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**Mapping and Assessment of
Maternal, Neonatal and Young
Children Health Care Services in
Gaza Strip, State of Palestine**

Preface

In 2019, the UNICEF Health and Nutrition program sharpened its focus around interventions to address the chronic acute problems related to neonatal morbidity and mortality, the increasing maternal health challenges, particularly in Gaza, and early childhood interventions, notably to detect and address developmental delays.

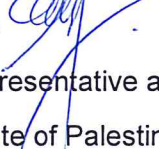
In so doing, UNICEF built on previous achievements in its humanitarian programme, learning from an independent evaluation of postnatal home visiting programme, and leveraging its humanitarian assistance to scale-up sustainable impact for the most vulnerable children and families.

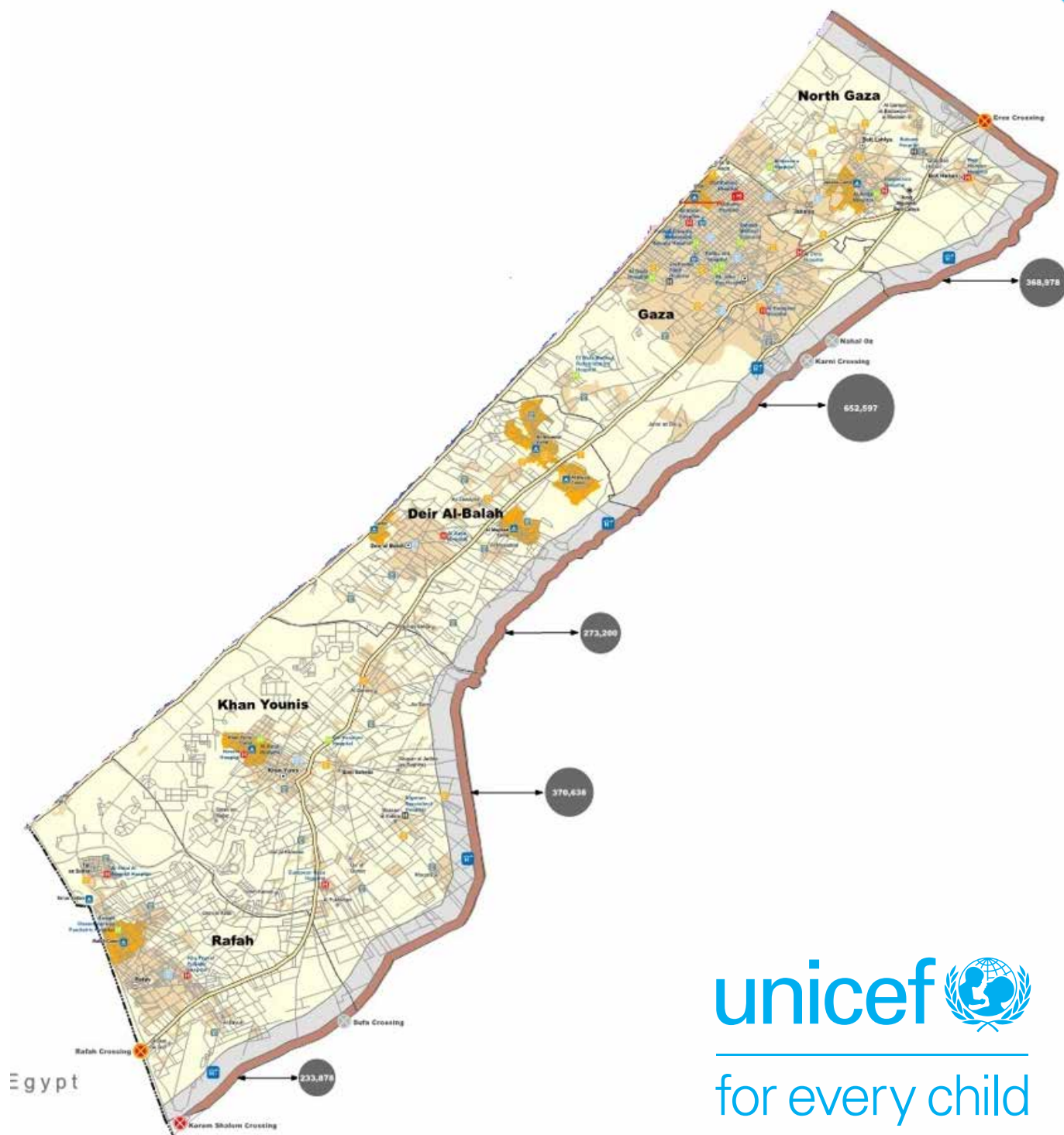
In partnership with key health partners, in particular, MoH, WHO, and UNFPA, UNICEF is investing in strengthening gender-responsive maternal and child health systems. Notably, as part of a new and growing partnership with Agence Francaise de Development (AFD), UNICEF with MoH completed a mapping study of the maternal, neonatal and child health (MNCH) care services in Gaza to assess accessibility and quality of services in governmental MNCH facilities. The value of this mapping study lies in the abundance of information and evidence obtained through a consultative process and data collection conducted jointly with partners, including MOH, WHO, UNFPA, UNWRA, and international and local health experts.

The mapping study identified major gaps of MNCH and informs the scale-up of the package services across Gaza including through a multi-year programme due to be rolled-out from 2020 to 2022 with MoH, WHO, and UNFPA.

Additionally, the mapping study includes the MNCH investment plan including costed interventions in both developmental and emergency response aspects. Hence, the study will also inform development partners in the health sector and donors, leveraging long-term investment in strengthening gender-sensitive MNCH services and reinforcing linkages between humanitarian and development interventions across the State of Palestine.

I would like to express my sincere gratitude and appreciation to the French Agency for Development (AFD) and the Ministry of Foreign Affairs of France for their generous financial support and commitment to strengthening gender-responsive maternal, neonatal and child health care systems including improving access to life-saving services for the most vulnerable women, new-borns and young children in Gaza.

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Mapping and Assessment of Maternal, Neonatal and Young Children Health Care Services in Gaza Strip, State of Palestine

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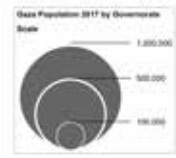
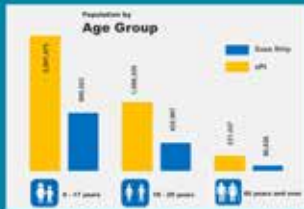
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Acronyms

ANC	Antenatal care
BCG	(Tuberculosis (Bacillus Calmette-Guérin
CBC	Complete Blood Count
CPAP	Continuous positive airway pressure
CS	Cesarean Section
CTG	Cardiotocography
ECMO	Extracorporeal membrane oxygenation
EENC	Early Essential New-born Care
EGH	European Hospital
FGD	Focus Group Discussion
FP	Family Planning
GBV	Gender based violence
GNN	German Neonatal Network
HBP	Hepatitis B Virus
HCV	Hepatitis C Virus
HRHR	Harmonized Reproductive Health Registry
HRP	High Risk Pregnancy
IMCI	Integrated Management of Childhood Illnesses
IPC	Infection prevention and control
IPTp	Intermittent preventive treatment in pregnancy
ITU	Information technology Unit
IUD	Intrauterine device
KII	Key informant interview
LAM	Lactational Amenorrhea Method
LBW	Low birth weight
LMIS	Logistics Management Information system
MCH	Maternal and Child Health
mCPR	Modern contraceptive prevalence rate
MD _{Acronyms}	Medical Doctor
MNCH	Maternal, Neonatal and Young Children Health
MO	Medical Officer
MoH	Ministry of Health
NCU	Neonatal care unit

ND	Normal Delivery
NGO	Non-governmental organization
NICU	Neonatal Intensive Care Unit
NIST	Neonatal in-service training
NLS	Neonatal Life Support
ORS	Oral Rehydration Solution
PCC	Preconception Care
PCVC	Percutaneous Central Venous Catheter
PHC	Primary Health Care
PICC	Peripherally Inserted Central Catheter
PKU	Phenylketonuria
PNC	Postnatal care
QSA	Quality Self-Assessment
RH	Reproductive health
ROP	Retinopathy of Prematurity
SCBU	Special Care Baby Units
TSH	Thyroid-stimulating hormone
TT	Tetanus toxoid
UNCEF	United Nations Children's Fund
UNFPA	United Nations Population fund
UNRWA	United Nations Relief and Works Agency
UVC	Umbilical Venous Catheter
WASH	Water, Sanitation, Hygiene
WHO	World Health Organization

West Bank & Gaza Strip Overview Map



Public secondary health services

Governorate	Hospitals	Beds	Population
North Gaza	2	156	368,978
Gaza	7	4,150	852,997
Middle Zone	1	146	273,200
South Gaza	2	953	370,838
Rafah	2	139	233,878
Total	14	5,583	1,899,291

Public & UNRWA primary health centres

Governorate	# of PHCs		Level 2		Level 3		Level 4		Population served
	Moh	UNRWA	Moh	UNRWA	Moh	UNRWA	Moh	UNRWA	
North Gaza	7	4	2	1	4	1	4	1	368,978
Gaza	16	6	5	5	1	1	1	1	852,997
Middle Zone	13	4	10	1	2	2	10	2	273,200
South Gaza	9	3	6	2	2	2	1	1	370,838
Rafah	4	5	2	2	2	2	1	1	233,878
Total	49	22	25	2	13	5	14	14	1,899,291



Classifications of PHC centers levels

Level 1	Level 2	Level 3	Level 4
Preventive services: Mother and child health care and immunization. Curative services: First aid	Preventive services: Mother and child health care and immunization. Curative services: General Practitioner (GP) health care. Laboratory (in some clinics)	Preventive services: mother and child health care, immunization, family planning and dental. Curative services: General Practitioner (GP) and medical specialist. Laboratory (in some clinics) Health education	Preventive services: mother and child health care, immunization, family planning and dental. Curative services: General Practitioner (GP) and medical specialist care and dental care. Specialty and specialist. Laboratory/Radiology/Health Education Emergency Medical Services (EMS)

HEALTH FACILITIES

Primary Health Care (PHC)

- Health Service Level
 - Level 1 (B)
 - Level 2 (H)
 - Level 3 (S)
 - Level 4 (T)
- Hospitals
 - Governmental (مستشفى حكومي)
 - UNRWA (مستشفى UNRWA)
 - MOH (مستشفى وزارة الصحة)
 - PHC (مركز الرعاية الصحية الأولية)
 - Private (مستشفى خاص)
- Thematic Distribution Points (TDP)
 - Mat & Paediatric Ref Crosscut Society

International Boundaries

- Government Boundary
- International Boundary

Main cities & Refugee camps

- Main city
- Refugee Camp
- Over 50,000
- 2,001 - 50,000

Building Area

- Community
- Refugee camps

Closed and Restricted Areas

- Access permitted on foot and for farmers only (500-1000 meters)
- Risk zone (200-1000) meters

Crossing Points

- Open
- Closed but opens for exceptional cases
- Closed

Health Facilities Summary

Total Area	365	Population Density	5,203
Per Sq. Km		Persons per Km. Sq.	
Total Population	1,899,291	# of registered refugees	1,230,629
Male (55%)		Female (45%)	
Healthcare Rate	48.2%	# of Unemployed	232,480

Map Scale: 1:60,000

Executive summary

The mapping and assessment of maternal, neonatal and child services was conducted in three different types of health facilities. Primary Health Care (PHC) Facilities, Neonatal Care Units (NCUs) and Maternity Hospitals were selected for the assessment in Gaza Strip, State of Palestine.

Five PHC facilities (Al Rimal (Gaza Governorate), Deir Al Balah (Middle Area Governorate), Khan Younis (Khan Younis Governorate), Rafah (Rafah Governorate), Jabalia (North Gaza Governorate), seven NCUs (Kamal Edwan (North Gaza Governorate), Shifa (Gaza Governorate), Al Naser (Gaza Governorate), Emarati (Rafah Governorate), Al Tahreer (Khan Younis Governorate), Al Aqsa (Middle Area Governorate) and European Gaza Hospital (EGH) (Khan Younis Governorate)) and six maternity hospitals (Al Tahreer (Khan Younis Governorate), Emarati (Rafah Governorate), Al Aqsa (Middle Area Governorate), Al Shifa (Gaza Governorate), Al Haraizin (Gaza Governorate), Kamal Edwan (North Gaza Governorate)) were covered through the assessment. The mapping study was conducted at the other 23 PHC clinics providing Maternal, Neonatal and Child Health (MNCH) services. Information on availability, accessibility, quality of delivery practices and financing of the MNCH services with a strong focus on gender considerations was obtained through the key informant interviews conducted with head doctors/directors of PHC facilities, Maternity Hospitals and NCUs. In addition, Focus Group Discussions were conducted among the end users of the MNCH services provided by NCUs. The purpose of FGDs was to find out more about integration of maternal health and gender issues in accessing the MNCH services by end users along with their satisfaction with services received.

A short summary of mapping study findings is outlined below and grouped around major areas of the health system related to the MNCH service delivery.

INFRASTRUCTURE

- **Infrastructure at the PHC facilities:** Assessment of the existing infrastructure clearly showed the need for renovation of existing and construction of additional space in the health care facilities to ensure higher standards in service delivery. Most of the infrastructure, water, sanitation and hygiene facilities are physically available in almost all visited PHC facilities, however some of them are out of adequate working conditions. Shower rooms are not available in any of the visited PHC centers. Toilets are available in all assessed facilities, but reconstruction to increase capacity of toilets is still needed as the existing capacity is not sufficient considering the number of daily visitors. Namely, Khan Younis and Al Aqsa facilities reported that number of toilets at their centers are insufficient for all patients visiting their facilities, while in Al Rimal number of toilets is sufficient, but require major renovation. Besides, toilets in Jabalia and Khan Younis PHC center also require major renovations. Assessment showed that the frequency of toilet cleaning varies between 3 to 10 per day, and the frequency of environmental

disinfection¹ from 2 to 6. Cleaning of the toilets and environmental disinfection is done 2 times per day, while environmental disinfection is not done at all in some of the visited facilities (Khan Younis Center).

- **Infrastructure at the NCUs:** Similar to the PHC centers, infrastructure, water sanitation and hygiene facilities are physically available in almost all visited NCUs, but in majority of cases they are not in adequate working conditions and require renovation. Toilets are available in all assessed NCUs, but only 1 (Al Aqsa) is suitable for people with disabilities.
- Solar system, shower rooms, water (desalination unit)² and storage facilities are most lacking at the NCUs (available in 4 out of 7 NCUs). Solar system is missing in Kamal Edwan and Shifa NCUs, while in Al Naser it is physically available, but in poor working condition. Shower rooms are unavailable in NCUs of Emarati, Al Tahreer and European Hospitals. As for water (desalination unit), it is available in all 7 NCUs, however in 3 of them (Al Naser, Al Aqsa and Al Tahreer) desalination unit is in inadequate working condition. Poor conditions of storage facilities was observed in NCUs of Shifa, Al Tahreer and European hospitals. Important to note, that sufficient municipality water is accessible only in 5 out of 7 mapped NCUs (except of Kamal Edwan and Al Naser NCUs).
- **Infrastructure at Maternity Hospitals.** Five of most critical items, out of the sixteen items included in the assessment list of Maternity hospitals were physically available at the assessed facilities. These items included: power (generator), sanitation and storage facilities, disposal of hazardous waste and soap/alcohol hand rub. Less than a half of the hospitals mentioned that they are preserved in a good working condition. Solar systems were available in 5 out of 6 assessed maternity hospitals (except of Kamal Edwan), however none of them is adequately functioning. Basins at rooms are available at 5 out of 6 maternity hospitals (in all maternities except of Al Haraizin hospital), however only one of them (Kamal Edwan) is adequately working. Supply water from desalination unit seems to be of a greatest need for majority of visited hospitals. Emarati Maternity Hospital reported that hot water was not available in the facility. Showering rooms are available in 4 (Al Tahreer, Emarati, Al Haraizin and Kamal Edwan) out of 6 facilities assessed, but none of them is properly functional. (In Al Tahreer maternity showering room was not physically observed and answer was self-reported).
- Privacy remains the major challenge in health facilities of Gaza. The study revealed that both, auditory and visual privacies for patient consultations are available in two out of five assessed PHC centers (Al Rimal and Jabalia). The remaining three centers (Al Aqsa, Rafah and Khan Younis) reported that privacy is not secured. PHC facilities and service delivery practices in Gaza are not gender-sensitive in terms of privacy and confidentiality in discussing gender sensitive issues such as sexual violence, family planning decisions, teenager pregnancies, parents' preference for sons etc. 5 out of 6 maternity hospitals (in all except of Al Shifa) also mentioned that privacy and security are ensured at their hospitals, however,

¹ Environmental disinfection considers cleaning of environmental surfaces including a) clinical contact surfaces (surfaces that can be directly contaminated from patient materials either by direct spray or spatter generated during procedures or by contact with gloved hands of health care personnel. These surfaces can subsequently contaminate other instruments, devices, hands, or gloves.); and b) housekeeping surfaces (walls, floors, sinks, etc.)

² desalination units: the units installed in the health facility to clean the water from the aquifers or wells.

according to the findings in the remaining hospitals several patients are regularly served in the same room, violating privacy rule.

- Total additional space required by the visited PHCs for upgrading physical infrastructure is 1,158sq.mt.out of which 405sq.mt.is requirement for reconstruction of existing facilities and 753 sq. mt. - construction of new facilities.
- Total additional space required by the visited NCUs was 180 sq. mt., where 30 sq. mt. is requirement for reconstruction and 150 sq. mt. – construction of the new space.
- Total additional space required by the visited Maternity Hospitals is 5,120 sq. mt., where reconstruction requirement is 2,400 sq. mt. and requirements for construction is 2,720 sq.mt.

The details on construction and reconstruction activities are provided in the respective individual profiles of the facilities in Annex 1, Annex 2 and Annex 3 on pages 125, 127 and 130 respectively.

ESSENTIAL MEDICAL PRODUCTS AND TECHNOLOGIES

- Availability of essential pharmaceuticals and medical supplies remains a major challenge for all facilities delivering MNCH services. The availability of pharmaceuticals at the PHC facilities was assessed through the application of the list of 11 essential pharmaceuticals, which was based on the list of essential pharmaceuticals for MNCH service delivery developed and adopted by the MoH. The study showed that in PHC facilities out of 11 medicines selected for assessment, only two types of pharmaceuticals were available (dexamethasone and insulin) in 4 and 5 facilities respectively. All PHC facilities reported that over the last 6 months pharmaceuticals were either unavailable or there were major problems with regards to consistency in pharmaceutical supply. Similar to the PHC facilities, the regular interruptions in supply of life saving drugs were observed in all NCU facilities assessed by the mapping study.
- Total of 12 different medicines and vaccines were included in the assessment instrument for Maternity Hospitals. According to the assessment findings, most of the medicines are available in half of the assessed maternities. Emarati hospital reported 100% availability of selected pharmaceuticals, followed by Kamal Edwan with 75% availability of selected medicines and Al Shifa reporting availability of 67% of selected drugs.
- 3 items for Infection Prevention and Control (IPC)³ – soap bar, or liquid, 70% isopropyl alcohol and alcohol hand rub gel were available at all assessed PHC facilities, however, 2 out of 5 facilities (Al Rimal, Al Aqsa) reported about the number of stock-outs of these items during the year. All 5 PHC centers reported shortage of 70% isopropyl alcohol. Stock records are maintained at only 2 PCH facilities (Rafah and Jabalia).
- 16 supply items were included in the list of supply assessment at the NCUs. None of the assessed NCU facilities had all 16 items in stock and all NCUs reported about the periodic stock-out of medical supplies during the last year.

³ The items were selected according to the standard methodology

- According to the study findings, the most “equipped” PHC facility is Deir Al Balah with 100% equipment items having physically in place, however, most of them are out of adequate working condition. The least equipped facility is Rafah - with about 75% of items available in place.
- Availability of the equipment at the NCUs was assessed through application of the list of 32 equipment items (see Table 20 below). None of the assessed NCUs had all listed items.
- Among the visited NCUs Shifa and Al Naser are the most equipped facilities with more than 80% of items available. Missing items include autoclave, extracorporeal membrane oxygenation (ECMO), Breast milk extraction pump, milk mixer, warmer, DC shock and transcutaneous oxygen/carbon dioxide monitor. The least equipped NCU is Kamal Edwan, with about 40% of items available in the facility. The missing items at this facility included autoclave, temperature and portable incubators, temperature body sensor, blood pressure instrument, Transcutaneous oxygen/carbon dioxide monitor, Gas analyzer, ultrasound, echocardiography, intensive phototherapy, continuous positive airway pressure (CPAP), high frequency ventilator, ECMO, DC Shock, pulse oximeter, warmer, cooling machine, breast milk extraction pump, milk mixer and warm bath for milk.
- Equipment for sterilization is available in most assessed maternities, however there is a definite need for its renewal. According to the assessment results, 5 out of 6 maternities (except of Al Aqsa) have equipment for sterilization of medical instruments in health facilities in place with none of them being in an adequate working condition. Well-functioning autoclave was documented in 1 maternity only (Al Shifa) and jar for forceps is not available in any of the maternities. 7 different types of equipment items (resuscitator, cardiotocography (CTG), fetal stethoscope, suction machine, oxygen source, clean towel for drying and covering baby, neonatal self-inflating bag (250-500ml) & masks (size for term & 0 for preterm) for the newborn were included in the assessment instrument. According to the assessment findings, the most part of equipment for newborns are physically available in majority of the assessed maternities with fetal stethoscope representing the most lacking one (available at Al Tahreer Maternity only). Resuscitator is available in all 6 maternity hospitals and remaining five items (except of fetal stethoscope) – in 5 out of 6 assessed maternities. In all visited facilities the newborn equipment is mostly old and require replacement or at least major repairs.
- Availability of contraceptives at the PHC centers is limited. Out of 8 types of contraceptives included in the mapping study, 5 (progestin contraceptive pill, combined injectable, Implants, Male condom and Female condom) were not physically available in any of the surveyed facilities. Only existence of combined oral contraceptive pills, injectable progestin and IUDs were observed in 25 PHC centers, respectively (availability of combined oral contraceptive pills was observed in all PHC centers except of Khan Younis, Injectable Progestin – in Khan Younis and Rafah centers and IUDs were observed at all centers). According to the facility reports the male condoms have not been available over the last 10 months/1 year and the female condoms are not used and/or recognized in Gaza.

HUMAN RESOURCES

- The detail information about the available human resources and unfilled positions in each of the surveyed facility is provided in the “individual profiles of the facilities” presented in the respective tables and figures annexed to this report.
- **PHC facility staff trainings:** The regular, but limited trainings are delivered to the staff in all assessed facilities. The training courses are available for all staff in all 5 PHC facilities. However, only one facility (Rafah PHC center) confirmed dissatisfaction with the training courses delivered to the facility staff not specifying the reason. In total from 3 to 7 different types trainings were provided to the personnel during last 3 years, including trainings in MCH, IMCI, GBV, IUD insertion, RH, ANC and etc. Most part of the trainings was organized and provided by the international development partners.
- **NCU trainings:** Trainings at NCUs. According to the assessment findings, the staff of all 7 NCUs received different types of trainings. In the majority of NCUs, the trainings are available for selected staff only (not for all). Only the European Hospital reported that continuous education possibility is equally accessible for all staff members working in the facility. Only 3 out of 7 NCUs (Al Naser, Al Tahreer and European Hospital) reported satisfaction with the trainings received, while Kamal Edwan and Emarati NCUs reported that they were completely dissatisfied with the received trainings without specifying reasons for dissatisfaction. Over the last three years types of the trainings received by NCUs varies from 2 to 5 per NCU. These were related to the following topics: Neonatal Life Support (NLS), Essential Neonatal Care (EENC), Infectious control, Retinopathy of Prematurity (ROP), Neonatal in-Service Training (NIST), Infection Prevention Control (IPC), on-job-training etc. Out of these trainings NLS was provided to all NCUs. Planning for the additional trainings is centralized and carried out by the MoH. One of the key findings of the survey highlighted the need for individual, specific trainings across the NCUs for strengthening specific areas of performance. For instance, Shifa NCU reported that they need additional training of the staff in umbilical catheterization and chest tubes, etc.
- **Maternity Hospital Staff Trainings:** Over the course of the last three years a number of training courses on different topics were planned and delivered to all staff at 4 out of 6 Maternities (Al Tahreer, Emarati, Al Aqsa and Al Shifa). Two of the assessed maternity hospitals - Al Haraizin and Kamal Edwan Maternities reported that the trainings were delivered to the selected staff members. Half of the maternities (Emarati, Kamal Edwan and Al Haraizin) reported their dissatisfaction with the quality of received trainings and only one maternity hospital - Al Shifa, reported the staff is satisfied with the trainings received so far.
- **Availability and usage of guidelines at PHC facilities:** Eight different guidelines (including guidelines for antenatal, postnatal and pre-conception care and immunization) were incorporated in the study instrument for the assessment of availability and usage of the guidelines at the PHC facilities. The findings revealed the need for additional investment in this area in order to ensure delivery of high-quality services. More specifically the findings showed that the guidelines were mostly available in soft copies in all PHC facilities. The vast majority of the guidelines were available in 4 out of 5 assessed PHC centers (guidelines were not

available at Rafah center) and all four facilities reported extensive usage of all guidelines during the last 12 months. Pre-conception care guidelines were not available at any of the assessed PHC centers. 3 out of 5 assessed PHC centers (Al Rimal, Al Aqsa, Khan Younis) reported availability of guidelines on standard precautions for infection preventions, however, the guidelines were physically observed only in two facilities (Al Aqsa and Khan Younis). Staff of Rafah facility said they do not have access to the mentioned guidelines.

- **Availability and usage of guidelines at NCUs:** Only 14 out of 41 guidelines selected for the assessment were observed in all 7 NCUs (see Figure 4). Out of these 14 guidelines, only 4 (antibiotic, apnea in neonates, hypoxic ischemic encephalopathy and Neonatal seizures) were used by all 7 visited NCUs at least once during the last 12 months. In addition to these 14 guidelines, 13 guidelines were available in 6 NCUs (see Figure 5 below) out of which only half of those guidelines are used during the last 12 months by these 6 facilities. Guidelines for managing teenage pregnancy and gender responsive maternal care were observed only in 2 out of 7 NCUs (Al Tahreer and Al Naser) and Hypothermia, breastfeeding, ROP, IPC and NLS guidelines were found only in 3 out of 7 NCUs (Al Tahreer, Al Naser and European Hospital).
- **Availability and usage of guidelines at maternity hospitals:** In total 7 different critical guidelines were included in the assessment tool of availability and usage of guidelines at the maternity hospitals. Guidelines on preparation of birth was available in 5 maternity hospitals (except for Kamal Edwan), guidelines on essential newborn care was available at four maternities (except for Al Haraizin and Kamal Edwan) and guidelines on newborn resuscitation and feeding of clinically stable baby weighing < 2500 g was available at three maternity hospitals (Emarati, Al Shifa and Al Haraizin). All guidelines were mostly available in soft copies and are not regularly used (about a half of maternities from those where guidelines were available reported that they have used them at least once during last 12 months). Important to note that Kamal Edwan maternity hospital do not have any of the guidelines included in the assessment list, which was explained by the fact that Kamal Edwan is not a teaching hospital. Al Shifa maternity hospital reported availability of 3 more guidelines beyond the list. These guidelines refer to abnormal progress of labor, high-risk cases and emergency obstetrics.

HEALTH INFORMATION SYSTEMS AND REPORTING

- **Data management and reporting at the PHC facilities:** Routine reporting and MIS are maintained in all assessed facilities, however in majority of cases no feedback is provided from the higher levels and there was no formal records were found on the evidence-based decision making practices that suggests weak procedure and practices of supportive supervision. All 5 PHC facilities prepared and submitted health statistics reports in the past 12 months. The reports developed at the PHC facilities are disaggregated by sex only. None of the facilities represent the data by employment, disability and/or client satisfaction. None of the PHC facilities use indicators to measure gender related results and/or processes

The assessment of the data maintenance and reporting highlighted weaknesses in reporting. In general, reporting process in PHC facilities is not standardized and

there is a significant variation in data flow and channels for reporting from the PHC facility to the upper levels of the reporting system. Rafah and Khan Younis PHC centers reported about the shortage of health statistical forms in the past 12 months. The copies of the prepared and submitted reports are stored in only 3 out of 5 assessed PHC facilities (Al Rimal, Deir Al Balah and Jabalia). The in-house analysis of the data is not practiced in 3 out of 5 facilities and only Deir Al Balah and Jabalia PHC facilities reported that the data analysis is regularly conducted by the staff at the facility. Khan Younis PHC center does not prepare routine reports and submits only surveillance data to the upper levels. Al Rimal Center submits data to IT department for statistical analysis and routine report development. The findings of the survey indicated about the poor supportive supervision practices. Only three out of five PHC facilities mentioned about the feedback received from upper level in response to submitted reports. Particularly, Jabalia center mentioned that they have received feedback during past 12 months, Deir Al Balah center mentioned that they receive feedback for PKU results only and Khan Younis reported that during last 12 months they received only annual report from MoH.

- **Data management and reporting at NCUs:** All 7 NCUs reported that they have been regularly preparing and submitting health statistical routine reports over the course of past 12 months. Out of all NCU facilities only 3 NCUs (Kamal Edwan, Al Naser and European Hospital) presented statistical data disaggregated by sex. Findings of the assessment indicated that none of the NCUs analyze and organize data by age, employment, disability and or client satisfaction, and only one NCU (European Hospital) uses indicators to measure gender related results or processes.

Three out of 7 NCUs (Kamal Edwan, Shifa, Al Naser) experienced problems with regards to preparation and submission of statistical reports. Among the mentioned problems are: a) shortage of health statistics forms in the past 12 months and b) lack of medical secretary (a dedicated staff for data management and reporting) among NCU staff. All 7 NCUs reported they keep copies of statistics reports at the facility, however only 2 of them (Al Tahreer and European Hospital) conduct in-house analysis of the collected data. 3 out of 7 NCUs (Kamal Edwan, Al Naser, European Hospital) are using the statistical analysis - mainly for logistical planning purposes (i.e. purchase of equipment and different supplies). The feedback from the upper level in response of submitted reports is received by 4 out of 7 NCUs (Shifa, Al Naser, Al Tahreer, European Hospital) during the past 12 months. Among those who provided the feedback, GNN and UNICEF were mentioned.

- **Data management and reporting at maternity hospitals:** All 6 maternity hospitals reported submitting all health reports during last 12 months with 4 of them (except of Al Tahreer and Al Aqsa) presenting data disaggregated by sex. None of the maternities disaggregate data by age, employment, disability or client satisfaction. None of the maternity hospitals use indicators to measure gender related results or processes in their reporting system. Al Shifa and Al Tahrir facilities reported about the shortage of standard statistical forms during the last 12 months. Al Haraizin facility mentioned unavailability of messengers for information transfer. The health statistical reports are kept in all 6 maternity hospitals and only 4 of them conduct in-house analysis of the collected data (all

except for Al Haraizin and Kamal Edwan). The analysis focuses on defining the number of low-risk pregnancies (defined by midwives), calculation of number of babies checked before discharge and etc. 4 maternity hospitals (Al Tahreer, Emarati, Al Shifa and Kamal Edwan) reported that the results of the analysis are used for managing of the number of infants at NICU and number of deliveries at the facility to balance capacity of the hospital and existing workload. Out of 6 assessed hospitals only four has been receiving (all except for Emarati and Kamal Edwan) feedback from higher levels in response to the reports/forms submitted in the past 12 months.

Recommendations

1. Improvement of the physical infrastructure of PHC, NCU and Maternity hospitals through reconstruction and construction of the additional
2. Upgrade equipment of facilities to ensure availability through procurement and installation of the specific equipment based on the developed facility profiles, to strengthen capacity of the health facilities
3. Scale-up monitoring and distribution system for stock management and logistics of pharmaceuticals and medical supplies through development of the LMIS system and training of the respective staff for the system application.
4. Provide health facilities with initial stocks of pharmaceuticals and medical supplies (at least one-year stock);
5. Develop standards for WASH, hygiene practices and waste management
6. Strengthen capacity of service providers in delivery of service packages through training of doctors and nurses
7. Strengthen capacity of technical staff for equipment maintenance through training of engineers and technical staff
8. Update protocols, guidelines and quality assurance standards at all facilities providing MNCH services in GS.
9. Promote MNCH practices among communities, through implementation of the specific strategies for awareness raising
10. Ensure participation of women and monitoring and evaluation of the MNCH service delivery in GS through planning and implementation of specific activities
11. Revise and improve existing Management Information System in health facilities through development and establishment of the upgraded electronic Mis, training of the staff in MIS application
12. Build capacity of the health workers in MISP and reproductive service delivery in emergencies
13. Facilitate collaboration of different key actors in elaboration of the joint strategy for emergency response
14. Establish network of pre-selected partners for rapid response in emergencies
15. Procure life-saving pharmaceuticals for emergency stock

1. Introduction

1.1. Purpose of the Assessment Report

The purpose of this report is to present the findings of the mapping and assessment of the Maternal Neonatal and Child Health service delivery in Gaza Strip region of the State of Palestine. The report analyses the information obtained through the a) qualitative and quantitative research conducted in different types of the health care facilities providing MNCH services; b) key informant interviews; c) Focus Group Discussions (FGDs); and d) mapping exercise carried out in all PHC facilities of the Gaza Strip. The assessment was conducted during the period of July–November 2019. The following report identifies key gaps in the MNCH service delivery and provides sets of recommendations for improvement of the different components of the MNCH system through investment in the infrastructure and capacity development of the different types of the health care facilities providing MNHC services in Gaza Strip. In addition, the study provides improvement plan and the budget for filling in the existing gaps in different system components identified through this study. This assessment report should enable international development partners to use the results of the assessment for guiding and coordinating investment process for improving MNCH service delivery which in turn would contribute in overall strengthening of the health system of Gaza Strip.

2. Background

The Cairo International Conference on Population and Development in 1994, emphasized that sexual and reproductive health is a fundamental human right and that empowering women and girls is both the “rights” thing to do and one of the most reliable pathways to improved well-being for all.⁴ A human rights-based approach to promoting health is guided by the key principle so availability; accessibility; acceptability and quality of facilities and services; participation; equality and non-discrimination; and accountability. Reproductive Maternal Neonatal and Child Health (RMNCH) remains an important priority for the health-related aspects of sustainable development.⁵

Maternal mortality in the world is unacceptably high. In 2017, about 295 000 women died during and following pregnancy and childbirth; every day approximately 810 women died from preventable causes related to pregnancy and childbirth. The majority of maternal deaths (94%) occurred in low-resource settings. Complications during or following pregnancy and childbirth are the results of maternal deaths. The major complications causing nearly 75% of all maternal mortalities are postpartum hemorrhage, antepartum hemorrhage, eclampsia, pre-eclampsia, puerperal sepsis, and complications from delivery. Complications may also exist before pregnancy as cardiac diseases and other chronic diseases but are worsened during pregnancy, especially if not managed as part of the woman's antenatal care. Skilled care before, during and after childbirth can save the lives of women and newborns.⁶

The neonatal period during the first 28 days of life is the most vulnerable time for a child's survival. Children face the highest risk of dying in their first month of life at an average global rate of 18 deaths per 1,000 live births in 2018. Comparatively, the probability of dying after the first month but before reaching age 1 was 11 and after age 1 but before turning age 5 was 10.⁷

Newborns suffer from conditions and diseases associated with a lack of quality care at birth or skilled care and treatment immediately after birth and in the first days of life are at risk of death. Preterm birth, complications during childbirth as birth asphyxia, infections and birth defects cause most neonatal deaths. Women who receive midwife-led continuity of care (MLCC) provided by professional midwives, educated and regulated to international standards, are 16% less likely to lose their baby and 24% less likely to experience pre-term birth (WHO, 2019b). Prevention of child deaths can be achieved by providing immediate and exclusive breastfeeding, improving access to skilled health professionals for antenatal, birth, and postnatal care, improving access to nutrition and micronutrients, promoting knowledge of danger signs among family members, improving access to water, sanitation, and hygiene and providing immunizations. Many of these lifesaving interventions are beyond the reach of the world's poorest communities.⁸

The Figure 1 below presents the conceptual framework that underscores the broad ramifications of neonatal morbidity and mortality and sheds light on the types of

4 UNFPA, 2014

5 WHO, 2015

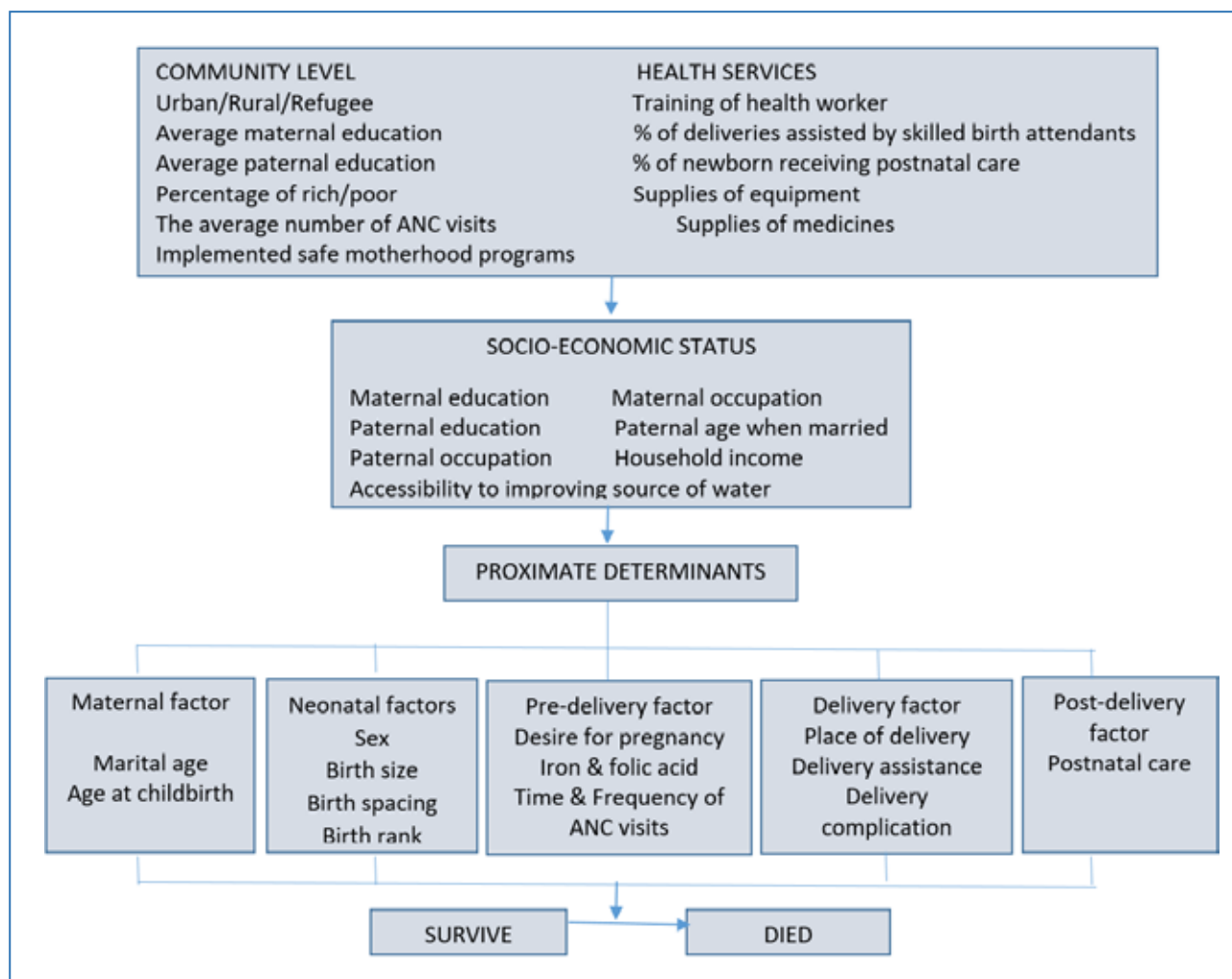
6 WHO, 2019a

7 UNICEF, 2019b

8 WHO, 2017a

measurement that should take place to capture factors that matters to women, service providers, and policy-makers. This framework is also expected to have important implications for healthcare interventions and programs.

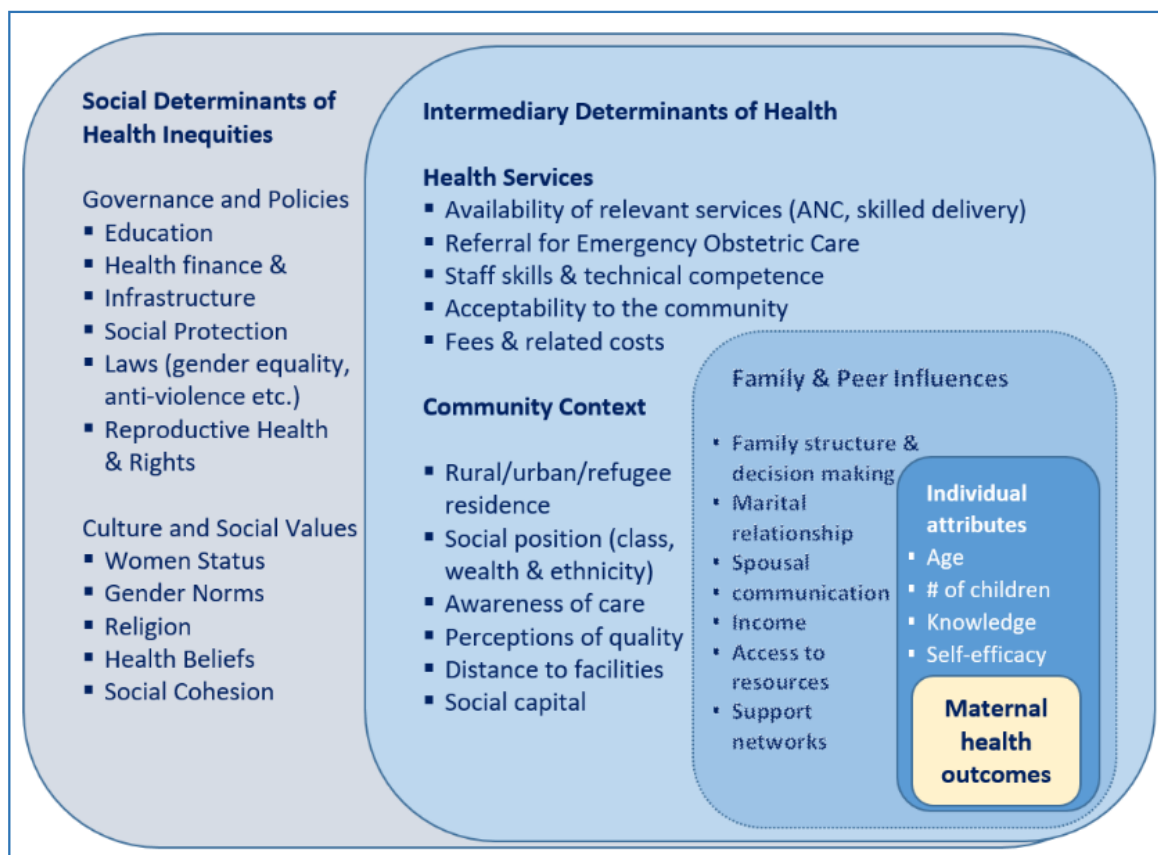
Figure 1: Conceptual Framework for Factors Influencing Neonatal Mortality



Source: Modified from Titley et. al., 2008

Figure 2 below illustrates the framework to discuss social determinants of maternal health inequities and intermediary social determinants at the individual, family, community and health system level. Certain structural factors – policies and programs - that resulted in system-induced vulnerabilities are also described.

Figure 2: Conceptual Framework for Social Determinants Approach to Maternal Deaths:



Source: WHO, 2019

2.1. Context of Gaza Strip

2.1.1. Landscape

The State of Palestine is divided into two main regions. The West Bank, including East Jerusalem, and the Gaza Strip. The Gaza Strip (GS) is a coastal band of land along the Mediterranean Sea, bordering Israel to the north and east and Egypt in the south-west. It is about 41km long, and between 6km and 12km wide, with a total area of 360 km². The border with Israel is 51km; with Egypt, 11km. The Mediterranean coastline is 40km.⁹

2.1.2. Demography

In 2018, the Gaza population reached 1,961,406 with a population density of 5,374/km². Distribution of GS population: Gaza governorate includes 670,138 with a population density of 9,056, North governorate includes 6,291 with population density 383,762, Middle Area governorate 282,017 with population density 4,862, Khan Younis governorate 383,712 with population density 3,778, and Rafah governorate 241,777 with population density 3,533. Children under 5 years represent 14.9% of the

⁹ UNRWA, 2019

population, and children under 15 years represent 41.6%. The refugees represent 71.3% of the Gaza population. The number of females aged 15 to 49 years (fertility period) reached 473,532 which represents 48.8% of all females at the end of 2018. The life expectancy for males was 72.4 years for males and 74.6 years for females. The number of marriages in 2018 reached 15,392 compared to 17,367 in 2017. The rate of marriage was 10/1000 population in 2012 which reduced to 8/1000 population in 2018.¹⁰

2.1.3. Economic situation

The increased pressure stemming from the prolonged closure of the Gaza Strip has affected the Palestinian economy and livelihoods. This has imposed major costs on the Palestinian productive and trade sectors, undercutting development prospects significantly. About 410,000 families are living under the abject poverty line in Gaza and almost 80% of Palestinians in Gaza depended on humanitarian assistance for survival, with no means to access education, health, clothing, and shelter (UNDP, 2019). The economy is significantly strained and poverty, unemployment and food insecurity are increasing. Unemployment in Gaza reached 54 percent in the second in 2018, with over 70 percent of young people and 78 percent of women unemployed. Poverty has soared to 53 percent and food insecurity to 68 percent.¹¹

2.1.4. Health System

The Ministry of Health (MoH) is responsible for delivery of the significant portion of primary, secondary, and some tertiary health care services. Total number of PHC facilities in Gaza Strip is 158. Of these facilities 51 PHC facilities are managed by the MoH (27 PHC level 2, 15 PHC level 3, and 9 level PHC 4), United Nations Relief and Works Agency for Palestine Refugees (UNRWA) manages 22 PHC facility, Non-governmental organizations (NGOs) provide management to 80 PHC facilities, and medical services runs 5 PHC facilities. Maternal and child health care is an integral component of health services provided in Gaza Strip. There is one PHC facility per 12,414 population in Gaza. The highest of them is located in Gaza governorate where there are one PHC facility per 15,230 population and the lowest is located in Middle governorate where one PHC facility serves 9,097 population. On average there is 0.81 PHC facility per 10,000 population.¹²

The number of hospitals accounts to 32 (2,943 beds), out of which MoH manages 13 hospitals (2,240 beds accounting for 71.1% of total beds), NGOs run 16 hospitals, Ministry of Interior runs two hospitals and private sector - one hospital. Out of the 2,240 beds at the MoH hospitals, there are 1,782 admission beds that include 213 maternity admission beds.

Maternity hospitals operated by MoH are Kamal Odwan, Al Shifa, Al Harazin, Al Aqsa, Al Tahrir, and Emarati hospitals. In addition, MoH runs one pediatric hospital and 7 NCUs (Kamal Odwan NCU, Al Shifa NCU, Naser pediatric hospital [NPH] NCU, Al Aqsa NCU, Al Tahrir NCU, European Gaza Hospital [EGH] NCU, and Emarati NCU). The tertiary services are procured by MoH, locally and abroad.¹³

UNRWA plays a key role in the health sector of Gaza Strip, delivering free PHC services to the target population through 22 PHC facilities. UNRWA also procures

10 MoH, 2019

11 OCHA, 2019a

12 MoH, 2019

13 MoH, 2019

secondary and tertiary services for registered Palestinian refugees and contracts NGOs to provide secondary and tertiary care including deliveries.¹⁴

The NGO sector plays a vital role in the health system of Gaza Strip, complementing the work of the MoH in providing tertiary services. NGOs are instrumental in filling in the gaps and inequalities in access to the health system particularly for vulnerable and marginalized groups including women and children. The private sector in Gaza Strip is largely unregulated and focuses on obstetrics and surgical service delivery. This adds a layer of complexity in institutional coordination especially between government and partners and quality control of services.

In the Gaza Strip, the average number of population per PHC facility reaches 12,414, however, according to the MoH data, each PHC facility providers health care services for 10,000 population.¹⁵ This mismatch indicates about the weaknesses in data management and maintenance of statistics in the GS.

Fragmentation of the health system in Gaza, insufficient capacity and suboptimal quality, directly affects the ability of patients to obtain needed health care services, especially those requiring referrals to other health facilities, including maternity wards and neonatal intensive care units.

2.1.5. Human resources

There are there is 10.1 physicians per 10,000 population, and 15.7 nurses/10,000 population at the MoH health system. The total number of physicians working at the PHC facilities operated by the MoH is 387 physicians (268 general practitioners, 14 specialists, and 105 dentists). In addition, there are 207 pharmacists, 438 nurses, and 49 midwives. The medical and paramedical staff at MoH hospitals includes 1,617 physicians (1,249 general practitioners, 368 specialists, and 14 dentists). 170 pharmacists, 2,173 nurses, 241 midwives.¹⁵

The health system in Gaza is fragile and continues to suffer from severe shortages of equipment, medical supplies, infrastructure, and personnel, alongside continuous restrictions on patients referred to medical treatment outside Gaza. Pregnant women are vulnerable who are affected by this precarious situation.¹⁶

2.1.6. Maternal Health

Out of MoH 51 PHC facilities, 28 facilities provide Maternal and child health. MCH services are also provided by the 22 PHC facilities ran by UNRWA. At any given time, there are around 45,000 pregnant women in Gaza.¹⁶ The number of pregnant women who attended PHC facilities in 2018 was 56,935 (17,935 at MoH, and 39,709 at UNRWA) and the average number of ANC visits was 6.9 visits (5.9 at MoH facilities and 7.3 at UNRWA facilities). At-risk pregnancy accounts for 44.2% of pregnant women at MoH and 21% - at UNRWA facilities.¹⁵

The number of births was 57,694 in the Gaza Strip in 2018.¹⁵ Crude birth rate reduced from 34.4 per 1000 population in 2012 to 29.8 per 1000 population in 2018. More than two-thirds of deliveries (69.9%) occurred at governmental hospitals, this reflects the heavy burden on MoH to offer advanced and secondary care for mother and newborn health, and 28.1% of deliveries took place at NGOs hospitals, and 2% at

14 UNRWA, 2016

15 MoH, 2019

16 OCHA, 2019b

the private hospitals. The Caesarean section rate was 21.6% of deliveries in 2012 which increased to 23.2% in 2018. The number of women received Postnatal Care (PNC) in 2018 was 52,849. The fertility rate dropped from 5 in 2012 to 3.7 in 2018.¹⁵

Figure 3: Administrative data on number of deliveries in GS, 2018

Indicator	Government Hospitals	NGOs	Total
Normal Delivery	34,333	10,203	44,536
Caesarean Section	10,532	2,626	13,158
Total	44,865	12,829	57,694

Source: MoH, 2019

Maternal Mortality Ratio (MMR) in 2019 was 19.1 per 100,000 livebirths.¹⁵ According to the MoH, as of August 31 in 2019, there were as many maternal deaths as in all of 2018. A review is ongoing to ascertain the contributing factors, such as possible weakened primary health care, stock-outs of essential drugs and disposables, and lack of access to family planning services. Years of the blockade and movement restrictions on people and goods, including medical resources, the deepening intra-Palestinian political division, and a chronic energy crisis, have led to a serious deterioration in the availability and quality of health services in the Gaza Strip.¹⁷

One of the key contribution factors in increasing maternal mortality rate is weakened primary health care sector, which due to the lack of adequate infrastructure, high qualified human resources, required essential drugs and medical supplies has limited capacity to provide required quality and volume of MCH services to the population, including the family planning services, which is essential for preventing maternal mortality.¹⁸

2.1.7. Neonatal and child health

The registered number of children with hypothyroidism is 292 and the newly registered in 2018 is 15 children with a rate of 0.26/1000 births. The registered number of children with Phenylketonuria (PKU) is 231 and the newly registered in 2018 is 12 children with a rate of 0.21/1000 births.

Figure 4: Administrative Data on Number of Newborns in 2018

Indicator	Governmental Hospitals	NGOs	Total
Multiple Births	1,770	57	1,827
Preterm (< 37 weeks)	6,510	108	6,618
LBW (< 2,500 gm)	3,432	68	3500
Abortions	5,611	446	6,057
Fetal Deaths	296	134	430

Source: MoH, 2019

The rate of multiple pregnancies is 3.2 in 2018. The rate of preterm is 11.6. The low birth weight infants (less than 2,500 gm.) represent 7.3% of live births in 2018 while it was 6.2% in 2012.

The rate of abortion is 10.6% of pregnancies. The rate of congenital malformation is 57/10,000 livebirths.¹⁹

¹⁷ OCHA, 2019b

¹⁸ WHO, 2019

¹⁹ MoH, 2019

2.1.8. Medicines and medical supplies

The percentage of essential medicines with less than a month's supply reaching 51% (262 items) at the MoH Central Drugs Store (CDS) in Gaza, out of which 225 items are totally depleted (90%), representing 44% from the essential drugs list. The percentage of medical disposables reported at less than one-month supply reaching 28% (239 items at the MoH CDS in Gaza (WHO, August, 2019).

Among these shortages are essential life-saving maternal and child health pharmaceuticals which have increased the risk of disability and death among pregnant women and newborns. Items affected by recurrent shortages include iron and folic acid, used to prevent and treat common forms of anemia resulting from micronutrient deficiencies in pregnancy. These shortages have contributed to a rise in anemia, which in 2018 affected nearly 40 percent of pregnant women.²⁰

The shortage of drugs in Gaza has been partly driven by the financial crisis affecting the Palestinian Authority, and the increased strain on the health system due to mass casualties from the Great March of Return demonstrations, as well as the unpredictability of medicines shipments to the Gaza Strip, in the context of internal Palestinians tensions.²⁰

2.1.9. Gender Inequalities

Education: the proportion of female youth (18-29 years) who have a bachelor's degree or above is 22% in 2018 which is higher than that of male youth (13%) for the same period in Palestine (Palestinian Central Bureau of Statistics [PCBS], 2019). This is despite poverty, families with limited resources prefer to invest in sending their sons to university, and despite the early marriage of females and its expected negative impact on girls' access to university education.

Gender-based violence (GBV):

GBV continues to be a key protection and health concern in Palestine. The protracted protection crisis, and its impact on gender and family dynamics, has exacerbated GBV in all its forms, including sexual violence, intimate partner violence, and child marriage. The types of GBV included rape, sexual assault, physical assault, forced marriage, denial of resources and psychological/emotional abuse.

The 2019 violence survey conducted by the PCBS showed that more than third of male and female youth (18-29 years) experienced psychological violence. Married women who suffered from at least one form of violence and abuse from their husbands were 38% in the Gaza Strip and 24%. Of these, nearly one-third of women in Gaza were exposed to physical violence (26%). Psychological Violence takes various forms including forced marriage, denying emotional needs, controlling resources even if these resources were earned by another family member and so on. Gender based violence in Palestine is regarded as an issue that should be handled by the family. Palestinian girls are also vulnerable to child marriage and pregnancy. Nearly 30% of girls in Gaza are pregnant before they turn 18 and about half are mothers before age 20.²¹

²⁰ OCHA, 2019

²¹ <http://www.pcbs.gov.ps/Downloads/book2480.pdf>

Female participation: according to the PCBS, in 2018, 29.4 percent of women in Gaza participated in the labor force, while the unemployment rate among women there stood at 74.6 percent. For women between the ages of 15 to 29, the unemployment rate was even higher, at 88.1 percent. The rate of poverty among women reached 53.8percent.²²

Multiple gender and social norms also limit widows, separated and divorced women from participating in their communities and constrain their ability to move freely, participate in productive activities outside their homes. In general, widows and separated and divorced women are expected to spend most of their time at home. Extra-domestic activities are often viewed with suspicion and can be associated with 'inappropriate' behavior. In Palestinian society, divorce is largely considered 'shameful' for women, but not for men. Separated women also suffer stigma and live in limbo until a decision to either return to their husband's house or finalize a divorce is taken. In the meantime, separated women live temporarily at their father's or a brother's house. Widowhood appears to be less stigmatized because of the cultural and religious precepts that see widows and orphans as vulnerable groups in need of assistance, and as social responsibility.²¹

The situation in the GS is dramatic and deteriorating due to longstanding imposed blockade, restriction of movements of people and goods, political and geographic divisions, early retirement, and financial retirement that have a negative impact on the development and provision of health services for not only for MNCH but also for all patients in the Gaza Strip.

Gaza suffers from six major issues:

- Scarcity of resources, shortage of equipment, lack of spare parts and equipment maintenance, reduction in the supply of medicines and consumables, shortage of NCU and maternity beds
- Shortage of human resources in terms of specialized professionals (neonatology) and specialist care nurses. Shortage in a subspecialty in gyne-oncology, fetal medicine, the technique in the frozen section, and GYN. laparoscopic surgery
- Shortage of national standards
- Delay, denial, and no permission for referred Gaza patients to hospitals at West Bank or Jordan.
- Overcrowding in NICU, maternity hospitals and PHC facility due to a shortage of NICU or maternity beds.
- National specialists couldn't get out from Gaza to attend medical conferences abroad and international experts couldn't get access to Gaza

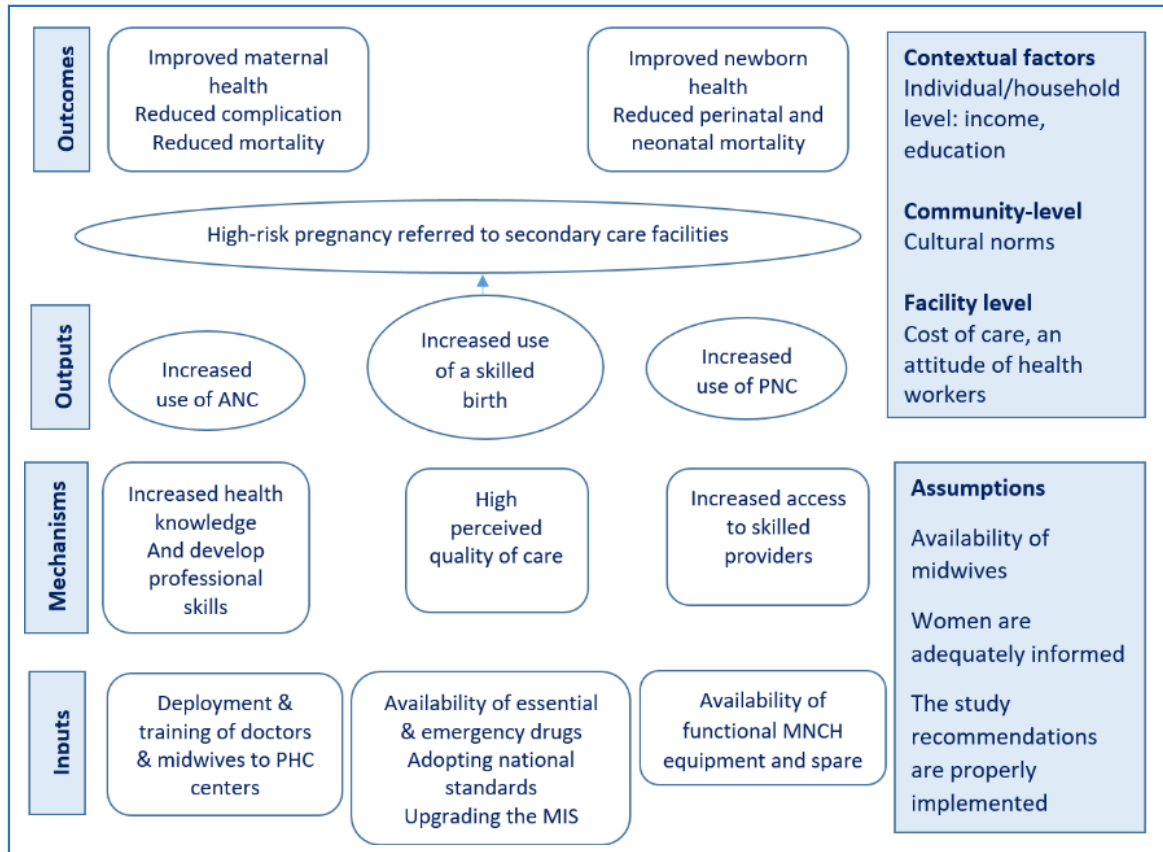
The findings of the present assessment illustrate gaps and needs in MNCH services and help decision-makers to take actions.

The theory of Change presented on the underlying on Figure 5Figure 5 was designed to explain the link between change inputs (deployment and training of doctors and midwives in PHC facilities, presence of medication and demand creation for ANC) and the delivery of outputs that contribute to the higher outcome, including the

²² Gaza Gateway, 2019

improved maternal. Neonatal and child health and reduced maternal and neonatal mortalities. Figure 5 brings clarification to the change towards improvement of maternal and neonatal health and reduction of neonatal and maternal mortalities.

Figure 5: The Theory of Change: To improve maternal and neonatal health and reduce neonatal and maternal mortality



3. Assessment Methodology

3.1. Assessment Framework

The assessment was guided by the Assessment Framework presented in Figure 6 on page 20 below. This assessment framework served as structured framework to guide the team of researchers throughout the assessment process. The Key assessment questions elaborated based on the original ToR of the assessment, were restructured and included in the following framework.

Figure 6: Assessment Framework

	Relevance ²³	Feasibility	Desk Review	FGD	Key informant interviews					Mapping tool
					National Level officials	Facility observations			Patients	PHC centers
						MOH/MH/NCU/ PHC management	Maternity Hospitals	NCUs		
1 Mapping of MNCH services										
Questions under this section are overarching. Respectively, analysis of this topics/issues will be based on the insights/data delivered from detailed questions outlined below										
1.1 Types of facilities providing MNCH services in GS	H	H								
1.2 Numbers of each type of facility providing MNCH services in GS	H	H								
1.3. Distribution of the Health facilities providing MNCH services in GS	H	H								
1.4. Availability of the standards	H	H								
2.WASH and Infrastructure										
2.1. PHC centers	H	H								
2.2. NCUs	H	H								
2.3. MHs	H	H								
2.4. Availability of standards	H	H								
3.Essential Medical Products and Technologies										
3.1. Equipment at PHC		M								
3.2. Equipment at NCU	H	M								
3.3. Equipment at MH		M								
3.4. Availability of Standards										

²³ Was assessed using High, Medium, Low

4 Essential Pharmaceuticals						
4.1. Pharmaceuticals at PHC	H M					
4.2. Pharmaceuticals at NCU	H M					
4.3. Pharmaceuticals at MH	H M					
4.4. Availability of Standards	H					
5 Contraceptives						
5.1. Contraceptives at PHC facilities	H L					
6 Lab Services						
6.1. Available Lab services	H H					
7 Medical Supplies						
7.1. Supplies at PHC	H M					
7.2. Supplies at NCU	H M					
7.3. Supplies at MH	H M					
7.4. Availability of Standards	H					
8 Ambulance services						
9 Human resources						
9.1. HR at PHC facilities/availability	H H					
9.2. HR at NCU/availability	H H					
9.3. HR at MH/availability	H H					
9.3. HR development at PHC/ Training	H H					
9.4. HR development at NCU/ Training	H H					
9.5. HR development at MH/ Training	H H					
9.6. Availability of Standards	H H					
10. Service Delivery						
10.1. Services delivered at PHC/ guidelines	H M					
10.2. Service delivery practices at NCU/guidelines	H M					
10.3. Service delivery at MH/ guidelines	H M					
10.4. Gender issues	M M					
11. Data management and reporting practices						
11.1. PHC	H					
11.2. NCU	H					
11.3. MH	H					
11.4. Availability of SoPs	H					
12. Monitoring and Evaluation						
12.1. Available indicators and standards	H					

3.2. Study objectives

General Objective

The general objective of the present study was to assess the availability, distribution, and accessibility of Maternal Neonatal and Child Health (MNCH) services in Palestinian hospitals and Health Center (HC) in the Gaza Strip to inform key national and international stakeholders and fill gaps in MNCH service delivery in Gaza Strip region of State of Palestine.

Specific Objectives:

1. Assess the availability of resources for MNCH service delivery including:
 - Facilities (delivery departments at maternity hospitals, neonatal unit, neonatal intensive care unit (NICU), primary healthcare centers)
 - Services (antenatal care, natal care, postnatal care, pre-conception care, family planning)
 - Human resources (obstetricians, pediatricians, neonatologists, neonatal nurses, medical subspecialists, medical officers, midwives, nurses)
 - Equipment and supplies
 - Drugs, nutrition and laboratory tests essential for MNCH care
 - Protocols and guidelines
2. Assess the distribution and accessibility of MNCH health services in terms of:
 - Geographic area (North, Gaza, Middle, Khan Younis and Rafah governorates)
 - Leveling for primary healthcare centers and neonatal departments
 - Capacity of maternity hospitals, neonatal departments, PHC centers for ensuring high quality service delivery;
 - Availability of guidelines at the health institutions;
 - Health information system available in selected health facilities;
 - Essential pharmaceuticals, equipment, supplies, WASH and infrastructure, information/data and financing/management.
 - Referral systems used by the facilities.
 - Research Questions
 - The following research questions were formulated and included in the assessment framework:
 - Is the equipment at the maternity hospitals, NCUs, and PHC facility appropriate and available for healthcare delivery?
 - Are the drugs, consumables and medical supplies at the maternity hospitals, NCUs, and PHC facility appropriate and available for healthcare delivery?
 - Is the infrastructure of health facilities appropriate for service provision?

- Are the number of MNCH service providers appropriate for the population needs?
- Are different specialties of obstetricians, pediatricians, neonatologists, well-trained midwives, and nurses available?
- Are there different subspecialties?
- Are the training programs sufficient?
- Is MIS intact?
- Are the service delivery for mothers and children from pre-pregnancy to delivery, the immediate postnatal period, and childhood integrated?
- Is the care provided by families and communities, through outpatient services, clinics, and other health facilities?

The study was commissioned by UNICEF State of Palestine, with the aim to identify, examine and describe existing gaps in the MNCH service delivery and enable UNICEF to better tailor its programmatic support, as well as create a Strategic Investment Plan – a roadmap for other donors and implementing partners to target their assistance. The study concentrated on the following directions: health service delivery and access to the MNCH services for women and children; the state of health infrastructure; availability of essential medicines and medical supplies and technologies (equipment), availability and quality of health workforce, personnel capacity building practices and health management information systems utilized.

A team of national and international experts was hired by UNICEF to conduct the mapping process, review available secondary data, analyze primary data collected through the mapping study and after consultations with the key stakeholders agreed on the development of the Strategic Investment Plan.

3.3. Methods of data collection, arrangements and sampling

The assessment was performed through the full collaboration between the research team and key stakeholders of the MoH in Gaza strip as well as the collaboration between assessors and the service providers at different sites to ensure full participation of all involved actors and most importantly support of the key health authorities and stakeholders of the Gaza Strip.

This assessment triangulated the outputs of a desk review and in-country feedback via semi-structured interviews, key informant interviews, and focus group discussions (FGDs). Thus, the following activities were carried out during data collection in order to ensure the involvement of all parties in such a relevant way. It depended on both qualitative (information gathered during FGDs and in-depth interviews) and quantitative information (like the number of staff, equipment, patients etc.)

The assessment of MNCH services in the selected health facilities included assessment of the physical infrastructure of the facilities, availability of essential medical products and technologies such as equipment, pharmaceuticals medical supplies and etc. The assessment also looked at the issues related to the human resources such as availability and training opportunities, availability and access to the of different types of services and the service delivery practices in the selected health care facilities.

3.4. Literature review

The literature review conducted within the framework of this study used available information collected during the assessment period. It also used the results of an extensive documentation, provided by the partners in Gaza Strip. In addition the review used documents available online: during the initial stage of the assessment the consultants, consultants reviewed the key reference documents including:

- UNICEF health documents
- WHO report
- Early essential newborn care, MoH
- Palestinian National Institute of Public Health
- Palestinian MOH reports
- UNRWA annual report of health department,
- Obstetric wards reports
- Antenatal, postnatal reports
- Family planning reports
- GNN reports
- UNFPA reports

3.5. In-depth interviews

In-depth interviews were conducted with MoH personnel and key partners' staff. These interviews (23 in total) were carried out to determine the appropriateness of the service provision, coverage, accessibility, gaps, barriers, quality, staff knowledge and skills; and if the activities meet the guidelines; to identify the main strengths and areas for improvements; and to match the provision of health services related to the use of resources. Prior to visits, the respondents were informed about the time and date of the visit of the consultant. Upon arrival, the consultant has been explaining the purpose of the visit, introduced himself, presented the study authorization letter, and received permission to begin data collection. She or he was recording the data by asking questions, listening, and observing.

3.6. Focus Group Discussions (FGDs)

Three FGDs were arranged. One FGDs with employees of maternity hospitals and two FGDs with the end-users of the MNCH services provided by the NCUs. Each focus group included 8 to 12 participants and the discussion lasted around one and half hour.

3.7. Face-to-face interviews with patients

The study interviewed 40 women at immediate and late postnatal care at PHC center to obtain information about their previous experience of PCC, Family planning, ANC services they have received and the about services for their children.

3.8. Observation of health facilities

The observation was carried out at 5 primary health care centers selected from 28 existing centers in the Gaza Strip. The selection was based on the following criteria:

Main health center in each governorate:

Workload and types of the services provided by the PHC center (number of pre-conception care, antenatal care, postnatal care and child health services) and number of coverage population of the PHC facility;

In addition to the PHC facilities the study targeted for observation all 7 NCUs operating in the Gaza Strip and main maternity hospitals providing services in each of five governorates.

The data collection team maintained a log of all visited facilities for recording the visit dates and important notes related to the visits.

The visits were precisely arranged through the advance communication with the facilities about the timing of the visits. Upon arrival, the research team members were meeting the facility director or the officer in charge for orientation and briefing facility heads on the details of the visit and presentation of the study authorization letters to receive permission for data collection.

The observation and data collection have been conducted at the following health care facilities:

Primary health care centers:

1. Al Rimal healthcare center
2. Jabaliya healthcare center
3. Deir Al Balah healthcare center
4. Khan Younis healthcare center
5. Rafah healthcare center

Maternity Hospitals

1. Obstetrics hospital at Al Shifa compound (Gaza governorate)
2. Obstetrics hospital at Kamal Odwan (north governorate)
3. Obstetrics department at Al Aqsa Martyr hospital (Deir Albalah, Middle governorate)
4. Al Tahreer Obstetrics hospital at Naser hospital complex (Khan Yunis city, Khan Yunis governorate). 56 maternity beds, 10 delivery beds Dr. Walid Abu Hatab
5. Obstetrics Emarati hospital (Tal Al Sultan, Rafah governorate)

Neonatal Care Units (NCUs)

1. Al Shifa hospital (Gaza city, Gaza governorate)
2. Al Naser pediatric hospital (Gaza city, Gaza governorate)
3. Kamal Odwan hospital (Beit Lahia, north governorate)
4. Al Aqsa Martyr hospital (Deir Albalah, Middle governorate)
5. Al Tahreer hospital, part of Naser medical complex (Khan Yunis city, Khan Yunis governorate) Dr. Hatem
6. European Gaza hospital (Rafah governorate)
7. Emarati hospital (Tal al Sultan, Rafah governorate)

3.9. Data collection instruments

The final draft data collection tools were shared with the steering committee members, WHO and UNICEF for review and feedback. The comments and suggestions provided from all these sources on the data collection instruments were analyzed and part of them were incorporated in the final version of the data collection tools.

The survey instruments / data collections forms were structured as standard-based checklists and question/answer format covering areas of key importance: PHC centers, infrastructure and services, maternity hospitals, NCUs, routine neonatal care, sick newborn care, infant and children healthcare, infection prevention and supportive care, human resources, and essential safety and life-saving practices. The assessment forms utilized different sources of information outlined in the Assessment Framework (see Figure 6: Assessment Framework on page 20), including direct observation and semi-structured interviews with the staff of the facilities. The forms included indicators and questions for assessing newborn care services at facilities. The tools aimed to collect data on indicators that assess whether a facility is able to address the three major causes of maternal, neonatal, and child morbidities.

More specifically, the set of the study instruments included:

1. Guide for the in-depth interviews
2. Guide for FGDs
3. Questionnaire to assess PCC, Family planning, ANC.
4. Questionnaire to assess natal and early neonatal care
5. Questionnaire to assess postnatal services
6. Checklist to identify the infrastructure and facility resources

3.10. Ethical considerations

The following ethical considerations were strictly adhered throughout implementation of this assessment:

3.10.1. Approvals

Prior to the beginning of the assessment the research Team Leader (National Expert) obtained approval of the steering committee, the representative body of the MoH for implementation of the assessment among all respondents and in all health facilities selected for the assessment. The approvals were also obtained from the heads of PHC centers, NCUs and Maternity Hospitals. In addition, approval was obtained from the MoH, the official approval for direct observations were obtained from the directors of hospitals.

3.10.2. Recruitment of study participants

During the training, specific emphasis was made on explaining that **selection process is not discriminatory**, participation in this research is entirely voluntary and will have no bearing on participant's job, quality and volume of receiving health services and/or any work-related evaluations or reports.

3.10.3. Informed consent

- Written informed consents were obtained from all study participants before the interviews started. Signed copy of the consent form was given to the respondent.
- Each participant was thoroughly informed about his/her rights including the right to refuse participation or withdraw from the process at any point, even if interview is already started, and right not to share any personal information he/she is not willing to share by any reason
- Participants were explained that their participation in the assessment is entirely voluntary. It is their choice whether to participate or not and the choice that they made will have no bearing on their job or on any work-related evaluations or reports.
- Respondents were clearly informed that they may change their minds later and stop participating even if they agreed at the beginning. Although, they were instructed that in case if the interview has already taken place, they cannot 'stop participation' but request that the information provided by them not be used in the research study.
- Participants also were explained that there were no major risks for them to participate in the assessment and they will not be asked to share with us some very personal and confidential information. Respondents also were told that if any question, discussion seems to them too personal or makes them uncomfortable, they will not have to answer these questions and/or participation in such discussions.
- In addition, participants of the focus group discussions (FGDs) were explained, that the report will not include information that will allow to identify participants, directly or indirectly. Besides, no personal identifiers were collected for women interviewed at selected PHC facilities included in the assessment.

3.10.4. Fieldwork administration

- A. The data collection team was formed by the national expert/consultant and six qualified data collectors. The team members were selected based on their education, qualification and background experience in survey work. Out of six data collectors three were obstetricians and another three – pediatricians.
- B. FGDs and KIs were led by FGD Moderator (research team leader) who has extensive experience of working in projects with specific focus on vulnerability, gender, health issues;
- C. Group discussions and interviews were recorded using detailed paper based notes were used.
- D. Detailed transcripts of all conducted FGD sessions and KIs were prepared based paper-based notes. The summary write ups were used for the analysis and final report preparation.
- E. All study instruments were sufficiently tested and validated before commencement of the survey fieldwork. All sensitive issues related to cultural norms, gender specific and/or any aspect leading to inequality and / or violation of human rights were specifically addressed and excluded.

- F. The data was collected in an appropriate, respectful manner paying special emphasis to the cultural, ethical and legal concerns.

3.10.5. Data storage

Data collected from the different data sources was submitted to the national expert, who reserved the data files in a secure place and kept fully confidential. No one else except for the national researcher has access to the study materials. The research data materials will be destroyed in 1 year after completion of the project.

3.10.6. Code of conduct

In addition, to mentioned ethical considerations, the principles of Code of Conduct were applied at all stages of the assessment. The assessment team successfully managed to respect the basic rights of all. Evaluation team acted fairly, honestly and tactfully and treated all respondents with sensitivity, tolerance, dignity and respect.

“Do no harm “principle was largely adhered during the assessment implementation and analysis phases to ensure that our activities were not bringing inconveniences to persons involved in the study.

3.11. Assessment timeline

The assessment was carried out during the period July – November 2019

4. Findings

4.1. Health Facilities

The results of the mapping exercise showed that the MNCH services in Gaza Strip are provided by the three different types of health facilities, that were selected for the further assessment: Primary Health Care Facilities (PHC), Neonatal Care Units (NCUs) and Maternity Hospitals (MHs).

The assessment and specifically observation of these facilities showed that the physical infrastructure of all facilities are inadequate and significantly limits capacity of these facilities to ensure delivery of high quality services due to the multiple factors, such as lack of essential spaces, inability to provide patients with privacy standards, ensure isolation of the patients with specific needs or infectious diseases and etc.

The detail description of the challenges faced by each type of the assessed facilities are outlined below.

PHC Centers

Figure 7 presents distribution of the PHC facilities in Gaza Strip. Across the five governorates of Gaza Strip, the number of PHC facilities varies from 2 in Rafah governorate to 12 PHC facilities in Gaza governorate.

Figure 7: PHC Facilities in Gaza Strip

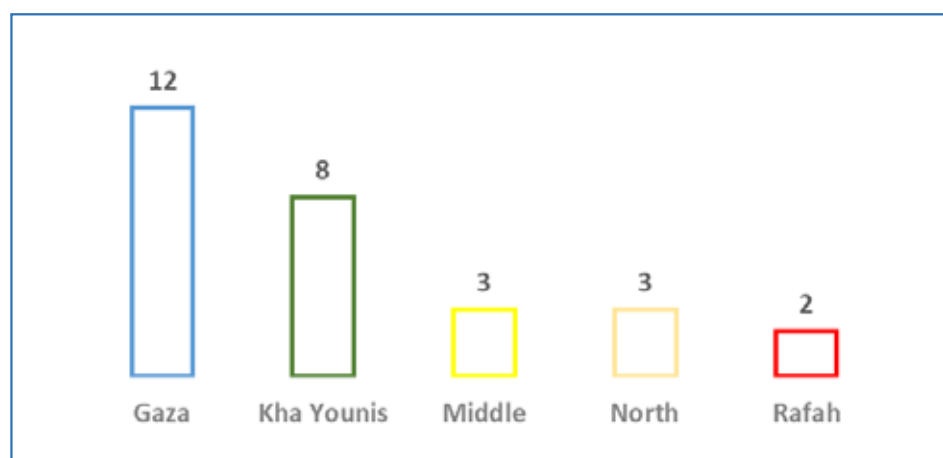
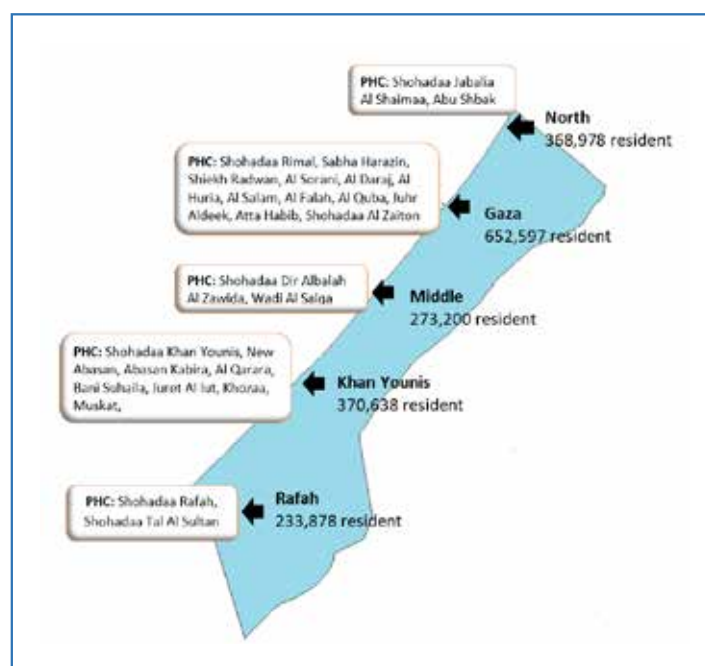


Figure 8 below provides information on the resident population and the distribution of the population across the Governorates and across the existing PHC facilities.

The number of populations in the North Governorate amounts to 368,978 residents who are served through the Jabalia, Al Shaimaa and Abu Shbak PHC facilities. The PHC services to the 652,597 residents of Gaza governorate are provided by 12 PHC facilities and services for the 273,200 residents of the Middle governorate are provided by the Deir Al Balah, Al Zawida, Wadi and Al Aqsa PHC facilities.

Figure 8: Distribution of population per PHC facilities in Gaza Strip



The population of Khan Younis is 370,638 residents who are served by 9 PHC facilities and the PHC services for 233,878 residents of the Rafah governorate are provided by Rafah, Tal Al Sultan PHC facilities.

The assessment of PHC facilities was carried out during the period September 15 – October 10, 2019. The study selected all major PHC facilities in each governorate and thus in total 5 facilities were assessed. The total number of catchment population of these facilities amounted to 844,000 individuals. The list of assessed facilities is presented on below:

Figure 9: List of assessed PHC Facilities

#	Facilities	Size of PHC catchment area
1	Al Rimal Gaza	150 000
2	Dir Albalah	250 000
3	Khan Younis	227 000
4	Rafah	97 000
5	Jabalia	120 000

Analysis of the space at the PHC facilities showed that the smallest space is occupied by the facilities in Khan Younis and Rafah (7 rooms each), however, these two facilities serve the greatest numbers of the pregnant women with ANC services compared to other PHC centers selected for the assessment (600 and 500 respectively per year). The number of pregnant women among assessed facilities varies from 387 in Jabalia to 600 in Khan Younis, number of at-risk pregnancies varies between 40 in Jabalia and 269 in Al Rimal, women for Postnatal care (PNC) – from 60 in Rafah to 369 in Al Aqsa and for family planning – from 168 in Al Aqsa to 633 in Khan Younis. The preconception care services (PCC) are provided in Deir Al Balah facility. The service utilization/delivery is very limited and at the time of assessment amounted to 3 women. The details are presented in Figure 10 below.

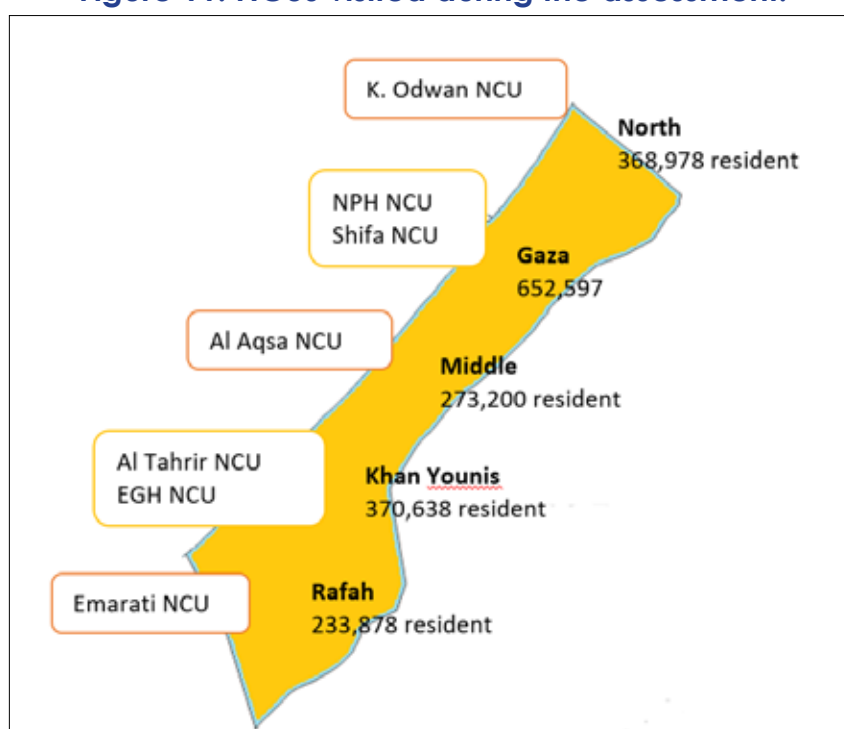
Figure 10: Case load at the PHC Centers

Category	Al Rimal	Al Balah	Khan Younis	Rafah	Jabalia
	#				
Number of rooms	42	30	7	7	60
No. of pregnant women for ANC	478	446	600	500	387
No. of at-risk pregnancy	269	76	200	120	40
No. of women for PNC	144	369	200	60	70
No. of women for Pre Conception Care	50	3	0	0	-
No. of women for FP	414	168	633	300	490

Neonatal Care Units (NCU)

As shown on Figure 11 the study assessed in total seven (7) Neonatal Care Units (NCUs) that were distributed across the Gaza Strip. More specifically the NCUs were located in Kamal Edwan, Shifa, Al Naser, Emarati, Al Tahreer, Al Aqsa and European Hospital (EGH). The assessment was carried out during the period September 4-30, 2019, by the three interviewers.

Figure 11: NCUs visited during the assessment.



Three out of seven visited NCUs represent Level II facilities and the remaining 4 NCUs – Level III facilities (see Figure 12 below).

The management and staff of only two out of seven visited facilities (Al Tahreer and European Hospital) were able to provide correct number of their respective catchment population. The remaining five facilities reported that such information is not available at the facility. The information on the catchment population of the NCUs in Gaza Strip was obtained through PCBS.

Figure 12: NCUs Assessed by the Study

#	Location of the NCU	Governorate	Level of NCU	Size of Catchment area
1	Kamal Edwan	North	2	377,126
2	NPH	Gaza	3	645,205
3	Shifa	Gaza	3	645,205
4	Al Aqsa	Dir Albalah	2	273,381
5	Al Tahreer	Khan Younis	3	350,000
6	EGH	Khan Younis	3	350,000
7	Emarati	Rafah	2	233,490

Source: PCBS 2017

Figure 13 provides more detailed description of the assessed Neonatal Care Units:

Figure 13: The list of assessed NCUs

Parameters	Kamal Edwan	Shifa ¹	Al Naser	Emarati	Al Aqsa	Al Tahreer	EGH	TOTAL
Average No. of admissions/day	3	6	5	3	7	5	8	Ranges from 3 to 8
Total space (mt ²)	36	445	220	300	350	435	177	Ranges from 36 to 445
Availability of Educational materials on breastfeeding expression	No	Yes	Yes	No	Yes	No	No	3 (yes) 4 (no)
(If yes) Do materials take into consideration literacy level?		Yes	Yes		No			2 (yes) 1 (no)
Availability of educational materials/lessons on breast milk storage	No	Yes	Yes	No	Yes	No	No	3 (yes) 4 (no)
(if yes) Do materials take into consideration literacy level?		No	No		No			3 (no)
Availability of amino acids for total parenteral nutrition	No	Yes	Yes	No	No	Yes	Yes	4 (yes) 3 (no)
Availability of intra-lipids for total parenteral nutrition	No	Yes	Yes	No	No	Yes	Yes	4 (yes) 3 (no)
Vitamins and minerals for total parenteral nutrition	No	No	No	No	No	No	No	7 (no)

Maternity Hospitals

Assessment of selected Maternity Hospitals has been carried out during the period September 9 – October 3, 2019. In total 6 Maternity Hospitals were visited by the study team (see Figure 14 below).

Figure 14: Maternity Hospitals Assessed by the Study



Assessment of the maternity hospitals was carried out by 3 qualified interviewers who had medical background. The list of assessed maternities along with the size of population in their respective catchment area is presented on Figure 15 below.

Figure 15: Assessed Maternity Hospitals

#	Maternity hospitals	Governorate	Size of population in Catchment area
1	Kamal Odwan	North	368,978
2	Al Shifa	Gaza	700,000
3	Al Haraizin	Gaza	150,000
4	Al Aqsa	Dir Al Balah	273,200
5	Al Tahrir	Khan Younis	500,000
6	Emarati	Rafah	233,878

Source: PSBS 2017

The capacity of the assessed maternity hospitals significantly differed across these health facilities. The number of beds per maternity hospital varied from 10 in Haraizin to 79 beds in Al Shifa maternity hospital. Highest number of delivery beds (11) was observed in Al Shifa hospital, followed by Al Tahrir maternity with 10 delivery beds. The greatest spaces among others are occupied by Emarati and Kamal Edwan maternities, while the lowest capacity was observed in Emarati hospital with three delivery beds only.

The number of delivery rooms per maternity varied from 1 in Emarati and Haraizin hospitals to the 6 rooms in Kamal Edwan maternity hospital. The number of births per day varied from 1 – in Al Haraizin to 43 births in Al Shifa and number of Cesarean Sections (CS) – varied from 1 to 12 in the same maternities respectively.

More detailed general information on the assessed maternity hospitals is presented in the Figure 74 on page 92, which shows that time of discharge in case of normal delivery varied from 3 to 6 hours. The delivery room for isolation of HVC/HCV infected pregnant women was available in only two out of six visited maternity hospitals (Al Shifa and Kamal Edwan) and pediatrician attended the births only in Kamal Edwan Hospital as it was reported by the hospital representative.

Criteria used in the maternity hospitals for referring the newborn to NCU included IDM, IUGR, meconium, RDS, PROM, IUFD, neonatal anomalies, LBW, Asphyxia and deliver of the sick baby who do not respond to the resuscitation measures (see Annex).

4.2. WASH and Infrastructure

PHC Facilities

According to the assessment findings the PHC facilities need substantial improvement of their physical infrastructure. The total needs of the PHC facilities in re-construction (renovation) was estimated at 405 m² and included renovation of toilet facilities, including toilets for disabled visitors as well as renovation of the most damaged parts of the buildings (Rafah PHC center). The total needs in construction of the additional space in PHCs were estimated at 753 m² and was related to the construction of toilets and additional space for ensuring isolation of specific patients (see Figure 16 below).

Figure 16: Construction and Re-construction needs at the PHC facilities

Facility #	Name of facility	Need for reconstruction/Square Meter	Construction/expansion/Square Meter	Total/Sq. Mere	Reconstruction	Construction
Primary Healthcare Facilities						
PHC 1	Al Rimal center	<ul style="list-style-type: none"> Refurbishment of toilets Add 10 sinks at examination rooms (not all examination rooms with sinks) 	<ul style="list-style-type: none"> Construction for vaccination store (The roof of existing store is zinco). It is not compatible with cold chain criteria Toilet for disabled people 	Store: 120 m ² (roof)	20 m ² for sinks	120 m ² 12 m ² (toilet for disabled)
PHC 2	Khan Younis	<ul style="list-style-type: none"> Maintenance of the existing toilets 	<ul style="list-style-type: none"> Construction of three toilets Toilet for disabled people 			30 m ² (3 toilets) 12 m ² (for disabled)
PHC 3	Al Zeiton	Toilet for disabled people	Expansion (adding part of the roof)	150 m ² (pillars and roof)		150 m ²
PHC 4	Dir Albalah		<ul style="list-style-type: none"> Construction of 2 toilets Toilet for disabled people 			20 m ² (2 toilets) 12 m ² (for disabled)
PHC 5	Rafah	Renovation of the existing building	<ul style="list-style-type: none"> Expansion vertically, construction of floor Toilet for disabled people 	385 m ² (additional space)	385 m ²	385 m ² 12 m ² (for disabled)
Total Space					405 m²	753 m²

Most of the infrastructure, water, sanitation and hygiene facilities are physically available in almost all visited PHC facilities, with some of them being out of adequate working conditions. According to the study findings, solar system in a working condition is available only in one – Rafah PHC center. The water desalination unit and ventilation systems are the most lacked items and are available only in 1 or 2 PHC centers only (water desalination unit is available in Deir Al Balah and Jabalia centers and Ventilation system – in Khan Younis center).

Solar energy is available only for vaccine refrigerator in Al Rimal and Khan Younis PHC centers, while in Deir Al Balah – the system needs maintenance (connections are missing). All solar energy for vaccine refrigerators are functioning well. Some of the PHC facilities, as Deir Al Balah, has a solar energy other than vaccine refrigerator and providing 50% of the needed electricity at the center. Al Rimal and Khan Younis PHCs reported insufficient quantity of basins (4 basins for 9 rooms in Al Rimal). Besides, in Al Rimal and Deir Al Balah centers poor quality of municipality water was

reported. According to these facilities available water is undrinkable, even though sufficient supply is documented. As it was mentioned above, ventilation system is physically available in Khan Younis center, while in Al Rimal – air condition is available at the laboratory and pharmacy only. In Deir Al Balah the facility drug store has no ventilation system.

Shower rooms are not available in any of the visited PHC facilities. The details on available infrastructure and WASH are presented in Figure 75 on page.

Refrigerators and storage facilities are physically available in all visited facilities with 3 (in Khan Younis, Rafah and Jabalia centers) and 2 (Rafah and Jabalia) respectively being in an adequate working condition.

Cleaning of the toilets and environmental disinfection is carried out 2 times per day in visited facilities, while environmental disinfection is not practiced at all in Khan Younis center. Toilets were available in all assessed facilities, however, Khan Younis and Al Aqsa reported that the number of toilets is insufficient considering the patient flow of the patients. Moreover, Al Rimal, Jabalia and Khan Younis reported that available toilets require major renovation (see construction and re-construction requirements of PHC facilities).

Only one (Jabalia PHC) mentioned that the waiting area at the facility is comfortable. At the same time, at all 5 facilities the waiting area included screens, displaying health and nutrition educational materials. Besides, sessions and/or individual counselling around health, nutrition, diet behavior, breastfeeding and personal hygiene were provided at all PHC centers. Sessions about weaning practices, diet of child with diarrheal episodes, identification of the danger signs of sick baby – were available at the majority – four out of 5 assessed facilities. Availability of sessions on weaning practices were not reported by Khan Younis center and on diet of child with diarrheal episode and identification of the danger signs of sick – in Rafah center.

In general, interviewed respondents thought positively about received sessions and assess them as useful, informative and clear, with an exception of Rafah facility.

Figure 17: Waiting area and awareness sessions at the PHC facilities

#	Questions	Al Rimal	Der Al Balah	Khan Younis	Rafah	Jabalia	# of PHC facilities responded "yes"
1	Is the waiting area comfortable?	No	No	No	No	Yes	1
2	Is the waiting areas include screen showing health and nutrition educational materials?	Yes	Yes	Yes	Yes	Yes	5
3	Are there health and nutrition awareness sessions delivered by nurse or health educator for a group? If yes,	Yes	Yes	Yes	Yes	Yes	5
4	Are there health and nutrition individual counselling?	Yes	Yes	Yes	Yes	Yes	5
5	Did you receive breastfeeding sessions?	Yes	Yes	Yes	Yes	Yes	5
6	Did you receive nutrition and diet behavior sessions?	Yes	Yes	Yes	Yes	Yes	5
7	Did you receive sessions about weaning practices?	Yes	Yes	No	Yes	Yes	4
8	Did you receive sessions about diet of child with diarrheal episode?	Yes	Yes	Yes	No	Yes	4
9	Did you receive training sessions about personal hygiene?	Yes	Yes	Yes	Yes	Yes	5
10	Did you receive education how to identify the danger signs if your baby is sick?	Yes	Yes	Yes	No	Yes	4
11	Did you feel that these awareness sessions are useful?	Yes	Yes	Yes	No	Yes	4
12	Did you feel that these awareness sessions are clear and informative?	Yes	Yes	Yes	No	Yes	4
13	If you receive other education sessions, please specify	IMCI				Diabetes mellitus & Hypertension	

According to the study findings, central electricity supply is available in all 5 PHC centers having generators as back-up source. In 3 out of 5 facilities electricity supply was documented with no interruptions over the last 7 days prior to the assessment. While, Al Ramal experienced frequent or prolonged interruptions during the same period and Deir al Balah – faced interruptions for less than 2 hours per day. Details on electricity supply are presented in Figure 18 below:

Figure 18: Electricity supply at PHC centers

#	Electricity source and supply	Al Rimal	Der al Balah	Khan Younis	Rafah	Jabalia
1	What is the facility's main source of electricity?	Central supply of electricity	Central supply of electricity	Central supply of electricity	Central supply of electricity	Central supply of electricity
2	Other than the main or primary source, does the facility have a secondary or backup source of electricity?	Generator	Generator	Generator	Generator	Generator
3	During the past 7 days, was electricity available at all times from the main or any backup source when the facility was open for services?	Sometimes available (frequent or prolonged interruptions of more than 2 hours per day)	Often available (interruptions of less than 2 hours per day)	Always available (no interruptions)	Always available (no interruptions)	Always available (no interruptions)
4	Is the solar system functional?	Yes, functioning	Partially, battery needs	Yes, functioning	Yes, functioning	Yes, functioning

PHC centers are open for 7 hours per day with an exception of Jabalia PHC facility reporting that they work on average 8 hours per day. In 4 out of 5 PHC centers water is supplied using pipe into the facility with an exception of Jabalia, where Tubewell/borehole is used instead.

Both, auditory and visual privacies for patients consultations are available in Rimal and Jabalia facilities only (see Figure 19)

Figure 19: Basic Client Amenities at PHC facilities

#	Basic client amenities	Al Rimal	Al balah	Khan Younis	Rafah	Jabalia
1	On average, how many hours per day is this facility open	7	7	7	7	7
2	What is the most commonly used source of water for the facility at this time?	Piped into facility	Piped into facility	Piped into facility	Piped into facility	Tubewell/borehole
3	Is there a room with auditory and visual privacy available for patient consultations?	Both auditory and visual privacy	No privacy	No privacy	No privacy	Both auditory and visual privacy

Neonatal Care Units

Total additional space required to upgrade the visited NCU physical infrastructure was estimated at 140 m², out of which 20 m² requires renovation and 120 m² – construction of the new space. The details of the construction and reconstruction needs per each NCU facility are presented in Figure 20 below:

Figure 20: Construction and reconstruction requirements at NCU facilities

PHC Facility	Reconstruction Square meter	Construction Square meter	Total Square meter	Construction
NPH*	Need elevator for transportation of incubators Construction nursing room			20 m ²
Kamal Edwan	Rehabilitation room for breastfeeding & friendly baby	Space needs partition	30 m ²	30 m ²
EGH	Expansion of NCU, Construction of doctors room	Re-allocation of NCU, SCABU & NICU at same room		
Al Tahreer		Construction of 3 toilets	30 m ²	30 m ²
Al Aqsa	No privacy at NCU, need restructuring	Need re-arrangement of rooms to keep privacy		
Al Shifa	Consumable store at ground level		60 m ²	60 m ²
Emarati	Partition of space to make SCBU & baby friendly rooms	Construct 2 toilets for mothers	20 m ²	20 m ²
Total				160 m ²

Almost all seven NCUs have neonatal Reception and Special Care Baby Units (SCBUs) with an exception of European Hospital reporting lack of Neonatal Reception. Number of beds in SCBU varies from 4 to 11.

Neonatal Intensive Care Units (NICU) are available in 4 out of 7 NCUs (Shifa, Al Naser, Al Aqsa, Al Tahreer). The assessment found that there were no beds in the Al Tahreer NICU rooms. Al Aqsa NICU has NICU with 5 beds occupying 60 square meters, however it is not functioning due of shortage of respective professional team. In European Hospital SCBU and NICU are located in the same room. Shifa NICU has the largest NICU with 22 beds occupying 331 m².

The number of Nurse Stations varies from 1 to 5, with 2 NCUs (Kamal Edwan and Emarati) reporting its absence, while in Shifa and Al Naser NCUs nurse stations are available at each room.

Isolation rooms are available in 6 out of 7 NCUs and number of rooms varies from 1 to 3 and number of beds – from 1 to 5. The highest capacity in Isolation rooms was observed at Al Tahreer NICU with 3 rooms and 5 beds occupying 60 m².

Baby friendly rooms are not available in 4 out of 7 NCUs (Kamal Edwan, Shifa, Emarati and European Hospital). Al Tahreer NICU has 2 baby friendly rooms occupying 100 m² with no beds. This space requires major reconstruction and renovation. Al Naser and Al Aqsa NCUs have 1 baby friendly room with 8 and 5 beds, occupying 30 to 50 m² respectively.

Facilities for breastfeeding expression exist in only 2 NCUs (Shifa and Al Naser). Al Naser NICU has 3 breastfeeding chairs (instead of room), while Shifa NICU has a room of 12 m² that needs renovation. Emarati and Al Aqsa reported that they use baby friendly rooms for breastfeeding expression.

Rooms for mothers to breastfeed their newborns are available in 5 out of 7 NCUs (Shifa, Al Naser, Emarati, Al Aqsa and Al Tahreer), of which with no functioning one in Al Aqsa NICU.

A milk kitchen exists in 4 NCUs (Shifa, Emarati, Al Aqsa, Al Tahreer), out of which kitchen is not functioning in Al Aqsa NICU as it requires renovation and Al Tahreer NICU lacks respective equipment. No nursery rooms are available at any of the visited and assessed facilities.

[*Naser Pediatric Hospital \(NPH\): the study reveals that there is a need for construction of NPH with a capacity of 130 beds](#)

Facilities for breast milk storage (domestic refrigerators) are available in 5 NCUs (Kamal Edwan, Shifa, Al Naser, Al Aqsa, Al Tahreer), although the facility does not function at Al Aqsa NICU. In Shifa NICU refrigerators are available in each room.

The assessment results showed that vast majority of units have at least one sink for washing hands with minor exceptions. Majority of NCUs have access to family/ mother or 24/h mother presence and are gender responsive with good welcoming receptions (as reported by NCUs), however clear signs suitable for those who cannot read is absent in most of the cases. The detail information on availability of rooms/ units and space of NCUs are presented in Figure 76 on page 94.

Infrastructure, water sanitation and hygiene facilities are physically available in almost all visited NCUs, however in some cases they are not in adequate working conditions (see details in

Figure 21 below). According to the assessment results, solar system, showering rooms, water (desalination unit) and storage facilities are most lacked ones (available in 4

out 7 NCUs). Solar system in adequate working condition is available at Emarati, Al Aqsa, Al Tahreer and European Hospitals, showering rooms - in Kamal Edwan, Shifa, Al Naser and Al Aqsa, water (desalination unit) – in Kamal Edwan, Shifa, Emarati and European Hospital and storage facilities – in Kamal Ewan, Al Naser, Emarati and Al Aqsa. Assessment found that sufficient municipality water is accessible for 5 out of 7 mapped NCUs (except of Kamal Edwan and Al Naser).

Figure 21: WASH and Infrastructure at NCUs

#	Conditions	Availability (# of observed “yes” cases)	Is adequate to perform services (# of observed “adequate” condition)	Comment
1	Power (generator)	6	5	
2	Solar system	5	2	
3	Lighting	7	6	
4	Sanitation facilities	7	7	
5	Basins at rooms	7	6	
6	Showering rooms	4	4	One NCU lacks hot water
7	Sufficient municipality water	5	5	
8	Delivery water of good quality	5	5	One NCU has reconstructed water system
9	Sufficient clean water tanks	6	6	
10	Water (desalination plant)	7	4	One NCU reported that filters are outdated and need to be changed
11	Ventilation	7	6	
12	Cleanliness	7	7	
13	Storage facilities	7	4	
14	Refrigeration	7	6	
15	Disposal of hazardous wastes	7	7	
16	Soap or Alcohol Hand Rub	7	7	

The assessment found that cleanliness and environmental disinfection are ensured in all 7 NCUs. Toilets are available in all assessed NCUs, but only 1 of them (Al Aqsa) is suitable for disabled people. Frequency of toilet cleaning per day varies between 3 (in Shifa, Al Naser, Al Tahreer and European Hospitals) to 10 (in Al Aqsa) per day, and for the environmental disinfection – from 2 (in Al Tahreer and European Hospitals) to 6 (In Kamal Edwan and Al Aqsa). Information on a) number of sink per bed and b) number of sinks with paper towel among all number of sinks, is presented in Figure 22.

Figure 22: WASH Cleanliness and Environmental Disinfection

1	Are toilets suitable for disabled people?	1
2	Does facility ensure privacy and security?	4
3	Frequency of cleaning the toilets (# per day)	Varies from 3 to 10 (6,3,3,5,10,3,3)
4	Frequency of environmental disinfection (# per day)	Varies from 2 to 6 (6,3,3,5,6,2,2)
5	Are toilets functioning?	7
6	Number of sinks/ patient (bed) ratio	<ul style="list-style-type: none"> • 2 sinks per 6 beds • 8 per 30 • 1 per 7 • 4 per 16 • 5 per 25 • 1 per 8 • Difficult to answer (1 NCU)
7	Number of sinks with paper towel/ all number of sinks	<ul style="list-style-type: none"> • 8 per 30

Maternity Hospitals

Total additional space required by the visited Maternity Hospitals was estimated at 5,120 m². Requirement for renovation was estimated at 2,400 m² and the requirement for construction of the new hospital space was estimated at 2,720 m². The details of construction and re-construction requirements of the maternity hospitals are provided in the Figure 23 below.

Figure 23: Construction and re-construction needs of Maternity Hospitals in Gaza Strip

Facility #	Name of facility	Need for reconstruction/Square Meter	Construction/expansion/ Square Meter	Total/Sq. Mere	Reconstruction	Construction
Maternity Hospitals						
Maternity 1	Al Shifa	Renovation of the building the hospital needs too much maintenance, the ceiling is wet with wastewater and the pieces of cement is falling. The building is dilapidated, tends to fall and needs urgent renovation	Toilet numbers are sufficient but the sewage pipes damaged and needs to be repaired at the three levels of the building	Approximately 800 m ² for each floor (3 floors) (only renovation of toilets and repair some of paintings)	2400 m ²	
Maternity 2	Al Haraizin		Construction third floor	500 m ² (additional space)		500 m ²
Maternity 3	Al Aqsa	The building is new	2 Toilets at reception	20 m ²		20 m ²
Maternity 4	Al Tahir					
Maternity 5	Emarati		Construction 2 floors	1100 m ² for each floor (additional space)		2200 m ²
Maternity 6	Kamal Edwan					
Total					2400 m ²	2720 m ²

Five out of sixteen infrastructure items included in the assessment list (list of items is presented in Figure 77 on page 98) were physically available in all 6 maternity hospitals, including: power (generator), sanitation and storage facilities, disposal of hazardous wastes and soap/alcohol Hand Rub. Only less than a half of the hospitals mentioned that they are preserved in a good working condition. Besides, solar systems are available in 5 out of 6 maternities (Except of Kamal Edwan), but none of them are adequately functioning. There are has 2 old generators available at Emarati hospital, but both of them are out of order which requires immediate attention to ensure sufficient power supply to this maternity hospital.

According to the assessment results, basins at rooms are available in 5 hospitals (except of Al Haraizin), but only one of them (Kamal Edwan) mentioned that basins are functional. Showering rooms are available in 4 out of 6 maternities, with none of them properly functioning. Showering rooms are missing at Al Aqsa and Al Shifa maternity hospitals.

Supply of water from desalination units seems to be the most critical need for the majority of visited hospitals. Emarati Maternity mentioned that they have deficiency of warm water in the facility. Desalination units are physically available in 2 facilities (Al Tahreer and Kamal Edwan) with only one of them functioning adequately (Kamal Edwan).

The proper ventilation of the building was another problematic area in the assessed maternities. Ventilation system exists in 3 maternities (Al Tahreer, Al Shifa and Kamal Edwan) with only 1 (Al Shifa) being in a well-functioning condition.

Functioning toilets were available in all 6 maternities, but one facility (Al Shifa) reported that toilets were not suitable for disabled people.

5 out of 6 maternities (except of Al Shifa) also mentioned that privacy and security are ensured at their hospitals. Al Shifa reported that the privacy rules are regularly violated and several patients are served at the same room. According to Kamal Edwan

representatives, curtains can partially solve their problems with regards to the privacy and security, as 2 doctors and 3 nurses are located in a room with limited space.

Furthermore, adequately functioning lightening system was found in 3 out of 6 hospitals (in Emarati, Al Shifa and Kamal Edwan) and deficiency of lighting around the building was reported by Al Shifa maternity.

Environmental disinfection is provided in 4 out of 6 maternities (Al Tahreer, Al Aqsa, Al Haraizin and Kamal Edwan) and frequency of cleaning of the toilets varies from 2 (in Al Aqsa) to 15 (in Haraizin) times per day with Kamal Edwan reporting cleaning measures undertaken every hour.

More details on the condition and availability of basic infrastructure facilities are presented in Figure 77 on page 98 below.

The study results showed that supply of clean water is available only in 5 out of 6 maternities (in all except of Emarati Maternity hospital) with 4 of them (A Aqsa, Al Shifa, Al Haraizin, Kamal Edwan) reporting that system in adequately functioning. Bar soap in small pieces is available only in 1 maternity (Al Haraizin), as the remaining hospitals use liquid soap. Important to note that nail brush or stick is not available in any of the assessed maternities and availability of clean towel is reported by 2 maternities only (Al Shifa and Kamal Edwan). For more details, see Figure 24 below.

Figure 24: Hand-washing supplies – Maternity Hospitals

#	Handwashing	# of Maternities where item was available on the day of the review	Among them: # of Maternities who have item in working / functioning condition	Comment
1	Clean water supply	5	4	
2	Bar soap in small pieces	1	1	• Emarati and Al Shifa use liquid soaps instead
3	Nail brush or stick	0	-	
4	Clean towel	2		
5	Alcohol hand rub	5		

Maternity Hospitals were evaluated for the availability of needed equipment and infrastructure items required for maintaining rooms and facilities warm and clean through the WHO recommended standard methodology.

Total of 8 items under “warm and clean rooms” were included in the assessment instrument against which facilities were assessed (for the list of items see Figure 25 and the clean bed linen is available at all maternities. However, the quantities of these items are not sufficient. Namely, Emarati hospital currently has 400 bed linen in stock, while reported need amounts to 1,400 items. Shifa hospital reported need for 200 more bed linen at the moment of the assessment.

Curtains (in case of one bed per room) are available in 5 out of 6 maternities (in all hospitals except for Emarati), where curtain dividers are available only in delivery room. Moreover, Al Shifa hospital reported need of 150 more curtains to ensure patient comfort and respect patient’s privacy.

Work surface for resuscitation near delivery beds (within 2 meters from delivery beds) is available in 5 maternities (except for al Shifa) with only 2 of them (Emarati and Al Aqsa) reporting as “adequate condition” (see Figure 26 below). According to the assessment findings, none of the maternities have all respective items in place that could ensure that

rooms are clean and sufficiently heated. Most equipped facility in terms of cleanliness and warm maintenance is Emarati hospital with about 90% of items physically available, followed by Al Haraizin with 3/4 of items having in place. Heat source is available in only 2 out of 6 assessed maternities (Emarati and Al Shifa), however none of them are properly functioning. Emarati maternity reported that they have 2 heaters only.

Figure 25: Warm and Clean room (summary table)

#	Handwashing	# of Maternities where item was available on the day of the review	Among them: # of Maternities who have item in working / functioning condition	Comment
1	Clean water supply	5	4	
2	Bar soap in small pieces	1	1	• Emarati and Al Shifa use liquid soaps instead
3	Nail brush or stick	0	-	
4	Clean towel	2		
5	Alcohol hand rub	5		

The clean bed linen is available in all maternities; however, the quantities of these items are not sufficient. Namely, Emarati hospital currently has 400 bed linen in the stock, while reported need is 1,400. Shifa hospital reported need for 200 more bed linen at the moment of the assessment.

Curtains (in case of one bed per room) are available in 5 out of 6 maternities (in all hospitals except of Emarati), where curtain dividers are available only in delivery room. Moreover, Al Shifa hospital reported need of 150 more curtains to ensure patient comfort and privacy.

Work surface for resuscitation near delivery beds (within 2 meters from delivery beds) is available in 5 maternities (Except of Al Shifa) with only 2 of them (Emarati and Al Aqsa) reporting as “adequate condition” (see Figure 26 below).

Figure 26: Warm and Clean room (detailed table)

#	Warm & Clean room	# of Maternities where equipment was available on the day of the review	Among them: # of Maternities who have equipment in working / functioning condition	Comment
1	Light source	6	3	
2	Heat source	2	0	• Emarati has 2 heaters
3	Room thermometer	1	1	
4	Clean bed linen	5		• Emarati currently has 400 bed linen and reported need for 1000; • Al Shifa needs 200 more linen
5	Curtains if more than one bed	5		• Emarati: Available only in delivery room; • Al Shifa: needs 150 curtains
6	Work surface for resuscitation near delivery beds (within 2 meters from delivery beds)	5	2	• Al Shifa needs 8 surface
7	Clean surface (for alternative delivery position)	3	0	
8	Detergent for cleaning walls, windows, floors (if no body fluids present)	5	3	

4.3. Essential Medical Products and Technologies

The findings of the mapping study were instrumental to define existing gaps in related to the necessary equipment types and quantities all visited health facilities. The detailed information on the equipment needs of Maternity Hospitals, PHC facilities and NCUs are provided in Figure 78, Figure 79 and Figure 80 on pages 99 and 103 below.

PHC facilities - Equipment

Total of 15 equipment items were included in the basic equipment list, used for assessing PHC facilities on the availability of equipment needed for routine functioning. According to the mapping results, the most “equipped” facility is Deir Al Balah PHC center with 100% of equipment items having physically in place, however most of them are out of adequate working conditions and/or facility experience shortage. The least equipped facility with about 75% of items physically available is – Rafah center.

Air conditioning is a problem in most of the facilities, with 3 of them having (Al Rimal, Deir Al Balah, Khan Yunis) it physically in place, however in only 1 (Al Rimal) being in good working condition. It should be mentioned that air conditioner is available only in lab and pharmacy at Al Rimal PHC center.

Refrigerator for vaccines is available in all 5 PHC centers, while vaccine carrier was observed at 4 centers, out of which was found in inadequate condition in one PHC (Deir Al Balah).

Weight & height measuring scale for children and infants is available in almost all facilities (except of Rafah center). Besides, Deir Al Balah reported need for additional ones (both, weight and height scales) for children and Infants.

Other most needed items include sphygmomanometer, stethoscope, tongue depressors, vaginal speculum and otoscope, that are available in good working condition in 1 or 2 centers only. Further details on availability of equipment in the PHC centers are provided in Figure 81 and Figure 82 on page 105.

Majority of the assessed facilities have most of the basic equipment (such as adult, child and infant weighing scales, Thermometer, Stethoscope, Blood pressure apparatus, Central oxygen supply, etc.) needed for general outpatient service provision, and all that are available - are properly functioning (see Figure 27 below). Thermometer, stethoscope and blood pressure apparatus are available in all 5 facilities.

Figure 27: Basic Equipment in General Outpatient Section of PHC

#	Basic equipment	Available (Observed)	Functioning
1	Adult weighing scale	3	3
2	Child weighing scale- 250 gram gradation	3	3
3	Infant weighing scale – 100 gram gradation	3	3
4	Measuring tape-height board/stadiometer	3	3
5	Thermometer	4	4
6	Stethoscope	4	4
7	Blood pressure apparatus (may be digital or manual sphygmomanometer with stethoscope)	4	4
8	Central oxygen supply	3	3
9	Flowmeter for oxygen therapy (with humidification)	3	3
10	Oxygen delivery apparatus (key connecting tubes and mask/nasal prongs)	2	2

Neonatal Care Units - Equipment

Total of 32 equipment items were included in the list that was used for assessing NCUs on availability of equipment for normal functioning. Results suggest that none of the mapped NCUs has all equipment items included in the assessment list, with some of them reporting that particular items are not needed at all. Mapping results provide information on current status with regards to the availability of needed equipment per NCU, as well as document need for additional equipment that facilities lack currently and/or have, but in non-functioning condition. Assessment results demonstrates that Al Shifa an Al Naser NCUs are most equipped facilities with more than 80% of items available currently. The least equipped NCU is Kamal Edwan, with about 40% of equipment items available in the facility. Missing equipment at Kamal Edwan center includes autoclave, portable incubator, temperature body sensor, blood pressure instrument, gas analyzer, ultrasound, echocardiography, high frequency ventilator, intensive phototherapy, ECMO, DC shock etc. Further details on availability of equipment are provided in Figure 83 and Figure 84 on page 106 below.

Figure 85 and Figure 86 on page 108 present the summarized results on assessment of availability of resuscitation items along with list of items (total of 9 items are included in the standard assessment list) against which the NCUs were assessed. According to the assessment results, NCUs mostly are well equipped with resuscitation items that is needed for normal and uninterrupted functioning of NCUs.

All 7 NCUs have both, Double Wall and Conventional Incubators with vast majority of Double Wall incubators (93%) and about 1/3 of Conventional Incubators in good working condition. About 70% of conventional incubators are broken but still are in use. NCU located in Kamal Edwan have the only Double wall and 4 conventional incubators and all of them are broken, however still utilized. European Hospital has 5 Double Wall and 5 Conventional Incubators and all in good working condition. Number of Double Wall Incubators varies from 1 (in Kamal Edwan) to 15 (in Al Aqsa) and number of conventional incubators - from 4 (in Kamal Edwan and Emarati) to 27 (in Al Shifa). Noteworthy, that 4 out of 7 NCUs (Kamal Edwan, Emarati, Al Aqsa and Al Tahreer) do not have Conventional Incubators in good working conditions at all (they have ones that are broken/damaged, but still in use). Details are presented in Figure 28 below.

Figure 28: Types and number of incubators

#	NCUs	a) Double Wall				b) Conventional Incubators			
		Working	Working but broken	Out of order	Total	Working	Working but broken	Out of order	Total
1	Kamal Edwan	0	1	0	1	0	4	0	4 ²
2	Shifa	9	0	0	9	12	14	1	27
3	Al Naser	4	1	0	5	5	11	0	16
4	Emarati	7	0	0	7	0	4	0	4
5	Al Aqsa	14	0	1	15	0	3	3	6
6	Al tahreer	4	0	0	4	0	11	0	11
7	EGH	5	0	0	5	5	0	0	5
	TOTAL	43	2	1	46	22	47	4	69

Maternity hospitals – Equipment

Equipment for sterilization is available in most assessed maternities, there is definite need for its renewal. According to the assessment results, 5 out of 6 maternities

have sterilization instrument in place with only 1 of them (Al Haraizin) being in an adequate working condition. Well-functioning autoclave was documented in 1 maternity only (Al Shifa) and Jar for forceps is not available in any for the maternities. 7 different types of equipment items (Resuscitator, Cardiotocography (CTG), Fetal stethoscope, Suction machine, Oxygen source, Clean towel for drying and covering baby, Neonatal self-inflating bag (250-500ml) & masks (size for term & 0 for preterm)) for the newborn were included in the assessment instrument. According to the assessment findings, majority of equipment items for newborns are physically available in majority of assessed maternities with fetal stethoscope representing the most lacked one (available at Al Tahreer Maternity only). Resuscitator is available in all 6 maternity hospitals and remaining five items (except of fetal stethoscope) – in 5 out of 6 assessed maternities. New items are in need in all maternities as most of them are old and need replacement and/or repair. As for the Gluteraldehyde (cidex), it is physically available in 5 maternities with 1 (Al Haraizin) reporting it is in a good working condition (see details in Figure 29 below).

Figure 29: Sterilization equipment at the Maternity Hospitals

#	Sterilization	# of Maternities where item was available on the day of the review	Among them: # of Maternities who have item in working / functioning condition	Comment
1	Instrument sterilizer	5	1	<ul style="list-style-type: none"> • Emarati: they need new one • Al Shifa: Needs 2 new
2	Jar for forceps	0	-	
3	Autoclave	4	1	<ul style="list-style-type: none"> • Emarati: they need one for delivery room • Al Aqsa: central sterilization
4	Gluteraldehyde (cidex)	5	1	

16 different equipment items for the mother were included in the assessment instrument for maternity hospitals (the list of items is presented in Figure 30 below). Results demonstrate that most of the items (likewise other items discussed above) are physically available at the facilities, however majority of them are old and needs either replacement or repair. Besides, almost all maternities provided details on type and quantity of those items they are in need currently. I.e. Blood Pressure Instrument is physically available in 5 maternities (except of Al Shifa) and where available, all were in a poor condition. Moreover, nevertheless the stethoscope is physically available in all maternities, only in 3 hospitals (Al Tahreer, Al Haraizin, Kamal Edwan) item was found in adequate working condition (details are presented in Figure 30 below). Noteworthy that severe deficiency of clean plastic sheet to place under mother was reported by Emarati Maternity Hospital. Besides, need for blood supply and transfusion was documented in all maternities, due to unavailability of Blood Bank.

Figure 30: Equipment for Mothers – Maternity hospitals

#	Equipment for the mother	# of Maternities where item was available on the day of the review	Among them: # of Maternities who have item in working / functioning condition	Comment
1	Delivery beds	5	3	<ul style="list-style-type: none"> • Emarati: need more • Al Aqsa: 4 in 3 rooms, 7 in first stage
2	Stethoscope	5	2	<ul style="list-style-type: none"> • Emarati: needs 30 • Al Shifa: needs 60
3	Blood Pressure Instrument	5	0	<ul style="list-style-type: none"> • Emarati: needs 6 • Al Shifa: needs 20
4	Body thermometer	4	0	<ul style="list-style-type: none"> • Emarati: needs 500 • Al Shifa: needs 400
5	Urinary catheter	5	1	
6	Delivery instruments	4	1	
7	Scissors	5	3	<ul style="list-style-type: none"> • Emarati: needs 50 • Al Shifa: needs 400
8	Needle holder	5	1	<ul style="list-style-type: none"> • Emarati: needs 50 • Al Shifa: needs 300
9	Artery forceps and clamp	5	2	<ul style="list-style-type: none"> • Emarati: needs 30 • Al Shifa: needs 100
10	Dissecting forceps	3	0	<ul style="list-style-type: none"> • Emarati: needs 30
11	Sponge forceps	5	1	<ul style="list-style-type: none"> • Emarati: needs 20
12	Vaginal speculum	5	0	
13	Clean plastic sheet to place under mother	4	0	<ul style="list-style-type: none"> • Emarati: severe deficiency
14	Sanitary pads	2	1	
15	Equipment for CS	6	0	
16	Blood supply and need of blood transfusion	6	3	<ul style="list-style-type: none"> • Blood Bank not available

7 different types of equipment items (Resuscitator, Cardiotocography (CTG), Fetal stethoscope, Suction machine, Oxygen source, Clean towel for drying and covering baby and Neonatal self-inflating bag and masks for term and preterm babies) for the newborn were included in the assessment instrument for maternity hospitals. According to the assessment findings, similar to the equipment for mothers discussed in previous paragraph, majority of equipment items for newborns are physically available in majority of assessed maternities with fetal stethoscope representing the most lacked one (available but in inadequate condition at Al Tahreer maternity only). New items are required in almost all maternities as most of the available equipment is old and need replacement and/or repair. Resuscitator is available in all 6 assessed maternities of which item was found in adequate condition in two maternities only (Al Tahreer and Al Aqsa). Emarati and Al Shifa maternities reported need for additional 2 and 8 resuscitators, respectively. CTG is physically present in 5 out of 6 maternities (except of Emarati maternity), however only two of them (Al Tahreer and Al Aqsa) reported availability of item in adequate working condition. Likewise, suction machine is available in 5 maternities (except of Al Aqsa), with only two maternities (Al Tahreer and Al Harazin) where item being in adequate condition. According to the assessment results, the most equipped maternity with equipment items for newborns is Al Tahreer (with 100% of items physically available with 6 out of 7 being in good working condition) and the least equipped maternity is Al Shifa (with 4 items physically available, out of which only one is reported to be in an adequate working condition).

Containers for waste management and disposal are available in majority of the assessed maternities, however facilities lack buckets for soiled pads and swabs.

Bowel or plastic bag for placenta is available in 5 out of 6 maternities (except of Kamal Edwan), however they need to be replaced with new ones (see details in Figure 31 below).

Figure 31: Waste Management at Maternity Hospitals

#	Waste	# of Maternities where item was available on the day of the review	Among them: # of Maternities who have item in working / functioning condition
1	Container for sharp disposal	6	5
2	Receptacle for soiled linen	5	3
3	Bucket for soiled pads and swabs	3	2
4	Bowel or plastic bag for placenta	5	0

PHC facilities – Pharmaceuticals and Contraceptives

Situation with regards to the availability of medicines at PHC facilities is extremely dire. According to the assessment results two medicines out of 11 included in the list (dexamethasone and insulin) were available in 4 facilities (except of Al Rimal center) and insulin was available in all five facilities (see Figure 32 below). Unavailability of pharmaceuticals over the last 6 months and/or interrupted supply of remaining medicines from the list were mentioned by almost all PHC centers and the results are presented in the table below:

Figure 32: Available pharmaceuticals at PHC facilities

#	c) Drugs	# of PHC facilities where drug was available on the day of the review	# of PHC facilities NOT experiencing supply stock out during last 12 months	Comment (as reported by the PHC facility)
1	Iron tablet	0	0	• Unavailable for the last 6 months
2	Folic acid	0	0	• Unavailable for the last 6 months
3	Antibiotics capsules or tables	0	0	• Interrupted supply of antibiotic capsules/tablets was reported by 3 PHC facilities
4	Antibiotics syrup	0	0	
5	Anti-parasitic drugs	0	0	
6	Anti-fungal drugs	0	0	• Interrupted supply of anti-fungal drugs was reported by all 5 PHC facilities
7	Anti-allergic drugs	0	0	• Interrupted supply of anti-allergic drugs was reported by all 5 PHC facilities
8	Bronchodilators	0	0	• Interrupted supply of bronchodilators was reported by 3 PHC facilities
9	Dexamethasone	4	0	• Interrupted supply of dexamethasone was reported by all 5 PHC facilities • Dexamethasone on the day of review was not available only at Al Rimal PHC facility
10	Methyldopa	0	0	• Interrupted supply of dexamethasone was reported by all 3 PHC facilities
11	Insulin	5	5	• Insulin was properly stored in all facilities with stock records available

Total of 8 types of contraceptives were included in the mapping tool, out of which 5 were not physically available in the surveyed facilities at all (see Figure 33 below). Only existence of combined oral contraceptive pills, IUD and progestin injectable was observed in 4 (Al Rimal, Deir Al Balah, Rafah and Jabalia), 5 (all centers) and 2 (Khan Younis and Rafah) PHC centers, respectively. According to the facility representatives, male condoms have not been available in the facilities over the last 10 months / 1 year. As for the female condom – they are not recognized in Gaza at all, as reported by the respondents.

Figure 33: Availability of contraceptives at PHC facilities

#	d) Contraceptives	# of PHC facilities where drug was available on the day of the review	# of PHC facilities NOT experiencing supply stock out during last 12 months	# of PHC facilities where Stock Records are available	# of PHC facilities where contraceptives were properly stored	Comment (as reported by the PHC facility)
1	Combined oral contraceptive pill	4	2	2	2	
2	Progestin only contraceptive pill	0	-	-	-	• Khan Younis and Rafah facilities reported item is unavailable during last 6 months
3	IUD	5	3	3	3	
4	Combined injectable	0	-	-	-	
5	Progestin only injectable	2	2	2	-	
6	Implants	0	-	-	-	
7	Male condom	0	-	-	-	
8	Female condom	0	-	-	-	

NCUs - Pharmaceuticals

Total of 43 medications/injections and drips were included in the list according to which assessment of NCUs was carried out aimed at exploring availability of medicines for normal and uninterrupted functioning of NCU (the detail list is presented in Figure 87 on page 109 below). The study findings show that none of the surveyed NCUs have all medicines included in the assessment list in their stocks. Noteworthy, that Al Shifa, Al Naser and Al Tahreer NCUs were found to be in the best condition in terms of availability of pharmaceuticals compared to other NCUs, having more than 90% of medication/injectable items in place. As for Emarati, Al Aqsa and European Hospitals, they reported around 85% availability of needed pharmaceuticals. Assessment results demonstrates that the least supplied NCU with medications, is Kamal Edwan with about 65% of listed medicines available at the time of the assessment, that is the smallest share observed among assessed NCUs. The most lacked medicines include glucose 50%, phenobarbitone oral, sildenafil, milrenon and sildenafil, that are available in 1-2 NCUs only out of 7. Interruptions in supply of live saving drugs were observed in all NCUs. Further details on availability of medicines, injections and drips, are provided in Figure 34 below and Figure 87 on page 109.

Figure 34: Availability of pharmaceuticals at NCUs (summary table)

#	NCU	% of medications/injections/drips available from the List (N=43 Items were included in the list in total)
1	Kamal Edwan	65.1
2	Shifa	93.0
3	Al Naser	90.7
4	Emarati	86.0
5	Al Aqsa	88.4
6	Al Tahreer	90.7
7	European H.	86.0

Maternity hospitals - Pharmaceuticals

Total of 12 different drugs (such as Hepatitis B immunoglobulin for new-born of infected mothers, Ampicillin, Gentamicin, Penicillin G etc.) and vaccines were included in the assessment instrument for maternity hospitals (the list of medicines and injectable is presented in the Figure 36 on page 53 below).

According to the assessment findings, most of the drugs are available in half of the assessed maternities. Emarati hospital is the most supplied one in terms of drugs and vaccines (reporting 100% availability), followed by Kamal Edwan with 75% and Al Shifa with 67% availability of items (see Figure 35 below).

Figure 35: Pharmaceuticals and vaccines at Maternity Hospitals (summary table)

#	Maternity Hospitals	% of drugs and vaccines available from the List (N=12 Items in total)
1	Al Tahrir	41.7
2	Emarati	100.0
3	Al Aqsa	41.7
4	Al Shifa	66.7
5	Al Haraizin	50.0
6	Kamal Odwan	75.0

Figure 36: Basic Pharmaceuticals and vaccines at Maternity Hospitals (detailed table)

#	DRUGS AND VACCINES	# of Maternities where drugs were available on the day of the review	# of Maternities NOT experiencing stock outs	# of Maternities where Stock Records are available	N of stock outs experienced during last 12 months (lacked quantity)	Storage conditions (# of Maternities where supplies are stored "properly")	# of Maternities where existence of expired drugs was reported
1	Hepatitis B immunoglobulin for new-born of infected mothers	2	2	2	30-100	2	0
2	Ampicillin	3	3	2	1000-2000	2	0
3	Gentamicin	4	4	3	1500-5000	3	0
4	Penicillin G	1	1	1	100	1	0
5	Ringer lactate or normal saline	6	4	3	1500-20000	3	0
6	Dextrose 10%	4	3	2	1200-15000	2	0
7	Sterile water for injections	5	3	1	30000-60000	1	0
8	Suction tube with mucous trap	6	4	2	30000 (in Emarati)	1	0
9	Feeding tubes (fr5 and 8)	3	2	3	5000 (in Emarati)	1	0
10	Cord ties (sterile) or clamps and forceps	6	3	2	16000 (in Emarati)	1	0
11	Blankets	3	2	2	10000 (in Emarati)	1	0
12	Bonnets, mittens & socks	2	1	1	6000 (in Emarati)	1	0

Noteworthy that Hepatitis B immunoglobulin for new-born of infected mothers was observed in 2 maternities only (Emarati and Al Shifa). Study findings showed that Penicillin G is also one of the lacked drugs among the maternities (available in Emarati maternity only) and Ampicillin was available in 3 out of 6 maternities (Emarati, Al Shifa and Kamal Edwan).

In addition, the facilities were assessed through the list of 21 different essential drugs, including Antibiotics for Mother and infant, Diazepam, Hydralazine, Lignocaine, Epinephrine, Dextrose 10%, Insulin, Anti-D etc. (see the list of drugs in the Figure 38 below). Nearly 80% of essential drugs were observed in assessed maternities varying from 71% in Al Aqsa and Al Haraizin to more than 95% in Kamal Edwan. The most lacked medicines are Benzathine penicillin and Hemoglobin testing kit available in 1 (Kamal Edwan) and 2 (Al Tahreer and Al Aqsa) maternities, respectively. Availability

of antibiotics for Mothers and Infants was reported by all assessed maternities. Besides, all maternities confirmed availability of Methylergonovine Maleate, Calcium Gluconate, Diazepam, Hydralazine, Epinephrine, Ringer's lactate, Normal saline and Sterile water for injection at the time of the visit. As for Gentamycin and Metronidazole, availability of these drugs was confirmed by 4 out of 6 maternities (are lacked in Al Tahreer and Al Aqsa maternities). More details on availability of essential medicines are presented in Figure 37 and Figure 38 and below.

Figure 37: Other essential drugs at Maternity Hospitals (summary table)

#	Maternity Hospitals	% of drugs and vaccines available from the List (N=12 items in total)
1	Al Tahrir	81.0
2	Emarati	81.0
3	Al Aqsa	71.4
4	Al Shifa	81.0
5	Al Haraizin	71.4

Figure 38: Other essential drugs at Maternity Hospitals (detail table)

#	DRUGS	# of Maternities where medications were available on the day of the review	# of Maternities NOT experiencing stock outs
1	Bag of IV Fluids	3	2
2	Methylergonovine maleate	6	3
3	Calcium gluconate	6	4
4	Antibiotics for Mother	6	3
5	Dexamethasone or betamethasone	5	4
6	Diazepam	6	3
7	Hydralazine	6	4
8	Ampicillin	3	3
9	Gentamycin	4	4
10	Metronidazole	4	4
11	Benzathine penicillin	1	1
12	Lignocaine	5	2
13	Epinephrine	6	3
14	Ringer's lactate	6	4
15	Dextrose 10%	5	1
16	Normal saline	6	3
17	Sterile water for injection	6	2
18	Haemoglobin testing kit	2	-
19	Insulin	5	4
20	Anti-D	5	4
21	Antibiotics for Infant	6	5

Lab Services at PHC Facilities

In terms of availability of basic lab/IPC screening and testing, Complete Blood Count (CBC) is available in 4 out of 5 PHC centers (except of Rafah center). Rafah center reported shortage of CBC testing currently and Khan Younis facility mentioned that they experience shortage of CBC lab testing and it happens during every 1 week each month. Screening for HBV and HCV is provided in 2 facilities (Al Rimal and Deir Al Balah) and only in one of them (Al Rimal) it is available for screening of the newly employed staff only.

IPC analysis are rendered in all 5 PHC centers, however most of the facilities reported that they frequently experience shortage of tests. Details are provided in Figure 39 below.

Figure 39: Availability of Lab and IPC at PHC facilities (summary table)

#	e) Lab	# of PHC facilities where drug was available on the day of the review	Comment (as reported by the PHC facility)
1	CBC	5	Khan Younis: reported shortage/stock out of CBC for 1 week each month Rafah also reported shortage
2	Screening for HBV and HCV	2	Al Rimal: Available only for screening of newly employed
	f) IPC		
3	Urine analysis	5	
4	Stool analysis	5	
5	Liver function tests	5	Khan Younis reported there is a shortage at the end of every month
6	Renal function tests	5	Khan Younis reported there is a shortage at the end of every month
7	PKU testing	5	
8	TSH testing	5	Al Rimal reported interrupted lab kits supplies in general

PHC centers – Supplies

The standard set of 3 IPC items - soap bar or liquid, 70% isopropyl alcohol and alcohol hand rub gel were included in the assessment list. Assessment results suggest that all 3 items are available in all 5 PHC centers, however 3 out of 5 facilities (Khan Younis, Rafah and Jabalia) experience stock-outs during the year. Most importantly, all 5 OGC centers reported shortage of 70% isopropyl alcohol. As for stock records, seems that only 2 facilities (Rafah and Jabalia) maintain respective records (see details in Figure 40).

Figure 40: Availability of IPC at PHC Facilities (summary table)

#	b) IPC	# of PHC facilities where IPC item was available on the day of the review	# of PHC facilities NOT experiencing supply stock out during last 12 months ⁶	Stock records available?	Comment (as reported by the PHC facility)
1	Soap bar or liquid	5	3	3	
2	70% Isopropyl alcohol	5	3	2	• All 5 PHC facilities reported shortage of this item
3	Alcohol hand rub gel	5	2	2	

NCU – Supplies

Total of 16 supply items were included in the list (such as Clean Gloves, Therapeutic milk, Gowns for parents and staff, Breastfeeding gown for mothers, Gluteraldehyde (cidex), Needle/Syringe, Eye cover, Clean Towel, Feeding Tube, Central intravenous Line, Peripherally Inserted Central Catheter (PICC), Percutaneous Central Venous Catheter (PCVC), Umbilical Venous Catheter (UVC) etc.) according to which assessment of NCUs was carried out aimed at exploring availability of supplies for normal and uninterrupted functioning (see detailed list of supply items in Figure 88 on page 111 below). Results suggest that none of the mapped NCUs has all supply items in the stock currently that were included in the assessment list. Some of the NCUs reported that they experience stock-outs time-to-time. Assessment results demonstrates that, similarly to availability of equipment, Shifa an Al Naser NCUs are

most supplied ones with needed items (63% and 69%, respectively). The least supplied NCU, is Kamal Edwan with about 37% of listed supplies available. Noteworthy, that five supply items - breastfeeding gown for mothers, central intravenous line 22 and 24 gauge, PICC, PCVC and Lumber puncture kit - were not observed in any of the assessed NCUs and availability of eye cover was reported by only two NCUs (Al Naser and Al Tahreer). Besides, Therapeutic milk presents at 4 NCUs (Al Shifa, Al Naser, Emarati and Al Aqsa). As for gowns for parents and staff, these items are not available only at Kamal Edwan NCU. Further details on availability of supplies are provided in Figure 41 below and Figure 87 on page 109.

Figure 41: Availability of supplies at NCUs (summary table)

#	NCU	% of supply items available from the List (N=16 Items were included in the list in total)
1	Kamal Edwan	37.5
2	Shifa	62.5
3	Al Naser	68.75
4	Emarati	56.25
5	Al Aqsa	62.5
6	Al Tahreer	56.25
7	European H.	43.75

Maternity Hospitals – Supplies

Facilities experience shortage of basic supplies (such as Digital thermometer, Baby weighing and length scales, feeding cups, Support binders for KMC, Newborn screen filter cards, Lancets) needed for proper functioning of the maternity. Newborn screen filter cards and feeding cups are not available in any of the assessed maternities. As for the support binders for KMC, it was documented in one maternity (Kamal Edwan) only. Digital thermometer and baby length scale were observed in 3 out of 6 maternities of which, availability of digital thermometer was observed in Emarati, Al Shifa and Al Haraizin NCUs and baby length scale were found at Al Tahreer, Emarati and Al Haraizin units) (see Figure 42).

Findings of mapping study suggest that most of the consumable items (such as long plastic apron, disposable syringes and needles, IV tubing, suture material for tear or episiotomy repair, antiseptic solution, swabs, bleach, flash light with extra batteries, women sanitary pads etc.) are available in all assessed maternities (for detailed list of items see Figure 43). Most lacked consumables are long plastic apron (available in 2 maturities only – Al Aqsa and Kamal Edwan), flashlight with extra batteries (available in 2 maternities – Emarati and Al Aqsa) and women sanitary pads (lacked in all hospitals). Noteworthy that deficiency of antiseptics for operations was reported by Emarati maternity hospital (see details in Figure 43).

Figure 42: Medical Supplies at Maternity Hospitals

#	SUPPLIES	# of Maternities where item was available on the day of the review	Among them: # of Maternities who have item in working / functioning condition	Comment
1	Digital thermometer	3	1	
2	Baby weighing scale	-	-	
3	Baby length scale	3	2	<ul style="list-style-type: none"> Emarati: Needs 5 Al Shifa: Needs 10
4	Feeding cups	0	-	
5	Support binders for KMC	1	0	
6	Newborn screen filter cards	0	-	
7	Lancets	6	4	

Figure 43: Medical Consumables at Maternity Hospitals

#	Consumables	# of Maternities where consumable was available on the day of the review	Comment
1	Partograph	5	
2	Long plastic apron	2	
3	Disposable syringes and needles	6	
4	IV tubing	6	
5	Suture material for tear or episiotomy repair	6	
6	Antiseptic solution (iodophores or chlorohexidine)	6	
7	70% isopropyl alcohol	6	• Emarati: Deficiency in antiseptic for operations
8	Swabs	5	
9	Bleach (chlorine based compound)	5	
10	Flash light with extra batteries	2	• Emarati: need 2 new for operating room
11	Women sanitary pads	0	

Means of communication

In terms of communication, all PHC facilities have functioning land line telephone and 4 out of 5 facilities (all except of Deir Al Balah center) have access to functioning computer and internet within the facility. Noteworthy that none of the facilities offer 24-hour emergency services and/or 24-hour availability for the patients. None of facilities has access to a functioning short-wave radio for radio calls. Details are shown in Figure 44 below.

Figure 44: Means of communication at PHC facilities

#	Communication	Al Rimal	Al Aqsa	Khan Younis	Rafah	Jabalia	Summary (# of "yes")
1	Does this facility have a <i>functioning land line telephone</i> that is available to call outside at all times	Yes	Yes	Yes	Yes	Yes	5
2	Does this facility offer 24-hour emergency services and/or 24-hour availability	No	No	No	No	No	0
3	Does this facility have a <i>functioning short-wave radio</i> for radio calls?	No	No	No	No	No	0
4	Does this facility have a <i>functioning computer</i> ?	Yes	No	Yes	Yes	Yes	4
5	Is there access to email or internet within the facility today?	Yes	No Answer	Yes	Yes	Yes	4

Ambulance services and transportation

Only Jabalia facility reported that the facility has the vehicle for emergency transportation for patients, residing in the facility coverage area. However the representative of the facility was not able to give definite answer on availability of fuel for vehicle operations. None of the PHC centers have capacity for emergency transportation (see details in Figure 45 below).

Figure 45: Ambulance Services/Emergency transportation at PHC facilities

#	Emergency services	Al Rimal	Al Aqsa	Khan Younis	Rafah	Jabalia	Summary (# of "yes")
1	Does this facility have a <i>functional ambulance</i> or other vehicle for emergency transportation for clients that is stationed at this facility or operates from this facility?	No	No	No	No	Yes	1
2	Does this facility have access to an ambulance or other vehicle for emergency transport for clients that is stationed at another facility or that operates from another facility in near proximity?	No	No	No	No	No	0
3	Is fuel for the ambulance or other emergency vehicle available today?	Don't know	Don't know	Don't know	Don't know	Don't know	0

4.4. Human Resources

Shortage of Human Resources were reported in all health facilities. Number and qualification of the existing staff were mentioned as the main challenge by all interviewed head doctors of NCUs, PHCs and Maternity Hospitals. Taking into account lack of the standards for staffing of health facilities, it was impossible to measure the gaps in HR, however, the mapping study collected comprehensive baseline data on HR, currently providing MNCH services in all facilities of Gaza Strip.

Opportunities for staff development and training for existing HR is extremely limited and based on ad hoc, sporadic decisions rather than consistent formalized strategy that ensures high qualification and continuous education for contributing into the HR development.

PHC Centers – Staff

The greatest number of staff (including doctors, midwives, nurses) with 29 members is available at Deir Al Balah PHC, followed by Jabalia with 21 health staff and Al Rimal and Khan Younis – with 16-16 each. The smallest PHC center in terms of number of available medical staff is Rafah PHC with total of 8 staff members available.

The number of doctors providing MCH (ANC, PNC, FP, and PCC) at 28 MoH PHC facilities is 41 while the number of nurses and midwives is 74. The total number of doctors, midwives and nurses is 115.²⁴ Some doctors cover more than one center. Child health is provided by other family medicine team

Further details on total numbers and composition of available staff per facility are summarized in the Figure 46 below:

Figure 46: PHC Staff per Facility

Staff/Facilities	Al Rimal	Al Balah	Khan Younis	Rafah	Jabalia
Doctor	12	6	2	2	8
Midwife	4	6	4	1	4
Nurse	0	9	0	5	1
Pharmacy and Lab	0	8	10	0	8
Total	16	29	16	8	21

ANC and FP services are provided by the same doctors, as reported by 3 out of 5 facilities (Deir Al Balah, Khan Younis, Rafah). 2 doctors in Deir Al Balah, 2 - in Khan Younis and 1 - in Rafah center are providing both - ANC and FP services. Moreover, medical staff providing PNC and Child health services are also the same in all assessed facilities. In Khan Younis, for example, PHC center ANC, PNC, FP and Child Health Services are provided by the same staff (2 doctors and 4 midwives in total), of which PNC is available during one day per week examining 35 patients, on average. Moreover, in Deir Al Balah and Rafah centers, there are 2 and 1 family doctors available, respectively, to provide PNC & child health services. Lab technicians & Pharmacists are available in 3 out of 5 facilities (Deir Al Balah, Khan Younis and Jabalia) and they serve the entire facility. There are 2 lab technicians in Jabalia, 6 - in Khan Younis and 4 – in Deir Al Balah. As for pharmacists – 3 to 4 pharmacists are available to serve mentioned facilities.

²⁴ Head of MCH department Dr. Nahla Heles during KII

Vast majority of medical personnel is female (total of 87 females vs. 3 male staff in all 5 PHC centers). Detail information on staffing of PHC centers is presented in Figure 47 below.

Figure 47: Staffing of the PHC centers

#	Post	No. of persons currently in post			# of PHCs were position is available	Qualification	Comment
		Total in 5 PHC facilities (range)	# of Male	# of Female			
Area 1: ANC							
1	Medical officer	10 (1 to 3)	0	10	5	MD (10)	
2	Midwives	12 (1-4)	0	12	5	Bachelor (12)	
3	Staff nurse	7 (1-4)	0	7	3	Bachelors (7)	Available in 3 facilities (Al Aqsa, Rafah, Jabalia)
4	Nurse	0	-	-	0	-	
5	Pharmacist	13	3	10	3	Bachelors (13)	Available in 3 facilities (Al Aqsa, Khan Younis, Jabalia)
6	Lab technician	13	1	12	3	Bachelors (13)	
Area 2: FP							
1	Medical officer	4 (1-2)	0	4	3	MD (4)	
2	Midwives	6 (2-4)	0	6	2	Bachelor (4)	
3	Staff nurse	3 (1-2)	0	3	2	Bachelor (3)	
4	Nurse	2	0	2	1	Bachelor (2)	
Area 3: PNC							
1	Medical officer	16 (2-5)	0	16	3	MD (16)	
2	Midwives	1	0	1	1	Bachelor (1)	
3	Staff nurse	3	0	3	1	Bachelor (3)	
Area 4: Child health		• There is no separate staff working at Child Health area					

34 women on average are examined by Medical Officer during a day and its quantity ranges from 18 (in Rafah) to 50 (in Jabalia). Average number of women examinations per medical officer during a day is 34. Slightly lighter is the workload for midwives compared to medical officers, as they examine 31 women on average per day, ranging from 24 (in Jabalia) to 45 (in Al Rimal) (see Figure 48 below).

Figure 48: Staff/Women Ratio at PHC centers

#	Questions	Al Rimal	Der Al Balah	Khan Younis	Rafah	Jabalia	Range
1	How many women the MO examine/day?	40	25	35	18	50	25-50
2	How many women the midwife examine/day?	45	25	35	25	24	24-45

Neonatal Care Unites - Staff

The greatest number of staff (including doctors and nurses) with 66 members has Al Shifa NCU, followed by Al Tahreer with 30 staff members and Al Aqsa – with 28. The smallest NCU in terms of number of available medical staff is Al Naser with 12 staff members available in total. Out of 66 medical staff working in Al Shifa NCU, 55 positions are occupied by nurses. As for Al Tahreer NCU, out of total staff, 10 are medical doctors and 20 – nurses. None of the assessed NCUs reported availability of neonatologist among the staff (only neonatologist who worked at Shifa NCU,

recently left Gaza). Further details on staff composition and quantities per facility are presented Figure 49 below.

Figure 49: Staff Composition at NCUs

Staff	Kamal Edwan	Al Shifa	Al Naser	Emarati	Al Aqsa	Al Tahreer	EGH
Doctors	7	12	10	8	13	10	5
Nurses	6	55	40	13	13	23	19
Total	13	67	50	21	26	33	24

Only one NCU has pharmacist among the staff. Pediatricians and general doctors are available at all NCUs and majority of them (11 out of 16 for pediatricians and 21 out of 34 general doctors) are males. There are also resident doctors, staff nurses and nurses at all NCUs, equally represented by both genders.

No Lab technicians, clinical nutritionists and clinical pharmacists are available in the assessed NCUs. The detail information on the NCU staff composition is presented in Figure 89 and Figure 89 on page 112.

Doctor/patient ratio

Assessment of the provider/patient ratio showed that number of resident doctors per NCU per bed varies from 1:3 (Kamal Edwan) to 1:14 (in Shifa). Nurse/bed ratio varies from 1:2 (in Emarati NCU) to 1: 6 (in Kamal Edwan). Neonatal Intensive Care Units (NICUs) are available in 4 out of 7 NCUs (Kamal Edwan and Emarati NCUs do not have NICUs at all. NICU established but not functioning in AL Aqsa NCU). The mapping results suggest that twice less staff is available at NICUs compared to NCUs in two NCUs (Al Tahreer and European Hospital) and about the same ratios are were in another 2 facilities. More details on distribution of health professionals within the NCUs and NICUs are included in Figure 91 on page 113.

Maternity Hospitals – Human Resources

Total number of medical personnel (including doctors, midwives, nurses and others) varies from 196 in Al Shifa maternity followed by Al Tahreer, with 138 members. Smallest maternity in terms of available medical personnel is Al Haraizin maternity with only 32 staff members, followed by Kamal Edwan with about 60 personnel.

All six assessed Maternities have obstetricians, medical officers, midwives and nurses in the staff. Their quantities vary from 5 in Al Haraizin to 45 (Al Tahreer) for obstetricians, from 3 (in Kamal Edwan) to 26 (in Al Shifa) for medical officers, 13 (in Al Haraizin) to 96 (Al Shifa) for midwives and from 3 (in Al Haraizin) to 40 (Al Shifa) for nurses. Out of 109 obstetricians more than 70% are represented by males, while out of 73 medical officers more than half are females. Pharmacists are available in 5 out of 6 maternities (except of Al Aqsa maternity) and lab technicians are presented in 4 maternities (including Emarati, Al Shifa, Al Haraizin and Kamal Edwan). Number of pharmacists varies from 1 (Al Haraizin) to 7 (Emarati), and number of lab technicians – from 6 (in Al Haraizin) to 12 (in Emarati). Further details on staff composition and quantities per facility are summarized in the Figure 50 below.

Figure 50: HR Composition at Maternity Hospitals

Staff/Facility	Al Tahrir	Emarati	Al Aqsa	Al Shifa	Al Haraizin	Kamal Odwan
Doctors	60	21	38	36	9	18
Midwives	41	33	12	96	13	28
Nurse	33	12	14	40	3	3
Pharma & Lab	4	19	0	12	7	10
Other	0	0	16	12	0	0
Total	138	85	80	196	32	59

Some of the pharmacists reported shortage of the respective staff they need to be able to respond to the demand and expected workload. In particular, Al Haraizin reported that CS is available on Sunday and Tuesday and Gynecologist works only one day per week (on Tuesday). Besides, to be able to respond to the existing caseload, Al Shifa reported need of 90 midwives and 10 medical doctors and Emarati mentioned they need additional 14 midwives. Moreover, pharmacy at Al Aqsa maternity closes at 14:30. Details on staff training needs in maternity hospitals presented in Annex 1 on page 125.

Figure 51: Human Resources at Maternity Hospitals

#	Post	No. of persons currently in post			# of Maternities where position is available	Qualification	Comment
		Total in 6 maternities (range)	# of Male (range)	# of Female (range)			
1	Obstetrician	109 (5-45)	77 (2-27)	32 (1-18)	6	Board, Master	Al Haraizin: CS is available on Sunday and Tuesday; and Gyn – on Tuesday
2	Medical Officer	73 (3-26)	31 (2-10)	42 (1-16)	6	Board resident, MD, MBBS	
3	Midwife	223 (13-96)	0	223 (13-96)	6	Bachelor, Master	Al Shifa: Need 90 midwives, & 10 doctors Emarati: needs 14 midwives
4	Nurse	105 (3-40)	29 (2-12)	76 (2-34)	6	Bachelor	
5	Pharmacist	18 (1-7)	9 (1-3)	9 (1-4)	5	Bachelor	Al Aqsa: no pharmacy after 2:30
6	Lab Technician	34 (6-12)	17 (1-7)	17 (4-8)	4	Bachelor, Master, PHD	
7	Other Staff (gynecologist, etc.)	28 (3-9)	22 (2-8)	4 (1-2)	2	Bachelor, Diploma	

PHC staff – Training

According to the assessment findings, different training courses are available for all staff in all 5 PHC centers. However, importantly, only one - Rafan PHC center reported they are satisfied with the trainings on received so far (see Figure 52 below).

3 to 7 trainings on MCH, IMCI, GBV, IUD insertion, RH, ANC were provided to health staff per facility during last 3 years (full list of training session received by the PHC staff during last 3 years is presented in Figure 53 below). Al Aqsa facility mentioned their staff is in need for the training in mammography usage.

As reported by the facilities, 100% of staff providing services in FP, ANC, PNC and PCC, received training in their respective subject areas during last 3 years (see Figure 54 below). PCC trainings by the respective staff was found in only 3 out of 5 PHC facilities (except of Rafah and Al Rimal PHC centers).

Figure 52: Training degree and satisfaction with trainings among PHC facility staff

#	PHC Facility	Availability of the trainings	Coverage with trainings	Degree of satisfaction Very Dissatisfied = 1 Dissatisfied = 2 Undecided = 3 Satisfied = 4 Very satisfied = 5
1	Al Rimal	Yes	Available for all	2 - Dissatisfied
2	Der al Balah	Yes	Available for all	3 - Undecided
3	Khan Younis	Yes	Available for all	3 - Undecided
4	Rafah	Yes	Available for all	4 - Satisfied
5	Jabalia	Yes	Available for all	3 - Undecided

Figure 53: Training courses received by PHC staff during last three years

#	PHC	Training courses received	Comment
1	Al Rimal	<ul style="list-style-type: none"> MCH, IMCI, GBV, Mammography 	
2	Al Aqsa	<ul style="list-style-type: none"> Ultrasound, Family planning, Preconception care, Postnatal care, Breastfeeding, Postnatal depression, Psychosocial support 	<ul style="list-style-type: none"> There is a need for training in mammography
3	Khan Younis	<ul style="list-style-type: none"> IUD insertion, Management of RH, BLS, Mental health, GBV 	
4	Rafah	<ul style="list-style-type: none"> Family planning, Human rights, BLS 	
5	Jabalia	<ul style="list-style-type: none"> Child health, Ultrasound, Antenatal care, Postnatal care, Psychiatric diseases, BLS 	

Figure 54: PHC staff training statistics

#	Indicator	%
1	Proportion of staff providing FP was trained in FP (indicate %)	100% (all facilities)
2	Proportion of staff providing ANC was trained in ANC (indicate %)	100% (all facilities)
3	Proportion of staff providing PNC was trained in PNC (indicate %)	100% (all facilities)
5	Proportion of staff providing PCC was trained in PCC (indicate %)	100% (3 facilities, except of Rafah and Al Rimal)

NCU staff training

According to the assessment results, the various trainings on EENC< NLS, NIST, RoP, Infectious control and etc. have been available for the staff of all 7 mapped NCUs over the course of the last three years (see Figure 55 below). However, in the majority of NCUs, abovementioned trainings are available for selected staff members only (not for all). Only the European Hospital reported that continuous learning possibility on EENC, NLS, NIST, ROP etc. is equally accessible for all health staff members. Only 3 out of 7 NCU (Al Naser, Al Tahreer and European Hospital) reported that available trainings are actually satisfactory. Kamal Edwan and Emarati NCUs mentioned they are completely dissatisfied with delivered trainings.

Figure 55: Trainings delivered to NCU staff during last three years

#	NCU	Availability of the trainings	Coverage with trainings	Degree of satisfaction Very Dissatisfied = 1 Dissatisfied = 2 Undecided = 3 Satisfied = 4 Very satisfied = 5
1	Kamal Edwan	Yes	Available for some staff	Very Dissatisfied
2	Shifa	Yes	Available for some staff	Undecided
3	Al Naser	Yes	Available for some staff	Satisfied
4	Emarati	Yes	Available for some staff	Very Dissatisfied
5	Al Aqsa	Yes	Available for some staff	-
6	Al Tahreer	Yes	Available for some staff	Satisfied
7	European H.	Yes	Available for ALL	Satisfied

3 out of 7 NCUs (Al Shifa, Al Naser and Al Aqsa) reported they have educational materials on breastfeeding expression, with two of them mentioning that materials take into consideration literacy level. In the same 3 NCUs educational materials/ lessons on breast milk storage are also available, with none of them reporting that materials take into consideration literacy level.

Results suggest that number of trainings received over the last 3 years per NCU varies from 2 to 4 per NCU (see details in Figure 56 below). The trainings include following topics: NLS, EENC, Infectious control, ROP, NIST, IPC, on-job-training etc. out of which NLS training was provided to all NCUs.

Planning for the additional trainings are centralized and NCUs are completely depending on the Ministry of Health in this regard and do not develop individual facility training plans. However, the study found that there are individual needs for particular trainings across the NCUs. For instance, Shifa NCU mentioned they need additional learning for the staff on umbilical catheterization and chest tubes.

Figure 56: Trainings delivered to NCU staff during last three years

#	NCU	Training courses	Comment
1	Kamal Edwan	<ul style="list-style-type: none"> NLS EENC 	<ul style="list-style-type: none"> No plan at hospital, apart from MoH
2	Shifa	<ul style="list-style-type: none"> NLS EENC On-job-training for doctors and nurses Infection control 	<ul style="list-style-type: none"> Training needed on umbilical catheterization and chest tubes
3	Al Naser	<ul style="list-style-type: none"> NLC Infection control On-job-training for doctors and nurses ROP 	
4	Emarati	<ul style="list-style-type: none"> NLS NIST ROP Infection control 	
5	Al Aqsa	<ul style="list-style-type: none"> NLS ROP Infection control 	
6	Al Tahreer	<ul style="list-style-type: none"> NLS ROP Neonatal <u>in service</u> training IPC 	
7	European H.	<ul style="list-style-type: none"> NLS ROP Infection control 	

Maternal Hospital Staff Trainings

According to the assessment findings, various training courses on EENC, ALSO, laparoscopy, NLS, Palestinian protocol, MH gap, ICD 10, Safe blood transfusion, Help for helpers etc. were planned and delivered for all staff in 4 out of 6 Maternities (Al Tahreer, Emarati, Al Aqsa and Al Shifa) over the last 3 years. Two - Al Haraizin and Kamal Edwan Maternities, mentioned that trainings were available for selected staff only and a half of the assessed maternities reported they are not satisfied with received trainings at all. Only one - Al Shifa hospital, reported that, overall, the staff is satisfied with received trainings so far (see Figure 57 below).

Figure 57: Trainings and Satisfaction of the Staff with provided trainings

#	Maternity Hospital	Availability of the trainings	Coverage with trainings	Degree of satisfaction Very Dissatisfied = 1 Dissatisfied = 2 Undecided = 3 Satisfied = 4 Very satisfied = 5
1	Al Tahrir	Yes	Available for all	No Answer
2	Emarati	Yes	Available for all	2 - Dissatisfied
3	Al Aqsa	Yes	Available for all	3 - Undecided
4	Al Shifa	Yes	Available for all	4 - Satisfied
5	Al Haraizin	Yes	Available for some	2 - Dissatisfied
6	Kamal Edwan	Yes	Available for some	2 - Dissatisfied

Number of thematic areas for the training courses delivered to maternity staffs over the last 3 years varies from 2 (in Kamal Edwan) to 9 (in Al Shifa). Thematic areas for the trainings include the following: ALSO, EENC, Neonatal life support, Safe blood transfusion, Perineal tears, Infection control, NLS, Breast feeding, Palestinian protocol, Help of helpers, MH Gap, ICD10 etc. Besides, 3 maternities - Al Tahrir, Emarati and Al Aqsa, mentioned additional subject areas (such as BLS, obstetric emergency management, perineal tear, on-job-training) in which they think the additional trainings for the staff will be of great benefit. Detailed list of training session received by Maternity staff during last 3 years along with specific needs for additional trainings are provided in Figure 58 below.

Figure 58: Training courses delivered to the staff of Maternity Hospitals during last three years

#	Maternity	Training courses received	Need for additional training
1	Al Tahrir	<ul style="list-style-type: none"> ALSO, EENC, Neonatal life support, Safe blood transfusion, Help of helpers, MH Gap, ICD10 (7 thematic areas in total) 	<ul style="list-style-type: none"> Needs BLS for all On job training Obstetric emergencies
2	Emarati	<ul style="list-style-type: none"> Palestinian protocol, NLS, Laparoscopy, EENC, ALSO, Safe blood transfusion, Help of helpers, MH Gap (8 thematic areas in total) 	<ul style="list-style-type: none"> Perineal tear training
3	Al Aqsa	<ul style="list-style-type: none"> EENC, National obstetric protocol, ALSO, perineal tears, infection control, NLS, Breast feeding (7 thematic areas in total) 	<ul style="list-style-type: none"> On job training BLS NLS Emergency management
4	Al Shifa	<ul style="list-style-type: none"> EENC, ALSO, laparoscopy, NLS, Palestinian protocol, MH gap, ICD 10, Safe blood transfusion, Help for helpers (9 thematic areas in total) 	
5	Al Haraizin	<ul style="list-style-type: none"> EENC, ALSO, Palestinian protocol (3 thematic areas in total) 	
6	Kamal Edwan	<ul style="list-style-type: none"> Safe delivery, EENC (2 thematic areas in total) 	

4.5. Service Delivery

Assessment results indicated the limited utilization of Pre-Conception and late-postpartum services that can be attributed to the insufficient capacity of service providers for effective communication and the low knowledge of the population about the availability of MNCH services in the health care facilities as well as the benefits of MNCH services.

The lack of service delivery standards and procedures for quality assessment calls to immediate attention and need for specific interventions to ensure precise standardization of service delivery processes that would in turn contribute in increased quality and practices of MNCH services in Gaza Strip.

PHC – Antenatal Care

According to the assessment results, basic ANC services are scarcely implemented in assessed PHC facilities. The most implemented ones are - monitoring for hypertensive disorder of pregnancy and existing capacity to follow the ANC defaulters.

The National ANC guidelines exist in all 5 PHC centers and the respective staff has been trained in ANC service delivery during the last two years.

Only Al Rimal and Rafah facilities mentioned that the staff received training on “communication with patients” over the last two years, that covered topics on non-discrimination and respect for individuals. Three

PHC centers reported that respective staff received the training in IPTp²⁵ (Al Rimal, Deir Al Balah and Jabalia) and management of teenage pregnancy (Khan Younis, Rafah and Jabalia) in the last two years.

The further details are provided in Figure 92 on page 113.

The in-depth interviews conducted with 40 women in 5 selected PHC facilities further examined experience of women related with services received during their ANC visits at MCH departments of the PHC centers.

Majority of women reported that they were provided with eligible services with two or more health care providers. More than a half of the pregnant women (21 out of 40) mentioned that they were provided with services by two health care providers at a time during their ANC visits and 17 out of 40 women mentioned that they were served by three health workers.

The first health worker who provide services to more than half of the pregnant women was a midwife, followed by doctors (in 25% of cases). The second health worker, that provided services to the interviewed women during their ANC visits was a doctor.

Vast majority of women had an immunization card with them during the interview with appropriate records available in it. 30 pregnant women had a record confirming that TT was received (out of which 25 have received 1 dose and 5 – 2 and more doses).

More than a half of the interviewed women were in their 38-40 weeks of pregnancy according to the book and in 90% cases book included information on client's blood group.

25 Intermittent preventive treatment in pregnancy

25% of the interviewed women (10 women out of 40) this was a first pregnancy and for only 10% (4 women) it was the first ANC visit at the given health center for this particular pregnancy.

Besides, more than half of the interviewed women reported that they had 8-9 ANC visits during their current pregnancy, while remaining 13 - had 5 and less visits. Average number of ANC visits was 6.61 ± 2.88 (min - 2, max - 13).

Almost all interviewed women (39-40) said that weight, height and blood pressure was measured during the visit and nearly all (with exception of 2-3 women) reported that their urine and blood samples were taken.

About 10% of interviewed women reported that provider palpated their tummy and examined their lower limbs and breast during their ANC visit. Very few (only 5 to 9) of them said they have received health education on breast self-examination, personal hygiene and nipple massage.

About half of the women received advice on their healthy diet. Contrary to the findings of PHC assessment all interviewed women reported that they were provided with iron and folic acid during the visit.

Women were asked to name any signs of complications (danger signs) during pregnancy that they know of. Results suggest that there is a lack of knowledge about dangerous signs of pregnancy among the women. Only bleeding was mentioned as one of the danger signs related to the pregnancy that was noted by half (20 women) of interviewed women. Another half was completely unaware about this issue.

Only about a half of the pregnant women were told by doctors during ANC visits that they had to go to the hospital to see a doctor if they noticed and/or felt one of the danger signs.

All pregnant women were informed about estimated delivery date during the visit, while more than half (21 out of 40) of them have scheduled their deliveries in the facility during the visit.

Further details on services provided during ANC visit are illustrated in Figure 93 on page 114.

According to the interviewed women the average time spent for reaching the PHC was 13.13 ± 9.731 minutes (minimum 3, maximum 60). 57.5% (23) of women reported that they reached facility by public transport (5 women mentioning this option were interviewed at Jabalia PHC, 6 - at Al Rimal, 1 - at Deir Al Balah, 5 - at Khan Younis and 6 - at Rafah PHC centers), 15% (5) reached respective facility by private car (all 5 were from Deir Al Balah PHC) and 27.5% (11) walked to the facility (3 of them were interviewed at Jabalia PHC and remaining 8 women were equally distributed among other PHCs (2 at each)). Waiting period for consultation varied from 5 minutes to 180 minutes. Some patients were dissatisfied with waiting period and reported about the bias from health personnel with their relatives.

Pre-Conception Care (PCC)

Out of 40 women interviewed in the PHC facilities only 26 provided information on their previous experience with pre-conception care (PCC).

More than $\frac{3}{4}$ of interviewed women (20 out of 26) with PCC experience mentioned that healthcare provider measured their Blood Pressure (BP), weight (WT) and Height (HT) during their visits (1 – Jabalia, 8 - Al Rimal, 7 – Deir Al Balah, 4 - Rafah). Only 5 out of 26 women said they have received education about breast self-examination (1 - Deir Al Balah and 4 - Rafah), and more than half were informed about personal hygiene (8 – Al Rimal, 4 – Rafah and 1 – Deir Al Balah) and nutritional issues (1 – Jabalia, 8 – Al Rimal, 3 Deir Al Balah and 4 - Rafah).

Besides, 18 and 20 women out of 26 mentioned that their blood group & Rh factor and hemoglobin were tested, respectively. Only 10 out of 26 women were tested on Fasting blood sugar (FBS).

Results suggest that checking the teeth is not widely practiced (85% was not checked by dentist). During the consultations about 40% of women were not asked about their previous surgeries and/or chronic diseases and 30% and 65% of women were not provided with folic acid and iron, respectively.

Results of women's experiences with received PCC services are summarized in the Figure 59 below:

Figure 59: PCC service delivery

No.	Questions	# of women who responded "yes" N=26
1	Did the healthcare provider measure your BP?	20 (76.9%)
2	Did the healthcare provider measure your WT?	20 (76.9%)
3	Did the healthcare provider measure your HT?	20 (76.9%)
4	Did you receive education about breast self-examination?	5 (19.2%)
5	Did you receive health education about personal hygiene?	13 (50%)
6	Did you receive nutrition education?	16 (61.5%)
7	Was your haemoglobin tested?	20 (76.9%)
8	Was your blood group & Rh factor tested?	18 (69.2%)
9	Was your FBS tested?	10 (38.5%)
10	Did the dentist check your teeth?	4 (15.4%)
11	Did the medical officer ask you about chronic disease?	17 (65.4%)
12	Did the medical officer ask you about previous surgeries?	16 (61.5%)
13	Did the medical officer perform physical examination?	13 (50%)
14	Did the health care provider give you folic acid?	18 (69.2%)
15	Did the healthcare provider give you iron?	10 (37%)

Early postpartum services

In total 40 women who had received postpartum services in the past were interviewed about their experience. Overall the findings indicate about insufficient service delivery which has implication on overall service delivery capacity and quality and patient satisfaction.

Results suggest that 95% (38 out of 40) of interviewed women were advised to sit, stand or lay in the position they wanted in the second stage of labor. Out of these women, majority preferred to lay (23) followed by women who chose to stand (8). 90% of women have companion of their choice supporting her during the labor.

Besides, 85% were encouraged to eat or drink and 60% of women mentioned that someone pushed down on their belly.

Only 25% of interviewed women (10 in total, out of which 8 Al Rimal, 1 Jabalia, 1 – Deir Al Balah) said that the baby was bathed after birth, out of which half were bathed in 24 hours after birth (all 5 women were interviewed at Al Rimal Center). In majority of cases (85%) baby was placed in skin-to-skin contact with his/her mother, out of which it was done in less than 1 minute in 11 cases. Noteworthy, that 4 babies were remained in uninterrupted skin-to-skin contact for 1.5-2 hours with their mothers before being separated from them for any reason.

Moreover, only 60% (23) of women mentioned the baby completed the first breastfeed (attached deep suckling) before being separated from the mother, out of which 13 were separated due to medical check-up and 2 of them were referred to NCU.

Only 2 babies received immediate skin-to-skin contact, no separation for at least 90 minutes until the first breast feed completed and 70% of babies stayed with their mothers during the entire hospital stay. The reasons of separation of the remaining 30% can be various such as referral to the NICUs, to wash the baby or be examined by the pediatrician and etc.

Also, 92.5% of mothers mentioned they are breastfeeding their babies and it was first done within 15 to 90 minutes after birth in 22 cases. The babies were breast feed for more than 15 minutes the first time by 16 mothers.

And lastly, 33 mothers mentioned that their babies were not fed anything other than breast milk since delivery and about half babies received early (within 10-90 min) and exclusive breastfeeding. 45% of mothers mentioned they have received any counselling from medical staff on breastfeeding since birth. The details are provided in Figure 94 on page 116.

Late Postpartum Care

As respondents mentioned, issues related to breastfeeding, baby care, personal and baby hygiene and care of umbilical cord were discussed during the visits, hence they evaluate home visits as more or less useful for them.

Women consider that all women in Gaza, but most of all single mothers, young, illiterate and high-risk pregnant (HRP) are in greatest need for home visits, however seems service need to be revisited and improved as majority of mother consider that nothing can be learned from those visits as it planned and delivered currently. The details on women's experience with the late postpartum services including the lab tests are presented in Figure 95 on page 118.

Family Planning services

The findings of the assessment related to the family planning service delivery at PHC facilities are presented in Figure 60 below:

Figure 60: Family Planning Services at PHC facilities

#	Questions	Result (n and % of „yes“)
1	Was your blood pressure measured?	24 (60%)
2	Was your weight measured?	24 (60%)
3	Was your height measured?	23 (57.5%)
4	Was your hemoglobin tested? Why? if IUD will be inserted	25 (62.5%)
5	Did you receive counselling about the contraceptive method by midwife?	22 (55%)
6	Did they explain for you the side effects of different methods?	27 (67.5%)
7	Did they ask you about the date of the last menstrual period?	35 (87.5%)
8	Did they MO apply physical examination?	19 (47.5%)
9	Did your medical and surgical history taken?	24 (60%)
10	Did you choose the appropriate method after counselling?	28 (70%)
11	When you have been followed up?	18 (45%)
12	Injectable contraception seen after 3 months?	25 (62.5%)
13	IUD seen after month and six month?	22 (55%)
14	Pills every month?	17 (42.5%)
15	Condom every month?	17 (42.5%)

Assessment findings showed that basic family planning services, such as measuring blood pressure, weight, height and hemoglobin are provided in only 60% of FP visits (cases are equally distributed among the respondents from 3 visited facilities (Al Rimal, Deir Al Balah and Rafah - 5-8 positive responses per each) with the exception of Jabalia and Khan Younis, where poor implementation of basic FP services were reported).

More than a half of women reported receiving counselling about the contraceptive method by midwife (vast majority of cases are distributed among Al Rimal, Deir Al Balah and Rafah PHC centers) and about 70% (27 women from the same three PHC centers mentioned above) are informed about the possible side effects of different methods.

Ultimately, only about 70% of women are leaving facilities with selected appropriate method of contraception after the counselling.

Family Planning Index

According to the survey results, around 50 to 60 per cent of interviewed women (22 to 25 out of 40 in total) have received family planning messages and were informed on other FP methods, possible side effects and consultation about their best choice. 8 and 8 women out of 22 who received the FP messages, receive services in Al Rimal and Rafah PHC centers. As for remaining 6 cases of message delivery were reported by 2 and 4 women receiving services at Jabalia and Al Aqsa facilities, respectively. Noteworthy, that none of the women interviewed at Khan Younis Center (0 out of 8) confirmed receiving of FP messages as shown on Figure 61 below:

Figure 61: Family Planning Index

#	Questions	Result (n and % of „yes“)
1	Did you receive any family planning message?	22 (55%)
2	Were you informed about other methods?	25 (62.5%)
3	Were you informed about side effects?	25 (62.5%)
4	Were you told what to do if you experienced side effects?	25 (62.5%)
5	Did you receive consultation about your best choices?	23 (57.5%)

Child Health

80% of women (32 out of 40) said they or other family members bring their children for vaccination to the medical facilities out of which on 100% of cases vaccinations are scheduled by the PHC doctor.

Vast majority of women mentioned they have vaccination card of their child at home and all of them said that weight, height and head circumference (HC) are measured during child's visit to the facility. More than 90% of women reported that cognitive development of their babies are assessed as well during the visits and they usually come to the health facilities even in case if their child feels unhealthy.

Finally, around 40 to 55 per cent of women said they have received information on health and nutritional issues (23 women), breastfeeding and weaning practices (17 women) and individual counselling on cases when the child is sick (17 women). The detail information on child health services obtained during the assessment is presented in Figure 62 below.

Figure 62: Child Health Services at PHC facilities

#	Questions	Result (n and % of „yes“) N=40
1	Do you or any other family member brings their child for vaccination?	32 (80%)
1.1	If yes, is your vaccination schedule is set by the doctor?	32 (100%)
2	Do you have vaccination card for your child?	40 (100%)
3	Do you know if weight, height and HC are measure during the visit to the health facility?	40 (100%)
4	Do you know if the mental development of your child is measured? (child is smiling, looking, reacting and etc.)	37 (92.5%)
5	Do you usually come to the clinic even if your child is considered to be healthy? (for preventive visits)	38 (95%)
6	Have you ever received health and nutrition education at the clinic?	23 (57.5%)
7	Have the medical personnel provided you with the training about proper breastfeeding and weaning practices?	17 (42.5%)
8	Have you received individual counselling in cases when your child is sick (diarrhoea, pneumonia and etc.)?	17 (42.5%)
9	Are the pharmaceuticals prescribed by doctor available at the facility pharmacy free of charge?	1 (2.5%)
10	Does the health facility provide you with nutritional supplement for your child?	22 (55%)

Overall Satisfaction with Quality of Received Services

Lastly, women were asked about their overall satisfaction with healthcare services they receive. According to the study results, 35 (88%) of interviewed women assess the travel to health center from their home as convenient. 38 women (95%) consider overall cleanliness of the facilities they visit to be satisfactory. Besides, 35 (about 88%) women evaluate health workers providing services to them as courteous and respectful.

Moreover, for about 25-29 (60 to 70 percent) of respondents, transport fees to the facility (except of respondents interviewed at Al Rimal center) and waiting time needed to see the doctor (except of respondents from Jabalia and Khan Younis centers) seems reasonable. Noteworthy, that 33 out of 40 interviewed women (80%) are satisfied with amount of time doctors spent with them, number of hours the facility is open and privacy issues. Overall, about ¾ of the respondents are satisfied with the quality of services they have received. The details on the patient satisfaction with provided services are outlined in Figure 63 below:

Figure 63: Overall Satisfaction with Quality and Arrangements of MNCH Service Delivery

#	Question	Result (n & % of "agree") N=40
1	It is convenient to travel from your house to the health centre.	35 (87.5%)
2	The health center is clean	38 (95%)
3	The health staff are courteous and respectful	35 (87.5%)
4	The health workers did a good job of explaining your condition	33 (82.5%)
5	It is easy to get medicine that health workers prescribe.	5 (12.5%)
6	Transport fees for this visit to the health centre were reasonable	29 (72.5%)
7	Time you spent waiting to be seen by health worker was reasonable	25 (62.5%)
8	The health worker spent a sufficient amount of time with you	33 (82.5%)
9	Hours the health centre is open are adequate to meet your needs.	34 (85%)
10	You had enough privacy during your visit	35 (87.5%)
11	The overall quality of services provided was satisfactory	30 (75%)

PHC – Immunization

Birth doses of Hep B and BCG and infant vaccination for under 1-year children are provided in all facilities (in the facility only).

More than half of women interviewed at the MCH departments of the PHC facilities mentioned that provider checked TT vaccination status during the visits.

National guidelines for routine child immunization were available in all facilities on the day of review, out of which it was physically observed in 4 out of 5 PHC centers (Deir Al Balah, Khan Younis, Rafah and Jabalia).

Trainings for respective staff in immunization service delivery, vaccine management/handling, cold chain, data reporting, monitoring of service delivery, injection safety and waste management were provided in all 5 facilities over the last 2 years. Receiving the trainings on disease surveillance and reporting, as well as on new vaccines during their introduction into the national immunization schedule, were mentioned by 3 and 2 facilities, respectively.

Moreover, vaccine carrier(s)/cold box, set of ice packs for vaccine carriers, immunization cards, immunization tally sheets and immunization registers were observed on all 5 facilities.

Lastly, properly functioning cold chain is available in all 5 facilities. All of them have functioning refrigerators for the storage of vaccines with energy source taken from solar system, that ensures supply of energy for 24 hours a day and for 7 days in the week. (see details on immunization service delivery in Figure 96 on page 119).

NCU – Essential practices during neonatal admission

Results of observation on essential practices during neonatal admission demonstrates that majority of essential practices are completed in the NCUs. Essential practices included the following: availability of supplies to clean hands and wear gloves for each neonate exam, hands washing practice with soap and water and hand sanitizer before touching a every newborn, taking history, assessing the baby's breathing, airway clearing practice in case if baby not breathing, availability of functioning ventilator, measuring fetal heart sounds, measuring baby's temperature etc. It is noteworthy, that in 5 out of 7 assessed NCUs (at all facilities except of Kamal Edwan and Al Shifa) washing hands with soap and water and hand sanitizer before touching a newborn was observed.

The detail information on completing essential practices are presented in Figure 97 on page 120.

Availability and usage of guidelines - PHC facilities

Guidelines mostly are available in soft copies at the PHC facilities. The tool for assessment of availability and usage of guidelines included eight different guidelines for antenatal, postnatal and pre-conception care, family planning, vaccination in practice and etc.

Eight different guidelines were included in the assessment instrument including guidelines for antenatal, postnatal and pre-conception care, family planning, how to run vaccination sessions etc. (for the full list see Figure 64 below). The study findings suggest that vast majority of the guidelines was available in at least 4 out of 5 PHC centers (except of Rafah center) at the time of the interview. Besides, 4 out of 5 facilities reported usage of all guidelines during last 12 months. Pre-conception care guidelines were not available at all visited PHC facilities.

Figure 64: Availability and Usage of Guidelines at PHC facilities

#	Guidelines	# of PHC facilities where guideline is available	Available in soft or hard copy? (# of PHC facilities responded soft and hard)	# of PHC facilities who reported usage of guideline at least once during last 12 months
1	How to run vaccination sessions	5	4 soft / 1 hard	5
2	Antenatal care	4	4 soft	4
3	Postnatal care	4	4 soft	4
4	Pre-conception care	0	2 soft / 1 hard (1 – info is not available)	0
5	Family planning provision	5	5 soft	4
6	How to manage a child with diarrhea	4	3 soft / 1 hard	4
7	How to manage a child with respiratory infections	4	4 soft	4
8	How to manage a child with fever	4	4 soft	4

3 out of 5 assessed PHC centers (Al Rimal, Deir Al Balah, Khan Younis) reported having guidelines on standard precautions for infection prevention, out of which guidelines were physically observed in 2 facilities. Rafah facility said they do not have access to the mentioned guidelines.

Availability and usage of Guidelines - NCU

Total of 41 different guidelines were included in the assessment list (see detailed list of guidelines in the Table 46 below). Out of these 41 guidelines , only 14 (Antibiotics, Cooling, TNP, early and late neonatal sepsis, apnea, hypotension,

Necrotizing enterocolitis, Hypoxic ischemic encephalopathy, Neonatal seizures, Intubation, Mechanical ventilation, Disseminated Intravascular Coagulation (DIC) and Neonatal jaundice) were observed in all 7 NCUs, and out of these 14 only 4 guidelines (antibiotics, apnea, Neonatal jaundice and Neonatal seizures) were used at least once during last 12 months by all 7 NCUs.

Another 13 guidelines (Neonatal shock, Neonatal hypertension, Feeding, Neonatal bleeding, Neonatal oxygen saturation, CPAP, Respiratory distress syndrome (RDS), Extubation, Neonatal chest drain insertion, Evaluation of neonate with suspected heart disease, Hypoglycemia, Inborn errors of metabolism, and Meconium aspiration syndrome guidelines) were available in 6 NCUs (see details in the table 46 below), out of which only half of those guidelines are used during last 12 months by all 7 facilities.

Guidelines for managing teenage pregnancy and gender responsive maternal care were observed only in 2 out of 7 NCUs (Al Naser and Al Tahreer). Hypothermia and breastfeeding guidelines were found only in 3 out of 7 NCUs (Al Naser, Al Tahreer and European Hospitals).

Retinopathy of Prematurity (ROP), Infection Prevention and Control (IPC) and Neonatal Life Support (NLS) guidelines, are available at all assessed NCUs except of Kamal Edwan and Al Shifa.

In one of the NCUs GNN & local guidelines from Al Naser hospital is implemented under supervision of the head of the unit, while GNN guidelines are not implemented at all in another NCU. Most details on availability of guidelines and their utilization are provided in the Figure 98 on page 121.

Availability and usage of guidelines – Maternity Hospitals

Guidelines on preparation of birth, essential newborn care, newborn resuscitation and Feeding of the clinically stable baby weighing < 2500 g – are available in 5 (is missing in Kamal Edwan), 4 (is missing in Al Haraizin and Kamal Edwan), 5 (is missing in Kamal Edwan) and 3 (is missing in Al Tahreer, Al Aqsa and Al Haraizin) maternity hospitals, respectively.

Guidelines are mostly available in soft copies and not always used (about half of the maternities from those where guidelines are physically available, reported that they have used them at least once during last 12 months). Important to note that Kamal Edwan Maternity hospital do not have any of the guidelines included in the assessment list, while Al Shifa maternity mentioned availability of 3 more guidelines beyond the list. These guidelines were related to abnormal progress of labor, high-risk cases and emergency obstetrics. As the hospital representatives reported, they have access to these guidelines and use them in their routine work. .

Further details on availability and utilization of guidelines are presented in Figure 65 below.

Figure 65: Availability and Usage of Guidelines at Maternity Hospitals

#	Guidelines	# of Maternities where guideline is available	Available in soft or hard copy? (# of Maternities responded soft and hard)	# of Maternities who reported usage of guideline at least once during last 12 months
1	Preparation of birth	5 (except of Kamal Edwan)	5 <u>soft</u>	4
2	Essential newborn care	4	3 soft / 1 hard	2
3	Newborn resuscitation	5	1 soft / 2 hard (in two facilities guidelines available, but were not documented)	2
4	Feeding of the clinically stable baby weighing < 2500 g	3	3 <u>soft</u>	2
5	Abnormal progress of labor	1 (available in Al Shifa hospital only)	1 soft	1
6	High-risk cases	1 (available in Al Shifa hospital only)	1 soft	1
7	Emergency obstetrics	1 (available in Al Shifa hospital only)	1 soft	1

Referral mechanisms

All 5 PHC facilities mentioned that they send referral notes to a higher level, while only two of them (Jabalia and Deir Al Balah) reported they receive some referral feedbacks. Deir Al Balah facility specified that they receive feedback for PKU results only.

Communication systems (radio call, telephone, etc.) exist in all 5 PHC facilities, while ambulance service is not available in any of the centers (Al Rimal center mentioned that in case of need of ambulance service, they call 101). Khan Younis center representative mentioned that feedback for high-risk pregnancies (HRP) is provided regularly, on a monthly basis. Moreover, only two PHC (Al Rimal and Khan Younis) centers mentioned that they receive referral reports when patients are referred to them.

Noteworthy that in Al Rimal facility there is co-payment from the patients when showing referral notes, while in all other facilities exemption from payment on showing referral note was reported (see details in Figure 66 below).

Figure 66: Referral Mechanisms at PHC facilities

Questions	Al Rimal	Al Aqsa	Khan Younis	Rafah	Jabalia	# of PHCs who answered "yes"
1: Referral notes (from a lower to a higher level)	Yes	Yes	Yes	Yes	Yes	5
2: Referral feedback reports (back to lower level)	Yes	No	No	Yes	No	2
3: Ambulance systems	No	No	No	No	No	0
4: Communication systems (radio call, telephone, etc.)	Yes	Yes	Yes	Yes	Yes	5
5: Exemption from payment on showing referral note	Yes	Yes	Yes	Yes	Yes	5
6: Do you receive referral reports when patients are referred to you?	Yes	No	Yes	Don't know	Yes	2

According to the obtained information Emarati NCU refers newborns to European NCU. Aqsa NCU reported referring newborns to NPH NCU and Harazin maternity refer newborns to Shifa NCU. NGO maternities refer newborns to the NPH NCU.

4.6. Data Management Information System

The statistical information collected and analyzed by different hospitals and PHC centers in Gaza is submitted to the Information Technology Unit (ITU) of the MoH. ITU is the main information source for the Palestinian Health Information Center, who regularly prepares and publishes official reports, such as Annual Health Report of the State of Palestine.

The study identified gaps collection of quality data from all facilities. Particularly, according to the procedure the data from all maternities must be provided to the ITU, however, Kamal Odwan maternity does not prepare and submit data to ITU due to the absence of database for this hospital at ITU. Haraizin hospital doesn't provide data to ITU as well, but the reasons for that could not have been defined.

PHC - MIS

In all 5 PHC facilities data is stored in both, electronic and hard versions.

All 5 PHC facilities reported submitting health statistics reports in the past 12 months. Reports are disaggregated mainly by sex and none of the facilities represent the data by employment, disability and/or client satisfaction.

None of the facilities has in place indicators to measure gender related results or processes. Rafah and Khan Younis centers mentioned they experienced shortages of health statistics forms in the past 12 months. In addition, only 3 out of 5 facilities (Al Rimal, Deir Al Balah and Jabalia) keep copies of submitted reports at the facility.

Deir Al Balah and Jabalia facilities reported that analysis of health statistics is done by the staff of the facility (e.g. comparing the figures over time, etc).

Khan Younis facility reported that they send surveillance data only, not reports to the higher level, while Al Rimal center submit data to IT department for statistical analysis and report development.

Only one facility - Jabalia center mentioned that they have received feedback from the higher level in response to the reports and forms they submitted during past 12 months.

Deir Al Balah center mentioned that they receive feedback for PKU results only and Khan Younis said they receive annual reports from MoH (results of assessment are presented in Figure 67 below).

Figure 67: Reporting and Data Management at PHC Facilities

#	Questions	Al Rimal	Al Aqsa	Khan Younis	Rafah	Jabalia	# of PHCs who answered "yes"
1	Have you submitted all health statistics reports in the past 12 months?	Yes	Yes	Yes	Yes	Yes	5
2	Are statistics disaggregated by sex?	Yes	Yes	Yes	Yes	No	4
3	Are statistics disaggregated by age (< 18 and ≥ 18)?	No	No	No	Yes	No	1
4	Are statistics disaggregated by employment?	No	No	No	No	No	0
5	Are statistics disaggregated by disability?	No	No	No	No	No	0
6	Are statistics disaggregated by client satisfaction data (access, respect and dignity, trust, privacy)?	No	No	No	No	No	0
7	Are there indicators to measure gender related results or processes?	No	No	No	No	No	0
8	Have you had any shortages of health statistics forms in the past 12 months?	No	Yes	No	Yes	No	2
9	Were there other constraints to the preparation and submission of these reports?	No	No	Yes	Yes	No	2
11	Do you keep copies of the health statistics reports you submit?	Yes	Yes	No	No	Yes	3
12	Are health statistics being analysed by the staff of the facility? (e.g. comparing the figures over time)	No	Yes	No	No	Yes	2
14	Are health statistics used by the staff of the facility?	No	Yes	No	Yes	Yes	3
16	Have you received any feedback from the higher level (such as reports, graphs, comparisons with statistics from other facilities) in response to reports or forms that were submitted in the past 12 months?	No	No	No	No	Yes	1

NCUs – MIS

All 7 NCUs reported that they have submitted all health statistics reports in the past 12 months, out of which only 3 NCUs (Kamal Edwan, Al Naser and European Hospital) present statistics disaggregated by sex.

Study found that none of the NCUs are analyzing / organizing data by age, employment, disability and or client satisfaction and only 1 NCU (at European Hospital) have indicators to measure gender related results or processes.

Three out of 7 NCUs (Kamal Edwan, Al Shifa and Al Naser) experienced problems with regards to preparation and submission of statistics reports. Among the mentioned problems are: a) shortage of health statistics forms in the past 12 months and b) lack of medical secretary among NCU staff (lack of time).

All 7 NCUs reported they keep copies of statistics reports at the facility, however only 2 of them are analyzing data in the facility.

3 out of 7 NCUs (Kamal Edwan, Al Naser and European Hospital) are using the statistics, mainly for logistical planning purposes (i.e. purchase of equipment and different supplies).

4 out of 7 NCUs (Al Shifa, Al Naser, Al Tahreer and European Hospital) said they have received feedback from the higher level in response to submitted reports or forms during past 12 months. Among those who provided the feedback, GNN and UNICEF were mentioned.

For more details on recent practices of Data Management Information System among assessed NCUs (see Figure 68).

Figure 68: NCU Management Information System (summary table)

#	Data management information system	# of NCUs who answered "yes"
1	Have you submitted all health statistics reports in the past 12 months?	7
2	Are statistics disaggregated by sex ?	3
3	Are statistics disaggregated by age (< 18 and ≥ 18)?	0
4	Are statistics disaggregated by employment ?	0
5	Are statistics disaggregated by disability ?	0
6	Are statistics disaggregated by client satisfaction data (<u>access</u> , respect and dignity, trust, privacy)	0
7	Are there indicators to measure gender related results or processes?	1
8	Have you had any shortages of health statistics forms in the past 12 months?	3
9	Were there other constraints to the preparation and submission of these reports?	3
10	If yes, please describe the main constraints for submitting these reports:	Lack of medical secretary among NCU staff
11	Do you keep copies of the health statistics reports you submit?	7
12	Are health statistics being analyzed by the staff of the facility? (e.g. comparing the figures over time)	2
13	If yes, give examples:	None of the examples were provided
14	Are health statistics used by the staff of the facility?	3
15	If yes, give examples	For planning of i.e. equipment purchase, etc.
16	Have you received any feedback from the higher level (such as reports, graphs, comparisons with statistics from other facilities) in response to reports or forms that were submitted in the past 12 months?	4 (From GNN and UNICEF)

Maternity Hospitals – MIS

All 6 Maternities reported submitting all health reports during last 12 months with 4 of them representing the data disaggregated by sex (not implemented in Al Tahreer and Al Aqsa maternities only). Importantly, none of the maternities disaggregate data by age, employment, disability or client satisfaction. Besides, indicators to measure gender related results or processes are not used in any of the maternities for the moment.

Moreover, Al Shifa and Al Tahrir maternities mentioned that they experienced shortage of health statistics forms during last 12 months and Al Haraizin unavailability of messengers for information transfer.

According to the assessment results, all 6 maternity hospitals keep copies of the health statistics reports they submit, with 4 of them (except of Al Aqsa and Al Haraizin) reporting that health statistics are being analyzed by respective staff of their facility. Analysis of statistical data performed at the facility includes the following: determining number of low-risk pregnancies defined by midwives; Calculating number of babies checked before discharge, etc. Besides, 4 maternities (Al Tahreer, Emarati, Al Shifa and Kamal Edwan) mentioned they practically use the results of the analysis they perform at the facility in order to optimize number of infants at NICU and number of deliveries at the facility in case if statistics indicate that the existing work load exceeds capacity of the hospital.

Lastly, not all 6 assessed maternities receive feedback from the higher level in response to reports/forms they submit and this was a case for 3 out of 6 maternities (Al Tahreer, Al Aqsa, Al Shifa) in the past 12 months.

Further details on data management information system is presented in Figure 69.

Assessment findings suggest that birth and death certificates are available and used in all maternities, with only one maternity (Al Tahreer) reporting having death audit form (see Figure 70).

As for the health insurance and referral forms, they are available and used in most of the assessed maternities (in 5 out of 6). The logbooks are used in 4 out of 6 maternities (however it is available in all 6 facilities).

Figure 69: MIS Maternity Hospitals

#	Questions	Al Tahrir hospital	Emarati hospital	Al Aqsa hospital	Al Shifa hospital	Al Haraizin	Kamal Qdwan	# of Maternities who answered "Yes"
1	Have you submitted all health statistics reports in the past 12 months?	Yes	Yes	Yes	Yes	Yes	Yes	6
2	Are statistics disaggregated by sex?	No	Yes	No	Yes	Yes	Yes	4
3	Are statistics disaggregated by age (< 18 and ≥ 18)?	No	No	No	No	No	No	0
4	Are statistics disaggregated by employment?	No	No	No	No	No	No	0
5	Are statistics disaggregated by disability?	No	No	No	No	No	No	0
6	Are statistics disaggregated by client satisfaction data (access, respect and dignity, trust, privacy)?	No	No	No	No	No	No	0
7	Are there indicators to measure gender related results or processes?	No	Yes	No	No	No	No	0
8	Have you had any shortages of health statistics forms in the past 12 months?	Yes	No	No	Yes	No	No	2
9	Were there other constraints to the preparation and submission of these reports?	No	No	No	No	Yes	No	1
10	If yes, please describe the main constraints for submitting these reports:					no messengers		
11	Do you keep copies of the health statistics reports you submit?	Yes	Yes	Yes	Yes	Yes	Yes	6
12	Are health statistics being analysed by the staff of the facility? (e.g. comparing the figures over time)	Yes	Yes	Yes	Yes	No	No	4
13	Are health statistics used by the staff of the facility?	Yes	Yes	No	Yes	No	Yes	4
14	Have you received any feedback from the higher level (such as reports, graphs, comparisons with statistics from other facilities) in response to reports or forms that were submitted in the past 12 months?	Yes	No	Yes	Yes	No	Yes	4

Figure 70: Reporting forms at Maternity Hospitals

#	Forms and records	# of Maternities where form/record was available on the day of the review	Of Which: # of Maternities where form/record is in use
1	Birth certificates	6	6
2	Health insurance forms	5	4
3	Death certificate	6	4
4	Does the hospital <u>has</u> death audit forms	1	0
5	Referral forms	5	3

4.7. Monitoring and Evaluation

ANC Coverage Indicators

Figure 71 represents the summary statistics for major indicators for ANC coverage. According to the assessment results, 2 out of 5 PHC centers (Deir Al Balah and Khan Younis) do not maintain records for evaluating their performance according to the key ANC coverage indicators. In remaining 3 PHC centers proportion of women making at least 4 ANC visits at the last pregnancy varies between 70% (in Rafah) and 90% (in Al Rimal and Jabalia centers). None of the facilities were able to provide figures on proportion of women making 8 ANC visits at their clinics. Noteworthy, that proportion of women making the first ANC visit for their last pregnancy in the first trimester ranges from 85 to 100%. Similarly, to previous indicators, only 2 out 5 PHC facilities (Rafah and Jabalia) were able to give statistics on it.

Figure 71: ANC Coverage Indicators

#	Indicators	Al Rimal	Al Aqsa	Khan Younis	Rafah	Jabalia
		%				
1	Proportion of women making at least 4 ANC visits at the last pregnancy	98%	Don't know	Don't know	70%	90%
	a. women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	b. women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
2	Proportion of women making at least 8 ANC visits at the last pregnancy	Don't know	Don't know	Don't know	Don't know	Don't know
	a. women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	b. women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
3	Proportion of women making the first ANC visit for their last pregnancy in the first trimester	Don't know	Don't know	Don't know	85%	100%
	a. women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	b. women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
4	Proportion of women receiving ANC for their last pregnancy who took iron tablets	Don't know	Don't know	Don't know	0	80%
	a. women < 18 years	Don't know	Don't know	Don't know	-	Don't know
	b. women ≥ 18 years	Don't know	Don't know	Don't know	-	Don't know
5	Proportion of women receiving ANC for their last pregnancy who had a urine sample taken	100%	100%	100%	100%	100%
	a. women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	b. women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
6	Proportion of women receiving ANC for their last pregnancy who had a blood sample taken	100%	100%	100%	100%	100%

Al Rimal and Al Aqsa facilities mentioned that there is neither iron nor folic acid available at their facilities over the last 5 months. Jabalia center mentioned that sometimes iron tablets are purchased by women due its unavailability. Representatives of Rafah and Khan Younis centers said that TT shots are given for pregnant women aged 40 years and more at their facilities.

Family Planning Coverage Indicators

Current status with regards to the family planning coverage indicators is presented in Figure 99 on page. Likewise, to other indicators discussed above, most of the information is not available in assessed facilities. Only Rafah center was able to estimate prevalence of modern contraceptives (mCPR) and reported 70% coverage for the moment. Besides, based on statistics provided by Al Rimal and Al Aqsa centers, proportion of women whose demand is satisfied with a modern method of contraception reaches 50%. Situation with regards to the indicator on informing women on family planning during their last contact with a health service provider is much more promising and 100% of women are covered by respective service (responses were provided by 4 out of 5 PHC centers). Noteworthy that disaggregated data is not available for any of the listed indicators.

Also, important to note that male sterilization and female condoms are not used in Gaza at all. Implants and mini-pills are currently unavailable in assessed PHC centers.

Health Facility Child Health Standards

According to the assessment findings, health facility child health standards are well implemented in all five facilities based on 10 out of 11 indicators included in the assessment list (including proportions of children with all growth measurements recorded, < 6 m receiving breastfeeding screening, 6-36 m receiving complementary feeding screening, over 12 months leaving the facility fully immunized, those receiving developmental screening, with diarrhea treated correctly, children with cough or difficulty breathing treated correctly, children with fever treated correctly, staff providing care at outpatient health facilities trained in primary health care for child health, health facilities with adequate hand washing resources available in all rooms, health facilities with no stock-outs of key medicines etc.) (see details in Figure 100 on page 123. Standards on 6-36 months' children to receive complementary feeding screening and adequate hand washing resources available in all rooms at the facilities seems to be the least implemented standards. Besides, proportion of children with cough or difficulty breathing treated correctly reaches 90% and 50% in two out of five assessed facilities (Rafah and Khan Younis, respectively), that also seem to be one of the challenges that needs to be addressed in the nearest future.

Important to note that none of the assessed facilities reported no stock-outs of key medicines (ORS solution, Zinc drops/syrup, Injectable antibiotic for severe disease, Oral antibiotic for pneumonia).

Facility-based Primary Care Quality Assessment

Assessment results suggest that PHC facilities currently do not possess information on majority of the indicators for facility based primary care quality assessment, that include indicators on proportion of women receiving an ultrasound before 24 weeks gestation, are with a birth plan available, attending ANC who know at least 3 danger signs for seeking care immediately, % of those with elevated blood pressure (HTN) of pregnancy (mild, moderate or severe eclampsia or eclampsia) treated correctly, % of women with mild, moderate or severe anemia treated correctly, % of women with UTI (upper, lower or asymptomatic bacteriuria) treated correctly, % of staff providing care at antenatal care clinics trained in ANC screening, prevention and management of problems and complications) (see Figure 101 on page 124).

All 5 facilities were able to provide statistics on proportion of women receiving an ultrasound before 24 weeks of gestation and those who have a birth plan available. Available statistics on both indicators demonstrate that indicator reaches almost 100% for all 5 PHC centers with an exception of Jabalia PHC center who reported that about 90% of women have a birth plans.

Proportion of women attending ANC who know at least 3 danger signs for seeking care immediately was measured in two PHC centers only in Rafah (estimated at 80%) and Jabalia (85%). Proportion of women with elevated blood pressure (HTN of pregnancy, mild moderate or severe pre-eclampsia or eclampsia) accounted for 100% in all PHC centers except for Rafah PHC center. Women with mild, moderate or severe anemia treated correctly accounted for 90% in Rafah PHC, the only health center where this indicator was measured. Proportion of women with UTI (upper, lower or asymptomatic bacteriuria) who were treated correctly was estimated in only two health centers at Rafah (20%) and Jabalia (80%). Finally, proportion of the staff of the antenatal care clinics, trained in ANC screening, prevention and management and complications accounted for 100% at all assessed PHC centers.

5. Recommendations

The following recommendations were elaborated based on the results of the mapping and assessment of the MNCH service delivery in Gaza. The recommendations are grouped around the individual component of the service delivery system:

Infrastructure and WASH

1. Improvement of the physical infrastructure (buildings) of PHC, NCU and Maternity hospitals through reconstruction and construction of the additional spaces in order to ensure sufficient the facilities through renovation and reconstruction of the additional space in PHC, NCU and Maternity Hospitals to ensure availability of the patient waiting areas, isolated delivery rooms, improved sanitation facilities, isolated rooms for infected mothers at maternities and infected neonates at the NCUs;
2. Upgrade equipment of facilities to ensure availability through procurement and installation of the specific equipment based on the developed facility profiles, to strengthen capacity of the health facilities for essential research, rehabilitation and treatment;
3. Scale-up monitoring and distribution system for stock management and logistics of pharmaceuticals and medical supplies through development of the LMIS system and training of the respective staff for the system application.
4. Provide health facilities with initial stocks of pharmaceuticals and medical supplies (at least one-year stock);
5. Develop standards for WASH, hygiene practices and waste management

Human resources

6. Strengthen capacity of service providers in delivery of service packages through training of doctors and nurses in application of MNCH service package in their routine work
7. Strengthen capacity of technical staff for equipment maintenance through training of engineers and technical staff

Service Delivery

8. Develop and institutionalize sexual, reproductive health packages
9. Update protocols, guidelines and quality assurance standards at all facilities providing MNCH services in GS.
10. Promote MNCH practices among communities, through implementation of the specific strategies for awareness raising and increase of utilization of the MNCH services in GS
11. Ensure participation of women and monitoring and evaluation of the MNCH service delivery in GS through planning and implementation of specific activities for strengthening capacity of women for participation.

Management Information Systems

12. Revise and improve existing Management Information system in health facilities through development and establishment of the upgraded electronic Mis, training of the staff in MIS application, streamlining and standardization of the reporting procedures and installation of the internet connection in each facility

Strengthening emergency response

13. Build capacity of the health workers in MIS and reproductive service delivery in emergencies
14. Facilitate collaboration of different key actors in elaboration of the joint strategy for emergency response
15. Establish network of pre-selected partners for rapid response in emergencies
16. Procure life-saving pharmaceuticals for emergency stock
17. Establish 24 hour hot-line services in MCNH and RapidPro platform operations

6. MCNH service delivery improvement plan

6.1. Improvement Plan

The MCNH service delivery improvement plan was developed based on the results of the mapping and assessment study for implementation of the key recommendations provided in result of analysis of study findings.

The main goal of the MNCH service improvement plan is to contribute in building of a gender responsive maternal and child health system in Gaza. The MNCH Improvement Plan will be built on strategic partnership of the key developing partners: UNICEF, WHO and UNFPA, as well as other implementing partners and donor community. The proposed plan will scale up the Khan Younis's model of MNHC services to 6 maternity hospitals, 7 neonatal intensive care units (NICU) and 28 primary care centers in Gaza with direct investment in capacity building, infrastructure and equipment of these institutions.

The interventions of the MNCH investment plan will ensure filling-in gaps identified through the mapping study for each system component. The specific objectives, strategies and activities of the MNCH investment plan are grouped around the MNCH system building blocks such as Leadership and Governance; Health Workforce; essential medical products and technologies; MNHC service delivery; Management Information Systems and Community Ownership and Participation.

6.2 Goals and objectives of the MNCH improvement plan

The main goal of the MNCH Investment Plan is to ensure sustainable access and universal coverage of women and children in Gaza with high quality MNCH services. For achieving the main goal of the plan following specific objectives were set:

1. Improve access to quality MNCH services to women and children in Gaza Strip
2. Ensure availability of the essential medical products and technologies at the MHs, PHC facilities and NCUs
3. Improve Health Management Information System and reporting practices at MHs, PHCs and NCUs
4. Promote MNHC services and practices among the local communities
5. Contribute in strengthening of Emergency preparedness and response capacity in Gaza Strip

The specific objectives of the proposed plan aim at filling-in existing gaps in critical components of MNCH service delivery, identified through the mapping study carried out by Unicef in 2019.

Details on the objectives, strategies and activities proposed for improvement of overall performance in MNHC service delivery in Gaza and the detailed budget of the improvement plan are presented Figure 72 on page 88 below.

6.3. Budget

Figure 72: Goals, Objectives and Activities of the MNCH service delivery improvement plan

Objective and sub-objectives	Strategy	Activities
1. Improve access to high quality MNCH services to women and children in Gaza Strip	1. Strengthen in-country capacity for effective governance and management of MNCH services	1.1 Develop and formalize necessary protocols, guidelines, standards and quality assurance systems for MNCH service delivery 1.2 Develop the gender responsive package of maternal, newborn and child health care services, including pre-natal, post-natal, nutrition and early childhood development 1.3 Develop standards for WASH, hygiene practices in delivery room and waste management in health facilities (maternity wards and NCUs)
	2. Strengthen staff capacity in high quality service delivery	2.1 Health service provider training needs assessment 2.2 Development of the training methodology and curricula 2.3 Training of the MNHC service providers at all levels of the health system
	3. Ensure adequate HR capacity at all levels of the system	3.1 Develop HR development strategy to fill the vacant posts at all levels 3.2 Recruit necessary staff
	4. Improve physical infrastructure of MHs, PHCs and NCUs	4.1 Develop facility rehabilitation and upgrade plan 4.2 Implementation of the facility rehabilitation and upgrade plan
2. Ensure access to the essential medical products and technologies at the MHs, PHC facilities and NCUs	5. Upgrade equipment at Maternity Hospitals, PHCs and NCUs	5.1 Development of the equipment procurement plan 5.2 Procure, import and install medical equipment at the targeted health facilities 5.3 Train engineers and technical personnel in management and maintenance of health equipment
	6. Provide health facilities with essential pharmaceuticals, medical supplies and consumables	6.1 Development and formalize stock management and logistics systems for ensuring sustainability in supply of drugs, medical consumables and supplies 6.2 Ensure availability of annual stocks of pharmaceuticals, medical supplies, lab supplies and consumables in all facilities providing MNCH services in Gaza Strip
3. Improve Health Management Information System and reporting practices at MHs, PHCs and NCUs	7. Establish electronic health management information system	7.1 Develop and institutionalization of the electronic health management system 7.2 Train appropriate staff at each health facility in application of the electronic HMIS
	8. Improve reporting	8.1 Revise current reporting system 8.2 Train appropriate staff at each health facility in reporting
4. Promote MNHC services and practices among communities	9. Strengthen communication with communities for promotion of MNHC services	9.1 Conduct KAP survey 9.2 Develop and implement specific communication campaign to promote MNHC services among the population
	10. Ensure community involvement in promotion, monitoring and evaluation of MNHC services	10.1 Strengthen capacity of women for promotion, monitoring and evaluation of MNHC services
5. Contribute in strengthening of Emergency preparedness and response capacity in Gaza Strip	11. Revise MoH Emergency Preparedness and Response Plan and ensure non-interrupted delivery of MNHC services	11.1 Facilitate meetings for MoH Emergency Plan revision 11.2 Establish network of partners to elaborate plan of immediate response to emergencies 11.3 Develop and introduce 24-hour hotline on MNHC services in case of emergencies
	12. Train service providers in minimal Initial Service Package (MISP) and reproductive health care in emergencies including GBV	12.1 Develop training methodology and curricula 12.2 Train respective staff in delivery of service packages

Figure 73: MNCH Improvement Plan, Gaza Strip State of Palestine - Budget

MNCH Investment Plan					
#	Activity	Item	# items	Item cost	Total
1	Rehabilitation and refurbishment of health facilities in Gaza*				7,182,600
	Rehabilitation of the PHC, NCU and Maternities	sq. mt	2,835	€ 1,000	€2,835,000
	Construction of additional space at PHC, NCUs and MHs	sq. mt	3,623	€ 1,200	€ 4,347,600
2	Medical equipment and consumables				9,360,675
	PHC equipment	set	1	€ 807,424	€ 807,424
	NCU equipment	set	1	€2,682,736	€ 2,682,736
	MH equipment	set	1	€ 1,695,531	€ 1,695,531
	Essential Pharmaceuticals, supplies and consumables - MH, PHC, NCU	annual stock	1	€ 4,174,984	€ 4,174,984
3	Development of service delivery packages				30,000
	Development of the sexual, reproductive health packages (International TA)	day	50	€ 600	€ 30,000
4	Capacity Strengthening in delivery of service packages				830,000
	Training of doctors in service delivery and application of MNCH service packages	participant	2,500	€ 125	€ 312,500
	Training of nurses and midwives in application of the MNCH service package	participant	4,140	€ 125	€ 517,500
5	Capacity building in equipment maintenance				75,000
	Training of engineers and technical personnel in equipment maintenance	participant	500	€ 150	€ 75,000
6	Update protocols, guidelines, quality assurance standards				252,000
	International TA - development of the guidelines, protocols and quality assurance standards	day	230	€ 700	€ 161,000
	National TA - development of the guidelines, protocols and quality assurance standards	day	180	€ 200	€ 36,000
	Workshop - 25 participants - update of guidelines, protocols and quality assurance standards	event	20	€ 2,750	€ 55,000
7	Development of standards for WASH, hygiene practices and waste management				54,000
	TA - development of standards (WASH, hygiene practices and waste management)	day	90	€ 600	€ 54,000
8	Revise existing health information system in health facilities				145,808
	Development of the MIS software - International TA	software	1	€ 100,000	€ 100,000
	Train health facility personnel in application of the software and reporting (at least two staff per facility)	participant	640	€ 62	€ 39,808
	Provide internet connection to the health facilities	monthly payment	60	€ 100	€ 6,000
9	Scale-up monitoring and distribution system for stock logistics, pharmaceuticals and medical supplies				107,000
	Development of the LMIS (logistics management information system) LMIS	software	1	€ 70,000	€ 70,000
	Introduction of LMIS	workshop	4	€ 2,750	€ 11,000
	Train respective staff in application of the LMIS	participants	400	€ 65	€ 26,000
10	Promote SRMNCH practices among communities				771,275
	Development of the C4D strategy and strategy implementation plan (TA - two consultants @ 50 consulting day each)	monthly fee	6	€ 9,000	€ 54,000
	Workshop - 25 participants - update of guidelines, protocols and quality assurance standards	event	12	€ 2,750	€ 33,000
	C4D materials - Radio	package	10	€ 1,000	€ 10,000
	C4D materials - Video clip	clip	10	€ 2,000	€ 20,000
	Booklets	each	100,000	€ 1.5	€ 150,000
	Outdoor advertisement - banners	each	30	€ 2,700.0	€ 81,000

	SMS messages	subscriber	20,000,000	€ 0.0037	€ 74,000
	Capacity building for strategy implementation - TA	monthly fee	24	€ 8,000	€192,000
	Baseline and End-line KAP survey (methodology, data collection (field work), data analysis and report writing - TA	monthly fee	12	€ 9,000	€ 108,000
	Workshop - Validation of survey findings	workshop	5	€ 1,555	€ 7,775
	KAP survey result dissemination conference - 100 person conference	conference	2	€ 20,750	€ 41,500
11	Ensure participation of women in monitoring and evaluation of MCH services				32,500
	Train women in M&E	participants	500	€ 65	€ 32,500
12	Emergency response				17,220
	Technical working meetings - 25 participants each	event	4	€ 1,555	€ 6,220
	Technical workshops - 50 participants each	event	4	€ 2,750	€ 11,000
13	Procurement of essential life-saving pharmaceuticals				1,043,746
	Pharmaceuticals and consumables - (three months buffer stock i.e. 25% of annual requirement)	emergency stock	1	€ 1,043,746	€ 1,043,746
14	Establishment of network of pre-selected partners for rapid response and emergencies				7,775
	Technical working meetings - 25 participants	event	5	€ 1,555	€ 7,775
15	Establishment of the 24 hour hot-line services on MCNH and RapidPro platform operations				36,000
	Design and establish 24-hour MNCH hotline services	lump sum	1	€ 36,000	€ 36,000
16	Build capacity of health workers in MISP and reproductive service delivery in emergencies				17,730
	Development of the training curricula for MISP and reproductive service delivery	day	14	€ 600	€ 8,400
	Training respective staff in service delivery	event	6	€ 1,555	€ 9,330
Total Budget					€19,963,329

*Naser Pediatric Hospital (NPH): the study reveals that there is a need for construction of NPH with a capacity of 130 beds

Figure 74: General Information about Assessed Maternity Hospitals

#		Al Tahrir hospital	Emarati hospital	Al Aqsa hospital	Al Shifa hospital	Al Haraizin	Kamal Edwan
1	Number of beds	70	50	45	79	10	35
2	Number of delivery beds	10	3	4	11	4	4
3	Number of delivery rooms	2	1	3	6	1	6
4	Time of discharge of normal delivery (ND) (without complications) No of hours?	5	5	6	3	5	6
5	Does the pediatrician attend the birth	No	No	No	No	No	Yes
6	Average No. of Births per day	26	18	17	42	1	10
7	Average No. of CS per day	7	6	6	12	1	4
8	Space of maternity in M ²	120	1200	238	800	600	1000
9	Time of discharge of Caesarean section (CS) (without complications) Days	1	2	1	1	1	1
10	Delivery room for isolation of HBV/HCV infected pregnant women	Info not available	No	No	Yes	No	Yes
11	Criteria of referral of newborn to NCU	IDM, IUGR, meconium	Info not available	IDM, RDS, PROM, IUFD	neonatal anomalies, neonatal stress	LBW, Asphyxia	Sick baby who don't respond to resuscitation

Figure 75: Infrastructure and WASH at PHC facilities

#	Conditions	Availability (# of observed "yes" cases)	Is adequate to perform services (# of observed "adequate" condition)	Comment
1	Power (generator)	5	5	
2	Solar system	4	1	Al Rimal: Solar only for vaccination refrigerator Deir Al Balah: Needs connections Khan Younis: for vaccination only
3	Lighting	5	5	
4	Sanitation facilities	5	4	Al Rimal and Khan Younis reported sanitation facilities need maintenance
5	Basins at rooms	5	3	Al Rimal: 4 basins in 9 rooms Khan Younis: 5 basins
6	Showering rooms	0	-	
7	Sufficient municipality water	5	4	Al Rimal reported municipal water is undrinkable Al Aqsa: No potable and for domestic use
8	Delivery water of good quality	4	3	
9	Sufficient clean water tanks	5	3	
10	Water (desalination unit)	2	1	Al Aqsa need maintenance Jabalia: available in working condition only
11	Ventilation	1	0	Al Rimal: air condition present only at lab & pharmacy Al Aqsa: Drug store without air condition
12	Cleanliness	5	1	
13	Storage facilities	5	2	
14	Refrigeration	5	3	
15	Disposal of hazardous wastes	5	4	
16	Soap or Alcohol Hand Rub	5	2	
17	Toilet to patient ratio	Data on ratio is not available	Data on ratio is not available	Insufficient for all patients (Khan Younis, Al aqsa) sufficient but need maintenance (Al Rimal) Jabalia and Khan Younis – need maintenance
17.1	Are toilets suitable for disabled people?	0	-	
18	Does facility ensure privacy and security?	5	-	
19	Frequency of cleaning the toilets (# per day)	2	-	
20	Frequency of environmental disinfection (# per day)	0-2		Khan Younis: no disinfection.
21	Are toilets functioning?	4		Al Rimal: needs maintenance
22	Number of sinks/patient (bed) ratio			outpatients
23	Number of sinks with paper towel/all number of sinks	20		Answer provided only by Al Rimal facility

Figure 76: NCU infrastructure – rooms and units

Type of rooms / NCUs	# of rooms	# of beds	Total Space (m2)	Has sink for washing hands (at least 1)	Access to family/ mother or 24/h mother presence	Gender responsive	Reception with good welcoming	With clear sign & suitable for those who cannot read	Comment
Neonatal reception									
Facility 1: Kamal Edwan	1	1	12	Yes	Yes	Yes	Yes	No	
Facility 2: Shifa	1	2	12	Yes	Yes	Yes	No	No	NCU is an extension to delivery suite
Facility 3: Al Naser	1	2	10	Yes	Yes	Yes	Yes	No	
Facility 4: Emarati	1	2	20	Yes	No	No	No	No	
Facility 5: Al Aqsa	1	1	11.5	Yes	Yes	Yes	Yes	Yes	
Facility 6: Al Tahreer	1	3	25	Yes	Yes	Yes	Yes	Yes	
Facility 7: EGH	0								
Special Care baby Unit (SCBU)									
Facility 1: Kamal Edwan	1	6	44	Yes	Yes	Yes	Yes	No	
Facility 2: Shifa	1	11	84	Yes	Yes	Yes	Yes	No	
Facility 3: Al Naser	1	8	50	Yes	Yes	Yes	Yes	No	
Facility 4: Emarati	1	8	60	Yes	No	No	Yes	Yes	
Facility 5: Al Aqsa	1	10	105	Yes	Yes	Yes	Yes	Yes	
Facility 6: Al Tahreer	1	11	40	Yes	Yes	Yes	Yes	Yes	
Facility 7: EGH	1	4	81	Yes	No	No	No	No	
NICU									
Facility 1: Kamal Edwan	0								
Facility 2: Shifa	3	22	331	Yes	Yes	Yes	Yes	No	
Facility 3: Al Naser	1	8	88	Yes	Yes	Yes	Yes	No	
Facility 4: Emarati	0								Not available
Facility 5: Al Aqsa	1	5	60	-	-	-	-	-	Not functioning due to shortage of team
Facility 6: Al Tahreer	1	0	90	Yes	No	No	No	No	There are no beds available
Facility 7: EGH	NA								SCBU & NICU are located in the same room
Nurse station									
Facility 1: Kamal Edwan	0								NS is not available
Facility 2: Shifa	1								NS is available at each room
Facility 3: Al Naser	5								NS is available at each room
Facility 4: Emarati	0								NS is not available
Facility 5: Al Aqsa	3								1 NS is available in baby friendly room
Facility 6: Al Tahreer	2								NS is available in NCU & SCBU
Facility 7: EGH	1	8	81	Yes	No	No	No	No	
Presence of isolation room									

Type of rooms / NCUs	# of rooms	# of beds	Total Space (m2)	Has sink for washing hands (at least 1)	Access to family/ mother or 24/h mother presence	Gender responsive	Reception with good welcoming	With clear sign & suitable for those who cannot read	Comment
Facility 1: Kamal Edwan	0								
Facility 2: Shifa	2	2	6	-	-	-	-	No	
Facility 3: Al Naser	3	3	9	Yes	Yes	Yes	Yes	No	
Facility 4: Emarati	2	2	10	Yes	No	No	Yes	No	
Facility 5: Al Aqsa	1	1	7						Not functioning
Facility 6: Al tahreer	3	5	60	Yes	Yes	Yes	Yes	Yes	
Facility 7: EGH	2	2	6	Yes	No	No	Yes	No	
Baby friendly room									
Facility 1: Kamal Edwan	0								
Facility 2: Shifa	0								
Facility 3: Al Naser	1	8	50	Yes	Yes	Yes	Yes	No	
Facility 4: Emarati	0								Not available
Facility 5: Al Aqsa	1	5	30	No	Yes	Yes	Yes	Yes	
Facility 6: Al Tahreer	2	0	100	No	No	No	No	No	There are only rooms available, that needs constructions and renovation
Facility 7: EGH	0								Not available
Facility for breastfeeding expression									
Facility 1: Kamal Edwan	0								Not available
Facility 2: Shifa	1	3	12	Yes	Yes	Yes	Yes	No	Needs renovation
Facility 3: Al Naser	1	3	NA	Yes	Yes	Yes	No		Breastfeeding chairs
Facility 4: Emarati	0								The same room as for BF
Facility 5: Al Aqsa	0								The same room as for BF
Facility 6: Al tahreer	0								Not available
Facility 7: EGH	0								Not available
Room for mothers to breastfeed NB									
Facility 1: Kamal Edwan	0								
Facility 2: Shifa	1	2	12	Yes	Yes	Yes	Yes	No	
Facility 3: Al Naser	1	3		Yes	Yes	No	Yes	No	
Facility 4: Emarati	1	4 chairs	9	Yes	Yes	No	Yes	Yes	
Facility 5: Al Aqsa	1	3 chairs							Not functioning
Facility 6: Al tahreer	1	2	3	Yes	Yes	No	No	Yes	
Facility 7: EGH	0								Not available
Nursery room									

Type of rooms / NCUs	# of rooms	# of beds	Total Space (m2)	Has sink for washing hands (at least 1)	Access to family/ mother or 24/h mother presence	Gender responsive	Reception with good welcoming	With clear sign & suitable for those who cannot read	Comment
Facility 1: Kamal Edwan	0								
Facility 2: Shifa	0								NR is not available
Facility 3: Al Naser	1								Available just office
Facility 4: Emarati	0								
Facility 5: Al Aqsa	0								
Facility 6: Al Tahreer	0								NR is not available
Facility 7: EGH	0								NA
A kitchen for milk preparation									
Facility 1: Kamal Edwan	0								
Facility 2: Shifa	1	NA		Yes	Yes	Yes	Yes	No	
Facility 3: Al Naser	0								
Facility 4: Emarati	1	NA		No	No	No	No	Yes	
Facility 5: Al Aqsa	1	NA							Not functioning
Facility 6: Al Tahreer	1	NA	20	Yes	No	No	No	Yes	Needs renovation & equipment
Facility 7: EGH	0								Not available
Facility of breast milk storage									
Facility 1: Kamal Edwan	Yes								Available – domestic refrigerator special refrigerator is needed
Facility 2: Shifa	Yes								Refrigerator is available in each room
Facility 3: Al Naser	Yes								Refrigerator is used
Facility 4: Emarati	No								Not available
Facility 5: Al Aqsa	Yes								Available, but not functioning
Facility 6: Al Tahreer	Yes								Stored besides incubator refrigerator
Facility 7: EGH	No								Not available

Figure 77: Infrastructure and WASH at Maternity Hospitals

#	Conditions	Availability (# of observed "yes" cases)	Is adequate to perform services (# of observed "adequate" condition)	Comment
1	Power (generator)	6	2	Emarati: There are 2 old need one
2	Solar system	5	0	
3	Lighting	5	3	Al Shifa: Deficiency of <u>lighting</u> <u>around</u> the building
4	Sanitation facilities	6	2	
5	Basins at rooms	5	1	
6	Showering rooms	4	0	
7	<u>Sufficient</u> municipality water	4	3	
8	Delivery water of good quality	4	3	
9	<u>Sufficient</u> clean water tanks	4	2	
10	Water (desalination plant)	2	1	Emarati: there is deficiency of warm water. delivery beds are old and in need of renewal
11	Ventilation	3	1	
12	Cleanliness	5	1	
13	Storage facilities	6	3	
14	Refrigeration	4	3	
15	Disposal of hazardous wastes	6	2	
16	Soap or Alcohol Hand Rub	6	2	
17	Toilet to <u>mothers</u> ratio	1 to 12; 1 to 4, 11 to 45, 1 to 6; 1 to 5, 8 to 32		
17.1	Are toilets suitable for disabled	1 (Al Shifa)		
18	Does facility ensure privacy and security? (specify in comments box)	5		Al Shifa: Many patients are served at same rooms; Kamal Edwan: need curtain, there is very narrow space - 2 doctors per room / 3 midwives per room
19	Frequency of cleaning the toilets (# per day)	2-15 (hourly in Kamal Edwan) 5, 4, 2, 3, 15, every hour		
20	Frequency of environmental disinfection (# per day)	1-5 (5 in Al Tahrir only)		Done in 4 hospitals out of 6
21	Are toilets functioning?	6		Al Tahrir: There is 1 toilet for delivery room available. Shortage of toilets for staff & patients was reported
22	Number of sinks/ patient (bed) ratio	2 to 12; 1 to 2; 1 to 4 (3), 1 to 2;		Al Aqsa: at delivery room, there are 2 toilets and two sinks
23	Number of sinks with paper towel/ all number of sinks	2-22		

Figure 78: Equipment needs – Maternity Hospitals

#	Description	AL SHIFAA	Al fahreer	AL Aqsa	AL-Emaratil	Karmal Edwan	AL- Haraizin	Gaps & Needs	unit cost	Total
	Beds									
1	Maternity beds	100	40	0	0	0	0	140	\$903	\$126,420
2	Delivery beds	0	0	0	2		0	2	\$4,332	\$8,664
3	Multi-position delivery bed	1	1	1	4	0	0	4	\$5,415	\$21,660
4	Semi fowler patients' bed		0	0	40	0	0	40	\$1,625	\$65,000
	Equipment									
5	Ultrasound	4	1	2	2	2	1	12	\$18,953	\$227,436
6	Resuscitator	4	0	2	2	2	1	11	\$4,513	\$49,643
7	Laparoscope	0	1	1	0	0	0	2	\$90,250	\$180,500
8	Operating table	4	2	1	2	1	0	10	\$31,588	\$315,880
9	Autoclave	1	0	1	0	1	1	4	\$7,220	\$28,880
10	Body thermometer machine	10	10	5	5	3	3	36	\$90	\$3,240
11	Vaginal speculum	60	0	10	0	0	0	60	\$45	\$2,700
12	Cardiotocography (CTG)	10	0	2	10	2	2	26	\$4,061	\$105,586
13	ECG	5	0	0	2	0	0	7	\$1,805	\$12,635
14	Stethoscope adult and fetal	60	20	5	30	0	0	110	\$158	\$17,380
15	Sphygmomanometer	50	10	5	6	0	0	66	\$54	\$3,564
16	Suction machine	1	1	1	1	1	1	6	\$903	\$5,418
17	Neonatal self-inflating bag (250-500ml) & masks (size for term & 0 for preterm)	0	0	0	0	0	0	0	\$903	\$0
18	Adult Monitors	10	4	2	3	0	0	19	\$10,830	\$205,770
19	Portable adult monitors	8	7	6	6	3	3	33	\$3,610	\$119,130
20	Oxygen flow meter	10	10	5	5	2	2	35	\$90	\$3,150
21	Anesthesia machine	1	0	1	1	0	0	2	\$58,663	\$117,326
22	refrigerators	3	2	2	2	1	1	11	\$1,083	\$11,913
23	DC shock	5	1	1	1	1	1	10	\$3,791	\$37,910
24	Air conditions	5	2	3	3	3	3	19	\$1,354	\$25,726
	Total									\$1,695,531

Figure 79: Equipment needs – PHC facilities

#	Description	In-depth Assessment and needs of 5 PHCs					Total Equipment	Unit Cost (USD)	Total cost (USD)	
		Al Rimal	Jabalila	Dier al Balah	Kh/Younis	Rafah				
Beds and chairs										
1	Clinical examination & U/S* beds	4	3	3	4	3	40	€ 300	€ 12,000	
2	Beds (lithotomy position for FP**)	2	2	1	2	1	20	€ 1,800	€ 36,000	
3	Chairs (stool for FP bed)	2	2	1	2	1	20	€ 100	€ 2,000	
Equipment										
4	Digital baby weight scale	2	2	2	2	2	30	€ 325	€ 9,750	
5	Baby length scale	2	2	2	2	2	30	€ 1	€ 30	
6	Adult weight and length scale	2	2	1	2	1	20	€ 300	€ 6,000	
7	Body thermometer	30	30	30	30	30	300	€ 1	€ 300	
8	Stethoscope	7	7	7	7	7	100	€ 85	€ 8,500	
9	Sphyngomanometer	7	7	7	7	7	100	€ 80	€ 8,000	
10	Otoscope	10	7	7	7	7	84	€ 50	€ 4,200	
11	Ultrasound	2	2	2	2	2	20	€ 21,400	€ 428,000	
12	Vaginal speculum	20	20	20	20	20	200	€ 60	€ 12,000	
13	Uterine sounds	20	20	20	20	20	150	€ 30	€ 4,500	
14	Sponge forceps	20	20	20	20	20	150	€ 30	€ 4,500	
15	Long curved scissors	20	20	20	20	20	150	€ 40	€ 6,000	
16	Side lamps	2	2	2	1	1	20	€ 150	€ 3,000	
17	Refrigeration	3	3	2	2	2	50	€ 1,200	€ 60,000	
18	Vaccine carrier	1	1	1	1	1	20	€ 60	€ 1,200	
19	Small freezer for ice packs	2	2	1	2	2	30	€ 350	€ 10,500	
20	Ice packs	5	5	5	5	5	70	€ 10	€ 700	
21	ECD corner***	1	1	1	1	1	28	€ 3,000	€ 84,000	
22	Air conditioner	6	6	6	6	6	100	€ 800	€ 80,000	
23	CTG	1	1	1	1	1	4	€ 4,061	€ 16,244	
24	Autoclave	1	1	1	1	1	5	€ 2,000	€ 10,000	
Budget Grand Total										€ 807,424

Figure 80: Equipment needs – Neonatal Care Units

#	Description	Item	# of items	item cost (EUR)	Total
Incubators					
1	Incubators double wall Jerraffi	each	18	€ 11,733	€ 211,194
2	Incubator Conventional (single closed with humidifier)	each	44	€ 4,332	€ 190,608
3	Portable transport incubator with ventilator can be fitted in Ambulance	each	7	€ 11,733	€ 82,131
Equipment					
4	Stethoscope Littman	each	42	€ 90	€ 3,780
5	Autoclave	each	5	€ 4,648	€ 23,240
6	Temperature body sensor Thermometer for Hypothermia T < 34 C DEGREE	each	20	€ 226	€ 4,520
7	Blood Pressure Instrument Electronic	each	20	€ 72	€ 1,440
8	Neonatal Blood Pressure cuff singl lumen	each	100	€ 27	€ 2,700
9	Transcutaneous oxygen/carbon dioxide monitor carbo	each	14	€ 6,318	€ 88,452
10	Gas analyser APL 80	each	7	€ 46,298	€ 324,086
11	Portable Echograph Plus Neonatal probe for Ultrasound brain or abdomen	each	4	€ 45,125	€ 180,500
12	CONVENTIONAL Phototherapy	each	29	€ 22,563	€ 654,327
13	Intensive phototherapy Intensive phototherapy Capsule	each	5	€ 9,025	€ 45,125
14	Transcutaneous bilirubin meter Bilirubin meter Dragger	each	7	€ 4,513	€ 31,591
15	Continuous positive airway pressure (C-PAP)	each	7	€ 4,513	€ 31,591
16	Respirator mechanical ventilator/ high frequency mod	each	21	€ 22,563	€ 473,823
17	DC shock	each	7	€ 3,610	€ 25,270
18	Pulse oximeter	each	50	€ 830	€ 41,500
19	Radiant Warmer	each	9	€ 13,538	€ 121,842
20	Cooling machine	each	2	€ 18,050	€ 36,100
21	Infusion pump	each	80	€ 542	€ 43,360
22	Syringe pump	each	110	€ 542	€ 59,620
23	Baby weight scale ELECTRONIC	each	20	€ 293	€ 5,860
24	Baby length scale (tape meter)	each	76	€ 1	€ 76
Total budget					€ 2,682,736

Figure 81: Available Equipment at PHC Facilities (summary table)

#	PHC facilities	% of equipment items available from the List (N=15 Items in total)
1	Al Rimal	86.7%
2	Al Aqsa	100%
3	Khan Younis	86.7%
4	Rafah	73.3%
5	Jabalia	93.3%

Figure 82: Available Equipment per PHC Facility

#	a) Equipment	# of PHC facilities where equipment was available on the day of the review	Among them: # of PHC facilities who have equipment in working / functioning condition	Need for equipment (as reported by the PHC facility)	Comment (as reported by the PHC facility)
1	Autoclave	4	4	• Al Aqsa: reported shortage	
2	Air condition	3	1	• Al Aqsa: reported shortage	• Al Rimal: Air condition present only at lab & pharmacy
3	Refrigerator for vaccines	5	5		
4	Solar energy in case of electricity blackouts	5	3		• Al Rimal: available only for vaccination • Refrigerator • Al Aqsa: Needs connections • Khan Younis: has 3 batteries
5	Vaccine carrier	4	3		
6	Ice packs	5	4	• Khan Younis: Needs more	
7	Weight & height measuring scale for children	5	4	• Al Aqsa: needs 1 weight & 1 height scales	
8	Weight scale for the infant	4	3	• Al Aqsa: needs 1 weight scale	
9	Length scale for the infant	4	3	• Al Aqsa: needs 1 height scale	
10	Gloves	5	-	• Al Rimal: reported Insufficient quantity	
11	Sphygmomanometer	5	1	• Al Aqsa: not available currently and needs 5 in total	• Al Rimal: 50% not functioning
12	Stethoscope	5	1	• Al Aqsa: available currently and needs 3 more	
13	Tongue depressors	5	2		• Al Aqsa: reported extreme shortage
14	Vaginal speculum	5	2		• Rafah: not adequate condition
15	Otoscope	4	2	• Al Aqsa: available currently and needs 5 more	

Figure 83: Available equipment at NCU (summary table)

#	NCU	% of equipment items available from the List (N=32 Items were included in the list in total)
1	Kamal Edwan	37.5
2	Shifa	81.3
3	Al Naser	84.4
4	Emarati	62.5
5	Al Aqsa	68.8
6	Al Tahreer	62.5
7	European H.	59.4

Figure 84: Available equipment per NCU (detailed table)

#	EQUIPMENT	# of NCUs where equipment was available on the day of the review	Among them: # of NCUs who have equipment in working / functioning condition	Need for equipment (as reported by NCUs)	Comment (as reported by NCUs)
1	Autoclave	1	1		<ul style="list-style-type: none"> Shifa NCU has central autoclave in the hospital European H (EGH) does not need autoclave.
2	Stethoscope	5	3	• 30 (Shifa)	
3	Temperature incubator	6	6		
4	Portable incubator	5	5		<ul style="list-style-type: none"> European H (EGH) does not need portable incubator Al Naser NCUs has portable incubator, but they could not use it due to absence of elevator
5	Temperature body sensor	5	5	• 20 (Shifa)	
6	Blood Pressure Instrument	5	4	• 100 per year (Al Naser)	
7	Transcutaneous oxygen/carbon dioxide monitor	1	0	• 5 (Shifa)	<ul style="list-style-type: none"> Al naser NCU needs portable one European H (EGH) does not need the item
8	Gas analyser	6	5	• 1 (Al Naser)	• Shifa NCU lack reagents
9	Ultrasound	3	1		• European H (EGH) does not need Ultrasound
10	Echocardiography	4	2		
11	Portable x-ray	7	7 (Kamal Edwan)		
12	Phototherapy	7	5 (Kamal Edwan)	<ul style="list-style-type: none"> 4 (Kamal Edwan) 20 (Shifa) 5 (Al Naser) 	
13	Intensive phototherapy	6	5	<ul style="list-style-type: none"> 1 (Kamal Edwan) 2 (Al Naser) 	
14	Transcutaneous bilirubinometer	5	3	<ul style="list-style-type: none"> 2 (Shifa) 2 (Al Naser) 	• European H (EGH) does not need phototherapy equipment
15	Continuous positive airway pressure (CPAP)	6	4		

#	EQUIPMENT	# of NCUs where equipment was available on the day of the review	Among them: # of NCUs who have equipment in working / functioning condition	Need for equipment (as reported by NCUs)	Comment (as reported by NCUs)
16	Respirator or mechanical ventilator.	7	4	<ul style="list-style-type: none"> • 10 (Shifa) • 10 (Al Naser) 	<ul style="list-style-type: none"> • Kamal Edwan NCU has old partially functioning one • Shifa NCU's current ventilator is functioning partially
17	High frequency ventilator	4	3	<ul style="list-style-type: none"> • 2 (Al Naser) 	<ul style="list-style-type: none"> • Kamal Edwan NCU said they do not need HF ventilator
18	Oxygen Hood	7	5	<ul style="list-style-type: none"> • 6 (Kamal Edwan) 	
19	Nasal Cannula or Nasal Prongs	7	7		
20	Extracorporeal membrane oxygenation (ECMO)	0	-		<ul style="list-style-type: none"> • 3 NCUs said they do not need ECMO
21	DC shock	2	1	<ul style="list-style-type: none"> • 1 (Kamal Edwan) • 2 (Shifa) 	<ul style="list-style-type: none"> • Al Tahreer and European H said they do need DC shock
22	Pulse oximeter	6	5	<ul style="list-style-type: none"> • 3 (Kamal Edwan) • 2 (Shifa) 	
23	Radiant Warmer	7	4		<ul style="list-style-type: none"> • Kamal Edwan NCU has partially functioning ones
24	Warmer	2	1	<ul style="list-style-type: none"> • 5 (Shifa) 	<ul style="list-style-type: none"> • European H (EGH) does not need warmer
25	Cooling machine	3	2		<ul style="list-style-type: none"> • European H (EGH) does not need cooling machine
26	Infusion pump	7	4	<ul style="list-style-type: none"> • 6 (Kamal Edwan) • 20 (Shifa) • 10 (Al Naser) 	
27	Syringe pump	7	4	<ul style="list-style-type: none"> • 12 (Kamal Edwan) • 40 (Shifa) • 20 (Al Naser) 	
28	Baby weight scale	6	2	<ul style="list-style-type: none"> • 3 (Kamal Edwan) • 5 (Shifa) • 5 (Al Naser) 	<ul style="list-style-type: none"> • European H (EGH) does not need baby weight scale
29	Baby length scale	4	2	<ul style="list-style-type: none"> • 3 (Kamal Edwan) • 30 (Shifa) • 25 (Al Naser) 	<ul style="list-style-type: none"> • European H (EGH) does not need baby length scale;
30	Breast milk extraction pump	2	1	<ul style="list-style-type: none"> • 3 (Shifa) 	<ul style="list-style-type: none"> • European H (EGH) does not need breast milk extraction pump
31	Milk mixer	0	-		<ul style="list-style-type: none"> • European H (EGH) and Shifa NCUs do not need milk mixer
32	Warm bath for milk	2	2		<ul style="list-style-type: none"> • European H (EGH) does not need warm bath for milk;

Figure 85: Availability of Resuscitation (summary table)

#	NCU	% of Resuscitation items available from the list (N=9 Items were included in the list in total)
1	Kamal Edwan	77.8
2	Shifa	100.0
3	Al Naser	88.9
4	Emarati	88.9
5	Al Aqsa	100.0
6	Al Tahreer	77.8
7	European H.	100.0

Figure 86: Availability of resuscitation (detailed table)

#	RESUSCITATION	# of NCUs where medications were available on the day of the review	Among them: # of NCUs who have equipment in working / functioning condition	Need for Resuscitation items (as reported by NCUs)
1	Resuscitator	7	3	<ul style="list-style-type: none"> • 5 (Shifa) • 5 (Al naser)
2	Suction Machine	6	3	<ul style="list-style-type: none"> • 5 (Kamal Edwan) • 4 (Shifa)
3	Mucus Extractor	3	2	<ul style="list-style-type: none"> • 1 (Kamal Edwan) • 1 (Al aqsa) – has but it is expired
4	Cardiorespiratory monitor	7	4	<ul style="list-style-type: none"> • 7 (Kamal Edwan) • 1 central for the 1st floor and 14 more for NCU (Shifa) • 8 (Al Naser) • 4 (Emarati)
5	Blood pressure monitor	6	3	<ul style="list-style-type: none"> • 7 (Kamal Edwan) • 14 (Shifa) • 8 (Al Naser) • 3 (Emarati)
6	Neonatal Bag-and-Mask	7	7	<ul style="list-style-type: none"> • 2 (Kamal Edwan) • 5 (Al naser)
7	Oxygen Cylinder/ Concentrator	7	5	<ul style="list-style-type: none"> • 2 (Kamal Edwan) • 5 (Al naser)
8	Endotracheal tube (ET)	7	6	<ul style="list-style-type: none"> • Shifa reported they lack ET / size 3.5
9	Laryngoscope	7	4	<ul style="list-style-type: none"> • 3 (Kamal Edwan) • 2 (Al naser)

Figure 87: Availability of pharmaceuticals at NCU (detailed table)

#	MEDICATIONS/ INJECTIONS/ DRIPS	# of NCUs where medications were available on the day of the review	# of NCUs NOT experiencing stock outs during last 12 months ²⁶	# of NCUs where Stock Records are available	N of stock outs experienced during last 12 months (average?)	Storage conditions (# of NCUs where supplies are stored "properly" ²⁷)	# of NCUs where existence of expired drugs was reported
1	Essential antibiotics						
1.1	Ampicillin	7	5	5	6 (AI Aqsa NCU)	7	2
1.2	Ceftriaxone/ cefotaxime	7	6	5	1 (AI Aqsa NCU)	7	2
1.3	Cloxacillin	6	5	4	- (info not available)	6	2
1.4	Gentamicin	7	5	5	- (info not available)	7	2
2	Other include						
2.1	Acyclovir	7	6	5	- (info not available)	7	2
2.2	Amphotericin B	6	5	4	-	6	2
2.3	Fluconazole	6	4	4	-	6	2
2.4	Vancomycin	7	6	5	-	7	2
3	Infusion drugs						
3.1	Glucose 5%	7	6	5	-	7	2
3.2	Glucose 10%	7	5	5	6 (AI Aqsa NCU)	7	2
3.3	Glucose 50%	0	-	-	-	-	-
3.4	Glucose with sodium chloride	7	7	5	0	7	2
3.5	Potassium chloride	7	7	5	0	7	2
3.6	Sodium chloride 0.9% isotonic,	7	6	5	3 (AI Aqsa NCU)	7	2
3.7	Sodium bicarbonate	7	7	5	0	7	4
4	Other essential medications						
4.1	Caffeine citrate	6	6	5	0	6	3
4.2	Surfactant	6	2	5	16 (AI Aqsa NCU)	6	3
5	Other medications						
5.1	Albumin IV	5	4	3	-	4	2
5.2	Vitamin K	7	7	5	0	7	2
5.3	Magnesium sulphate IV	7	7	6	0	7	2
5.4	Prostaglandin	6	4	4	3 (AI Aqsa NCU)	6	2
5.5	Milrenon	1	1	1	0	1	0
5.6	Nystatin	5	4	3	-	5	1
5.7	Vitamin D	3	2	3	(AI Aqsa NCU)	3	0
5.8	Meropenem IV	7	6	6	8 (AI Aqsa NCU)	7	3
5.9	Amikacin IV	7	7	6	0	7	2
5.10	Phenobarbitone IV	7	5	6	7 (AI Aqsa NCU)	7	2
5.11	Phenobarbitone oral	2	2	2	9 (AI Aqsa NCU)	2	1
5.12	Randine IV	7	7	6	0	7	2

²⁶ A stock-out is defined as any period of 1 day or more during last 12 months

²⁷ Proper storage condition is defined as follows: stored in dry, well-ventilated premises at temperatures of 15°C–25°C or, depending on climatic conditions, up to 30°C

#	MEDICATIONS/ INJECTIONS/ DRIPS	# of NCUs where medications were available on the day of the review	# of NCUs NOT experiencing stock outs during last 12 months ²⁶	# of NCUs where Stock Records are available	N of stock outs experienced during last 12 months (average?)	Storage conditions (# of NCUs where supplies are stored "properly" ²⁷)	# of NCUs where existence of expired drugs was reported
5.13	Metochlopramine IV	7	7	6	0	7	2
5.14	Adrenaline	6	6	5	0	6	2
5.15	Lasix	7	7	6	0	7	2
5.16	Aldactone	5	5	4	0	5	2
5.17	Sildenafil	1	1	1	0	1	0
5.18	Dopamine IV	7	7	6	0	7	3
5.19	Poputamine	7	7	6	0	7	2
5.20	Propranolol	5	5	3	0	5	2
5.21	Hydralazine	6	6	5	0	6	1
5.22	Dexamethasone	6	6	5	0	6	1
5.23	Hydrocortisone	6	6	5	0	6	1
5.24	Midazolam	6	6	5	0	6	1
5.25	Fentanyl	6	6	5	0	6	1
5.26	Naloxone	5	5	4	0	5	1

Figure 88: Availability of Supplies at NCU

#	SUPPLIES	# of NCUs where supplies were available on the day of the review	# of NCUs NOT experiencing supply stock outs during last 12 months ⁷	# of NCUs where Stock records are available	N of stock outs experienced during last 12 months	Comment
1	Clean Gloves	7	Info not available	5	• 1; 3; almost always	
2	Therapeutic milk	4	3	2	Info not available	- Shifa NCU (Gets from central pharmacy) - Al Naser (LF and Pre-digested formulas are lacked)
3	Gowns for parents	6	5	5	12 (Al Aqsa)	
4	Gowns for staff	6	3	5	• 1 (Al Aqsa); • 12 (Al Tahreer)	
5	Breastfeeding gown for mothers	0	-	-	-	- Majority of NCUs reported they do not need BG
6	Gluteraldehyde (cidex)	4	4	4	-	
7	Needle/Syringe	7				
8	Eye cover	2	0	1		
9	Clean Towel	7	6	4		- Kamal Edwan NCU has shortage almost always
10	Feeding Tube	7	6	6		
11	Central intravenous Line 22 and 24 gauge	0	-	-	-	- Shifa NCU said suitable size not available
12	Peripherally Inserted Central Catheter (PICC)	0	-	-	-	- Shifa NCU <u>is in need of PICC</u> - Al Naser needs 100 per year
13	Percutaneous Central Venous Catheter (PCVC);	0	-	-	-	- Al Naser needs 10 per year
14	Umbilical Venous Catheter (UVC)	6	5	5	-	
15	Blood exchange transfusion set	6	5	4	-	
16	Lumber puncture kit	0	-	-	-	

Figure 89: Available HR at NCUs (summary table)

#	Posts / NCUs	Male	Female	Total
1	Neonatologists	1	0	1
2	Pediatricians	11	5	16
3	Resident doctors	6	5	11
4	Staff nurse	55	86	141
5	Nurse	10	11	21
6	Pharmacist	0	1	1
7	Lab technician	0	0	0
8	General Doctor	21	13	34
9	Clinical nutritionist	0	0	0
10	Clinical pharmacist	0	0	0
	TOTAL	104	81	185

Figure 90: Available HR at NCUs (detail table)

#	Posts / NCUs	Kamal Edwan		Shifa		Al Naser		Emarati		Al Aqsa		Al Tahreer		European H.	
		male	female	male	female	male	female	male	female	Male	female	male	female	male	female
1	Neonatologists	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2	Pediatricians	1	0	1	0	1	2	2	0	2	3	3	0	1	0
3	Resident doctors	0	0	0	0	4	1	0	0	0	0	1	2	1	2
4	Staff nurse	1	4	32	14	0	0	3	7	0	14	10	7	9	0
5	Nurse	1	0	6	3	0	40	1	1	0	2	0	3	2	2
6	Pharmacist	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7	Lab technician	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	General Doctor	4	1	8	2	1	0	2	4	2	5	3	1	1	0
9	Clinical nutritionist	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10	Clinical pharmacist	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Figure 91: Staff/bed ratio at NCUs

Indicator / NCU	Kamal Edwan ^a	Shifa	Al Naser	Emarati	Al Aqsa	Al Tahreer	European H.
Resident doctors/bed at NCU	2 to 6	1 to 14	1 to 8	3 per 8	4 per 16	1 to 5	1 to 5
Resident doctors/bed at NICU	NICU not available	2 to 26	2 to 10	NICU not available	NICU not functioning	1 to 15	1 to 11
Nurse/bed at NCU	1 to 6	5 to 14	2 to 8	4 per 8	5 per 16	1 to 5	1 to 3
Nurse/bed at NICU	NICU not available	8 to 26	3 to 10	NICU not available	NICU not functioning	1 to 10	1 to 4

Figure 92: ANC services at PHC Facilities

#	Family planning	Al Rimal	Der al Balah	Khan Younis	Rafah	Jabalia	Summary (# of "yes")
1	Female sterilization	No	No	No	No	No	0
2	Emergency contraceptive pills	No	Yes	No	No	No	1
	Do ANC providers provide any of the following services to pregnant women as part of routine ANC services?						
1	Iron supplementation	No	No	No	No	No	0
2	Folic acid supplementation	No	No	No	No	No	0
3	Tetanus toxoid immunization	No	Yes	Yes	Yes	Yes	4
4	Monitoring for hypertensive disorder of pregnancy	Yes	Yes	Yes	Yes	Yes	5
5	Does this facility <u>has</u> the capacity to follow ANC defaulters?	Yes	Yes	Yes	Yes	Yes	5
	Availability of documents in the facility at the day of review						
6	National ANC guidelines	Yes observed	Yes observed	Yes observed	Yes reported not seen	Yes observed	5
7	Any ANC <u>check-lists</u> and/or job-aids	No	No	No	No	No	0
8	<u>IPTp</u> guidelines, <u>check-lists</u> and/or job-aids (including wall charts)	No	No	No	No	No	0
	Have you or any provider(s) of ANC services:						
9	Received any ANC training in the last two years?	Yes	Yes	Yes	Yes	Yes	5
10	Received any training in <u>IPTp</u> in the last two years?	Yes	Yes	No	No	Yes	3
11	Received training in managing teenage pregnancy, delivery	No	No	Yes	Yes	Yes	3
12	Received training on communication skills with patients including non-discriminatory ways and respect for individuals	Yes	No	No	Yes	No	2

Figure 93: ANC Delivery Practices

#	Questions	Response N=40
1	During your ANC, how many health workers provided care to you?	<ul style="list-style-type: none"> • 1 HW (2) • 2 HWs (21) • 3 HWs (17)
2	What is the position of the <u>first</u> health worker who provided care to you?	<ul style="list-style-type: none"> • Doctor (10) • Medical secretary (8) • Midwife (22)
3	What is the position of the <u>second</u> health worker who provided care to you?	<ul style="list-style-type: none"> • Doctor (21) • Midwife (9) • Nurse (8)
4	What is the position of the <u>third</u> health worker who provided care to you?	<ul style="list-style-type: none"> • Doctor (11) • Midwife (6)
5	Do you have a book with you?	<ul style="list-style-type: none"> • Seen (38) • Not seen/not used (2)
6	Check book. Any note or record of the client having received TT?	<ul style="list-style-type: none"> • Yes, 1 TT shot (25) • Yes, 2 and more (5) • No (7) • No answer (1)
7	How many weeks of pregnancy according to the book?	<ul style="list-style-type: none"> • 11-12 (3) • 28-34 (5) • 36-37 (9) • 38-40 (21) • Book not seen/used (2)
8	Does the book mention the client blood group?	<ul style="list-style-type: none"> • Yes (36) • No (3) • No answer (1)
9	How long have you been pregnant?	<ul style="list-style-type: none"> • 11-12 (3) • 28-34 (5) • 36-37 (9) • 38-40 (21) • Book not seen/used (2)
10	Is this your first pregnancy?	<ul style="list-style-type: none"> • Yes (10) • No (29) • No answer (1)
11	Is this your first ANC visit at this health centre for this pregnancy?	<ul style="list-style-type: none"> • Yes (4) • No (35) • No answer (1)
12	How many ANC visits have you had for this pregnancy to this HC?	<ul style="list-style-type: none"> • 2 (5) • 3 (3) • 4 (3) • 5 (2) • 6 (5) • 8 (4) • 9 (15) • 13 (1) • No answer (2)
13	During the visit, were you weighed?	<ul style="list-style-type: none"> • Yes (40)
14	During the visit, was your height measured?	<ul style="list-style-type: none"> • Yes (40)
15	During the visit, was your blood pressure measured?	<ul style="list-style-type: none"> • Yes (39) • No answer (1)
16	During the visit, did you give a urine sample?	<ul style="list-style-type: none"> • Yes (38) • No answer (2)
17	During the visit, did you give a blood sample?	<ul style="list-style-type: none"> • Yes (37) • No (1) • No answer (2)
18	During the visit, did you schedule your delivery in the facility?	<ul style="list-style-type: none"> • Yes (21) • No (18) • No answer (1)
19	During the visit, did the provider palpate your tummy?	<ul style="list-style-type: none"> • Yes (4) • No (35) • No answer (1)

#	Questions	Response N=40
20	Did the healthcare provider examine your lower limbs?	<ul style="list-style-type: none"> • Yes (5) • No (34) • No answer (1)
21	Did the healthcare provider conduct breast examination?	<ul style="list-style-type: none"> • Yes (5) • No (33) • No answer (2)
22	Did you receive education about breast self-examination?	<ul style="list-style-type: none"> • Yes (5) • No (34) • No answer (1)
23	Did you receive health education about personal hygiene?	<ul style="list-style-type: none"> • Yes (9) • No (30) • No answer (1)
24	Did you receive health education about nipple massage? if yes At what gestational age?	<ul style="list-style-type: none"> • Yes (5) • No (34) • No answer (1)
25	During the visit, did the health worker estimate your delivery date?	<ul style="list-style-type: none"> • Yes (40)
26	During the visit, did a health worker give you advice on your diet?	<ul style="list-style-type: none"> • Yes (20) • No (19) • No answer (1)
27	During the visit, did a health worker give you iron and/or folic acid?	<ul style="list-style-type: none"> • Yes (40)
28	During the visit or previous visits, has a health worker asked you whether you had ever received a tetanus toxoid injection?	<ul style="list-style-type: none"> • Yes (22) • No (18)
29	Please tell me any signs of complications (danger signs) during pregnancy that you know of.	<ul style="list-style-type: none"> • Bleeding (20) • No baby movement (1)
30	What did the health worker advice you to do if you experienced any of the warning signs during pregnancy?	<ul style="list-style-type: none"> • No advice (1) • Go to hospital (5) • See the doctor (18)
	Accessibility	
31	How long does it take you to travel to the PHC clinic?	<ul style="list-style-type: none"> • Mean time: 13 minutes • 3 to 10 minutes (22) • 15-20 minutes (15) • 30-60 minutes (3)
32	Which mode of transport do you use to go to the PHC clinic?	<ul style="list-style-type: none"> • Public (23) • Care (6) • Walk (11)
33	What was the average amount of time that you waited to see medical staff when you visited the clinic?	<ul style="list-style-type: none"> • Mean time: 71.7 minutes • Median time: 30 minutes • Minimum: 5 minutes • Maximum: 180 minutes

Figure 94: Early Postpartum Services at PHC centers

#	Questions	Result (n & % of „Yes“ if not otherwise required)	Summary n/N(%)
1	During child birth...		
1a	Was the mother allowed to sit, stand or lay in the position she wanted in the second stage of labor?	Yes 38 (95%)	
1b	If yes, in what position did she spend most time?	Back position (6) Laying position (23) Sitting (1) Standing (8)	
1c	Did the mother has a companion of her choice?	36 (90%)	
1d	Was the mother encouraged to eat and drink?	34 (85%)	
1e	Did anyone push down on the mother's belly?	24 (60%)	
1f	Was an enema done?	2 (5%)	
2	Was the baby bathed?	10 (25%)	
2a	If yes, how long after birth? (hours)	6 hours (1) 8 hours (2) 12 hours (1) 15 hours (1) 24 hours (5)	n ≥24h
3	Was the baby placed in skin-to-skin contact with the mother?	34 (85%)	
3a	How long after birth? (minutes)	1 minute (11) >1 minutes (28)	n <1min
3b	How long did the baby remain in uninterrupted skin-to-skin contact before being separated from the mother for any reason? (minutes)	1-5 minutes (9) 10-20 minutes (12) 30-60 minutes (7) 90-120 minutes (4)	n ≥90 min
3c	Had the baby completed the first breastfeed (attached deep suckling) before being separated from the mother?	23 (60.5%)	
3d	Why the baby being separated from the mother?	Episiotomy (1) Examination (13) Referred to NICU (2) To dress (5)	reasons
3e	Did the baby receive immediate skin-to-skin contact, no separation for at least 90 minutes and until the first breast feed completed? (Answer yes only if (a) min, b > 90 min & c completed)	2 (5.3%)	
4	Did the baby stay with the mother the entire hospital stay (rooming in)?	28 (70%)	
5	Is the mother breastfeeding? If yes	37 (92.5%)	
5a	How long after birth did the baby breastfeed? (.....min) (Attached deep suckling)	1-10 minutes (13) 15-90 minutes (22) 120 minutes (1)	n (15-90 min)
5b	How long the baby breast feed the first time?	<15 (20) >15 (16)	n > 15 min
5c	Since delivery was her baby fed anything other than breast milk?	33 (82.5%)	n (no)
5d	Did the baby receive early (within 10-90 min) and exclusive breastfeeding? (answer "yes" only if both, a=15 - 90 & c= no)	20 (50%)	
6	If the baby has been fed other than breast milk, what is being given?	No information	
7	Has the baby being fed anything from a bottle?	3 (7.5%)	
8	Did the mother receive any counselling from staff on breastfeeding since birth? (feeding cues, positioning of the baby, signs of attachment, how often to feed and how long to feed, importance of giving only breast milk & no other food or drink)	18 (45%)	
9	Was anything applying to the cord stump?	5 (12.5%)	
9a	If, yes what was applied?	Alcohol (3) Salt & oil (2)	Substance
10	Does the mother have infant formula, baby bottles, gifts or products sponsored by baby food companies with her the hospital?	2 (5%)	
10a	If yes, ask her to show them to you and note down the types of products	No information	

Figure 95: Late Postpartum Services at PHC facilities

#	Questions	Result (n & % of „Yes“ if not otherwise required)
1	Did you receive home visits?	8 (20%)
2	If yes, when was the first time you received home visits following delivery?	<ul style="list-style-type: none"> • 1st week (5) • 2nd week (2) • 3rd week (1)
3	How many home visits did you get?	1 visit (8)
4	How useful were the home visits for you? Why?	<p>Was useful (8)</p> <p>Why? Information was provided on the following issues:</p> <ul style="list-style-type: none"> • Breastfeeding (4) • Baby care (4) • Hygiene (1) • Child was examined (1) • Care of umbilical cord (1)
5	Which type of women in Gaza are most in need of home visits just after giving birth?	<ul style="list-style-type: none"> • All women (2) • Single mothers (2) • Non-educated mothers (2) • Young women (1) • High-risk pregnancies (1)
6	What are things you learned from the home visitor that you did not know or do before?	<ul style="list-style-type: none"> • Breastfeeding (3) • Personal hygiene (2) • Baby Hygiene (2) • Baby care (3) • Nothing (1)
7	What are things you learned from your visits to the clinic after delivery (postnatal) that you did not know or do before?	<ul style="list-style-type: none"> • Baby care (3) • Breastfeeding (1) • Care of umbilical cord (1) • Nothing (22)
8	Did midwife measure your bp?	17 (42.5%)
9	Did your hb tested? And why?	7 (17.5%)
10	Did you receive iron?	9 (22%)
11	If you had episiotomy, did health care provider examine it?	4 (10%)
12	If you had c.s wound, did health care provider examine it?	2 (5%)
13	Did health care provider examine your abdomen?	10 (25%)
14	Did health care provider examine lochia (colour, odor)?	10 (25%)

Figure 96: Immunization Service Delivery and Supply Chain Practices

#	Immunization	Summary
a	Types of services: Does this facility provide any of the following immunization services in the facility only, as outreach at fixed post only, or both?	
1	Birth doses (e.g. hepB0, BCG)	<ul style="list-style-type: none"> In the facility only (5)
2	Infant vaccines (under 1 year)	<ul style="list-style-type: none"> In the facility only (5)
3	Do you have the national guidelines for routine child immunization available in this facility today?	<ul style="list-style-type: none"> Yes, Observed (4) Yes, reported not seen (1)
b	Service delivery: Have you or any provider(s) of immunization service delivery received any training in any of the following child immunization services in the last two years?	
4	Immunization service delivery (Immunization in practice (IIP) or any similar)	<ul style="list-style-type: none"> Yes, formal training (5)
5	Vaccine management/handling and cold chain	<ul style="list-style-type: none"> Yes, formal training (5)
6	Data reporting and monitoring of service delivery (e.g. Data Quality Self-Assessment (DQS))	<ul style="list-style-type: none"> Yes, formal training (5)
7	Disease surveillance and reporting	<ul style="list-style-type: none"> Yes, formal training (3) No training (2)
8	Injection safety and waste management	<ul style="list-style-type: none"> Yes, formal training (5)
9	Training on new vaccine* prior to introduction	<ul style="list-style-type: none"> Yes, formal training (2) No training (3)
c	Supply management: Are there any of the following items for immunization available in this service area today.	
10	Vaccine carrier(s)/cold box	<ul style="list-style-type: none"> Yes, Observed (5)
11	Set of ice packs for vaccine carriers (Note: 4-5 ice packs make one set)	<ul style="list-style-type: none"> Yes, Observed (4) Yes, reported not seen (1)
12	Immunization cards (or child health booklet)	<ul style="list-style-type: none"> Yes, Observed (5)
13	Official immunization tally sheets or integrated tally sheet	<ul style="list-style-type: none"> Yes, Observed (5)
14	Official immunization registers or equivalent	<ul style="list-style-type: none"> Yes, Observed (5)
d	Cold-chain: Does this facility have a refrigerator available and functioning for the storage of vaccines?	
15	Does this facility have a refrigerator available and functioning for the storage of vaccines?	<ul style="list-style-type: none"> Available and functional (5)
16	What type of energy source is used for the vaccine refrigerator?	<ul style="list-style-type: none"> Solar (4) Electricity company (1)
17	Does this energy source supply power to the refrigerator for 24 hours a day and for 7 days in the week?	<ul style="list-style-type: none"> Yes (5)

Figure 97: Essential Practices During Neonatal Admission

#	Essential practices	Was practice completed or not at your facility?	Reason for not completing
1	Are supplies available to clean hands and wear gloves for each neonate exam?	7	
2	Were hands washed with soap and water and hand sanitizer before touching a every newborn?	5	
3	Was history taken?	7	
4	Was baby's breathing assessed?	7	
5	If baby not breathing, was the airway cleared?	2	
6	Was ventilator is functioning well	7	
7	Was baby's feeding checked?	4	<ul style="list-style-type: none"> • Baby was just born • Baby was ventilated
8	Was baby temperature taken?	6	
9	Were fetal heart sounds measured?	5	
10	Was physical examination applied?	6	
11	Was baby weight measured	7	
12	Was baby length measured	1	<ul style="list-style-type: none"> • No tape available • Not applicable
13	Was lab investigation requested?	7	
13.1	a) If yes, which one? b) What was the case?	<ul style="list-style-type: none"> • Kamal Edwan: CBC and RBS for macrosomia • Shifa: CBC and blood culture for preterm, 32 weeks with ANC diagnosis of intestinal obstruction • Al Naser: CBC and blood culture for RDS • Emarati: ABC and CBC for preterm, RDS • Al Aqsa: CBC, ABG and CXR for congenital pneumonia • Al Tahreer: CBC and CXR for PTM, RDS • European H: CBC and CXR (case not specified) 	
14	Was blood for culture drawn under complete aseptic technique?	4	
15	Was CSF for culture and chemical analysis drawn under complete aseptic technique	0	<ul style="list-style-type: none"> • Not needed • Not applicable
16	Was chest x ray ordered?	7	
17	Was ultrasound ordered?	0	<ul style="list-style-type: none"> • Not needed • Not applicable
18	Was radiologist report delivered? <i>(please check with doctor what time is generally needed to receive report and check the status after you finish with the interview)</i>	1	<ul style="list-style-type: none"> • Generally, needs: 30 minutes • Delivered <u>in</u>: 30 minutes
19	Was management plan based on guidelines settled?	7	
20	Were needed drugs delivered?	6	
20.1	If yes, which drugs?	<ul style="list-style-type: none"> • Kamal Edwan: ampicillin and gentamycin for macrosomia and RD • Shifa: ampicillin & gentamycin • Al Naser: ampicillin, gentamycin and surfactant for HMD • Emarati: NA • Al Aqsa: ampicillin and gentamycin for congenital pneumonia • Al Tahreer: answer not provided • European H: ampicillin, gentamycin (case not specified) 	

Figure 98: Availability and Usage of Guidelines at NCU Clinics

#	Guidelines	# of NCUs where guideline is available	# of NCUs who reported usage of guideline at least once during last 12 months
1	Antibiotics guidelines	7	7
2	Cooling guidelines	7	4
3	Early neonatal sepsis guidelines	7	6
4	Late neonatal sepsis guidelines	7	6
5	Apnea in <u>neonates</u> guidelines	7	7
6	Hypotension guidelines	7	5
7	Necrotizing enterocolitis guidelines	7	4
8	TPN guidelines	7	4
9	Hypoxic ischemic encephalopathy guidelines	7	7
10	Neonatal seizures guidelines	7	7
11	Intubation guidelines	7	6
12	Mechanical ventilation guidelines	7	4
13	Disseminated Intravascular Coagulation (DIC) guidelines	7	4
14	Neonatal jaundice guidelines	7	6
15	Neonatal shock guidelines	6	5
16	Neonatal hypertension guidelines	6	4
17	Feeding guidelines	6	6
18	Neonatal bleeding and coagulopathy	6	5
19	Neonatal oxygen saturation guidelines	6	6
20	CPAP guidelines	6	6
21	Respiratory distress syndrome (RDS) guidelines	6	6
22	Extubation guidelines	6	4
23	Neonatal chest <u>drain</u> insertion guidelines	6	4
24	Evaluation of neonate with suspected heart disease	6	6
25	Hypoglycemia guidelines	6	5
26	Inborn errors of metabolism	6	6
27	Meconium aspiration syndrome	6	5
28	Acute kidney injury guidelines	5	4
29	Blood transfusion guidelines	5	5
30	Neonatal anemia guidelines	5	5
31	Blood culture guidelines	5	5
32	Bradycardia guidelines	5	5
33	Tachycardia guidelines	5	5
34	Cyanosis guidelines	5	5
35	Hyperglycemia guidelines	5	5
36	Guidelines on communicating with parents	4	4
37	Hypothermia guidelines	3	3
38	Breastfeeding guidelines	3	3
39	ROP, IPC, NLS	3	2
40	Guidelines for managing teenage pregnancy	2	1
41	Guidelines for gender responsive maternal care	2	1

Figure 99: Coverage Indicators for Family Planning

#	Indicators	Al Rimal	Al Aqsa	Khan Younis	Rafah	Jabalia
		%				
1	Modern contraceptive prevalence rate (mCPR)	Don't know	Don't know	Don't know	70%	Don't know
	women < 18 years	-	-	-	Don't know	-
	women ≥ 18 years	-	-	-	Don't know	-
2	Proportion of women with an unmet need for a modern method of contraception	Don't know	200	50%	20%	Don't know
	women < 18 years	-	200	Don't know	Don't know	-
	women ≥ 18 years	-	0	Don't know	Don't know	-
3	Proportion of women whose demand is satisfied with a modern method of contraception	50%	50%	Don't know	Don't know	Don't know
	women < 18 years	Don't know	Don't know	-	-	-
	women ≥ 18 years	Don't know	Don't know	-	-	-
4	Percentage of women who were provided with information on family planning during their last contact with a health service provider	100%	100%	100%	100%	Don't know
	women < 18 years	Don't know	Don't know	Don't know	Don't know	-
	women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	-
5	Proportion of women not using any contraceptive methods	Don't know	Don't know	Don't know	20%	Don't know
	women < 18 years	-	-	-	Don't know	-
	women ≥ 18 years	-	-	-	Don't know	-
6	Proportion of women taking male condom for their husbands	0%	0%	0%	50%	0%
	women < 18 years	-	-	-	Don't know	-
	women ≥ 18 years	-	-	-	Don't know	-
7	Proportion of women using female condom	** Not used in Gaza at all				
8	Proportion of women using progesterone only pills	0%	0%	0%	50%	25%
	women < 18 years	-	-	-	Don't know	Don't know
	women ≥ 18 years	-	-	-	Don't know	Don't know
9	Proportion of women using progesterone & estrogen pills	16%	Don't know	50%	Don't know	60%
	women < 18 years	Don't know	-	Don't know	-	Don't know
	women ≥ 18 years	Don't know	-	Don't know	-	Don't know
10	Proportion of women using IUD	10.40%	Don't know	3.80%	40%	Don't know
	women < 18 years	Don't know	-	Don't know	Don't know	-
	women ≥ 18 years	Don't know	-	Don't know	Don't know	-
11	Proportion of women using Implant	* Not available in Gaza				
12	Proportion of women using Injection	0%	Don't know	Don't know	30%	Don't know
	women < 18 years	-	-	-	Don't know	-
	women ≥ 18 years	-	-	-	Don't know	-
13	Proportion of women using female sterilization	0%	Don't know	Don't know	No Answer	Don't know
	women < 18 years	-	-	-	-	-
	women ≥ 18 years	-	-	-	-	-
14	Proportion of women using male sterilization	** Not used in Gaza at all				
15	Proportion of women using LAM	Don't know	Don't know	Don't know	10%	Don't know
	women < 18 years	-	-	-	Don't know	-
	women ≥ 18 years	-	-	-	Don't know	-

Figure 100: Health Facility Child Health Standards

Indicator	%	%	%
1. For children:	All (# of responses)	Male (# of responses)	Female (# of responses)
a. Proportion with all growth measurements recorded	100% (5)	100% (5)	100% (5)
b. Proportion < 6 m receiving breastfeeding screening	100% (5)	Don't know (5)	Don't know (5)
c. Proportion 6-36 m receiving complementary feeding screening	100% (3) 60% (1) Don't know (1)	Don't know (5)	Don't know (5)
d. Proportion over 12 months leaving the facility fully immunized	100% (5)	100% (5)	100% (5)
e. Proportion receiving developmental screening	100% (5)	100% (5)	100% (5)
2. For sick children:			
a. Proportion of children with diarrhea treated correctly	100% (3) 90% (2)	100% (4) Don't know (1)	100% (4) Don't know (1)
b. Proportion of children with cough or difficulty breathing treated correctly	100% (3) 90% (1) 50% (1)	100% (2) Don't know (3)	100% (2) Don't know (3)
c. Proportion of children with fever treated correctly	100% (3) 90% (1) 80% (1)	100% (3) Don't know (2)	100% (3) Don't know (2)
3. Proportion of staff providing care at outpatient health facilities trained in primary health care for child health	100% (4) 0% (1)	100% (3)	100% (3)
4. Proportion of health facilities with adequate hand washing resources available in all rooms	100% (3) 0% (1) Don't know (1)	80% (1) Don't know (4)	80% (1) Don't know (4)
5. Proportion of health facilities with <u>no</u> stock-outs of key medicines	0%	0%	0%
<u>5.1</u> ORS solution	0		
5.2. Zinc drops/syrup	0		
<u>5.3</u> <u>Injectable</u> antibiotic for severe disease	0		
<u>5.4</u> <u>Oral</u> antibiotic for pneumonia	0		
5.5. Oral iron	0		

Figure 101: Facility Based Primary Care Quality Assessment Indicators

#	Indicators	Al Rimal	Deir Al Balah	Khan Younis	Rafah	Jabalia
		%				
1	Proportion of women receiving an ultrasound before 24 weeks gestation	100%	100%	100%	100%	100%
	women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
2	Proportion of women with a birth plan available	100%	100%	100%	100%	90%
	women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
3	Proportion of women attending ANC who know at least 3 danger signs for seeking care immediately	Don't know	Don't know	Don't know	60%	85%
	women < 18 years	-	-	-	Don't know	Don't know
	women ≥ 18 years	-	-	-	Don't know	Don't know
4	Proportion of women with elevated blood pressure (HTN of pregnancy, mild, moderate or severe eclampsia or eclampsia) treated correctly	100%	100%	100%	Don't know	100%
	women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
5	Proportion of women with mild, moderate or severe anemia treated correctly	Don't know	Don't know	Don't know	90%	Don't know
	women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
6	Proportion of women with UTI (upper, lower or asymptomatic bacteriuria) treated correctly	Don't know	Don't know	Don't know	20%	80%
	women < 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
	women ≥ 18 years	Don't know	Don't know	Don't know	Don't know	Don't know
7	Proportion of staff providing care at antenatal care clinics trained in ANC screening, prevention and management of problems and complications	100%	100%	100%	100%	100%

Annex 1: Individual Profile of Facilities – PHC Facilities

Training needs

Trainees: 41 doctors and 74 midwives and nurses providing ANC, PNC, FP and PCC services at MoH facilities;

Provider/Patient current ratio: 0.24 (115 providers)

The minimum threshold: 2.3 (4,253 providers)

Health Workforce demand (WHO): 4.45 (8,432 providers)

Number of training participants - 115

Trainings

Training topics	Number of trainees
Service delivery and application of guidelines	115 trainees
Application of the data management software	115 trainees
Routine reporting system	115 trainees

Construction and re-construction needs

PHC Facility	Reconstruction Square meter	Construction Square meter	Total Square meter	Reconstruction	Construction
Al Rimal	Refurbishment of toilets & add 10 sinks,	*Construction vaccination store, toilet for disabled	120 m ² (roof)	20 m ² for sinks	120 m ² 12 m ² (for disabled)
Khan Younis	Maintenance of existing toilets	Construction of toilet, toilet for disabled			30 m ² (3 toilets), 12 m ² for disabled
Al Zaiton	Toilet for disabled	Expansion: adding part of roof	150 m ² (pillars and roof)		150 m ²
Dir Albalah		Construction of 2 toilet & toilet for disabled			20 m ² (2 toilets), 12 m ² for disabled
Rafah	Renovation of existing building	Construction of floor, toilet for disabled	385 m ² (additional space)	385 m ²	385 m ² , 12 m ² for disabled
Total				405 m ²	753 m ²

Equipment needs - PHC facilities

#	Description	In-depth Assessment and needs of 5 PHCs					Total Equipment	Unit Cost (USD)	Total cost (USD)
		Al Rimal	Jabalila	Dier al Balah	Kh/Younis	Rafah			
	Beds and chairs								
1	Clinical examination & U/S* beds	4	3	3	4	3	40	€ 300	€ 12,000
2	Beds (lithotomy position for FP**)	2	2	1	2	1	20	€ 1,800	€ 36,000
3	Chairs (stool for FP bed)	2	2	1	2	1	20	€ 100	€ 2,000
	Equipment								
4	Digital baby weight scale	2	2	2	2	2	30	€ 325	€ 9,750
5	Baby length scale	2	2	2	2	2	30	€ 1	€ 30
6	Adult weight and length scale	2	2	1	2	1	20	€ 300	€ 6,000
7	Body thermometer	30	30	30	30	30	300	€ 1	€ 300
8	Stethoscope	7	7	7	7	7	100	€ 85	€ 8,500
9	Sphyngomanometer	7	7	7	7	7	100	€ 80	€ 8,000
10	Otoscope	10	7	7	7	7	84	€ 50	€ 4,200
11	Ultrasound	2	2	2	2	2	20	€ 21,400	€ 428,000
12	Vaginal speculum	20	20	20	20	20	200	€ 60	€ 12,000
13	Uterine sounds	20	20	20	20	20	150	€ 30	€ 4,500
14	Sponge forceps	20	20	20	20	20	150	€ 30	€ 4,500
15	Long curved scissors	20	20	20	20	20	150	€ 40	€ 6,000
16	Side lamps	2	2	2	1	1	20	€ 150	€ 3,000
17	Refrigeration	3	3	2	2	2	50	€ 1,200	€ 60,000
18	Vaccine carrier	1	1	1	1	1	20	€ 60	€ 1,200
19	Small freezer for ice packs	2	2	1	2	2	30	€ 350	€ 10,500
20	Ice packs	5	5	5	5	5	70	€ 10	€ 700
21	ECD corner***	1	1	1	1	1	28	€ 3,000	€ 84,000
22	Air conditioner	6	6	6	6	6	100	€ 800	€ 80,000
23	CTG	1	1	1	1	1	4	€ 4,061	€ 16,244
24	Autoclave	1	1	1	1	1	5	€ 2,000	€ 10,000
	Budget Grand Total								€ 807,424

Annex 2: Individual Profile of Facilities - NCUs

Staff Training

Training topics	Number of trainees
Neonatal care	225 trainees
application of the guidelines	225 trainees
TPN	225 trainees

Construction/Reconstruction needs – NCUs

PHC Facility	Reconstruction Square meter	Construction Square meter	Reconstruction	Construction
NPH	Need elevator for transportation of incubators Construction nursing room			20 m ²
Kamal Edwan	Rehabilitation room for breastfeeding & friendly baby	Space needs partition	30 m ²	
EGH	Re-allocation of NCU, SCABU & NICU at same room (this needs partition to divide the space into SCABU & NICU)	Expansion of NCU Construction of doctors room		20 m ²
Al Tahreer		Construction of 3 toilets		30 m ²
Al Aqsa	No privacy at NCU, need restructuring	Need re-arrangement of rooms to keep privacy	Partitions	
Al Shifa	Consumable store at ground level			60 m ²
Emarati	Partition of space to make SCBU & baby friendly rooms	Construct 2 toilets for mothers		20 m ²
Total			30 m²	150 m²

Equipment needs – NCUs

#	Description	Item	# of items	item cost (EUR)	Total
	Incubators				
1	Incubators double wall Jerraffi	each	18	€ 11,733	€ 211,194
2	Incubator Conventional (single closed with humidifier)	each	44	€ 4,332	€ 190,608
3	Portable transport incubator with ventilator can be fitted in Ambulance	each	7	€ 11,733	€ 82,131
	Equipment				
4	Stethoscope Littman	each	42	€ 90	€ 3,780
5	Autoclave	each	5	€ 4,648	€ 23,240
6	Temperature body sensor Thermometer for Hypothermia T < 34 C DEGREE	each	20	€ 226	€ 4,520
7	Blood Pressure Instrument Electronic	each	20	€ 72	€ 1,440
8	Neonatal Blood Pressure cuff single lumen	each	100	€ 27	€ 2,700
9	Transcutaneous oxygen/carbon dioxide monitor carbo	each	14	€ 6,318	€ 88,452
10	Gas analyser APL 80	each	7	€ 46,298	€ 324,086
11	Portable Echograph Plus Neonatal probe for Ultrasound brain or abdomen	each	4	€ 45,125	€ 180,500
12	CONVENTIONAL Phototherapy	each	29	€ 22,563	€ 654,327
13	Intensive phototherapy Intensive phototherapy Capsule	each	5	€ 9,025	€ 45,125
14	Transcutaneous bilirubin meter Bilirubin meter Dragger	each	7	€ 4,513	€ 31,591
15	Continuous positive airway pressure (C-PAP)	each	7	€ 4,513	€ 31,591
16	Respirator mechanical ventilator/ high frequency mod	each	21	€ 22,563	€ 473,823
17	DC shock	each	7	€ 3,610	€ 25,270
18	Pulse oximeter	each	50	€ 830	€ 41,500
19	Radiant Warmer	each	9	€ 13,538	€ 121,842
20	Cooling machine	each	2	€ 18,050	€ 36,100
21	Infusion pump	each	80	€ 542	€ 43,360
22	Syringe pump	each	110	€ 542	€ 59,620
23	Baby weight scale ELECTRONIC	each	20	€ 293	€ 5,860
24	Baby length scale (tape meter)	each	76	€ 1	€ 76
	Total budget				€ 2,682,736

Equipment needs per NCU

#	Item	EGH	NPH	Shifa	Tahreer	Emarati	Aqsa	K.E	Total
1	Double wall incubator Jerraffi	2	2	6	6	0	0	0	18
2	Single closed incubator with humidifiers	5	8	20	5	0	0	4	44
3	Mechanical ventilators SLE 5000	5	5	5	1	0	0	4	16
4	Portable Echography	1	1	1	0	1	0	0	4
5	Bilirubin meter Dragger	1	1	1	1	1	1	1	7
6	Intensive phototherapy Capsule	0	2	0	1	0	0	1	5
7	Electronic scale	2	4	5	3	2	2	2	20
8	Nasal bubble CPAP with circuit for (one year)	0	2	0	0	2	2	1	7+ /1000 yr
		100/yr		300/yr	500/yr				
9	ABG machine APL 80	1	1	1	1	1	1	1	7
10	Ophthalmoscope	1	2	2	1	1	1	1	7
11	Fiber optic Trans illuminator	1	1	1	1	1	1	1	7
12	Infusion pump	10	20	15	20	5	5	5	80
13	HFOV Circuit (Reusable (3 Sensors)	10	30	150	10	0	0	0	200
14	Glucometer sticks (20)	10	10	20	20	5	5	5	75
15	Pulse Oximeter	5	5	20	5	5	5	5	50
16	Intermittent suction(portable)	1	2	3	5	0	1	0	12
17	Syringe pump	20	20	20	20	10	10	10	110
18	Portable ventilator	1	1	1	1	1	1	1	7
19	Emergency Resuscitation bag for transportation	1	1	1	1	1	1	1	7
20	PICC(percutaneous inserted central line)	10/mo	10/mo	40/mo	30/mo	3/mo	5/mo	2/mo	100/ month
21	Open Resuscitator incubators	0	1	1	1	0	1	1	5

Annex 3: Individual Profile of Facilities – Maternity Hospitals

Training

Training topics	Number of trainees
Sub-specialty trainings of doctors	222 trainees
Obstetrics guidelines and service delivery application of the guidelines	109
Service delivery – training for nurses and midwives	588 trainees
	328 trainees

Construction/reconstruction

Maternity	Reconstruction Square meter	Construction Square meter	Total Square meter	Reconstruction	Construction
Al Shifa	Building is dilapidated, tends to fall, needs urgent renovation	Toilet number is sufficient, but sewage lines are damaged & needs to be repaired at 3 levels	800 m ² for each floor (2400 m ²), renovation of toilets & paintings	2400 m ²	
Harazin		Construction 3 rd floor	500 m ²		500 m ²
Al Aqsa	Building is new	2 toilet at reception	20 m ²		20 m ²
Al Tahreer					
Emarati		Construction of 2 floors	1100 m ² for each (additional space 2200 m ²)		2200 m ²
Kamal Edwan					
Total				2400 m²	2720 m²

Equipment needs

#	Description	AL SHIFAA	Al tahreer	AL Aqsa	AL-Emarati	Kamal Edwan	AL- Harazin	Gaps & Needs	unit cost	Total
	Beds									
1	Maternity beds	100	40	0	0	0	0	140	\$903	\$126,420
2	Delivery beds	0	0	0	2		0	2	\$4,332	\$8,664
3	Multi-position delivery bed	1	1	1	4	0	0	4	\$5,415	\$21,660
4	Semi fowler patients' bed		0	0	40	0	0	40	\$1,625	\$65,000
	Equipment									
5	Ultrasound	4	1	2	2	2	1	12	\$18,953	\$227,436
6	Resuscitator	4	0	2	2	2	1	11	\$4,513	\$49,643
7	Laparoscope	0	1	1	0	0	0	2	\$90,250	\$180,500
8	Operating table	4	2	1	2	1	0	10	\$31,588	\$315,880
9	Autoclave	1	0	1	0	1	1	4	\$7,220	\$28,880
10	Body thermometer machine	10	10	5	5	3	3	36	\$90	\$3,240
11	Vaginal speculum	60	0	10	0	0	0	60	\$45	\$2,700
12	Cardiotocography (CTG)	10	0	2	10	2	2	26	\$4,061	\$105,586
13	ECG	5	0	0	2	0	0	7	\$1,805	\$12,635
14	Stethoscope adult and fetal	60	20	5	30	0	0	110	\$158	\$17,380
15	Sphygmomanometer	50	10	5	6	0	0	66	\$54	\$3,564
16	Suction machine	1	1	1	1	1	1	6	\$903	\$5,418
17	Neonatal self-inflating bag (250-500ml) & masks (size for term & 0 for preterm)	0	0	0	0	0	0	0	\$903	\$0
18	Adult Monitors	10	4	2	3	0	0	19	\$10,830	\$205,770
19	Portable adult monitors	8	7	6	6	3	3	33	\$3,610	\$119,130
20	Oxygen flow meter	10	10	5	5	2	2	35	\$90	\$3,150
21	Anesthesia machine	1	0	1	1	0	0	2	\$58,663	\$117,326
22	refrigerators	3	2	2	2	1	1	11	\$1,083	\$11,913
23	DC shock	5	1	1	1	1	1	10	\$3,791	\$37,910
24	Air conditions	5	2	3	3	3	3	19	\$1,354	\$25,726
	Total									\$1,695,531

Figure 102: Pharmaceuticals, Consumables, and Lab Supplies – annual needs of all facilities

Pharmaceuticals

#	Item Name	Dosage Form	Unit	Unit Price EUR 2019	Annual Quantity	Total price EUR
1	Acetylcysteine 20%. 10 mL	Ampoule	Single	€ 2.98	500	€ 1,489
2	Acyclovir 250 mg	Vial	Single	€ 2.25	3,000	€ 6,742
4	Alfacalcidol 0.25 mcg	Oral Drops	Single	€ 22.43	300	€ 6,728
6	Amikacin sulphate 500 mg	Vial	Single	€ 0.77	5,000	€ 3,836
7	Amoxicillin powder/oral Suspension 125mg/5ml, bottle of 100ml	Oral Susp.	bottle of 100ml	€ 0.41	100,000	€ 40,613
8	Ampicillin powder for injection 500 mg vial, box of 100 vials.	Vial	box of 100	€ 46.19	300	€ 13,857
9	Azithromycin 200 mg/5 ml 22.5 ml	Susp.	Single	€ 0.90	5,000	€ 4,513
10	Betamethasone valerate 0.1 % cream, tube of 20g	Cream	tube of 20g	€ 0.29	40,000	€ 11,552
11	Benzylepenicillin pdr/inj 5MIUvial/box-50	Vial	BOX OF 50	€ 27.66	300	€ 8,298
18	Ceftriaxone powder for injection 1 g vial, box of 10	Vial	box of 10	€ 8.20	5,000	€ 41,019
19	Cefuroxime sodium 750 mg	Vial	Single	€ 0.81	30,000	€ 24,368
22	Deferasirox 250 mg	Tablet	THOUSAND	€ 3,119.04	20	€ 62,381
23	Dextrose 10% Bag of 500 ml	Inj. Solution	Single	€ 1.31	10,000	€ 13,086
24	Dextrose 4.3% + Saline 0.18%. Bag of 500 ml	Inj. Solution	Single	€ 0.99	100,000	€ 99,275
26	Enoxaparin prefilled syringes 20 mg/ml	Prefilled Syringes	Single	€ 1.99	5,000	€ 9,928
29	Factor IX 500 I.U./ Vial	Vial	VIAL	€ 135.38	200	€ 27,075
30	Factor VIII 500 I.U./ Vial	Vial	VIAL	€ 111.56	800	€ 89,247
31	Ferrous sulphate oral drops, 125 mg/ml, bottles of 30 ml each	Oral drops	bottles of 30 ml	€ 0.46	80,000	€ 36,822
39	Hydrocortisone 100mg powder for injection, vial. Box of 10.	Vial	Box of 10	€ 4.01	8,000	€ 32,057
40	Immunoglobulin G (human) 5%, 100 mL	Vial	Single	€ 231.94	500	€ 115,971
42	L-carnitine 30% 20 ml	Solution	Single	€ 7.22	2,000	€ 14,440
45	Meropenem 1 gm	Vial	Single	€ 7.04	5,000	€ 35,198
48	Metoclopramide 5mg/ml injection in 2ml ampoules, box of 10	Ampoule	BOX OF 10	€ 2.85	2,000	€ 5,706

49	Metronidazole 200mg/5ml powder for oral suspension, bottle of 100 ml	Oral Susp.	bottle of 100 ml	€ 0.73	50,000	€ 36,551
50	Miconazole nitrate 2 % cream, tube of 30g	Cream	tube of 30g	€ 0.35	40,000	€ 14,079
52	Midazolam 5 mg/ml 1 ml IV, IM	Ampoule	Single	€ 0.68	20,000	€ 13,501
53	Milk Formula , for Galactosaemia	Powder	TIN	€ 85.74	400	€ 34,295
54	Milk Formula, Hydrolysed Cow Milk Formula with M.C.T. 450 g (Pregestimil or Alike)	Powder	TIN	€ 15.70	1,000	€ 15,704
55	Milk Formula, Hydrolysed Cow Milk Formula without M.C.T. 425 g	Powder	TIN	€ 15.70	1,000	€ 15,704
56	Milk Formula, Hydrolysed Cow Milk Formula without M.C.T. 425 g	Powder	TIN	€ 15.70	1,000	€ 15,704
57	Milk Formula, Phenylalanine-Free Milk Formula for Child 450g (over 1 years)	Powder	TIN	€ 34.48	1,500	€ 51,713
59	Milk Formula, Soya Protein Based Formula 400 g	Powder	TIN	€ 12.54	2,000	€ 25,090
62	Normal Albumin (human serum) 20% 50 ml	Vial	Single	€ 30.50	2,000	€ 61,009
63	Nystatin oral sus 100,000IU/ml/BOT-30ml	Oral Susp.	BOT-30ml	€ 0.69	30,000	€ 20,848
64	ORS fl.1Lx2+ Zinc 20mg 10tabs.kit/PAC	Sachets, dispersible tab.	kit/PAC	€ 0.52	30,000	€ 15,704
66	Pancreatic Extract 150mg	Capsule	THOUSAND	€ 267.29	200	€ 53,458
67	Paracetamol 125mg/5ml or.liq/BTL-60ml	Elixir	bottle of 60 ml	€ 0.54	150,000	€ 81,225
68	Paracetamol 150 mg	Suppository	THOUSAND	€ 45.13	1,000	€ 45,125
73	Salbutamol Sulphate 5mg/ml 20 ml	Solution for nebulization	Single	€ 3.53	15,000	€ 52,947
74	Saline 0.45%. 500 ml	Injectable solution	Single	€ 1.90	40,000	€ 75,810
77	Sodium Bicarbonate 8.4% 50 ml	Vial	Single	€ 2.91	2,000	€ 5,816
78	Sulfameth. 200mg + Trimethoprim 40mg / 5ml 100ml	Suspension	Single	€ 0.83	50,000	€ 41,515
82	Vancomycin 500 mg	Vial	Single	€ 2.89	20,000	€ 57,760
83	VITAMIN A AS PALMITATE 500 U + VITAMIN D 200 U/ DROP 10ml	EA	EA	€ 0.09	50,000	€ 4,513
Total						€ 1,442,267

Consumables

#	Items	Unit	Qty./Year	Unit Price (NIS)	Total Price (NIS)
1	BONE MARROW BIOPSY ASPIRATION J TYPE/NEEDLE #15- 16G ADJUSTABLE LENGTH12.5MM--47MM	piece	100	32.7	3,270
2	NEEDLE HYPODERMIC DISP. 20G	piece	1500000	0.0368	55,200
3	NEEDLE SPINAL 20G x90mm	piece	1000	1.25	1,250
4	URINE BAG FOR INFANT 100ML	piece	40000	0.2397859	9,591
5	CATHETER SILICON FOLLY 2 WAY5CC BALLOON SIZE 8FR	piece	600	5.67	3,402
6	CATHETER SILICON FOLLY 2 WAY5CC BALLOON SIZE 14FR	piece	1200	5.67	6,804
7	LONG TERM DOUBLE LUMEN HEMODILYSIS CATH 7 FR/ 10 CM WITH CUFF	Set	12	830	9,960
8	LONG TERM DOUBLE LUMEN HEMODILYSIS CATH 8 FR/ 18 CM WITH CUFF	Set	12	830	9,960
9	SHORT TERM DOUBLE LUMEN HEMODIALYSIS CATH 6.5 FR / 10 CM	Set	12	540	6,480
10	SHORT TERM DOUBLE LUMEN HEMODIALYSIS CATH 7 FR / 12.5 CM	Set	12	540	6,480
11	CATHETER SUCTION WITH VALVE SIZE 12CH	Piece	15000	0.268	4,020
12	CATHETER SUCTION WITH VALVE SIZE 18CH	piece	15000	0.268	4,020
13	ENDOTRACHEALTUBE ORAL/ NASAL PLAIN 3 INTERNAL DIAMETER	piece	3000	1.47	4,410
14	ENDOTRACHEALTUBE ORAL/ NASAL PLAIN 3.5 INTERNAL DIAMETER	piece	2000	1.47	2,940
15	ENDOTRACHEAL TUBE with cuff # 7 INTERNAL DIAMETER	piece	3000	1.78	5,340
16	ENDOTRACHEAL TUBE with cuff #7.5 INTERNAL DIAMETER	piece	3000	1.78	5,340
17	COMPLETE 8.5MM FLEXIBLE BREATHING SYSTEM TUBING SET LENGTH 1.6 MT HUMIDIFICATION LIMB 0.4MM TEMPERATURE PROBE SIZE 7.6MM WITH WATER TRAP AND ADAPTOR CLAMPS PEDIATRIC. CODE NO.4506	SET	1000	76	76,000
18	BACTERIA FILTER (SINGLE USE) (FILTA GUARD BREATHING FILTER 22F/22 M / 15 F -/ 1944	Piece	5000	5.3	26,500
19	INFUSION ADMINISTRATION SET WITH AIRVENT&INJECTION PORT,CHAMBER WITH FILTER SIZE15- 20M L	SET	300000	0.4	120,000
20	VOLUSET FOR SOLUTION 150CC . 60 DROPS / ML ,CHAMBER WITH FILTER SIZE15- 20M L ,WITH INJECTION PORT	Piece	30000	1.578	47,340
21	CENTRAL VENOUS PRESSURE CATHETER SET SINGLE LUMEN PEDIATRIC RADIOPAQUE POLYETHYLENE CATH . EQUIVALENT TO 3FR , GA20 LENGTH 8CM WITH INTRODUCER NEEDLE STRAIGHT GUIDE WIRE 20 CM LENGTH	KIT	800	44.5	35,600
22	I.V. CANNULA WITH INJECTION PORT 20G	piece	200000	0.35	70,000
23	I.V. CANNULA WITH INJECTION PORT 22G	piece	200000	0.35	70,000
24	I.V. CANNULA WITH INJECTION PORT 24G	piece	400000	0.408	163,200

25	SCALP VEIN 23G STERILE	piece	10000	0.147	1,470
26	TONQUE DEPRESSOR SPATULA WOODEN ADULT	piece	800000	0.022	17,600
27	UMBILICAL CORD CLAMP (PACK /100)	piece	50000	0.15	7,500
28	BRACELET IDENTITY FOR INFANT	piece	30000	0.17316	5,195
29	ELECTRODE CHEST 'PREJELLD FOR ECG ADULT AG/AGCL TYPE	piece	200000	0.18	36,000
30	ELECTRODE CHEST 'PREJELLD FOR ECG PEDIATRIC AG/ AGCL TYPE	piece	30000	0.184	5,520
31	GLOVE LATEX NONSTERILE DISPOSABLE (ALL SIZES)	piece	1000000	0.11445	114,450
32	GLOVE LATEX SURGICAL #7 (STERILE)	PAIR	800000	0.468	374,400
33	GLOVE LATEX SURGICAL #7.5 (STERILE)	PAIR	120000	0.48	57,600
34	GLOVE LATEX SURGICAL #8 (STERILE)	PAIR	120000	0.44	52,800
35	GLOVE LATEX SURGICAL #8.5 (STERILE)	PAIR	30000	0.51	15,300
36	GLOVES POLYSAN (NON STERILE LARGE+MEDIUM	piece	200000	0.0135	2,700
37	NEEDLE HYPODERMIC DISP. 21G	piece	1500000	0.0368	55,200
38	NEEDLE HYPODERMIC DISP. 25G	piece	400000	0.0368	14,720
39	NEEDLE SPINAL 22G x90mm	piece	1000	1.25	1,250
40	NEEDLE SPINAL 25G x90mm	piece	2000	1.25	2,500
41	SYRINGE 2ML DISPOSABLE WITH OUT NEEDLE	piece	1000000	0.0783	78,300
42	SYRINGE 5MLDISPOSABLE WITH OUT NEEDLE	piece	1000000	0.08	80,000
43	SYRINGE 10MLDISPOSABLE WITH OUT NEEDLE 3 PARTS &SUITABLE FOR ELECTRIC SYRING PUMP	piece	500000	0.143	71,500
44	SYRINGE IRRIGATION 50/60ML DISPOSABLE WITHOUT NEEDLE 3 PARTE	piece	20000	0.655333	13,107
45	TUBE FEEDING # 6 PVC. 2 SIDES EYES CLOSED TIP/ 50CM STERILE	piece	30000	0.36	10,800
46	TUBE FEEDING# 8 PVC. 2 SIDES EYES CLOSED TIP/ 50cm STERILE	piece	6000	0.283	1,698
47	TUBE FEADING#10 PVC. 2 SIDES EYES CLOSED TIP/ 50cm STRILE	piece	1500	0.283	425
48	NASO GASTRIC TUBE 8 CH	piece	1500	0.69	1,035
49	NASO GASTRIC TUBE 10 CH	piece	1500	0.47	705
50	NASO GASTRIC TUBE 16 CH	piece	2000	0.47	940
51	NASO GASTRIC TUBE 18 CH	piece	2000	0.47	940
52	URINE BAG FOR ADULT 2000CC WITH OUTLET VALVE	piece	120000	0.58	69,600
53	CATHETER FOLLEY 2WAY BALLON 'CATHETER (LATEX SILICONIZED) ,VOLUM 3 -5ML, SIZE 6 CH	piece	1000	1.38	1,380
54	CATHETER FOLLEY 2WAY BALLON 'CATHETER (LATEX SILICONIZED) ,VOLUM 3 -5ML, SIZE 8 CH	piece	1000	1.38	1,380
55	CATHETER FOLLEY 2WAY BALLON 'CATHETER (LATEX SILICONIZED) ,VOLUM 5-15ML, SIZE24CH , CATHETER LENGTH 40CM	piece	1500	1.38	2,070
56	CATHETER NELATON SIZE 8 , LENGTH 40CM (CLOSED ROUND TIP ,2 LATERAL EYES)	piece	3000	0.244	732
57	(DIALYZER) CAPILLARY POLYSULFONE DIALYSER SURFACE AREA.7mm (F4)	piece	1000	50	50,000

58	TROCAR FOR LAPROSCOPY 5MM CODE NO.178064	piece	200	95	19,000
59	TROCAR FOR LAPROSCOPY 10MM CODE NO.178062	piece	200	95	19,000
60	NURSE HAT DISP.	piece	150000	0.0725	10,875
61	OPERATION ROOM FACE MASK DISP. MADE OF NON TRANMITANT FABRIC MATERIAL NOT PAPER	piece	200000	0.0888	17,760
62	NEBULIZER COMPLETE (AEROSOL, THEARAPY KIT ADULT) WITH MASK .	SET	15000	2.6	39,000
63	OXYGEN HUMIDIFIER	piece	4000	5.37	21,480
64	OXYGEN NASAL CANNULA PEDIATRIC	piece	10000	0.75	7,500
65	OXYGEN NASAL CANNULA NEONATAL	piece	10000	0.866	8,660
66	CATHETER SUCTION WITH VALVE SIZE 8CH	piece	35000	0.268	9,380
67	CATHETER SUCTION WITH VALVE SIZE 10CH	piece	25000	0.268	6,700
68	NYLON 1 W 2797 CUTTING NEEDLE 90MM 50 CM 2 SUTURE PER PACK AND 2 40MM VINYL TUBING	Doz of 12	40	12	480
69	NYLON 2/0 W736 CURVED REVERSE CUTTING NEEDLE 45MM ,LENGTH 1M BLUE	Doz of 12	1000	7.2	7,200
70	MERSELINE TAPE RS22 30CM*5MM/65MM-1/2CIRCLE ROUND BODIED DOUBLE NEEDLE	Doz of 12	50	140	7,000
71	COTTON WOOL MEDICAL ZIG-ZAG (PACK OF100GM)	KG	3000	13.96	41,880
72	PARAFFIN GAUZE DRESSING NON ADHESIVE BPC 73 10CM ×10CM	BOX/36	3000	6.64	19,920
73	GAUSE 7.5×7.5cm STERILE17THREAD / SQ. CM 8 PLY (PACK/4)	PACK/4	100000	0.23	23,000
74	GAUSE 10×10cm 17THREAD / SQ. CM12PLY W X-RAY STERILE DOUBLE BAG (10/PACK)	PACK	100000	1.21	121,000
75	LAPORATOMY SPONGE 45×45 WITH X- RAY DETECTABLE LINE 5 / PACK (17*24THREAD / CM) STERILE DOUBLE BAG	PACK / 5	60000	4.09	245,400
76	GAUSE 10×10cm 12PLY,17THREAD / SQ .CM (100/PACK)	Pack	100000	14.356	1,435,600
77	MICROPORE ADHESIVE TAPE 2.5CM*9.2MT LENGTH (POURUS PAPER ADHESIVE TAPE .)	Roll	30000	0.71	21,300
78	PLASTER ZINC OXIDE 7.5CM*5MT (ADHESIVE)	Roll	30000	4.649	139,470
79	BLOOD LINE FOR FRESENIUS OR BRUAN VOLUME 117CC-6.4/8MM SEGMENT	Set	2500	10	25,000
80	BLOOD LINE INLET-OUTLET FOR 50CC-FOR FRESINIUS	Set	1500	70	105,000
81	DIALYZER F3	Set	400	30	12,000
82	UNDER PAD SHEET 60x90 CM	pcs	50000	0.945	47,250
	Total Price (NIS)				4,306,778
	Total Price in EURO				€ 1,050,504.73

Laboratory supplies

Items	Unit	Qty./Year	Unit Price (NIS)	Total Price (NIS)
Biochemistry				
Ammonia	Kit/60 ml	24	80.00	1,920.00
Alkaline Phosphatase(ALP)	Kit /500 ml	40	9.00	360.00
Bilirubin(Bili) Total,Direct	Kit /1000 ml	60	71.00	4,260.00
Calcium (Ca)	Kit /500 ml	15	26.00	390.00
Cholinesterase	Kit /60 ml	40	25.00	1,000.00
Creatinine (Crea)	Kit /1000 ml	30	30.00	900.00
Glucose(GLU)	Kit /1000 ml	30	20.00	600.00
Iron(Fe +++)	Kit /500 ml	10	64.00	640.00
Phosphorus(ph)	Kit/500	15	22.00	330.00
Uric Acid (U.A)	Kit /500 ml	180	19.00	3,420.00
PKU test	Kit/2400 Test	30	750.00	22,500.00
Glucostix(Blood)	Box /50 strip	150	10.00	1,500.00
Glucostix(Blood) For Pediatric	Box /50 strip	300	17.00	5,100.00
Multistix 9SG	Box /100 strip	500	6.40	3,200.00
Disposable And Glass Ware				
Lancet	NO	60000	0.02	1,200.00
Cover Glass(20*20)	Box/100	1000	0.40	400.00
CupUrine(100ml)nonsterile	Th	80	76.00	6,080.00
Cup(100ml) Sterile	No	5000	0.11	550.00
Paper card DBS - Card Dry Blood Spot - Card	Th.	96	415.00	39,840.00
Petri dishes (90mm)	Th	30	110.00	3,300.00
Slides precleaned	Box/50	1000	0.70	700.00
Loops (10 μ)	Th	6	27.00	162.00
Loops (1 μ)	Th	6	22.00	132.00
Tubes Glass (Heprenized)	Unit /100	120	1.80	216.00
Tubes Plastic (EDTA 0.5 ml)	Th	50	118.00	5,900.00
Tubes Plastic (Serum 12/75 mm)	Th	250	10.00	2,500.00
Tubes Plastic centerifuge(Polystyrene round)	Th	200	19.00	3,800.00
Tubes Vacutainer Plastic (EDTA K3 3 ml)	Th	250	72.00	18,000.00
Tubes Vacutainer (with serum 5 ml)	Th	300	90.00	27,000.00
Micro plate U	Pcs	4800	0.56	2,688.00
Micro Plat flat	Pcs	4800	0.50	2,400.00
Endocrinology				0.00
Folic Acid (folate)	Kit /100 Test	2	380.00	760.00
Vitamin B12	Kit /100 Test	2	450.00	900.00
B-Human Chorionic Gonadotropin (B-HCG)	Kit /100 Test	3	350.00	1,050.00
ThyroxineTotal (T4 Total)	Kit /100 Test	5	360.00	1,800.00
Thyroid-Stimulating Hormone (TSH)	Kit /100 Test	10	360.00	3,600.00
Free T4	Kit /100 Test	5	350.00	1,750.00
TSH Neonatal	Kit /1920Test	39	1,300.00	50,700.00

Vitamin D for architect	Kit /100 Test	1	1,050.00	1,050.00
Laboratory Diagnostic Accessories And Disposable				
Blood Gases Analyzer - Radiometer				
Quality Control (S 2040) ABL 5(Normal)	30 Vial x 2 ml	8	114.00	912.00
Quality Control (S 2030) ABL 5 (Acidemia)	30 Vial x 2 ml	8	114.00	912.00
Quality Control (S 2060) ABL 5 (High Orogen)	30 Vial x 2 ml	8	114.00	912.00
Quality Control(S 2050) ABL 5(Alkalemia)	30 Vial x 2 ml	8	114.00	912.00
S 1545, Calibration Solution pH 7.383 ABL5	Btl /140 ml	150	183.00	27,450.00
S 1555, Calibration pH 6.841 ABL5	Btl /140 ml	75	183.00	13,725.00
S 4930, Rinse Solution ABL5	Btl /340 ml	150	104.00	15,600.00
S 5332, Cleaning Solution ABL 5	Btl /100 ml	10	84.00	840.00
PO2 Membrane ABL 5 (D999)	Box/6 pcs	3	436.00	1,308.00
PCO2 Membrane ABL 5(D333)	Box/6 pcs	3	436.00	1,308.00
Reference Membrane ABL 5(D115)	Box/6 pcs	3	436.00	1,308.00
Gas I ABL 5 1.5 L(19.76%O2,5.61%CO2)	CYLINDER	20	400.00	8,000.00
GAS II ABL 5 1.5 L(0%O2,11.22%CO2)	CYLINDER	20	400.00	8,000.00
Radiometer blood gas ABL 80 CO-OX				
Sensor Cassette ABL 80 CO-OX	Cassette/300 sample	36	1,050.00	37,800.00
Solution pack CO-OX	Pack/300 sample	72	120.00	8,640.00
Radiometer blood gas ABL 80 basic				
Sensor Cassette ABL 80 basic	Cassette/300 sample	36	900.00	32,400.00
Solution pack Basic	Pack/300 sample	36	200.00	7,200.00
Radiometer blood gas ABL 90				
Sensor Cassette ABL 90	Cassette/300 sample	24	2,300.00	55,200.00
Solution pack ABL 90	Pack/300 sample	48	340.00	16,320.00
Electrolyte Analyzer - NOVA 10				
Cleaning Solution	Bottle / 50 ml	10	81.00	810.00
Deproteinizing Solution	BTL	6	77.00	462.00
Linearity Standad set A 1.2.3,4	Box/20 Vial/1 ML	6	74.00	444.00
Reagent Pack	Kit	50	591.00	29,550.00
Sodium Conditioning Solution	Bottle / 100 ml	10	71.80	718.00
Cell Counter - CD Emerald				
CD Emerald Diluent	10L	125	117.00	14,625.00
CD Emerald Cleaner	BTL/960 ml	80	124.00	9,920.00
CD Emerald HGB Lyse	BTL/960 ml	30	310.00	9,300.00
Sweet Analyzer - Wescor 3700 - SYSTEM				
Supply Kit Contains: 12ea. Pilogel Disc, 6ea. Macroduct Sweat Collection, 6ea. Small Sealable Containeres	Kit /6 Test	30	309.00	9,270.00
Microbiology				

Neisseria meningitis monovalent Anti -Sera Group C	Vail/1 ml	5	98.00	490.00
Neisseria meningitids monovalent Anti -Sera Group A	Vail/1 ml	5	96.00	480.00
Neisseria meningitis monovalent Anti -Sera Group B	Vail/1 ml	5	158.00	790.00
Neisseria meningitis monovalent Anti -Serua Group W135	Vail/1 ml	5	112.00	560.00
Neisseria meningitis monovalent Anti -Serum Group X	Vail/1 ml	5	200.00	1,000.00
Oxidase	Box/50 Test	10	7.50	75.00
API 20 Staph	Kit / 25 test	3	304.00	912.00
Catalase Test	Box/50 Test	3	11.70	35.10
Coagulase test	Kit/100 test	5	98.00	490.00
API 20 Strep	Box / 25 Test	3	278.00	834.00
Staphurex	Kit /50 Test	10	60.00	600.00
API 20 E	Box /100 T	10	600.00	6,000.00
Entero Tube	Tube	1000	4.00	4,000.00
Streptococcal grouping	Kit /50 Test	5	53.50	267.50
Gas pack (anaerobe)	envelop / 10	30	39.00	1,170.00
Aerobic bottle	BTL	10000	2.50	25,000.00
Anaerobic bottle	BTL	3000	2.50	7,500.00
Serology				
Anti Streptolycine O Titer (A.S.O.T)	Kit /100 Test	100	11.00	1,100.00
C-Reactive Protein (C.R P)	Kit /100 Test	200	12.00	2,400.00
Quantitative CRP	Kit/50 ML	100	72.00	7,200.00
Quantitative CRP Calibrator	Set/5*1 ML	12	170.00	2,040.00
Quantitative CRP Control I	Kit/2*1 ML	36	61.00	2,196.00
Quantitative CRP Control II	Kit/2*1 ML	36	61.00	2,196.00
Total needs				603,780