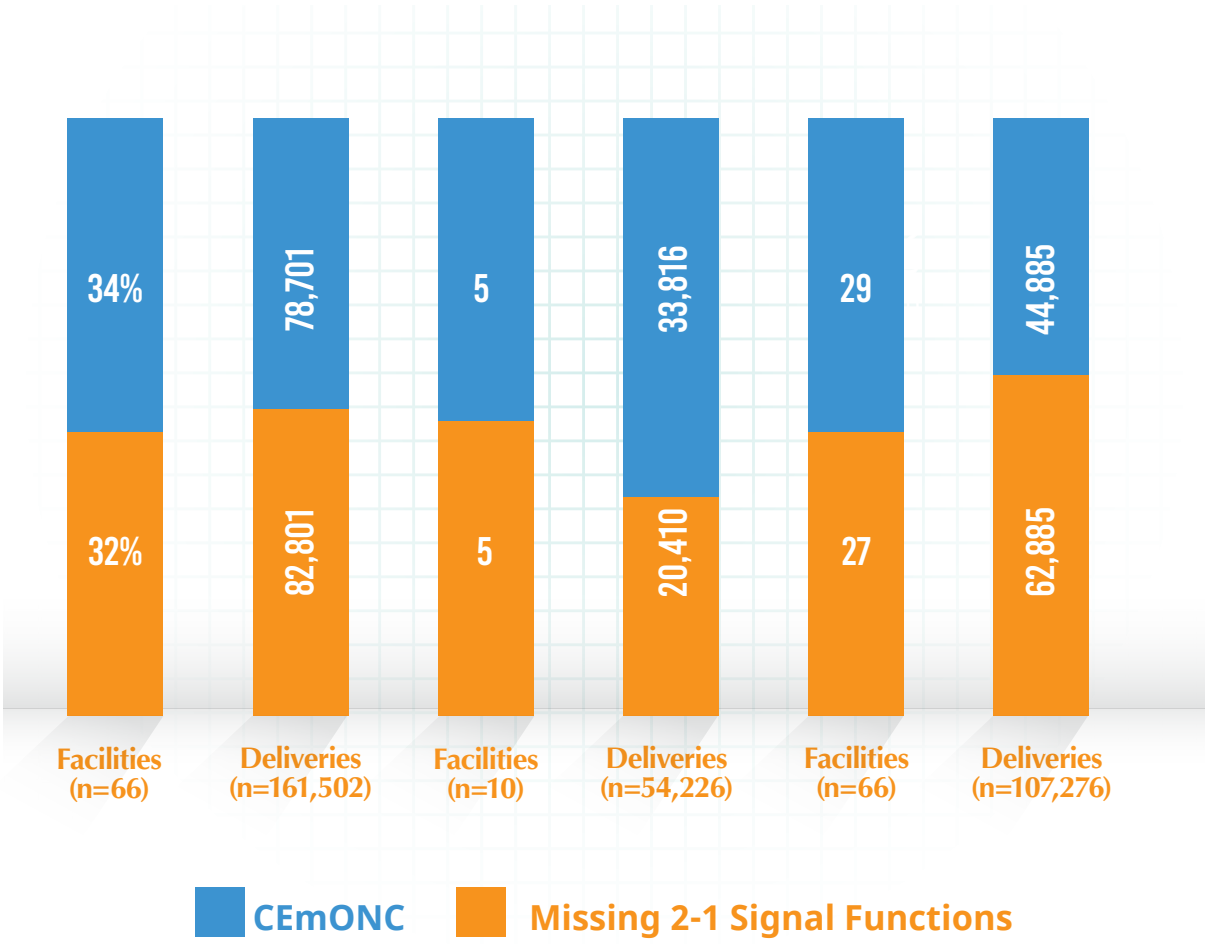
Table 3.3.2A in the appendix and Figure 3.3.1 below show percent distribution of institutional deliveries by region, facility type, operating agency and EmONC status.

Of the total deliveries registered from August 2021 to July 2022 (161,502), two-third of the deliveries (66%) occurred in the secondary/primary hospitals. A similar percentage distribution was observed in all the regions. The number of secondary/primary hospitals assessed were higher than the rest of the facility types that might have contributed to the high deliveries in these facilities.

Ideally, all births are expected to take place in EmONC facilities for better treatment, as most obstetric complications are not predicted, to minimize delays in accessing higher levels of care; though only 51% of the total deliveries took place in EmONC facilities in the country. In tertiary-level hospitals, most deliveries took place in those that missed one or two of the basic signal functions. On the other hand, secondary/primary hospitals that qualified as CEmONC captured most deliveries in the country (Figure 3.3.1).

As expected, most deliveries happened in public/government facilities (72%) than private facilities. A similar percentage distribution was observed across regions. Location wise, the majority of the deliveries took place in urban areas rather than rural at national level (Table 3.3.2A).

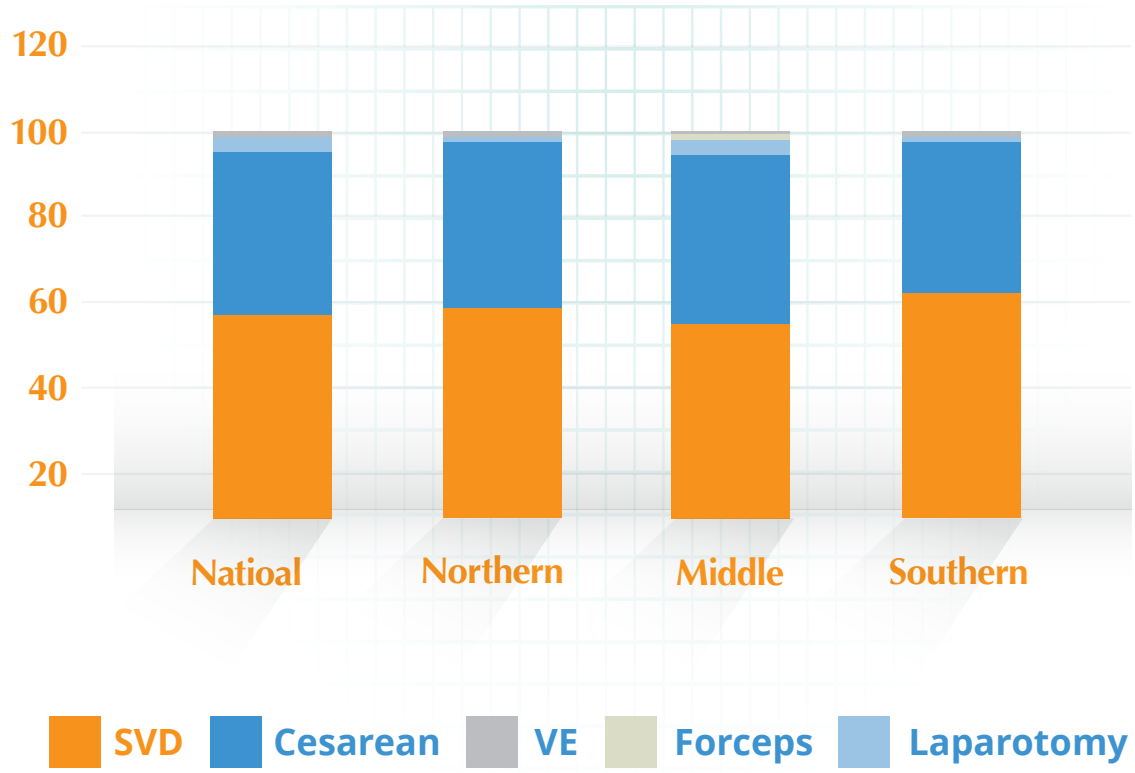
Figure 3.3.1: Distribution of facilities and institutional deliveries according to facility EmONC status, by facility type, Jordan EmONC, 2022



Mode of institutional delivery

Figure 3.3.2 below and Table 3.3.3A in the appendix show distribution of institutional deliveries mode by region, facility type, operating agency, and location. Of the total deliveries (161,502) in the 12 months prior to the assessment, over half of them (56%) were normal spontaneous vaginal deliveries (SVDs) and 41% were CS deliveries. Instrumental deliveries and laparotomies for ruptured uterus accounted for 2.3% and 0.3%, respectively. There were little disparities in the mode of delivery among regions. SVDs were high in Southern region (63%) while CS delivery was high in the Middle region (42%). Similarly, SVD was high among public/government facilities (61%) than the rest of the facility ownership. However, CS delivery was higher among private-for-profit facilities (46%) than the rest.

Figure 3.3.2: Percent distribution of institutional delivery by mode of delivery and district, Jordan EmONC, 2022



3.4 Indicator 4: Met need for EmONC services

As stipulated in Section 2.10 (Limitations, Methodology), there was poor documentation of complications of antepartum and postpartum hemorrhage/retained placenta, postpartum sepsis, severe pre-eclampsia and eclampsia, prolonged or obstructed labor, ruptured uterus, complications from abortion, and ectopic pregnancy in the register books. Prior discussions were held among the TWG members on whether to drop this indicator or if there are any other means of acquiring such data. As a result, the TWG decided to drop this indicator due to incomplete information on major obstetric complications.

3.5 Indicator 5: Caesarean section as a proportion of all births

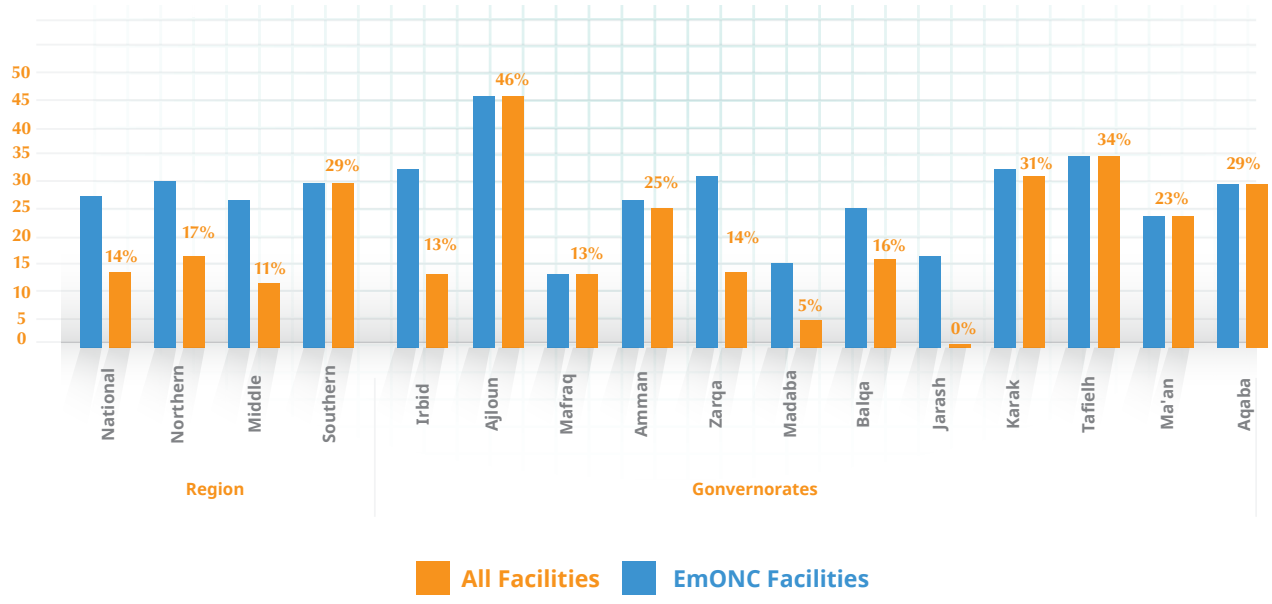
The EmONC handbook stipulated that population-based CS delivery rate ranges from 5 – 15%[28]. However, the WHO issued a consensus statement that says population-based rates above 10% are not associated with reductions in maternal or newborn mortality[29]. This was an adjustment to the definition of the indicator in the EmONC handbook.

Taking 238,831 expected births as a denominator and 65,526 CS deliveries as a numerator, the population based CS rate in all facilities was 27%; where as EmONC facilities recorded 14% (34,039 CS deliveries as numerator while the denominator is unchanged). The caesarean rate in both all and EmONC facilities were above the new international range (10%) (Figure 3.5.1, Map 3.5.1 and Table 3.5.1A in the Appendix).

rate in both all and EmONC facilities were above the new international range (10%) (Figure 3.5.1, Map 3.5.1 and Table 3.5.1A in the Appendix).

The population-based caesarean section rate in EmONC facilities was high in Southern region (29%) and low in Middle region (11%). CS rate in all facilities also varied widely by governorate, with the highest in Ajloun (46%) and the lowest in Jarash (13%), followed by Zarqa (16%) and Balqa (17%). A similar pattern was observed across governorates in EmONC facilities, with the exception of Zarqa that registered 5% CS rate. Considering CS rate in all facilities, all the governorates had above the 10% cut-off point. This implies that a concern of unnecessary caesareans, that created disparities in access to what should be promoted as life-saving technology, but only when medically indicated.

Figure 3.5.1: Percent of expected births delivered by caesarean section in all facilities and EmONC facilities, by region and governorate, Jordan EmONC, 2022



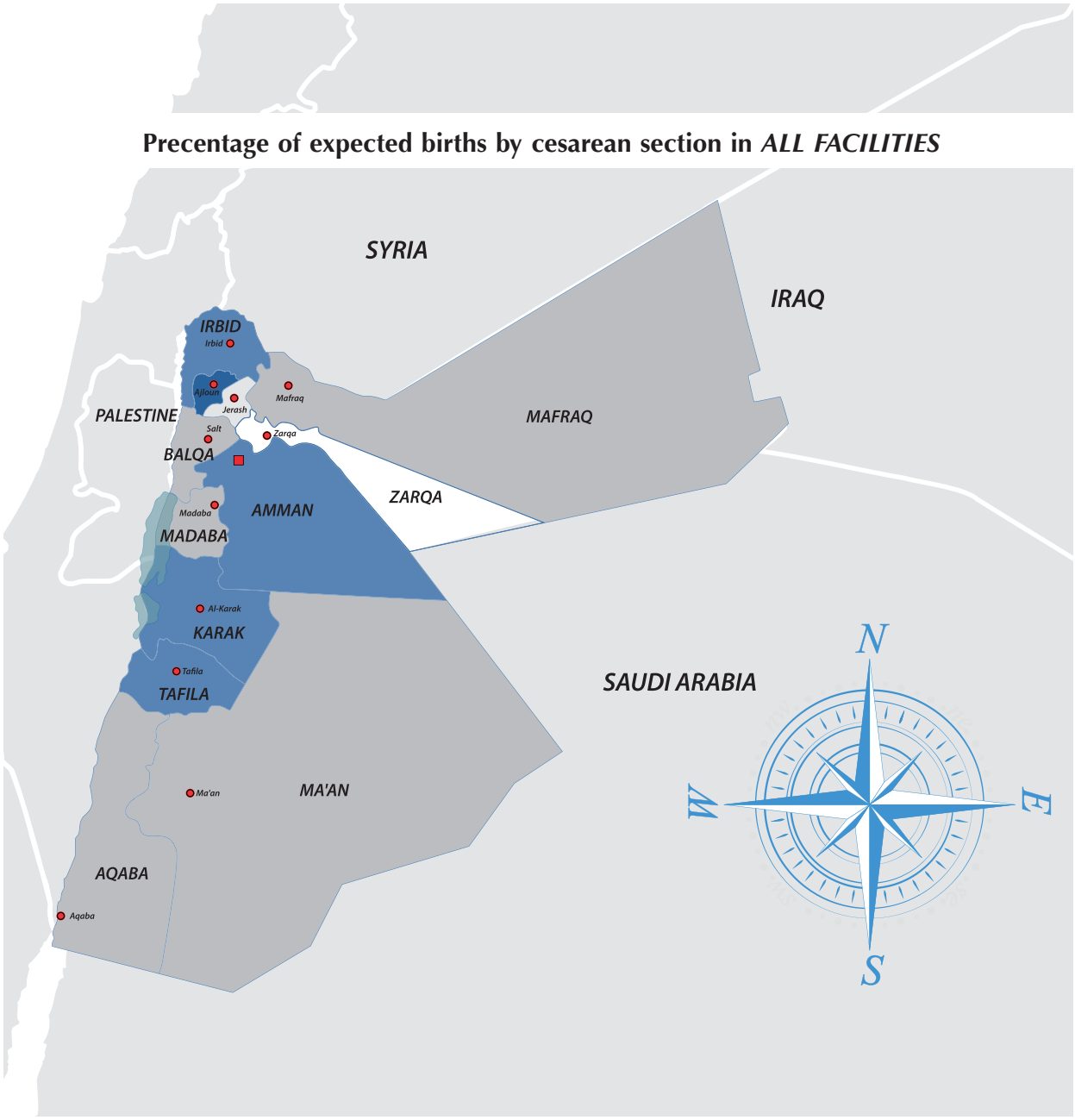
[28]WHO, UNFPA, UNICEF, AMDD. Monitoring emergency obstetric care: a handbook. Geneva: World Health Organization; 2009

[29]World Health Organization Human Reproduction Program. WHO Statement on caesarean section rates. Reprod Health Matters. 2015;23(45):149-50

Map 3.5.1: Percent of expected births delivered by caesarean section in all facilities by governorate, Jordan EmONC, 2022

Population-based Cesarean Delivery Rate

Percentage of all expected births by cesarean section in all facilities and in EmONC facilities, by region (EmONC Indicator 5), Jordan EmONC, 2022

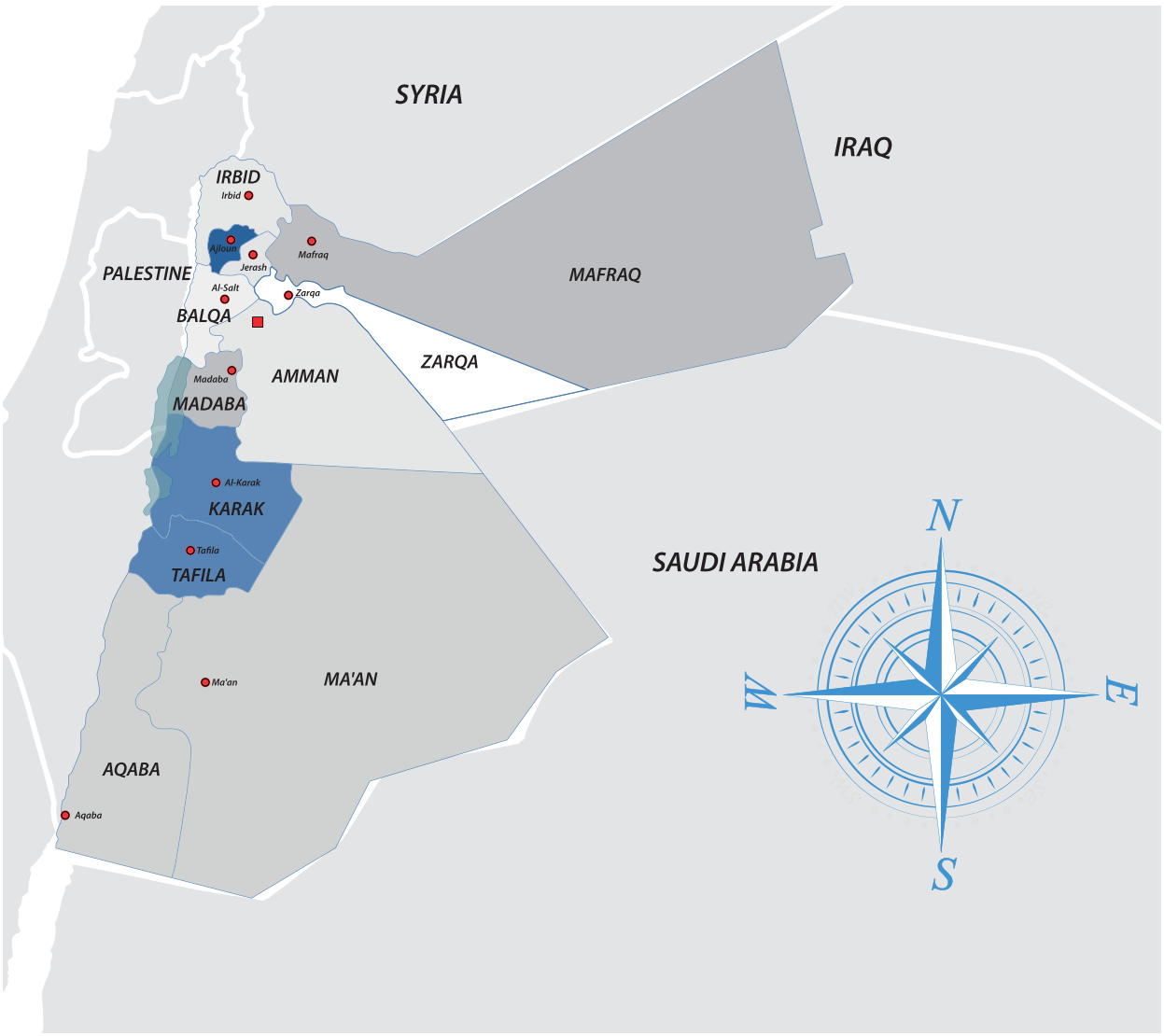


All Facilities: Precentage of expected births by cesarean section

0% 120%

Mafraq	27%	Balqa	17%	Zarqa	16%
Tafielh	34%	Madaba	28%	Ma'an	23%
Irbid	31%	Amman	31%	Karak	32%
Aljoun	48%	Jarash	13%	Aqaba	29%

Precentage of expected births by cesarean section in *EmONC FACILITIES*



EmONC Facilities: Precentage of expected births by cesarean section

0% 120%

Mafraq	25%	Balqa	0%	Zarqa	5%
Tafielh	34%	Madaba	16%	Ma'an	23%
Irbid	13%	Amman	14%	Karak	31%
Aljoun	48%	Jarash	13%	Aqaba	29%

Institutional cesarean delivery rate

As part of a routine performance monitoring system, programmers and implementers want to see institutional CS delivery rates other than the population-based rates. Accordingly, 46% of the deliveries in the private-for-profit facilities that had performed CS delivery, were resolved by caesarean section, in comparison with 39% in the public/government facilities and 43% in the private-not-for-profit. In EmONC facilities, the difference between private-not-for-profit was very low (17%) than government (41%) and private-for-profit facilities (43%) that had done CS deliveries. Tertiary-level facilities recorded higher institutional CS rate than secondary/primary hospitals, that might be impacted by referrals from these lower level to higher level facilities (Table 3.5.1 below).

As the majority of the fully functioning EmONC facilities were located in urban areas, CS delivery performance was also higher in urban areas than rural, in both EmONC and All facilities (Table 3.5.1 below).

Table 3.5.1: Caesarean delivery as a proportion of institutional deliveries in All and EmONC facilities, by Region, Facility Type and Operating agency, Jordan EmONC, 2022

			All facilities		EmONC facilities	
	Population1,2	Number of Expected Births (CBR*pop)3	Number of births attended in All facilities	Percent of expected births	Number of births attended in EmONC facilities	Percent of expected births
National	161,502	65,526	41%	82,801	34,039	41%
Region						
Northern	50,367	20,253	40%	29,391	11907	41%
Middle	95,487	39,637	42%	38,592	16579	43%
Southern	15,648	5,636	36%	14,818	5553	37%
Facility Type						
Tertiary-level hospitals	54,226	23,652	44%	20,410	9,026	44%
Secondary/primary hospitals	107,276	41,874	39%	62,391	25,013	40%
Operating agency						
Public/government	116,461	44,996	39%	63,086	25,913	41%
Private-for-profit	34,920	16,155	46%	18,595	7,938	43%
Private-not-for-profit	10,121	4,375	43%	1,120	188	17%
Location						
Rural	21,994	6,685	30%	14,129	5,575	39%
Urban	139,508	58,841	42%	68,672	28,464	41%

3.6 Indicator 6: Direct obstetric case fatality rate (DOCFR)

The DOCFR is defined as the proportion of women with major direct obstetric complications in facilities who die before discharge. The main direct causes of maternal death include: hemorrhage, hypertensive diseases, abortion, sepsis or infections, prolonged or obstructed labor, ectopic pregnancy, embolism, and anesthesia-related death. The international benchmark is less than one percent. However, this indicator was not calculated for Jordan due to lack of complete data in the facilities (mentioned in Section 2.10 – Limitations).

3.7 Indicator 7: Intrapartum and very early neonatal death (VEND) rate

The intrapartum and very early (pre-discharge) neonatal death rate is the proportion of births that result in an intrapartum stillbirth (fresh stillbirth) or a very early neonatal death (≥ 2.5kgs and < 24 hours)[30]. This indicator is intended to measure the quality of intrapartum and newborn care. A distinction between fresh and macerated stillbirth was made in this assessment.

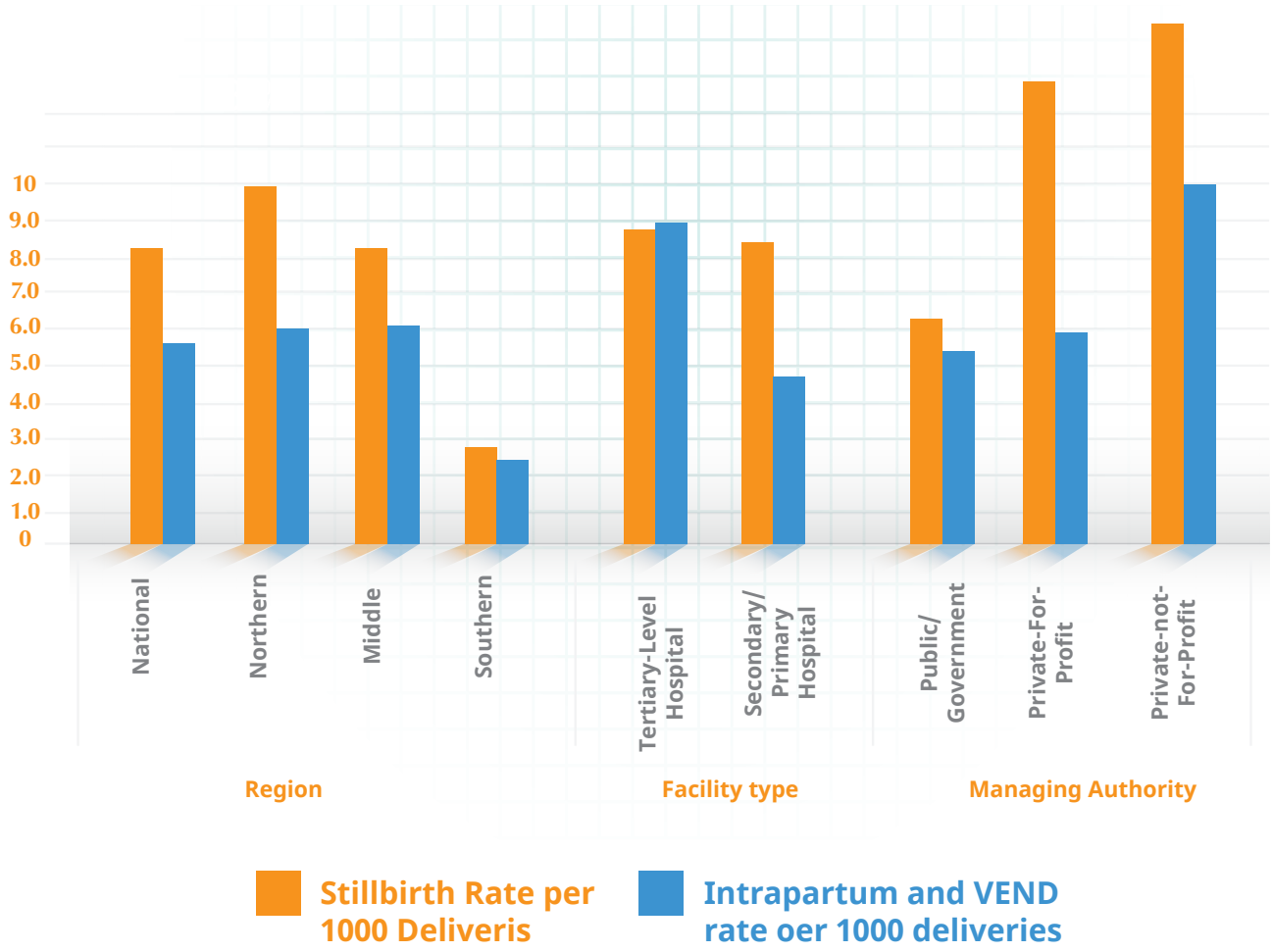
Figure 3.7.1 below and Table 3.7.1A in the appendix, show the intrapartum and VEND rate among all facilities. Similarly, Table 3.7.2A in the appendix, shows the same rates but among EmONC facilities only.

Among the 742 stillbirths that were recorded in all facilities at national level, 619 (83%) were fresh stillbirths and 123 (17%) were macerated stillbirths. Nationally, a 4.6 stillbirth rate per 1000 deliveries were recorded. Of the total VEND reported, 440 were very early neonatal deaths with a 2.5 kgs and the first 24 hours. Overall, the intrapartum and VEND rate in All facilities was 3.2 per 1000 live births. Middle region recorded the highest intrapartum and VEND rate (3.5 per 1000 live births) in all facilities while the lowest was observed in Southern region (1.3 per 1000 live births).

Tertiary-level hospitals recorded the highest intrapartum and VEND rate in all facilities (4.4) than secondary/primary hospitals (2.6). Private-not-for-profit facilities unveiled the highest intrapartum and VEND rate (5.6 per 1000 live births) compared to government (3.0 per 1000 live births) and private-for-profit facilities (3.3 per 1000 live births). Facilities located in the rural areas exhibited a little bit higher intrapartum and VEND rate than urban located facilities.

[30]WHO, UNFPA, UNICEF, AMDD. Monitoring emergency obstetric care: a handbook. Geneva: World Health Organizations; 2009.

Figure 3.7.1: Intrapartum and very early neonatal death rates in all facilities, by district, Jordan EmONC, 2022



3.8 Indicator 8: Proportion of maternal deaths due to indirect causes

Indirect causes of maternal death result from previous existing disease, or disease that developed during pregnancy and was not due to direct obstetric causes, but was aggravated by the physiologic effects of pregnancy. This indicator highlights the larger social and medical context and has implications for intervention strategies. Malaria, HIV, severe anemia, and hepatitis were the major indirect causes included in this indicator. However, data on maternal deaths due to indirect obstetric causes was not available in the health facilities assessed, and hence the indicator was not calculated.

3.9 Summary of EmONC Indicators

Due to recording and documentation problems, the 2022 Jordan EmONC assessment did not produce all the eight EmONC indicators, taking this into consideration, table 3.9.1 below summarizes the available indicators only. Nationally, EmONC availability in more rigorous criteria (24%) seems to be lower than its availability in the less rigorous criteria (29%). At sub-national level, Southern region had large reductions of EmONC facilities in the more rigorous criteria. However, Irbid, Jarash, Mafraq, Karak, and Aqaba had unchanged EmONC facilities in either of the criteria set.

Table 3.9.1: Summary of EmONC indicators, Jordan EmONC, 2022

	All facilities	EmONC facilities (LESS rigorous criteria)	EmONC facilities (MORE rigorous criteria)
Indicator 1: Availability of EmONC			
Recommended n		111	111
Functioning n (%)		32 (29%)	27 (24%)
Functioning CEmONC n (%)		32 (145%)	27 (122%)
Functioning BEmONC n (%)		0 (0%)	0 (0%)
Indicator 2: Subnational availability of EmONC (% of minimum recommended EmONC facilities)			
Northern region		28%	25%
Middle region		24%	21%
Southern region		68%	25%
Irbid		14%	14%
Ajloun		100%	50%
Jarash		33%	33%
Mafraq		50%	50%
Amman		30%	28%
Zarqa		13%	13%
Madaba		50%	0%
Balqa		0%	0%
Karak		50%	50%
Tafielh		100%	0%
Maan		100%	50%
Aqaba		50%	50%
Indicator 3: Proportion of births in facilities	68%	35%	31%
Indicator 4: Met need for EmONC			
Indicator 5: Proportion of births delivered by caesarean	27%	14%	13%
Indicator 6: Direct obstetric case fatality rate			
Indicator 7: Stillbirth and newborn mortality rates			
Stillbirth rate (per 1,000 deliveries)	4.6	3.4	2.8
Very early neonatal mortality rate (>2.5 kgs and 1st 24 hours; per 1,000 live births)	3.2	2.4	2.3
Indicator 8: Proportion of maternal deaths due to indirect causes			

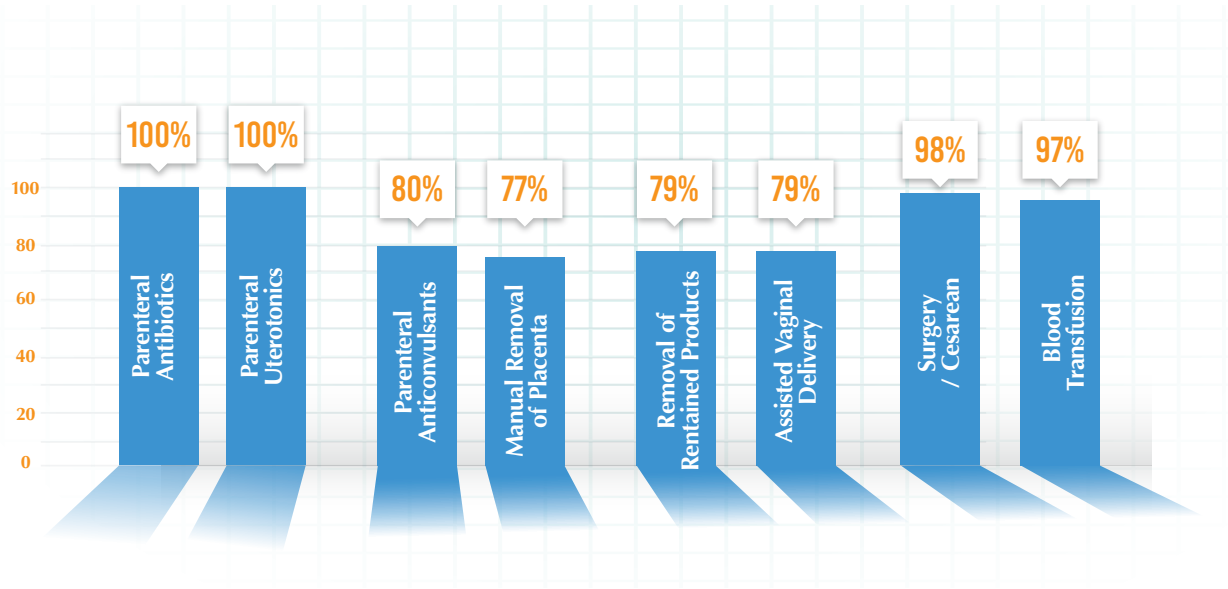
Chapter 4
Additional Obstetric and Newborn care Indicators for Coverage, Readiness and Quality

4.1 Performance of EmONC and EmNeC signal functions and reasons for non-performance

Performance of EmONC signal functions and reasons for non-performance

Figure 4.1.1 below presents performance of the EmONC signal functions in the last 3 months prior to the assessment. Accordingly, all (100%) the 66 health facilities assessed performed parenteral antibiotics and parenteral uterotonics. Similarly, almost all of the facilities (98% and 97%) performed CS delivery and blood transfusion, respectively. The main reason for the high performance of the two comprehensive EmONC signal functions, was highly likely because the facilities assessed were hospitals. Comparatively, the least performed EmONC signal function was manual removal of placenta (77%), followed by removal of retained products of conception (79%) and assisted vaginal delivery (79%).

Figure 4.1.1: Percent of facilities that performed each EmONC signal function in the last 3 months, Jordan EmONC 2022



Parenteral antibiotics: As shown in Table 4.1.1 below, parenteral antibiotics was performed in all facilities in each region. All the facilities assessed in any location and ownership, performed parenteral antibiotics in the last 3 months prior to the assessment.

Parenteral uterotonics: Parenteral uterotonics was also performed in all facilities in the country.

Parenteral anticonvulsants: Parenteral anticonvulsant was performed in 80% of the total facilities at national level. All facilities in Southern region and 95% of the facilities in Northern region performed the signal function while only 69% of the 39 facilities assessed from the Middle region performed the signal function. As expected, all the higher-level hospitals performed the signal function but only 77% of the secondary/primary hospitals performed it. Private-not-for-profit facilities and government facilities were more likely to provide parenteral anticonvulsants than private-for-profit facilities. Location wise, rural facilities were more likely to provide parenteral anticonvulsants than urban-located facilities.

Manual removal of placenta: This signal function was the least performed among all other signal functions. Nationally, a little over three-quarter of the facilities in the country had provided this signal function with the highest performing regions of Southern and Northern (86% and 85%, respectively) and the lowest in the Middle (72%). Tertiary-level hospitals and government-owned facilities were highly likely performing this signal function than the rest of the groups.

Removal of retained products of conception: This signal function was performed in 79% of the facilities in the country. All facilities in Southern region performed the signal function; while only 74% in the Middle region provided it in the 3 months prior to the assessment.

Assisted vaginal delivery: Nationally, 79% of the 66 facilities assessed performed this signal function with the highest performing region was Southern (100%) and lowest was Northern (55%). Secondary/primary hospitals were more likely to perform this signal function than tertiary-level hospitals. Similarly, private-for-profit facilities were most likely performing the signal function than the rest in the group.

Surgery/Cesarean and blood transfusion: Performance of these two comprehensive signal functions were observed in more than 97% of the total facilities assessed. These signal functions were more common in government-owned and private-for-profit health facilities than private-not-for-profit. Urban-based facilities were also most likely to perform these signal functions than rural health facilities (Table 4.1.1 below).

Table 4.1.1: Percent of facilities that performed each EmNOC signal function in the last 3 months, by region, type of facility, managing authority, and location, Jordan EmONC 2022

	Total number of facilities that attended deliveries	EmNOC Signal Function							
		Parenteral Antibiotics	Parenteral Uterotonics	Parenteral Anticonvulsants	Manual Removal of Placenta	Removal of Retained Products	Assisted Vaginal Delivery	Surgery / Cesarean	Blood Transfusion
		%	%	%	%	%	%	%	%
National	66	100	100	80	77	79	79	98	97
Region									
Northern	20	100	100	95	85	80	55	95	95
Middle	39	100	100	69	72	74	87	100	97
Southern	7	100	100	100	86	100	100	100	100
Facility Type									
Tertiary level hospitals	10	100	100	100	90	80	60	100	100
Secondary/ primary hospitals/ HCs	56	100	100	77	75	79	82	98	96
Managing Authority									
Public/Government	35	100	100	94	86	89	66	100	100
Private-for-profit	26	100	100	58	73	69	96	100	96
Private-not-for-profit*	5	100	100	100	40	60	80	80	80
Location									
Urban	54	100	100	78	80	80	85	100	98
Rural	12	100	100	92	67	75	50	92	92

* Includes NGO health facilities

Table 4.1.2 below shows reasons for the non-performance of the EmONC signal functions. Parenteral antibiotics and parenteral uterotonics were performed in all facilities. Of the 13 and 14 hospitals that did not perform parenteral anticonvulsants and removal of retained products of conception, respectively, all of them cited "no-indication" as the main reason for the non-performance. Of the 15 hospitals that did not perform manual removal of placenta, 88% had no case/no indication; while 12% of them had no supportive policy to provide this signal function.

Of the 14 hospitals that did not perform assisted vaginal delivery, 86% had no indication as the main reason for non-performance, 7% said lack of equipment/supplies to perform the signal function and another 7% had no supportive policy to perform it. As expected, the only health center that did not perform both CS delivery and blood transfusion in the last 3 months cited "unsupportive policy" as the main reason for not performing these two comprehensive signal functions (Table 4.1.2 below).

Table 4.1.2: Percentage of facilities that provided the signal functions in the last 3 months and reasons for not providing, by function (multiple responses possible), Jordan EmONC, 2022

	Percentage of facilities (n=66) that provided the procedure in the last 3 months	Number of facilities that did not perform the procedure in the last 3 months	Percentage of facilities that responded that the procedure was not provided in the last 3 months due to lack of (multiple responses allowed):						
			Staff/human resource	Training issues	Supplies/ Equipment/ Drugs	Management Issues	Policy Issues	No indication	Blood Transfusion
		%	%	%	%	%	%	%	%
EmONC Signal Functions									
Parenteral antibiotics	100	0	0%	0%	0%	0%	0%	0%	95
Parenteral uterotonics	100	0	0%	0%	0%	0%	0%	0%	97
Parenteral anticonvulsants	80	13	0%	0%	0%	0%	0%	100%	100
Manual removal of placenta	77	15	0%	0%	0%	0%	12%	88%	95
Removal of retained products	79	14	0%	0%	0%	0%	0%	100%	97
Assisted vaginal delivery	79	14	0%	0%	7%	0%	7%	86%	100
Blood transfusion	98	1	0%	0%	0%	0%	100%	0%	97
Cesarean section	97	2	0%	0%	0%	0%	50%	50%	100
EmNeC Signal Functions									
Resuscitation of newborn with bag and mask	95	3	0%	0%	0%	0%	0%	100%	100
Corticosteroids	94	4	0%	0%	0%	0%	0%	100%	96
Antibiotics for pPROM	92	5	0%	0%	0%	0%	0%	100%	100
Injectable antibiotics for neonatal sepsis	88	8	0%	13%	0%	0%	13%	74%	96
Kangaroo mother care (KMC)	50	33	9%	58%	12%	9%	82%	6%	100
Safe administration of Oxygen	100	0	0%	0%	0%	0%	0%	0%	96
IV fluids	97	2	0%	50%	0%	0%	50%	50%	96

KMC = kangaroo mother care; pPROM = preterm premature rupture of membranes, SF = signal function.

Performance of EmNeC signal functions and reasons for non-performance

Figure 4.1.2 and Table 4.1.3 below show provision of EmNeC signal functions and Table 4.1.2 above present the reasons for the non-performance of EmNeC signal functions. Nationally, safe administration of oxygen was performed in all facilities; while IV fluids, newborn resuscitation, and antenatal corticosteroids were performed in 97%, 95%, and 94% of the total facilities, respectively. Kangaroo Mother Care (KMC) was the least performed EmNeC signal function (50%) in all facilities. Most of the EmNeC signal functions were more likely be performed in tertiary-level hospitals than secondary and primary hospitals.

Figure 4.1.2: Percent of facilities that performed each EmNeC signal function in the last 3 months, Jordan EmONC 2022

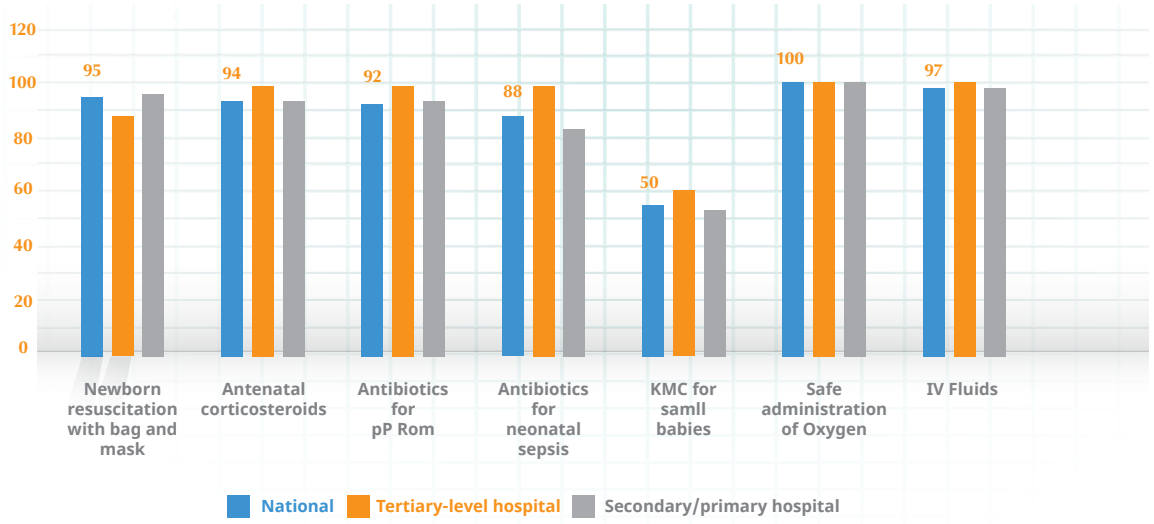


Table 4.1.3 below indicates performance of each EmNeC signal function.

Newborn resuscitation: 95% of the facilities at national level provided newborn resuscitation. All facilities in Southern region performed the signal function; while 95% of the facilities in Northern and Middle regions did perform it. Private-not-for-profit facilities were more likely to perform the signal function than the rest of the group. Newborn resuscitation was highly likely performed in urban-located facilities than rural.

Antenatal corticosteroids. Nationally, 94% of the 66 facilities performed this signal function with the highest in Southern region (100%) and lowest in the Middle region (92%). All government-owned, and private-not-for-profit facilities performed this signal function.

Antibiotics for preterm premature rupture of membranes (pPROM). This signal function was performed in 92% of the facilities at national level. As expected, all the facilities in the Southern region performed it while 90% of the facilities in the Middle did so.

Antibiotics for neonatal sepsis. This signal function was performed in (88%) of facilities. All of the 10 tertiary-level hospitals performed this signal function; while only 86% of the secondary/primary hospitals did so.

KMC for small babies. KMC was the least performed signal function from the seven EmNeC signal functions. Nationally, 50% of the facilities provided KMC for babies. A huge disparity observed in the provision of KMC, with the highest in Southern region (71%) and the lowest in Northern region (35%). Government-owned facilities were most likely providing KMC than the rest of the facility ownerships.

Safe administration of oxygen. All the facilities assessed provided safe administration of oxygen for newborns in the last three months prior to the assessment.

IV fluids. Nationally, 97% of the facilities provided IV fluids to newborns. All tertiary-level hospitals and 96% of secondary/primary hospitals had administered IV-fluids to newborns.

As shown in table 4.1.2 above, the most common reason for non-performance of newborn resuscitation, antenatal corticosteroids, antibiotics for pPROM, and antibiotics for neonatal sepsis was no indication. However, the main reason cited for non-performance of KMC was unsupportive policy, in which KMC is believed to be provided at the basic EmONC function level. Of the two facilities that did not provide IV fluids in the last 3 months prior to the assessment, one of them reasoned out unsupportive policy for the non-performance.

Table 4.1.3: Percent of facilities that performed each EmNeC signal function in the last 3 months, by region, type of facility, managing authority, and location, Jordan EmONC, 2022

	Total number of facilities that do deliveries	EmNOC Signal Function							
		Newborn resuscitation with bag and mask	Antenatal corticosteroids	Antibiotics for pPROM	Antibiotics for neonatal sepsis	KMC for small babies	Safe administration of Oxygen	IV Fluids	Blood Transfusion
		%	%	%	%	%	%	%	%
National	66	95	94	92	88	50	100	97	97
Region									
Northern	20	95	95	95	80	35	100	95	95
Middle	39	95	92	90	90	54	100	97	97
Southern	7	100	100	100	100	71	100	100	100
Facility Type									
Tertiary level hospitals	10	90	100	100	100	60	100	100	100
Secondary/ primary hospitals/ HCs	56	96	93	91	86	48	100	96	96
Managing Authority									
Public/Government	35	97	100	100	89	57	100	97	100
Private-for-profit	26	92	85	81	88	42	100	100	96
Private-not-for-profit*	5	100	100	100	80	40	100	80	80
Location									
Urban	54	94	93	91	89	52	100	98	98
Rural	12	100	100	100	83	42	100	92	92

* Includes NGO health facilities

4.2 Readiness to provide EmONC and EmNeC Signal Functions

Health facility's performance of signal functions tells us the performance of each facility in the last 3 months prior to the assessment. However, health facilities that have the capacity in terms of Human Resources and availability of drugs, equipment and supplies are challenged by non-performance of few signal functions like manual removal of placenta due to no-indication, or no case. Many countries are, therefore, interested in having an option for planning based on facility's readiness to provide EmONC signal functions.

Facility readiness is defined as the availability of at least one health worker cadre on staff who can provide the signal function, and the availability of a minimum package of drugs, supplies and equipment for the specific signal function. The minimum package of drugs, equipment and supplies are determined based on a country's national standards, if there is any, or on basic packages from other countries/international standards (attached in Appendix B).

Readiness to provide EmONC signal functions

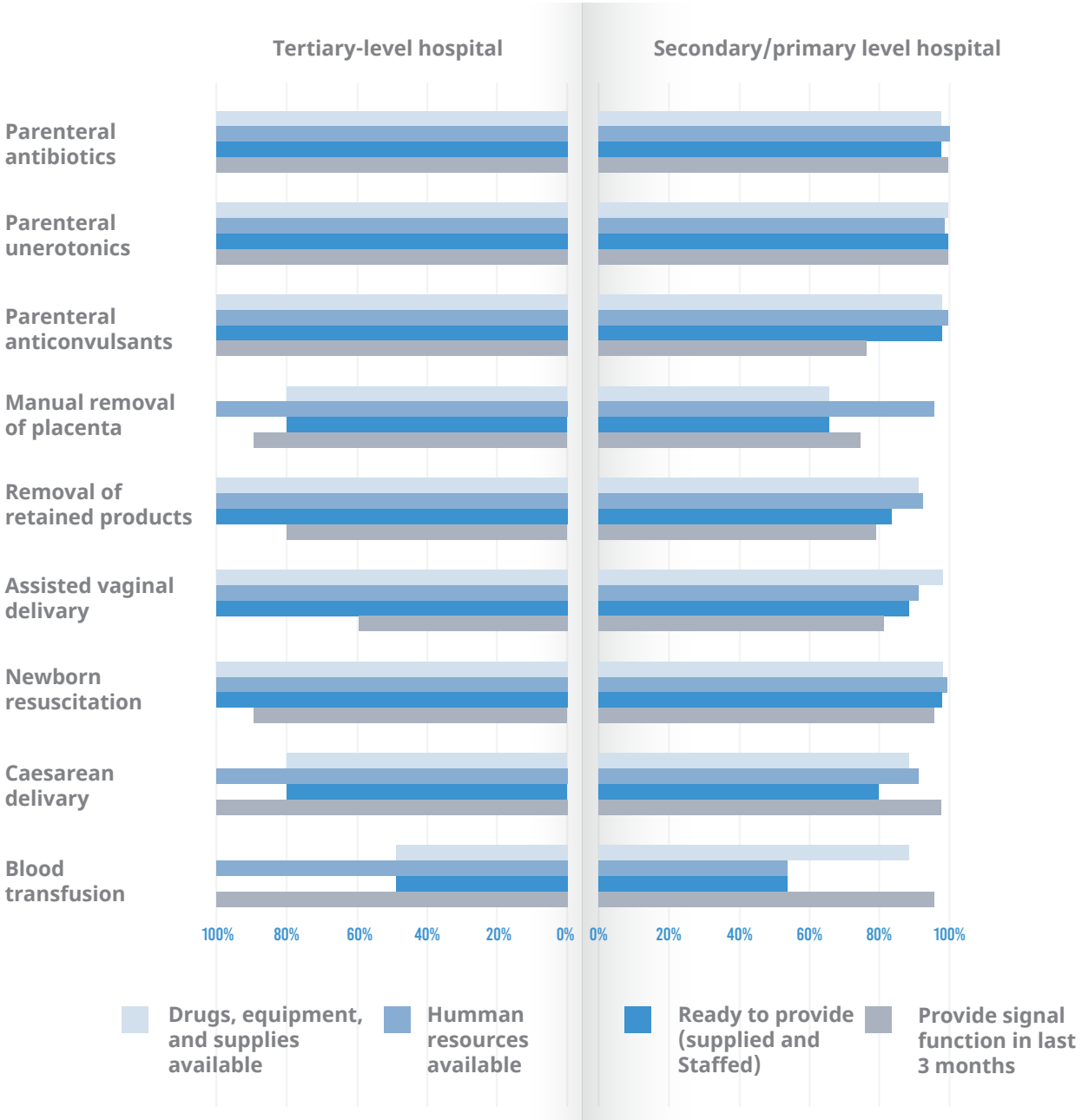
Table 4.2.1A and figure 4.2.1 below, provide percentage of facilities that are ready to provide and currently providing each EmONC signal function by facility category. In this assessment, we have two categories of hospitals (tertiary-level and secondary/primary).

For tertiary-level hospitals, facility readiness and actual performance of parenteral antibiotics, parenteral uterotonics, and parenteral anticonvulsants were equal and all 100%. In three signal functions, removal of retained products of conception, assisted vaginal delivery, and newborn resuscitation, facility readiness was higher than performance. However, facility readiness was lower than actual performance for manual removal of placenta, caesarean delivery, and blood transfusion;

indicating that performance of these signal functions was happening under suboptimal conditions. The least readiness was observed for blood transfusion (50%), followed by caesarean delivery and manual removal of placenta (both 80%).

For secondary/primary hospitals, a similar pattern was observed with tertiary hospitals. Like the tertiary-level hospitals, the least readiness was recorded for blood transfusion (54%), followed by manual removal of placenta (66%).

Figure 4.2.1: Percent of facilities that are ready to provide and currently provide each EmONC signal function, by facility type, Jordan EmONC, 2022



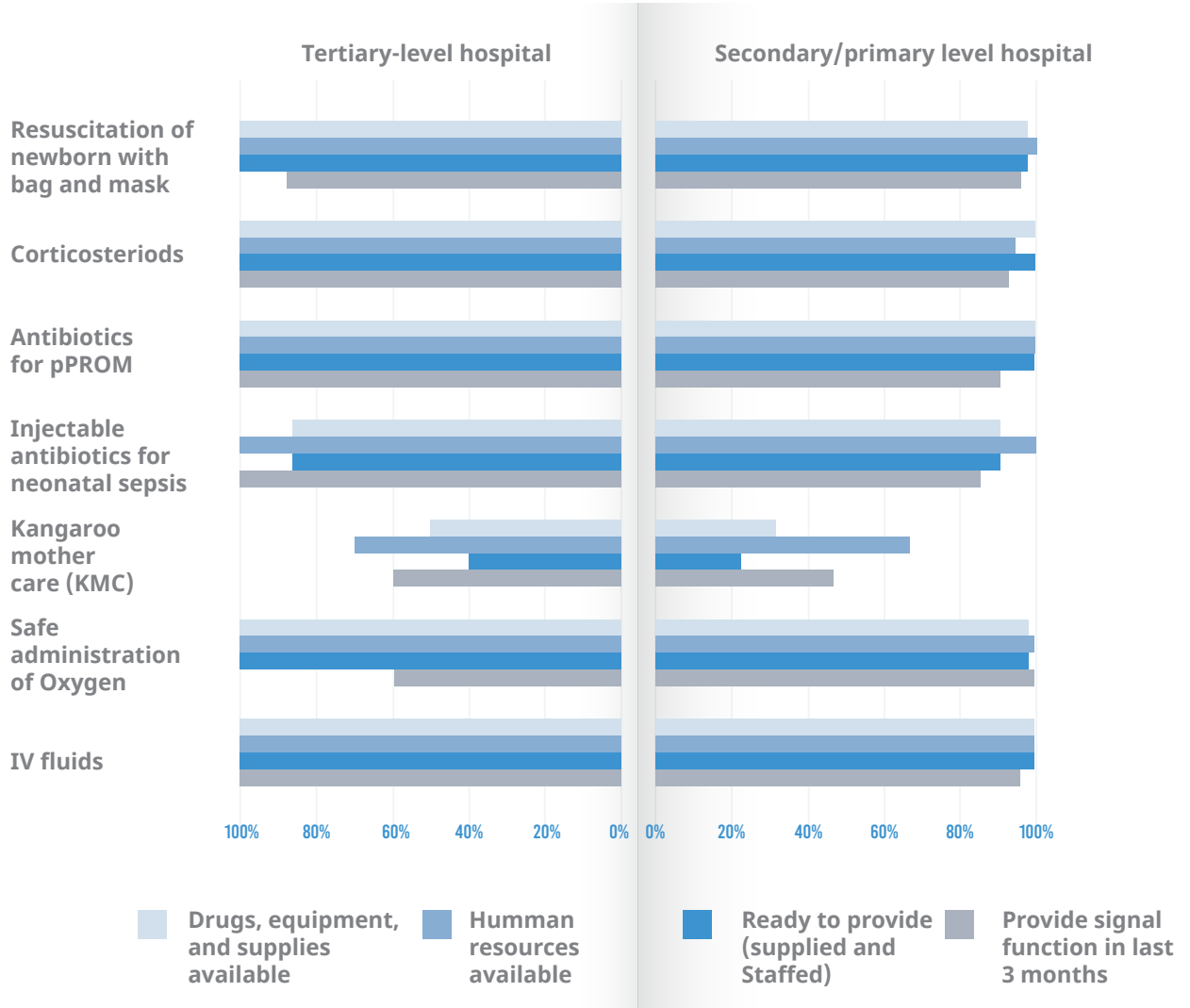
Readiness to provide EmNeC signal functions

Table 4.2.2A in the appendix and figure 4.2.2 below, show percentage of facilities that are ready to provide and currently providing each EmNeC signal function by facility type.

For tertiary-level hospitals, facility readiness to provide and actual provision was observed the same for antenatal corticosteroids, administration of antibiotics for pPROM, safe administration of oxygen, and administration of IV fluids. However, readiness was lower than actual provision for administration of antibiotics for neonatal sepsis and KMC. The main reason for lower readiness was due to unavailability of the required drugs/equipment/supplies.

For secondary/primary hospitals, we found that readiness was higher than actual provision for five of the seven EmNeC signal functions. For KMC and safe administration of oxygen, however, readiness was lower than actual provision, indicating that performance was happening under suboptimal conditions.

Figure 4.2.2: Percent of facilities that are ready to provide and currently provide each EmNeC signal function, by facility type, Jordan EmONC, 2022



4.3 Choices regarding drugs and equipment for performing the signal functions

Health providers make decisions to administer each drug based on national or international standards, or influenced by their preferences. We presented below such choices of drugs and procedures in some of the EmONC signal functions.

Provision of uterotonic drugs: Table 4.3.1 presents choice of uterotonic drugs in augmenting labour. Oxytocin is the drug of choice for augmentation of labour. All facilities assessed administered Oxytocin. Ergometrine (85%) was also the second highest drug of choice that was administered in quite a large proportion of the facilities.

Table 4.3.1: Percentage of facilities that administered parenteral oxytocics in the last 3 months and type of oxytocic used, by region, facility type, and managing authority, Jordan EmONC, 2022

	Total number of facilities that performed deliveries	Total number of facilities that administered oxytocics in last 3 months	Among facilities that administered parenteral oxytocics in the last 3 months, percent that used (multiple answers possible):			
			Oxytocin	Ergometrine	Pabal/Carbetocin	Misoprostol
National	66	66	100%	85%	26%	26%
Region						
Northern	20	20	100%	85%	10%	30%
Middle	39	39	100%	87%	36%	21%
Southern	7	7	100%	71%	14%	43%
Type of facility						
Tertiary level hospitals	10	10	100%	70%	0%	20%
Secondary/primary hospitals/HCs	56	56	100%	88%	30%	27%
Managing Authority						
Public/Government	35	35	100%	83%	20%	29%
Private-for-profit	26	26	100%	88%	38%	23%
Private-not-for-profit*	5	5	100%	80%	0%	20%

Provision of parenteral anticonvulsants: Anticonvulsants are used to treat women who are suffering from eclampsia and pre-eclampsia caused by pregnancy. Magnesium sulphate is a drug of choice to treat pre-eclampsia/eclampsia. Accordingly, of those that administered parenteral anticonvulsants in the three months prior to the assessment, only 49% used Magnesium Sulphate exclusively while 3% used Diazepam exclusively, a drug that is no longer recommended as a first-line drug for severe pre-eclampsia and eclampsia. Forty-seven percent used both Magnesium Sulphate and Diazepam (table 4.3.2 below).

The majority of the facilities in the Middle region used Magnesium Sulphate, while the majority in Northern and Southern regions used both Magnesium Sulphate and Diazepam. Similarly, the majority of private facilities used both drugs, while government owned facilities were more likely to use Magnesium Sulphate (Table 4.3.2 below).

Table 4.3.2: Percentage of facilities that administered parenteral anticonvulsants in the last 3 months and type of medication, by region, facility type, and operating agency, Jordan EmONC, 2022

	Total number of facilities that performed deliveries	Total number of facilities that administered anticonvulsants in last 3 months	Among facilities that administered anticonvulsants in the last 3 months, percent that used:		
			Magnesium sulfate only	Diazepam only	Both magnesium sulfate and diazepam
National	66	53	49%	3%	47%
Region					
Northern	20	19	47%	5%	47%
Middle	39	27	52%	4%	44%
Southern	7	7	43%	0%	57%
Type of facility					
Tertiary level hospitals	10	10	40%	0%	60%
Secondary/primary hospitals/HC	56	43	51%	5%	44%
Managing Authority					
Public/Government	35	33	61%	3%	36%
Private-for-profit	26	15	27%	7%	67%
Private-not-for-profit*	5	5	40%	0%	60%

Removal of retained products of conception: As shown in table 4.3.3 below, 79% of facilities performed removal of retained products of conception. Of these, 90% used dilation and curettage (D&C), followed by dilatation and evacuation (D&E) (88%) and 42% used Misoprostol. Vacuum aspiration was the least method used for removal of retained products of conception at national level. A similar pattern was observed across all regions and facility types.

Table 4.3.3: Percentage of facilities that removed retained products in the last 3 months and type of method, by region, facility type, and operating agency, Jordan EmONC, 2022

	Total number of facilities that performed deliveries	Total number of facilities that administered oxytocics in last 3 months	Among facilities that administered parenteral oxytocics in the last 3 months, percent that used (multiple answers possible):			
			Oxytocin	Ergometrine	Pabal/Carbetocin	Misoprostol
Region						
Northern	20	16	31%	88%	94%	50%
Middle	39	29	34%	93%	83%	38%
Southern	7	7	43%	86%	100%	43%
Type of facility						
Tertiary level hospitals	10	8	25%	88%	100%	50%
Secondary/primary hospitals/HCs	56	44	36%	91%	86%	41%
Managing Authority						
Public/Government	35	31	26%	84%	90%	32%
Private-for-profit	26	18	56%	100%	83%	56%
Private-not-for-profit*	5	3	0%	100%	100%	67%

Provision of assisted vaginal delivery (AVD): When delivery is not progressing well, clinicians may use vacuum extractor or obstetric forceps to assist with delivery. This signal function is the least performed one in many countries. In Jordan, a large proportion (79%) of the facilities performed it. Of these, 73% used vacuum extractor only, while only 6% used obstetric forceps. The remaining 21% used both vacuum extractor and obstetric forceps to assist delivery. A similar pattern was observed across all regions, except private-not-for-profit facilities, in which only two of the four facilities that had performed the signal function used vacuum extractor only. Half of the six tertiary-level hospitals that performed this signal function did also use vacuum extractor (Table 4.3.4 below).

Table 4.3.4: Percentage of facilities that performed assisted vaginal delivery in the last 3 months and type of method, by region, facility type, and operating agency, Jordan EmONC, 2022

	Total number of facilities that performed deliveries	Total number of facilities that performed assisted vaginal delivery last 3 months	Among facilities that performed assisted vaginal delivery in last 3 months, percent that used:		
			Vacuum extractor only	Forceps only	Both
National	66	52	73%	6%	21%
Region					
Northern	20	11	82%	0%	18%
Middle	39	34	71%	9%	21%
Southern	7	7	71%	0%	29%
Type of facility					
Tertiary level hospitals	10	6	50%	0%	50%
Secondary/primary hospitals/HCs	56	46	76%	7%	17%
Managing Authority					
Public/Government	35	23	83%	0%	17%
Private-for-profit	26	25	68%	8%	24%
Private-not-for-profit*	5	4	50%	25%	25%

4.4 Human Resources who reportedly performed the signal functions in the last three months

In this assessment, we asked the maternity in-charges, who had provided each of the EmONC and EmNeC signal functions. Figures 4.4.1 and 4.4.2 below, and tables 4.4.1A and 4.4.2A in the appendix, present the cadre who had performed the EmONC and EmNeC signal functions in tertiary-level and secondary/primary hospitals.

In the tertiary-level hospitals that provided EmONC signal functions, Ob/Gyns were more likely to provide the signal functions than the rest of the cadres, except blood transfusion, in which medical doctors were highly likely performing it than the rest. Similarly, almost all of the EmNeC signal functions were highly likely provided by nurses than the rest of the cadres, except neonatal resuscitation and antenatal corticosteroids that were mostly administered by neonatologist and Ob/Gyn, respectively. A similar pattern of performance of health workers was observed in the provision of EmONC and EmNeC signal functions in the secondary/primary hospitals. The exception was for the neonatal resuscitation with bag and mask, which was administered mostly by pediatricians than the rest of the cadres in this group of facilities.

Figure 4.4.1: Percent of tertiary-level hospitals where different health worker cadres performed selected EmONC signal functions in the last 3 months, Jordan EmONC, 2022

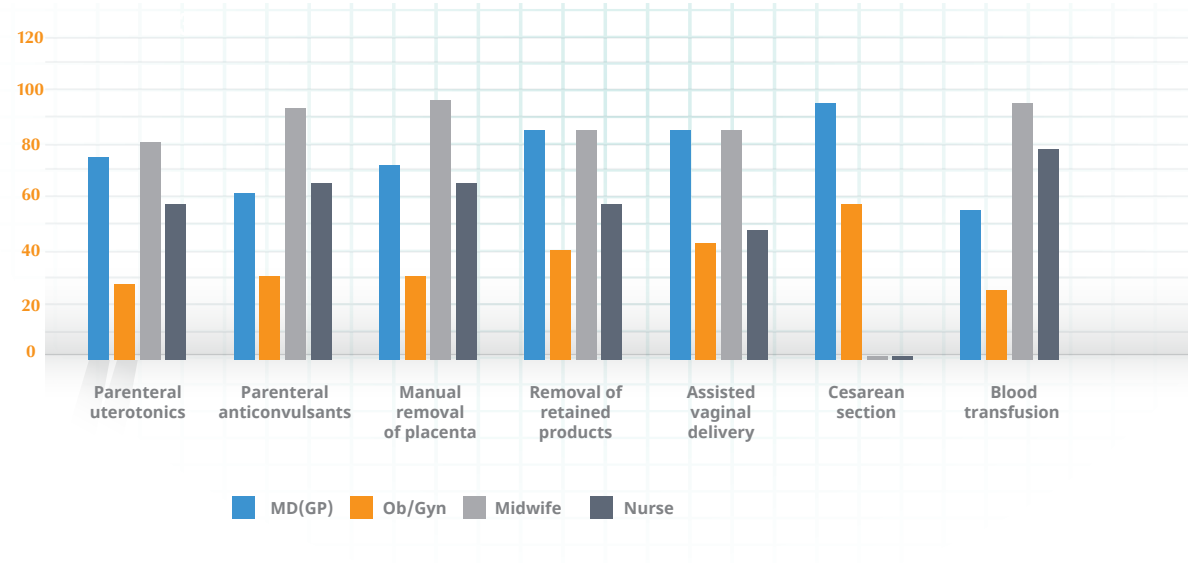
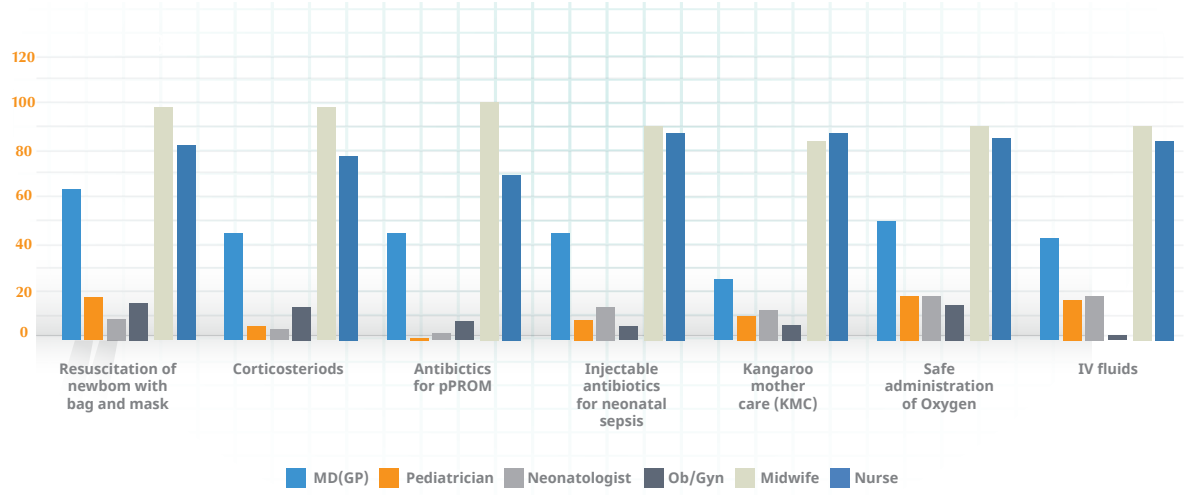


Figure 4.4.2: Percent of tertiary-level hospitals where different health worker cadres performed EmNeC signal functions in the last 3 months, Jordan EmONC, 2022



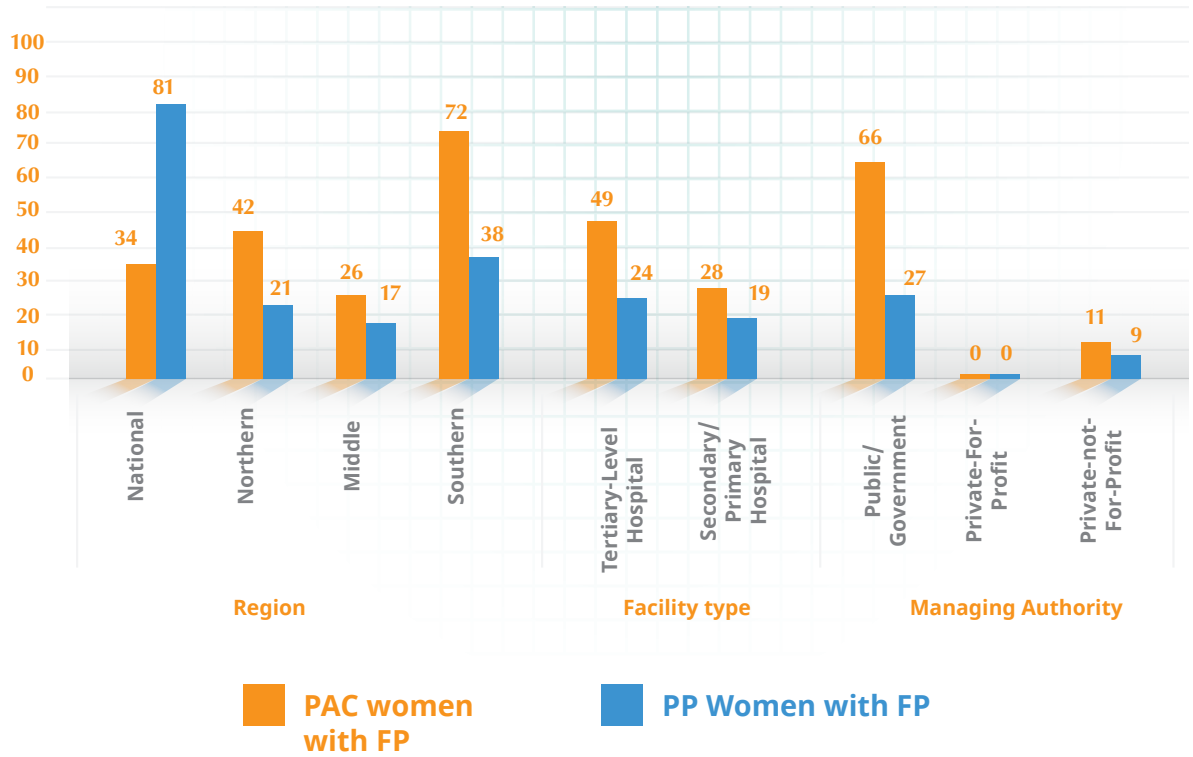
4.5 Abortion related indicators

Women in PAC or postpartum, discharged with family planning methods

Figure 4.5.1 below and table 4.5.1A in the appendix, show that percentage of women in post-abortion and post-partum who were discharged with contraceptive methods. Nationally, of the total 46,712 Post abortion care (PAC) cases, only one third (34%) of them received contraceptive methods. A huge regional variation was observed with the highest in Southern (72%) and the lowest in the Middle region (26%). Government-owned facilities were more likely to provide contraceptives for PAC women than the rest of facility ownerships – 11% in private-not-for-profit and zero in private-for-profit facilities.

Postpartum women discharged with contraceptive methods was higher (81%) than that of women with PAC (34%). The distribution of postpartum women discharged with contraceptives was higher among tertiary-level hospitals, government-owned facilities, and rural-located facilities than their respective groups.

Figure 4.5.1: Percent of post-abortion care (PAC) postpartum cases discharged with family planning methods, by region, facility type, and managing authority, Jordan EmONC, 2022



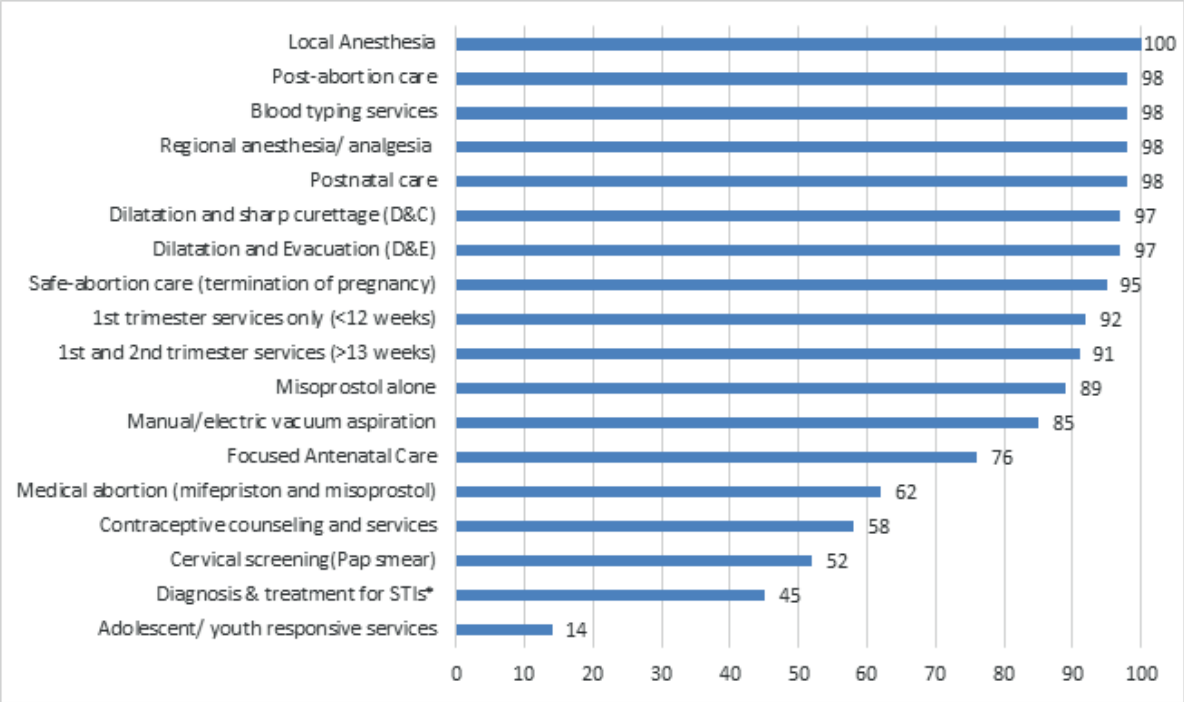
Chapter 5
Performance of Other MNH Services, Procedures, and Policy Environment

5.1 Availability of routine services and performance of other MNH services

This EmONC assessment also looked at availability of focused ANC, postnatal care, cervical screening, contraceptive counseling, diagnosis and treatment of sexually transmitted infections, adolescent/ youth responsive services, regional anesthesia, blood typing services, post-abortion care (PAC), safe abortion care (SAC), 1st trimester (< 12 weeks) services, 1st and 2nd trimester (> 13 weeks) services, manual/electric vacuum aspiration, D&E, D&C, medical abortion, and Misoprostol.

Figure 5.1.1 below, tables 5.1.1A and 5.1.2A in the appendix, show availability of the afore-mentioned services. Nationally, all the facilities assessed had provided local anesthesia, followed by PAC, blood typing services, regional anesthesia, and PNC (98% each). The least provided service in the facilities was adolescent/youth responsive services (14%), followed by diagnosis and treatment of STIs (45%). Tertiary-level hospitals were highly likely to have some of the services listed above than the rest of the facility types.

Figure 5.1.1: Percent availability of selected services by service type, Jordan EmONC, 2022



Focused antenatal care[31]: Nationally, 76% of the facilities assessed reported availability of this service with the highest availability in Northern (95%) and the lowest in the Middle region (64%). All the 10 tertiary-level hospitals had provided focused ANC; while 96% secondary/primary hospitals did so.

Post-natal care: post-natal care seems to be available in all facilities, irrespective of facility type and ownership.

Cervical screening: Unlike other maternal and child health services, only half (52%) of the facilities had been providing cervical screening services. Southern region has the lowest proportion of facilities (29%) that provide cervical screening. Similarly, secondary/primary hospitals had also the least performing facilities in this service. Private-owned facilities were highly likely to provide cervical screening than public/government facilities.

Post-abortion/Safe-abortion care: Nationally, almost all facilities (98%) had said they provide post-abortion care services. Similarly, 95% of the facilities had provided safe-abortion

care services too. Tertiary-level hospitals were highly likely providing safe-abortion (termination of pregnancy) care services than secondary/primary hospitals.

Adolescent and youth responsive services: This service was the least available service in the country as only 14% of the facilities did so. Government and private-not-for-profit facilities (20% each) were more likely providing this service than private-for-profit facilities (only 4% provided the service).

5.2 Length of stay for women after normal deliveries

Table 5.2.1 below shows the median length of stay in hours after normal delivery. The median length of stay was 24 hours with 97% of the total facilities assessed recorded this national average. Only three percent of the facilities had more than 24 hours of stay for a woman after normal delivery. All tertiary-level hospitals (10) recorded 36 hours as a median length of stay.

Table 5.2.1: Percent distribution of length of stay after normal delivery by district, facility type, managing authority, and location, Jordan EmONC, 2022

	Total number of facilities	Normal Delivery		
		Within 24 hours	24-72 hours	Median length of stay (hrs)
National	66	97	3	24
Region				
Northern	20	100	0	24
Middle	39	95	5	24
Southern	7	100	0	24
Facility Type				
Tertiary-level hospitals	10	90	10	36
Secondary/primary hospitals	56	98	2	24
Managing Authority				
Government/Public	35	97	3	24
Private-for-profit	26	96	4	24
Private-for-not-profit	5	100	0	24
Location				
Urban	54	96	4	24
Rural	12	100	0	24

* Includes NGO health facilities

(30) Focused ANC is a recommendation of at least 4 ANC visits in the resource-constrained setting. FANC interventions include: identification and management of obstetric complications such as preeclampsia, tetanus toxoid immunisation, intermittent preventive treatment for malaria during pregnancy (IPTp), and identification and management of infections including HIV, syphilis and other sexually transmitted infections (STIs); World Health Organization. WHO antenatal care randomized trial: manual for the implementation of the new model, WHO document WHO/RHR/01.30. Geneva: WHO; 2002.

5.3 Provision of other maternal and newborn care related services

Table 5.3.1 below, presents other services and procedures that should be offered by the facilities providing maternity services. The services reported here were self-reported, and not verified as the actual services provided in the facilities.

Nationally, episiotomy (100%) had been provided in all facilities, followed by administration of partograph (79%), and breech delivery (70%). Application of Chlorhexdine gel to the newborn's cord stump and provision of ARVs t the mother (11% each) were the least available services in the facilities. ARVs for mothers are essential to prevent mother-to-child transmission of HIV if her status is known during her ANC visits.

Table 5.3.1: Percentage of health facilities that provide other MNH services by region, facility type, and managing authority, Jordan EmONC, 2022

	Number of facilities	Routinely apply Chlorhexdine gel to newborn's cord stump	Alternative feeding (expressing breast milk and using a cup or spoon for feeding)	ARVs been given to newborns in the maternity / labor ward (PMTCT)	ARVs been given to seropositive mothers in maternity/ labor	Partograph been used to manage labor	Breech delivery been performed	Episiotomy been performed	Obstetric fistula been repaired	Reversible contraceptive methods been provided	Irreversible/ permanent FP method been provided
	n	%	%	%	%	%	%	%	%	%	%
National	66	11	47	14	11	79	70	100	18	62	59
Region											
Northern	20	15	50	0	0	65	75	100	30	70	70
Middle	39	10	44	18	13	85	67	100	13	51	51
Southern	7	0	57	29	29	86	71	100	14	100	71
Type of facility											
Tertiary level hospitals	10	30	70	40	40	90	90	100	40	70	80
Secondary/ primary hospitals/HCs	56	7	43	9	5	77	66	100	14	61	55
Managing Authority											
Public/ Government	35	9	51	14	11	77	77	100	20	86	63
Private-for-profit	26	12	35	12	12	81	58	100	19	27	54
Private-not-for-profit	5	20	80	20	0	80	80	100	0	80	60

Reasons for not-performing other services in the last three months prior to the assessment

Table 5.3.2 below, shows the percentage of health facilities that reported they had not provided the services and procedures mentioned above in the last three months, and the reasons why these services were not provided.

ARVs for the mothers was the least provided among other services in the facilities. The common reasons cited were no-indication/no-case (90%), followed by unsupportive policy (24%). Similarly, 82% of the facilities did not provide obstetric fistula and their main reason was no indication (96%). More than half (53%) of the facilities had not provided alternative feeding (expressing breast milk and using a cup or spoon) and their major reason for not performing it was unsupportive policy (69%), and lack of training (57%).

Table 5.3.2: Percentage of facilities that provided other MNH services in the last 3 months by type of facility, and reasons for not providing the service (among facilities that do deliveries), Jordan EmONC, 2022

Other MNH Services	Percentage of facilities that provided the service in the last 3 months (n=66)	Number of facilities that did not provide the service	Percentage of facilities that responded that the service was not provided in the last 3 months due to (multiple responses allowed):					
			Lack of staff	Training needed	Lack of supplies/ equipment	Weak management	Unsupportive or no policy	No indication/ clients
	%	n	%	%	%	%	%	%
Alternative feeding (expressing breast milk and using a cup or spoon for feeding)	47	35	14%	57%	46%	23%	69%	14%
ARVs been given to newborns in the maternity / labor ward (PMTCT)	14	57	0%	5%	11%	0%	25%	89%
ARVs been given to seropositive mothers in maternity / labor	11	59	0%	7%	12%	0%	24%	90%
Partograph been used to manage labor	79	14	14%	43%	29%	7%	71%	0%
Breech delivery been performed	70	20	0%	0%	0%	20%	35%	65%
Episiotomy been performed	100	0	0%	0%	0%	0%	0%	0%
Obstetric fistula been repaired	18	54	4%	4%	0%	0%	2%	96%
Reversible contraceptive methods been provided	62	25	4%	20%	24%	4%	80%	40%
Irreversible / permanent FP method been provided	59	27	4%	19%	15%	0%	30%	74%

5.4 Policy environment and user fees

User fees affects whether clients access health facilities smoothly or discourage them to seek services. Maternity services are free of charge or associated with insurance system in most countries. In addition, some countries institute different methodologies like: waiving poor women to access health facilities.

Formal service fees

Table 5.4.1 below, describes information on payment system and requirements to payments for selected services. Nationally, over three-quarters (77%) of the facilities indicated that payment was required before receiving services. Payments were also required for purchase of supplies/medicines for delivery (65%), treatment of Ob/gyn emergency (26%), and medicines and supplies for Ob/Gyn emergency (21%).

Payments were more common in facilities located in Southern region than the rest of the regions. As expected, private-for-profit facilities requested payments before receiving maternity services more likely than the rest in the group.

Close to one-fifth (18%) of the facilities, mentioned that fees were posted in a visible location in the facilities. Such response was a bit high in the Southern region (29%) than the rest. Of the 10 tertiary-level hospitals only one had such experience of posting fees in a visible public area inside the facilities. Private-not-for-profit owned facilities were, comparably, better in posting service fees than the rest of the facility ownerships (table 5.4.1).

Table 5.4.1: Percentage of facilities that charge formal fees and that expect women to pay for supplies, by region and facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	% Facilities charge formal payment				
		Payment required before receiving service	Purchase supplies/ medicines for delivery	Payment required before treatment of Ob/Gyn emergency	Medicines or supplies for Ob/Gyn emergency	Fee in a visible and public place
National	66	77	65	26	21	18
Region						
Northern	20	65	65	10	20	15
Middle	39	82	62	33	13	18
Southern	7	86	86	29	71	29
Facility Type						
Tertiary-level hospitals	10	70	80	10	10	10
Secondary/primary hospitals	56	79	63	29	23	20
Managing Authority						
Government/Public	35	77	69	14	26	17
Private-for-profit	26	85	62	38	12	15
Private-for-not-profit	5	40	60	40	40	40
Location						
Urban	54	81	67	30	22	17
Rural	12	58	58	8	17	25

* Includes NGO health facilities

Fee waivers

Table 5.4.2A in the appendix, presents proportion of facilities that charge women for food, bed, and fee waivers. Nationally, 41% and 20% of the facilities charged women separately for bed and for food, respectively. On the other hand, three-fourth (74%) of the facilities charge the mother for blood transfusion.

At national level, 47% of the facilities had a formal waiving system for poor women and 29% had an informal system. Quite a large proportion of facilities in the Southern region (71%) had a formal system of waiving poor women; followed by Northern region (60%). Tertiary-level hospitals, and private-not-for-profit owned facilities, were more likely to have a formal system to waive poor women than the rest of the facilities in the group. Such system of waiving poor women was more common in the rural facilities than urban located facilities.

Average costs of selected services

Facility and maternity in-charges were asked about the average cost of selected basic health services such as: admission, normal delivery, CS delivery, surgical abortion, medical abortion, and Neonatal Intensive Care Unit (NICU) cost per day (Table 5.4.3A in the appendix). However, the answer to this question was insufficient and with a wide range of costs. Hence, interpretation of this data requires careful considerations and it is advisable to generalize the data for the country level.

Nationally, the mean cost of admission was 52.34 Jordanian Dinar (JOD). Average cost of admission varied among the regions with highest in the Middle (78.92) to the lowest in Northern region (11.50). As expected, private-for-profit facilities charged more than public facilities. Admission fee was also high in urban located facilities (61.80) than rural (9.83).

On the average, normal delivery costs 220.86; CS delivery 504.20; surgical abortion (first trimester = 198.15, second trimester = 193.91); medical abortion (first trimester = 171.78 and second trimester = 170.65). The average daily cost of NICU services was recorded as 216.71 with high average cost in the private-for-profit facilities (338.85) and lowest in the government facilities (131.31). Generally, service costs were much higher in the private-for-profit facilities than public and private-not-for-profit.

Policy for the review of maternal and newborn deaths

As shown in table 5.4.4 below, only 71% of the total facilities had routine maternal death review process. Variations observed by facility type as all the 10 tertiary-level hospitals had done routine maternal death audits, while only 66% of the secondary/primary hospitals did so. Such practice was higher in the private-for-profit facilities (85%) than private-not-for-profit and government facilities. Registering maternal death by cause was available in 79% of the facilities with little variations among regions and facility types. However, registration of maternal death by cause was widely practiced among the five private-not-for-profit facilities than private-for-profit and government facilities. On the other hand, newborn case audits was generally very low in the country as only 58% of the facilities did so.

Table 5.4.4: Percent of facility reviewing maternal and newborn cases, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Routine Maternal death case audit	Register Maternal death by cause	Audits or case reviews of Newborn death/still birth routinely
	n	%	%	%
National	66	71	79	58
Region				
Northern	20	65	70	40
Middle	39	74	82	69
Southern	7	71	86	43
Facility Type				
Tertiary-level hospitals	10	100	80	80
Secondary/primary hospitals	56	66	79	54
Managing Authority				
Government/Public	35	60	69	46
Private-for-profit	26	85	88	73
Private-for-not-profit	5	80	100	60
Location				
Urban	54	72	83	63
Rural	12	67	58	33
* Includes NGO health facilities				

5.5 Respectful maternity care (RMC)

The WHO Intrapartum Care Guideline[32] recommends RMC as a key intervention for a positive childbirth experience. Respect and dignity, a companion of choice, effective communication by maternity staff, freedom to move around in the early stage of labor, and

comfortable birth position are the major components of RMC. This EmONC assessment has not collected data on all aspects of RMC but captured indications of status of RMC through questions related to policy, infrastructure and accompanying companionship during labor and delivery. This is a self-reported information and the data was not validated by the respective agency to certify facilities for this service.

At policy level, the government encourages facilities to provide quality maternal and newborn health services, and thereby register them as mother-baby friendly birthing facility. However, only a third of the facilities (33%) reported their facilities were qualified as mother-baby friendly birthing place. A wide variation was observed in the mother-baby friendly birthing place, with the highest in Southern region (57%) and lowest in Northern region (30%) (table 5.5.1A in the appendix). Tertiary-level hospitals were twice more likely being certified by mother-baby friendly birthing place as secondary/primary hospitals.

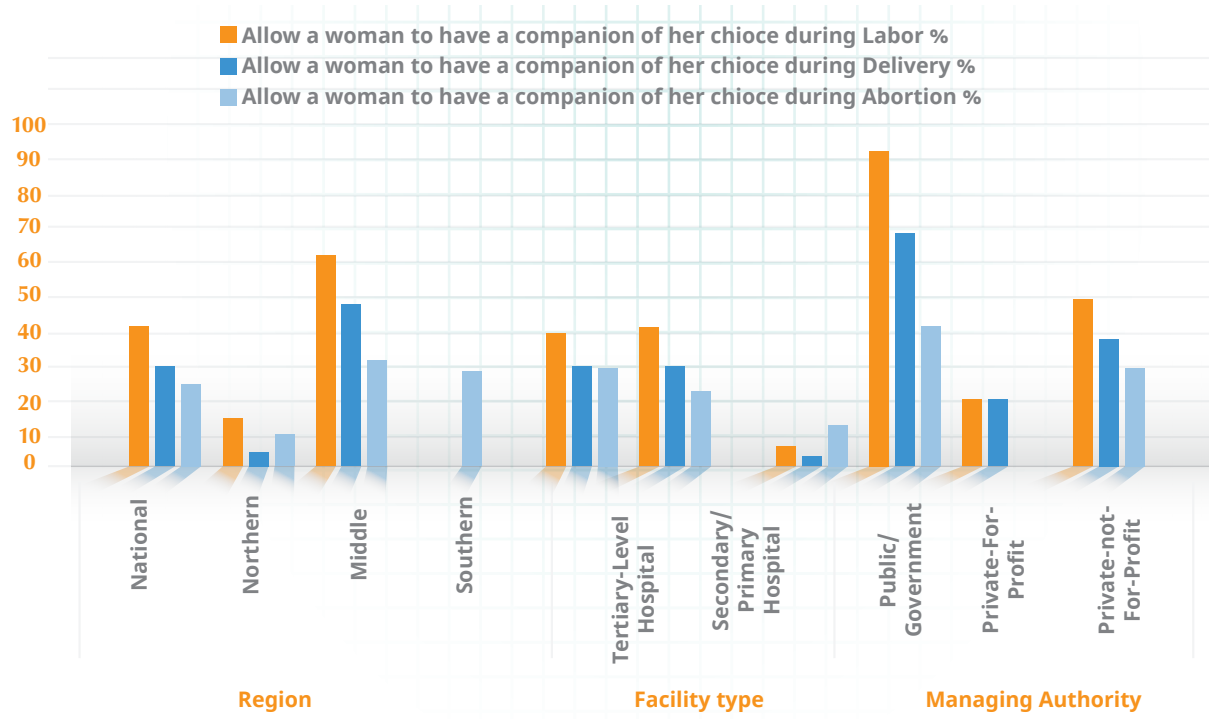
Facilities were also reported that women are allowed to have their companion of choice during labor (41%), during delivery (30%), and during abortion (24%). Southern region had no facility that allow

[32]World Health Organization. WHO Recommendations: Intrapartum Care for a Positive Childbirth Experience. Geneva, Switzerland: World Health Organization, 2018 (http://www.who.int/reprod uctivehealth/publications/intrapartum-care-guidelines/en/).

a woman to have companion of her choice during labor and delivery (figure 5.5.1 below and table 5.5.1A in the appendix).

With regard to infrastructure, curtains or means of providing patient privacy exists in all facilities. Waiting area for visitors and families also exist in 92% of the facilities. Functioning and sanitary toilet for patient use and toilet for visitors and family use were also available in all the facilities and 86% of the facilities, respectively (table 6.3.1 in the infrastructure chapter 6).

Figure 5.5.1: Percentage of facilities that allowed a woman to have a companion of her choice during labour and delivery by district, Jordan EmONC, 2022



Chapter 6
Facility Infrastructure

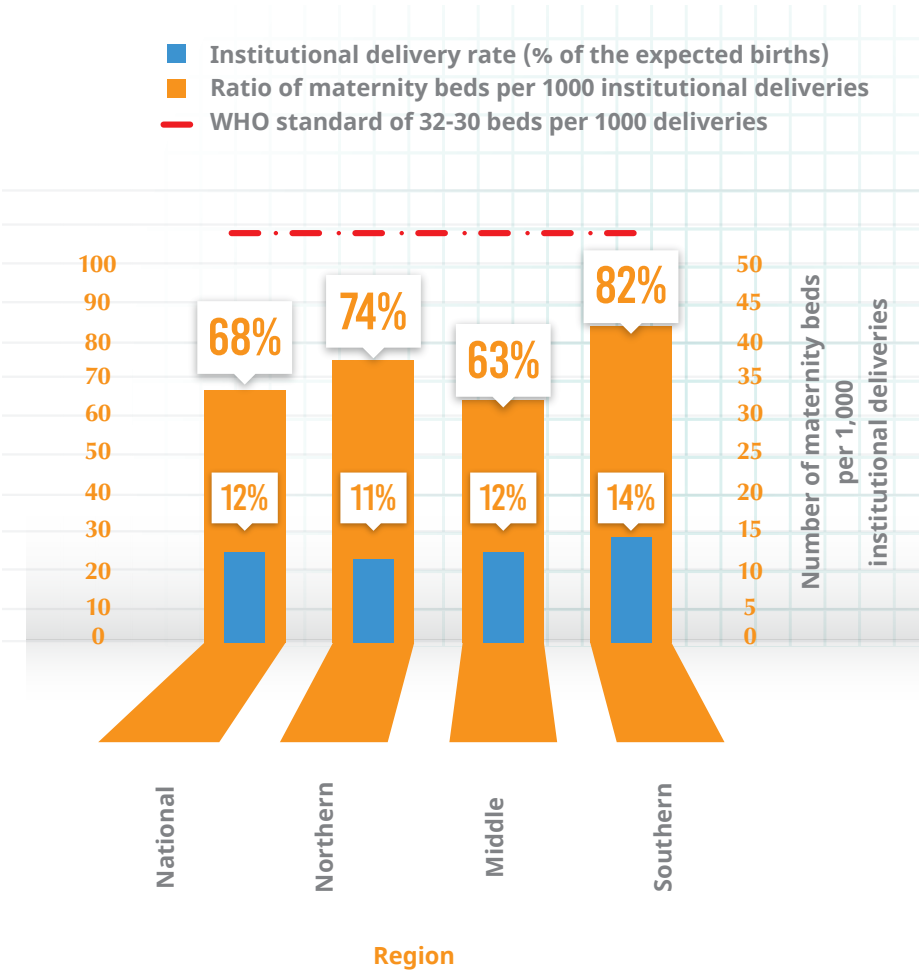
Facility Infrastructure is one of the components of health system building blocks to provide quality healthcare services . This chapter presents ratio of beds to deliveries, availability of separate rooms for maternal and newborn health services, availability of electricity, modes of communication, and other infrastructure related elements of the health system.

6.1 Number and ratio of beds to deliveries

The number and ratio of beds per 1,000 deliveries is often used for the criteria to determine the level and load of care in health facilities. As stipulated in the international standards , it is recommended that there should be at least 30-32 beds for every 1,000 deliveries at the first level referral facilities such as district hospitals. Figure 6.1.1 and map 6.1.1 below, as well as table 6.1.1A in the appendix presents such information.

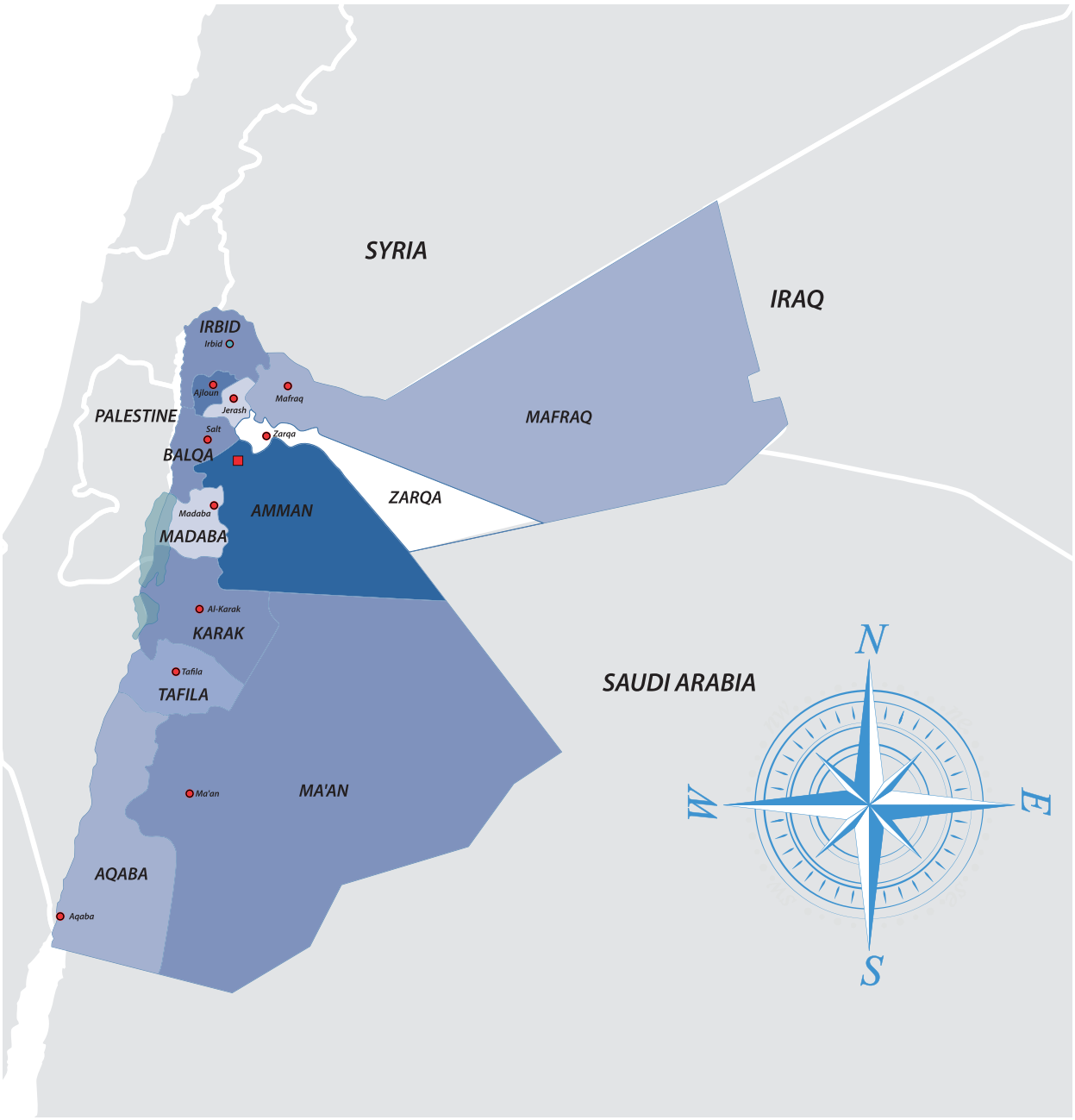
The ratio of maternity beds to 1000 institutional deliveries (12) was much lower than the international standards (30-32 per 1000 deliveries) at national level. Comparatively, Southern region had a better ratio of maternity beds (14) to 1000 deliveries; but all regions fell below the international standards.

Figure 6.2.1: Ratio of beds to 1000 deliveries by region, Jordan EmONC, 2022



Map 6.1.1: Ratio of maternity beds to 1000 institutional deliveries by governorate, Jordan EmONC 2022

Ratio of maternity beds to 1000 institutional deliveries



*WHO standard of 30-32 beds per 1000 deliveries

8 — 26

Mafraq	13%	Balqa	16%	Zarqa	12%		
Tafielh	13%	Madaba	8%	Ma'an	18%		
Irbid	18%	Amman	26%	Karak	18%		
Aljoun	20%	Jarash	9%	Aqaba	12%		

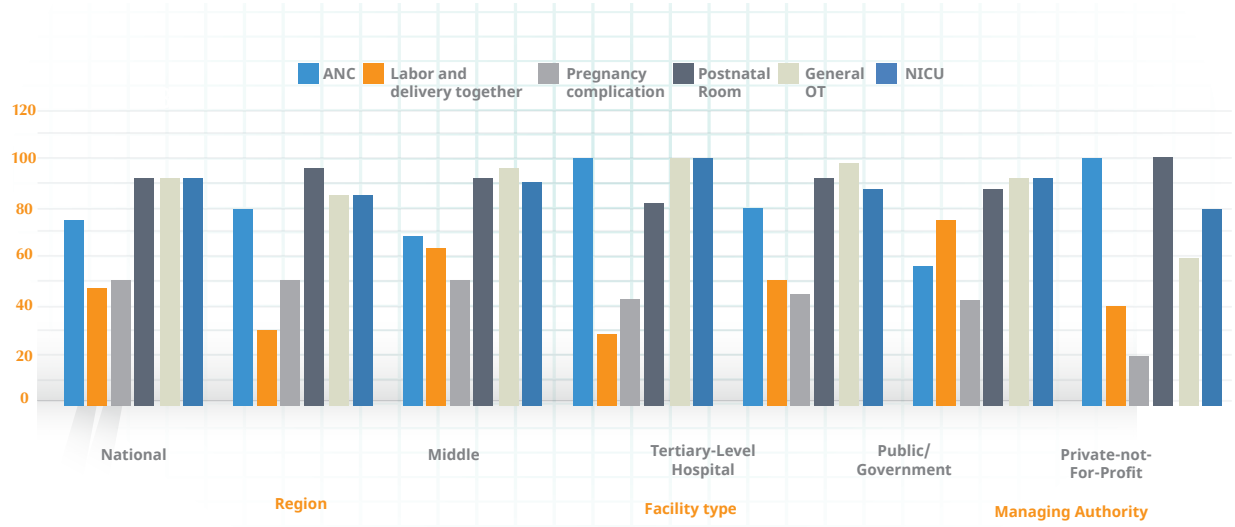
6.2 Availability of separate rooms for maternal and newborn health services

Figure 6.2.1 below, table 6.2.1A and 6.2.2A in the appendix show the percentage of facilities with separate rooms or spaces for maternal and newborn care services. Nationally, 92% of the facilities had separate rooms for postnatal room; 92% had a general operating theater; 76% had a separate ANC room. A low proportion of facilities had separate labor and delivery rooms (52% each).

Tertiary-level hospitals were more likely to have separate spaces/rooms of ANC, labor and delivery together, pregnancy complications, postnatal room, Ob/Gyn, separate laboratory room, and newborn corner/neonatal care unit than secondary/primary hospitals. To the contrary, secondary/primary hospitals were more likely to have general operating theater than tertiary hospitals.

Nationally, NICU and pediatric ward were available in 89% and 74% of the facilities, respectively. NICU was highly likely available in private-for-profit facilities than the rest; while pediatric ward was more likely to exist in government owned facilities than the rest (Figure 6.2.1, table 6.2.1A and 6.2.2A).

Figure 6.2.1: Percent of facilities with separate room or space for selected maternal and newborn services by type of facility, Jordan EmONC, 2022



6.3 Other infrastructure in labor and delivery

Maternity in-charges were asked about availability of some selected infrastructure elements in the labour and delivery area. The data collectors made observations of these infrastructure elements on their availability and functionality. As shown in table 6.3.1 below, almost all facilities confirmed that they had sufficient light both during the day and at night. All the facilities had a functional toilet for patient use, heating/heating arrangements, and curtains/means of providing patient use. A functioning air conditioning and means of ventilation were available in 95% and 91% of the facilities, respectively. Relatively, only 86% of the facilities had functioning toilet for visitors and family use at national level. All the 10 tertiary hospitals had this area.

Table 6.2.3: Percentage of facilities that have the indicated infrastructure in the maternity area1, by region, type of facility, managing authority, and location, Jordan EmONC, 2022

	Total facilities	Sufficient light during the day	Sufficient light at night	Means of ventilation	Functioning toilet for patient use	Heating/ heating arrangements	Functional fan/air conditioning	Curtains/ means of providing patient privacy	Waiting area for visitors and family	Functioning toilet for visitors' and family use
	n	%	%	%	%	%	%	%	%	%
National	66	97%	97%	91%	100%	100%	95%	100%	92%	86%
Region										
Northern	20	100%	100%	80%	100%	100%	90%	100%	90%	85%
Middle	39	95%	95%	97%	100%	100%	97%	100%	92%	92%
Southern	7	100%	100%	86%	100%	100%	100%	100%	100%	57%
Type of facility										
Tertiary level hospitals	10	100%	100%	100%	100%	100%	90%	100%	100%	100%
Secondary/ primary hospitals/HCs	56	96%	96%	89%	100%	100%	96%	100%	91%	84%
Managing Authority										
Public/ Government	35	100%	97%	83%	100%	100%	91%	100%	89%	80%
Private-for-profit	26	96%	96%	100%	100%	100%	100%	100%	96%	92%
Private-not-for-profit	5	80%	100%	100%	100%	100%	100%	100%	100%	100%
Managing Authority										
Location	54	98%	96%	93%	100%	100%	94%	100%	96%	85%
Urban	12	92%	100%	83%	100%	100%	100%	100%	75	92

* Includes NGO health facilities

1. For hospitals, the maternity area is likely to be a specific room and these questions are related to the infrastructure available in that specific room. Health centers may not have a specific room devoted for a maternity and these questions are therefore related to whether the facility, in general, has the infrastructure available.

6.4 Availability of electricity

Sources of electricity

Electricity is one of the key utilities for the daily operation of health facilities to help medical equipment work and facilitate quality service delivery. Table 6.4.1 below, shows availability of electricity, and whether there were interruptions or not by region, facility type, operating agency and location. All the facilities in the country were connected to the grid or had a central power source. Nationally, of the total 66 facilities connected to the grid, 86% had back-up generator with fuel operated, 52% had generator with UPS, and 26% had a solar powered back-up system. All of the facilities with a generator/any back-up system, were periodically checking functionality and full automation of the back-up generators.

Table 6.4.1: Percentage of facilities according to primary source of electricity, by district, facility type and managing authority, Jordan EmONC, 2022

	Total number of facilities	Connected to the grid/ central power source	Generator (fuel operated)	Generator (UPS)	Solar power	Among facilities with power from grid, interruption for over 2 hours in last 7 days	Among facilities with a Generator, that periodically checked and fully automated
						> 2hours at a time	
		%	%	%	%	%	%
National	66	100%	86%	52%	26%	11%	100%
Region							
Northern	20	100%	80%	45%	15%	5%	100%
Middle	39	100%	89%	55%	32%	10%	100%
Southern	7	100%	86%	57%	29%	29%	100%
Facility Type							
Tertiary-level hospitals	10	100%	80%	20%	20%	20%	100%
Secondary/ primary hospitals	56	100%	87%	58%	27%	9%	100%
Managing Authority							
Government/ Public	35	100%	86%	51%	17%	9%	100%
Private-for-profit	26	100%	84%	60%	44%	12%	100%
Private-for-not-profit*	5	100%	100%	20%	0%	20%	100%
Location							
Urban	54	100%	87%	55%	30%	9%	100%
Rural	12	100%	83%	42%	8%	17%	100%
* Includes NGO health facilities							

Interruptions in electricity

Nationally, of those facilities connected to the grid, a little over a tenth (11%) of the facilities had experienced power interruptions for over 2 hours in the last seven days prior to the assessment. The interruption was worse in the facilities located in the Southern region as close to a third of them had experienced such interruptions. Similarly, interruptions of electricity were frequent in the secondary/ primary hospitals and private-not-for-profit facilities, than in tertiary-level hospitals and public or private-for-profit facilities. Health facilities that reside in rural parts of the country were highly likely experiencing power shortages than those in urban-located facilities (Table 6.4.1 above).

Functioning electricity in selected maternity service areas

Tables 6.4.2A and 6.4.3A in the appendix, present availability and functionality of electricity in selected maternity service areas/rooms at the time of the assessment. Accordingly, all facilities with a separate ANC, labor, delivery, and blood bank rooms had a functioning electricity at the time of the assessment. In general, over 91% of all the facilities had functioning electricity in the maternity service areas. Almost all facilities (97% each) with newborn corner attached to delivery and neonatal special care unit had a functioning electricity in the specified rooms at the time of the survey. Similarly, 96% and 95% (each) of the facilities with pediatric ward, newborn corner, and NICU had a functioning electricity in the rooms, respectively. There w no much variation in the availability of electricity in specific maternity rooms and newborn areas by region, facility type, managing authority, and location of facilities.

6.5 Availability of water

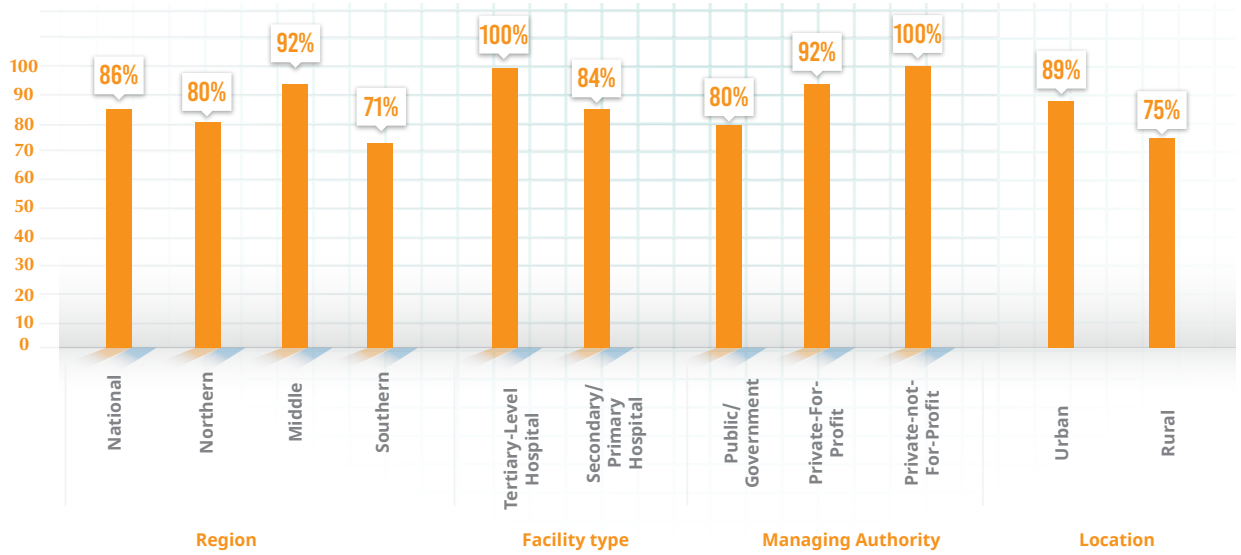
Water is also one of the basic necessities of life and a key amenity for health facilities for infection prevention and other basic service functions. Availability of water is universally available in all facilities in Jordan. Due to this prior knowledge and facts, the TWG decided to drop questions related to availability of water in the infrastructure module. So, we did not assess availability of water in the health facilities.

6.6 Availability of health management information system (HMIS)

Health information systems is in general, one of the key components of the six building blocks of monitoring a health system for a country. With this assumption, EmONC assessments usually incorporate availability and functionality of HMIS to improve evidence-based decision making. Accordingly, figure 6.6.1 below and table 6.6.1A in the appendix present such information. Nationally, only 86% the facilities had HMIS in-place to collect Maternal and Newborn Health (MNH) service data. Of the 57 facilities with HMIS system, 95% had the practice of compilation and reporting of routine MNH services. About 96% had the practice on monthly basis, while the remaining 4% did so on weekly basis. HMIS system was more likely available in facilities located in the Middle region, tertiary-level facilities, NGO-based facilities, and urban-located facilities than the rest in the groups. In the contrary, compiling routine MNH data was highly likely practiced in the facilities located in the Middle, rural-based, secondary/primary hospitals than the rest in the groups.

Of the 57 facilities with HMIS, 91% had a responsible person assigned for MNH service data. Such a responsible person of routine MNH service data was more likely available in the facilities in the Southern region, urban-located facilities, and government-owned facilities than the rest in their respective groups (table 6.6.1A in the appendix).

Figure 6.6.1: Percent of facilities with HMIS system in-place by region, facility type, managing authority, and location, Jordan EmONC, 2022



Large proportion of the facilities with HMIS system were routinely calculating indicators for institutional CS delivery rate (86%), followed by institutional delivery rate (70%). Calculation of institutional low birth weight, stillbirth rate, and institutional adolescent birth rate in 46%, 37%, and only in 7% of the facilities, respectively. Routine collection of HMIS data on post-abortion or safe-abortion care was generally very low (below 14%) (table 6.6.2A in the appendix).

Chapter 7
Human Resources

Availability of qualified health workforce is one of the building blocks of a health system[35]. This EmONC assessment had collected information on the availability of health workers at the time of the assessment, whether they are working 24/7, staffing patterns and regulatory policies that allow the health workers to do EmONC and EmNeC signal functions and coverage of key health workers to population.

Qualification of the health workers was purely based on self-reported data, and hence, verification was not done. The overall staffing (current availability of health workers, those that left, and posted) and performance of signal functions by each health worker cadre was also captured through the interview of facility managers and maternity in-charges. Some of the health workers, that had worked in multiple health facilities with payroll systems, might be double counted, and this could overestimate few of the cadres in some facilities.

7.1 Staffing standards based on established positions

Staffing standards were calculated based on facility's self-reported established positions (required staffing). Facility standards give more meaning if it is based on facility accreditation system with regards to staffing and basic health service packages. However, the assessment team could not get such data for Jordan. Hence, standards are taken as number of established positions, while actual number of staffing was obtained from the facility interviews. According to table 7.1.1 below, there were shortages of staffing in all the cadres at national level with the highest deficit in staff nurse (1,714), followed by medical doctors (GP) (495), practical nurse (365), and midwife (297). With regard to facility types, the gap of staff nurse, practical nurse, midwife, and Ob/Gyn was observed high among general hospitals any other facilities. Medical doctors (GPs) were more likely to be a deficit in referral/specialized hospitals than other facility types.

[35]WHO, 2010. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva, Switzerland BN 978 92 4 156405 2

Table 7.1.1: Human resource standards, gaps, and percentage of facilities with minimum required Human Resources in government/public health facilities, by facility type, Jordan EmONC, 2022

	Facility type	Medical doctor (GP)	Obstetrician/ Gynecologist	General Surgeon	Pediatrician	Neonatologist	Practical Nurse	Midwife	Staff Nurse	Anesthesiologist (MD)	Anesthetist Technician	Lab Technician
Established positions	National	3,455	498	394	417	110	2,904	1,755	10,663	419	748	1,648
	Teaching hospitals	937	25	34	29	5	262	43	1,528	34	65	121
	Referral/ specialized Hospital	594	97	16	59	19	238	497	1,345	24	76	248
	General hospital	1,922	366	344	325	86	2,403	1,194	7,785	361	607	1,274
	Health Centre	2	10	-	4	-	1	21	5	-	-	5
Actual number of staff	National	2,960	440	371	333	83	2,539	1,458	8,949	368	638	1,438
	Teaching hospitals	770	23	33	28	5	219	29	1,377	24	61	97
	Referral/ specialized Hospital	426	91	11	48	16	199	379	880	27	66	198
	General hospital	1,762	316	319	253	62	2,120	1,029	6,687	317	511	1,138
	Health Centre	2	8	-	4	-	1	20	5	-	-	5
Gap	National	(495)	(58)	(23)	(84)	(27)	(365)	(297)	(1,714)	(51)	(110)	(210)
	Teaching hospitals	(167)	(2)	(1)	(1)	-	(43)	(14)	(151)	(10)	(4)	(24)
	Referral/ specialized Hospital	(168)	(6)	(5)	(11)	(3)	(39)	(118)	(465)	3	(10)	(50)
	General hospital	(160)	(50)	(25)	(72)	(24)	(283)	(165)	(1,098)	(44)	(96)	(136)
	Health Centre	-	(2)	-	-	-	-	(1)	-	-	-	-

7.2 Recent postings of health workers and net gain/loss

As shown in table 7.2.1 below, except pediatrician and midwives that showed a net loss in tertiary hospitals by one and four, respectively, there was a net gain in the rest of the health workers. Similarly, general surgeons, obstetrician/gynecologists, pediatricians, practical nurses, lab technicians showed a net loss in staffing patterns in secondary/primary hospitals.

Table 7.2.1: Number of health workers, currently employed, and staff turnover (left, posted/ hired) in the last 12 months, by health worker cadre and facility type, Jordan EmONC, 2022

Health worker cadre	Tertiary-level hospitals (n=10)				Secondary/primary hospitals (n=56)			
	Currently employed	:In the last 12 months			Currently employed	:In the last 12 months		
		Staff left	Staff posted/ hired	Net gain (loss)		Staff left	Staff posted/ hired	Net gain (loss)
Medical doctor (GP)	1,196	121	314	193	1,764	293	324	31
Obstetrician/ Gynecologist	114	2	9	7	326	55	47	(8)
General Surgeon	44	2	3	1	327	58	47	(11)
Pediatrician	76	2	1	(1)	257	52	49	(3)
Neonatologist	21	-	1	1	62	2	18	16
Practical Nurse	418	-	5	5	2,121	143	137	(6)
Midwife	408	48	44	(4)	1,050	76	114	38
Staff Nurse	2,257	95	254	159	6,692	627	776	149
Anesthesiologist (MD)	51	1	4	3	317	54	54	-
Anesthetist Technician	127	4	4	-	511	52	73	21
Lab Technician	295	8	9	1	1,143	88	87	(1)

7.3 Extended leave, provision of care, and basic and comprehensive EmONC training

Figure 7.3.1 below, and table 7.3.1A in the appendix, show percentage of total health workers on leave, providing obstetric and newborn care, and trained in EmONC, by type of facility and health workers.

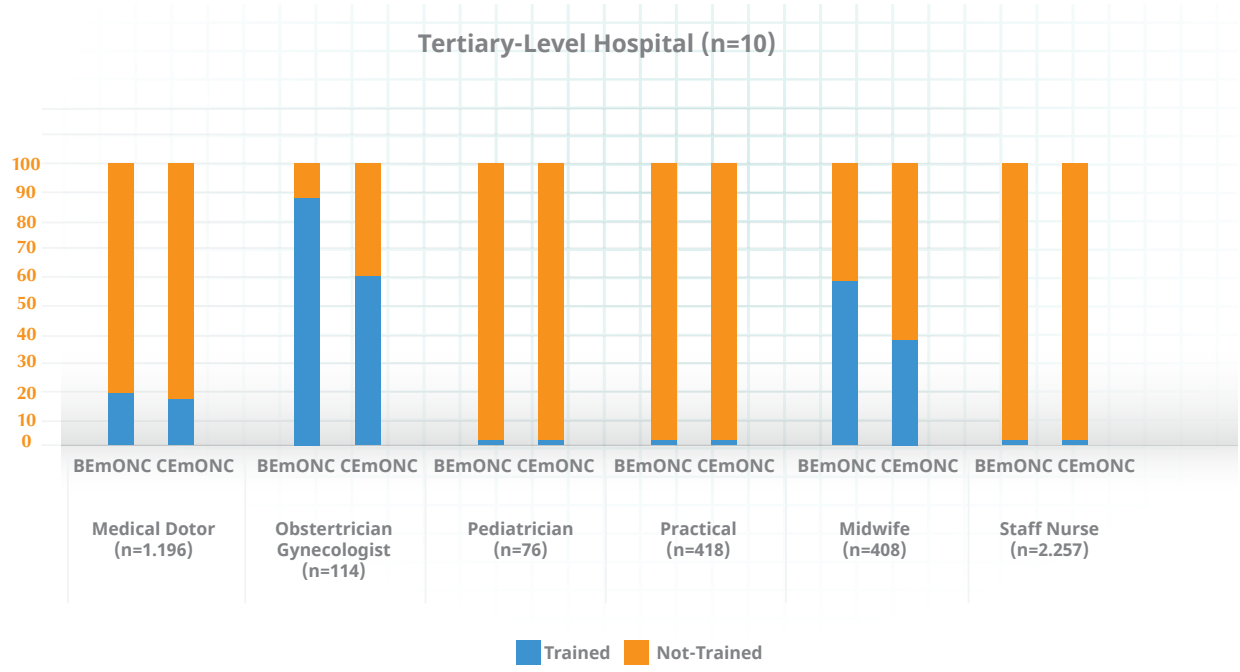
In tertiary-level hospitals, 6% and 2% of obstetricians/gynecologists and midwives were on extended leave; while 94% and 96% of those who were not on extended leave had provided obstetric and newborn care, respectively. In the contrary, 9% of staff nurse were on extended leave, but only 31% of them who were not on extended leave had provided obstetric and newborn care.

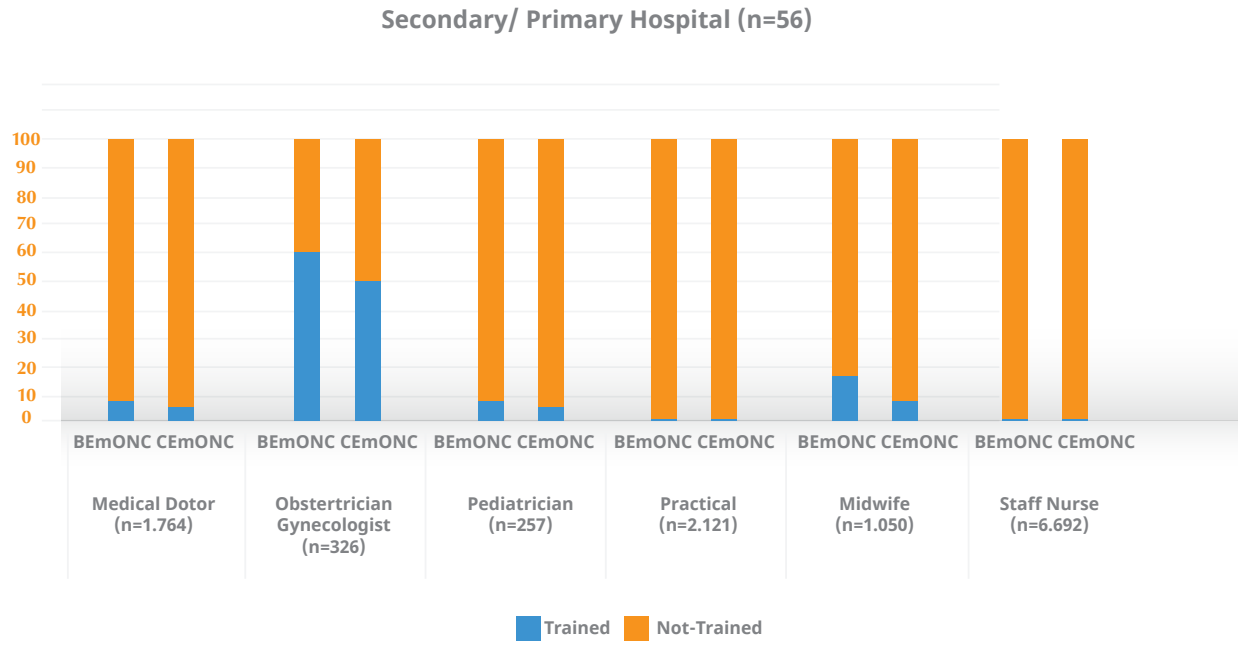
In secondary/primary hospitals, 5% each of obstetricians/gynecologists and midwives were on extended leave; while 99% and 93% of those not on extended leave had provided obstetric and newborn care, respectively. Like tertiary-level hospitals, staff nurses were one of the least in providing obstetric and newborn care in secondary/primary hospitals.

In tertiary-level hospitals, obstetricians/gynecologists, midwives, and medical doctors (GPs) were more likely to be trained on BEmONC and CEmONC than the rest of the cadres. In secondary/

primary hospitals, obstetricians/gynecologists, pediatricians, and midwives were highly likely trained on BEmONC than the rest of the cadres; while Obstetrician/gynecologists, pediatricians, and midwives were more likely to be trained on CEmONC than the rest of the cadres (table 7.3.1a in the appendix)

Figure 7.3.1: Percent of key health workers in tertiary-level and secondary/primary hospitals with basic and comprehensive EmONC training, by health worker cadre, Jordan EmONC, 2022





7.4 Availability of health workers 24/7

Health facilities are required to be open 24 hours a day and 7 days a week for a primary reason that labor, delivery, and pregnancy related complications are unpredictable and may occur at any given time in 24 hours. Hence, the facilities need to be equipped with competent staff and functional medical equipment and supplies and commodities. With this assumption, EmONC assessments are designed to have questions related to availability of Human Resources 24 hours a day, and 7 days a week.

As shown in table 7.4.1 below, all tertiary-level hospitals had at least one medical doctor, obstetrician/gynecologist, midwife, staff nurse, anesthesiologist (MD), and nurse anesthetist on-staff. Of these, all of the tertiary-level hospitals had at least one midwife, staff nurse, anesthesiologist (MD), and nurse anesthetist and 90% (each) of the facilities with at least one medical doctor and obstetrician/gynecologist present on-site from Sunday to Thursday day time. At least one practical nurse, midwife, and staff nurse were available on-site in all the 10 tertiary-level hospitals from Sunday to Thursday daytime and at night, Friday and Saturday daytime and at night. In general, practical nurse, midwives, and staff nurse were the most frequently available staff in tertiary-level hospitals.

In secondary/primary hospitals, all the 56 secondary/primary hospitals had at least one midwife and staff nurse available and present from Sunday to Thursday daytime and in more than 95% of the facilities present Sunday to Thursday night time, Friday and Saturday daytime and night time. Of the 50 secondary/primary hospitals with at least one obstetrician/gynecologist available, 94% of them had an obstetrician/gynecologist present on-site from Sunday to Thursday daytime; while only 64%, 60%, and 58% of the secondary/primary hospitals had at least one obstetrician/gynecologist present from Sunday to Thursday night time, Friday and Saturday daytime, and night time, respectively. Neonatologists were the least on staff as only 19 of the 56 secondary/primary hospitals had this group of cadres. Of the 19 secondary/primary hospitals with at least one neonatologist on staff, 95% had at least one neonatologist available on-site from Sunday to Thursday daytime, 63% had them during Sunday to Thursday night time, 53% and 42% had them during Friday and Saturday daytime and night time, respectively. Staff nurse and midwives were the most frequently available health workers in the secondary/primary hospitals (Table 7.4.1).

Across all facilities, health workers were more likely to present on-site during the day than during the night and over the weekends and holidays. The gap of staff presence during the day and during the night was high among obstetricians/gynecologists, general surgeons, neonatologists, pediatricians, and anesthesiologists (MDs).

Table 7.4.1: Percentage of health facilities with health workers present and on call (staff coverage during a normal week) at certain times, by health worker cadre, Jordan EmONC, 2022

	of % Facilities with at least one of the cadre on staff	Number of health facilities with at least one cadre on staff	Sun-Thu night		Sun-Thu night		Fri-Sat & Holidays daytime		Fri-Sat & Holidays night	
			Present On-site	On call	Present On-site	On call	Present On-site	On call	Present On-site	On call
			%	%	%	%	%	%	%	%
Tertiary-level hospitals (n=10)										
Medical doctor	100%	10	90%	70%	80%	70%	90%	70%	80%	70%
Obstetrician/ Gynecologist	100%	10	90%	90%	80%	100%	60%	100%	50%	100%
General surgeon	30%	3	100%	67%	100%	67%	33%	100%	33%	100%
Pediatrician	70%	7	86%	86%	57%	86%	43%	86%	43%	100%
Neonatologist	70%	7	100%	86%	86%	100%	57%	100%	57%	100%
Practical Nurse	90%	9	100%	78%	100%	78%	100%	78%	100%	78%
Midwife	100%	10	100%	80%	100%	80%	100%	80%	100%	80%
Staff Nurse	100%	10	100%	80%	100%	80%	100%	80%	100%	80%
Anesthesiologist (MD)	100%	10	100%	80%	70%	100%	70%	100%	70%	90%
Nurse Anesthetist	100%	10	100%	80%	90%	80%	90%	80%	90%	80%
Laboratory technician	90%	9	100%	78%	89%	78%	100%	78%	89%	78%
Secondary/primary hospitals (n=56)										
Medical doctor	100%	56	98%	57%	96%	63%	95%	61%	95%	59%
Obstetrician/ Gynecologist	89%	50	94%	68%	64%	78%	60%	80%	58%	76%
General surgeon	82%	46	96%	63%	70%	72%	70%	72%	63%	72%
Pediatrician	80%	45	98%	60%	76%	62%	73%	64%	69%	67%
Neonatologist	34%	19	95%	68%	63%	84%	53%	84%	42%	89%
Practical Nurse	98%	55	93%	51%	87%	53%	87%	49%	85%	49%
Midwife	100%	56	100%	59%	96%	61%	95%	59%	96%	59%
Staff Nurse	100%	56	100%	59%	96%	61%	95%	59%	96%	59%
Anesthesiologist (MD)	91%	51	96%	67%	80%	71%	80%	65%	80%	63%
Nurse Anesthetist	96%	54	100%	56%	93%	57%	91%	54%	93%	54%
Laboratory technician	98%	55	100%	55%	96%	58%	95%	55%	95%	55%

7.5 Policies that allow health workers to perform EmONC, EmNeC, and routine obstetric care signal functions

EmONC signal functions

Collecting information on policies, that allow health workers performing EmONC signal functions, help programmers and managers to compare what the policy says, and what the actual performance is, to influence policy changes. In this regard, Jordan's EmONC TWG collected information on policies that allow the different health worker cadres that perform the EmONC signal functions. Accordingly, obstetricians/gynecologists were the only cadres that were allowed to perform all the basic and comprehensive EmONC signal functions; while a midwife was allowed to provide all basic signal functions. Nurses, on the other hand, were allowed to perform only for few of the basic EmONC signal functions. In the table "Y" means the specified health worker was allowed to provide the stated EmONC signal function and "N" means not allowed to perform the specified signal function (table 7.5.1A in the appendix).

EmNeC signal functions

Similar to the EmONC signal functions, the TWG collected information on policies that allow health worker cadres perform EmNeC signal functions (table 7.5.2A in the appendix). Accordingly, midwives, pediatricians, and neonatologists were the key health workers that were allowed to perform EmNeC signal functions than the rest of the cadres.

Contraceptives, abortion related services, and prevention of mother-to-child transmission of HIV (PMTCT)

Table 7.5.3.A in the appendix, presents policies that allow health workers perform contraceptives, abortion related services and PMTCT. Accordingly, obstetricians/gynecologists were the most likely cadres that were allowed to perform contraceptives, abortion related services and PMTCT than the rest of the cadres. Midwives and nurses were allowed to provide contraceptives.

7.6 Facilities that actually provide EmONC signal functions by health worker cadre

Table 7.6.1 below, shows the percentage of health facilities with at least one cadre of the category that performed each of the signal functions. The table shows the percentage and number of tertiary and secondary/primary hospitals with at least one health worker on-staff. Among these facilities, percent of facilities with a health worker cadre that performed each of the signal functions by that category of that cadre. Accordingly, in tertiary hospitals, midwives and staff nurses were the most likely cadres that performed antibiotics, oxytocics, anticonvulsants, and blood transfusion; while medical doctors and Ob/Gyns were highly likely performed manual removal of placenta, removal of retained products of conception and CS delivery. A similar percent distribution was observed among secondary/primary hospitals.

Table 7.6.1: Percentage of health facilities that provide EmONC signal functions, by health worker cadre, Jordan EmONC, 2022

	% of facilities with at least one cadre present	Number of facilities with at least one cadre present	Among facilities with at least one of the cadres on staff, the percent where that cadre provides:								
			Antibiotics	Oxytocics	Anti-convulsants	Manual removal of placenta	Removal of retained products		Assisted vaginal delivery	Perform obstetric surgery (eg. Cesarean delivery)	Blood transfusion for the mother
							MVA/ EVA	D&C or D&E	Vacuum extraction or forceps		
	%	n	%	%	%	%	%	%	%	%	%
Tertiary-level hospitals (n=10)											
Medical doctor/ Ob/Gyn	100%	10	50%	60%	50%	100%	90%	100%	100%	100%	80%
Pediatrician/ Neonatologist	90%	9	56%	0%	11%	0%	0%	0%	0%	0%	33%
Practical Nurse	90%	9	22%	22%	11%	0%	0%	0%	0%	0%	11%
Midwife	100%	10	100%	100%	90%	50%	0%	10%	0%	0%	70%
Staff Nurse	100%	10	100%	80%	90%	0%	10%	0%	0%	0%	80%
Anesthesiologist (MD)	100%	10	80%	50%	50%	0%	10%	0%	0%	0%	90%
Secondary/primary hospitals (n=56)											
Medical doctor/ Ob/Gyn	100%	56	73%	75%	79%	93%	88%	91%	91%	91%	79%
Pediatrician/ Neonatologist	80%	45	62%	4%	44%	0%	2%	0%	0%	0%	18%
Practical Nurse	98%	55	9%	2%	4%	0%	0%	0%	0%	0%	2%
Midwife	100%	56	96%	93%	96%	36%	9%	9%	5%	2%	86%
Staff Nurse	100%	56	98%	63%	82%	5%	5%	0%	4%	7%	84%
Anesthesiologist (MD)	91%	51	67%	18%	49%	0%	0%	5%	2%	14%	63%

D&C = dilation and curettage; E&C = evacuation and curettage; MVA = manual vacuum aspiration.

7.7 Facilities that actually provide EmNeC signal functions by health worker cadre

Table 7.7.1 below, shows percent of health facilities with at least one cadre of the category that performed each of the EmNeC signal functions. Accordingly, midwives and staff nurse were the most likely cadres of staff that provided antenatal corticosteroids for preterm labor, antibiotics for preterm labor, and oxygen for newborns in tertiary level hospitals. Neonatologists, pediatricians, and staff nurse were the most frequently available staff that provided antibiotics for neonatal sepsis and administered IV fluids for newborns in this category of hospitals. However, KMC was highly likely provided by medical doctors (GPs), obstetricians/gynecologists, and midwives.

In secondary/primary hospitals, medical doctors (GPs), obstetricians/gynecologists, midwives, and staff nurses were the widely available staff that provided antenatal corticosteroids for preterm labor and antibiotics for preterm labor; while neonatologists, pediatricians, and staff nurses were the most likely cadres of health workers that provided antibiotics for neonatal sepsis and oxygen for newborns. In this category of facilities, midwives were the key staff for providing KMC for newborns.

Table 7.7.1: Percentage of health facilities that provide emergency newborn signal functions, by health worker cadre, Jordan EmONC, 2022

	% of facilities with at least one cadre present	Number of facilities with at least one cadre present	Corticosteroids for preterm labor	Antibiotics for Preterm labor	Antibiotics for neonatal sepsis	KMC	Newborn resuscitation with bag and mask	Oxygen for newborn	IV fluids to newborns
	%	n	%	%	%	%	%	%	%
Tertiary-level hospitals (n=10)									
Medical doctor/ Ob/ Gyn	100%	10	70%	80%	20%	60%	50%	40%	0%
Pediatrician/ Neonatologist	90%	9	0%	11%	89%	22%	0%	89%	78%
Practical Nurse	90%	9	11%	11%	11%	11%	22%	56%	44%
Midwife	100%	10	90%	90%	20%	60%	100%	100%	40%
Staff Nurse	100%	10	80%	80%	80%	50%	80%	100%	100%
Anesthesiologist (MD)	100%	10	0%	10%	0%	0%	90%	80%	20%
Secondary/primary hospitals (n=56)									
Medical doctor/ Ob/ Gyn	100%	56	77%	77%	27%	36%	48%	38%	23%
Pediatrician/ Neonatologist	80%	45	7%	9%	78%	18%	0%	84%	73%
Practical Nurse	98%	55	4%	5%	7%	16%	18%	16%	11%
Midwife	100%	56	73%	71%	27%	57%	63%	68%	32%
Staff Nurse	100%	56	64%	71%	82%	46%	91%	96%	98%
Anesthesiologist (MD)	91%	51	8%	14%	10%	0%	63%	65%	33%

1. Columns may not sum to total due to rounding. Total columns may not equal the first column 'percent with cadre present' due to missing information.

7.8 Facilities that actually provide other essential services by health worker cadre

As shown in table 7.8.1 below, medical doctors (GPs), Ob/Gyns, midwives and staff nurse were the most likely cadres of staff that provided most of the essential services: focused antenatal care (FANC), normal delivery, filling partograph, post-abortion care, immediate newborn care, PMTCT, family planning counseling and method provision, and post-abortion contraception in all the hospitals.

Table 7.8.1. Percentage of health facilities that provide other essential services or procedures, by health worker cadre, Jordan EmONC, 2022

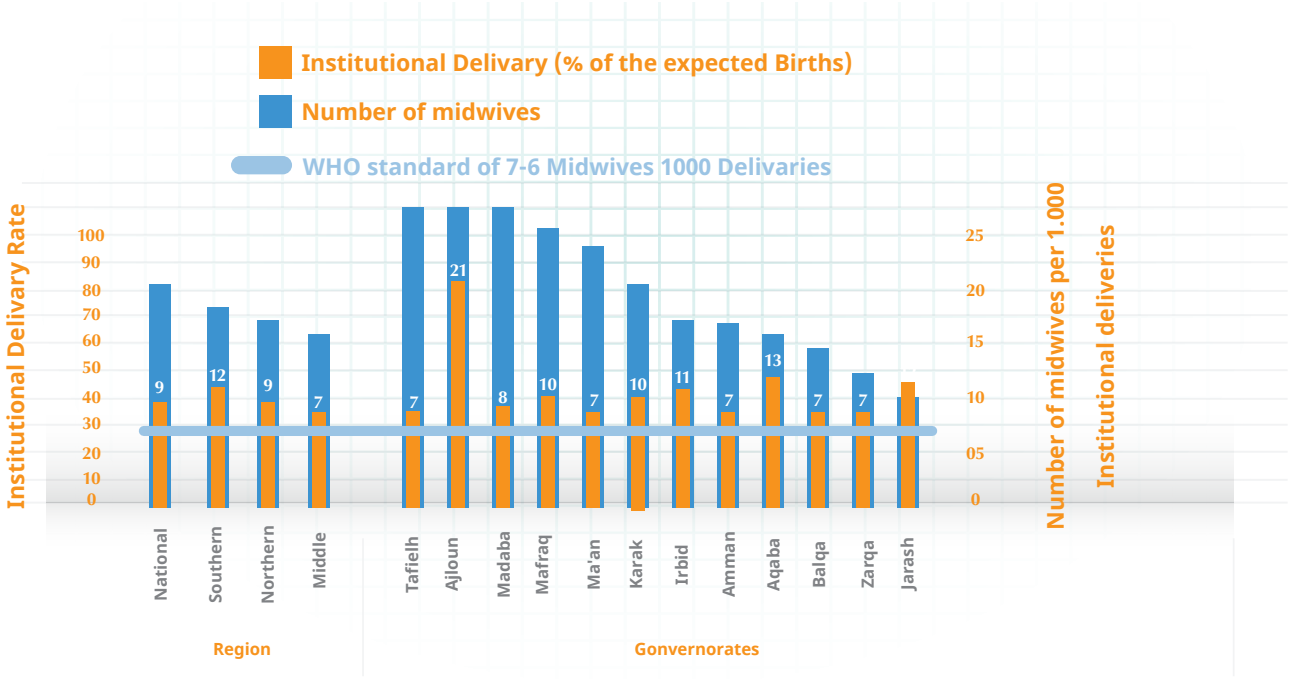
	% of facilities with cadre present	Number of facilities with cadre present	Focused ANC	Normal delivery	Fill out and use Partograph	Post-abortion care	Immediate newborn care	PMTCT	FP counseling	Temporary FP methods	Long acting reversible FP methods (IUDs, implants)	Tubal ligation	Vasectomy	Post-abortion contraception
	%	n	%	%	%	%	%	%	%	%	%	%	%	%
Tertiary-level hospitals (n=10)														
Medical doctor/ Ob/Gyn	100%	10	100%	100%	60%	100%	70%	100%	80%	80%	90%	100%	20%	60%
Pediatrician/ Neonatologist	90%	9	0%	44%	0%	0%	67%	0%	0%	0%	0%	0%	0%	0%
Practical Nurse	90%	9	22%	33%	0%	11%	22%	11%	11%	0%	0%	0%	0%	0%
Midwife	100%	10	100%	100%	70%	90%	90%	20%	70%	60%	40%	0%	0%	50%
Staff Nurse	100%	10	60%	60%	10%	70%	60%	20%	40%	10%	0%	0%	0%	20%
Anesthesiologist (MD)	100%	10	10%	20%	0%	0%	0%	0%	0%	0%	0%	0%	10%	0%
Secondary/primary hospitals (n=56)														
Medical doctor/ Ob/Gyn	100%	56	73%	91%	34%	80%	43%	57%	77%	59%	66%	84%	21%	59%
Pediatrician/ Neonatologist	80%	45	11%	22%	2%	4%	58%	2%	2%	2%	0%	2%	0%	0%
Practical Nurse	98.0%	55	15%	11%	4%	24%	16%	4%	7%	4%	0%	0%	4%	4%
Midwife	100%	56	66%	100%	73%	80%	71%	29%	66%	48%	11%	4%	9%	39%
Staff Nurse	100%	56	46%	32%	11%	68%	77%	20%	29%	13%	5%	9%	9%	16%
Anesthesiologist (MD)	91%	51	2%	22%	0%	4%	6%	6%	0%	0%	0%	8%	6%	0%

[36]The State of the World's Midwifery 2011. New York: United Nations Population Fund, 2011.

7.9 Ratio of midwives to 1000 deliveries in a year

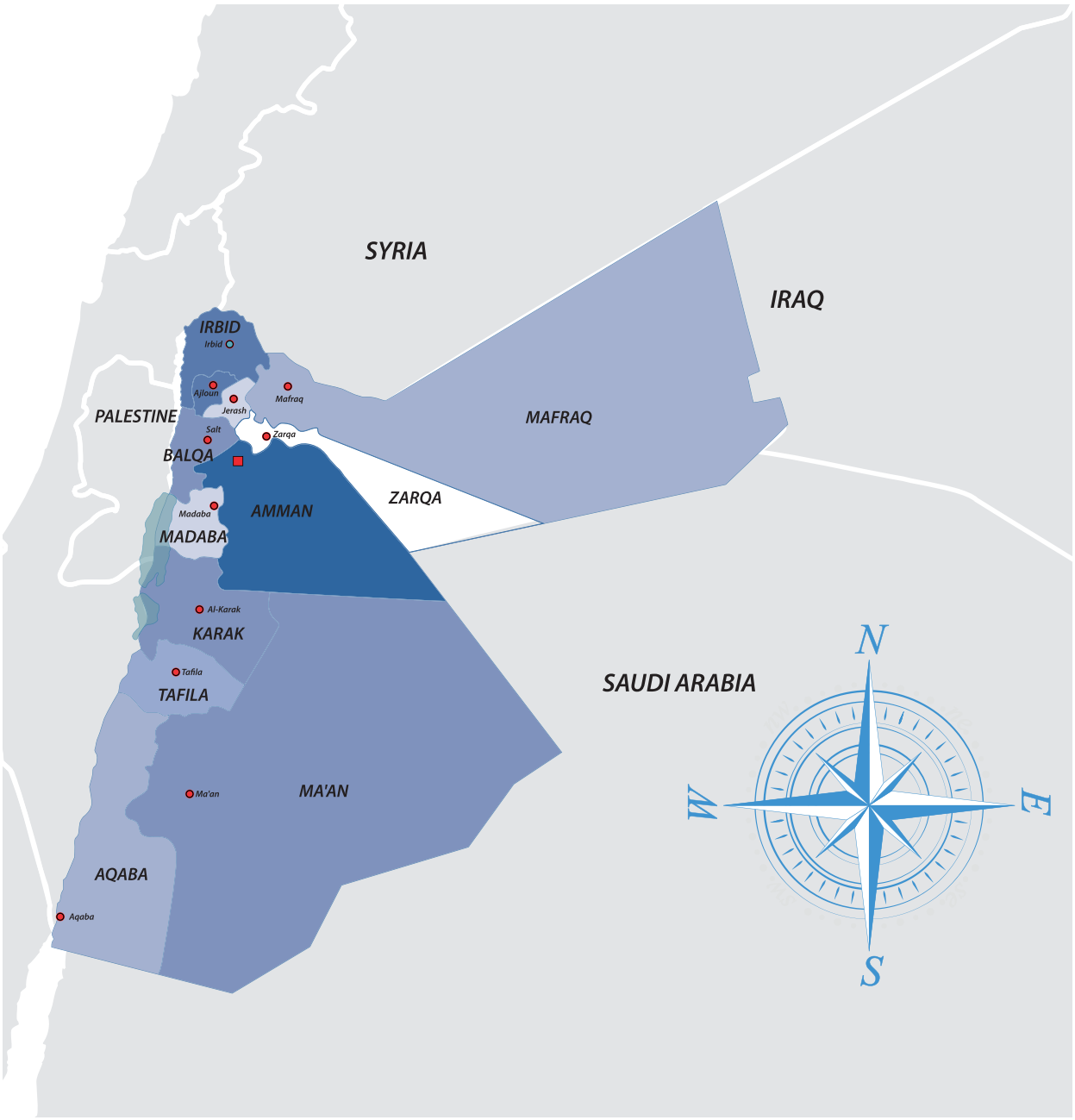
The number of midwives per 1000 deliveries provides facility's work load in managing deliveries per year for an average hospital, often referred by a district or general hospital. Evidence shows that a midwife in such general hospitals should attend an average of 175 births per year.[36] This is presented as 6 to 7 midwives needed per 1000 deliveries. Accordingly, as shown in figure 7.9.1 below, the country demonstrated over this standard as 9 midwives were available for every 1000 deliveries at national level. Five of the 12 governorates met the cut-off point (7 midwives per 1,000 deliveries), while 7 of the 12 governorates were above the international average with the highest in Ajloun (21 midwives per 1000 deliveries), followed by Aqaba (13 per 1000 deliveries), and Jarash (12 per 1000 deliveries). Northern region had facilities with the highest midwife to deliveries proportion; while Middle region had facilities that met the international average (figure 7.9.1 and map 7.9.1).

Figure 7.9.1 Ratio of midwives per 1000 institutional deliveries, by region and governorate, Jordan EmONC, 2022



Map 7.9.1 Ratio of midwives per 1000 institutional deliveries, by governorate, Jordan EmONC, 2022

Ratio of midwives to 1000 institutional deliveries



SUM (Midwife Available	*WHO standard of 6-7 Midwives per 1000 deliveries
10	496

Mafraq	132%	Balqa	48%	Zarqa	113%
Tafielh	18%	Madaba	40%	Ma'an	24%
Irbid	345%	Amman	496%	Karak	66%
Aljoun	25%	Jarash	30%	Aqaba	37%

Chapter 8
Interviews with Service Providers

EmONC assessments usually include provider's knowledge and motivational questions to guide MoH and its partners to devise tailored capacity building initiatives. In this regard, data collectors received training to conduct face-to-face interviews with a provider in the maternity who had delivered the largest number of babies in the past month and who was available and willing to be interviewed at the time of the assessment. Once the first stage of knowledge questions was completed by the service provider, a self-assessment module was also administered on supervisory support and motivation. Due to its sensitivity on motivational factors and supervision activities, the data collectors briefed the providers to self-administer the second part of the module. No names and or any other identifier was used in the module where the provider worked, so that no one can link the provider with the facility.

8.1 Profile of respondents on knowledge questions

As shown in table 8.1.1 below, all the facilities responded to the part 1 and part 2 of the provider's knowledge and motivation questions. Most respondents were female (77%) with midwives (55%) were the most likely to manage largest number of deliveries in the past month than the rest of the cadres, followed by obstetricians/gynecologists (24%), and medical doctors (GPs) (17%). Nurses (2%) were the least interviewed cadres in the knowledge and motivational questions as they did not handle largest deliveries. Midwives and nurses were all female while 63% of obstetricians/gynecologists and 45% of medical doctors (GPs) interviewed were male.

Nationally, the median age of respondents was 37 years old, had been posted to the current facility for 6 years, and had been practicing with current qualification for 11 years. The median number of facilities, in which a health worker was posted in different facilities in the past three years was only one. Medical doctors were substantially older than the rest of the cadres interviewed, while nurses had been practicing for much longer (9 years) than the rest in the current facility. The median number of deliveries attended in tertiary-level facilities (60) was twice that of the deliveries in secondary/primary hospitals (28) in the past month prior to the assessment.

In the subsequent sections of this chapter, we presented the results for medical doctors (GPs), obstetricians/gynecologists, and midwives; removing nurse (only one) and others (only two) due to small denominators.

Table 8.1.1: Percent distribution of interviewed health providers characteristics and professional experience, by occupation, facility type and managing authority, Jordan EmONC, 2022

	Providers Interviewed		Sex		Median Age	Median number of deliveries attended in past month	Median number of years at current facility	Median number of years since receiving professional qualification	Median number of different health facilities posted to in past 3 years
	n	%	Male	Female					
National	66	100%	23%	77%	37	30	6	11	1
Occupation									
Medical Doctor (GP)	11	17%	45%	55%	56	35	4	5	1
Obstetrician/ Gynecologist	16	24%	63%	37%	52	38	6	10	1
Midwife	36	55%	0%	100%	38	26	7	14	1
Nurse	1	2%	0%	100%	29	15	9	37	0
Others	2	3%	0%	100%	38	38	4	18	1
Type of Facility									
Tertiary-level hospitals	10	15%	20%	80%	33	60	8	10	1
Secondary/ primary hospitals	56	85%	23%	77%	37	28	6	11	1
Managing Authority									
Government/ Public	35	53%	37%	63%	36	35	7	11	1
Private-for-profit	26	39%	4%	96%	44	24	3	16	1
Private-for-not-*profit	5	8%	20%	80%	34	35	4	7	1
Location									
Urban	1109	65.4%	5.9%	94.1%	36	30	6	12	1
Rural	587	34.6%	1.9%	98.1%	40	33	6	10	1

Includes NGO health facilities *

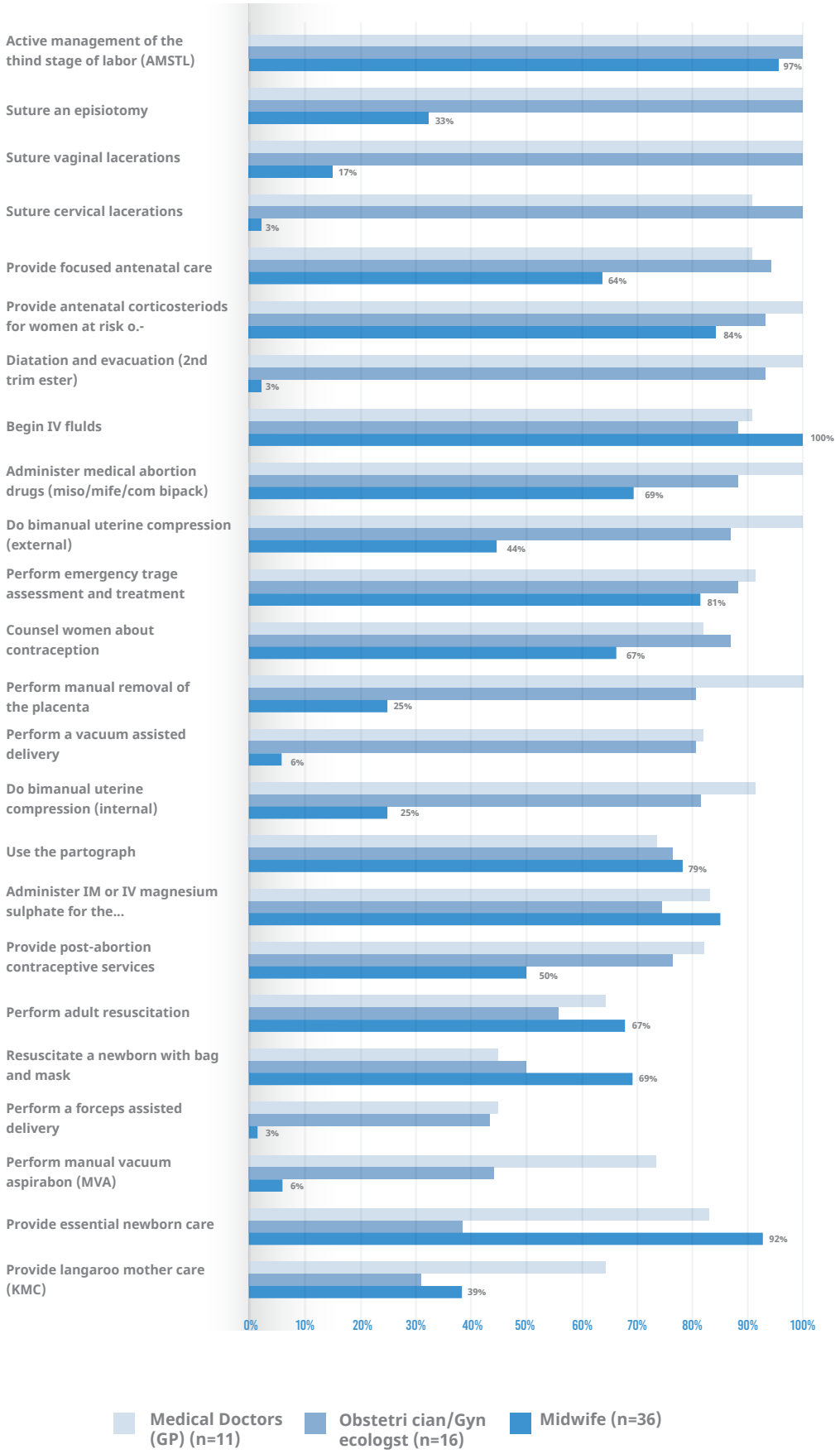
8.2 Training and recent delivery of services

Figure 8.2.1 below, and table 8.2.1A in the appendix, present the proportion of respondents who had ever received training and actually providing the different maternal and newborn care services in the past three months prior to the assessment. Nationally, more than 80% of providers interviewed reported providing Active Management of Third Stage of Labor (AMTSL), IV fluids, antenatal corticosteroids for pre-term labor, Magnesium Sulphate injection for treatment of PEE, emergency triage assessment and treatment, and administer medical abortion drugs. On the other hand, fewer than a quarter of respondents reported providing Manual vacuum aspiration (MVA), forceps deliveries, antibiotics for neonatal infections, and ARVs for PMTCT.

Medical doctors (GPs) and obstetricians/gynecologists were the most likely cadres that provided most of the services in the past three months prior to the assessment than midwives. However, midwives were the most likely to have provided essential newborn care, newborn resuscitation with bag and mask, adult resuscitation, Magnesium Sulphate injection for PEE, and administered IV-fluids.

In terms of training, medical doctors (GPs) were more likely than the other cadres to report being trained in most of the services, except for essential newborn care, newborn resuscitation, and adult resuscitation where midwives were the most likely to have been trained. Obstetricians/gynecologists reported receiving training more likely in the use of partograph, post-abortion contraception, MVA, forceps delivery, and ARVs for PMTCT than the rest of the cadres (table 8.2.1 in the appendix).

Figure 8.2.1: Percent of providers who provided selected services in the past 3 months, by health worker cadre, Jordan EmONC, 2022

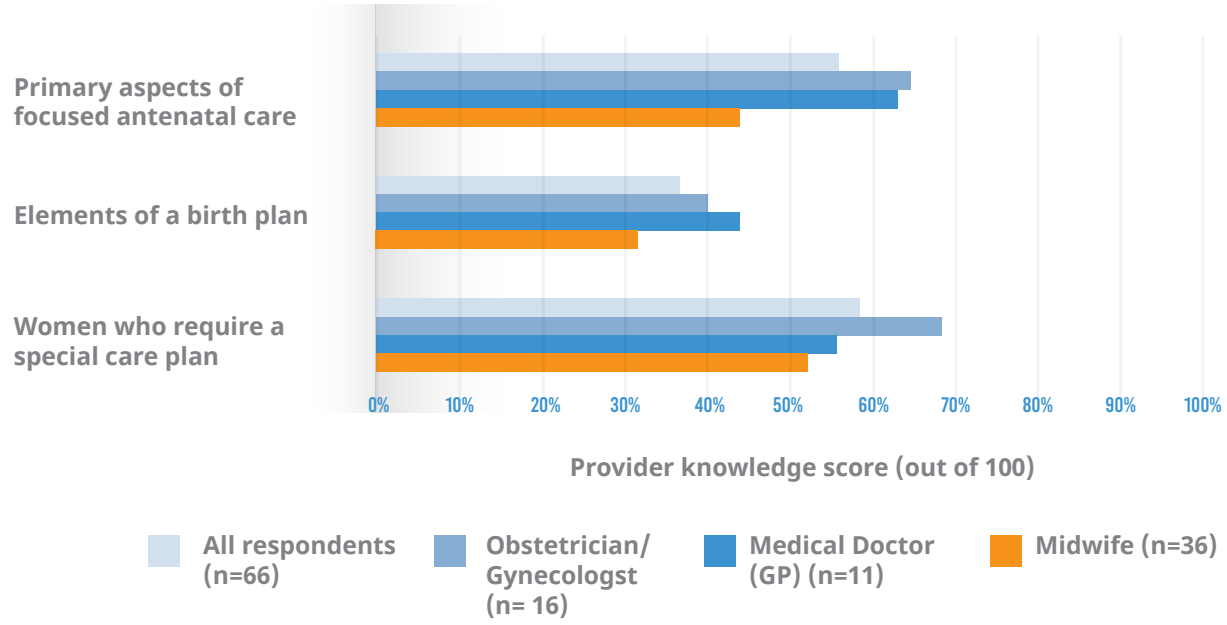


8.3 Knowledge of care during pregnancy

One of the knowledge questions to respondents was antenatal care. Each question had multiple "correct" answers; in which, respondents were expected to answer spontaneously. Correct answers were scored out of the total possible, and standardizing this to a scale of 100. Average scores were then calculated for each question, aggregated by cadre, and presented in summary figures.

Primary aspects of FANC, elements of a birth plan, and women that require a special care plan were the three key questions asked in this section. Overall, respondents scored under 60% of the correct answers for all the three questions of antenatal care. Obstetricians/gynecologists scored highest, compared to other cadres, in responding to the primary aspects of antenatal care (66% of the six possible answers) and women who requires special care plan (67% of the ten possible answers). Although all the respondents scored under 42% of the five possible answers in responding to elements of a birth plan, medical doctors (GPs) scored better (42%) than the rest (figure 8.3.1 below and table 8.3.1A in the appendix).

Figure 8.3.1: Provider knowledge scores related to antenatal care, by health worker cadre, Jordan EmONC, 2022



8.4 Knowledge of intrapartum and immediate newborn care

As shown in figure 8.4.1 below, tables 8.4.1A and 8.4.2A in the appendix, respondents scored highest on intrapartum knowledge questions related to AMTSL, observations to monitor labor progress, and on management principles for women with heavy bleeding after delivery and lowest on administering the loading dose of Magnesium Sulphate injection for treatment of PEE. Ob/Gyns scores were consistently higher than medical doctors (GPs) and midwives in the knowledge elements of routine and complicated intrapartum care. Overall, respondents scored 79% of the ten possible answers of monitoring a woman in labor and 82% of the three possible answers of AMTSL.

Figure 8.4.1: Provider knowledge scores related to routine and complicated intrapartum care, by health worker cadre, Jordan EmONC, 2022

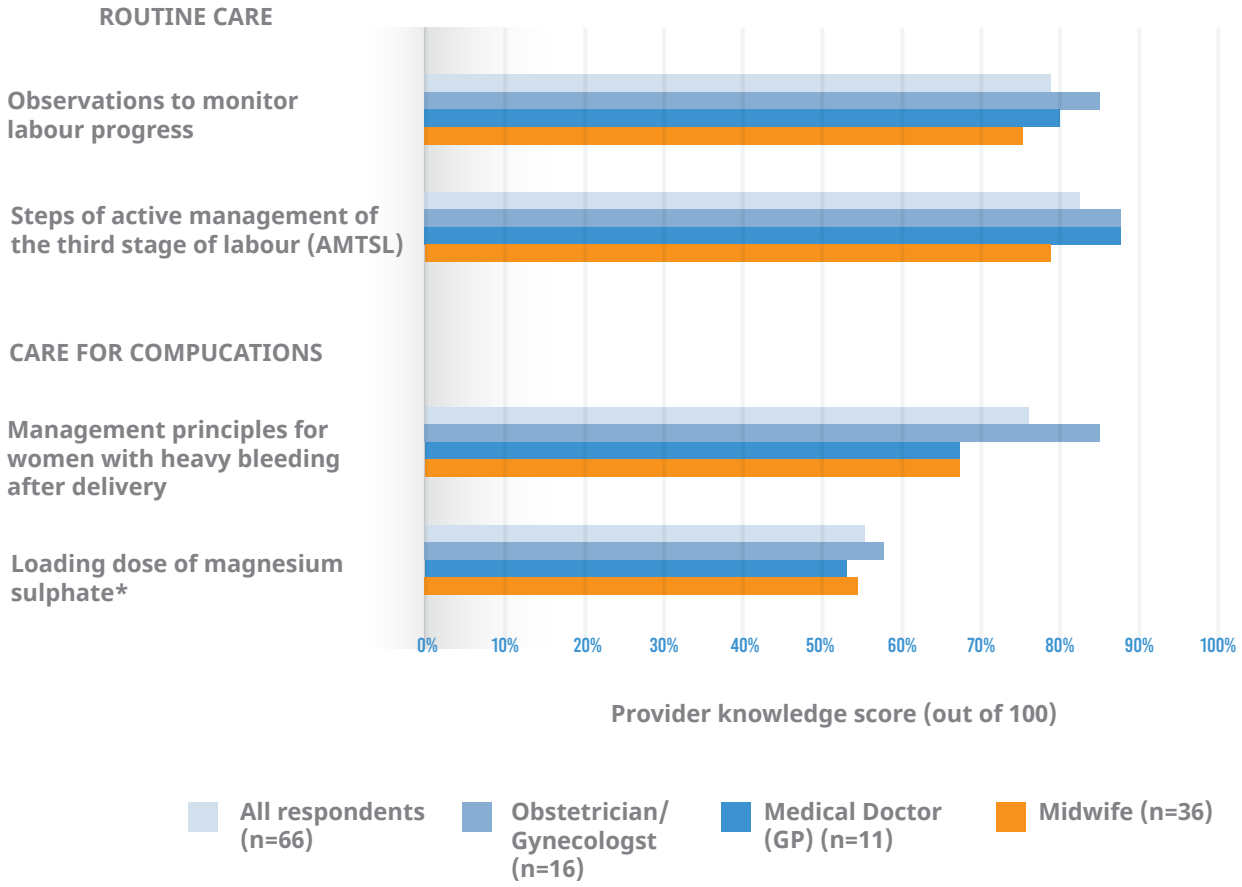
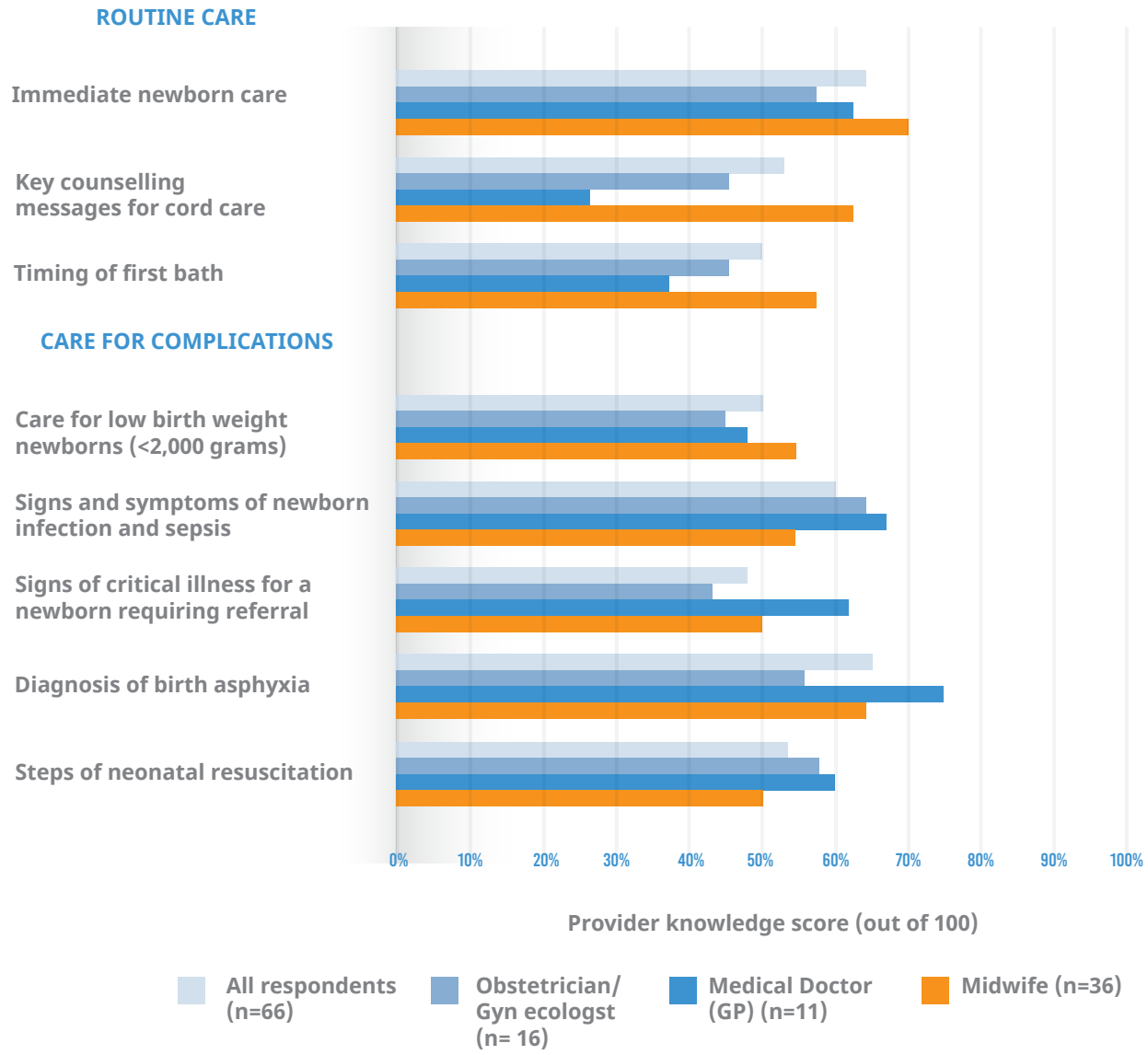


Figure 8.4.2 below, tables 8.4.3A and 8.4.4A in the appendix, indicate knowledge scores on routine newborn care and care for complicated newborn cases. Accordingly, respondents answered over 50% of possible answers on aspects of immediate newborn care, key counselling messages for cord care, and timing of first bath. In general, midwives scored higher than the rest of the cadres on routine newborn care elements. Of the ten possible answers on immediate newborn care, midwives scored 70% of the answers, compared to GPs (63%) and Ob/Gyns (54%).

Regarding complicated newborn care elements, providers scored 64%, 60%, and 53% of the possible answers of diagnosis of birth asphyxia, signs and symptoms of newborn infections, and on steps of neonatal resuscitation, respectively. However, providers scored only 50% and 48% of the correct responses of care for low-birth-weight babies and critical illness of newborns requiring referrals. In general, GPs scored much higher than midwives and obstetricians/gynecologists in many of the complicated cases of newborn care, except care for low birth-weight babies, in which midwives were more likely knowledgeable than the rest.

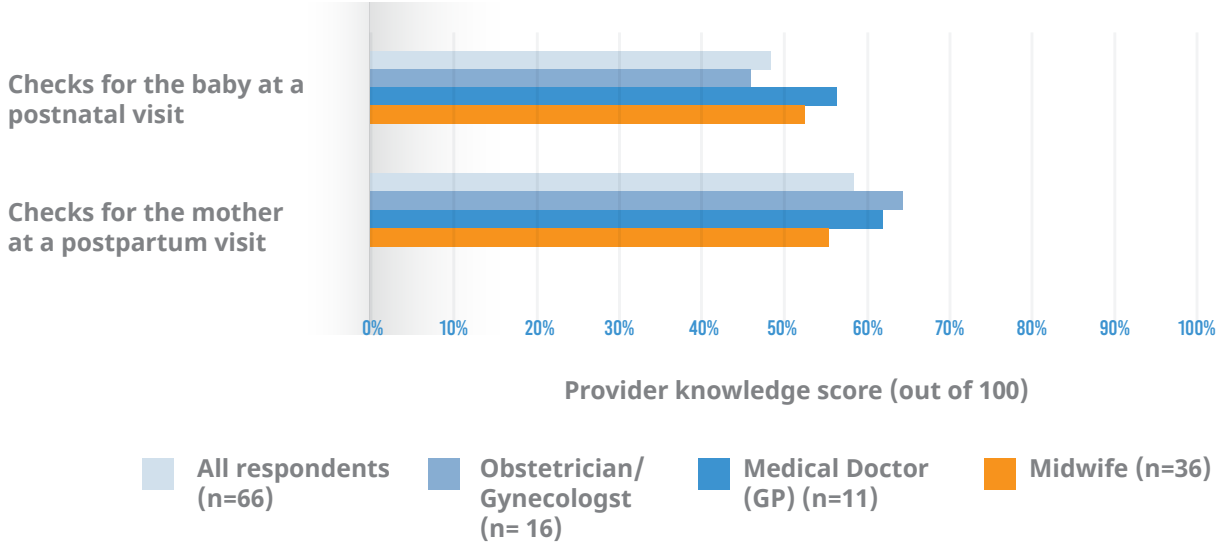
Figure 8.4.2: Provider knowledge scores related to routine and complicated newborn care, by health worker cadre, Jordan EmONC, 2022



8.5 Knowledge of care after delivery

Service providers in the maternity were asked about what should be checked for the baby and the mother during the postpartum. As presented in figure 8.5.1 below, and table 8.5.1A in the appendix, providers scored only 48% and 56% of the ten correct checks for the baby and twelve correct checks for the women, respectively. Obstetricians/gynecologists scored higher than the rest of the cadres on mother checks; while GPs scored higher than the rest on baby checks.

Figure 8.5.1: Provider knowledge scores on components of postnatal and postpartum care, by health worker cadre, Jordan EmONC, 2022



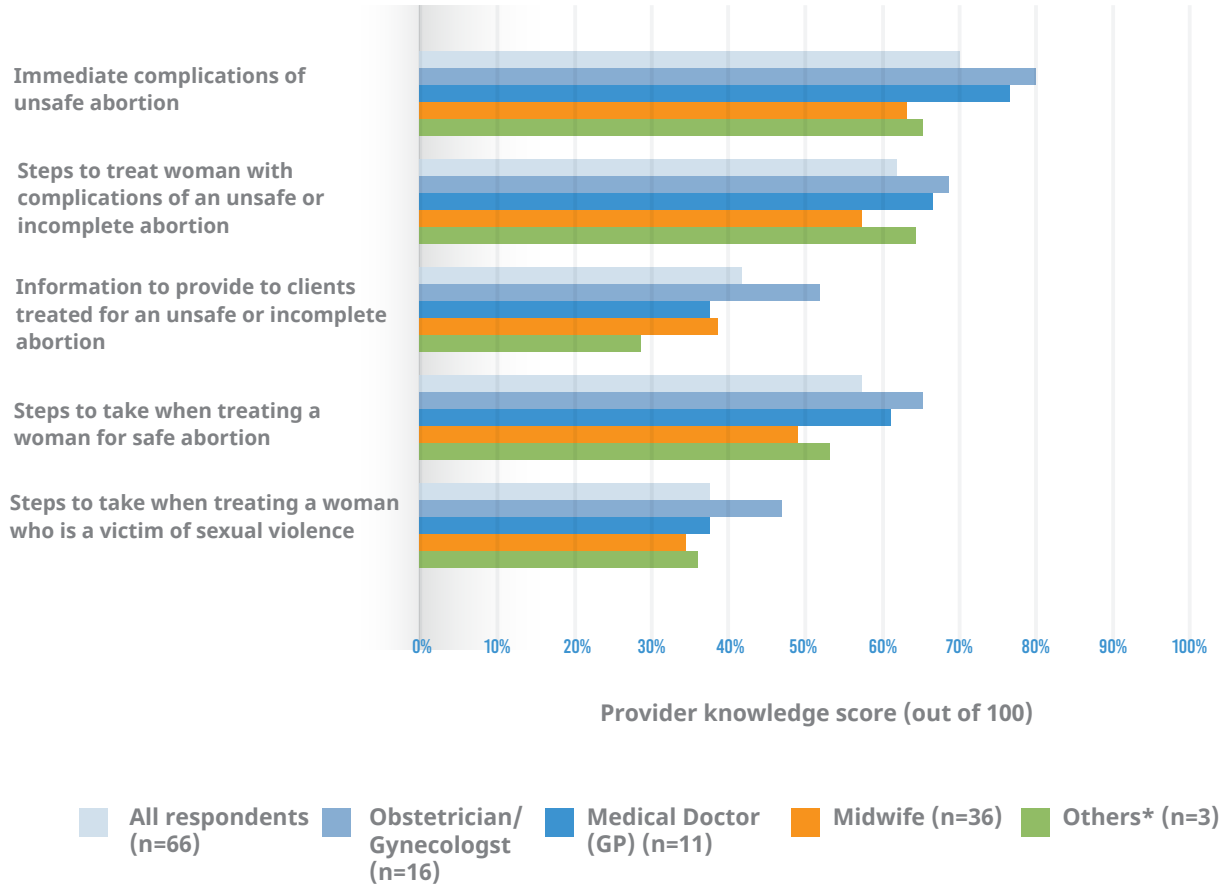
8.6 Unsafe abortion and sexual violence

Undergoing unsafe abortion and its complications is one of the leading causes of maternal morbidity and mortality. The assessment probed respondents' knowledge about diagnosis and management, and counselling of women with complications from unsafe abortions and also the management of victims of sexual violence (figure 8.6.1 below, tables 8.6.1A and 8.6.2A in the appendix).

Respondents' highest mean score (70 out of 100) was recorded in knowledge of immediate complications of unsafe abortion, followed by the steps to follow for a woman who came to a facility with unsafe or incomplete abortion (64 out of 100). On both knowledge questions, obstetricians/gynecologists scored better than the rest of the cadres in facilities. Regarding what to do for a woman who was treated for an unsafe or incomplete abortion, all the providers scored low with the highest recorded was 52% from obstetricians/gynecologists and lowest among medical doctors (38%). The most frequent response provided under this category of question was counselling service for family planning and services (61% of the respondents correctly mentioned it).

What to do for a survivor or victim of a sexual violence was the least scored knowledge question as only 34% of the nine possible answers were correctly mentioned. Again, obstetricians/gynecologists scored (47 out of 100) better than the rest of the cadres.

Figure 8.6.1: Provider knowledge scores on complications of abortion, how to intervene, and what to do for victims of sexual violence, by health worker cadre, Jordan EmONC, 2022



As indicated in table 8.6.2A in the appendix, the mean score of responses to the circumstances of legal permission of abortion was generally very low, as only 23% of the possible answers were correctly cited. In addition, only 68% and 55% of the providers interviewed, answered "Yes" for questions related to penalty of a provider who is providing abortion services that are not recognized by the law, and women are also panelized for the conducting abortions for circumstances that are not recognized by the law, respectively.

With regard to a question on who can provide abortion services, 98% of the providers cited obstetricians/ gynecologists, while the remaining 2% indicated medical doctors (GPs) and others who are eligible to provide such services. Similarly, providers were asked about which segments of women are seeking abortion services, women with many children (48%) was the most frequently cited group, followed by unmarried women and girls (42%). Students (12%) and all women (12%) were the least mentioned group of women who seek abortion services. Abortion seems to be less common in Jordan as only 35% of the providers answered "Yes" to the question "are abortions common in this country" (table 8.6.2A in the appendix).

Bleeding (92%) was the most common complication that brings a woman to the facility, followed by sepsis (55%). On the average, facilities in Jordan treat only one abortion related case per week (table 8.6.2A in the appendix).

8.7 Profile of respondents on supervisory support and motivation questions

All the facilities assessed filled out the second part of the supervisory support module with the assistance of data collectors. The response rate was 100%, females were 80% of the total respondents; and 52% of the medical doctors, while 100% of midwives and nurses' respondents were female. The median age for all providers interviewed was 38, with the highest recorded median age observed between the two nurses (53). The minimum and maximum number of years served in the provider's current facility ranges from four among medical doctors, and seven among midwives. On average, providers attended 31 deliveries in the previous month prior to the assessment. with the highest average recorded deliveries by medical doctors (including obstetricians/gynecologists) (40) and lowest by nurses (10).

Table 8.7.1: Characteristics of health workers responding to supervision and motivation questions by health worker cadre, Jordan EmONC, 2022

	Total	Medical doctors	Midwives	Nurses
	n=66	n=27	n=37	n=2
Sex				
Female	80%	52%	100%	100%
Male	20%	48%	0%	0%
Median age	38	38	38	53
Median number of years at current facility	5.5	4.0	7.0	6.0
Median number of years since receiving professional qualification	12.0	6.0	14.0	34.5
Number of providers in profession for 3+ years	n=61	n=25	n=34	n=2
Median number of facilities posted to in past 3 years	1.0	1.0	1.0	0.5
Median number of deliveries attended last month	31	40	26	10

8.8 Experience with supervision and perceptions of support

As shown in table 8.8.1 below, only a third (32%) of the 66 providers interviewed received technical support in the last 3 months prior to the assessment. Another 30% of the providers received technical and supervisory support in longer than a year ago. Thirty-eight percent of midwives and 26% of medical doctors (all categories) received supervisory support in the last 3 months, while the two nurses interviewed never received any technical support at all. Close to a quarter of the respondents never received any technical support from their facility nor any external body.

Among those who had received supervisory support, 92% received the support on either administrative and technical issues, problems encountered, or overall work-related issues. Checking records, and receiving performance related feedback were the second most frequently cited supervisory support that the providers received (with 88% each) (table 8.8.1 below).

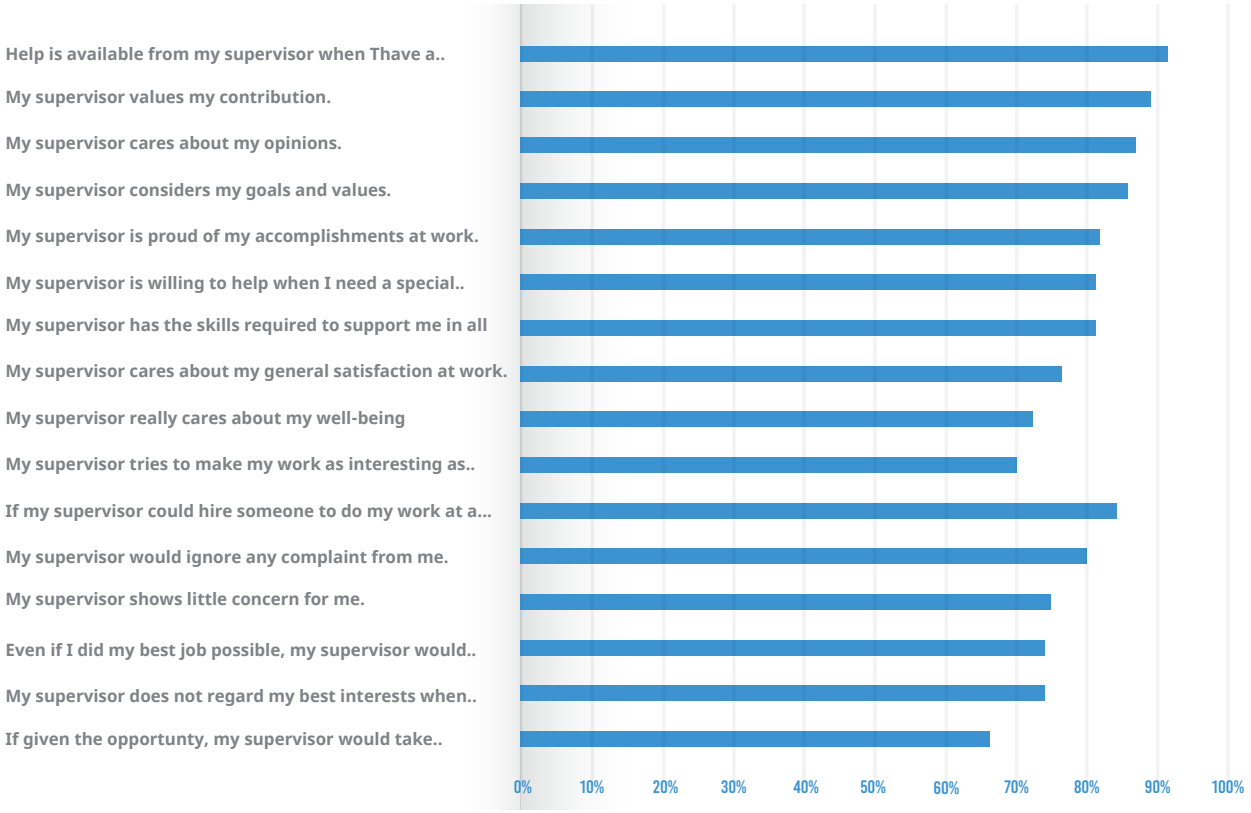
Table 8.8.1: Percent of health workers who received support and content of recent supervisory visit,1 by health worker cadre, Jordan EmONC, 2022

	Total	Medical doctors	Midwives	Nurses
	n=66	n=27	n=37	n=2
Technical support or supervision received from this facility or externally				
Never	23%	22%	19%	100%
Yes, in the last 3 months	32%	26%	38%	0%
Yes, in the last 12 months	17%	22%	14%	0%
Yes, but longer ago than 12 months	29%	30%	30%	0%
Number of providers who have ever received support/supervision	n=51	n=21	n=30	n=0
Type of support received in last supervisory visit[1]				
Checked records or reports	88%	76%	97%	0%
Observed work	92%	81%	100%	0%
Provided feedback (either positive or negative) on performance	88%	86%	90%	0%
Provided updates on administrative or technical issues related to work	92%	86%	97%	0%
Discussed problems encountered	92%	95%	90%	0%

1 Measured among providers who have ever received support/supervision.

The 66 providers were given a set of 17 questions that formed a scale around supportive supervision in figure 8.8.1 below, and table 8.8.2A in the appendix. The Likert-scale like response options, ranged from strongly disagree to strongly agree (with no neutral option). The statements are classified in to two: positive and negative statements. We summarized the reports in; the percent in agreement (strongly agree and agree) for the positive statements, and the percent in disagreement (strongly disagree and disagree) for the negative statements. Accordingly, the percent in agreement ranges from 70% for "my supervisor tries to make my work as interesting as possible" to 91% for "help is available from my supervisor when I have a problem". Similarly, the percent in disagreement ranges from 54% for the response "my supervisor fails to appreciate any extra effort from me", to 84% in disagreement for a statement "If my supervisor could hire someone to do my work at a lower salary, s/he would do so". Such response ranges vary between medical doctors and midwives (table 8.8.2A in the appendix).

Figure 8.8.1: Percent of respondents providing positive response to supportive supervisory statements, Jordan EmONC, 2022



8.9 Motivation factors

Like supervisory support, motivation questions were measured by a Likert-type scale for 10 items[37], all of which were phrased positively. As indicated in table 8.9.1 below, the percent in agreement (agreed or strongly agreed) is summarized with each statement as well as the overall score, by health worker category. Generally, 88% of the health workers felt satisfied with their job, with highest among midwives and the two nurses, and lowest among medical doctors (86%). Although nurses were only two, both were highly motivated. Compared to medical doctors, midwives were more likely motivated providers in the country. However, providers were less motivated as only 58% of the total respondents (66) agreed to the overall motivation score.

[37]Cronbach's alpha was 0.84, also considered high.

Table 8.9.1: Percent agreement with individual items and overall motivation score, by health worker cadre, Jordan EmONC, 2022

	Total	Medical doctors	Midwives	Nurses
	n=66	n=27	n=37	n=2
Percent agreement				
I am punctual about coming to work.	95%	96%	94%	100%
I am a hard worker.	96%	96%	94%	100%
I always complete my tasks efficiently and correctly.	97%	97%	98%	100%
I am satisfied with the opportunity to use my abilities in my job.	90%	89%	90%	100%
Overall, I am very satisfied with my job.	88%	86%	89%	100%
These days, I feel motivated to work as hard as I can.	77%	86%	68%	100%
I am satisfied that I accomplish something worthwhile in this job.	96%	92%	97%	100%
I am proud to be working for this hospital/health center	91%	95%	89%	100%
This hospital/health center really inspires me to do my very best on the job.	72%	67%	73%	100%
I am glad that I work for this facility rather than other facilities in the country.	85%	89%	81%	100%
Overall motivation score (out of 100)	58%	52%	59%	100%
Cronbach's alpha on included statements = 0.8815. All 10 items included. See Table 8.8.2A in the Appendix for an explanation of Cronbach's alpha.				

In addition to the Likert-scale based questions, providers were asked other questions that impact their motivation level. Table 8.9.2 below describes these elements. Accordingly, respondents surfaced that their working condition, resource distribution, rewards they receive from their organizations were, generally, very low (below 50%). However, the providers positively responded that they received their past-month salary on time (97%).

Regarding sexual harassment, 8% of male (one out of 13) and 6% of female (3 out of 53) respondents admitted that they ever had experienced sexual harassment in their facilities (4 out of 66 respondents). Medical doctors were the highly likely providers group that faced such harassments. This provides the magnitude of sexual harassment as one in 17 health workers in face of sexual harassment in the health facilities. We did not ask questions regarding who is perpetrating the harassment – either from colleagues or clients.

Table 8.9.2: Percent of health workers with high/very high rating of items impacting motivation, received salary on time, and ever experienced sexual harassment in the facility, by health worker cadre, Jordan EmONC, 2022

	Total	Medical doctors	Midwives	Nurses
	n=66	n=27	n=37	n=2
Percent rating high or very high				
The conditions of their job	44%	41%	46%	50%
The support received from their supervisor	67%	67%	68%	50%
The distribution of resources among fellow employees	47%	41%	54%	0%
The rewards received from their organization	20%	23%	19%	0%
Received their salary on time last month	97%	96%	97%	100%
Ever experienced sexual harassment in this facility	6%	7%	5%	0%
Female respondents	6%	7%	5%	0%
Male respondents	8%	8%	0%	0%

8.10 Suggestions for improvements

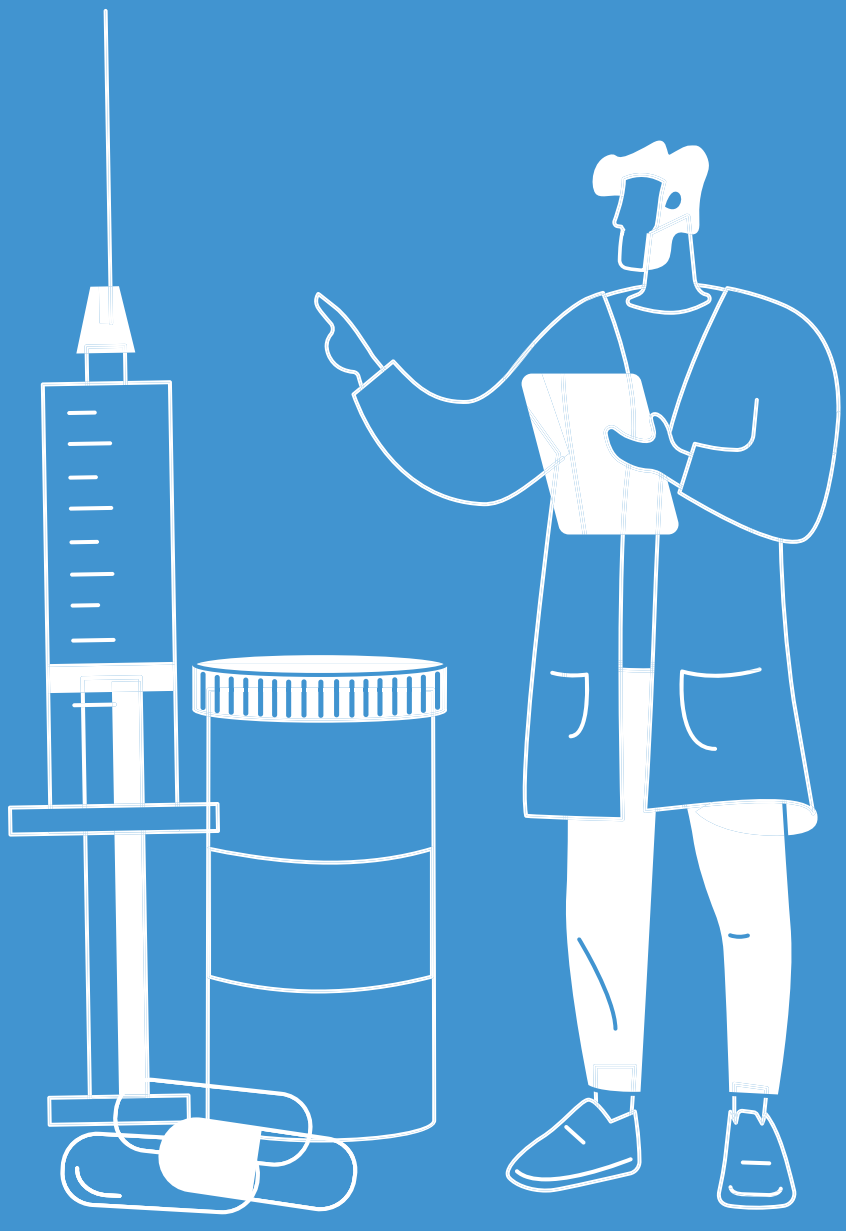
Table 8.10.1 below presents provider's top three priorities that need improvements. Of the 10 pre-determined list of priority areas, more incentives stood the first, better quality of supplies/stock came out as the second most important priority, and availing transportation for referral services was cited as the third. A similar order of ranks observed for the stated priority areas by midwives and little variations among medical doctors.

Table 8.10.1: Ranking of conditions that need improvement, by health worker cadre, Jordan EmONC, 2022

	Total	Medical doctors	Midwives	Nurses
	n=66	n=27	n=37	n=2
What requires improvement (top 3)[1]				
More incentives (salary, promotion, holidays)	1	1	1	3
More knowledge / updates / training				1
Better quality supplies / stock	2	3	2	3
More supplies / stock		2	3	2,3
Better Facility Infrastructure (for patient and / or staff comfort)				2,3
Transportation for referral patients	3		3	3
Less workload (i.e. more staff)				3
More support from supervisor				3
More autonomy / independence				3
Better working hours				

[1] Health workers were asked to rank the top 3 improvements from the list above that would improve their ability to provide good quality services. 1 indicates the item ranked as the first top priority, 2 as the second top priority, and 3 as the third top priority. Ties were possible, which explains why 2 and 3 sometimes appear more than once.

Chapter 9
Availability of Drugs, Equipment, and Supplies



More than two billion people in low- and middle-income countries lack access to essential medicines[38]. As stipulated in the WHO document, essential drugs, equipment and supplies have significant impact in the quality of maternal and child health care provision[39].

This chapter presents availability of essential drugs, equipment, and supplies using Module 3 as a questionnaire for data collection. The data collectors were also trained and made observations on the availability drugs/supplies, as well as the availability and functionality of equipment in the maternity, pharmacy, and neonatal units, and other wards.

9.1 Management and stock outs of drugs

All the facilities assessed in Jordan had pharmacies and supply of medicines. In addition, all the 66 facilities had drug inventory registers; and the inventory registers were up-to-date (table 9.1.1 below).

As presented in table 9.1.1 below, the main source of medicines for the facilities was private suppliers (45%), followed by MoH (36%). Fourteen percent of the 66 facilities mentioned military supplier as a source of medicine. Similar percentage distribution was observed for general hospitals. However, the only health center had a supplier from NGOs. The same suppliers of medicines did also supply gloves, syringes, and medical supplies.

Table 9.1.1: Percentage of facilities with a supply of medicines, with registers and sources of drugs and supplies, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Among all facilities					
Drug inventory register exists	100%	100%	100%	100%	100%
Drug inventory register exists and is up-to-date	100%	100%	100%	100%	100%
Primary source of medicine for facility					
MOH supplier	36%	0%	50%	36%	0%
Military supplier	14%	0%	13%	15%	0%
Private supplier	45%	50%	38%	47%	0%
University supplier	2%	50%	0%	0%	0%
NGO/Mission	3%	0%	0%	2%	100%
Primary source for gloves, syringes and medical supplies					
MOH supplier	36%	50%	50%	35%	0%
Military supplier	15%	0%	13%	16%	0%
Private supplier	44%	0%	38%	47%	0%
University supplier	2%	50%	0%	0%	0%
NGO/Mission	3%	0%	0%	2%	100%

[38]Access to Essential Medicines. In: The World Medicines Situation 2004. Geneva: World Health Organization (WHO); 2004. http://apps.who.int/medicinedocs/en/d/Js6160e/9.html. Accessed on 11 March 2023.

[39]World Health Organization. WHO Policy Perspectives on Medicines 5: Promoting rational use of medicines: core components. WHO/EDM/2002.3, Geneva, Switzerland: 2002. http://apps.who.int/iris/bitstream/10665/67438/1/WHO_EDM_2002.3.pdf, Accessed on 11 March 2023.

Mechanisms for ordering drugs

As shown in table 9.1.2 below, the two teaching hospitals order drugs in the pharmacy on every 6 to 12 months; while the majority of referral/specialized hospitals (63%), a little over half of general hospitals (53%), and the health center order drugs on weekly/monthly/quarterly basis. Ordering drugs when it runs out was a mechanism for 5% of general hospitals.

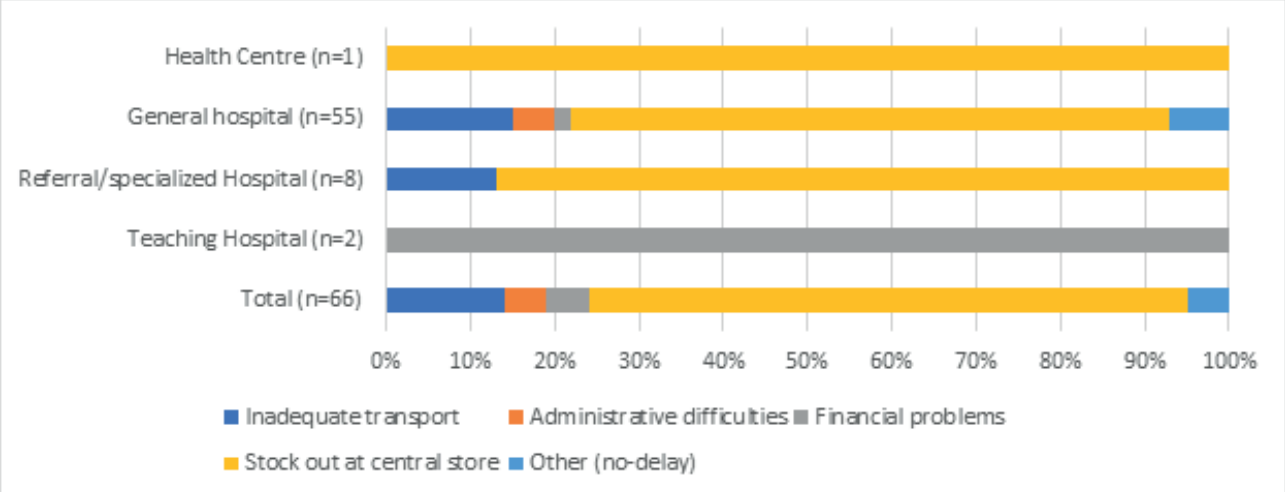
Table 9.1.2: Percentage of facilities with mechanisms for ordering drugs and reasons for delay, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Drug supplies in the pharmacy are ordered					
Weekly/monthly/quarterly	53%	0%	63%	53%	100%
Every 6 or 12 months	3%	100%	0%	0%	0%
Whenever stock reaches reorder level	39%	0%	38%	42%	0%
Whenever stock runs out	5%	0%	0%	5%	0%

Most common cause of delays in refilling supplies

Figure 9.1.1 below, shows major reasons for resupply of medicines. Of the 66 facilities, 71% reported stockout at central level; while only 14% had inadequate transport as a common cause of delay. Financial problem was the major bottleneck for the two teaching hospitals for the delay of stocking medicines/supplies; while the rest of the facilities had the stock-out at central store and inadequate transport as the key challenges in the resupply of medicines.

Figure 9.1.1: Percent distribution of facilities with a supply of medicines according to reasons for delays refilling stock, by facility type, Jordan EmONC, 2022



Accessibility of pharmacy and reporting of pharmacy-related items

As indicated in table 9.1.3 below, 95% of the total facilities had their pharmacy accessible 24 hours a day. Three-quarter of the referral/specialized hospitals had their pharmacies accessible 24 hours a day.

Eighty-eight percent of the facilities, mentioned that they had a written policy for ensuring that expired drugs are not used or distributed to the different units. First-in-first-out system of supply management, was used among 97% of the facilities, for ensuring drugs/supplies that would expire early are distributed or used first. Almost all of the facilities also mentioned that drugs/supplies were protected from moisture, heat or infestations.

Data collectors observed that 97% of the facilities had Oxytocin refrigerated and its temperature was monitored daily. Among facilities storing required drugs in a functioning refrigerator, all of them had an electricity or gas refrigerator.

Table 9.1.3: Percentage of facilities reporting on pharmacy-related items, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Pharmacy accessible 24 hours a day	95%	100%	75%	98%	100%
A written policy exists to ensure expired drugs are not distributed	88%	100%	88%	87%	100%
"First-in-first-out" system is in use (observation)	97%	100%	100%	96%	100%
Drugs are protected from moisture, heat or infestation (observation)	97%	100%	100%	96%	100%
Oxytocin refrigerated and temperature monitored daily	97%	100%	100%	96%	100%
Among facilities storing required drugs in functioning refrigerator:	n=64	n=2	n=8	n=53	n=1
Power source of main refrigerator storing drugs					
Electricity/Gas	100%	100%	100%	100%	100%

Stockout of key essential drugs and supplies

Figure 9.1.2 below and table 9.1.4A in the appendix, show stockout of some essential drugs, supplies and equipment in the last 3 months prior to the assessment. Nationally, half of the facilities experienced stockout of ARVs. Close to a third (32%) of the facilities had faced stockout of Misoprostol, followed by Gentamicin – injection (29%), Magnesium Sulfate (27%), and Oxytocin (26%). Ketamine and Isoflurane were also stocked out in 23% of the facilities.

Figure 9.1.2: Percentage of facilities with stockout of essential drugs in the last 3 months prior to the assessment, Jordan EmONC, 2022

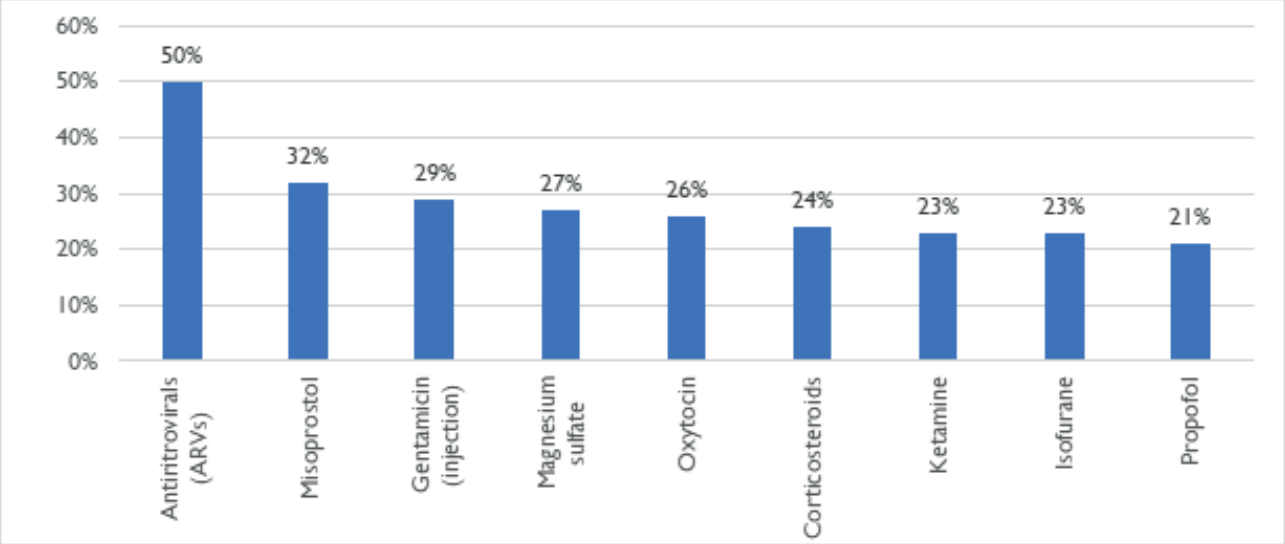


Table 9.1.5A in the appendix, shows reported interruptions of oxygen supply in the last 12 months prior to the assessment by facility type. Accordingly, only 2% of the facilities indicated such interruptions in labor and delivery, neonatal, and pediatric wards.

9.2 Availability of essential drugs

Table 9.2.1A in the appendix, shows availability of essential drugs: antibiotics, anticonvulsants, antihypertensives, oxytocics and prostaglandins, and drugs used in emergencies.

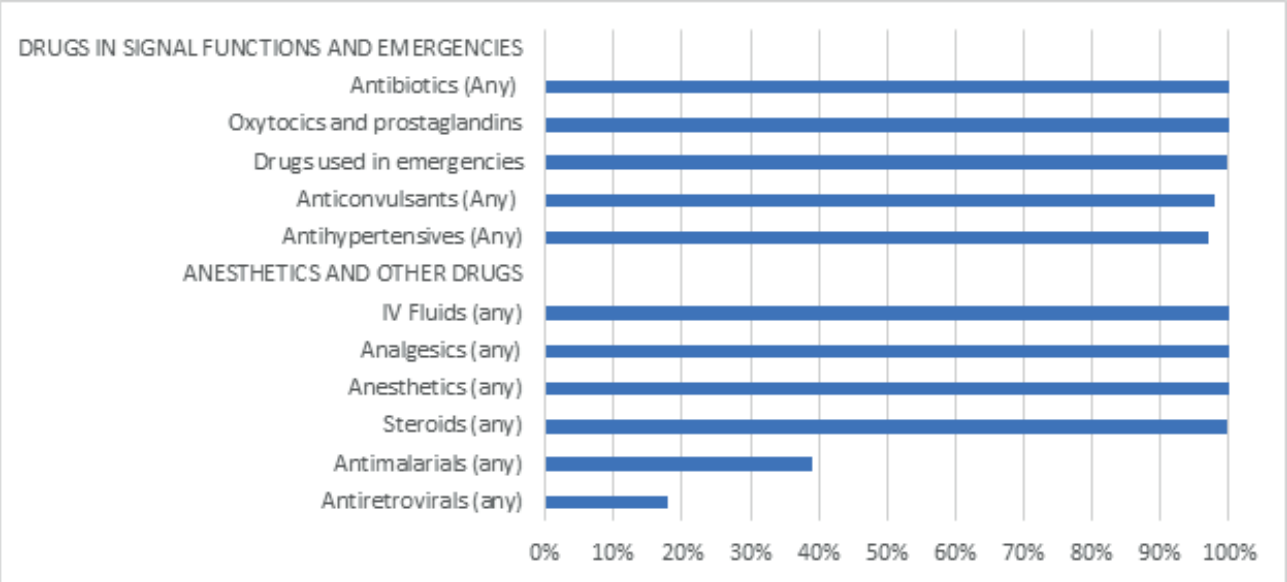
All facilities reported having one or more of the antibiotics, with Gentamicin injection (100%), Ceftriaxone (100%), Metronidazole injection (98%), and Amoxicillin (oral) (97%) being the most common antibiotics available in the facilities. On the other hand, oral Flucloxacillin for newborn (17%), Procaine Benzylpenicillin (29%), Cloxacillin Sodium (32%), and Amoxicillin injection (35%) were the least available antibiotics in the facilities.

Among all facilities, 98% had one or more anticonvulsants with Diazepam injection (95%) and Phenytoin (94%) as the most common available anticonvulsants. Magnesium Sulphate injection (50% concentration) (92%). Magnesium Sulphate injection (50% and other than 50% concentration) were the least available drugs in this category.

With uterotonics drug family, Oxytocin was available in all facilities, while Ergometrine (29%) was the least available drug in this category. Misoprostol was available in three-quarters of the facilities. All teaching and referral/specialized hospitals stocked both Oxytocin and Misoprostol at the time of the assessment; while Ergometrine was unavailable in teaching hospitals and the health center.

Among drugs in emergencies, Adrenaline (100%), Calcium Gluconate (100%), and Frusemide (100%) were commonly available, while Promethazine (27%) and Diphenhydramine (45%) were the least available in the facilities. Methyldopa (97%) and Labetalol (63%) were the most common and least common antihypertensives available in the facilities (figure 9.2.1 below and table 9.2.1A in the appendix).

Figure 9.2.1: Percent of facilities that had drugs related to the signal functions and emergencies, Jordan EmONC, 2022



As shown in table 9.2.2A in the appendix, anesthetics, analgesics, steroids, and IV fluids were stocked in all the facilities. Antimalarials were available in only 39% of the facilities and ARVs were stocked in 18% of the facilities. Among anesthetics, Lignocaine/Lidocaine (2% or 1%) were the most common available drug in the family. Similarly, Paracetamol, Dexamethasone, and normal saline and Ringer's Lactate were the widely available drugs among analgesics, steroids, and IV fluids, respectively. Teaching hospitals had no antimalarials and ARVs at the time of the assessment.

Table 9.2.3 below, presents the availability of selected contraceptives, as well as other drugs and supplies at the time of the assessment. Seventy-nine percent of the facilities had one or more of the selected contraceptives. However, only 10% and 38% of the facilities had female condoms and emergency contraception in stock, respectively. The two-teaching hospital had no stock of female condoms and emergency contraception. The health center included in this assessment had none of the contraceptives, except for emergency contraception that was in stock at the time of the visit.

Among other drugs and supplies, vitamin K (for newborn) and Heparin were the most widely available drugs available in all facilities; followed by Folic acid (98) and Anti-Rho (D) immune globulin (96%). Gentian violet paint (8%) and Sodium Citrate (25%) were the least available drugs.

Table 9.2.3: Percentage of facilities that had contraceptives and other drugs, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Contraceptives (any)	79%	50%	88%	78%	100%
Combined oral contraceptives	90%	100%	100%	91%	0%
Implants (e.g: Implanon, Jadelle, etc)	44%	100%	57%	42%	0%
3-month injectables	44%	100%	57%	42%	0%
Copper intrauterine devices	60%	100%	71%	58%	0%
Hormonal intrauterine devices	44%	100%	29%	47%	0%
Male condoms	65%	100%	86%	63%	0%
Female condoms	10%	0%	0%	12%	0%
Emergency contraception	38%	0%	57%	35%	100%
Other drugs and supplies					
Vitamin K (newborn)	100%	100%	100%	100%	100%
Chlorhexidine (7% gel for cord cleansing)	38%	0%	57%	37%	0%
Nystatin (oral) (for newborn)	66%	100%	43%	70%	0%
Oral rehydration solution	75%	50%	57%	81%	0%
Gentian violet paint	8%	0%	0%	9%	0%
Ferrous sulfate or fumarate	91%	50%	100%	91%	100%
Folic acid	98%	100%	100%	98%	100%
Heparin	100%	100%	100%	100%	100%
Magnesium trisilicate	32%	0%	29%	35%	0%
Sodium citrate	25%	0%	29%	26%	0%
Anti-tetanus serum / TAT	55%	50%	57%	56%	0%
Tetanus toxoid vaccine	91%	100%	71%	95%	0%
Anti-Rho (D) immune globulin	96%	50%	86%	100%	100%

9.3 Infection prevention and autoclave room

Table 9.3.1 below, presents the availability of some materials for infection prevention in the maternity. All facilities had soap and puncture proof sharp containers. Antiseptics, disposable latex examination gloves, non-sterile protective clothing, prepared disinfection solution, covered contaminated trash bin, regular trash bin, mayo stand/table, and heavy-duty gloves were available in 92% to 98% of the facilities. Teaching hospitals and the health center fully stocked most of the infection prevention materials. Among the disinfectants and antiseptics, alcohol-based rub and Polyvidone Iodine were widely available; while Ethanol and Chlorhexidine 7% gel were least stocked; 59% and 55% of the facilities stocked them, respectively.

Table 9.3.1: Percentage of facilities that have the indicated materials for infection prevention in the maternity area, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Basic Items					
Soap	100%	100%	100%	100%	100%
Antiseptics	98%	100%	100%	98%	100%
Disposable latex examination gloves	97%	100%	88%	98%	100%
Heavy duty gloves	92%	100%	100%	91%	100%
Non-sterile protective clothing	97%	100%	88%	98%	100%
Bleach or bleaching powder (chlorine)	77%	100%	75%	76%	100%
Prepared disinfection solution	98%	100%	100%	98%	100%
Regular trash bin	94%	100%	88%	95%	100%
Covered contaminated waste trash bin	95%	100%	100%	95%	100%
Puncture proof sharps container	100%	100%	100%	100%	100%
Mayo stand/table (or equivalent to establish sterile field)	92%	100%	100%	91%	100%
Surgeon's hand brush with nylon bristles	64%	50%	88%	62%	0%
Disinfectants and antiseptics					
Chlorhexidine 7% gel	55%	50%	100%	47%	100%
Ethanol	59%	0%	100%	55%	100%
Polyvidone iodine	95%	100%	100%	95%	100%
Alcohol-based rub	95%	100%	88%	96%	100%

Autoclave room

Table 9.3.2 below, shows facilities with autoclave room and materials/supplies in the autoclave room. Nationally, 88% of the facilities had a separate autoclave room. All referral/specialized hospitals, the health center, one of the two teaching hospitals, and 87% of general hospitals had separate autoclave room. At national level, 88% of the facilities had autoclave with temperature and pressure gauges. Steam sterilizer was available in 89% of the total facilities assessed. Sterilizer (pressure cooker) electric and Kerosene were also available in 73% and 44% of the facilities; respectively.

Among miscellaneous items, 98% of the facilities at national level had a procedure for waste management and disposal. Most of the facilities had an in-house waste management system than external (contracted/ outsourced). Food was provided for patients in the facilities as reported by 98% of them. Empty bed for the next patient was available in 95% of the facilities at the time of the assessment. During the adaptation of modules, the country TWG dropped a question of availability of incinerator, in anticipation that all facilities had it.

Table 9.3.2: Percentage of facilities with autoclave, sterilization and miscellaneous items in the maternity area, by type of facility, Jordan EmONC, 2022

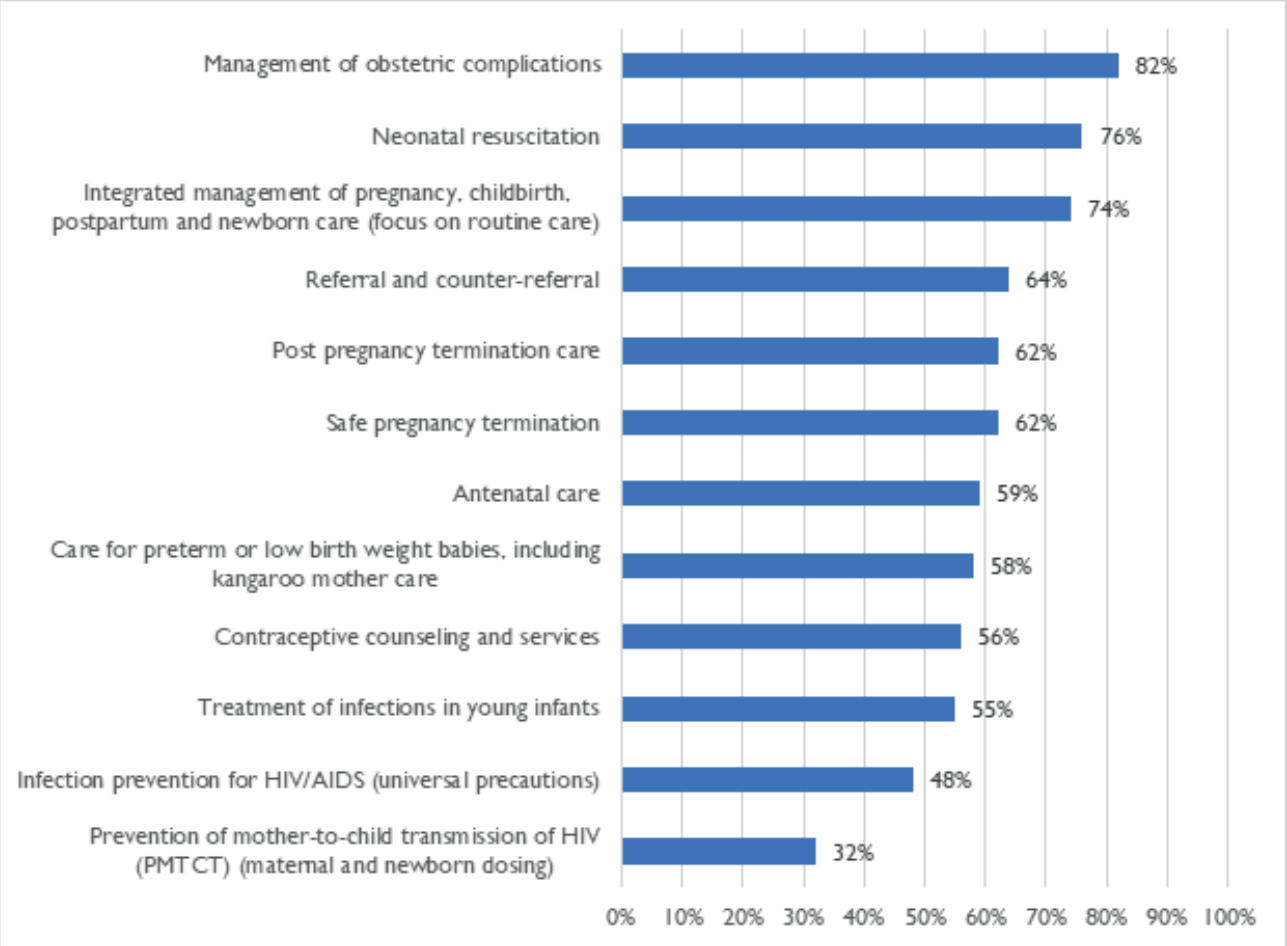
	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Autoclave					
Facility has separate autoclave room	88%	50%	100%	87%	100%
Sterilization equipment and incineration					
Autoclave (with temperature and pressure gauges)	88%	100%	88%	87%	100%
Hot air Sterilizer (dry oven)	41%	50%	13%	44%	100%
Steam Sterilizer	89%	100%	88%	89%	100%
Steam Instrument Sterilizer / Pressure Cooker (electric)	73%	100%	50%	75%	100%
Sterilizer / Pressure Cooker (kerosene heated)	44%	50%	25%	45%	100%
Sterilization drum	64%	0%	50%	69%	0%
Sterilization drum stand	67%	0%	38%	75%	0%
Miscellaneous Items					
A procedure for waste management and disposal	98%	100%	100%	98%	100%
In-house system	52%	100%	13%	55%	100%
Contracted/outsourced	48%	0%	87%	45%	0%
Food is provided to patients by facility	98%	100%	100%	98%	100%
Empty bed for the next patient	95%	100%	88%	96%	100%
Liquid spills or trash observed on floors (observation)	20%	0%	25%	20%	0%

9.4 Guidelines, supplies and medical equipment in labor and delivery and maternity wards

Guidelines and protocols

From figure 9.4.1 below, and table 9.4.1A in the appendix, we found that out of the 66 facilities, 82% had management of obstetric complications guideline; 76% had neonatal resuscitation guideline; 74% had guidelines for integrated management of pregnancy, childbirth, postpartum, and newborn care as widely available in the facilities. However, PMTCT and infection prevention for HIV/AIDS (universal precautions) were available in only 32% and 48% of the facilities, respectively. The health center included in this assessment had all the guidelines and protocols for maternal and newborn care services.

Figure 9.4.1: Percent of facilities that have the indicated guidelines in the maternity area, Jordan EmONC, 2022



Basic supplies and equipment in the maternity area

Table 9.4.2A in the appendix presents basic supplies and equipment in the maternity area. Nationally, blood pressure cuff was the most widely available equipment in the maternity; available in 100% of the facilities. The least available equipment was low reading thermometer; available only in 64% of the facilities. Ultrasound was available in all hospitals and the health center, except general hospitals; available in 96% of them.

Availability of supplies in the maternity area was, generally upright as 17 of the 22 items asked were available in more than 90% of the facilities. Only few items: HIV rapid test kits available only in 22%, dipsticks for bacteriuria/urinary tract infections available in 53% of the facilities (table 9.4.2A in the appendix).

Basic supplies and equipment used for assisted vaginal delivery and removal of retained products of conception

Table 9.4.3A in the appendix presents equipment and supplies used for assisted vaginal delivery and removal of retained products of conception. Accordingly, vacuum extractors with different size cups were available in 97% of the facilities. Obstetric forceps were, on the other hand, available in 61%-79% of the facilities.

Great majority (91%) of the facilities had electric vacuum aspiration machine; while only 70% of the facilities had a complete MVA set. Shortage of MVA set was observed high in general hospitals; available only in 64% of them. Vacuum aspirators/syringes were available in only 67% of the facilities. The two teaching hospitals did not have vacuum aspirators/syringes at the time of the assessment. From other uterine evacuation equipment set, most of the equipment and supplies were available in 82% - 88% of the facilities. Uterine sound was available in 77% of the facilities (table 9.4.3A in the appendix).

Delivery sets, dressing instrument sets, and gynecological and craniotomy equipment in the maternity area

In addition to what is presented in table 9.4.3A, table 9.4.4A in the appendix shows some basic items for delivery sets, dressing instruments, gynecological and craniotomy equipment sets in the maternity area. Complete delivery set was available in 97% of the facilities with the average number of deliveries set per facility reported as 13; highest among referral/specialized hospitals (26) and lowest in the health center (10). Supplies used for delivery were widely available in the facilities; except long gloves that were available only in 68% of the facilities. Teaching and general hospitals were better supplied than others (the health center did not have long gloves). Availability of dressing instruments were quite good as more than 89% of the facilities had dressing instruments. Among the gynecological equipment, vaginal speculums (Sims) were most commonly available; 98% of the facilities had them and the least available was tenaculum single tooth/multi teeth (76%).

At least one episiotomy/perineal set was available in 98% of the facilities with the average number of sets per facility ranging from 10 per facility in general hospitals to 20 per facility in the two teaching hospitals. At least one complete set of craniotomy equipment was available in only 70% of the facilities; while 91% of the facilities had electric vacuum aspiration machine (table 9.4.4A in the appendix).

Selected furnishings and amenities in the maternity area

As shown in table 9.4.5 below, all the facilities had instrument trolley, blankets for cold weather, linens, and wheelchair. The rest of the furnishings and amenities were widely available in more than 94% of the facilities; except labor/delivery table without stirrups; which was available only in 76% of the facilities.

Table 9.4.5: Percentage of facilities with selected furnishings and amenities in the maternity area, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Furnishings					
Instrument trolley	100%	100%	100%	100%	100%
Instrument tray	98%	100%	100%	98%	100%
Beds	98%	100%	100%	98%	100%
Linens	100%	100%	100%	100%	100%
Blankets for cold weather	100%	100%	100%	100%	100%
Water filter (or other means to make potable water available to patients and staff)	94%	100%	100%	93%	100%
Filled O_2 cylinder with cylinder carrier and key to open the valve	98%	100%	100%	98%	100%
Wheelchair	100%	100%	100%	100%	100%
Stretcher with trolley	98%	100%	88%	100%	100%
Examination table	95%	100%	88%	96%	100%
Labor/delivery table with stirrups	98%	100%	100%	98%	100%
Labor/delivery table without stirrups	76%	50%	88%	75%	100%

9.5 Newborn care equipment and supplies

Figure 9.5.1 and table 9.5.1A in the appendix, give the percentage of facilities with newborn supplies and equipment. Baby-weighing scales were found in all facilities, thermometer for newborns was also available in almost all facilities (98%), cord ties/clips were available in 97%, and towels/blanket or cloth for newborns were found in 89% of facilities, while caps or hats to prevent heat loss were available in only 59% of the facilities.

The neonatal resuscitation pack consists of essential basic equipment to ensure adequate resuscitation of the newborn: mucus extractor, infant face masks, ambu (ventilatory) bags, suction catheter, infant laryngoscope, endotracheal tubes, disposable uncuffed tracheal tubes, suction aspirator, and mucus trap for suction. Neonatal size ambu bag was available in all the facilities; irrespective of type. Similarly, mucus extractor and neonatal size face masks, infant laryngoscope, endotracheal tubes, disposable uncuffed tracheal tubes, and neonatal resuscitation were available in 98% of the facilities. However, anatomical model (for practice) was found in only 47% of the facilities.

Providers were asked whether they have the neonatal resuscitation packs within reach or not. Accordingly, great majority of the facilities (95%) reported that neonatal resuscitation packs were within their reach of a minute away if needed. Decontamination supplies for the ambu bag and mask were found in 88% of the total facilities assessed. This implies that one of the teaching hospitals, 12% and 11% of the referral/specialized and general hospitals, respectively, had stockout of decontamination supplies for ambu bag and mask.

Figure 9.5.1: Percent of facilities with selected items from neonatal resuscitation pack, Jordan EmONC, 2022

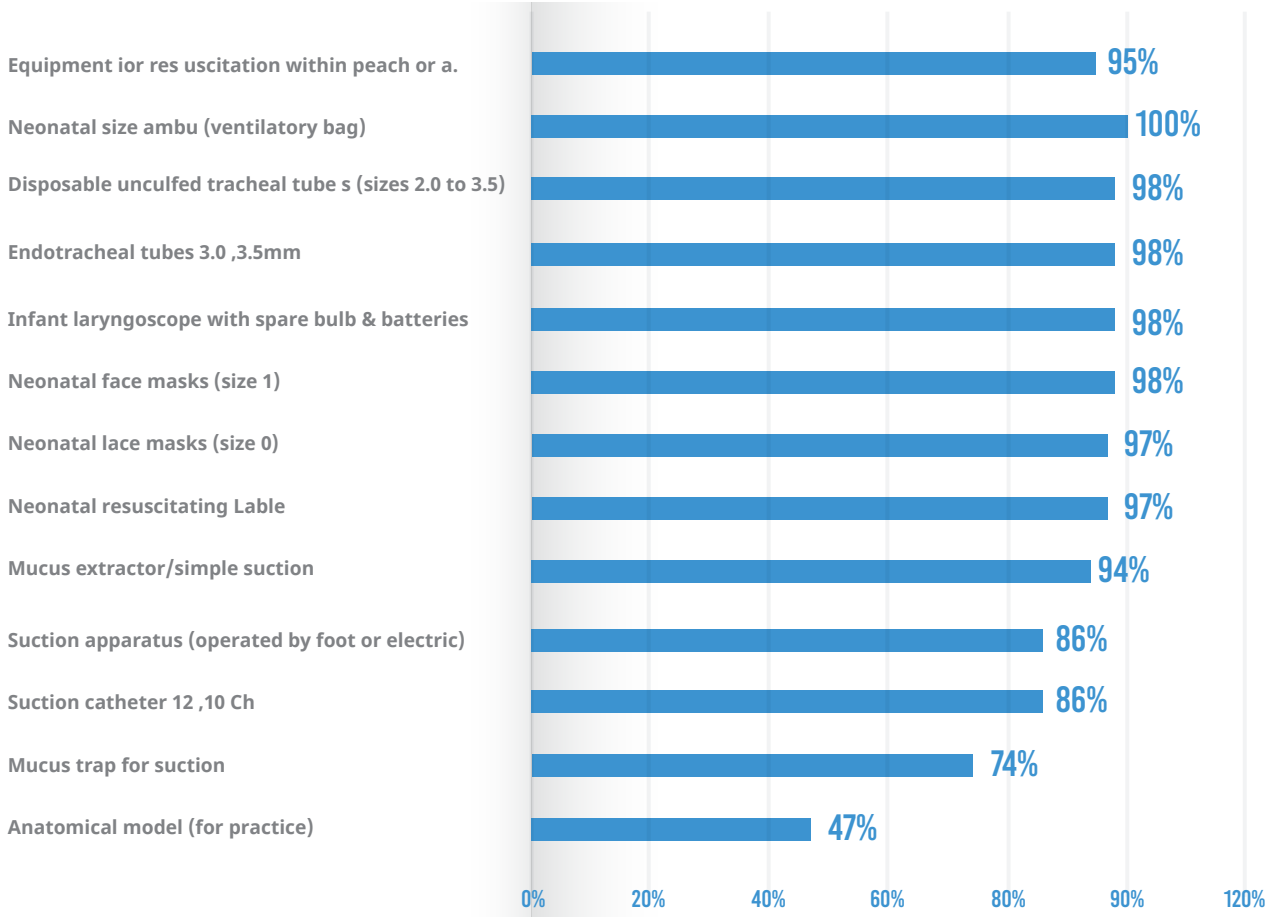


Table 9.5.1A in the appendix also shows equipment and supplies for small and sick newborns. Out of the selected equipment in this category, syringes (0.5 and 1ml), incubator, nasogastric feeding tube were found in all the facilities. Radiant warmer, fluorescent tubes for phototherapy to treat jaundice, register for sick babies, and daily patient chart were available in over 94% of the facilities. In the contrary, KMC register, cup and spoon for infant feeding, and small cup for breast milk expression were available in only 24%, 45%, and 48% of the facilities, respectively. KMC register was not found in the two teaching hospitals.

9.6 Operating theatre and equipment

Table 9.6.1 below, focuses on the availability of OTs and the availability of complimentary supplies and equipment. The denominator for OT questions was 65 as the health center that provided maternity services did not have one. Of the total 65 hospitals included in this assessment, only 75% had one or more OTs for obstetric patients. Among those with an OT, availability of basic items in the OT was quite good as over 98% of the facilities had them. All or a little below 100% of the facilities had all the 24 items obstetric laparotomy/caesarean delivery packs.

Table 9.6.1: Percentage of hospitals with an operating theatre (OT) and among those with an OT, the percent with select equipment and supplies, Jordan EmONC, 2022

	Total (n=65)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)
	%	%	%	%
Has one or more separate OT for obstetric patients	75%	100%	100%	71%
Basic Items	n=49	n=2	n=8	n=39
Operating table	100%	100%	100%	100%
Light- adjustable, shadowless	94%	100%	88%	95%
Surgical drapes	98%	100%	100%	97%
Syringes 5ml	100%	100%	100%	100%
Syringes 10ml	100%	100%	100%	100%
Syringes 20ml	100%	100%	100%	100%
Needles 21, 22, 23	98%	100%	100%	97%
Obstetric laparotomy / cesarean delivery pack	n=49	n=2	n=8	n=39
Stainless steel instrument tray with cover	100%	100%	100%	100%
Towel clips	98%	50%	100%	100%
Sponge forceps, 22.5 cm	100%	100%	100%	100%
Straight artery forceps, 16 cm	100%	100%	100%	100%
Uterine hemostasis forceps, 20 cm	100%	100%	100%	100%
Needle holder	100%	100%	100%	100%
Surgical knife handle/No 3	100%	100%	100%	100%
Surgical knife handle/No 4	100%	100%	100%	100%
Surgical knife blades	100%	100%	100%	100%
Triangular point suture needles/7.3 cm/size 6	84%	100%	75%	85%
Round-bodied needles/No 12/size 6	96%	100%	100%	95%
Abdominal retractor/size 3	98%	100%	100%	97%
Abdominal retractors/double-ended (Richardson)	98%	100%	88%	100%
Curved operating scissors/blunt pointed (Mayo) 17cm	100%	100%	100%	100%
Straight operating scissors/blunt pointed (Mayo) 17cm	100%	100%	100%	100%
Scissors, straight, 23 cm	98%	100%	100%	97%
Suction nozzle	92%	100%	88%	92%
Suction tube, 22.5 cm, 23 French gauge	98%	50%	100%	100%
Intestinal clamps, curved (Dry), 22.5 cm	86%	100%	63%	92%
Intestinal clamps, straight, 22.5 cm	88%	50%	63%	95%
Dressing (non-toothed tissue) forceps/15 cm	100%	100%	100%	100%
Dressing (non-toothed tissue) forceps/25 cm	100%	100%	100%	100%
Sutures (different sizes and types)	100%	100%	100%	100%
Mini-laparotomy kit (for female sterilization)	88%	50%	75%	92%

As shown in table 9.6.2 below, most of the anesthetic equipment and supplies were fully available in 83% to 100% of the facilities with OT. Of all the items available, anesthetic face masks, oropharyngeal airways, laryngoscopes with spare bulbs and batteries, endotracheal tubes, intubating forceps, anesthesia vaporizers (draw-over system), oxygen cylinders with manometer and flowmeter, and electric suction aspiration were the most common equipment/supplies found in at least 95% of hospitals with OT.

Table 9.6.2: Percentage of hospitals with an operating theatre (OT) and with anesthesia equipment and supplies, Jordan EmONC, 2022

	Total (n=65)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)
Anesthesia Equipment				
Anesthetic face masks	100%	100%	100%	100%
Oropharyngeal airways	100%	100%	100%	100%
Laryngoscopes (with spare bulbs and batteries)	98%	100%	100%	98%
Endotracheal tubes with cuffs (8 mm)	97%	100%	100%	96%
Endotracheal tubes with cuffs (10 mm)	83%	50%	88%	84%
Intubating forceps	97%	50%	100%	98%
Endotracheal tube connectors: 15 mm plastic (connect directly to breathing valve; three for each tube size)	92%	100%	88%	93%
Spinal needles (18-gauge to 25-gauge)	97%	100%	100%	96%
Suction aspirator, Foot-operated	63%	100%	50%	64%
Suction aspirator Electric	100%	100%	100%	100%
Anesthesia vaporizers (draw-over system)	95%	100%	88%	96%
Oxygen cylinders with manometer and flowmeter (low flow) tubes and connectors	98%	100%	100%	98%

9.7 Laboratory equipment and supplies for blood transfusion

Tables 9.7.1A and 9.7.2A in the appendix present the availability of laboratories and laboratory equipment and supplies. Of the 66 facilities assessed, 65 had laboratories (one general hospital has no laboratory – but manage lab tests through outsourcing to another private facility). All types of facilities with a laboratory had a set of laboratory guidelines, except 6 general hospitals (table 9.7.1A in the appendix).

Regarding blood bank, only 55% of the facilities with laboratory had blood bank. Shortage of blood banks was attributed by referral/specialized and general hospitals as only 38% and 56% had blood bank, respectively. Facilities without blood bank were asked about the time required to provide blood in their respective facilities. Close to half of the facilities without a blood bank mentioned that it would need only one hour to provide blood, followed by 34% that said two hours, and 17% mentioned 3 to 4 hours. Refrigerator for blood bank, test-tubes (various sizes), cotton wool, rack, microscope slides, centrifuge (electric), 37-degrees water bath, and blood typing and cross-matching reagents were available in 97% – 100% of the facilities. As expected, teaching and referral/specialized hospitals had most of the laboratory equipment and supplies than the rest of the facility types. The median number of blood units available at the time of the assessment ranges from zero in the health center to 300 units in teaching hospitals. Referral/specialized hospitals had 100 units of blood and general hospitals had 58 units (table 9.7.1 in the appendix).

Most of the supplies were available in many of the facilities. Pregnancy tests were available in almost all facilities (97%), while malaria RDT kits and Tuberculosis (TB) microscopy (slides, stain) were available in 6% and 17% of the facilities, respectively. Generally, syphilis, hepatitis B and C tests, and rapid HIV test kits were very low (below 53%) (table 9.7.1 in the appendix).

Microscope, refrigerator for lab supplies, test tubes, and test tube rack were available in all of the facilities assessed; while CD4 machine was available in only six of the 66 facilities. Ammonia was also limited in facilities as only 29% had it. Teaching hospitals were more likely to get stocked in lab supplies and equipment than the rest of the facilities in the group (table 9.7.2A in the appendix).

Chapter 10
Case Reviews

This chapter presents analysis results of five case review modules/questionnaires: 1) partograph review, 2) CS delivery review, 3) maternal morbidity review, and 4) newborn morbidity review. In these case reviews, there were general and specific questions asked during admission, delivery or treatment of complications, and after admission. In all the case reviews, we did not attempt to select the cases randomly in order not to interrupt the routine services provision. Rather, we had the most recent three cases selected for each case review module to ease data collection. Hence, the analysis is to indicate quality of care and record keeping for the convenience sample of cases. We do recommend taking precautions when generalizing to the entire cases over the 12 months prior to the assessment. Details of each case review is described below:

10.1 Partograph reviews

WHO recommends the use of partograph as a key strategy to monitor progress of labor, and thereby manage complications arising from prolonged or obstructed labor that lead to other major obstetric complications. The assessors were instructed to select most recent three partographs with the following criteria: 1) at term, 2) less than 8 centimeters dilatation at first exam, 3) vertex presentation, 4) fetal heart present at first exam, and 5) without known obstetric complications at first exam.

Use and availability of partograph

Table 10.1.1A in the appendix presents the number of facilities with partograph, reviewed by facility type, region, managing authority, and EmONC status. Of the 66 health facilities assessed, a partograph review was conducted in 48 (73%) health facilities. From these facilities, a total of 144 partographs were reviewed. The partograph was used in 48 (73%) health facilities and among these facilities where partographs were used, the modified WHO partograph was used in 77% of the facilities, composite WHO partograph was used in 15% of the facilities, while 8% of the facilities used simplified WHO partograph. Tertiary-level facilities and the private-not-for-profit facilities were more likely used modified WHO partograph than the rest in the groups (table 10.1.2 below).

Availability of labor management protocol is important as it guides the use of the partograph during labor and delivery; it alerts the provider for interventions as needed. This protocol existed in only 39% of the facilities. Secondary/primary hospitals and government-owned facilities tend to have this labor management protocol than the rest. Great majority (92%) of the facilities used clinical/case file to record women's information, and 58% of facilities used ANC card with partograph. When prioritized, 65% of the facilities preferred to use clinical/case file, followed by ANC card with partograph (28%). Such prioritization highly likely happened in secondary/primary hospitals and private-for-profit facilities than the rest of the groups (table 10.1.2 below).

Table 10.1.2: Percent of facilities according to partograph usage characteristics, by facility type and managing authority, Jordan EmONC, 2022

	All facilities	Facility type		Managing authority		
		Tertiary-level hospitals	Secondary/ primary hospitals	Public/ government	Private-for-profit	Private-not-for-profit
Among all facilities	n=66	n=10	n=56	n=35	n=26	n=5
Uses partographs	73%	83%	72%	71%	73%	80%
Among facilities that use partographs	n=52	n=9	n=43	n=27	n=21	n=4
Type of partograph (multiple responses possible)						
Modified WHO partograph	77%	100%	73%	88%	58%	100%
Simplified WHO partograph	8%	0%	10%	8%	11%	0%
Composite WHO partograph	15%	18%	0%	12%	21%	0%
Other types of partograph (MOH Form)	2%	0%	3%	5%	0%	0%
Labor management protocol existed and observed (% yes)	39%	17%	42%	49%	27%	40%
Facility has other document to fill in for women in labor (multiple responses possible)						
ANC card (includes partograph)	58%	50%	60%	72%	37%	75%
Clinical/case file	92%	88%	93%	84%	100%	100%
Administrative/financial file	79%	88%	78%	76%	89%	50%
When prioritized, with which document do you start?						
ANC card (includes partograph)	28%	13%	32%	30%	16%	75%
Clinical/case file	65%	63%	66%	57%	84%	25%
Administrative/financial file	7%	25%	3%	13%	0%	0%

Partograph recording practice

Table 10.1.3 below, shows partograph recording practices by facility type and managing authority. Accordingly, cervical dilation was correctly charted in 92% of the partographs except those from private-for-profit and private-not-for-profit facilities, where it was lower at 78% and 88%, respectively. Among those correctly charted, 89% of the partographs filled the timing at delivery. Tertiary-level and private-not-for-profit facilities had more likely filled the timing at delivery than the rest of the groups. Women delivered on, or left of the alert line, was recorded in a little more than half of the partographs, followed by those who delivered between alert and action lines (41%). In private-for-profit facilities, however, the partographs indicated that deliveries beyond the action line (12%) were greater than deliveries occurring between the alert and action lines (5%).

Among the 25 women who delivered beyond the action line, the average time between the action line and delivery was 4.1 hours and the median was 3.5 hours. This shows the quality of birth attendance that might led to an increased risk of complications for the mothers and their babies.

Of the 144 women who had their partograph filled, only 45% had their labor augmented. Tertiary-level hospitals and private-for-profit facilities had low number of women with their labor augmented than the rest of the groups.

Among those partographs where augmentation was used (55), 42% recorded unnecessarily on the alert line. The practice in the private facilities was even higher (over 48%). Only 55% had augmentation between alert and action line (table 10.1.3).

Table 10.1.3: Percent of partographs reviewed according to charting and recording practices, by facility type and managing authority, Jordan EmONC, 2022

	All partographs reviewed	Facility type		Managing authority		
		Tertiary-level hospitals	Secondary /primary hospitals	Public/ government	Private-for-profit	Private-not-for-profit
Among all partographs reviewed	n=144	n=24	n=120	n=75	n=57	n=12
First dilatation charted correctly on alert line	92%	93%	92%	92%	78%	88%
Among partographs with first dilatation charted correctly on alert line	n=122	n=22	n=100	n=73	n=39	n=10
Time at delivery filled in	89%	91%	89%	92%	82%	100%
Apgar score recorded	52%	59%	51%	45%	56%	90%
Partograph filled in: (subjective according to data collector)						
As labor progressed	93%	91%	93%	93%	90%	100%
After delivery	7%	9%	7%	7%	10%	0%
The woman delivered:						
On or left of alert line	52%	64%	49%	59%	46%	20%
Between alert and action lines	41%	23%	45%	34%	46%	70%
On or right of action line	7%	14%	6%	7%	8%	10%
Labor was augmented	45%	36%	47%	45%	36%	64%
Among those delivering on or to the right of the action line5	n=25	n=4	n=21	n=10	n=12	n=3
Average time until delivery after reaching action line (hours)						
Mean	4.1	4.6	4.0	3.8	4.9	3.3
Median	3.5	3.3	3.5	2.8	4.5	2.8
Among those augmented	n=55	n=8	n=47	n=26	n=25	n=4
Record of augmentation						
Augmented on alert line	42%	50%	40%	35%	48%	50%
Augmented between alert and action lines	55%	50%	55%	62%	52%	25%
Augmented on or right of action line	4%	0%	4%	4%	0%	25%

Table 10.1.4 below, presents whether key measurements were taken in the reviewed partographs. The standards included in this assessment were temperature, blood pressure, fetal heart rate, maternal pulse, contractions, vaginal exam, descent of head, and state of the membrane or color of the liquor.

Fetal heart rate (over 94%), vaginal exam recorded every 4 hours (89%), decent of head (between first exam and delivery) (83%), and blood pressure observed every 4 hours (80%) were better recorded in the partographs. However, observed temperature (every 2 hours) (68%) was the least well recorded component of partographs.

Table 10.1.4: Percent of partographs reviewed according to whether key measurements were taken and recorded as appropriate, by time between first exam and delivery, Jordan EmONC, 2022

	All partographs reviewed1	Facility type		Managing authority		
		Tertiary-level hospitals	Secondary/ primary hospitals	Public/ government	Private-for-profit	Private-not-for-profit
	n=122	n=22	n=100	n=73	n=39	n=70
Key measurements taken2						
Temperature (standard) - observed at least every 2 hours	68%	59%	70%	66%	72%	70%
Blood pressure (standard) - observed at least every 4 hours	80%	68%	82%	75%	85%	90%
Maternal pulse (standard) - observed at least every 30 minutes	72%	45%	78%	66%	85%	70%
Fetal heart beat (standard) - observed at admission	98%	100%	98%	97%	100%	100%
Fetal heart beat (standard) - observed at least on hourly basis	94%	95%	94%	96%	95%	80%
Contractions (standard) - assessed every 30 minutes	75%	55%	79%	75%	74%	70%
Vaginal exam (standard) - performed every 4 hours	89%	95%	87%	93%	82%	80%
Descent - assessed between first exam and delivery	83%	59%	88%	84%	82%	80%
State of the membrane or color of the liquor recorded	75%	73%	75%	77%	72%	70%

Table 10.1.5 below, indicates charting of delivery time by mode of delivery in the partographs. Of the 122 partographs where first dilatation was charted correctly, 90% were delivered by spontaneous vaginal delivery, of which 53% took place during normal active phase of labor (on or to the left of the alert line of the partograph). Delivery by instrument was documented in only 4% of the partographs, and 7% of the partographs had no information of delivery type.

Indications for instrumental delivery were analyzed by the timing of delivery. However, there were low frequencies/numbers of partographs. Of the two partographs filled for women who experienced prolonged labor, one delivered on or to the left of the alert line, and the other one between alert and action lines.

Outcomes for the baby were also analyzed by the timing of delivery. Of the 114 partographs with normal live birth as an outcome, 51% delivered on or to the left the alert line, while 41% delivered between alert and action lines. Only 8% of the normal live births were delivered on or beyond action lines.

Table 10.1.5: Percent distribution of partographs reviewed according to charting of delivery time, by mode of delivery, reason for instrumental or caesarean delivery, and newborn outcome, Jordan EmONC, 2022

	Number of partographs reviewed1	Charting of delivery time2			
		On or left of alert line	Between alert and action lines	On or right of action line	Total
Total cases1	122	52%	41%	7%	100%
Vaginal (SVD)	110	53%	39%	8%	100%
Instrumental	5	40%	60%	0%	100%
No information	7	43%	57%	0%	100%
Reason for instrumental or caesarean delivery					
Prolonged labor	2	[50%]	[50%]	[0%]	[100%]
Fetal distress	2	[50%]	[50%]	[0%]	[100%]
Other	1	[0%]	[100%]	[0%]	[100%]
Newborn outcome					
Normal live birth	114	51%	41%	8%	100%
Live birth with asphyxia	1	[100%]	[0%]	[0%]	[100%]
No information	7	57%	43%	0%	100%

1 This table is based only on those partographs where first dilatation was charted correctly on the alert line (n=122), minus 22 cases that did not indicate time between first exam and delivery.

2 Figures in brackets indicate that analyses are based on very few cases.

10.2 Cesarean delivery reviews

CS delivery case review was conducted to understand the principal clinical indications for CS, and to evaluate some aspects of the quality of the procedure and record-keeping. Data collectors picked three most recent CSs, as documented in the facility operating theatre logbook in the last 12 months prior to the assessment.

As shown in table 10.2.1 below, of the 66 facilities assessed, one was a health center that did not have CS delivery. All of the 65 facilities provided 3 cases for review. Due to the higher number of facilities in the Middle region, most cases came from this region (60%) and secondary/primary hospitals (85%). Government facilities provided 54% of the cases while 40% were from private-for-profit facilities, and the remaining 6% from private-not-for-profit facilities. Most of the cases came from facilities that were functioning as partial EmONC (51%).

Table 10.2.1: Percent of facilities where caesarean deliveries were reviewed, by region, facility type, managing authority, and EmONC classification, Jordan EmONC, 2022

	Number of facilities1	Percent of facilities where caesareans were reviewed	Number of facilities where caesareans were reviewed and how many were reviewed2	Total number of caesareans reviewed
			3	
National	65	100%	65	195
Region				
Northern	19	100%	19	57
Middle	39	100%	39	117
Southern	7	100%	7	21
Type of Facility				
Tertiary-level hospitals	10	100%	10	30
Secondary/primary hospitals	55	100%	55	165
Managing authority				
Public/government	35	100%	35	105
Private-for-profit	26	100%	26	78
Private-not-for-profit3	4	100%	4	12
EmONC classification				
CEmONC	32	100%	32	96
Partially functioning4	33	100%	33	99

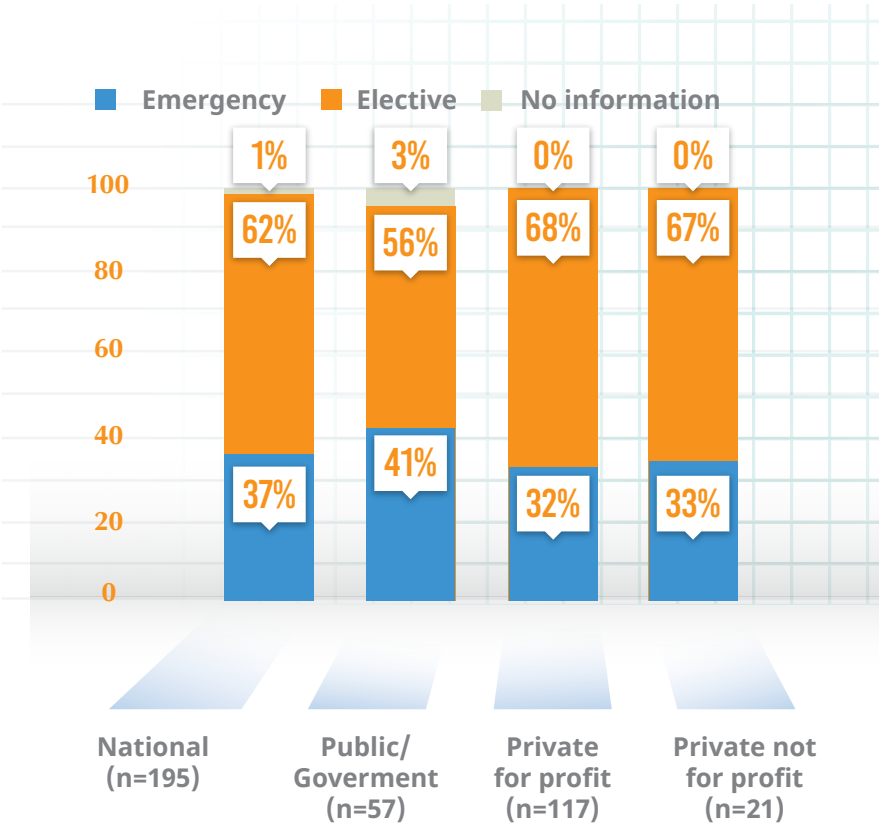
1 Only hospitals are included in this cesarean delivery review.
2 Maximum number of caesarean deliveries reviewed was 3 per facility. And all the 65 hospitals had 3 cases while the health center did not do CS delivery.
3 Includes NGO
4 Partially functioning indicates those facilities providing some signal functions but missing at least one BEmONC signal function.

Characteristics of women and outcomes

Table 10.2.1A in the appendix shows characteristics of women with their CS reviewed. The average age of women was 30 years; most of the women with CS reviewed were multiparous (33%), followed by nulliparous women (31%). A similar distribution percentage was observed among government facilities; while most women in the private-for-profit facilities were nulliparous (38%). Half of the women with CS cases reviewed in the private-not-for-profit were para one. Large proportion of women in all the facilities were at term (86%). Of the 195 cases reviewed, 5%, 7%, and 7% of the cases were with known positive status of HIV, Hepatitis B Virus (HBV), and Hepatitis C Virus (HBC), respectively.

Figure 10.2.1 and table 10.2.2 below, present CS delivery characteristics and maternal survival status. Overall, 62% of the CS delivery cases reviewed were elective and 37% were emergency. A similar distribution percentage was observed by managing authority. Nationally, of the total CS cases, three-quarters had CS done before the onset of labor, while 15% had started labor spontaneously. Of the 72 cases whose CS was an emergency, 65% did not have partograph filled. Of the total 195 CS cases, 55% had previous CS.

Figure 10.2.1: Percent distribution of caesarean deliveries reviewed according to type of caesarean, by managing authority, Jordan EmONC, 2022



As indicated in table 10.2.2 below, large proportion of women (89%) with their CS reviewed were given prophylactic uterotonics after their babies were delivered. Antibiotics was administered before the CS in 84% of women. The average time between decision to the CS and beginning of actual CS was recorded as one hour, with variations observed as higher in the private-not-for-profit (an hour and half) and lower in the private-for-profit facilities (about 46 minutes).

Seven percent of the total cases developed complications during surgery, while post-operative complications were recorded in 3% of the cases. Of these, 1% had wound infections. All of the mothers were alive during discharge (table 10.2.2 below).

Table 10.2.2: Percent distribution of caesarean deliveries reviewed according to delivery characteristics and maternal survival status, by managing authority, Jordan EmONC, 2022

	All caesareans reviewed	Managing authority		
		Public/ government	Private-for-profit	Private-not-for-profit1
	n=195	n=57	n=117	n=21
Onset of labor				
Spontaneous	15%	13%	19%	0%
Induced	10%	10%	13%	0%
Caesarean before labor	75%	77%	68%	100%
Type of caesarean				
Emergency	37%	41%	32%	33%
Elective	62%	56%	68%	67%
No information	1%	3%	0%	0%
Partograph use (among women whose caesarean was an emergency)	n=72	n=43	n=25	n=0
Partograph used	31%	35%	24%	25%
Partograph not used	65%	60%	72%	75%
Partograph not used because considered elective but went into labor	1%	2%	0%	0%
No information	3%	2%	4%	0%
Fetal presentation				
Cephalic	69%	75%	62%	67%
Breech	14%	12%	14%	33%
Transversal or oblique	3%	1%	5%	0%
No information	14%	11%	19%	0%
Number of neonates				
Singleton	92%	88%	96%	100%
Multiple	6%	9%	4%	0%
No information	2%	4%	0%	0%
Woman had previous CS (% Yes)	55%	57%	53%	58%
Prophylactic uterotonics administered after baby delivered (% yes)	89%	83%	96%	100%
Mean time between decision to CS and beginning of surgery (minutes)	56	57	46	88
Antibiotics administered before the CS (% Yes)	84%	85%	85%	75%
Woman was given a contraceptive				
Permanent method	2%	3%	0%	8%
Temporary method	13%	23%	1%	0%
Not provided contraceptives	64%	57%	68%	92%
No information	20%	17%	27%	0%
Developed a complication during operation (% Yes)	7%	5%	10%	0%
Developed a complication post-operation (% Yes)	3%	5%	1%	0%
Infected wound from current cesarean (% Yes)	1%	1%	1%	0%
Meconium presents in the amniotic fluid (% Yes)	8%	6%	9%	25%
Maternal outcome (% Alive)	100%	100%	100%	100%

1 Includes NGO facilities

Indications for caesarean section

As shown in table 10.2.3A in the appendix and table 10.2.4 below, of the 195 caesarean cases reviewed, 153 (78%) were due to maternal indications and 36 (18%) for fetal indications – i.e., fetal distress, breech, cord prolapse, and multiple gestation. Three percent of the cases had no information on indications to CS. Indications related to previous CS scar, fetal distress, breech with footling, failure to progress, and cephalo-pelvic disproportion were the leading indications for CS. Previous CS scar was the leading indication in government (47%) facilities, private-for-profit (41%) and private-not-for-profit facilities (42%).

Table 10.2.4: Percent distribution of caesarean deliveries reviewed according to type of caesarean, by indication for surgery, Jordan EmONC, 2022

	Number of caesareans reviewed	Type of caesarean			
		Emergency	Elective	No information	Total
Maternal indications					
CPD/prolonged labour1	37	62%	32%	6%	100%
Previous caesarean/uterine scar	86	12%	88%	0%	100%
Placenta previa/abruption	8	88%	12%	0%	100%
Uncontrolled severe PE/E	6	83%	17%	0%	100%
Other maternal indications2	16	19%	81%	0%	100%
Fetal indications					
Fetal distress3	18	89%	11%	0%	100%
Breech	14	43%	57%	0%	100%
Cord prolapse	1	100%	0%	0%	100%
Multiple gestation	3	0%	100%	0%	100%
No information	6	17%	67%	16%	100%

CPD = cephalo-pelvic disproportion; PE/E = pre-eclampsia/eclampsia.

1 CPD/prolonged labor includes CPD, malpresentations, prolonged or obstructed labour, arrest disorders, failure to progress, failed assisted vaginal delivery, failed induction, and uterine ruptures.
2 Other maternal indications include failed vaginal birth after caesarean, fistula, medical disease, maternal request, and trauma.
3 Fetal distress includes distress, severe intrauterine growth restriction, and non-reassuring biophysical state.

According to table 10.2.5A in the appendix, 69 cases had an emergency CS but were not referred from another facility. Among these, 91% stayed in hospital for about less than 3 days, compared to elective CS cases (93%) that stayed with the same number of days. The average number of days for both emergency and elective non-referred cases was 2 days, and 1.8 days for the referred cases.

The mean number of hospitalization days was also analyzed by indication for CS for non-referred clients. On average, women with an indication of fetal distress remained the shortest time (1.7 days) and women with placenta previa/abruption and previous CS scar had the longest stays (2.3 and 2.2 days, respectively).

The time lapse between decision to perform surgery and surgery itself was documented for only 34% of cases and the question was asked only of those women whose caesarean was considered an emergency. Because this piece of information was so poorly recorded, we did no further analysis beyond whether this information was recorded or not. It was noteworthy that recording was higher among referred clients with an emergency caesarean (44%), than among non-referred emergency caesarean clients (29%).

Fetal outcomes

Figure 10.2.2 below and table 10.2.6A in the appendix, show the distribution of the newborn outcomes of the reviewed CS cases. Of the 195 cases, 185 (95%) resulted in a live birth, 3% were live births with a low Apgar score, and 2% had no information for fetal outcome. Two cases found that were one or more alive, or one or more dead for twins or more.

Figure 10.2.2: Percent distribution of caesarean deliveries reviewed according to newborn outcome, Jordan EmONC, 2022

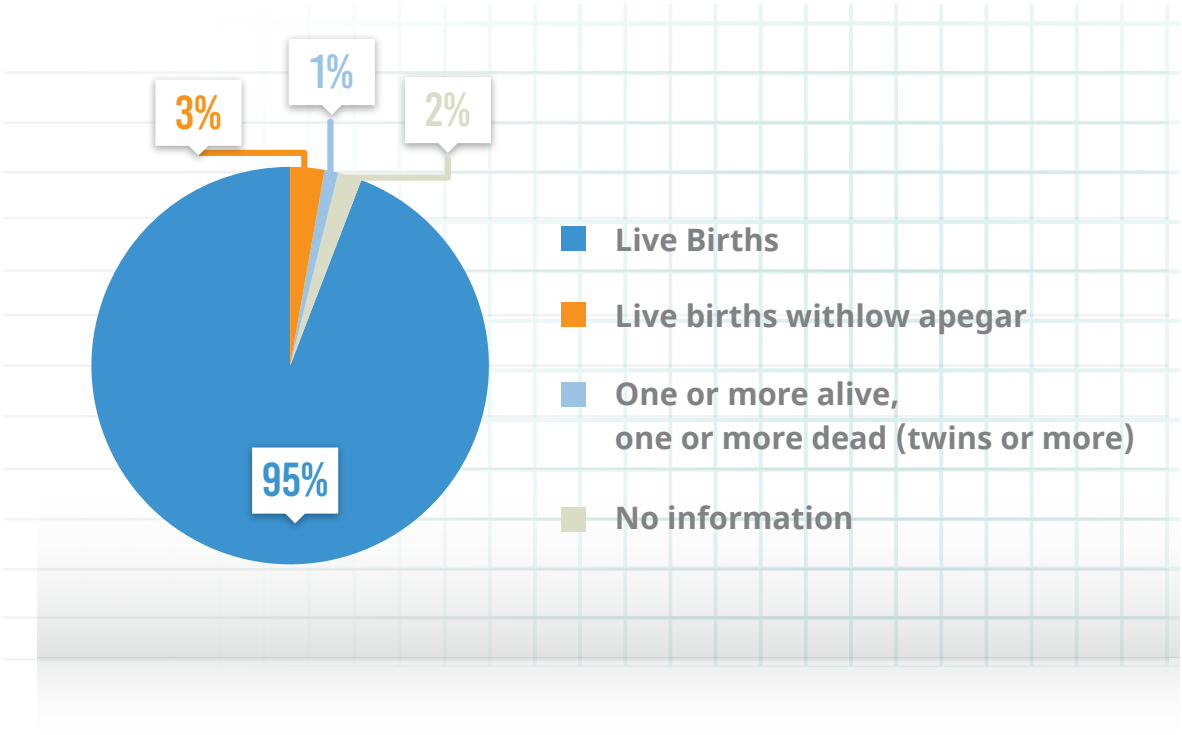


Table 10.2.7A in the appendix presents the health worker cadre who performed the surgery, anesthesia used, and who provided the anesthesia by managing authority. In this case, 85% of all reviewed cases were performed by an obstetrician/gynecologist, and the remaining 15% were performed by a resident doctor. Almost all reviewed cases from the private facilities, and 73% of the government facilities had performed the CS by obstetricians/gynecologists.

Regarding anesthesia used, 57% of the cases had surgery with general anesthesia, while 40% had spinal/epidural. The later anesthesia type was the most commonly administered among the private facilities, while general anesthesia was more likely be used in the government facilities.

10.3 Maternal morbidity reviews

Maternal morbidity reviews were done with the aim of assessing record-keeping among women who survived PPH, PEE and sepsis, and also to identify factors that contribute to the quality of care. Like partograph and CS delivery reviews, we selected the 3 most recent cases of the aforementioned complications that occurred in the health facility in the last 12 months prior to the assessment.

According to table 10.3.1A in the appendix, there were a total of 306 morbidities reviewed: 133 for PPH, 137 for severe PEE and 36 for sepsis. For PPH, only 40 facilities were able to provided 3 cases, 43 facilities provided 3 cases for PEE, and 10 facilities provided 3 cases for sepsis. The majority of the cases were from secondary/primary hospitals and government-owned facilities. Most of the cases for PPH and PEE came from fully CEmONC facilities (53% each), and sepsis cases reviewed were from partial EmONC facilities (53%).

As shown in table 10.3.2 below, most of the women whose cases were reviewed were between the ages of 25-29 years (28%), followed by age 18 – 24 (17%). As age increased above 29 the percentage of cases reviewed decreased. Very few reviewed cases were among women less than 18 (PEE) or over the age of 40 years for all the complications. Fifty percent of PPH and 37% of PEE cases were multiparous (2 – 4 parity), while 44% of women with sepsis cases were parity one.

Table 10.3.2: Percent distribution of reviewed maternal morbidities according to woman's age and parity, by morbidity type, Jordan EmONC, 2022

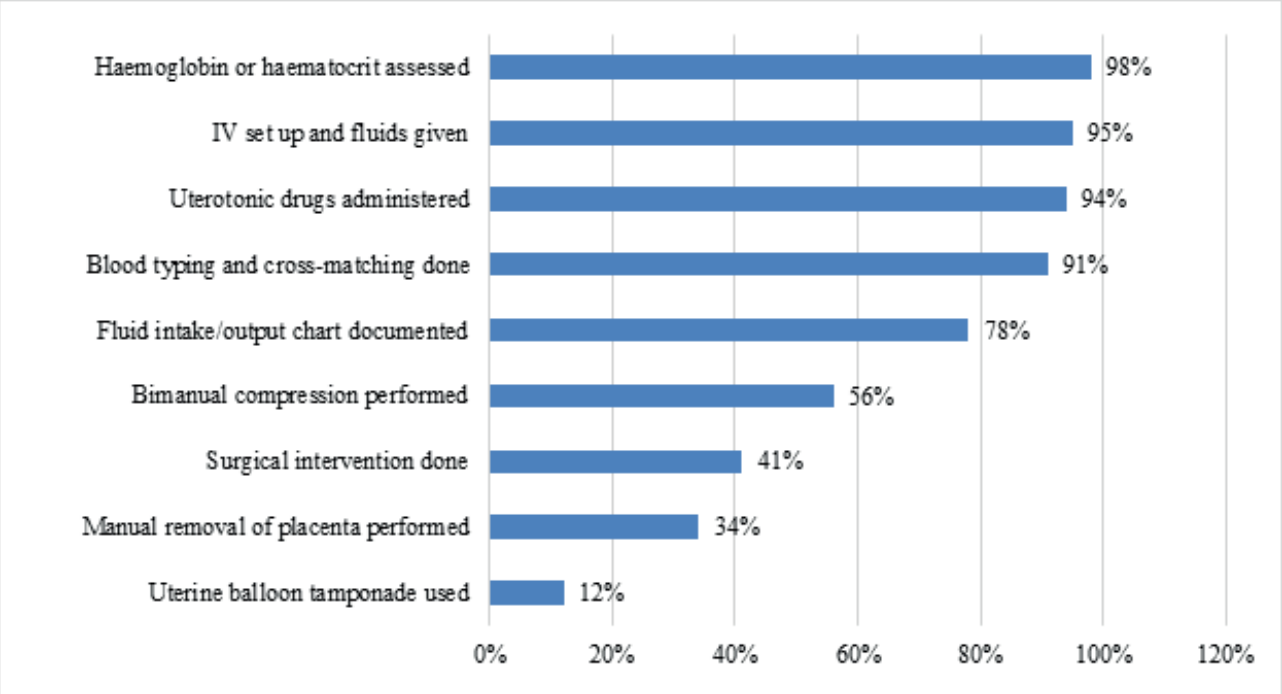
	Postpartum hemorrhage	Severe pre-ec-lampsia/ eclampsia	Sepsis
	n=133	n=137	n=36
Age (in years)			
<18	0%	2%	0%
18-24	17%	11%	4%
25-29	28%	19%	8%
30-34	13%	19%	4%
35-39	9%	14%	2%
≥40	1%	5%	2%
Mean age (in years)	28	30	29
Parity (index pregnancy)			
Nulliparous (0 parity, first delivery)	17%	38%	8%
Parity 1	22%	13%	44%
Multiparous (2-4 parity)	50%	37%	40%
Grand multiparous (≥5 parity)	11%	12%	8%

Status on admission and management of PPH cases

According to table 10.3.3 below, only 7% and 35% of the total 133 PPH cases had evidence of complications in a previous pregnancy and in index pregnancy; respectively. At admission, blood pressure was recorded in 99%, pulse rate for 97%, and consciousness for 89%.

As shown in figure 10.3.1 below, assessment of hemoglobin/hematocrit (98%), IV fluids (95%), uterotonic drugs (94%), and blood typing and cross-matching (91%) were the most common treatment modalities administered for the PPH complications. Uterine balloon tamponade, manual removal of placenta, and surgical interventions were also recorded but uncommon.

Figure 10.3.1: Percent of reviewed postpartum hemorrhage cases according to treatment, Jordan EmONC, 2022



Vital signs (blood pressure, pulse, body temperature, and respiratory rate) after admission were recorded commonly in over 93% of the facilities (table 10.3.3 below).

Table 10.3.3: Percent distribution of reviewed postpartum hemorrhage (PPH) cases according to complications in previous pregnancy, vital signs checked during and after admission, by facility type and managing authority, Jordan EmONC, 2022

	All PPH cases	Facility type		Managing authority		
		Tertiary-level hospitals	Secondary /primary hospitals1	Public/ government	Private-for-profit	Private-not-for-profit2
	n=133	n=24	n=109	n=85	n=39	n=9
Complications in previous pregnancy (% Yes)	7%	8%	6%	7%	5%	11%
Complications in index pregnancy (% Yes)	35%	38%	34%	38%	64%	0%
Vital signs checked on admission (% yes)						
Blood pressure	99%	96%	99%	99%	97%	100%
Pulse	97%	96%	97%	99%	95%	89%
Consciousness	89%	88%	89%	91%	82%	100%
Treatment (% recorded yes)						
IV set up and fluids given	95%	92%	95%	93%	97%	100%
Blood typing and cross-matching done	91%	88%	92%	93%	90%	78%
Hemoglobin or hematocrit assessed	98%	100%	97%	99%	95%	100%
Fluid intake/output chart documented	78%	67%	81%	74%	87%	78%
Uterotonic drugs administered	94%	92%	95%	92%	97%	100%
Bimanual compression performed	56%	25%	63%	55%	64%	33%
Manual removal of placenta performed	34%	17%	38%	33%	36%	33%
Uterine balloon tamponade used	12%	17%	11%	6%	26%	11%
Surgical intervention done	41%	38%	42%	40%	46%	33%
Vital signs monitored after admission (% Yes)						
Blood pressure	97%	100%	96%	99%	95%	89%
Pulse	99%	96%	99%	98%	100%	100%
Body temperature	97%	96%	97%	96%	97%	100%
Respiratory rate	93%	92%	94%	93%	92%	100%

1 Includes a health center
2 Includes NGO facilities

Status on admission and management of pre-eclampsia or eclampsia (PEE)

Table 10.3.4 below, presents status on admission and treatment of PEE cases. Among the 137 PEE cases, 13% had evidence of complications in previous pregnancy and 69% had evidence of complications in index pregnancy. At admission, vital signs were checked for blood pressure, pulse, and consciousness 98%, 97%, and 90%, respectively.

In the PEE case notes, monitoring of proteinuria and urine output were documented in 90% and 81% of the facilities, respectively. Provision of anti-hypertensives was recorded in 82% of the PEE cases. Decision to deliver and time of delivery were also recorded in 87% and 85% of the facilities, respectively. A loading dose of Magnesium Sulphate was documented in 76% of the cases. Tendon reflexes were monitored for only 28% of the PEE cases.

Information about blood pressure and urine output was recorded at post-partum in 95% and 82% of the PEE cases, respectively. There were no much differences among tertiary and secondary/primary hospitals and facilities by managing authority in recording of such vital signs at post-partum.

Table 10.3.4: Percent distribution of reviewed severe pre-eclampsia and eclampsia (PEE) cases according to status during admission and treatment, by facility type and managing authority, Jordan EmONC, 2022

	All severe PE/E cases	Facility type		Managing authority		
		Tertiary-level hospitals	Secondary/ primary hospitals1	Public/ government	Private-for-profit	Private-not-for-profit2
	n=137	n=24	n=113	n=90	n=41	n=6
Complications in previous pregnancy (% Yes)	13%	21%	12%	14%	12%	0%
Complications in index pregnancy (% Yes)	69%	88%	65%	67%	71%	100%
Vital signs checked on admission (% yes)						
Blood pressure	98%	100%	97%	99%	95%	100%
Pulse	97%	100%	96%	97%	98%	100%
Consciousness	90%	83%	91%	91%	85%	100%
Treatment (% recorded Yes)						
Proteinuria results documented	90%	96%	89%	99%	73%	67%
Antihypertensive administered	82%	88%	81%	93%	59%	83%
Loading dose of magnesium sulphate given	76%	75%	76%	86%	56%	67%
Tendon reflexes monitored	28%	29%	28%	28%	27%	50%
Respiratory rate monitored	85%	100%	82%	79%	98%	100%
Urine output monitored	81%	96%	78%	80%	83%	83%
If pregnant, decision to deliver noted	87%	100%	84%	83%	98%	67%
Time of delivery recorded	85%	100%	82%	87%	80%	100%
Postpartum monitoring (% yes)						
Blood pressure recorded	95%	92%	96%	96%	92%	100%
Urine output recorded before discharge	82%	75%	83%	83%	78%	83%

1 Includes a health center
2 Includes NGO facilities

Status on admission and management of maternal sepsis

According to table 10.3.5 below, there were only 36 sepsis cases reviewed in this assessment. Among them, 3% had evidence of complications in previous pregnancy, and 44% had recorded infections in index pregnancy. Vital signs at admission were recorded in 97% for blood pressure, 94% for pulse, 97% for consciousness. There was no much differences in recording of vital signs among facility types and facilities by managing authority.

Evidence of white blood cell count was recorded for all cases with maternal sepsis. Treatment with antibiotics (Metronidazole) was documented in 78% of the cases; while broad spectrum antibiotics were given and documented in 97% of the cases. Blood culture for bacteria was performed in only 58% of the cases.

Vital signs were monitored after admission in 94% of the cases, each for blood pressure, pulse and body temperature. However, urine output was only monitored in 61% of the cases.

Table 10.3.5: Percent distribution of reviewed sepsis cases according to status on admission and treatment, by facility type and managing authority, Jordan EmONC, 2022

	All sepsis cases	Facility type		Managing authority		
		Tertiary-level hospitals	Secondary/ primary hospitals1	Public/ govern-ment	Private-for-profit	Private-not-for-profit2
	n=36	n=3	n=33	n=24	n=11	n=1
Complications in previous pregnancy (% Yes)	3%	0%	3%	4%	0%	0%
Complications in index pregnancy (% Yes)	44%	0%	48%	38%	64%	0%
Vital signs checked on admission (% yes)						
Blood pressure	97%	100%	97%	96%	100%	100%
Pulse	94%	100%	94%	92%	100%	100%
Consciousness	97%	100%	97%	96%	100%	100%
Treatment (% recorded Yes)						
Broad spectrum antibiotics given	97%	100%	97%	100%	91%	100%
Metronidazole given	78%	100%	76%	83%	73%	0%
Blood count with white cell component assessed	100%	100%	100%	100%	100%	100%
Blood culture for bacteria performed	58%	33%	61%	50%	73%	100%
Vital signs monitored after admission (% yes)						
Blood pressure	94%	100%	94%	92%	100%	100%
Pulse	94%	100%	94%	92%	100%	100%
Body temperature	94%	100%	94%	92%	100%	100%
Urine output	61%	33%	64%	46%	91%	100%

1 Includes a health center
2 Includes NGO facilities

10.4 Newborn morbidity reviews

Like the case reviews of partograph, CS delivery, and maternal morbidities cases were reviewed for newborns that survived breathing difficulties, pre-term or low birth weight babies (< 2000 grams), and neonatal sepsis. Most recent three cases were selected for review as a uniformly applied convenient sampling technique for all case reviews. A total of 185 neonatal case records who had breathing difficulties, 174 preterm or low birth weight (< 2000 grams), 142 that had signs of infection (< 60 days of age) were identified and analyzed (table 10.4.1 below). Due to the size of facilities, of the total cases, 83% to 85% were from secondary/primary hospitals. The large majority of facilities provided three cases for each of the complications.

Data collectors were instructed to select preterm and low birth weight babies with a maximum weight of 2000 grams. However, 10 newborns weighing more than 2000 grams were dropped from the analyses in the tables that follow table 10.4.1.

Table 10.4.1: Percent distribution of facilities where cases of newborn morbidities were reviewed according to number of cases reviewed, facility type, managing authority, and EmONC classification, by morbidity type, Jordan EmONC, 2022

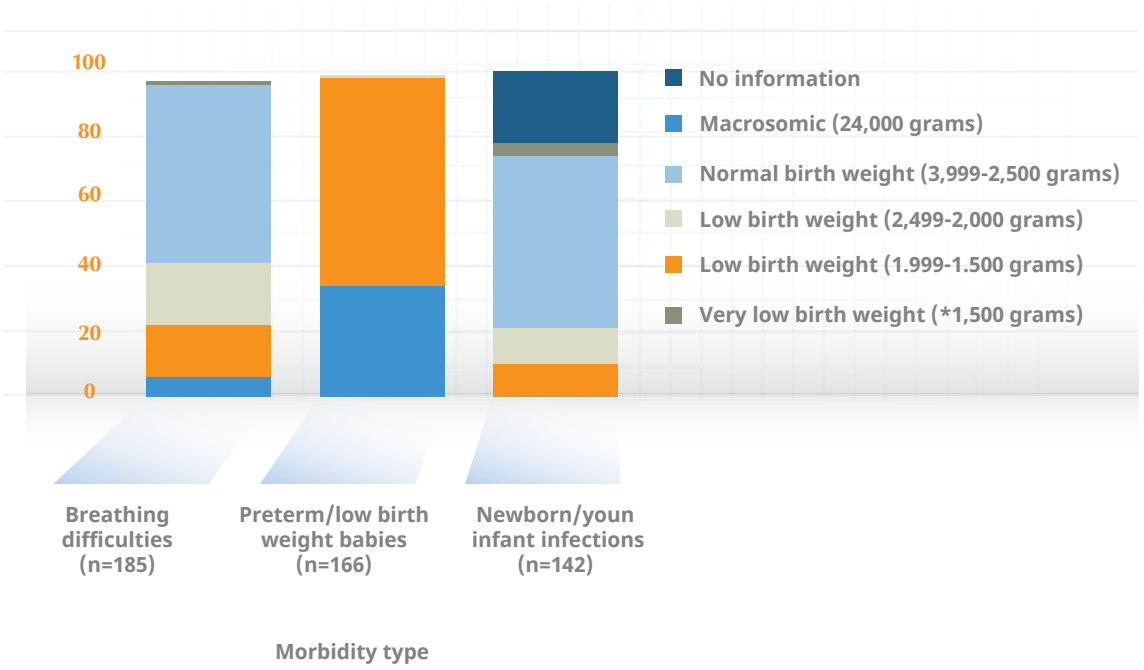
	Breathing difficulties	Preterm/low birth weight babies	Newborn/ young infant2 infections
	n=185	n=174	n=142
1	1% (1)	2% (4)	3% (5)
2	2% (4)	2% (2)	6% (8)
3	97%(180)	96%(168)	91%(129)
Total number of reviewed cases	185	174	142
Facility type			
Tertiary-level hospitals	16%	17%	15%
Secondary/primary hospitals1	84%	83%	85%
Managing authority			
Public/government	55%	57%	63%
Private-for-profit	38%	36%	31%
Private-not-for-profit3	7%	7%	6%
EmONC classification			
CEmONC	50%	51%	52%
Partially functioning4	50%	49%	48%

1 Includes a health center
2 Young infant refers to age less than 60 days.
3 Includes NGO
4 Partially functioning indicates those facilities providing some signal functions but missing at least one BEmONC signal function.

Birth weight and gestational age of cases

As shown in figure 10.4.1 below, and table 10.4.2 in the appendix, 58% of the babies with breathing difficulties weighed over 2500 grams and 89% of the cases had their gestational age recorded. Of the 166 cases of pre-term and low birth-weight babies, 64% weighed between 1,500 and 2000 grams; while 34% weighed below 1500 grams. Ninety-nine percent of the preterm and low birth-weight babies had their gestational age recorded. The selection criterion of < 2000 grams helped minimizing missing information on birth weight and gestational age, unlike the other cases. Twenty-two percent of young infants less than 60 days old with infections were missing birth weight and 32% missed the gestational age.

Figure 10.4.1 Percent distribution of reviewed newborn morbidities according to Birth weight, by morbidity type, Jordan EmONC, 2022



Newborns with breathing difficulties

Table 10.4.3A in the appendix indicates status of newborns with breathing difficulties at admission, treatment and outcome. Of the total 185 neonates with breathing difficulties, only 12% were born through normal labor; while large majority (85%) had no information on duration of labor. The majority (67%) of the case records undergone CS delivery and 30% were born through spontaneous vaginal delivery. Overall, 17% of the mothers had experienced obstetric complications. During treatment, 64% of the cases received positive pressure ventilation (PPV). Government facilities had the highest PPV (75%), compared to private-for-profit with the lowest (54%) performed PPV. Regarding respiratory support using bag and mask, 47% and 41% of the cases received CPAP as well as bag and mask support. Intubation was performed in 9% of the cases, with highest in the private-not-for-profit facilities (17%) than the rest. Fluid/blood treatment/transfusion was done in 95% of the cases.

Preterm babies of low birth weight (< 2,000 grams)

Table 10.4.4A in the appendix shows the status of preterm/low-birth weight babies (< 2000 grams) at admission, treatment and outcome. For preterm and low birth-weight babies, 98% were born at a health facility, and only 2% were born at home. Nearly one third (30%) of the mothers had received antenatal corticosteroids. Mother who received antenatal corticosteroids were higher in the private-for-profit facilities (44%) than the rest in the group. Overall, 20% of preterm or low birth weight babies were treated through KMC with 31% treated in the tertiary-level hospitals, and 18% in the secondary/primary hospitals. A daily monitoring chart was found in almost all facilities (98%).

Overall, 68% of the mothers were counseled on feeding plan, with similar percentage of distribution among the facilities by type and ownership. Regarding newborns' breastfeeding status, 47% of the babies had difficulties in breast feeding, and 14% had no information recorded in the case notes. Cases in the private-for-profit facilities had highly likely breastfed (49%) than government (36%) and private-not-for-profit (9%) (table 10.4.4A in the appendix).

Young infants with infections (< 60 days of age)

As shown in table 10.4.5A in the appendix, most of the cases had evidence of location of delivery as health facilities (85%), while 15% had no information. Information was recorded on the 14% of the cases, in which either the mother or baby were referred from other facilities. Of the total 142 cases, the majority (58%) were seen in the outpatient department (OPD). The median age of the newborn was recorded as 19 days; with 16 days for tertiary-level hospitals, and 19 for secondary/primary hospitals. Temperature was recorded in 99% of the cases. Similarly, heart rate, respiratory rate, oxygen saturation level, and weight were recorded for 92% to 96% of the cases. Overall, 97% of the cases received injectable antibiotics, and the mothers were counseled on follow-up plan in 79% of the cases recorded.

Chapter 11
Referral System

To facilitate successful referrals, availability of efficient communication and transportation services in all the facilities is critical. This EmONC assessment asked questions related to referral services, availability of functional transportation, including availability of ambulances, availability of communication materials, distance and time to the nearest facilities that provide surgical services and higher level of newborn care.

11.1 Availability of emergency services 24/7 and distance and time to the nearest facility with obstetric and newborn care

Availability of emergency services 24/7

As shown in table 11.1.1A in the appendix, hence all the facilities assessed were hospitals and a health center, provision of 24/7 obstetric and newborn care, as expected, was apparent in all the facilities.

Distance (Km) and time (minutes) to the nearest facility with obstetric surgery

As indicated above, all the facilities provide obstetric and newborn care services, except the health center that did not provide surgery. For this health center, the nearest hospital that provides obstetric surgery was in 25 kilometers radius, meaning that the time required for the health center to refer the case to this nearest hospital was about 30 minutes. For example, if a pregnant woman experiences bleeding, she can reach to the health center's referral out hospital within 30 minutes.

Distance (Km) and time (minutes) to the nearest facility with special newborn care unit

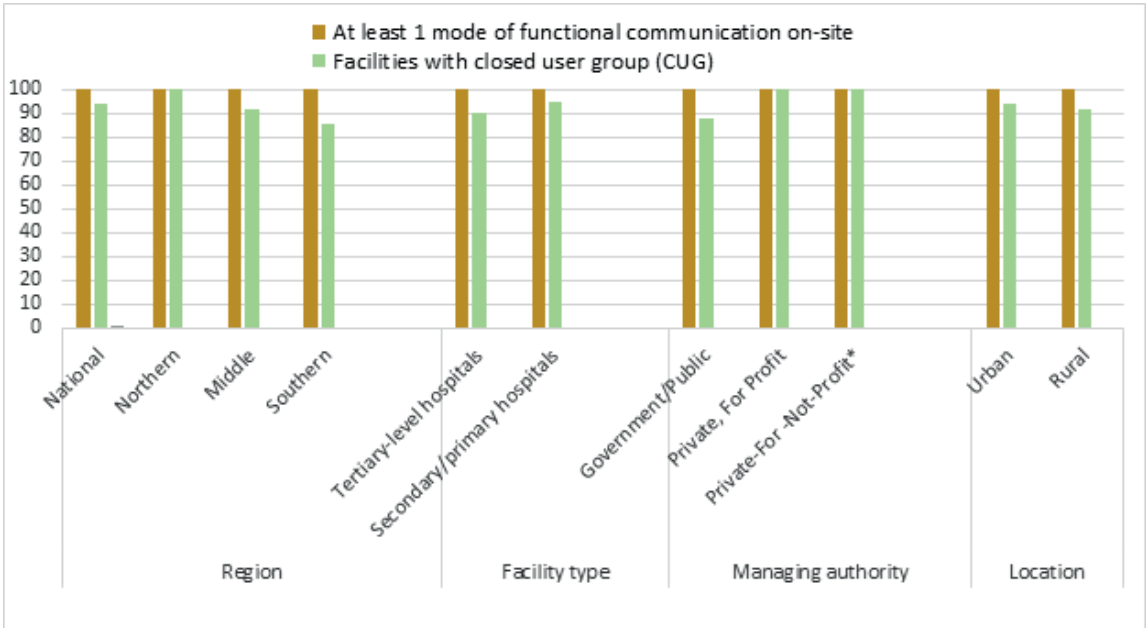
As indicated above, all the facilities have either special newborn care unit or NICU to provide neonatal care 24/7, the distance and time required to reach the nearest facility that provides newborn care question was not relevant. The data also confirms that all facilities have the aforementioned services 24/7.

11.2 Availability of communication

Facility in-charges or logistics officer were asked about the availability of communication materials/equipment to facilitate the referral services. These materials were functioning landline telephone in the maternity, functioning landline elsewhere in the facility, cell phone owned by facility or owned by individual staff, functioning two-way radio, functioning public telephone, availability of computers, and a CUG within the facility. According to table 11.2.1A in the appendix, 98% of the facilities reported having a landline telephone. A functioning cell phone owned by facilities and owned by individuals were used for emergency referrals in 68% and 88% of the facilities, respectively. Overall, all the facilities had at least one of the afore-mentioned modes of communication for referral services.

As shown in figure 11.2.1 below, and table 11.2.1A in the appendix, 94% of the facilities had a CUG. In addition, all the facilities had a computer, while only 68% reported having internet access. Internet access was poor among government-owned facilities (49%), facilities in the Middle region (65%), and secondary/primary hospitals (66%), compared to the rest of their respective groups. As expected, internet access was worse in the rural-located facilities (42%) than urban (74%).

Figure 11.2.1: Percent of facilities with at least one functioning mode of communication material by region, facility type, managing authority, and location, Jordan EmONC, 2022



Cell phone signal and policy for reimbursement of staff air time

Table 11.2.2A in the appendix presents the percentage of facilities with a cell phone signal at the facility, use of staff cell phones for referral, and reimbursement for the use of staff's air time. Overall, of those facilities with either a facility-owned or individual-owned cell phone, 73% of them had very dependable cell phone signal; while 26% had somewhat dependable signal, and only 1% did not have a dependable signal. Government-owned facilities had less dependable cell phone signals (54%) than the rest in the group. As expected, cell phone signal was less likely to be dependable in the rural-located facilities than urban.

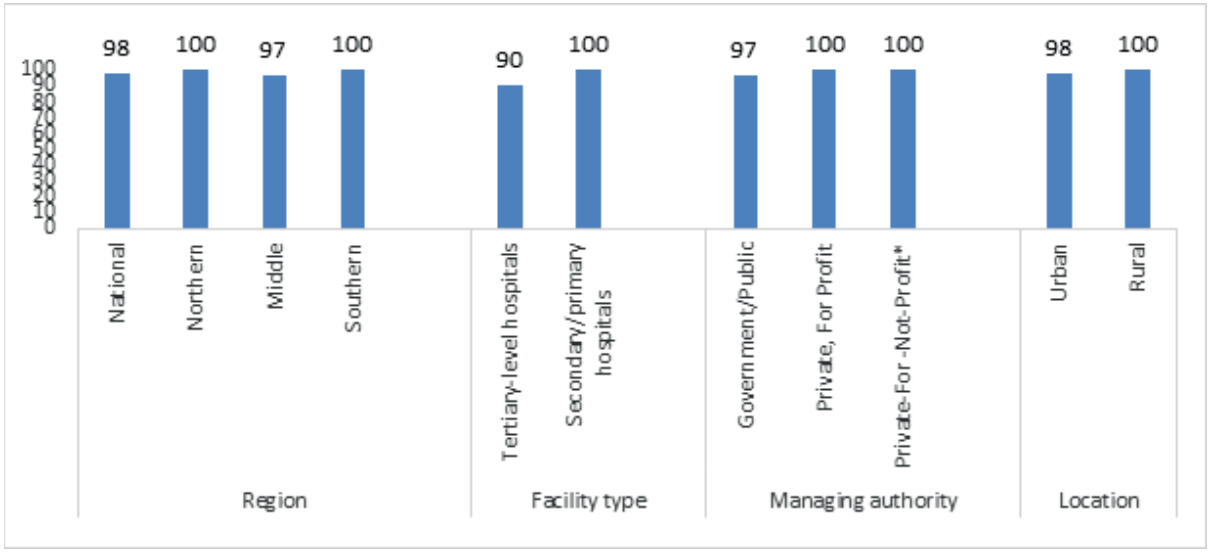
At national level, very few facilities (3 out of 58 facilities) had a policy of reimbursing staff for using their air time for facility related referrals. These facilities were secondary/primary hospitals and private-for-profit. None of the government-owned and private-not-for-profit facilities did have such reimbursement mechanisms at all.

11.3 Availability of transportation

Availability of motor vehicle ambulances

Access to a specialized obstetric and newborn care is always a concern due to resource limitations. To facilitate access to such services through referrals, ambulances play a crucial role. Facility in-charges were asked if they have a functional motor vehicle ambulance for emergency referrals, and how many if they have one (figure 11.3.1, map 11.3.1 below, and table 11.3.1A in the appendix). Almost all (98%) the facilities had at least one functional motor vehicle ambulance. In addition, 95% had stretchers as an emergency transportation. For fast actions in facilitating newborn referrals, a little over a quarter (26%) of the facilities had portable incubators. Twenty percent of government and 35% of private-for-profit facilities had portable incubators.

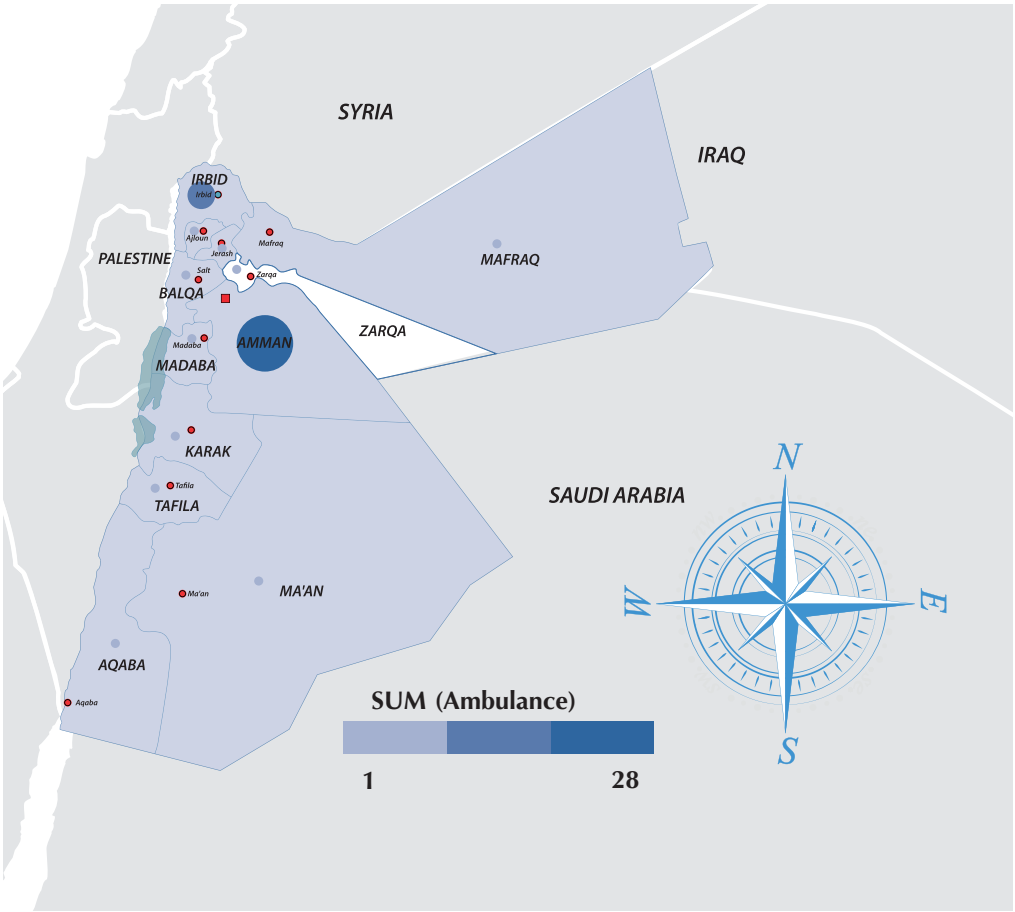
Figure 11.3.1: Percent of facilities with at least one functioning motor vehicle ambulance on-site by region, facility type, managing authority, and location, Jordan EmONC, 2022



Map 11.3.1: Distribution of at least one functioning motor vehicle ambulance on-site by governorate, Jordan EmONC, 2022

Availability of Ambulance per Gouvernante

Number of facilities that had at least one functioning ambulance on site



Coverage of ambulances to population

Countries put targets of ambulance coverages as part of the health system plan for a smooth and facilitated referral system. Anecdotal evidence shows that at least one ambulance is needed for 100,000 population for a densely populated area, and one to 70,000 for dispersedly populated areas. As shown in table 11.3.2 below, the coverage of ambulances to population in Jordan stood out to be 2 ambulances for every 100,000 populations. The coverage in the Middle region seems low (1 per 100,000 population) as compared to Southern (4 per 100,000 population).

Table 11.3.2: Ratio of functioning motorized vehicle ambulances to population, by region, Jordan EmONC, 2022

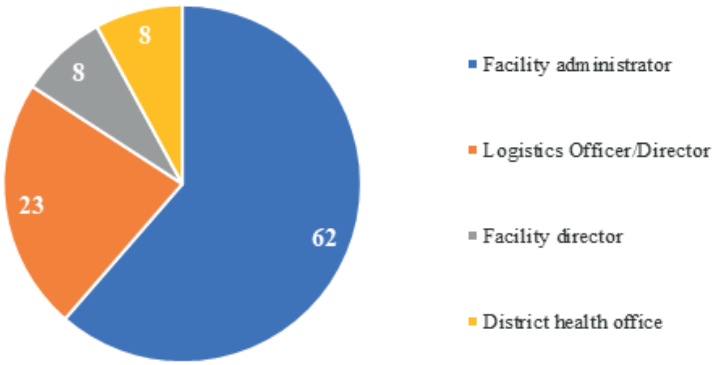
	Population	Total ambulances (public and private)	Ratio of ambulances to 100,000 population
National	11,057,000	200	2
Region			
Northern	3,165,800	62	2
Middle	7,011,600	104	1
Southern	879,600	34	4

Facility accountability on the management of ambulances

Table 11.3.3A in the appendix indicates access to resources (sufficient fuel, and sufficient funds to maintain ambulances) for keeping the ambulances functional at all times. As shown in table 11.3.1A in the appendix, of the 66 facilities assessed, 65 had at least one motorized ambulance on-site. Of these, 97% had routine preventive maintenance systems to their ambulances. Secondary/primary hospitals were more likely to have routine maintenance system than tertiary-level facilities. All the facilities reported having sufficient fuel available on the day of the visit, if needed to refer women and newborns to a specialized level of care. In addition, sufficient funds were available in 98% of the 65 facilities, if maintenance is needed for the ambulances.

Facility administrator (62%) was the most frequently cited responsible personnel in managing ambulances whether they are in working order, followed by logistics officer (23%). Such percentage distribution was observed across regions, facility type and managing authority (Figure 11.3.2 below and table 11.3.3A in the appendix).

Figure 11.3.2: Percent distribution of facilities according to staff member in charge of managing the emergency transport system, Jordan EmONC, 2022



Chapter 12
Conclusion and Recommendations

12.1 Conclusion

The 2022 Jordanian EmONC assessment identified the gaps in this first ever assessment taken as a benchmark. Coverage of EmONC facilities in Jordan is far below the recommended with a gap of 79 EmONC facilities for the population. There is no BEMONC facility in the country to serve women and their newborns at the lower level of the healthcare system. This implies that referral and specialized maternity hospitals are forced to be overloaded for women who faced obstetric complications. Equity was also an issue as 8 of the 12 governorates did not even fulfil half of the required EmONC facilities. Availability of fully functioning EmNeC facilities was also limited to only 41% in the country, with wide variations in the coverage among regions and governorates. Proportion of institutional deliveries was found to be low (68%) with severely affected in EmONC facilities – only 35% attended fully functioning EmONC facilities. Close to half of the deliveries did happen in facilities that missed one or two of the basic signal functions.

Resources are always scarce, and countries are struggling to satisfy the unmet needs to EmONC. As a priority, instead of stretching to upgrade every lower level facility, it is advisable to define the national network of EmONC facilities, by focusing on a targeted number of those facilities that have an important catchment area (within 2 hours travel time) and missed only one or two signal functions. These facilities were distributed across all governorates with the highest needed in Amman (32 facilities), followed by Irbid (18 facilities), and Zarqa (14 facilities each) to the lowest in Aljoun, Tafielh, and Maan (Zero).

Facility readiness to provide EmONC signal functions was one of the crucial elements of analysis that is useful for planning. As readiness was defined in section 4.2, both tertiary and secondary/primary hospitals were better staffed, equipped and supplied in most of the signal functions, except for three (manual removal of placenta, CS delivery, and blood transfusion). which were performed under sub-optimal conditions due to higher performance than readiness. This meant, most of the facilities were challenged with lack of adequate and required drugs, equipment and supplies to provide these three signal functions. KMC was the severely affected EmNeC signal functions. Readiness of all facilities to provide KMC was very low due to unavailability of KMC guideline in 42% of the facilities. Stockout of essential drugs was reported in many facilities; 50% of the facilities experienced stockout of ARVs, 32% on Misoprostol, 29% on Gentamicin injection, 27% on Magnesium Sulphate, and 21% to 26% reported stockout of Oxytocin, antenatal corticosteroids, Ketamine, Isoflurane, and Propofol.

Maternal and newborn care services are highly dependent on the availability of qualified and skilled health workers. Lack of national staffing standards on each of the health worker cadre, limits us to genuinely analyze the required staffing by type of facility, which deters us to estimate the net gain or deficit in terms of staffing. Despite health workers existence in all facilities, many of them lacked either pre-service or in-service training on comprehensive or basic EmONC as more than 80% of midwives and almost all of the practical nurses had not received the complete BEmONC training. In addition, only 3% of midwives performed D&E, forceps delivery, 6% of midwives managed vacuum assisted delivery and MVA, indicating that some of the basic signal functions were dependent on medical doctors (GPs) and Ob/Gyns.

Water and electricity were universally available in almost all facilities. Availability of a functioning toilet was almost in every facility across the country. On-site communication mechanism also exists in each facility, but challenged with reimbursement of staff's cell phones as only three out of the 66 facilities had a policy of reimbursing staff's air time for using their cell phones for referral services.

Ambulances were available in many of the facilities assessed. However, ambulance to population ratio seems low in the facilities found in the Middle region (only 1 to 100,000 population). Surprisingly, 1 of the 10 tertiary level hospitals did not have a functional motor-vehicle ambulance at the time of the survey – had 2 that needed major repair. Almost all of the facilities assessed provide surgical and specialized newborn care services on-site and facilities were not challenged much to refer to other facilities.

9.2 Recommendations

Recommendations were crafted based on the gaps identified in this assessment. In addition, the country's TWG reviewed the feasibility of these recommendations to effectively respond to gaps and strategize interventions. The recommendations are organized in ten thematic areas: coverage and utilization of EmONC, readiness to EmONC and EmNeC, coverage and utilization of other MNH services, respectful maternity care, quality of care, infrastructure and communication, Human Resources, drugs/equipment/supplies, data quality, and referral system:

1.Human Resources Management
1.1 Review the HR standards of the country in relation to the number/ratio of staff, deployment and re-deployment strategies, and staff rotation to meet the gaps.
1.2 Consider reviewing the country's healthcare workers policy to allow nurses/midwives to provide some specific procedural basic EmONC signal functions, which will help offload the caseloads from obstetricians/gynecologists and medical doctors (GPs).
1.3 Collaborate with partners to support training institutions for their accelerated training schemes, in particular to midwives, nurses, obstetricians/gynecologists, pediatricians, and medical doctors (GPs) whom most of the EmONC and EmNeC services were dependent on.
1.4 Provide accelerated CEmONC and BEmONC training to health professionals, supported by staff rotation to facilitate functioning of upgraded facilities.
1.5 Train healthcare providers on the full packages of KMC.
1.6 Increase coverage of other MNH.
1.7 Provide training of healthcare providers on data management system of EmONC indicators, including recording and reporting of maternal and newborn complications, maternal and newborn death/stillbirth, to improve documentation and quality of care in the health facilities.
1.8 Provide training of healthcare workers on the use of partograph, including availability of modified WHO partograph, itself.
1.9 Build the capacity of pharmacists/pharmacy technicians on Logistics Management Information System (LMIS), with supply of guidelines and LMIS forms to improve performance in tracking, forecasting, ordering, and supply and resupply of drugs/equipment/supplies.
2. Coverage & Utilization of EmONC & MNH services
2.1 Develop a national network of EmONC facilities (five EmONC facilities, at least one CEmONC and the rest BEmONC facilities per 500,000 populations) based on the adapted, to suit the geo-spatial distribution in each district or region, to improve coverage and utilization of EmONC services.
2.2 Upgrading the 34 facilities that miss only one or two of the basic EmONC signal functions with considerations of GIS mapping and caseloads (institutional birth rate).
2.3 Conduct qualitative study on why some signal functions are not performed at the health facilities.
2.4 Revisit the service provision protocols MNH services including: adolescent and youth responsive services, PAC, cervical screening, medical abortion, and others services to update and orient providers as needed in line with national laws and regulations

3. Drugs/equipment/supplies
3.1 The MoH in collaboration with other partners and donors, should strengthen the national/local procurement system to fill the supply gaps in essential drugs, equipment and supplies of the EmONC facilities.
3.2 Ensure the availability of sufficient blood stock within all EmONC facilities
3.3 Strengthen the LMIS for timely forecast and ordering of drugs/equipment/supplies, noting that 71% of the facilities indicated stockout at central store as the most common reason for delayed resupply.
3.4 Provide regular supportive supervisions to the health facilities to timely solve supply chain related problems.
4. Data Quality of EmONC Services
4.1 Strengthen streamlining of EmONC indicators/services in the existing HMIS system and ensure regular monitoring of EmONC indicators.
4.2 Ensure that Jordan's Maternal Mortality Surveillance and Response (JMMSR) is linked to the facility registers to improve data quality and quality of care.
4.3 Improve the performance and linkages of facility data and civil registration and vital statistics system at all levels.
4.4 Standardize the different register books elements and distribute to the health facilities with an up-to-date training of health providers on the register books.
4.5 Support the establishment of real-time data dashboard for EmONC facilities
4.6 Establish clinical audit program at the level of facilities
4.7 Develop Accreditation program to assess and monitor facilities readiness to provide EmONC services

Appendix A: Tables in the Appendix

Table 3.1.2A: Distribution of facilities according to EmONC status, by Facility Type, Region, Operating Agency, and Location, Jordan EmONC, 2022

	Tertiary level hospitals	Secondary/ primary level facilities	All Facilities									
	Comp	Basic	Partially func-tioning	Total number of hospitals	Comp	Basic	Partially func-tioning	Total number of hospitals	Comp	Basic	Partially func-tioning	Total number of facilities
	n	n	n		n	n	n		n	n	n	
National	5	0	5	10	27	0	29	56	32	0	34	66
Region												
Northern	1	0	3	4	8	0	8	16	9	0	11	20
Middle	4	0	2	6	13	0	20	33	17	0	22	39
Southern	0	0	0	0	6	0	1	7	6	0	1	7
Operating agency												
Government/ public	3	0	4	7	16	0	12	28	19	0	16	35
Private-for-profit	2	0	2	8	10	0	14	24	12	0	14	26
Private-not-for-profit	0	0	1	1	1	0	3	3	1	0	4	5
Location												
Urban	5	0	5	10	23	0	21	44	28	0	26	54
Rural	0	0	0	0	4	0	8	12	4	0	8	12

Table 3.1.3A: Percent distribution of facilities according to EmONC status, by Facility Type, Region, Operating Agency and Location, Jordan EmONC, 2022

	Tertiary level hospitals				Secondary/primary level facilities				All Facilities			
	Comp	Basic	Partially func-tioning	Total number of hospitals	Comp	Basic	Partially func-tioning	Total number of hospitals	Comp	Basic	Partially func-tioning	Total number of facilities
	%	%	%		%	%	%		%	%	%	
National	50%	0%	50%	10	48%	0%	52%	56	48%	0%	52%	66
District												
Northern	25%	0%	75%	4	50%	0%	50%	16	45%	0%	55%	20
Middle	67%	0%	33%	6	39%	0%	61%	33	44%	0%	56%	39
Southern	0%	0%	0%	0	86%	0%	14%	7	86%	0%	14%	7
Operating agency												
Government/public	43%	0%	57%	7	57%	0%	43%	28	54%	0%	46%	35
Private-for-profit	25%	0%	25%	8	42%	0%	58%	24	46%	0%	54%	26
Private-not-for-profit	0%	0%	100%	1	33%	0%	100%	3	20%	0%	80%	5
Location												
Urban	50%	0%	50%	10	52%	0%	48%	44	52%	0%	48%	54
Rural	0%	0%	0%	0	33%	0%	67%	12	33%	0%	67%	12

Table 3.1.4A: Percent distribution of facilities by number of EmONC status, by region, facility type, operating agency and location (among facilities that do deliveries), Jordan EmONC, 2022

	Total number of facilities	CEmONC		BEmONC		Almost There		Basic or comprehensive EmONC	
	n	%	n	%	n	%	n	%	n
National	66	48%	32	0%	0	52%	34	48%	32
Region									
Northern	20	45%	9	0%	0	55%	11	45%	9
Middle	39	44%	17	0%	0	56%	22	44%	17
Southern	7	86%	6	0%	0	14%	1	86%	6
Type of Facility									
Tertiary level hospitals	10	50%	5	0%	0	50%	5	50%	5
Secondary/primary hospitals/HCs	56	48%	27	0%	0	52%	29	48%	27
Operating agency									
Public/Government	28	68%	19	0%	0	57%	16	68%	19
Private-for-profit	24	50%	12	0%	0	58%	14	50%	12
Private-not-for-profit	4	25%	1	0%	0	100%	4	25%	1
Location									
Urban	44	64%	28	0%	0	59%	26	64%	28
Rural	12	33%	4	0%	0	67%	8	33%	4

Which signal function(s) is missing cannot be determined in this table.

EmONC grading is defined as CEmONC – that performs all the nine signal functions, BEmONC – performs all the seven basic signal functions, "Almost there" – missing one or two of the seven basic signal functions, "On the way" – missing 3 or 4 of the seven basic signal functions, "Barely functioning" – providing only 1 or 2 signal functions, and Non-EmONC – facilities that did not provide any of the signal functions. In this definition, we do not tell which of the signal functions are missing.

Table 3.3.2A: Percent distribution of Institutional Deliveries according to Facility Type and EmONC Status by region, operating agency, and location, Jordan EmONC, 2022

	National	Northern	Middle	Southern
Total Deliveries	161,502	50,367	95,487	15,648
Facility Type				
Tertiary level hospitals	34%	10%	23%	0%
Secondary/primary hospitals	66%	21%	36%	10%
EmONC Status				
CEMONC	51%	18%	24%	9%
Partially functioning	49%	13%	35%	1%
Managing Authority				
Public/government	72%	26%	36%	10%
Private-for-profit	22%	4%	18%	0%
Private-not-for-profit	6%	1%	5%	0%
Location				
Urban	86%	23%	54%	9%
Rural	14%	8%	5%	1%

Table 3.3.2A: Percent distribution of mode of delivery by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Mode of delivery					
	SVD	VE	Forceps	Cesarean	Laparotomy1	Total deliveries
National	56%	2%	0.3%	41%	0.3%	161,502
Region						
Northern	59%	1%	0.0%	40%	0.0%	50,367
Middle	54%	3%	0.4%	42%	0.4%	95,487
Southern	63%	1%	0.0%	36%	0.3%	15,648
Facility Type						
Teaching hospital	43%	1%	0.2%	56%	0.1%	6,224
Referral/specialized hospital	56%	1%	0.5%	42%	0.4%	48,002
General hospital/HC	57%	3%	0.2%	39%	0.3%	107,276
Managing Authority						
Public/government	61%	0%	0.0%	39%	0.2%	116,461
Private-for-profit	43%	9%	1.0%	46%	0.8%	34,920
Private-not-for-profit	54%	2%	0.6%	43%	0.1%	10,121
Location						
Urban	54%	3%	0.3%	42%	0.3%	139,508
Rural	69%	0%	0.0%	30%	0.2%	21,994
1 Laparotomy for ruptured uterus						

Table 3.5.1A: Percentage of all expected births by CS section in all facilities and in EmONC facilities, by region (EmONC Indicator 5), Jordan EmONC, 2022

Region	Expected births1	All facilities		EmONC facilities	
		Number of cesareans	Percent of expected births by cesarean	Number of cesareans	Percent of expected births by cesarean
National	238,831	65,526	27%	34,039	14%
Region					
Northern	68,381	20253	30%	11907	17%
Middle	151,451	39637	26%	16579	11%
Southern	18,999	5636	30%	5553	29%
Governorate					
Irbid	44,286	13,732	31%	5,719	13%
Ajloun	4,406	2,030	46%	2,030	46%
Jarash	5,929	742	13%	742	13%
Mafraq	13,759	3,749	27%	3,416	25%
Amman	100,267	30,926	31%	14,026	14%
Zarqa	34,150	5,376	16%	1,785	5%
Madaba	4,733	1,212	26%	768	16%
Balqa	12,301	2,123	17%	-	0%
Karak	7,921	2,524	32%	2,441	31%
Tafielh	2,408	810	34%	810	34%
Ma' n	3,964	926	23%	926	23%
Aqaba	4,707	1,376	29%	1,376	29%

Table 3.7.1A: Stillbirth and very early neonatal death rates in all facilities, by region, facility type, managing authority, and, location, Jordan EmONC, 2022

	Number of institutional deliveries	Number of still-births (fresh stillbirth)	Number of still-births (macerated)	Number of still-births (Total)	Stillbirth rate (per 1000 deliveries)	Number of live births	Number of Very Early Neonatal deaths (> 2.5kgs and 1st 24 hours)	Number of Fresh (intrapartum) stillbirth and Very Early Neonatal deaths (> 2.5kgs and 1st 24 hours)	Intrapartum (fresh) and Very Early Neonatal death rate (per 1000 deliveries)
National	161,502	619	123	742	4.6	94,835	207	519	3.2
Region									
Northern	50,367	250	27	277	5.5	38,625	36	169	3.4
Middle	95,487	346	95	441	4.6	53,498	159	330	3.5
Southern	15,648	23	1	24	1.5	2,712	12	20	1.3
Facility type									
Tertiary-level hospitals	54,226	234	0	234	4.3	19,299	97	238	4.4
Secondary/ primary hospitals	107,276	385	123	508	4.7	75,536	110	281	2.6
Managing Authority									
Public/ government	116,461	342	67	409	3.5	50,237	173	347	3.0
Private-for-profit	34,920	195	56	251	7.2	32,719	33	115	3.3
Private-not-for-profit*	10,121	82	0	82	8.1	11,879	1	57	5.6
Location									
Urban	139,508	548	114	662	4.7	76,980	164	438	3.1
Rural	21,994	71	9	80	3.6	17,855	43	81	3.7

Table 3.7.2A: Stillbirth and very early neonatal death rates in EmONC facilities, by region, facility type, managing authority, and, location, Jordan EmONC, 2022

	Number of institutional deliveries	Number of stillbirths (fresh stillbirth)	Number of stillbirths (macerated)	Number of stillbirths (Total)	Stillbirth rate (per 1000 deliveries)	Number of live births	Number of Very Early Neonatal deaths (> 2.5kgs and 1st 24 hours)	Number of Fresh (intrapartum) stillbirth and Very Early Neonatal deaths (> 2.5kgs and 1st 24 hours)	Intrapartum (fresh) and Very Early Neonatal death rate (per 1000 deliveries)
National	82,801	227	52	279	3.4	53,497	101	199	2.4
Region									
Northern	29,391	141	24	165	5.6	29,551	28	98	3.3
Middle	38,592	67	27	94	2.4	22,061	61	82	2.1
Southern	14,818	19	1	20	1.3	1,885	12	19	1.3
Facility type									
Tertiary-level hospitals	20,410	45	0	45	2.2	11,295	24	45	2.2
Secondary/ primary hospitals	62,391	182	52	234	3.8	42,202	77	154	2.5
Managing Authority									
Public/ government	63,086	170	8	178	2.8	33,608	76	160	2.5
Private-for-profit	18,595	52	56	108	5.8	18,707	25	37	2.0
Private-not-for-profit*	1,120	5	44	49	43.8	1,182	0	2	1.8
Location									
Urban	68,672	163	52	215	3.1	43,056	60	124	1.8
Rural	14,129	64	0	64	4.5	10,441	41	75	5.3

Table 4.2.1A: Percent of facilities that are ready to provide and currently provide each EmONC signal function, by facility type, Jordan EmONC, 2022

	National				Tertiary level hospitals				Secondary/primary hospitals			
	Facility had required:		Facility was ready to provide (supplied and staffed)1	Facility provided SF in last 3 months	Facility had required:		Facility was ready to provide (supplied and staffed)1	Facility provided SF in last 3 months	Facility had required:		Facility was ready to provide (supplied and staffed)1	Facility provided SF in last 3 months
	Drugs, equipment, and supplies	Human Resources			Drugs, equipment, and supplies	Human Resources			Drugs, equipment, and supplies	Human Resources		
EmONC signal functions												
Parenteral antibiotics	98%	100%	98%	100%	100%	100%	100%	100%	98%	100%	98%	100%
Parenteral uterotonics	100%	100%	100%	100%	100%	100%	100%	100%	100%	99%	100%	100%
Parenteral anticonvulsants	98%	100%	98%	80%	100%	100%	100%	100%	98%	100%	98%	77%
Manual removal of placenta	68%	97%	68%	77%	80%	100%	80%	90%	66%	96%	66%	75%
Removal of retained products	92%	94%	86%	79%	100%	100%	100%	80%	91%	93%	84%	79%
Assisted vaginal delivery	98%	92%	91%	79%	100%	100%	100%	60%	98%	91%	89%	82%
Newborn resuscitation with bag and mask	98%	100%	98%	95%	100%	100%	100%	90%	98%	100%	98%	96%
Caesarean delivery	88%	92%	80%	98%	80%	100%	80%	100%	89%	91%	80%	98%
Blood transfusion	53%	100%	53%	97%	50%	100%	50%	100%	54%	100%	54%	96%

SF = signal function.

1 There are 2 components to being "ready" to provide a signal function: the availability of a minimum package of drugs, equipment, and supplies, and the availability of at least one cadre who provides the signal function.

Table 4.2.2A: Percent of facilities that are ready to provide and currently provide each EmNeC signal function, by facility type, Jordan EmONC, 2022

	National				Tertiary level hospitals				Secondary/primary hospitals			
	Facility had required:		Facility was ready to provide (supplied and staffed)1	Facility provided SF in last 3 months	Facility had required:		Facility was ready to provide (supplied and staffed)1	Facility provided SF in last 3 months	Facility had required:		Facility was ready to provide (supplied and staffed)1	Facility provided SF in last 3 months
	Drugs, equipment, and supplies	Human Resources			Drugs, equipment, and supplies	Human Resources			Drugs, equipment, and supplies	Human Resources		
EmONC signal functions												
Resuscitation of newborn with bag and mask	98%	100%	98%	95%	100%	100%	100%	90%	98%	100%	98%	96%
Corticosteroids	100%	95%	95%	94%	100%	100%	100%	100%	100%	95%	100%	93%
Antibiotics for pPROM	100%	100%	100%	92%	100%	100%	100%	100%	100%	100%	100%	91%
Injectable antibiotics for neonatal sepsis	91%	100%	91%	88%	90%	100%	90%	100%	91%	100%	91%	86%
Kangaroo mother care (KMC)	36%	68%	27%	50%	50%	70%	40%	60%	34%	68%	25%	48%
Safe administration of Oxygen	98%	100%	98%	100%	100%	100%	100%	100%	98%	100%	98%	100%
IV fluids	100%	100%	100%	97%	100%	100%	100%	100%	100%	100%	100%	96%

SF = signal function.

SF = signal function.
1 There are 2 components to being "ready" to provide a signal function: the availability of a minimum package of drugs, equipment, and supplies, and the availability of at least one cadre who provides the signal function.

Table 4.4.1A: Percentage of Tertiary level hospitals with a health worker (cadre) that performed the signal function in the last 3 months, Jordan EmONC, 2022

Signal Function	Number of facilities	Number of facilities that provided the SF in the last 3 months	What health worker provided the signal function in the last 3 months?									
			Medical doctor (GP)	Pediatrician	Neonatologist	Ob/gyn	General Surgeon	Midwife	Nurse	Anesthesiologist	Nurse Anesthetist	Lab Technician
	n	n	%	%	%	%	%	%	%	%	%	%
EmOC Signal Functions												
Parenteral antibiotics												
Parenteral uterotonics	10	10	60			80		50	10			
Parenteral anticonvulsants	10	10	40			80		80	50		0	0
Manual removal of placenta	10	9	44			100		22	0		0	0
Removal of retained products	10	8	50			100	0	0	0	0	0	0
Assisted vaginal delivery	10	6	50			100		0	0	0	0	0
Cesarean section	10	10	60			100	0			10	0	0
Blood transfusion	10	10	70			60		40	40	0	0	70
EmNeC Signal Functions												
Resuscitation of newborn with bag and mask	10	9	30	60	70	0		60	50	0	0	0
Corticosteriods	10	10	50	10	10	80		30	70	0	0	0
Antibiotics for pPROM	10	10	30	10	10	40		40	80	0	0	0
Injectable antibiotics for neonatal sepsis	10	10	40	40	40	0		0	90	0	0	0
Kangaroo mother care (KMC)	10	6	67	33	17	67		50	83	0	0	0
Safe administration of Oxygen	10	10	40	50	30	0		30	100	0	0	0
IV fluids	10	10	30	20	30	10		20	100	0	10	0
Cells that are shaded indicate that the health worker category was not a response option.												

Table 4.4.2A: Percentage of Secondary/primary level hospitals with a health worker (cadre) that performed the signal function in the last 3 months, Jordan EmONC, 2022

Signal Function	Number of facilities	Number of facilities that provided the SF in the last 3 months	What health worker provided the signal function in the last 3 months?									
			Medical doctor (GP)	Pedia-trician	Neona-tologist	Ob/gyn	General Surgeon	Midwife	Nurse	Anesthe-siologist	Nurse Anesth-etist	Lab Technician
	n	n	%	%	%	%	%	%	%	%	%	%
EmOC Signal Functions												
Parenteral antibiotics												
Parenteral uterotonics	56	56	38			77		38	9		0	0
Parenteral anticonvulsants	56	43	40			81		65	28		0	0
Manual removal of placenta	56	42	43			93		19	0		0	0
Removal of retained products	56	44	41			98	0	2	0		0	0
Assisted vaginal delivery	56	46	28			96		4	4	2	0	0
Cesarean section	56	55	35			98	0			0	0	0
Blood transfusion	56	54	50			52		33	17	0	0	41
EmNeC Signal Functions												
Resuscitation of newborn with bag and mask	56	54	28	93	44	13		41	69	4	0	0
Corticosteriods	56	52	35	8	4	58		46	50		0	0
Antibiotics for pPROM	56	51	26	6	2	53		53	55		0	0
Injectable anti-biotics for neo-natal sepsis	56	48	21	50	31	4		6	71		0	0
Kangaroo mother care (KMC)	56	27	19	7	7	37		56	78		0	0
Safe administra-tion of Oxygen*	56	56	38	63	30	20		39	98		0	0
IV fluids	56	54	24	37	20	7		15	93		0	15
Cells that are shaded indicate that the health worker category was not a response option.												

Table 5.1.1A: Percentage of facilities providing selected services, by region, and facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Focused Antenatal Care	Postnatal care	Cervical screening (Pap smear)	Contraceptive counseling and services	Diagnosis & treatment for STIs*	Adolescent/ youth responsive services	Regional anesthesia/ analgesia	Local Anesthesia	Blood typing services
	n	%	%	%	%	%	%	%	%	%
National	66	76	98	52	58	45	14	98	100	98
Region										
Northern	20	95	100	45	65	50	10	95	100	100
Middle	39	64	97	59	46	44	13	100	100	97
Southern	7	86	100	29	100	43	29	100	100	100
Facility Type										
Tertiary-level hospitals	10	90	100	80	70	90	20	100	100	100
Secondary/primary hospitals	56	73	98	46	55	38	13	98	100	98
Managing Authority										
Government/ Public	35	97	100	49	86	49	20	100	100	100
Private-for-profit	26	42	96	54	19	35	4	100	100	100
Private-for-not-profit	5	100	100	60	60	80	20	80	100	80
Location										
Urban	54	70	98	54	56	44	15	100	100	100
Rural	12	100	100	42	67	50	8	92	100	92

* STI = Sexually Transmitted Infection, HIV = Human Immuno-deficiency Virus

Table 5.1.2A: Percentage of facilities providing safe and post-abortion related services, by region, and facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Post-abortion care	Safe-abortion care (termination of pregnancy)	1st trimester services only (<12 weeks)	1st and 2nd trimester services (>13 weeks)	Manual/ electric vacuum aspiration	Dilatation and Evacuation (D&E)	Dilatation and sharp curettage (D&C)	Medical abortion (mifepriston and misoprostol)	Misoprostol alone
	n	%	%	%	%	%	%	%	%	%
National	66	98	95	92	91	85	97	97	62	89
Region										
Northern	20	100	90	90	85	85	95	95	75	90
Middle	39	97	97	92	95	87	97	97	59	90
Southern	7	100	100	100	86	71	100	100	43	86
Facility Type										
Tertiary-level hospitals	10	100	100	100	100	70	100	100	80	100
Secondary/primary hospitals	56	98	95	91	89	88	96	96	59	88
Managing Authority										
Government/ Public	35	100	94	94	89	77	100	100	63	91
Private-for-profit	26	96	100	96	96	100	96	100	69	92
Private-for-not-profit	5	100	80	60	80	60	80	60	20	60
Location										
Urban	54	98	98	94	94	87	98	98	61	93
Rural	12	100	83	83	75	75	92	92	67	75

Table 5.4.2A: Percent of facilities that charge women separately for specific items and have waiver systems for the poor, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Women charged separately for Bed (%)	Women charged separately for Food for mother (%)	Women charged separately for Blood Transfusion (%)	Formal system waived for poor women (%)	In formal system waived for poor women (%)
National	41	20	74	47	29
Region					
Northern	35	15	75	60	10
Middle	44	21	77	35	38
Southern	43	29	57	71	29
Facility Type					
Tertiary-level hospitals	30	0	100	70	20
Secondary/primary hospitals	43	23	70	43	30
Managing Authority					
Government/Public	40	17	71	63	23
Private-for-profit	42	23	81	19	38
Private-for-not-profit*	40	20	60	80	20
Location					
Urban	41	20	78	44	35
Rural	42	17	58	58	0
* Includes NGO health facilities					

Table 5.4.3A: Mean cost* to patient for selected services, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Admission fee	Normal labor/ delivery	CS delivery	Surgical abortion (1st trimester)	Medical abortion (1st trimester)	Surgical abortion (2nd trimester)	Medical abortion (2nd trimester)	Neonatal special care unit (per day)	Neonatal Intensive Care Unit - NICU (per day)
National	52.34	220.86	504.20	198.15	171.78	193.91	170.65	101.83	216.71
Region									
Northern	11.50	127.37	321.16	154.79	129.58	154.05	132.68	51.11	84.47
Middle	78.92	290.13	632.44	233.62	209.24	226.54	208.24	122.46	284.08
Southern	21.00	88.71	286.57	118.29	83.00	120.29	75.00	133.67	200.29
Facility Type									
Tertiary-level hospitals	211.50	224.50	490.50	211.50	199.50	218.00	207.00	45.30	153.00
Secondary/primary hospitals	53.25	220.20	506.69	195.73	166.65	189.53	163.79	113.37	228.29
Managing Authority									
Government/Public	23.63	98.89	286.23	132.71	99.38	124.83	95.03	81.34	131.31
Private-for-profit	101.08	384.42	804.04	287.88	267.12	285.96	263.85	137.08	338.85
Private-for-not-profit**	0.00	225.00	462.50	187.50	167.50	200.00	220.00	38.33	170.00
Location									
Urban	61.80	257.89	577.87	224.22	196.45	220.22	192.06	117.16	256.39
Rural	9.83	39.09	142.55	70.18	52.91	64.73	57.20	16.67	21.91

* Mean cost calculated for those facilities that charge (exclude those with no cost, item not available, and respondent doesn't know)

** Includes NGO and faith-based or mission health facilities

Table 5.5.1A: Percent of facilities having different policies related to maternal and newborn service delivery by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Allow a woman to have a companion of her chioce during			Ever been certified by any mother-baby friendly birthing-facility initiative	Family register of birth of a baby in a government Vital Statistics and Civil Registration
		Labor	Delivery	Abortion		
	n	%	%	%	%	%
National	66	41	30	24	33	0
Region						
Northern	20	15	5	10	30	0
Middle	39	62	49	31	31	0
Southern	7	0	0	29	57	0
Facility Type						
Tertiary-level hospitals	10	40	30	30	60	0
Secondary/primary hospitals	56	41	30	23	29	0
Managing Authority						
Government/ Public	35	6	3	14	49	0
Private-for-profit	26	92	69	42	15	0
Private-for-not-profit	5	20	20	0	20	0
Location						
Urban	54	50	37	30	33	0
Rural	12	0	0	0	33	0

* Includes NGO or mission health facilities

Table 6.1.1A: Average number of beds per facility, and number and ratio of maternity beds to 1000 deliveries, by region, facility type, and managing authority, Jordan EmONC , 2022

	Total number of facilities	All beds (in all departments)	Average number of beds per facility	Number of annual institu-tional deliveries	Number of beds for obstetrics and gynecology patients	Ratio of obstetric/gyne beds to 1000 deliveries 1
National	66	10,930	166	161,502	1,888	12
Region						
Northern	20	2994	150	50,367	546	11
Middle	39	6794	174	95,487	1125	12
Southern	7	1142	163	15,648	217	14
Facility Type						
Tertiary-level hospitals	10	3,033	303	54,226	541	10
Secondary/primary hospitals	56	7,897	141	107,276	1,347	13
Managing Authority						
Government/Public	35	7,381	211	116,461	1,291	11
Private-for-profit	26	2,965	114	34,920	488	14
Private-for-not-profit*	5	584	117	10,121	109	11
Location						
Urban	54	9,665	179	139,508	1,617	12
Rural	12	1,265	105	21,994	271	12

* Includes NGO health facilities

Deliveries from the period of August 2021 to July 2022

1. According to the Essential elements of obstetric care at first referral level (WHO, 1991) there should be 24 beds per 1000 deliveries in the maternity ward (for both prenatal and postnatal patients). The labour and delivery room should have 6-8 beds. Overall, therefore, the standard would be approximately 30-32 beds for every 1000 deliveries at a facility that would be considered 'first referral level.' This is the equivalent to a district level hospital for about 100,000 population.

Table 6.2.1A: Percent of facilities with separate room or space for selected maternal and newborn services, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	ANC	Labor and delivery together	Labor Room	Delivery Room	Pregnancy complication	Postnatal Room	General OT*	Og/Gy Operating theater*
National	66	76	48	52	52	50	92	92	73
Region									
Northern	20	80	30	70	70	50	95	85	70
Middle	39	69	62	38	38	51	92	95	72
Southern	7	100	29	71	71	42	86	100	86
Facility Type									
Tertiary-level hospitals	10	80	50	50	50	70	100	60	100
Secondary/primary hospitals	56	75	48	52	52	46	91	98	68
Managing Authority									
Government/ Public	35	94	31	69	69	60	94	97	83
Private-for-profit	26	46	73	27	27	42	88	92	58
Private-for-not-profit*	5	100	40	60	60	20	100	60	80
Location									
Urban	54	70	56	44	44	50	93	93	72
Rural	12	100	17	83	83	50	92	92	75

ANC = Antenatal Care unit; OT = Operating theaterNICU = NICU = neonatal intensive care unit.
1 Includes NGO, faith-based, or mission facilities.
* Only hospitals are included (n=48)

Table 6.2.2A: Percent of facilities with separate room or space for selected maternal and newborn services, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Laboratory and Blood bank together*	Separate Laboratory	Separate Blood Bank*	Newborn corner/ Neonatal care unit attached to delivery/ post-partum ward	Newborn corner/ Neonatal care unit	Neonatal special care unit*	Neonatal intesive care unit (NICU)*	Pediatric Ward
National	66	36	67	18	52	62	52	89	74
Region									
Northern	20	55	50	20	55	70	55	85	85
Middle	39	23	79	15	54	64	51	90	64
Southern	7	57	43	29	29	29	43	100	100
Facility Type									
Tertiary-level hospitals	10	30	70	10	50	70	60	100	50
Secondary/primary hospitals	56	38	66	20	52	61	50	88	79
Managing Authority									
Government/ Public	35	60	46	31	51	54	60	89	94
Private-for-profit	26	8	92	0	54	69	46	92	46
Private-for-not-profit*	5	20	80	20	40	80	20	80	80
Location									
Urban	54	31	72	17	52	67	50	91	69
Rural	12	58	42	25	50	42	58	83	100

ANC = Antenatal Care unit; OT = Operating theaterNICU = NICU = neonatal intensive care unit.

1 Includes NGO, faith-based, or mission facilities.

* Only hospitals are included (n=48)

Table 6.4.2A: Percentage of facilities with functioning electricity in selected maternal health services areas, among those facilities with a separate room for the service, of the facility, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	ANC	Labor and delivery together	Labor Room	Delivery Room	Pregnancy compl-ication	Postnatal Room	General OT	Og/Gy Operating theater	Laboratory and Blood bank together	Separate Laboratory	Separate Blood Bank
	%	%	%	%	%	%	%	%	%	%	%
National	100	91	100	100	94	97	97	92	96	98	100
Region											
Northern	100	83	100	100	90	95	94	93	91	100	100
Middle	100	92	100	100	95	97	97	89	100	97	100
Southern	100	100	100	100	100	100	100	100	100	100	100
Facility Type											
Tertiary-level hospitals	100	80	100	100	86	90	83	90	67	100	100
Secondary/ primary hospitals	100	93	100	100	96	98	98	92	100	97	100
Managing Authority											
Government/ Public	100	91	100	100	95	97	97	93	95	100	100
Private-for-profit	100	89	100	100	91	96	96	87	100	96	100
Private-for-not-profit*	100	100	100	100	100	100	100	100	100	100	100
Location											
Urban	100	90	100	100	93	96	96	90	94	97	100
Rural	100	100	100	100	100	100	100	100	100	100	100

* Includes NGO health facilities

Table 6.4.3A: Percentage of facilities with functioning electricity in newborn areas of the facility, among those facilities with a separate room of newborn areas, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Newborn corner/ Neonatal care unit attached to delivery/ postpartum ward	Newborn corner/ Neonatal care unit	Neonatal special care unit	Neonatal intesive care unit (NICU)	Pediatric Ward
	%	%	%	%	%
National	97	95	97	95	96
Region					
Northern	91	93	100	94	94
Middle	100	96	95	94	96
Southern	100	100	100	100	100
Facility Type					
Tertiary-level hospitals	80	86	100	90	80
Secondary/primary hospitals	100	97	96	96	98
Managing Authority					
Government/Public	94	95	100	97	97
Private-for-profit	100	94	92	92	92
Private-for-not-profit*	100	100	100	100	100
Location					
Urban	96	94	96	94	95
Rural	100	100	100	100	100
* Includes NGO health facilities					

Table 6.6.1A: Percent of facility with HMIS and other HMIS related services, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	System in-place to collect MNH^ services data	Compile any reports of MNH services	Reporting MNH service data on:		Routinely calculate indicators for Instit-utional delivery	Routinely calculate instit-utional adolescent birth rate	Routinely calculate Instit-utional C/S rate	Routinely calculate Instit-utional still birth rate	Routinely calculate Instit-utional low birth weight	Person responsible for MNH services data
				Weekly	Monthly						
	n	%	%	%	%	%	%	%	%	%	%
National	66	86	95	4	96	70	7	86	37	46	91
Region											
Northern	20	80	94	7	93	69	13	88	19	50	94
Middle	39	92	94	3	97	69	6	83	44	50	89
Southern	7	71	100	0	100	80	0	100	40	0	100
Facility Type											
Tertiary-level hospitals	10	100	90	11	89	70	0	90	30	50	90
Secondary/ primary hospitals	56	84	96	2	98	70	9	85	38	45	91
Managing Authority											
Government/ Public	35	80	93	4	96	75	4	93	29	36	93
Private, For Profit	26	92	96	0	100	67	4	79	46	54	92
Private-For -Not-Profit	5	100	100	20	80	60	40	80	40	60	80
Location											
Urban	54	89	94	2	98	71	2	85	38	46	92
Rural	12	75	100	11	89	67	33	89	33	44	89

* Includes NGO health facilities

^ MNH - Maternal and Newborn Health

Table 6.6.2A: Percent of facility with HMIS in-place and abortion-related service data use for decision making, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Facility routinely collects information for planning/ decision making on:			
		1st trimester post-abortion care	2nd trimester post-abortion care	1st trimester safe abortion care	2nd trimester safe abortion care
	n	%	%	%	%
National	66	14	12	12	12
Region					
Northern	20	19	19	19	19
Middle	39	14	11	11	11
Southern	7	0	0	0	0
Facility Type					
Tertiary-level hospitals	10	0	0	0	0
Secondary/primary hospitals	56	17	15	15	15
Managing Authority					
Government/Public	35	14	14	14	14
Private, For Profit	26	13	8	8	8
Private-For -Not-Profit	5	20	20	20	20
Location					
Urban	54	13	10	10	10
Rural	12	22	22	22	22

* Includes NGO health facilities

^ HMIS - Health Management Information System

Table 7.3.1A: Percentage of total health workers on leave, providing delivery services, and trained in EmONC, by type of facility and cadre of health worker, Jordan EmONC, 2022

Health worker cadre	Tertiary-level hospitals (n=10)					Secondary/primary hospitals (n=56)				
	Currently employed	on extended leave	providing obstetric and newborn care	trained in BEmONC	trained in CEmONC	currently employed	on extended leave	providing obstetric and new-born care	trained in BEmONC	trained in CEmONC
	Total	%	%	%	%	Total	%	%	%	%
Medical doctor (GP)	1196	5%	33%	18%	17%	1764	3%	33%	8%	5%
Obstetrician/ Gynecologist	114	6%	94%	87%	60%	326	5%	99%	60%	51%
General Surgeon	44	7%	5%	7%	7%	327	6%	19%	1%	1%
Pediatrician	76	11%	80%	3%	3%	257	9%	85%	8%	7%
Neonatologist	21	10%	71%	14%	14%	62	13%	69%	3%	3%
Practical Nurse	418	2%	28%	2%	2%	2121	2%	16%	0%	0%
Midwife	408	2%	96%	58%	38%	1050	5%	93%	16%	6%
Staff Nurse	2257	9%	31%	2%	2%	6692	5%	27%	1%	0%
Anesthesiologist (MD)	51	6%	86%	6%	6%	317	8%	76%	1%	1%
Anesthetist Technician	127	2%	91%	2%	2%	511	4%	58%	0%	0%
Lab Technician	295	6%	32%	0%	0%	1143	2%	30%	0%	0%

Table 7.5.1A: Regulatory policies for EmONC signal functions, by health worker cadre, Jordan EmONC, 2022

	Routine functions			Emergency obstetric functions									
	Normal vaginal delivery	Complete and use partograph for management of labor	Perform active management of the third stage of labor	Administer parenteral antibiotics	Administer uterotonic drugs – parenteral oxytocic	Administer parenteral anticonvulsants	Perform manual removal of placenta	Perform manual vacuum aspiration (MVA) or electric aspiration	Perform dilatation and evacuation (D&E) for 2nd trimester abortions	Perform assisted vaginal delivery with vacuum	Perform obstetric surgery (e.g., cesarean delivery)	Perform blood transfusion for the mother	Administer anesthesia (e.g., spinal, general, ketamine)
Medical doctor (GP)	Y	N	N	Y	N	N	N	N	N	N	N	N	N
Obstetrician/ Gynecologist	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
General surgeon	N	N	N	N	N	N	N	N	N	N	N	N	N
Pediatrician	N	N	N	N	N	N	N	N	N	N	N	N	N
Neonatologist	N	N	N	N	N	N	N	N	N	N	N	N	N
Midwife	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N
Nurse	Y	N	Y	Y	Y	Y	N	N	N	N	N	Y	N
Anesthesiologist (MD)	N	N	N	Y	N	N	N	N	N	N	N	N	Y
Nurse anesthetist	N	N	N	Y	N	N	N	N	N	N	N	N	Y
Laboratory technician	N	N	N	N	N	N	N	N	N	N	N	N	N

Y = Yes, the national policy stipulates that this cadre of health worker be trained in this area.
N = No, the national policy does not stipulate that this cadre of health worker be trained in this area.

Table 7.5.2A: Regulatory policies for EmNeC signal functions, by health worker cadre, Jordan EmONC, 2022

Health workers	Emergency Newborn Care Signal Functions						
	Antenatal corticosteroids to mother	Administer antibiotics for preterm, premature rupture of membranes	Resuscitate newborn with bag and mask	Administer antibiotics for neonatal sepsis	Provide Kangaroo Mother Care	Provide oxygen to a newborn	Administer IV fluids to a newborn
Medical doctor (GP)	N	N	N	N	N	N	N
Obstetrician/ Gynecologist	Y	Y	N	N	N	N	N
General surgeon	N	N	N	N	N	N	N
Pediatrician	N	N	Y	Y	Y	Y	Y
Neonatologist	N	N	Y	Y	Y	Y	Y
Midwife	Y	Y	Y	Y	Y	Y	Y
Nurse	N	Y	N	Y	N	Y	N
Anesthesiologist (MD)	N	N	Y	N	N	Y	N
Nurse anesthetist	N	N	Y	N	N	Y	N
Laboratory technician	N	N	N	N	N	N	N

Y = Yes, the national policy stipulates that this cadre of health worker be trained in this area.
N = No, the national policy does not stipulate that this cadre of health worker be trained in this area.

Table 8.3.1A: Provider knowledge scores and percent of providers with knowledge of aspects of antenatal care, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ Gynecologist (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)
What are the primary aspects of focused antenatal care?				
Average knowledge score (out of 100)	54%	66%	64%	46%
Percent providing specific response:				
Minimum of 4 consultation visits	47%	50%	73%	36%
Ensure woman has birth plan	47%	75%	45%	39%
Prevent illness and promote health (e.g. tetanus toxoid vaccine, iron tablets, protection against malaria, eMTCT)	58%	63%	73%	53%
Detect existing illnesses and manage complications	73%	88%	91%	61%
Teach the danger signs (of pregnancy, childbirth, and the postpartum period)	59%	63%	64%	56%
Promote breastfeeding	39%	56%	36%	31%
What are the elements that need to be included in a birth plan?				
Average knowledge score (out of 100)	36%	40%	42%	31%
Percent providing specific response:				
Decide on a place of birth	73%	75%	73%	69%
Set aside money	20%	13%	18%	22%
Prepare for emergency transport	36%	50%	36%	28%
Identify potential blood donors	33%	38%	64%	22%
Identify caregivers for children or animals	17%	25%	18%	11%
Which women require a special care plan?				
Average knowledge score (out of 100)	59%	67%	58%	55%
Percent providing specific response:				
Women who have had a caesarean	85%	81%	82%	86%
Women with ≥5 deliveries	74%	75%	82%	72%
Interval <2 years or >5 years between pregnancies	27%	44%	36%	17%
Previous stillbirth	64%	69%	64%	58%
Previous neonatal death	56%	69%	45%	53%
Previous instrumental delivery	45%	56%	64%	36%
History of severe obstetric complications (e.g. PE/E, gestational diabetes, DVT, APH, PPH, preterm labour, etc.)	95%	88%	100%	97%
Women <18 or >40 years of age	42%	63%	18%	39%
Women who have non-communicable diseases (e.g. diabetes, cardiac disease)	79%	81%	64%	81%
Previous obstetric fistula repair	24%	44%	27%	11%

APH = antepartum haemorrhage; DVT = deep vein thrombosis; eMTCT = elimination of mother-to-child transmission (of HIV); PE/E = pre-eclampsia/eclampsia; PPH = postpartum haemorrhage.

Table 8.4.1A: Provider knowledge scores and percent of providers with knowledge of intra-partum care, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)
For a woman in labour, what observations do you make as you monitor her progress?				
Average knowledge score (out of 100)	79	84	80	76
Percent providing specific response:				
Maternal blood pressure	98%	94%	100%	100%
Maternal temperature	92%	94%	91%	92%
Maternal pulse	94%	94%	100%	94%
Foetal heartbeat	100%	100%	100%	100%
Colour of amniotic fluid	62%	63%	64%	61%
Degree of moulding	45%	81%	45%	28%
Dilatation of the cervix	97%	94%	100%	97%
Descent of the head	74%	81%	82%	69%
Uterine contractions	88%	88%	91%	86%
Urine output	36%	56%	27%	31%
What are the actions taken during AMTSL?				
Average knowledge score (out of 100)	82	88	88	79
Percent providing specific response:				
Immediate uterotonic (within 1-2 mins)	94%	94%	91%	94%
Controlled cord traction	73%	88%	82%	64%
Check uterine tone and massage if soft	80%	81%	91%	78%
AMTSL = active management of the third stage of labour.				

Table 8.4.2A: Provider knowledge of selected care processes related to the management of postpartum hemorrhage (PPH) and pre-eclampsia/eclampsia, Jordan EmONC 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)	Others* (n=3)
When a woman develops heavy bleeding after delivery, what do you do?					
Average score (out of 100)	73	86	69	69	73
Percent providing specific response:					
Massage the fundus	92%	94%	82%	94%	100%
Give Ergometrine or Oxytocin (IV or IM) or Misoprostol or Tranexamic acid	94%	100%	91%	92%	100%
Begin IV fluids	92%	94%	82%	94%	100%
Empty bladder	74%	81%	45%	81%	67%
Take blood for hemoglobin, grouping and cross-matching	88%	94%	91%	86%	67%
Examine woman for lacerations	70%	94%	73%	58%	67%
Manually remove retained products	53%	88%	55%	36%	67%
Bimanual uterine compression	62%	81%	91%	44%	67%
Insert balloon tamponade	23%	50%	9%	14%	33%
Call for help/refer	85%	88%	73%	89%	67%
When would you give a loading dose of magnesium sulfate?					
Average score (out of 100)	54	58	52	53	58
Percent who replied:					
Would never give magnesium sulfate	18%	38%	9%	11%	33%
When authorized by a superior	42%	13%	36%	56%	67%
When a pregnant woman or recently delivered woman shows signs of severe pre-eclampsia	91%	100%	100%	83%	100%
When a pregnant or recently delivered woman has a seizure/eclampsia	65%	81%	64%	61%	33%

Table 8.4.3A: Provider knowledge scores and percent of providers who know steps of immediate newborn care and key counselling messages related to cord care and first bath, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)	Others* (n=3)
What do you do for the newborn following delivery?					
Average knowledge score (out of 100)	65	54	63	70	77
Percent providing specific response:					
Deliver the baby skin-to-skin onto the mother's abdomen/chest	79%	75%	82%	83%	33%
Dry the baby's body	86%	63%	91%	94%	100%
Cover the baby with a dry towel	80%	50%	82%	92%	100%
Assess the baby's breathing	85%	75%	91%	86%	100%
Tie cord (after 2-3 minutes)	79%	75%	82%	81%	67%
Care for umblical cord - apply chlorhexidine, if policy allows	24%	25%	27%	19%	67%
Ensure baby is kept warm (skin-to-skin)	77%	63%	91%	81%	67%
Initiate breastfeeding (within 60 minutes)	44%	31%	36%	53%	33%
Give vitamin K (after 90 minutes)	52%	50%	18%	58%	100%
Weigh the baby (after 90 minutes)	45%	31%	27%	53%	100%
What are key counselling messages related to cord care?					
Average knowledge score (out of 100)	53	44	27	63	78
Percent providing specific response:					
Put nothing on the cord while waiting for the cord to fall off	61%	44%	27%	75%	100%
Cord should remain dry	73%	56%	55%	83%	100%
Give sponge baths until cord falls off	26%	31%	0%	31%	33%
How many hours after birth would you recommend that the baby have its first bath?					
Percent who replied 24 hours	50%	44%	36%	58%	67%

Table 8.4.4A: Provider knowledge scores and percent of providers who know signs of newborn complications and the appropriate responses, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)	Others* (n=3)
When a newborn weigh <2,000 grams, what special care do you provide?					
Average knowledge score (out of 100)	50	44	47	54	48
Percent providing specific response:					
Ensure the baby is warm with skin-to-skin with mother, if stable (KMC)	65%	50%	82%	69%	33%
Ensure baby is warm by placing in radiant warmer	68%	50%	64%	78%	67%
Ensure baby is warm by placing in incubator	44%	50%	27%	47%	33%
Provide extra support to the mother to establish breastfeeding	44%	31%	36%	50%	67%
Monitor ability to breastfeed	48%	40%	36%	53%	67%
Assess for danger signs	56%	50%	64%	56%	67%
Assess for breathing difficulties (need for O2 supplementation)	61%	50%	64%	64%	67%
Monitor baby for first 24 hours	45%	50%	27%	50%	33%
Ensure infection prevention	24%	31%	27%	22%	0%
What are the signs and symptoms of infection, or sepsis, in the newborn?					
Average knowledge score (out of 100)	60	63	66	56	67
Percent providing specific response:					
Temperature ≥38o C (hyperthermia)	91%	75%	91%	97%	100%
Temperature <35.5o C (hypothermia)	34%	50%	30%	26%	67%
Movement only with stimulation	53%	63%	64%	44%	67%
Severe chest in-drawing	55%	50%	82%	50%	33%
Poor feeding on observation	67%	75%	73%	61%	67%
What are the signs of critical illness for a newborn baby indicating referral?					
Average knowledge score (out of 100)	48	42	61	50	28
Percent providing specific response:					
Unconscious	59%	44%	64%	67%	33%
Convulsions	47%	44%	73%	42%	33%
Unable to feed	55%	38%	73%	61%	0%
Weak or absent cry	41%	38%	45%	42%	33%
Cyanosis	73%	63%	82%	75%	67%
Bulging fontanelle	17%	25%	27%	11%	0%
How would you diagnose birth asphyxia?					
Average knowledge score (out of 100)	64	56	73	63	89
Percent providing specific response:					
Depressed/no breathing	80%	69%	91%	81%	100%
Floppiness	56%	56%	45%	58%	67%
Heart rate <100 beats per minute	56%	44%	82%	50%	100%

What are the steps of neonatal resuscitation?					
Average knowledge score (out of 100)	53	57	60	49	52
Percent providing specific response:					
Call for help	74%	63%	82%	81%	33%
Explain to mother condition of baby	32%	44%	27%	31%	0%
Place the newborn face up	47%	63%	64%	31%	100%
Wrap or cover baby, except for face and upper portion of chest	35%	31%	45%	33%	33%
Position baby's head so neck is slightly extended	41%	56%	55%	31%	33%
Clear secretions if seen	60%	56%	82%	54%	67%
Start ventilation using bag and mask	79%	88%	64%	78%	100%
Percent observed to mention the steps in sequential order	36%	25%	45%	36%	67%
KMC = kangaroo mother care.					

Table 8.4.5A: Provider knowledge scores and percent of providers who know components of postnatal and postpartum care, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)
What do you check for the baby during a postnatal visit?				
Average knowledge score (out of 100)	48	44	53	48
Percent providing specific response:				
Baby breastfeeding well	76%	63%	73%	81%
Proper positioning for breastfeeding	35%	38%	18%	36%
Color tone of baby	56%	50%	55%	58%
Fever of baby	53%	50%	64%	50%
Breathing difficulty	55%	50%	73%	53%
Eye swelling or discharge	30%	44%	55%	19%
Umbilical cord stump	58%	44%	73%	61%
Alertness of baby	42%	38%	64%	33%
Discuss vaccination	41%	25%	36%	50%
Discuss newborn screening tests	33%	38%	18%	36%
What do you check for the mother during a postpartum visit?				
Average knowledge score (out of 100)	56	67	63	50
Percent providing specific response:				
Vaginal bleeding	92%	94%	82%	94%
Signs of infection (fever)	80%	81%	100%	75%
Blood pressure	92%	88%	100%	92%
Abdominal tenderness	53%	69%	73%	39%
Size and firmness of uterus	64%	69%	91%	53%
Deep vein thrombosis	30%	44%	45%	22%
Breast engorgement	73%	81%	73%	72%
Signs of anaemia	50%	63%	64%	42%
Assess lochia (vaginal discharge)	65%	69%	64%	61%
Signs of depression	33%	56%	45%	19%
Dribbling urine/urinary incontinence	26%	56%	9%	17%
Cough or breathing difficulties	18%	38%	9%	11%

Table 8.6.1A: Provider knowledge scores and percent of providers with knowledge of complications of abortion, how to intervene, and what to do for victims of sexual violence, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)	Others* (n=3)
What are the immediate complications of unsafe abortion?					
Average knowledge score (out of 100)	70	80	77	65	67
Percent providing specific response:					
Sepsis	89%	81%	100%	89%	100%
Bleeding	97%	100%	91%	97%	100%
Genital tract injuries	45%	75%	64%	31%	0%
Shock	50%	63%	55%	42%	67%
When you see a woman with complications from an unsafe or incomplete abortion, what do you do?					
Average knowledge score (out of 100)	64	73	70	57	67
Percent providing specific response:					
Do a vaginal exam	67%	69%	64%	67%	67%
Assess vaginal bleeding	91%	88%	91%	92%	100%
Assess vital signs	95%	88%	100%	97%	100%
Begin IV fluids	95%	94%	91%	97%	100%
Begin antibiotics	56%	75%	55%	47%	67%
Give ergometrine or oxytocin or misoprostol	67%	63%	91%	61%	67%
Perform (manual or electric) vacuum aspiration	23%	44%	45%	6%	33%
Do dilatation and evacuation	53%	88%	91%	25%	67%
Perform evacuation with curettage	39%	75%	55%	17%	67%
Provide counselling	53%	69%	45%	50%	33%
Provide blood transfusion	58%	81%	55%	47%	67%
Call for help/Refer	65%	44%	55%	81%	33%
What information do you give clients who were treated for an unsafe or incomplete abortion?					
Average knowledge score (out of 100)	42	52	38	39	29
Percent providing specific response:					
Information on testing for HIV and sexually transmitted infections	11%	31%	0%	6%	0%
Information on cervical cancer screening	21%	44%	18%	11%	33%
Information about when a woman can plan to conceive again	55%	56%	64%	53%	33%
Counselling on family planning and services	61%	56%	55%	67%	33%
Refer for family planning to receive family planning methods	53%	56%	55%	53%	33%
Social support	45%	56%	27%	47%	33%
About the consequences of an unsafe abortion	45%	63%	45%	39%	33%
When you see a woman seeking safe abortion, what do you do?					
Average knowledge score (out of 100)	55	69	61	48	52
Percent providing specific response:					
Do a vaginal exam	73%	63%	82%	78%	33%
Assess vital signs	89%	81%	91%	92%	100%
Prepare the cervix with misoprostol	53%	81%	55%	39%	67%
Perform a surgical termination of pregnancy	48%	69%	73%	31%	67%

Provide medical abortion (misoprostol)	68%	88%	100%	50%	67%
Provide pain management	53%	63%	55%	50%	33%
Provide general counseling	55%	81%	27%	53%	33%
Provide contraceptive counseling and services	33%	69%	27%	19%	33%
Refer her to another facility	24%	31%	36%	17%	33%
When a woman presents as a survivor of sexual violence, what do you do?					
Average knowledge score (out of 100)	34	47	35	27	30
Percent providing specific response:					
Report to police / Family Protection Directorate	76%	75%	64%	81%	67%
Counsel for pre and post HIV testing and testing for other STIs	9%	31%	9%	0%	0%
Counsel about pregnancy prevention	30%	31%	55%	22%	33%
Provide emergency contraception	17%	31%	36%	6%	0%
Provide post-exposure prophylaxis for HIV	8%	31%	0%	0%	0%
Perform a physical exam	45%	69%	45%	36%	33%
Request that she does urine, vaginal smear/swabs, and/or blood exams	23%	38%	36%	11%	33%
Ensure that she has a place to go/shelter	24%	44%	18%	19%	0%
Call for help/Refer	71%	75%	55%	72%	100%

Table 8.62A: Provider knowledge scores and percent of providers with knowledge of abortion-related legal and social issues, by health worker cadre, Jordan EmONC, 2022

	All respondents (n=66)	Obstetrician/ gynecologists (n=16)	Medical Doctor (GP) (n=11)	Midwife (n=36)	Others* (n=3)
Under what circumstances are abortions legally permitted in your country?					
Average knowledge score (out of 100)	23	24	24	19	56
Percent providing specific response:					
To save the woman's life	77%	75%	91%	72%	100%
When pregnancy occurred due to incest and/ or rape	6%	13%	9%	0%	33%
To protect the mental health of the woman	11%	19%	0%	6%	67%
To protect the physical health of the woman	32%	31%	36%	28%	67%
For socio economic reasons	3%	0%	0%	3%	33%
When a woman petitions the court for permission and is approved	8%	6%	9%	6%	33%
Women are penalized for conducting abortions under circumstances that are not recognized by the law (% Yes)	55%	38%	73%	56%	67%
Providers are penalized for providing abortions under circumstances that are not recognized by the law (% Yes)	68%	50%	73%	78%	33%
Who can provide abortion in the country?					
Obstetrician/Gynecologist	98%	94%	100%	100%	100%
Medical doctor (GP) or other eligible	2%	6%	0%	0%	0%

Who do you believe typically seek abortion services?					
Students	12%	19%	0%	14%	0%
Unmarried women and girls	42%	31%	27%	50%	67%
Irresponsible women and girls	15%	19%	0%	19%	0%
Women who have many children	48%	38%	64%	44%	100%
Women experiencing economic hardship	24%	13%	9%	28%	100%
Sex workers	14%	9%	8%	67%	33%
All women	12%	13%	27%	6%	33%
Are abortions common in this country? (% Yes)	35%	50%	27%	28%	67%
What are the most common complications they present with?					
Bleeding	92%	94%	100%	89%	100%
Perforated uterus	9%	13%	0%	8%	33%
Sepsis	55%	56%	55%	53%	67%
Retained products of conception	38%	44%	64%	31%	0%
Other	5%	13%	0%	3%	0%
Average number of women treated with post-abortion complications per week	1	2	1	1	1

Table 8.8.2A: Percent agreement/disagreement with supportive supervisory statements and overall score, by health worker cadre, Jordan EmONC, 2022

	Total	Medical doctors	Midwives	Nurses
	n=66	n=27	n=37	n=2
Percent agreement1				
My supervisor values my contribution.	89%	93%	87%	100%
My supervisor considers my goals and values.	86%	78%	92%	100%
My supervisor tries to make my work as interesting as possible.	70%	67%	70%	100%
My supervisor is proud of my accomplishments at work.	83%	81%	83%	100%
Help is available from my supervisor when I have a problem.	91%	93%	89%	100%
My supervisor really cares about my well-being.	72%	78%	68%	100%
My supervisor cares about my opinions.	87%	96%	84%	100%
My supervisor cares about my general satisfaction at work.	76%	74%	76%	100%
My supervisor is willing to help when I need a special favour.	82%	71%	84%	100%
My supervisor has the skills required to support me in all of my clinical undertakings, including safe abortion care.	82%	92%	73%	100%
Percent disagreement1				
My supervisor would ignore any complaint from me.	80%	81%	78%	100%
Even if I did my best job possible, my supervisor would fail to notice.	74%	82%	67%	100%
If my supervisor could hire someone to do my work at a lower salary, s/he would do so.	84%	88%	83%	50%
My supervisor does not regard my best interests when s/he makes decisions that affect me.	74%	78%	70%	100%
My supervisor shows little concern for me.	75%	78%	73%	100%
My supervisor fails to appreciate any extra effort from me.	54%	60%	59%	100%
If given the opportunity, my supervisor would take advantage of me.	67%	74%	65%	0%
Overall score (percent of all items with which the respondent positively responded)2	23%	26%	22%	0%

1. Cronbach's alpha on included statements = 0.9230. All 17 items included.
1. Cronbach's alpha is an internal consistency estimate. The closer Cronbach's alpha coefficient is to 1.0 the greater the internal consistency of the items in the scale, thus it is widely believed to indirectly indicate the degree to which a set of items measures a single unidimensional latent construct. Source: Gliem, Joseph A., and Rosemary R. Gliem. "Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales." Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education, 2003.
2 Positive response is agreement with a positively framed statement or disagreement with a negatively framed statement.

Table 9.1.4A: Percentage of facilities reporting a stock out in the last 3 months, by type of facility, Jordan EmONC, 2022

	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)	Total (n=66)
	%	%	%	%	%
Gentamicin (injection)	0%	13%	33%	0%	29%
Magnesium sulfate	0%	0%	33%	0%	27%
Oxytocin	0%	0%	31%	0%	26%
Misoprostol	0%	0%	38%	0%	32%
Ketamine	0%	0%	27%	0%	23%
Propofol	0%	0%	25%	0%	21%
Isoflurane	0%	0%	27%	0%	23%
Corticosteroids	0%	13%	27%	0%	24%
Antiretrovirals (ARVs)	0%	38%	13%	0%	50%

Table 9.1.5A: Percentage of facilities that reported an interruption in the safe oxygen supply in the last 12 months, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
In labor and delivery	2.0%	0.0%	0.0%	2.0%	0.0%
In the neonatal ward	2.0%	0.0%	0.0%	2.0%	0.0%
In the pediatric ward	2.0%	0.0%	0.0%	2.0%	0.0%

Table 9.2.1A: Percentage of facilities that have drugs related to the signal functions and emergencies, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Antibiotics (Any)	100%	100%	100%	100%	100%
Amoxicillin (oral)	97%	100%	88%	98%	100%
Amoxicillin (injection)	35%	50%	38%	35%	0%
Ampicillin (injection)	91%	100%	100%	89%	100%
Cephazolin sodium	91%	100%	75%	95%	0%
Cefixime	92%	100%	63%	96%	100%
Ceftriaxone	100%	100%	100%	100%	100%
Cefotaxime injection (for newborn)	91%	50%	88%	95%	0%
Clindamycin	82%	100%	63%	85%	0%
Cloxacillin sodium	32%	0%	25%	35%	0%
Erythromycin	61%	50%	63%	62%	0%
Oral flucloxacillin (for newborn)	17%	0%	25%	16%	0%

Gentamicin (injection)	100%	100%	100%	100%	100%
Metronidazole (injection)	98%	100%	100%	100%	0%
Penicillin G (Benzyl)	39%	50%	63%	36%	0%
Procaine benzylpenicillin (procaine penicillin G)	29%	0%	50%	27%	0%
Trimethoprim/sulfamethoxazole	88%	100%	50%	95%	0%
Tetracycline eye ointment/drops	41%	0%	25%	44%	100%
Anticonvulsants (Any)	98%	100%	100%	98%	100%
Magnesium Sulfate - 50% Concentration (Injection)	48%	0%	50%	50%	0%
Magnesium Sulfate - Concentration other than 50% (Injection)	60%	100%	88%	54%	100%
Diazepam (Injection)	95%	100%	100%	96%	0%
Phenobarbital (Injection)	77%	100%	63%	80%	0%
Phenytoin (Diphenylhydantoin)	94%	100%	63%	100%	0%
Antihypertensives (Any)	97%	100%	88%	98%	100%
Hydralazine	86%	100%	100%	85%	0%
Labetalol	63%	100%	71%	61%	0%
Methyldopa	97%	100%	100%	96%	100%
Nifedipine	94%	100%	86%	96%	0%
Oxytocics and prostaglandins	100%	100%	100%	100%	100%
Ergometrine	29%	0%	25%	31%	0%
Methylergometrine	86%	100%	75%	87%	100%
Misoprostol	74%	100%	100%	71%	0%
Oxytocin	100%	100%	100%	100%	100%
Prostaglandin E2 (Dinoprostone)	88%	100%	88%	89%	0%
Drugs used in emergencies	100%	100%	100%	100%	100%
Adrenaline (Epinephrine)	100%	100%	100%	100%	100%
Aminophylline	95%	100%	100%	96%	0%
Atropine	98%	100%	100%	100%	0%
Calcium Gluconate	100%	100%	100%	100%	100%
Digoxin	94%	100%	88%	96%	0%
Diphenhydramine	45%	50%	50%	45%	0%
Ephedrine	95%	100%	100%	96%	0%
Frusemide	100%	100%	100%	100%	100%
Hydrocortisone	95%	100%	100%	96%	0%
Naloxone	95%	100%	88%	98%	0%
Nitroglycerine	82%	100%	75%	84%	0%
Promethazine	27%	0%	13%	31%	0%

Table 9.2.2A: Percentage of facilities that have anesthetics and other drugs, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Anesthetics (any)	100%	100%	100%	100%	100%
Propofol (Diprivan)	95%	100%	100%	96%	0%
Isoflurane	89%	100%	100%	89%	0%
Ketamine	95%	100%	88%	98%	0%
Lignocaine/ Lidocaine 2% or 1%	100%	100%	100%	100%	100%
Analgesics (any)	100%	100%	100%	100%	100%
Acetylsalicylic acid	97%	100%	75%	100%	100%
Ibuprofen	95%	100%	75%	98%	100%
Indomethacin	74%	100%	50%	78%	0%
Morphine	94%	100%	75%	98%	0%
Paracetamol	100%	100%	100%	100%	100%
Pethidine	95%	50%	88%	100%	0%
Steroids (any)	100%	100%	100%	100%	100%
Betamethasone	70%	0%	63%	75%	0%
Dexamethasone	100%	100%	100%	100%	100%
Prednisone	29%	100%	67%	50%	49%
Prednisolone corticosteroid	62%	50%	63%	64%	0%
IV Fluids (any)	100%	100%	100%	100%	100%
Dextrose	97%	100%	100%	96%	100%
Dextran	32%	0%	25%	35%	0%
Glucose 5%	97%	50%	100%	98%	100%
Glucose 10%	94%	50%	100%	96%	0%
Glucose 40 or 50%%	38%	0%	38%	40%	0%
Normal saline	100%	100%	100%	100%	100%
Ringer's lactate	100%	100%	100%	100%	100%
Antimalarials (any)	39%	0%	38%	42%	0%
Chloroquine	81%	0%	67%	83%	0%
Artemisium–based combination therapy (ACT)	4%	0%	0%	4%	0%
Quinine Dihydrochloride	15%	0%	0%	17%	0%
Antiretrovirals (any)	18%	0%	38%	15%	100%
Nevirapine (for mother)	8%	0%	0%	13%	0%
Nevirapine (for newborn)	17%	0%	0%	25%	0%
Post-HIV exposure prophylactic treatment	42%	0%	33%	50%	0%
Combined ARVs for mother	50%	0%	33%	50%	100%
Combined ARVs for newborn	42%	0%	33%	50%	0%

Table 9.2.3A: Percentage of facilities that had contraceptives and other drugs, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Contraceptives (any)	79%	50%	88%	78%	100%
|Combined oral contraceptives	90%	100%	100%	91%	0%
Implants (e.g: Implanon, Jadelle, etc)	44%	100%	57%	42%	0%
3-month injectables	44%	100%	57%	42%	0%
Copper intrauterine devices	60%	100%	71%	58%	0%
Hormonal intrauterine devices	44%	100%	29%	47%	0%
Male condoms	65%	100%	86%	63%	0%
Female condoms	10%	0%	0%	12%	0%
Emergency contraception	38%	0%	57%	35%	100%
Other drugs and supplies					
Vitamin K (newborn)	100%	100%	100%	100%	100%
Chlorhexidine (7% gel for cord cleansing)	38%	0%	57%	37%	0%
Nystatin (oral) (for newborn)	66%	100%	43%	70%	0%
Oral rehydration solution	75%	50%	57%	81%	0%
Gentian violet paint	8%	0%	0%	9%	0%
Ferrous sulfate or fumarate	91%	50%	100%	91%	100%
Folic acid	98%	100%	100%	98%	100%
Heparin	100%	100%	100%	100%	100%
Magnesium trisilicate	32%	0%	29%	35%	0%
Sodium citrate	25%	0%	29%	26%	0%
Anti-tetanus serum / TAT	55%	50%	57%	56%	0%
Tetanus toxoid vaccine	91%	100%	71%	95%	0%
Anti-Rho (D) immune globulin	96%	50%	86%	100%	100%

Table 9.4.1A: Percentage of facilities that have the indicated guidelines in the maternity ward1, by type of facility, Jordan EmONC, 2022

Guidelines or protocols	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Antenatal care	59%	50%	88%	55%	100%
Integrated management of pregnancy, childbirth, postpartum and newborn care (focus on routine care)	74%	100%	88%	71%	100%
Management of obstetric complications	82%	100%	88%	80%	100%
Care for preterm or low birth weight babies, including kangaroo mother care	58%	50%	75%	55%	100%
Neonatal resuscitation	76%	100%	88%	73%	100%
Treatment of infections in young infants	55%	0%	50%	56%	100%
Prevention of mother-to-child transmission of HIV (PMTCT) (maternal and newborn dosing)	32%	50%	50%	27%	100%
Referral and counter-referral	64%	50%	75%	62%	100%
Infection prevention for HIV/AIDS (universal precautions)	48%	100%	63%	44%	100%
Safe pregnancy termination	62%	50%	50%	64%	100%
Post pregnancy termination care	62%	50%	50%	64%	100%
Contraceptive counseling and services	56%	50%	75%	53%	100%

1For hospitals, the maternity area was likely to be a specific room and these questions were related to the guidelines available in that specific room. Health centres may not have had a specific room devoted for a maternity ward and these questions were therefore related to whether the facility, in general, had the guidelines available.

Table 9.4.2A: Percentage of facilities with basic equipment and supplies in the maternity area, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Equipment					
Ultrasound	97%	100%	100%	96%	100%
Blood Pressure cuff	100%	100%	100%	100%	100%
Stethoscope (for adult)	97%	100%	100%	96%	100%
Fetal Stethoscope	98%	100%	100%	98%	100%
Doppler	88%	100%	88%	87%	100%
Clinical thermometer	98%	100%	100%	98%	100%
Low reading thermometer	64%	100%	63%	62%	100%
Supplies					
Kidney basins	100%	100%	100%	100%	100%
Sponge bowls	100%	100%	100%	100%	100%
Scissors	100%	100%	100%	100%	100%
Needles and Syringes (10-20cc)	100%	100%	100%	100%	100%
Syringes (1ml, 2ml, 5ml, 10ml)	100%	100%	100%	100%	100%
Needles (23-25 gauge)	94%	100%	88%	95%	100%
Suture needles/suture materials	100%	100%	100%	100%	100%
Catheter for IV line (16-18)	97%	100%	100%	96%	100%
IV Infusion stand(s)	100%	100%	100%	100%	100%
Urinary catheters	100%	100%	100%	100%	100%
IV cannula 24gauge	100%	100%	100%	100%	100%
Dipstick for protein in urine analysis	67%	100%	88%	62%	100%
Blood sugar/glucose dipsticks	91%	100%	100%	89%	100%
Dipsticks for bacteriuria/urinary tract infections	53%	100%	75%	47%	100%
Adult ventilator bag and mask	95%	100%	88%	96%	100%
Dressing forceps	97%	100%	100%	96%	100%
Partograph form	82%	100%	88%	80%	100%
Watch or clock with second hand that can be easily seen	91%	100%	100%	89%	100%
Measuring tape	83%	100%	88%	82%	100%
Tubing for oxygen administration	100%	100%	100%	100%	100%
Pulse oximeter	98%	100%	100%	98%	100%
HIV Rapid test kit	22%	0%	0%	23%	100%

Table 9.4.3A: Percentage of facilities with items for cervical / perineal repair pack and equipment for other procedures in the maternity area, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Vacuum extraction / forceps delivery					
Vacuum extractor with different size cups	97%	100%	100%	96%	100%
Obstetric forceps, outlet	79%	100%	88%	78%	0%
Obstetric forceps, mid-cavity	62%	100%	88%	58%	0%
Obstetric forceps, breech	61%	100%	88%	56%	0%
Uterine evacuation					
Electric vacuum aspiration machine	91%	100%	100%	89%	100%
Vaginal speculum (Sims)	100%	100%	100%	100%	100%
Sponge (ring) forceps or uterine packing forceps	98%	100%	100%	98%	100%
Dissecting forceps, serrated jaws 250 mm s/s	86%	100%	100%	84%	100%
Towel clip	85%	50%	88%	85%	100%
Ovum forceps, 240mm, S/S	92%	100%	100%	91%	100%
Uterine forceps, 3x4 teeth, curved, S/S	88%	100%	88%	89%	0%
Uterine forceps, 241mm, S/S	86%	100%	88%	87%	0%
Uterine dilators, sizes 13-27 (French)	85%	100%	75%	87%	0%
Sharp uterine curettes, size 0 or 00	82%	100%	63%	85%	0%
Blunt uterine curettes, size 0 or 00	83%	100%	63%	87%	0%
Uterine sound	77%	100%	63%	80%	0%
Manual vacuum aspiration					
Complete manual vacuum aspiration set	70%	100%	100%	64%	100%
Vacuum aspirators/syringes	67%	0%	88%	65%	100%
Silicone lubricant (for lubricating O-ring)	79%	50%	88%	78%	100%
Other oil (for lubricating O-ring)	53%	0%	75%	51%	100%
Flexible cannula, 4 – 6 mm	71%	50%	88%	69%	100%
Flexible cannula, 7-12 mm	70%	50%	88%	67%	100%
Flexible cannula, 14 mm	70%	50%	88%	67%	100%

Table 9.4.4A: Percentage of facilities with items for delivery sets, dressing instrument sets, gynecological, episiotomy, and craniotomy equipment in the maternity area, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Delivery Set/Pack					
Complete delivery set (%Yes)	97%	100%	100%	96%	100%
Number of complete delivery sets/packs	857	24	209	614	10
Average Number of complete sets per facility	13	12	26	11	10
Supplies for Delivery					
Disposable latex gloves (short)	98%	100%	88%	100%	100%
Long gloves	68%	100%	75%	67%	0%
Plastic sheeting	98%	100%	100%	98%	100%
Gauze swabs	100%	100%	100%	100%	100%
Cloths or towels for drying baby	94%	100%	88%	95%	100%
Dressing Instrument Set					
Gallipot bowl or jar s/s	94%	100%	100%	93%	100%
Dissecting forceps Lane's 1x2 teeth 140 mm	89%	100%	100%	89%	0%
Needle holder, Mayo hegar's 180 mm s/s	95%	100%	100%	95%	100%
Scissors, sharp point straight 120 mm s/s	97%	100%	88%	98%	100%
Scissors flat s/s curved 180 mm	95%	100%	100%	95%	100%
Sponge (ring) forceps	97%	100%	100%	96%	100%
Artery forceps, mosquito 130 mm straight s/s	94%	100%	88%	95%	100%
Gynecological Equipment					
Vaginal speculum, Sims	98%	100%	100%	98%	100%
Vaginal speculum, Cusco, virgin size 75x17 mm	97%	100%	100%	96%	100%
Cuscos speculum, Cusco, adult sized	98%	100%	100%	98%	100%
Uterine sound, graduated, 305 mm s/s	85%	100%	63%	87%	100%
Tenaculum single tooth/mutli teeth	76%	100%	75%	75%	100%
Scissors, straight, sharp 145 mm s/s	97%	100%	88%	98%	100%
Episiotomy /perineal set					
Facility has at least one complete set	98%	100%	100%	98%	100%
Number of complete sets	700	39	94	555	12
Number of complete sets per facility	11	20	12	10	12
Cervical exploration and repair set					
Facility has Electric vacuum aspiration machine	91%	100%	100%	89%	100%
Facility has at least one Complete MVA set	70%	100%	100%	63%	100%

1. For hospitals, the maternity area was likely to be a specific room and these questions were related to the items available in that specific room. Health centers may not have had a specific room devoted to a maternity and these questions were therefore related to whether the facility, in general, had the items available.

Table 9.5.1A: Percentage of facilities with equipment and supplies for neonatal care, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Supplies and equipment needed for newborn					
Baby weighing scale	100%	100%	100%	100%	100%
Cord ties / clips	97%	100%	100%	96%	100%
Thermometer for newborn	98%	100%	100%	98%	100%
Caps or hats to prevent heat loss	59%	100%	75%	55%	100%
Towels/blanket or cloth for newborn	89%	100%	100%	87%	100%
Neonatal Resuscitation Pack					
Neonatal resuscitating table	97%	100%	88%	98%	100%
Mucus extractor/simple suction	94%	100%	88%	95%	100%
Neonatal face masks (size 0)	97%	100%	100%	96%	100%
Neonatal face masks (size 1)	98%	100%	100%	98%	100%
Neonatal size ambu (ventilatory bag)	100%	100%	100%	100%	100%
Suction catheter 10, 12 Ch	86%	100%	100%	84%	100%
Infant laryngoscope with spare bulb & batteries	98%	100%	100%	98%	100%
Endotracheal tubes 3.5, 3.0mm	98%	100%	100%	98%	100%
Disposable uncuffed tracheal tubes (sizes 2.0 to 3.5)	98%	100%	100%	98%	100%
Suction apparatus (operated by foot or electric)	86%	100%	88%	85%	100%
Mucus trap for suction	74%	100%	75%	73%	100%
Anatomical model (for practice)	47%	100%	63%	44%	0%
Equipment for resuscitation within reach or a minute away	95%	100%	100%	95%	100%
Decontamination supplies for bag and mask	88%	50%	88%	89%	100%
Small and sick newborns					
Register for sick babies	95%	50%	100%	96%	100%
Daily patient chart	94%	100%	100%	93%	100%
IV fluid (neonatal giving) set/Umbilical catheter	98%	100%	100%	98%	100%
Syringes (0.5, 1.0ml)	100%	100%	100%	100%	100%
Radiant warmer	95%	100%	100%	95%	100%
Incubator	100%	100%	100%	100%	100%
Designated space or beds for KMC	65%	50%	75%	64%	100%
KMC register	24%	0%	13%	25%	100%
Nasogastric feeding tube #4	100%	100%	100%	100%	100%
Cup and spoon for infant feeding	45%	50%	75%	42%	0%
Small Cup for breast milk expression	48%	100%	63%	45%	0%
Fluorescent tubes for phototherapy to treat jaundice	95%	100%	100%	96%	0%

Table 9.5.1A: Percentage of facilities with equipment and supplies for neonatal care, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Supplies and equipment needed for newborn					
Baby weighing scale	100%	100%	100%	100%	100%
Cord ties / clips	97%	100%	100%	96%	100%
Thermometer for newborn	98%	100%	100%	98%	100%
Caps or hats to prevent heat loss	59%	100%	75%	55%	100%
Towels/blanket or cloth for newborn	89%	100%	100%	87%	100%
Neonatal Resuscitation Pack					
Neonatal resuscitating table	97%	100%	88%	98%	100%
Mucus extractor/simple suction	94%	100%	88%	95%	100%
Neonatal face masks (size 0)	97%	100%	100%	96%	100%
Neonatal face masks (size 1)	98%	100%	100%	98%	100%
Neonatal size ambu (ventilatory bag)	100%	100%	100%	100%	100%
Suction catheter 10, 12 Ch	86%	100%	100%	84%	100%
Infant laryngoscope with spare bulb & batteries	98%	100%	100%	98%	100%
Endotracheal tubes 3.5, 3.0mm	98%	100%	100%	98%	100%
Disposable uncuffed tracheal tubes (sizes 2.0 to 3.5)	98%	100%	100%	98%	100%
Suction apparatus (operated by foot or electric)	86%	100%	88%	85%	100%
Mucus trap for suction	74%	100%	75%	73%	100%
Anatomical model (for practice)	47%	100%	63%	44%	0%
Equipment for resuscitation within reach or a minute away	95%	100%	100%	95%	100%
Decontamination supplies for bag and mask	88%	50%	88%	89%	100%
Small and sick newborns					
Register for sick babies	95%	50%	100%	96%	100%
Daily patient chart	94%	100%	100%	93%	100%
IV fluid (neonatal giving) set/Umbilical catheter	98%	100%	100%	98%	100%
Syringes (0.5, 1.0ml)	100%	100%	100%	100%	100%
Radiant warmer	95%	100%	100%	95%	100%
Incubator	100%	100%	100%	100%	100%
Designated space or beds for KMC	65%	50%	75%	64%	100%
KMC register	24%	0%	13%	25%	100%
Nasogastric feeding tube #4	100%	100%	100%	100%	100%
Cup and spoon for infant feeding	45%	50%	75%	42%	0%
Small Cup for breast milk expression	48%	100%	63%	45%	0%
Fluorescent tubes for phototherapy to treat jaundice	95%	100%	100%	96%	0%

Table 9.7.1A: Percentage of facilities with a laboratory and among those the percent with equipment and supplies for blood transfusion and screening, by type of facility, Jordan EmONC, 2022

	Total (n=66)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=55)	Health Centre (n=1)
	%	%	%	%	%
Among all facilities					
Facility has a laboratory	98%	100%	100%	98%	100%
Among facilities with a laboratory	(n=65)	(n=2)	(n=8)	(n=54)	(n=1)
Facility has set of guidelines for laboratory	91%	100%	100%	89%	100%
Among facilities with a laboratory	(n=65)	(n=2)	(n=8)	(n=54)	(n=1)
Has Blood Bank	55%	100%	38%	56%	100%
Among facilities with a laboratory but no blood bank	(n=29)	(n=0)	(n=5)	(n=24)	(n=0)
Time to provide blood					
One hour	48%	0%	60%	46%	0%
Two hours	34%	0%	20%	38%	0%
Three to four hours	17%	0%	20%	17%	0%
Equipment & Supplies	(n=36)	(n=2)	(n=3)	(n=30)	(n=1)
Refrigerator for blood bank	100%	100%	100%	100%	100%
Test tubes - various sizes	100%	100%	100%	100%	100%
Microscope slides	97%	100%	100%	97%	100%
Compound microscope for cross-matching	83%	50%	100%	83%	100%
Microscope illuminator	64%	50%	67%	63%	100%
Blood lancets	92%	100%	100%	93%	0%
Cotton wool	100%	100%	100%	100%	100%
Rack	100%	100%	100%	100%	100%
8.5 g/l Sodium Chloride solution	92%	100%	67%	97%	0%
20% Bovine albumin	83%	50%	100%	87%	0%
Centrifuge (electric)	97%	100%	100%	100%	0%
Centrifuge (hand driven)	39%	0%	67%	40%	0%
37o Water bath (or incubator)	97%	100%	100%	100%	0%
Pipettes Volumetric - various sizes	94%	100%	100%	97%	0%
Blood typing and cross-matching reagents	97%	100%	100%	100%	0%
Bags for collecting blood	92%	100%	100%	93%	0%
Blood transfusion supplies					
Median number of units of blood in stock	69	300	100	58	0
Blood collection and Screeening tests	(n=36)	(n=2)	(n=3)	(n=30)	(n=1)
Airway needle for giving blood	86%	100%	67%	90%	0%
Artery forceps	53%	50%	67%	53%	0%
Anticoagulant bottles	78%	50%	33%	83%	100%
Scale for blood collection	78%	100%	33%	83%	0%
Hepatitis B Test	53%	100%	100%	43%	100%
Hepatitis C Test	50%	100%	100%	43%	0%
HIV Rapid Diagnostic Test (RDT) kit	22%	0%	0%	23%	100%
Syphilis Test	25%	50%	0%	23%	100%
TB microscopy (slides, stain)	17%	100%	67%	7%	0%
Malaria RDT kit	6%	0%	33%	3%	0%
Pregnancy test	97%	100%	100%	97%	100%

Table 9.7.2A: Percentage of facilities with laboratory supplies, by type of facility (among facilities with a laboratory), Jordan EmONC, 2022

	Total (n=65)	Teaching Hospital (n=2)	Referral/ Specialized Hospital (n=8)	General hospital (n=54)	Health Centre (n=1)
	%	%	%	%	%
Laboratory supplies					
Microscope	100%	100%	100%	100%	100%
Immersion oil	92%	100%	100%	91%	100%
Glass rods	62%	100%	38%	63%	100%
Sink or staining tank	89%	100%	88%	89%	100%
Measuring cylinder, various sizes	85%	100%	75%	85%	100%
Wash bottle	91%	100%	75%	93%	100%
Bottle with buffered water	78%	100%	50%	81%	100%
Timer clock with alarm	95%	100%	100%	94%	100%
Rack for drying slides	82%	100%	75%	81%	100%
Giemsa stain	49%	100%	50%	48%	0%
Wright stain	48%	50%	63%	46%	0%
May Grunwald stain	32%	0%	25%	35%	0%
Funnel and filter paper	86%	100%	75%	89%	0%
Methanol	78%	100%	88%	78%	0%
Refrigerator for laboratory supplies	100%	100%	100%	100%	100%
Glass containers	88%	100%	88%	87%	100%
Counting chamber (Differential counter)	91%	100%	88%	91%	100%
Pipette (5 ml)	80%	100%	88%	78%	100%
Pipette (graduated, 1.0 ml)	91%	100%	100%	89%	100%
Dropping pipette	95%	100%	100%	94%	100%
Cover slips	98%	100%	100%	100%	0%
Petri dishes	92%	100%	75%	96%	0%
Bowls, kidney dishes, various sizes	42%	50%	63%	39%	0%
Turk diluting solution	32%	50%	38%	30%	100%
Tally counter	35%	100%	38%	33%	0%
Haemoglobinometer and hydrochloric acid solution	37%	100%	25%	37%	0%
Spectrophotometer	51%	100%	38%	52%	0%
Microhematocrit centrifuge (manual or electric)	74%	50%	75%	74%	100%
Balance for reading results	77%	50%	88%	76%	100%
Heparinized capillary tubes (75 mm x 1.5 mm)	78%	100%	75%	80%	0%
Spirit lamp	55%	50%	63%	54%	100%
Ethanol	83%	100%	88%	81%	100%
Test tubes	100%	100%	100%	100%	100%
Test tube rack	100%	100%	100%	100%	100%
Beaker, various sizes	78%	100%	75%	78%	100%
Ammonia	29%	50%	25%	30%	0%
Lugol's iodine solution	54%	100%	38%	56%	0%
CD4 machine	9%	50%	13%	7%	0%

Table 10.1.1A: Number of facilities where partographs were reviewed and how many were reviewed, by region, facility type, managing authority, and EmONC classification, Jordan EmONC, 2022

	Number of facilities	Percent of facilities where partographs were reviewed	Number of facilities where partographs were reviewed and how many were reviewed1	Total number of partographs reviewed
			3	
National	66	73%	48	144
Region				
Northern	20	65%	13	39
Middle	39	77%	30	90
Southern	7	71%	5	15
Type of Facility				
Tertiary-level hospitals	10	83%	8	24
Secondary/primary hospitals	56	72%	40	120
Managing authority				
Public/government	35	71%	25	75
Private-for-profit	26	73%	19	57
Private-not-for-profit2	5	80%	4	12
EmONC classification				
CEmONC	32	94%	29	87
Partially functioning3	34	65%	19	57

1 Maximum number of partographs reviewed was 3 per facility.
2 Includes NGO, faith-based, or mission facilities.

Table 10.2.1A: Percent distribution of caesarean deliveries reviewed according to maternal characteristics, by managing authority, Jordan EmONC, 2022

	All caesareans reviewed	Managing authority		
		Public/ government	Private-for-profit	Private-not-for-profit1
	n=195	n=57	n=117	n=21
Age (in years)				
<18	1%	0%	1%	0%
18-24	17%	18%	13%	33%
25-29	36%	34%	41%	25%
30-34	24%	23%	24%	33%
35-39	16%	19%	13%	8%
≥40	6%	6%	8%	0%
Mean age (in years)	29.7	29.7	30.0	27.8
Parity (index pregnancy)				
Nulliparous (0 parity, 1st delivery)	31%	29%	38%	8%
Parity 1	24%	23%	22%	50%
Multiparous (2-4 parity)	33%	37%	28%	33%
Grand multiparous (≥5 parity)	11%	11%	12%	8%
Gestational age				
Preterm (<37 weeks)	12%	14%	10%	8%
Term (37-42 weeks)	86%	84%	88%	83%
No information	2%	2%	1%	8%
HIV status				
Known HIV status	5%	3%	8%	0%
Negative (of those with known status)	100%	100%	100%	100%
Tested at the time of delivery (of those with known status)				
HBV status				
Known HBV status	7%	4%	12%	0%
Negative (of those with known status)	100%	100%	100%	0%
Tested at the time of delivery (of those with known status)	3%	0%	8%	0%
HBC status				
Known HBC status	7%	4%	12%	0%
Negative (of those with known status)	100%	100%	100%	0%
Tested at the time of delivery (of those with known status)	3%	0%	8%	0%

1 Includes NGO, faith-based, or mission facilities.
HIV = Human Immuno-Deficiency Virus; HBV = Hepatitis B Virus; HBC = Hepatitis C Virus

Table 10.2.3A: Percent distribution of caesarean deliveries reviewed according to indication, by managing authority, Jordan EmONC, 2022

	All caesareans reviewed		Managing authority		
	n=195	%	Public/ government	Private-for-profit	Private-not-for-profit1
			n=57	n=117	n=21
Indication for caesarean delivery					
Previous CS scar	86	44%	47%	41%	42%
Fetal distress	17	9%	10%	6%	8%
Breech with footling	14	7%	6%	9%	8%
Failure to progress	12	6%	9%	3%	8%
Cephalo-pelvic disproportion	8	4%	2%	8%	0%
Failed induction	7	4%	4%	3%	8%
Precious baby	7	4%	1%	5%	17%
Severe pre-eclampsia / eclampsia	6	3%	4%	3%	0%
No Information	6	3%	3%	4%	0%
Malpresentation (transverse, oblique, brow)	5	3%	1%	5%	0%
Placenta previa	4	2%	2%	3%	0%
Placenta abruption	4	2%	2%	3%	0%
Failed trial of labor	3	2%	1%	3%	0%
Multiple gestation	3	2%	2%	1%	0%
Short intervals between primary C/S and current pregnancy	3	2%	3%	0%	0%
History of Infertility	3	2%	2%	1%	0%
Prolonged labor	2	1%	2%	0%	0%
Other	2	1%	0%	1%	8%
Maternal distress	1	1%	1%	0%	0%
Cord prolapse	1	1%	0%	1%	0%
Severe intrauterine growth retardation	1	1%	0%	1%	0%
Total	195	100%	100%	100%	100%

NRFHR = non-reassuring fetal heart rate pattern; VBAC = vaginal birth after caesarean.
1 Includes NGO, faith-based, or mission facilities.
2 Other includes 2 cases of PROM and post-date (which is not clear)

Table 10.2.5A: Percent distribution of caesarean deliveries reviewed according to duration of hospital stay, by referral status and type of caesarean, Jordan EmONC, 2022

	All caesareans reviewed	Not referred/no information1		Referred1			
		Emergency	Elective	No information	Emergency	Elective	No information
	n=195	n=69	n=115	n=3	n=3	n=5	n=0
Duration of hospital stay (in days)							
0 - 3	93%	91%	93%	100%	100%	80%	0%
4 -. 10	7%	9%	7%	0%	0%	20%	0%
Mean number of days in hospital	2.0	2.0	2.0	1.7	1.8	1.8	0.0
Mean number of days in hospital by indication for caesarean delivery							
CPD/prolonged labour2 (n=192)	1.8	2.0	1.4	1.5			
Previous caesarean/uterine scar (n=44)	2.2	2.8	2.2				
Placenta previa/abruption (n=26)	2.3	2.2	3.0				
Fetal distress3 (n=57)	1.7	1.6	2.2				

CPD = cephalo-pelvic disproportion; PE/E = pre-eclampsia/eclampsia.
1 Shaded cell mean no cases fit the selection.
2 CPD/prolonged labor includes CPD, malpresentations, prolonged/obstructed labor, failure to progress, failed assisted vaginal delivery, failed induction, and uterine ruptures.
3 Fetal distress includes distress, severe intrauterine growth restriction, and non-reassuring biophysical state.

Table 10.2.6A: Percent distribution of caesarean deliveries reviewed according to newborn outcome, by indication for caesarean, Jordan EmONC, 2022

	All caesareans reviewed	Newborn outcome			
		Live births	Live births with low Apgar score	One or more alive, one or more dead (twins or more)	No information
Indication for caesarean delivery					
Maternal indications					
CPD/prolonged labour2	37	100%	0%	0%	0%
Previous caesarean/uterine scar	86	95%	2%	0%	2%
Placenta previa/abruption	8	88%	12%	0%	0%
Uncontrolled severe PE/E	6	100%	0%	0%	0%
Other maternal indications3	16	94%	0%	6%	0%
Fetal indications					
Fetal distress4	18	100%	0%	0%	0%
Breech	14	71%	14%	0%	0%
Cord prolapse	1	100%	0%	0%	0%
Multiple gestation	3	100%	0%	0%	0%
No information	6	100%	0%	0%	0%

CPD = cephalo-pelvic disproportion; FHB = fetal heartbeat; PE/E = pre-eclampsia/eclampsia.
2 CPD/prolonged labor includes CPD, malpresentations, prolonged/obstructed labor, failure to progress, failed assisted vaginal delivery, failed induction, and uterine ruptures.
3 Other maternal indications include failed vaginal birth after caesarean, fistula, medical disease, maternal request, and trauma.
3 Other maternal indications include failed vaginal birth after caesarean, fistula, medical disease, maternal request, and trauma.
4 Fetal distress includes distress, severe intrauterine growth restriction, and non-reassuring biophysical state.

Table 10.2.7A: Percent distribution of caesarean deliveries reviewed according to cadre performing surgery, providing anesthesia, and type of anesthesia used, by managing authority, Jordan EmONC, 2022

	All caesareans reviewed	Managing authority		
		Public/ government	Private-for-profit	Private-not-for-profit1
	n=195	n=57	n=117	n=21
Clinician who performed the surgery				
Obstetrician/gynecologist	85%	73%	99%	100%
Resident Doctor	15%	27%	1%	0%
Clinician who provided the anesthesia				
Anesthesiologist (MD)	95%	91%	100%	92%
Same person as did the surgery	5%	9%	0%	8%
Type of anesthesia used				
General (not ketamine)	57%	70%	42%	33%
Spinal/epidural	40%	27%	54%	67%
No information	3%	3%	4%	0%
1 Includes NGO facilities.				

Table 10.3.1A: Percent distribution of facilities where cases of maternal morbidities were reviewed according to facility type, managing authority, location, and EmONC classification, by morbidity type, Jordan EmONC, 2022

	Postpartum hemorrhage	Severe pre-eclampsia/ eclampsia	Sepsis
	n=133	n=137	n=36
Number of morbidities reviewed at facility			
1	7	2	0
2	3	3	3
3	40	43	10
Total number of reviewed cases	133	137	36
Facility type			
Tertiary-level hospitals	18%	18%	8%
Secondary/primary hospitals1	82%	82%	92%
Managing authority			
Public/government	64%	66%	67%
Private-for-profit	29%	30%	31%
Private-not-for-profit2	7%	4%	2%
Location			
Urban	83%	85%	86%
Rural	17%	15%	14%
EmONC classification			
CEmONC	53%	53%	47%
Partially functioning3	47%	47%	53%
1 Includes a health center 2 Includes NGO facilities 3 Partially functioning indicates those facilities providing some signal functions but missing at least one BEmONC signal function.			

Table 10.4.2A: Percent distribution of reviewed newborn morbidities according to birth weight and gestational age, by morbidity type, Jordan EmONC, 2022

	Breathing difficulties	Preterm/ low birth weight babies	Newborn/young infant1 infections
	n=185	n=166	n=142
Birth weight			
Very low birth weight (<1,500 grams)	6%	34%	0%
Low birth weight (1,500-1,999 grams)	16%	64%	10%
Low birth weight (2,000-2,499 grams)	19%		11%
Normal birth weight (2,500-3,999 grams)	55%		53%
Macrosomic (≥4,000 grams)	3%		4%
No information	1%	1%	22%
Gestational age			
Preterm (<37 weeks)	52%	97%	20%
Term (37-42 weeks)	36%	2%	48%
Post-term (>42 weeks)	1%		0%
No information	11%	1%	32%
1 Young infant refers to age less than 60 days.			

Table 10.4.3A Percent distribution of cases of newborn breathing difficulties according to client status at birth/admission, treatment, and outcome, by facility type and managing authority, Jordan EmONC, 2022

	All cases	Facility type	Managing authority			
		Tertiary level hospitals	Secondary/ primary hospitals1	Public/ government	Private for-profit	Private-not-for-profit2
	n=185	n=30	n=155	n=103	n=72	n=12
Client status at birth/admission						
Duration of labor						
Precipitated labor (<1 hour)	0%	0%	0%	0%	0%	0%
Normal labor (1-12 hours)	12%	3%	14%	15%	11%	0%
Prolonged labor (>12 hours)	2%	0%	3%	3%	1%	0%
No information	85%	97%	83%	82%	87%	100%
Mode of delivery						
Vaginal	30%	13%	33%	40%	17%	25%
Instrumental	1%	0%	1%	0%	1%	0%
Caesarean	67%	83%	65%	58%	82%	67%
No information	2%	3%	1%	2%	0%	8%
Mother experienced obstetric complication3 (% yes)	17%	17%	17%	18%	15%	25%
Evidence of meconium (written in chart)	14%	13%	14%	19%	8%	8%
Treatment						
Type of resuscitation used						
Positive Pressure Ventilation (PPV)	64%	63%	65%	72%	54%	67%
Respiratory support (bag and mask)						
Not done/no information	3%	10%	1%	1%	6%	0%
CPAP	47%	37%	49%	59%	38%	0%
Bag and mask	41%	47%	40%	30%	49%	83%
Intubation	9%	7%	9%	10%	7%	17%
Fluid/blood treatment transfusion	95%	97%	94%	93%	96%	100%
Plastic bag/wrap for <32 weeks of gestation	6%	7%	6%	6%	7%	0%

1 Includes a health center.
2 Includes NGO

Table 10.4.4A: Percent distribution of cases of preterm and low birth weight babies according to client status at birth/admission, treatment, and outcome, by facility type and managing authority, Jordan EmONC, 2022

	All cases	Facility type	Managing authority			
		Tertiary-level hospitals	Secondary/ primary hospitals1	Public/ government	Private for-profit	Private-not-for-profit2
	n=166	n=29	n=137	n=94	n=61	n=11
Client status at birth/admission						
Location of delivery						
Health facility	98%	100%	98%	98%	98%	100%
No information	2%	0%	2%	2%	2%	0%
Mother received antenatal corticosteroids (% yes)	30%	21%	32%	24%	44%	0%
Antibiotics given for pPROM (% yes)	30%	34%	29%	31%	23%	64%
Progesterone given for prevention of preterm (% yes)	12%	11%	12%	11%	15%	0%
Magnesium sulphate given for <32 weeks of gestation (% yes)	3%	3%	3%	1%	7%	0%
Breastfeeding status						
Breastfed well	39%	48%	37%	36%	49%	9%
Was not breastfed/had difficulties	47%	38%	49%	49%	41%	64%
No information	14%	14%	14%	15%	10%	27%
Mother/baby was referred from another facility (% yes)	7%	14%	6%	6%	5%	27%
Treatment						
Initiated KMC (% yes)	20%	31%	18%	17%	25%	27%
Daily monitoring chart found in the file (% yes)	98%	100%	97%	98%	97%	100%
Feeding plan described/mother counselled (% yes)	68%	66%	69%	69%	64%	82%

1 Includes a health center
2 Includes NGO facilities.

Table 10.4.5A: Percent distribution of cases of newborn/young infant infections according to client status at birth/admission, treatment, and outcome, by facility type and managing authority, Jordan EmONC, 2022

	All cases	Facility type	Managing authority			
		Tertiary-level hospitals	Secondary/ primary hospitals1	Public/ government	Private for-profit	Private-not-for-profit2
	n=142	n=22	n=120	n=89	n=44	n=9
Client status at birth/admission						
Location of delivery						
Health facility	85%	95%	83%	85%	82%	100%
No information	15%	5%	17%	15%	18%	0%
Mother/baby/young infant3 was referred from other facility (% yes)	14%	18%	13%	10%	20%	22%
Admission/consultation						
OPD visit	58%	50%	59%	60%	57%	44%
In-patient	42%	50%	41%	40%	43%	56%
Median age of babies/young infants3 (in days)	18.9	15.7	19.4	20.1	15.3	24.1
Record-keeping						
Weight recorded (% yes)	92%	95%	92%	92%	95%	78%
Temperature recorded (% yes)	99%	100%	99%	99%	100%	100%
Heart rate recorded (% yes)	97%	100%	97%	96%	100%	100%
Respiratory rate recorded (% yes)	96%	100%	96%	94%	100%	100%
Oxygen saturation level recorded (% yes)	96%	95%	97%	98%	93%	100%
Treatment						
Injectable Antibiotics given (% yes)	97%	100%	97%	98%	95%	100%
Follow-up plan described/mother counselled (% yes)	79%	68%	81%	76%	86%	67%

OPD = out-patient department.

1 Includes a health center
2 Includes NGO facilities.
3 Young infant refers to age less than 60 days.

Table 11.1.1A: Percent of facilities that provided obstetric and newborn care 24/7 and whether staff on call can reach the facility within 30 minutes, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Provides obstetric care 24/7	Provides newborn care 24/7
National	66	100	100
Region			
Northern	20	100	100
Middle	39	100	100
Southern	7	100	100
Facility Type			
Tertiary-level hospitals	10	100	100
Secondary/primary hospitals	56	100	100
Managing Authority			
Government/Public	35	100	100
Private, For Profit	26	100	100
Private-For -Not-Profit	5	100	100
Location			
Urban	54	100	100
Rural	12	100	100
1 Includes NGO facilities.			

Table 11.2.1A: Percentage of facilities with a functional mode of communication, by type of communication, by region managing authority, and facility type, Jordan EmONC, 2022

	Number of facilities	Functioning landline in maternity	Functioning cell phone (owned by facility)	Functioning cell phone owned by individual staff	At least 1 mode of functional communication on-site	Facilities with closed user group (CUG)	Facilities with Computer	Maternity ward has its own computer	Facilities with internet access to e-mail
	n	%	%	%	%	%	%	%	%
National	66	98	68	88	100	94	100	32	68
Region									
Northern	20	100	60	85	100	100	100	6	65
Middle	39	97	74	92	100	92	100	6	77
Southern	7	100	57	71	100	86	100	33	29
Facility Type									
Tertiary-level hospitals	10	100	70	90	100	90	100	100	80
Secondary/ primary hospitals	56	98	68	88	100	95	100	100	66
Managing Authority									
Government/ Public	35	100	46	86	100	88	100	30	49
Private, For Profit	26	100	92	88	100	100	100	70	92
Private-For -Not-Profit*	5	80	100	100	100	100	100	37	80
Location									
Urban	54	100	76	89	100	94	100	41	74
Rural	12	92	33	83	100	92	100	29	42

* Includes NGO and faith-based or mission health facilities
1 No electricity = no grid and no other source of electricity

Table 11.2.2A: Percent distribution of facilities according to strength of cell phone signal at facility, and among facilities with staff cell phone, that used their cell phone for work, and that have a policy to reimburse costs, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities	Cell phone signal	Among facilities with cell phone signal, percent where:		
		Very dependable signal	Somewhat dependable signal	No cell phone signal	Facility has policy to reimburse staff for use of air time for work1
National	66	73	26	1	5
Region					
Northern	20	65	35	0	0
Middle	39	79	18	3	8
Southern	7	57	43	0	0
Facility Type					
Tertiary-level hospitals	10	80	20	0	0
Secondary/primary hospitals	56	71	27	2	5
Managing Authority					
Government/Public	35	54	43	3	0
Private, For Profit	26	92	8	0	12
Private-For -Not-Profit*	5	100	0	0	0
Location					
Urban	54	80	19	1	5
Rural	12	42	58	0	0

1 Calculated only among those facilities reporting that staff use their own airtime.
2 Includes NGO, faith-based, or mission facilities.

Table 11.3.1A: Percentage of facilities with functional transport, by district, facility type, and managing authority, Jordan EmONC, 2022

	Total number of facilities	Motor vehicle ambulance	Stretcher	Other: Portable incubators	
		Available & functional	Available Needs repair	Available & Functional	Available & Functional
	n	%	%	%	%
National	66	98	32	95	26
Region					
Northern	20	100	20	95	15
Middle	39	97	33	95	31
Southern	7	100	57	100	29
Facility Type					
Tertiary-level hospitals	10	90	40	80	30
Secondary/primary hospitals	56	100	30	98	25
Managing Authority					
Government/Public	35	97	49	100	20
Private, For Profit	26	100	12	92	35
Private-For -Not-Profit*	5	100	20	80	20
Location					
Urban	54	98	33	94	26
Rural	12	100	25	100	25
* Includes NGO health facilities					

Table 11.3.3A: Percent of facilities with their own functional motorized transport that had access to resources for fuel and maintenance, and reason for not having resources, by region, facility type, managing authority, and location, Jordan EmONC, 2022

	Number of facilities with their own functional motorized transport	Facility had routine preventive maintenance schedule	Sufficient fuel available today to transport women and newborns if needed	Sufficient funds available today if maintenance needed	Who is responsible for ensuring vehicle(s) are in working order?			
					Facility director	Facility administrator	District health office	Logistics Officer/ Director
National	65	97	100	98	8	62	8	23
Region								
Northern	20	100	100	100	5	60	10	25
Middle	38	97	100	97	11	58	5	26
Southern	7	86	100	100	0	86	14	0
Facility Type								
Tertiary-level hospitals	9	89	100	100	0	44	0	56
Secondary/primary hospitals	56	98	100	98	9	64	9	18
Managing Authority								
Government/ Public	34	97	100	97	9	62	12	18
Private, For Profit	26	96	100	100	8	54	4	35
Private-For -Not-Profit*	5	100	100	100	0	100	0	0
Location								
Urban	53	96	100	100	8	62	4	26
Rural	12	100	100	92	8	58	25	8
* Includes NGO facilities								

Appendix B: Minimum required drugs, equipment, and supplies for determining Readiness

Signal Function	Minimum Required Drugs, Equipment, and Supplies
Antibiotics	Hospitals: Ampicillin AND (metronidazole OR clindamycin) AND gentamicin -OR- Ceftriaxone AND (clindamycin OR metronidazole) AND gentamicin NOTE: Chloramphenicol was not asked about in the questionnaire, so a third possible combination is not included here. Health centers/clinics: Ampicillin AND gentamicin -OR- Ceftriaxone AND gentamicin NOTE: Ceftazidime was not asked about in the questionnaire, so a third possible combination is not included here.
Oxytocics	Oxytocin -OR- Ergometrine (injection)
Anticonvulsants	Magnesium sulphate (any concentration) -OR- Diazepam
Manual removal of placenta	Long sleeve gloves (elbow length OR disposal exam gloves)
Removal of retained products	MVA/EVA equipment: [Complete MVA kit OR (electric aspirator AND dilators) OR (vacuum aspirator AND lubricant AND various sized cannula)] AND local anesthesia -OR- D&C equipment: (Sharp curettes OR blunt curettes) AND uterine dilators AND local anesthesia
Assisted vaginal delivery	Functioning vacuum extractor AND different size cups -OR- Forceps
Resuscitate newborn with bag and mask	Ambu bag and masks (0 or 1) AND suction equipment (mucus extractor OR suction aspirator OR mucus trap)
Obstetric surgery/ caesarean	Functioning anesthesia machine AND (halothane OR ketamine) -OR- Regional anesthesia (ligno/lido 4% OR bupivacaine) -AND- Functioning oxygen cylinders AND operating table AND functioning adjustable light
Blood transfusion	All facilities: Reagents for blood typing/cross matching AND functioning refrigerator for blood bank Facilities that indicated their source of blood is not the central blood supply (therefore it must be direct donation or a facility blood bank): Items listed above AND empty blood bags AND microscope AND blood tests for Hep B, Hep C, HIV, and syphilis
Antibiotics for preterm premature rupture of membranes (pPROM)	Ampicillin (injection) -OR- Erythromycin AND (ampicillin OR gentamicin)
Antibiotics for neonatal infections	Gentamicin AND (ampicillin (injection) OR benzylpenicillin) AND amoxicillin (oral)
Kangaroo mother care (KMC)	KMC guidelines AND bed for KMC (designated for KMC OR for postpartum recovery)
Antenatal corticosteroids	Betamethasone -OR- Dexamethasone
Administer oxygen to newborns	Oxygen source (in maternity OR neonatal corner)
Administer IV fluids to newborns	IV giving set for newborn OR IV infusion stand -AND- Syringes (0.5/1.0) AND IV cannula (24 gauge) AND IV fluid (normal saline)

Sources:

1. World Health Organization (WHO). 2010. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. World Health Organization, 20 Avenue Appia, 1211 Geneva 27, Switzerland (tel.: +41 22 791 3264; fax: +41 22 791 4857; e-mail: bookorders@who.int). ISBN 978 92 4 156405 2
2. WHO, UNFPA, UNICEF, AMDD. Monitoring emergency obstetric care: a handbook. Geneva: World Health Organization; 2009

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