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Primary Healthcare Centers Assessment

Post Beirut Explosion



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Authors of the report

Issam Shaarani, MD; Rim Taleb, MD, MHPE; Rabih Soubra, RN, BSN, MPH; Louna Ftouni; Ibrahim Mallah; Aref El-Kantar; Mouhamad Mourad; Racha Ftouni; Abdel Raouf Kayssi

Acknowledgment

Asma Kurdahi, Head of Office, UNFPA Lebanon
Felicia Jones, Regional Roving Reproductive Health Specialist, UNFPA
Elke Mayrhofer, Regional Humanitarian Adviser, UNFPA
Shible Sahbani, Regional Advisor for Reproductive Health, UNFPA
Maguy Ghanem, Reproductive Health Program Specialist, UNFPA Lebanon
Faysal El Kak, MD, MS ARCOG, President FAGOS, Vice President FIGO

Lebanese Medical Students' International Committee, LeMSIC

Ali Ghanem	Jacques Kfoury	Maya Hamdanieh	Ounssi Hammoud
Alicia Khazzeka	Jad Assaf	Michele Haykal	Peter Abou Fadel
Anthony Yazbeck	Jean Kfoury	Mohamad Nafeh	Raneem Al-Assaad
Asmaa Kebbe	Jean-Paul Rizk	Mohamad-Hussein Al-Zein	Rawan Abdallah
Christin Berjaoui	Joseph Hawly	Mohamad Jounblat	Rayan Ayoub
Clarisse Toumieh	Khanom Baalbaki	Mohyeddine El-Sayed	Rim Chehab
Dany Faysal	Lara Hamdanieh	Muriel Slim	Rouba Halime
Farah Serhan	Lara Serhan	Natalie Estelly	Sarah Beaini
Farhat Farhat	Marc Louak	Noha El-Yaman	Sary Faraj
Georgio Sader	Marc Nseir	Nour Awad	Tarek Nahle
Georgio Toumieh	Mathieu Choufani	Nour Samad	Yara Menassa

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ABBREVIATIONS

AIDS	Acquired Immunodeficiency Syndrome
BEmOC	Basic Emergency Obstetric Care
CBPFA	Community-Based Model of Psychological First Aid
CMAM	Community-based Management of Acute Malnutrition
COPD	Chronic Obstructive Pulmonary Disease
COVID-19	Coronavirus Disease 2019
EPI	Expanded Program on Immunization
EWARS	Early Warning, Alert and Response System
GBV	Gender-Based Violence
HeRAMS	Health Resources Availability Monitoring System
HIV	Human Immunodeficiency Virus
IUD	Intrauterine Device
LeMSIC	Lebanese Medical Student International Committee
MHPSS	Mental Health and Psychosocial Support
MoPH	Ministry of Public Health
MoSA	Ministry of Social Affairs
NCD	Non-Communicable Diseases
NGO	Non-Governmental Organization
PEP	Post-Exposure Prophylaxis
PHC	Primary Healthcare Center
SDC	Social Development Center
SRH	Sexual and Reproductive Health
STI	Sexually Transmitted Infection
UNFPA	United Nations Population Fund
WHO	World Health Organization

HIGHLIGHTS

55

Healthcare centers assessed

89.1%

Fully/partially damaged

67.3%

Accessible to patients with disabilities

82%

Provide hypertension management

80%

Provide diabetes mellitus management

76%

Provide cardiovascular services

80%

Have obstetricians/gynecologists

70.9%

Provide reproductive health consultations

22%

Of consultations are related to reproductive health

56.4%

Provide family planning services

41.8%

Provide contraceptives

58.2%

Provide antenatal care

12.7%

Provide BEmOC services

56.4%

Provide psychological support services

54.5%

Provide private rooms for mental health consultations

30.9%

Provide psychiatric medications

41.8%

Provide psychological support and counseling for GBV

21.8%

Provide HIV testing and counseling

23.6%

Provide PEP for HIV and provide emergency contraceptives

76.4%

Provide EPI for children

52.7%

Provide diarrhea management for children

INTRODUCTION

On August 4, 2020, an explosion at the Beirut Port devastated the city and its citizens with a shockwave that spread for kilometers. Before the explosion, fires fulminated throughout dock number 12, resulting in blooming smoke of black and purple. This smoke would serve as a harbinger for the catastrophic explosion that eventually resulted in more than 170 casualties, more than 50 people missing, 6,000 injured and approximately 300,000 residents displaced.

The primary trigger for the explosion is yet to be determined. However, the chemical substance responsible for the massive explosion was determined to be ammonium nitrate, roughly 2,750 tons.

The damage was drastic in terms of its effect on human life, livelihood, and the infrastructure of the city. The damages to infrastructure cannot be understated, particularly for the health sector through its vital institutions including hospitals, clinics, primary healthcare centers, and dispensaries. It is well known that during crisis and disasters, health care is seriously affected by interruption of continuity of care, poor access, shortage of medical supplies, and often a lack of essential Sexual and Reproductive Health (SRH) services. In addition, quick resumption of primary health services is crucial to the overall process of return of the displaced persons. In this regard, the importance and functionality of the healthcare sector have become much more prominent in the aftermath of such a catastrophe, which is further overburdened by the global Coronavirus Disease 2019 (COVID-19) pandemic. With these compounding stressors and factors affecting the healthcare system, it is imperative that measures to determine the integrity and functionality of Primary Healthcare Centers (PHCs) be undertaken.

METHODOLOGY

The healthcare centers' assessment was based on the established World Health Organization's (WHO) list of primary healthcare facilities within a five-kilometer radius of point zero (i.e., site of explosion). According to the list, 82 PHCs, Social Development Centers (SDCs), and dispensaries were well within the blast radius. Beyond this, another healthcare facility was assessed per the request of the Ministry of Public Health (MoPH). (Appendices 1, 2)

HeRAMS

The Health Resources Availability Monitoring System (HeRAMS), a system for assessing the healthcare sector's capability post-catastrophe, was the primary tool utilized in this assessment. Amidst the aftermath of the blast, this system is vital to the rapid assessment of the affected healthcare sector. The assessment took special note of SRH and mental health services. The mental health indicators of this assessment were developed in coordination with the National Mental Health Program at MoPH. The SRH health indicators were developed by the United Nations Population Fund (UNFPA), based on the Minimum Initial Service Package (MISP) for reproductive health in emergencies. The tool was also sensitive for infection prevention and control.

An online application was developed and used for data collection per the HeRAMS assessment tool.

DATA COLLECTION

Forty-three medical students, members of the Lebanese Medical Students International Committee (LeMSIC), were responsible for collecting data. LeMSIC members were trained on August 10 and 11 in the use of the data collection method and online application before the assessment. Data were collected from August 12th through August 17th. The methods of data collection employed included field visits to healthcare centers (respecting social distancing and COVID-19 precautions), phone calls, and self-completed applications.

Prior to initiation of data collection, an email for approval was sent by the PHC department at MoPH to healthcare centers that will be assessed. An official letter was issued in this regard to introduce the objective of the assessment, and to encourage the PHCs to provide the needed responses.

In addition, the Ministry of Social Affairs (MoSA) was involved in facilitating the data collection from the affected SDCs as part of this assessment.

The data collectors encountered some difficulties in the data collection process. Such difficulties included the refusal of healthcare centers to provide the data in question, particularly because several assessment teams asked for health-related information previously. Another encountered difficulty was the lack of authentic contact information for some of the health centers. As such, data collectors were unable to contact some healthcare centers on the WHO list, because few listed centers were not found. In response to these bottlenecks, the UNFPA team liaised directly with a number of health facilities and organizations to complete the data collection. Some facilities opted for online assessment while others preferred phone call-based assessment, choosing to complete them when their workloads were reduced. Fifty five out of 82 centers accepted to participate, making the overall response rate 67%.

DATA ANALYSIS

Data cleaning and subsequent analysis were conducted via Statistical Package for the Social Sciences (SPSS) version 23.

RESULTS

BACKGROUND INFORMATION

More than half of the healthcare facilities assessed are located within Beirut Governorate (54.5%), while the rest are within a five-kilometer radius of the blast, within the Mount Lebanon Governorate (45.5%). The facilities included PHCs (56.4%), specialized centers (centers for specific communities such as refugees, mothers, children, elderly...) (9.1%), dispensaries (29.1%), and MoSA SDCs (5.5%). The vast majority of these facilities (87.5%) provide a wide range of medical services.

Results show that the majority of healthcare facilities reported full functionality (70.9%), accessibility (89.1%), and staffing (96.4%), and two-thirds of the facilities reported full accessibility to patients with disabilities. (Table 1)

The average number of beneficiaries per month was 35,129 in PHCs, 2,870 in specialized centers, 485 in MoSA SDCs, and 12,554 in dispensaries amounting to around 51,038 patients. It is worth noting that during the past few months, patient health-seeking behaviors decreased, consistent with drops due to the COVID-19 pandemic, civil unrest, and economic crisis.

INFRASTRUCTURE AND ENVIRONMENTAL HEALTH

Regarding infrastructure and environmental health components, most of healthcare facilities (81.8%) sustained partial damage due to the explosion, with around 72.7% of them needing renovations and had requested work for repair.

Most of the healthcare facilities relied on the main pipeline as a source of water (92.7%), with many of them (76.4%) having fully functional water supply. Likewise, most facilities (85.5%) had access to vaccine-specific refrigerators secured by private generators in 87.3% of the facilities, indicating that they are not continuously supplied by government electricity company. (Table 2)

Most of the facilities continued to have safe and sufficient water (89.1%), sanitation (89.1%), waste segregation (83.6%), and timely and safe waste collection (78.2%) were widely available. (Table 3)

Concerning infrastructure, 35 (87.5%) of the centers require construction materials. Such materials include glass, ceiling material, windows, doors, walls, paint, and lights. However, in three centers, the damage is absolute and requires full renovation work. (Figure 1)

MEDICAL EQUIPMENT

Regarding medical equipment, centers reported the availability. The data in Table 4 documents, for each listed item, the number of centers with at least one functional piece of hardware. Between 54.3 and 87.2% of the centers that provided information on the availability of general medical equipment have at least one functional piece of the listed hardware, and only a minority reported having equipment needed for delivery. (Table 4)

Five centers cited the need for equipment, including computers, laptops, medical equipment, printers, and refrigerators. More so, one center specified the need for X-ray machines. (Figure 1)

HUMAN RESOURCES

Concerning human resources, it was reported that around 80% of healthcare centers have obstetricians/gynecologists. Furthermore, adequate numbers of general practitioners were reported in 65.5% of the centers. However, 72.7% of the facilities lack psychiatrists. Paramedical workers of different specialties were available including registered nurses (78.2%), laboratory technicians (78.2%), midwives (72.7%), outreach workers (70.9%), and psychologists (61.8%), among others. (Figure 2)

Thirteen centers (23.6%) cited deficits in at least one of the following professional fields: nutrition, pediatrics, gynecology, cardiology, Ear-Nose-Throat (ENT), ophthalmology, urology, family medicine, dermatology, orthopedics, pulmonology, general medicine, dentistry, physiotherapy, midwifery, and pharmacy. However, when centers were asked regarding their need for healthcare workers, 11 centers (20%) assumed being short on nursing staff and psychologists, seven (12.7%) on social workers, and six (10.9%) on

psychiatrists. Furthermore, 11 centers (20%) cited the lack of both general practitioners and family physicians.

HEALTH SERVICES

Regarding health services, general clinical services and essential trauma care are insufficient in terms of triage, assessment, first aid and life support, and basic laboratory testing. Nonetheless, standard precautions (i.e., soap/hand disinfectant, disposable/auto-disable needles, and syringes, etc.) were reported to be available in most facilities (85.5%).

Regarding child health and nutrition, the results were mixed. Concerning the Expanded Program on Immunization (EPI), three-quarters (76.4%) of the assessed facilities reported adequate ability to carry out routine immunizations according to the national target diseases and adequate cold chains in place. Growth monitoring and/or screening of acute malnutrition were available in 63.6% of the facilities. Nevertheless, diarrhea management was unavailable in nearly half of the facilities assessed and oral rehydration therapy was unavailable in 63.6% of the facilities. More so, some services, such as under-5 pediatric clinics (60%) and Community-Based Management of Acute Malnutrition (CMAM) were also absent in around 70% of healthcare facilities. (Tables 5, 6)

The capacities to manage communicable and Non-Communicable Diseases (NCD) was also assessed (Figure 4). Most of the healthcare facilities reported the capacity to treat or manage NCD such as asthma and Chronic Obstructive Pulmonary Disease (COPD) (70.9%), hypertension (81.8%), cardiovascular disease (76.4%), diabetes mellitus (80%), and oral health and dental care (61.8%). However, in terms of medication availability, only 41.8% and 52.7% of the centers reported having at least a one month supply of anti-diabetic and antihypertensive medications respectively. (Table 6)

Concerning communicable diseases, approximately half of the healthcare facilities do not have a regular reporting sentinel site for syndromic surveillance of local relevant diseases/conditions. A vast majority of them cannot immediately report unexpected or unusual health events via the Early Warning, Alert and Response System (EWARS). (Figure 4)

SEXUAL AND REPRODUCTIVE HEALTH SERVICES

Sexual and reproductive health services are essential core services that need to be provided in disaster and humanitarian settings, as women and children are often disproportionately affected during crisis.

MATERNAL AND NEWBORN HEALTH

When asked about maternal and newborn care, the respondents replied that normal deliveries were possible in 9.1% of facilities. Basic Emergency Obstetric Care (BEmOC), skilled care during childbirth, and vaccination during pregnancy were available in 12.7%, 21.8%, and 23.6% of facilities respectively. Other maternal and newborn health services such as postpartum care, antenatal care, and tetanus shots, are available in 50-60% of the facilities. (Table 7)

More so, concerning pregnancy and delivery-related medicines, there are significant shortages. For instance, important drugs such as oxytocin and prostaglandins are available only in 8 and 5 centers, respectively. Additionally, important supplements are lacking in many centers. For instance, only 10 centers have a supply of folic acid and iron sufficient for at least one month. (Figure 5)

SEXUALLY TRANSMITTED INFECTIONS (STI) AND HUMAN IMMUNODEFICIENCY VIRUS (HIV) /ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS)

Concerning STIs, and specifically HIV, testing and counseling, these services are available in only a minority of facilities (21.8%). Similarly, availability of prophylaxis and treatment, and prevention of maternal HIV transmission (PMTCT) were low (20%). Although more widely available (45.5%), the syndromic management of STIs and national first-line antibiotics were inadequate. More so, barrier methods, specifically male condoms, were available in only 41.8% of facilities. (Table 7)

OTHER REPRODUCTIVE HEALTH SERVICES

Other reproductive health services such as family planning, postmenopausal care, cancer screening, and ultrasound exam are found in at least half of all the centers. (Table 7)

REPRODUCTIVE HEALTH SPECIFIC EQUIPMENT

Table 4 describes the number of centers with at least one functional reproductive health specific equipment with a wide variability range of 6.7 to 75%. Few centers (6.7%) with available data on safe/clean delivery kits had at least one functional kit. Yet, many centers (75%) reported at least one functional vaginal examination set. Likewise, 17.2% of centers had at least one functional delivery table, 28.1% a bedside monitor, and 64.9% a fetal doppler monitor.

REPRODUCTIVE HEALTH MEDICATIONS

Contraceptive pills are widely available in 41 centers, with injectable forms being less so available (13 centers). However, most scarce were emergency contraceptives reported to be available in only 7 centers. Regarding contraceptive devices, condoms and Intrauterine Devices (IUDs) were found across 25 and 24 centers respectively, with contraceptive implants most scarce. Cytotec® for post-abortion care and drugs for the treatment of STIs were unavailable in more than 80% of the centers. The remaining reproductive health medications can only be found in certain centers. (Figure 5)

GENDER-BASED VIOLENCE (GBV) IN EMERGENCIES

Safe identification and referral of GBV survivors' services were available in around 51% of the facilities. Other services were less available including Post-Exposure Prophylaxis (PEP) and emergency contraceptives (23.6%), case management of GBV (32.7%), and psychological support and counseling (41.8%). (Table 8)

AVAILABILITY OF MENTAL HEALTH SERVICES

The assessment across healthcare facilities post-blast showed largely insufficient mental health services.

It should be noted that while services were available to different degrees, they were insufficient for the growing needs. For example, some services are available in half of the facilities, including psychological support (56.4%), PHC referral options (65.5%), availability of private rooms for mental health consultations (54.5%), willingness to assign focal coordinators for mental health integration at PHC (49.1%), the capacity to store psychotropic medications (49.1%), and the availability of specialized and/or trained mental healthcare providers (47.3%).

However, the assessment uncovered a lack of services and decreased capacity of staff in the areas of PHC staff participation in mental health-related training (40%), screening for mental health (27.3%), PHC reception of persons requiring Mental Health and Psychosocial Support (MHPSS) services (40%), mental health outreach services (32.7%), PHC support for integration of mental health services (41.8%), and management (21.8%). (Table 9)

Only a minority of facilities (21.8%) reported available psychotropic drug supplies, such as haloperidol, chlorpromazine, fluoxetine, sertraline, amitriptyline, etc. (Table 6, Figure 6)

DISCUSSION

BACKGROUND INFO

Since most centers are fully functional, we presume that most services provided are still available. Therefore, with the increasing demands on primary healthcare centers, the beneficiaries of partially functioning and non-functioning centers can be temporarily referred to fully functional ones for the services no longer offered in the former centers. However, even with most services in the functional centers, a recent WHO-MoPH report showed that these centers are not well prepared to deliver services due to the lack of training and innovative medical equipment [1].

Additionally, many centers are still not accessible to patients with disabilities. This inaccessibility implies that these centers are not equipped with aids ranging from providing ramps, adjusting the width of the doors and corridors, and the addition of bars, among others, that serve to facilitate these patients' accessibility to the centers. A 2018 report done in Lebanon revealed that patients with disabilities face several barriers including inappropriate physical settings, shortage of trained healthcare workers that can properly deal with these patients and lack of specialized medical services [2].

INFRASTRUCTURE AND ENVIRONMENTAL HEALTH

Regarding the PHCs' infrastructure, it was found that most facilities sustained partial damage due to the ruin, steal, and other factors related to the explosion, thus requiring renovations and repair in the form of construction material, and equipment (such as computers, printers, refrigerators and medical equipment). This issue will likely impact provision of the routine and full range of services in these centers, thus imply referral of beneficiaries to other health care facilities.

Moreover, the vast majority of centers reported having private generators of electricity, overcoming frequent power cuts. Despite such generators' availability, the

inappropriate and perhaps intermittent electricity coverage risks to damage medicines and vaccines that must be stored in refrigerators.

MEDICAL EQUIPMENT

Despite the damage endured by most centers, the medical equipment's functionality is still high. Nevertheless, the majority of centers lack delivery tables and safe delivery kits. Contrastingly, a HeRAMS based report from Syria issued in 2019 showed that the delivery tables' availability was much higher than what was found in the Lebanese centers [3].

We postulate that this issue is not substantial to beneficiaries due to hospitals' proximity and wide availability with accessible equipment and expedient child-delivery capability. The MoPH emphasizes building the capacity of service providers in PHCs for provision of antenatal and postnatal care at the primary health care level in PHCs, and the capacity for deliveries at secondary care i.e. in governmental hospitals [4].

HUMAN RESOURCES

While most centers have adequate numbers of healthcare practitioners, including obstetricians/gynecologists, general practitioners, and paramedical workers, other specialties such as psychologists and psychiatrists, were generally sparse. Nevertheless, some centers reported a lack of a mix of these specialties.

More so, clinical services such as triage, assessment, first aid, and life support were available in less than half of the centers. At the same time, basic laboratory capability was available in less than a third.

The shore up of such human resources and services is imperative. For instance, triage is essential for prioritizing patients based on the severity and urgency of injury. Its availability is necessary for expediting the medical response in the case of disaster. Taking into consideration maternity cases, the importance of midwives and disaster response is notable. Hays and Prepas suggest that midwives play an integral role and have sufficient knowledge and experience in maternity care [5]. The training of midwives in triage and disaster response can potentially play a role in the expediency of treatment in urgent maternity cases.

Likewise, the role of mental health triage cannot be understated. In consideration of the dearth of mental health professionals, the optimization of their role in crisis is necessary. As advised by Jacobs et al., training in Disaster Mental Health (DMH) could better prepare available health personnel in the cases where disaster response is vital [6]. More so, a Community-Based Model of Psychological First Aid (CBPFA) training of the general community, especially in the cases of large-scale disasters is recommended. CBPFA is better suited to training the community in identifying members of their families who are in urgent need of mental health care [6]. As such, these measures serve to shore up triage capabilities and preparedness in the case of disaster.

HEALTH SERVICES

More so, health services in the facilities are generally available, but basic laboratory tests can be accessed in only few centers. The lack of lab tests in some centers forces them to refer patients to other dispensaries or private laboratories. Since almost all laboratories charge for their services, the countless beneficiaries who are not insured and cannot pay for these services will likely not undergo testing, putting their health on the line. It is noteworthy to mention that, according to MoPH requirements for PHCs, the presence of a laboratory department is not obligatory and depends on the center's capacity to accommodate such services [7].

Vaccination during pregnancy and tetanus shots are rather insufficient. Furthermore, measures for the prevention of mother-to-child HIV transmission are inadequate, placing the child at risk of poor health from birth. For instance, the mother's immunization during pregnancy for influenza is protective for both the mother and child [8]. As such, measures need to be taken in the improvement of such services.

More so, child nutrition is of importance during crises. In synergy with inadequate health care, poor nutrition directly correlates with increased defenselessness against disease and death [9]. Even though antibiotics and diarrhea management in children are available in 60% and 52.7% of the facilities, most centers lacked CMAM capability. With reduced CMAM sensory power, acute malnutrition in children would go unrecognized in the affected

community. However, more than half of the facilities were capable of growth monitoring via mid-upper arm circumference or weight-for-height. As such, in most centers, acute malnutrition would most likely be diagnosed under such monitors' parameters. For instance, mid-upper arm circumference is a good predictor of mortality [9].

The results obtained show that CMAM ought to be improved. With more significant detection of child malnutrition cases, referral and subsequent diagnosis of malnutrition serve to decrease child mortality during a crisis. Therefore, CMAM should be instituted in future preparedness, as it is an economic system that would improve child mortality in the aftermath of a disaster [10].

SEXUAL AND REPRODUCTIVE HEALTH SERVICES

Sexual and reproductive health is a fundamental right and cannot be reduced to the delivery of a single entity of services, since it entails multiple aspects of the sexual and reproductive life.

STIs

Despite the dramatic consequences of STIs on a person's quality of life, PHCs do not seem to accord the needed importance to this aspect of SRH. This assessment revealed that PHCs have insufficient testing for STIs, yet several Non-Governmental Organizations (NGOs) offer free-of-charge testing for HIV, hepatitis B and C. The availability of these tests in healthcare facilities is critical; thus, coordination for referral between the different PHCs and the NGOs offering these tests is needed. Needless to say that coordination is helpful for testing efficiency, expediting diagnosis, and preventing complications [11].

MATERNAL AND NEWBORN HEALTH

Maternal and neonatal care services are not better provided as compared to STIs. Essential services such as antenatal care and BEmOC are not readily available across all centers. Without these services, the health of female patients and that of their fetus are in

peril. A previous report on maternal mortality confirms these observation [12]. The report found the maternal mortality ratio on the rise during the past few years despite the existence of a dedicated program for reproductive and maternal health in PHCs [7]. Likewise, a 2020 report showed that among the services provided at PHCs, the least provided services are reproductive and maternal services [1]. The reason for the absence of these services is yet to be determined.

OTHER REPRODUCTIVE HEALTH SERVICES

Reproductive Health services such as family planning, postmenopausal care, cancer screening, and ultrasound examinations are available in at least half of all the centers. Such services' adequacy indicates some capability regarding early diagnosis and treatment of conditions like malignancies, common postmenopausal symptoms that negatively influence women's health and quality of life. Therefore, these services' availability is paramount to maintaining women's health across different age groups.

Knowing that several local and international NGOs offer these essential services at no cost or at nominal fees for the local population and for the refugees, it is suggested to ensure a multilevel collaboration between the health centers and these NGOs to provide beneficiaries with the essential services and prevent compromising their health. Also, paucity of funding for reproductive health services, among other health services, is another factor that contributes to their insufficiency across PHCs [1, 13].

Of note, Lebanon is not the only country to suffer deficiency in SRH services, as demonstrated by a WHO report describing the inadequacy of such services in Africa. Nevertheless, according to the report, progress is being made, and the coverage of SRH services is improving [14].

REPRODUCTIVE HEALTH MEDICATIONS

Among the reproductive health medications, contraceptives are the most available drugs. The remaining reproductive health medications are found only in few centers despite the dreaded complications in their absence, whether related to pregnancy, delivery, menopause, or others.

The ability of a woman to pursue family planning is a fundamental human right [15], and as such, the availability of contraceptives in the health centers is essential. Furthermore, in crisis, women are more subject to sexual violence [16]. Hence, the availability of post-coital emergency contraceptives should be considered as imperative.

Concerning postmenopausal women, increased risks of diabetes mellitus, cardiovascular pathologies, and osteoporosis [17]. Therefore, the availability of menopausal medicines, such as hormone replacement therapies is necessary. However, the availability of such therapies is low across many centers. This unavailability requires attention and immediate action to avail necessary medication.

Gender-based violence

Safe identification and referral of gender-based violence (GBV) cases are only found in half of the facilities. However, case management and psychological support and counseling are less prevalent. Moreover, there is lack of PEP for HIV exposure and lack of emergency contraceptives.

Females are more likely than their counterparts to experience psychological distress in the aftermath of a disaster; i.e. developing depressive disorder and even suicidal ideation. Psychological support and counseling are imperative in the aftermath of crises, and with the psychological pressures and increase of domestic violence associated with the COVID-19-quarantine [18]. There is need to ensure that referral to GBV services is available in PHCs which is not the case across all centers.

MENTAL HEALTH

According to the collected data, there is shortage of needed resources and capacities to ensure provision of needed mental health care services, especially with the growing need for it in the aftermath of the blast. Less than half of the facilities reported being able to provide mental health care services. Even though more than half of the facilities have referral options, the lack of support services, private rooms for consultations, and even willingness to assign a focal coordinator for mental health integration probably impact proper referral mechanism. Also, the overall lack of psychotropic medication across most facilities further exacerbates the dearth of mental health care capability. Subsequently several factors need to be addressed to ensure access to mental health care including for the physical structure that ensure privacy of the patient, capacity development for the health care staff and establishment of a proper referral mechanism.

CONCLUSION AND RECOMMENDATIONS

This report aims to rapidly assess the various types of healthcare centers with regards to functionality, services provided, and drug storage, post Beirut Explosion and during COVID-19 outbreak in Lebanon. While most centers reported partial damage from the explosion and the request for renovation, the majority were fully functioning. Despite the wealth of medical and paramedical staff in most health specialties, general services and trauma care were substantially lacking. Likewise, child health and nutrition services' availability is inconsistent: while some services are provided, other equally important services are not. Additionally, the facilities were better able at handling non-communicable diseases than communicable ones.

With regard to reproductive health services, the scope and diversity of the reproductive health services provided are inadequate in view of the urgent needs of the population for essential SRH services. Although obstetricians and gynecologists are available, the essential SRH are not placed as priority services. Those findings are alarming as they threaten basic health needs of women and children. Furthermore, in view of the overall

paucity of the mental health services, there remains room for intervention to improve this important aspect of health.

It is important to highlight that integrated services are needed in humanitarian settings, basically SRH, mental health, and GBV. Scope of quality services should focus on emerging needs, usually interrelated needs that has to be met. This report reveals that most of the facilities assessed remain functional, but the scope, the type, and the quality of services need to be addressed immediately according to the following recommendation:

1. Categorize facilities through mapping of level of services that would allow triaging and referring patients effectively
2. Ensure safety of facilities in terms of building, water, electricity, infection control, and precautionary measures (COVID-19)
3. Map the scope of services emphasizing SRH essential services, mental health, and NCDs primarily based on available funds and support, and design procurement accordingly
4. Prioritize SRH services including screening for gynecological diseases and GBV support, with emphasis on prevention of unintended pregnancies and post-abortion care
5. Conduct assessment based on resources to assign facilities to provide certain services preceded by assessment and triage of patients
6. Establish referral system based on available services and resources
7. Assess need to train or reorient providers towards health needs in humanitarian settings
8. Establish a tracking system using HeRAMS to monitor the availability of supplies and the demand for additional support
9. Train general practitioners and family physicians and midwives on providing adequate mental health services and psychosocial support in order to fill the gap of the lack of psychiatrists

TABLES AND FIGURES

Table 1. Background information on primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

	N (%)
Governorate	
Beirut	30 (54.5)
Mount Lebanon	25 (45.5)
Health center type	
PHC	31 (56.4)
Specialized Center	5 (9.1)
Dispensary	16 (29.1)
MoSA SDC	3 (5.5)
Comprehensive Clinic	0 (0)
Beneficiaries	
All patients	42 (87.5)
A specific community*	6 (12.5)
Functionality status in the current place	
Fully functioning	39 (70.9)
Partially functioning	8 (14.5)
Non-functioning	8 (14.5)
Accessibility for patients	
Accessible	49 (89.1)
Inaccessible	3 (5.5)
Hard-to-reach	3 (5.5)
Accessibility for staff	
Accessible	53 (96.4)
Inaccessible	1 (1.8)
Hard-to-reach	1 (1.8)
Accessibility for patients with disabilities	
Accessible	37 (67.3)
Inaccessible	18 (32.7)
Hard-to-reach	0 (0)

*Specific community such as refugees, mothers, children and elderly

Table 2. Infrastructure of primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

	N (%)
Level of damage in the original place	
Fully damaged	4 (7.3)
Partially damaged	45 (81.8)
Not damaged	6 (10.9)
Need for renovation and requested work for repair	
Yes	40 (72.7)
No	15 (27.3)
Damage level of equipment	
Fully damaged	4 (7.3)
Partially damaged	19 (34.5)
Not damaged	32 (58.2)
Nature of damage to equipment*	
Steal	1 (1.8)
Ruin	13 (23.6)
Other reason	9 (16.4)
Main source of water	
Main pipeline	51 (92.7)
Well	4 (7.3)
Water supply status	
Fully functioning	42 (76.4)
Partially functioning	8 (14.5)
Not functioning	5 (9.1)
Private generators	
Available	48 (87.3)
Not available	7 (12.7)
Vaccine specific refrigerator	
Available	47 (85.5)
Not available	8 (14.5)

*Values do not add to 100% because these numbers are only representative of the fully and partially damaged equipment

Table 3. Environmental health at primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

Services	N (%)
Safe and sufficient water	49 (89.1)
Sanitation available	49 (89.1)
Segregation of hazardous and non-hazardous waste	46 (83.6)
Timely and safe waste collection and management	43 (78.2)

Table 4. Essential equipment available in primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

General Medical Equipment	N (%)*
Combined otoscope/ laryngoscope complete	26 (70.3)
Weighing Scale for infants	28 (77.8)
Weighing Scale for adults	34 (87.2)
Length Measurement Device	29 (78.4)
Height Measurement Device	29 (76.3)
Sterilizer / Autoclave	28 (77.8)
Thermometer	32 (82.1)
Blood pressure device	33 (84.6)
Minor surgical sets	19 (54.3)
Examination light	31 (79.5)
Flashlight	22 (61.1)
Reproductive Health Specific Equipment	
Safe / Clean delivery kit	2 (6.7)
Vaginal examination set	27 (75)
Fetal Doppler	24 (64.9)
Bedside Monitor	9 (28.1)
Delivery Table	5 (17.2)

*Number and percentage of centers who reported having at least one functional unit of the respective equipment

Table 5. Health Services Availability in primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

General Clinical Services and Essential Trauma Care	N (%)
Standard precautions ¹	47 (85.5)
Triage, assessment, first aid and life support ²	24 (43.6)
Outpatient services ³	36 (65.5)
Basic laboratory ⁴	17 (30.9)
Referral capacity ⁵	40 (72.7)
Child Health and Nutrition	
EPI ⁶	42 (76.4)
Under-5 clinic conducted by IMCI-trained health staff ⁷	22 (40)
Growth monitoring and/or screening of acute malnutrition (Mid-Upper Arm Circumference or weight- for-height)	35 (63.6)
CMAM ⁸	17 (30.9)
Diarrhea Management	29 (52.7)

¹ Soap/hand disinfectant, disposable/auto-disable needles and syringes, sharps safe disposal box, sterilizer, latex gloves, masks, guidelines for Standard Precautions

² Cardiopulmonary resuscitation stabilization of patient with severe trauma and non-trauma emergencies before referral (IV line and saline solution for fluid resuscitation)

³ With availability of all essential drugs for primary care as per national guidelines

⁴ Glycaemia, Complete Blood Count, Chemistry...

⁵ Referral procedures, means of communication, access to transportation

⁶ Routine immunizations against all national target diseases and adequate cold chain in place

⁷ With available paracetamol, first- line antibiotics, Oral rehydration salts and zinc dispersible tablets, national Integrated Management of Childhood Illness (IMCI) guidelines and flowcharts

⁸ With outpatient program for severe acute malnutrition without medical complications with ready-to-use therapeutic foods available

Table 6. Priority medications' availability in primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

Essential and NCD Medications	N (%)
Anti-allergic including Steroids	25 (45.5)
Oral Rehydration Therapy	20 (36.4)
Antibiotics	33 (60)
Anti-diabetic preparations ¹	23 (41.8)
Cardiac and /or Vascular Drugs ²	29 (52.7)
Antiseptics	28 (50.9)
Psychotropic Medications	
Psychotropic medicine ³	12 (21.8)
Reproductive Health Medications	
Pregnancy/ Delivery related medicines ⁴	12 (21.8)
Reproductive Health Drugs	21 (38.2)
Menopausal therapy	9 (16.4)
Contraceptives ⁵	23 (41.8)

¹ Especially Insulin

² Anti-hypertensive Drugs, Diuretics ...

³ Haloperidol, Chlorpromazine, Fluoxetine, Sertraline, Amitriptyline

⁴ Pregnancy/ Delivery related medicines such as Iron, Folic acid, Multivitamins, Cytotec® and Methergine® ...

⁵ Pills, Injectables, Implants, Long-Acting Reversible Contraceptives, Intrauterine Device, Condoms

Table 7. Reproductive health services available in primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

STIs and HIV/AIDS	N (%)
Syndromic management of sexually transmitted infections, national first-line antibiotics available	25 (45.5)
Availability of free condoms	23 (41.8)
HIV testing and counseling	12 (21.8)
Prophylaxis and treatment of opportunistic infections, prevention of mother-to-child HIV transmission only with National AIDS Program	11 (20)
Maternal and Newborn Health	
Antenatal care ¹	32 (58.2)
Skilled care during childbirth ²	12 (21.8)
Basic Emergency Obstetric Care (BEmOC) ³	7 (12.7)
Postpartum care ⁴	33 (60)
Vaccination during pregnancy	13 (23.6)
Tetanus Shot	25 (45.5)
Other Reproductive Health Services	
Family Planning services ⁵	31 (56.4)
Post menopause care and therapy	26 (47.3)
Cancer screening tests (Pap smear)	34 (61.8)
Ultrasound Obstetrical and gynecological	40 (72.7)

¹i.e., assess pregnancy, birth and emergency plan, respond to problems (observed and/or reported), advise/counsel on nutrition & breastfeeding, self-care and family planning, preventive treatment(s) as appropriate

²Including early essential newborn care: preparing for birth, assess presence of labour, stage, fill WHO partograph and monitor, manage conditions accordingly, dry baby, clean cord care, basic newborn resuscitation, skin-to-skin contact, available magnesium sulphate, oxytocin, Cytotec®, early and exclusive breastfeeding, eye prophylaxis

³i.e., parenteral antibiotics + oxytocic/anticonvulsant drugs + manual removal of placenta + removal of retained products with manual vacuum aspiration (MVA) + assisted vaginal delivery 24/24 & 7/7

⁴Examination of mother and newborn baby (up to 6 weeks), respond to observed signs, support breastfeeding, counsel on complementary feeding, promote family planning

⁵Provision of family planning counseling, provision of contraceptives, birth spacing and postponement

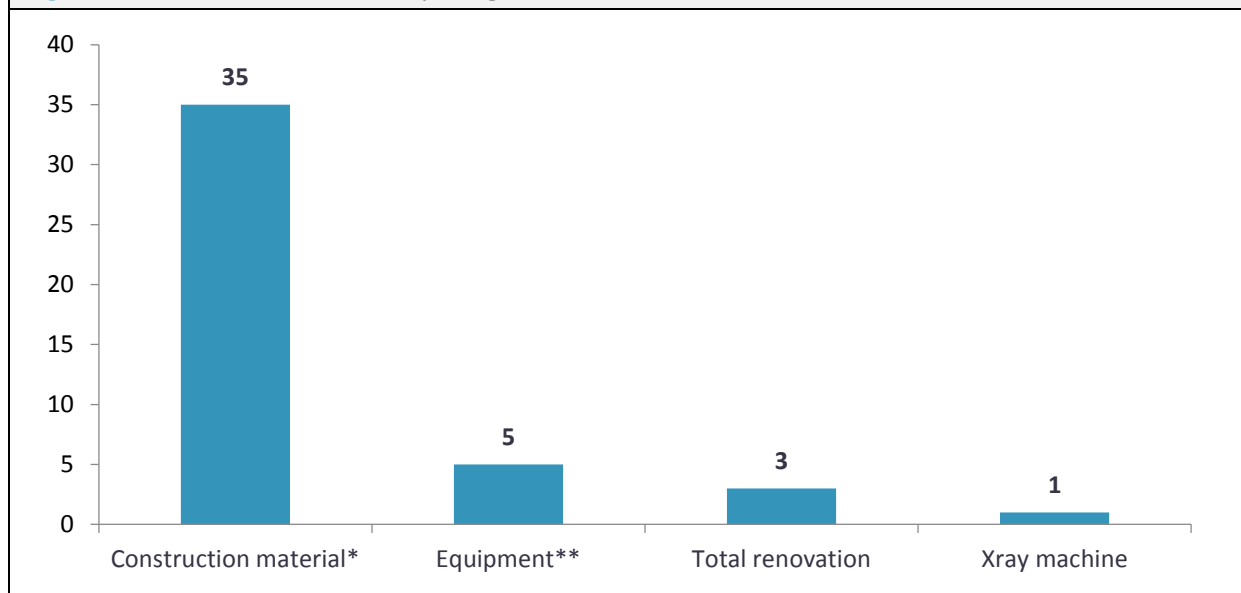
Table 8. Services for gender-based violence offered by primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

Services	N (%)
PEP for HIV and Emergency contraceptives	13 (23.6)
Safe identification and referral of GBV cases	28 (50.9)
Psychological support and counseling	23 (41.8)
Case management for GBV	18 (32.7)

Table 9. Mental health services offered by primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

	N (%)
Psychological support services	31 (56.4)
PHC staff participation in trainings related to mental health	22 (40)
Screening conducted for Mental Health	15 (27.3)
PHC reception of persons requiring MHPSS services	22 (40)
Mental health outreach services	18 (32.7)
PHC support to the integration of mental health (commitment, time, space, incentives, etc.)	23 (41.8)
PHC referral option(s) to a specialized mental health service provider (psychiatrist, psychologist, etc.)	36 (65.5)
Private rooms to provide Mental Health consultations	30 (54.5)
Willingness to assign a focal person / coordinator for mental health integration at PHC if resources are available	27 (49.1)
Pharmacy and Place for storing psychotropic medications with presence of specialized staff	27 (49.1)
The PHC usage of the health information system (PHENICS) to report on service provision indicators	17 (30.9)
Patient data documentation in a confidential way	49 (89.1)
Management of mental disorders by specialized and/or trained healthcare providers	26 (47.3)
Management of mental disorders by supervised non-specialized healthcare providers	12 (21.8)
Availability of at least one medicine from each group, antipsychotics, antidepressants, antiepileptic and anxiolytics	17 (30.9)

Figure 1. Number of centers requiring renovation material



*Glass, ceiling, false-ceiling, windows, doors, walls, paint and lights

**Computers, laptops, medical equipment, printers and refrigerators

Figure 2. Human resources in primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

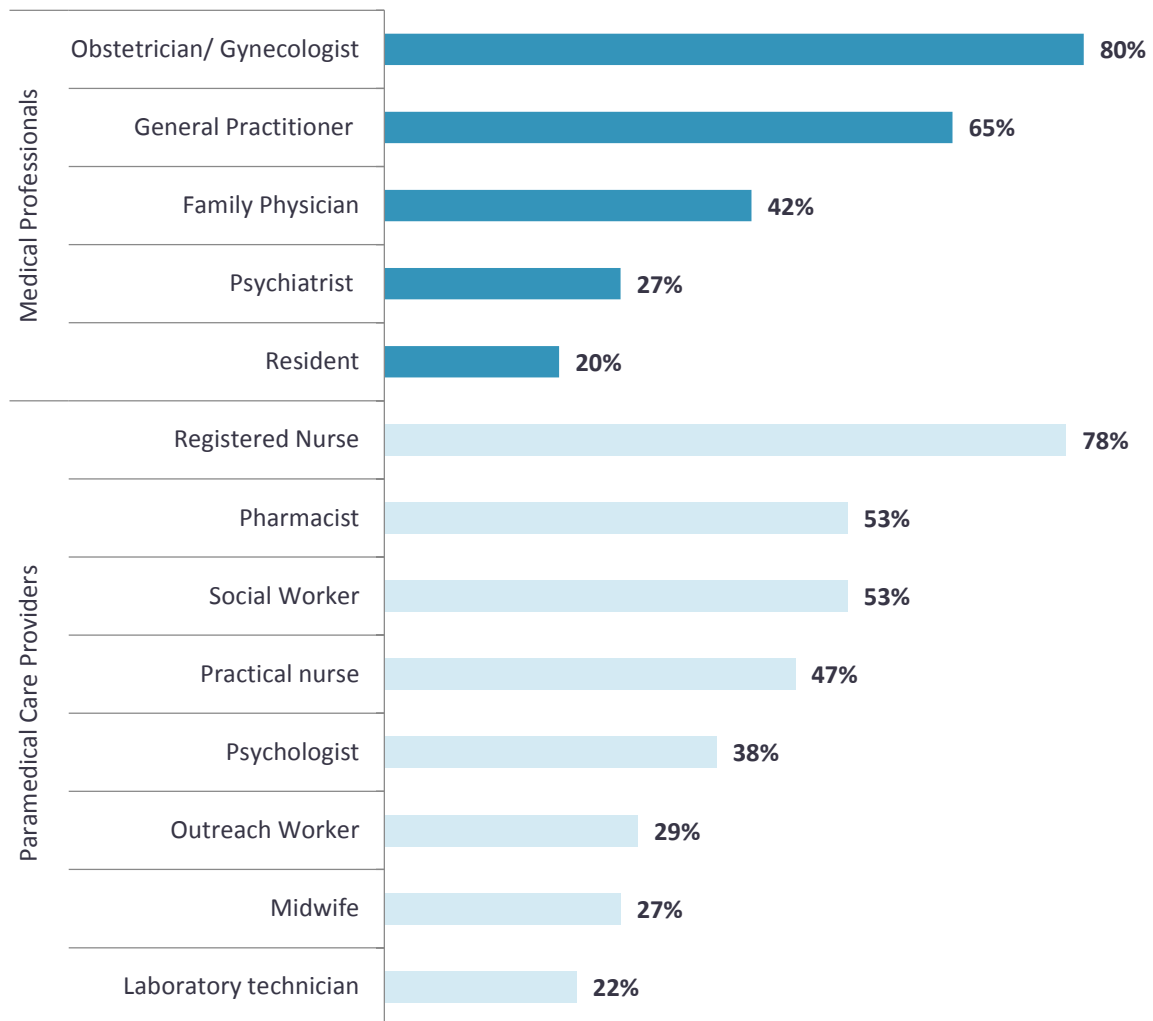
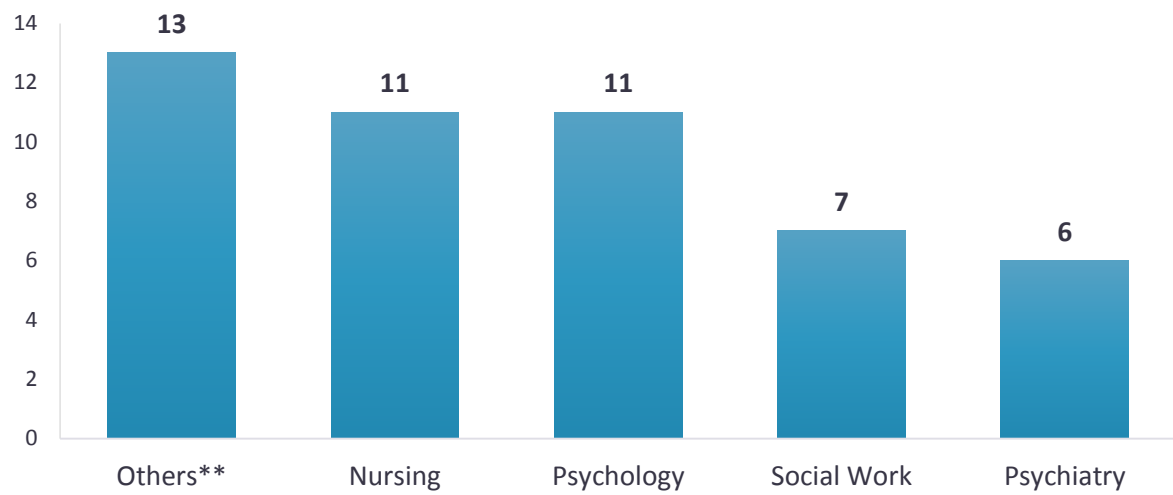


Figure 3. Number of centers reporting deficit in human resources (N=29)*



*N=29: number of centers reporting shortage in human resources

**Others: Nutrition, Pediatrics, Gynecology, Cardiology, Ear Nose Throat, Ophthalmology, Urology, Family Medicine, Dermatology, Orthopedics, Pulmonology, General Medicine, Dentistry, Physiotherapy, Midwifery and Pharmacy

Figure 4. Communicable and non-communicable disease services offered by primary healthcare centers located in Beirut and Mount Lebanon Governorates (N=55)

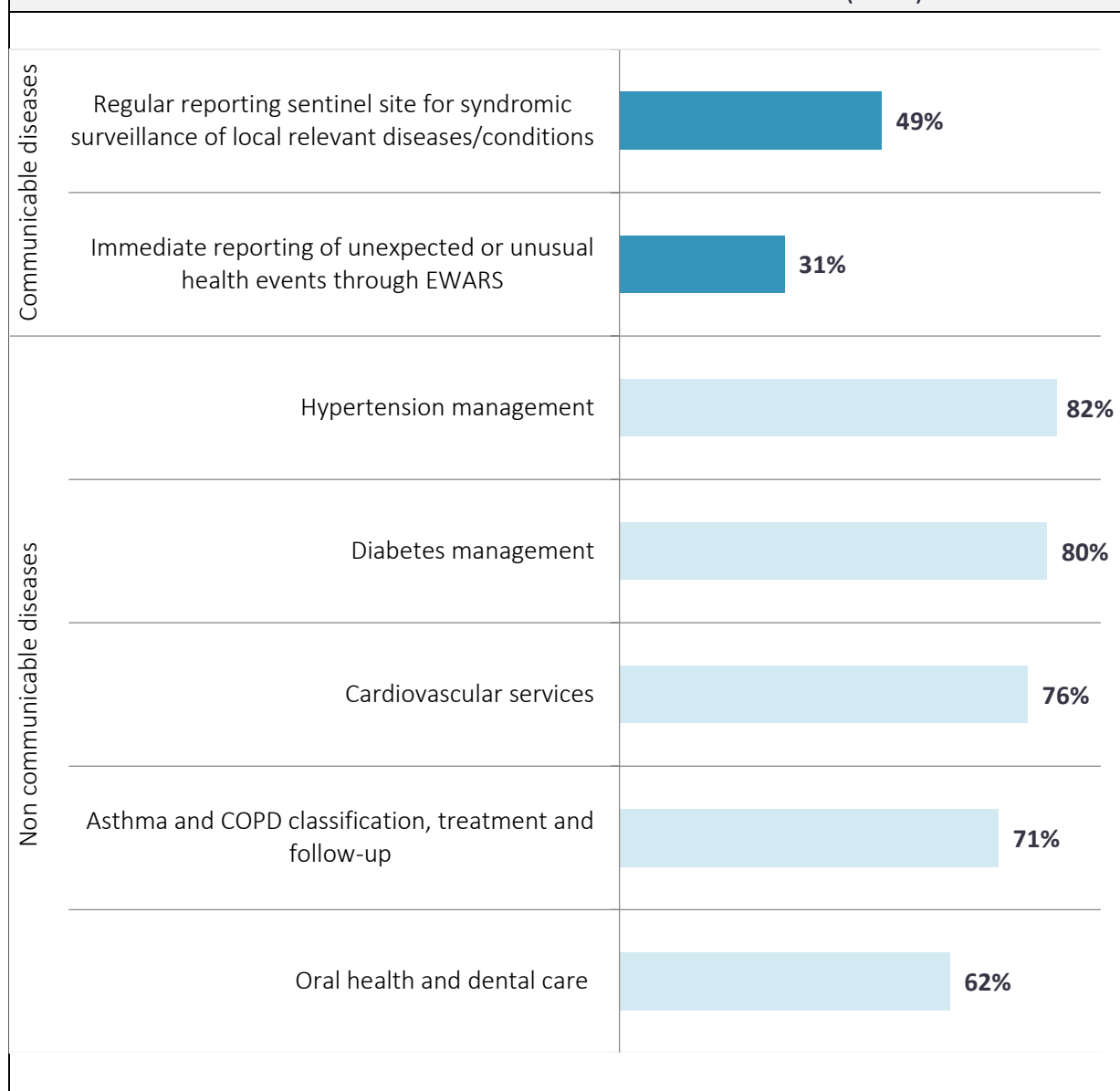


Figure 5. Number of centers having sufficient stocks of the following drugs and contraceptive methods for the next month

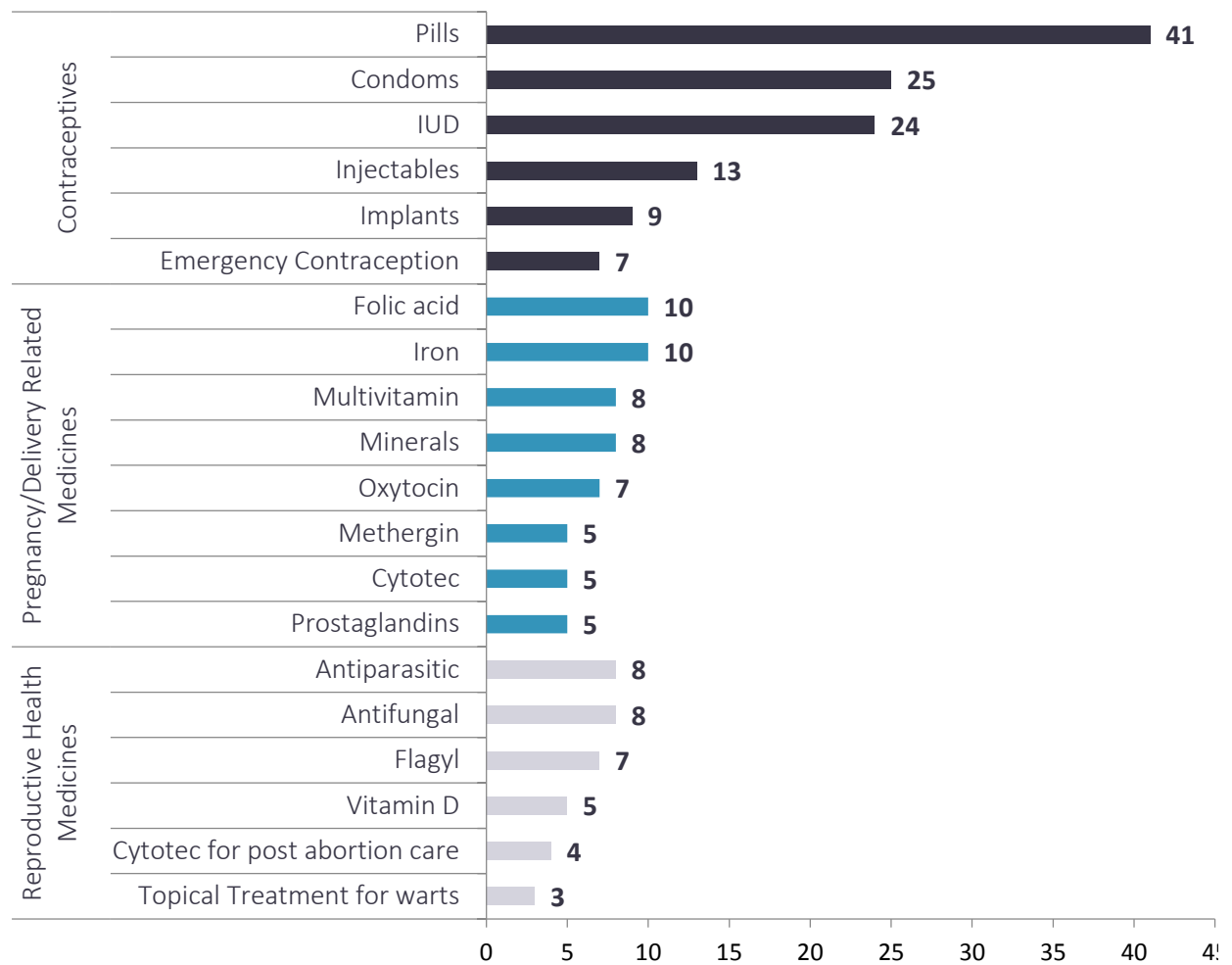
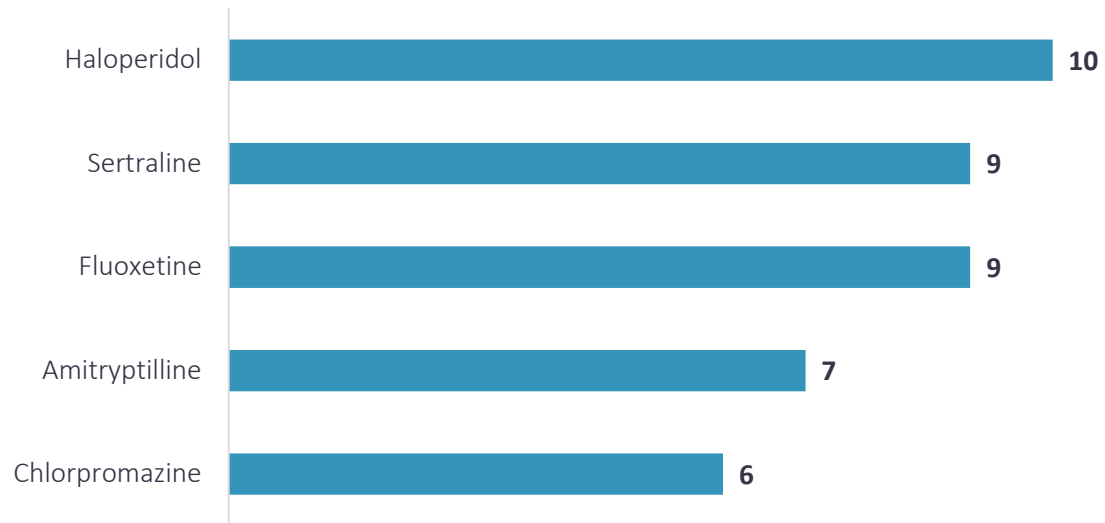


Figure 6. Number of centers having sufficient psychotropic medicines for the next month



APPENDICES

Appendix 1. Characteristics of the primary health care centers located in Beirut and Mount Lebanon Governorates

ID	Health Center	Health district	Affiliation	Average number of beneficiaries per month	Total number of consultations	Total number of reproductive health consultations
1	Socio-Medical Center-El Fanar	Maten	Private	400	700	200
2	Arc en Ciel	Maten	Organizations	3000	400	85
3	Ibad Al Rahman	Beirut	Organizations	3000	1520	300
4	Dispensaire Medico-Social Intercommunautaire	Maten	Organizations	600	1800	180
5	MoSA SDC Sin El Fil	Maten	Other Ministries	150	450	150
6	Beirut Central Dispensary	Beirut	Ministry of Health	1154	630	0
7	Men Center Abaad	Baabda	Organizations	100	300	0
8	Boulghourjian Socio-Medical Center	Maten	Ministry of Health	7500	7500	0
9	Saint Afram Dispensary - Assyrian League	Maten	Private	1000	3000	0
10	Medical and Social Center Greek Orthodox Nabaa	Maten	Organizations	650	650	30
11	Sin El Fil PHCC	Maten	Organizations	700	950	50
12	Saint Antoine Health Center	Beirut	Ministry of Health	500	350	15
13	American University of Beirut Medical Center PHCC	Beirut	Private	700	1800	5
14	Municipal Dispensary Dekwaneh	Maten	Other Ministries	650	1950	0
15	Soins Infirmiers et Développement Communautaire	Maten	Organizations	240	240	240
16	Jdeydeh Municipality Health Center	Maten	Ministry of Health	500	488	0
17	MoSA SDC Achrafieh	Beirut	Other Ministries	35	120	20
18	Red Cross Tarik El Jdide	Beirut	Ministry of Health	300	200	0
19	Orthodox Youth Movement	Beirut	Organizations	400	180	15

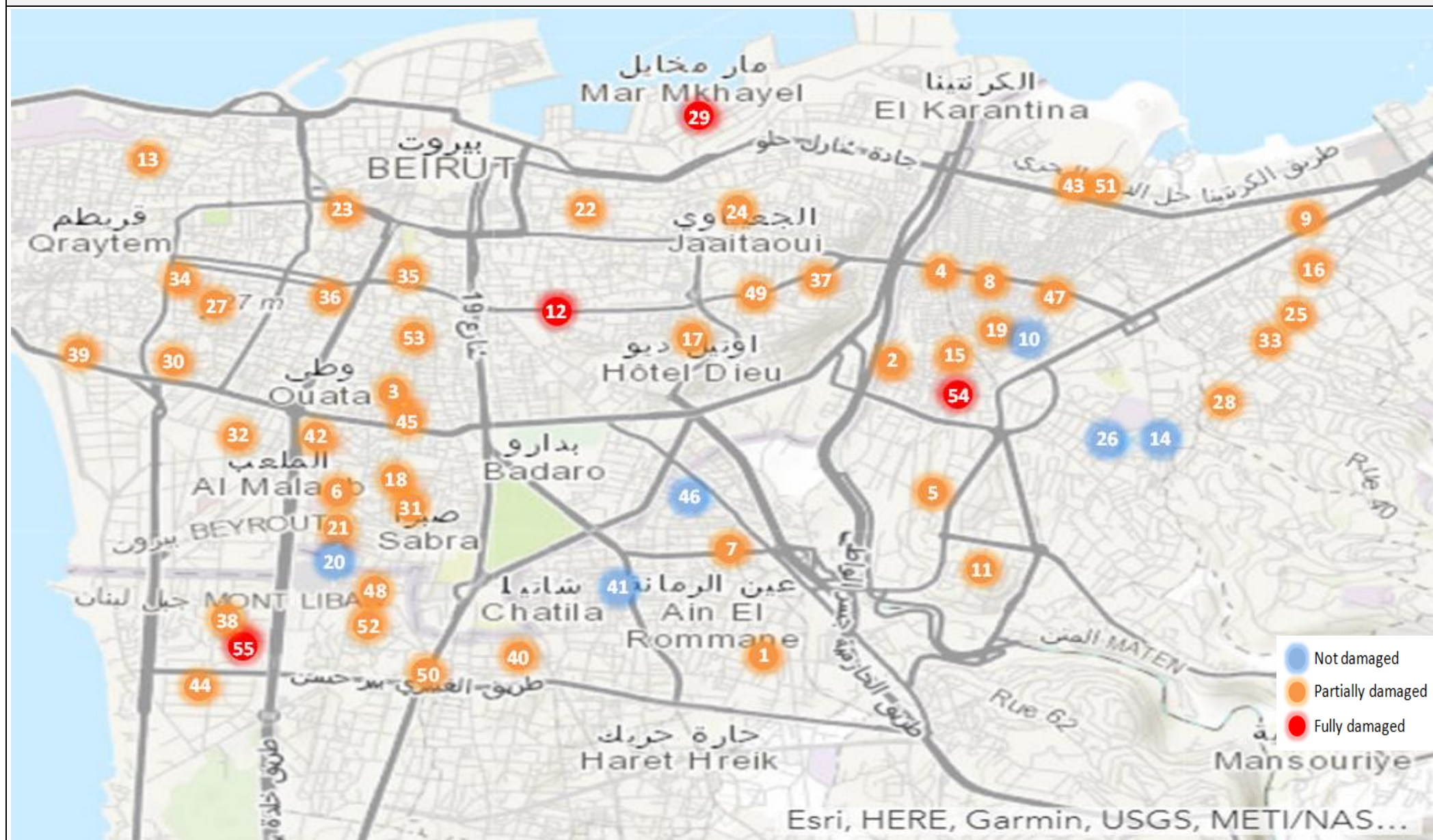
Appendix 1. Characteristics of the primary health care centers located in Beirut and Mount Lebanon Governorates

ID	Health Center	Health district	Affiliation	Average number of beneficiaries per month	Total number of consultations	Total number of reproductive health consultations
20	Tahaddi Association	Beirut	Private	800	1200	120
21	Social Reform Association Dispensary	Beirut	Organizations	1000	3000	0
22	Lebanese Red Cross	Baabda	Ministry of Health	90	287	50
23	Al Zahra Health Center	Beirut	Organizations	1300	4000	240
24	Saint George University Hospital PHCC	Beirut	Ministry of Health	250	250	0
25	Saint Michel Medical Center	Maten	Private	260	600	0
26	Etihad Al Kouloub Dispensary	Maten	Organizations	200	400	0
27	Markaz Al Zarif	Beirut	Private	3500	4500	4500
28	La Ligue De Bienfais Des Dames De Rawda	Maten	Other Ministries	60	180	40
29	Quarantina Governmental Hospital PHCC	Beirut	Ministry of Health	400	700	60
30	MoSA SDC Msaitbeh	Beirut	Other Ministries	900	200	25
31	MoSA SDC Mazraa	Beirut	Other Ministries	100	300	60
32	The Drouz Charity Aassociation Dispensary	Beirut	Organizations	100	300	60
33	Saint Charbel Dispensary - Sad El- Bouchrieh	Maten	Organizations	550	1650	360
34	Dar El fatwa	Beirut	Ministry of Health	2000	50	15
35	Bachoura Health Center	Beirut	Ministry of Health	450	1350	300
36	Salim Slam Makassed Association Mazraa	Beirut	Ministry of Health	400	500	30
37	Centre de Protection Maternelle et Infantile	Beirut	Organizations	250	300	0
38	University Medical Center Universal Learning Center	Baabda	Ministry of Health	1000	900	300
39	Mother and Child Care Association Health Center	Beirut	Organizations	1200	2100	2100
40	Ghobeiri Municipality Center	Baabda	Ministry of Health	Missing	1060	114
41	Restart Center	Beirut	Organizations	1000	3000	0

Appendix 1. Characteristics of the primary health care centers located in Beirut and Mount Lebanon Governorates

ID	Health Center	Health district	Affiliation	Average number of beneficiaries per month	Total number of consultations	Total number of reproductive health consultations
42	Herj Health Center	Beirut	Ministry of Health	1000	3000	300
43	Bourj Hammoud	Beirut	Organizations	30	30	3
44	MoSA SDC Chiyah	Baabda	Ministry of Health	690	2100	2100
45	Makhzoumi Foundation PHCC	Beirut	Ministry of Health	2200	3600	100
46	Lebanese Red Cross	Baabda	Private	400	486	79
47	Karagheusian PHCC	Maten	Ministry of Health	5000	4500	1147
48	Shatila Health Center	Beirut	Organizations	1700	1700	300
49	Saydeh Dispensary Achrafieh	Beirut	Private	150	0	0
50	PHCC Chiyah	Baabda	Ministry of Health	600	1800	300
51	MoSA SDC Bourj Hammoud	Maten	Other Ministries	350	165	45
52	Médecins Sans Frontières Birthing Center	Beirut	RHUH	330	992	992
53	Khatem Al Anbiyaa	Beirut	Ministry of Health	200	200	3
54	Al Sayde dispensary	Beirut	Private	0	0	0
55	Rafik Hariri University Voluntary Counseling and Testing	Beirut	Ministry of Health	0	0	0

Appendix 2. Locations of the assessed health care centers located in Beirut and Mount Lebanon Governorates



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