

AMERICAN UNIVERSITY OF BEIRUT

FROM UNDER THE RUBBLE: A DESCRIPTIVE STUDY ON
THE EMERGENCY RESPONSE OF DOCTORS WITHOUT
BORDERS POST BEIRUT PORT BLAST ON AUGUST 4,
2020

by
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My husband Ayman, for all the support he gave during this journey, I could not have done it without you.

And finally, to my mother, this is for you.

ABSTRACT OF THE THESIS OF

Nada Jihad Kazoun for Master of Science in Nursing
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Title: From under the Rubble: A Descriptive Study on the Emergency Response of Doctors without Borders post Beirut Blast on August 4, 2020

Introduction: A disaster is an occurrence that disrupts the normal conditions of existence and causes a level of suffering that is beyond the capacity of adjustment of the affected population of community (WHO, 2022) on the other hand , emergencies are defined as the quick response to a hazardous event .On August the 4th 2020 , the Lebanese capital of Beirut suffered a disaster like no other when the Beirut Port exploded up in flames. The Beirut Port blast was one of the biggest explosions in history, plunging an already strained country into darkness amid a COVID-19 pandemic and an unprecedented economic crisis. Medicine sans frontier (MSF), also known as Doctors without Borders responded to this humanitarian crisis. The explosion Killed more than 200 individuals and injured more than 6,000 (Shankiti, 2020). Destroyed Residential and commercial infrastructure as well as medical infrastructure three hospitals were rendered unfunctional as well as to the karantina central warehouse. The study was motivated by the request from MSF to do an evaluation of their response, moreover the possibility for improvement of future emergency responses. The main purpose of this study is to evaluate the emergency response conducted by MSF in response to the Beirut Port blast guided by the World Health Organization (WHO) framework for emergency response.

Methodology: This study is based on a mixed-method approach where the quantitative is embedded in the qualitative, using secondary data obtained from MSF.

Data sources: Secondary data obtained from MSF. The data covered from the time MSF started the emergency response i.e. August 7th until the end of the emergency response on September 30th in the form of emails, minutes of meetings and presentations. As well as quantitative aggregated data.

Data management: the data was categorized into emails, presentations and minutes of meeting. Then labeled chronologically. The third step was identifying key actions within the WHO framework and then slating the data from MSF into the corresponding action in the framework.

Data analysis We used the framework thematic analytical approach to gather and analyze the qualitative data (Gale, 2013). This approach is particularly important when there is prior conceptual framework to guide the research but also allowing space for additional comments that highlight the difference in operations between the WHO and MSF.

Results: The findings are organized into three main categories or key moments of action based on the WHO framework: **situational analysis, incident management system, emergency performance standards and key performance indicators (KPIs)**. For each category, we map and report the actual activity conducted by MSF

supported by extract from the secondary data and we identified the gaps in implementation.

Situational analysis: Out of the 18 sub-functions that WHO Framework proposes to conduct a situational analysis, we found that MSF reported on 15 of them. The following steps were implemented: 1- scope 2-scale 3-number of people affected 4- size of geographic area affected 5-causative factors 6-ongoing hazards and risk 7-primary and secondary effects 8-refugees complicated by the situation 9- conditions of the effected population 10- extent and type of health consequences 11-vulnerabilities and vulnerable groups, 12-functionality of national health system 13-physical damage to health facilities and other vital infrastructure.14-disruption of health service delivery, including cessation of programmes.15-operational environment 16-response capacity 17-international capacities and response 18-access and gaps.

The gaps in MSF situational analysis were: first, delay in initiating the analysis by 24 hours; second, there was no **proper systematic documentation** of the situational analysis. The WHO had clear details on what to report in the situational analysis. From the email and presentation, the documentation was rather patchy and did not follow the recommended details of the WHO Framework. Especially on the points of **international capacity response.**

The MSF has taken several strides to assess the situation post Beirut Port blast emergency, however a few gaps were identified that need to be addressed in the future.

Incident management: The WHO Framework encompasses 26 sub-functions that make up the incident management of the emergency framework. Ranging from activating the emergency Standard of Practices (SOPs) to the day-to-day management of the incident response. Out of the 26 sub-functions, MSF implemented 18; these were 1-ensure the safety and security of all staff 2-activate emergency SOPs 3-establish an initial Incident Management Team 4-establish contact with government officials, partners and other relevant stakeholders 5-determine the need for surge support 6-begin the deployment of surge support 7-elaborate the initial response objectives and action plan, 8-appoint an Emergency Coordinator and Incident Management Support Team 9-field operations 10-operational oversight 11-technical and operational support 12-staff health 13- liaison 14-information and planning 15-monitoring and evaluation 16-strategic and operational planning 17-project management 18-health service delivery 19-technical expertise 20-training of health staff 21-operational support and logistics 22-supply chain management 23- field support 24- finance and administration 25-health logistics 26-HR. Six sub-functions were found to be unique to the WHO funded NGOs, hence not applicable to MSF. Two sub-functions were meant to be implemented by MSF but not addressed and these were: training of staff & monitoring and evaluation.

Key performance indicators were not met according to the data received from MSF.

Discussion: We suggest to MSF that having a monitoring and evaluation component in their future responses would be an added value as highlighted by the lessons learnt from implementation of the *Pandemic influenza preparedness framework* and the joint external evaluation (JEE) both benefited the development of the National Action Plan for Health Security (NAPHS) in Indonesia. This was further enhanced by multisectoral coordination mechanisms and the active engagement of stakeholders, political commitment and authoritative backing through various presidential decrees.

Second, in developing countries, governments clearly have neither the financial infrastructure nor the know-how to respond adequately to disaster. As a result, they rely

on non-governmental organizations. NGOs with funding and human resources in place are willing to fill the role of the state but are also failing due to lack of coordination, know-how, and governmental support. Given the history and capacities of MSF, we believe if there was systemic and chronological documentation MSF would have been able to identify, coordinate and support other actors. We believe if this was also done in the situational analysis, MSF could have changed their incident management to accommodate.

Finally, we believe having a model for key performance indicators such as the WHO have to monitor the standards of the response and evaluate its effectiveness is very important (World Health Organization, 2020).

Conclusion: We provided an overview of the emergency response by MSF to the Beirut Port blast and compared to the steps suggested by the WHO framework. The lessons learned: the response was adequate but suboptimal. There are several gaps that MSF need to address to improve its emergency response. First, there is a need to create a systemic chronological documentation and reporting system on the situational analysis. Second, better process for the national and international capacity response. Third, establishing a monitoring and evaluation component as part of the incident management. Finally, MSF needs to consider the key performance indicators for an emergency response as recommended by the WHO guidelines.

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ABBREVIATIONS

- 1-Low- and Middle-Income Countries (LMIC)
- 2-Non-communicable diseases (NCD)
- 3-High Relief Committee (HRC)
- 4-Incident management system (IMS)
- 5-Emergency operations center (EOC)
- 6-International federation of red cross and red crescent societies IFRC
- 7-Joint external evaluation (JEE)
- 8- National action plan for health security (NAPHS)
- 9- World Health Organization (WHO)
- 10- Medecins Sans frontier (MSF)
- 11- Field coordinator (Fieldco)

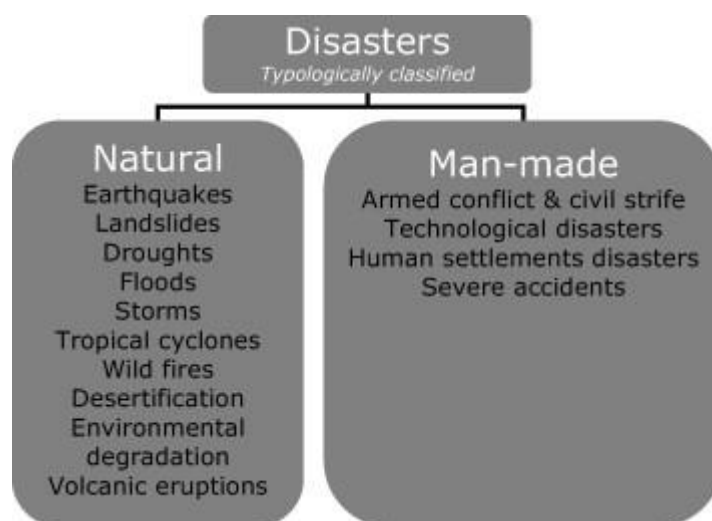
CHAPTER I

INTRODUCTION

A disaster is an occurrence that disrupts the normal conditions of existence and causes a level of suffering that is beyond the capacity of adjustment of the affected population of community. We have two distinct categories of hazardous events that can lead to disasters: natural and man-made. Natural disasters can be sudden like earthquakes, floods, and volcano eruptions, or progressive such as droughts. Man-made disasters can also be sudden such as structural collapse and explosions, or progressive such as wars and pollution (WHO, 2022). (Figure 1. Disasters classification and typology)

When a hazardous event is coupled with vulnerability, which is when the affected community does not have the capacities to deal with the disaster, it is enlisted as an emergency requiring a response either from agencies or organizations such as national governments and international organizations. (WHO, 2022).

Figure 1. Disasters classification and typology.



Hundreds of thousands of people per year die globally by disasters, mostly in Low- and Middle-Income Countries (LMIC), signifying that disasters affect more heavily poor population (Ritchie, 2014). In 2020 alone, there were 274 disasters events, 189 of which were natural, 85 were man made. One of which was the Beirut Port blast (Direct relief, 2020).

A. The Beirut Port blast

On August 4, 2020, amid a protracted refugee crisis, political unrest, a collapsing economy and a COVID-19 pandemic, the world witnessed the Port of Beirut along with surrounding neighborhoods go up in flames due to an explosion labeled as the biggest non-nuclear explosion of all times. The explosion killed more than 200 people, injured more than 6,000 and left around 30,000 people homeless. The injured flooded the hospitals inside and outside of Beirut. The deceased were scattered around the explosion, many were buried under the rubble. Houses were destroyed and their inhabitants in a split of time lost their shelters, belongings, and essential livelihood means including medications. Water and power cuts exacerbated the already unstable supply. The capital of the country Beirut was plunged into extreme dismay (Shankiti, 2020).

Three of Beirut's major hospitals were left nonfunctional decreasing by 500 beds the bed capacity of the capital during a COVID-19 pandemic (Shankiti, 2020), not to mention the loss of countless containers with essential medical supplies and medicine at the Port. The central Ministry of Public Health (MOPH) warehouse, located in the vicinity of the Beirut Port, that stores and dispenses medications such as non-communicable diseases (NCD) medications, vaccines, cancer and tuberculosis

treatments, was severely affected by the blast and left it nonfunctional (World Health Organization, 2020).

“WHO is deeply concerned about the hospital and health workforce capacity, supplies of medicine, and chemical fumes which might have a harmful impact on the health of people with underlying conditions”, the agency said in a donor alert issued on August 6 (World Health Organization, 2020).

Before the explosion, and due to the socio-political and COVID-19 pandemic, 75% of Lebanese people needed aid, 33% had lost their jobs, and 1 million people were living below the poverty line (World Food Program, 2021). The Beirut Port blast exacerbated the situation exponentially. The estimated damage added up to 15 billion USD as per official analysis, which further accelerated the state of Lebanon's dying economy and impending humanitarian crises. Fifty percent of Lebanese surveyed indicated that they did not have enough to eat; knowing that Lebanon imports 80-85% of its food products through the Port, thus the percentage of people that went hungry post this terrible event grew higher (El Sayed, 2020).

Many non- governmental organizations (NGO) such as MSF and others rushed to aid directly post the Beirut Port blast, in hopes to help the people directly affected by the blast in their most vulnerable moment, until the dust settles and a clear plan to move forward has been made by the governing authorities of the country.

On August 10, 2020, in the aftermath of the explosion, the Lebanese Prime Minister resigned further crippling an already failed system. Thus, the heavy rely on international actors to support the emergency response post-disaster.

B. The MSF emergency response

On August the 6th, after a brief and quick assessment of the most damaged areas, Doctors without Borders officially known as Médecins Sans Frontiers (MSF), an emergency medical NGO that has a long history of responding and aiding Lebanon, started medical and non-medical operations in three of the most affected locations by the blast, Karantina, Mar Mikhail, and Khandak. They setup wound care clinics, distribution of NCD medications, and mental health consultations. Alongside the medical activities, MSF started a distribution of hygiene and essential items for protection from COVID-19 such as facemasks and sanitizers. This immediate response lasted until the end of September 2020. I personally was part of this rescue effort and witnessed first-hand the activities on the ground.

MSF response to the Beirut Port blast emergency was based on a quick household assessment (approximately 70 households) that put NCD medications as a priority. The economic crises that hit the country less than a year prior to the blast, the Lebanese currency devaluation, led to an inflation in prices of goods including medications. Thus, it was not a surprise that the result of the survey singled out the NCD medications.

C. Motivation, purpose and objectives of the study

This study was motivated by the demand of MSF administration to evaluate its emergency response with the purpose of improving future responses. MSF is an international NGO that has a long-standing history of intervening to emergency and protracted crises in mostly LMIC countries. The Beirut Port blast represents an epitome of emergencies, an in-depth analysis and documentation and the lessons learned about

this emergency response are essential for improving MSFs emergency responses in other contexts as well.

Hence, the main purpose of this study is to evaluate the emergency response conducted by MSF in response to the Beirut Port blast guided by the World Health Organization (WHO) framework for emergency response (World Health Organization, 2017). The WHO developed this framework in 2017 as a guide for organizations to manage, grade and respond to emergencies in member states. We compare the steps adopted by MSF to the WHO recommendations for emergency response.

Our specific objectives are:

- 1- To map the planning process done by MSF as the first step in the emergency response and compare it to the corresponding WHO recommendation.
- 2- To describe the implementation process and evaluate it based on the recommendation of the WHO framework.
- 3- To identify the challenges during and after the response.
- 4- To highlight the gaps in response.
- 5- To recommend strategies for improvement

CHAPTER II

LITERATURE REVIEW

This chapter is divided into two sections: Section 1: we define the main concepts used in emergency responses, the recommended phases for disaster preparedness and management, and a narrative review of countries' preparedness and responses to emergencies including Lebanon. Section 2: we provide a historical background for MSF interventions in Lebanon and introduce the WHO emergency response framework and rationale for choosing this specific framework.

SECTION 1.

A. Definition of main concepts used in emergency responses.

Disasters as mentioned previously disaster is an occurrence that disrupts the normal conditions of existence and causes a level of suffering that exceeds the capacity of adjustment of the affected community. A disaster can be further categorized as natural or man-made.

Natural disasters, as shown in figure.1 range from earthquakes to volcanic eruptions, essentially everything done by nature that causes harm to effected populations and societies. We can see that risk increases with our current climate changes.

An example of man-made disasters can be wars, nuclear bombings and explosions. With the progression of technology new prospective of man-made disasters are emerging (International federation of red cross and red crescent societies IFRC, 2022).

Disaster mitigation or disaster risk reduction are actions set in place that aim to foresee disasters and asses their probable impact and prevent it when possible , when

that is not possible. Disaster mitigation aims to be able to better prepare to respond to the disaster if or when it hits (International Federation of Red Cross and Red Crescent societies IFRC, 2022).

Disaster preparedness is identified as the actions taken to prepare for the occurrence of any type of disaster (man-made or natural) to minimize loss to human lives, property and environment. Disaster preparedness differs from one context to the other due to a variety of reasons ranging from political, cultural, economic and more (International federation of red cross and red crescent societies IFRC, 2022).

Disaster management, like disaster preparedness, are the set of actions that roll into place once a disaster hits to as well minimize losses. The disaster preparedness is setting a system in place for when a disaster occurs, disaster management is rolling out this system in a timely and efficient manner after the impact of this disaster. (International federation of red cross and red crescent societies IFRC, 2022).

Emergency response is a response to provide immediate assistance to hazardous events such as fires, earthquakes and even mass casualty events. Emergency responses are often seen as part of the disaster management plan (International federation of red cross and red crescent societies IFRC, 2022).

B. The phases of disaster preparedness and management

Since humanity is witnessing more and more risks for natural disasters and man-made disasters, the idea of disaster preparedness originated. The concept of disaster preparedness and management is defined as the accurate set of actions and activities taken to prevent a disaster from happening and to overcoming its effects. Disaster preparedness and management is split into three phases: pre-disaster phase, warning phase and the post-disaster phase, each of which has a specific set of activities to follow

to ensure optimal and successful implementation (International federation of red cross and red crescent societies IFRC, 2022).

The pre-disaster phase is the set of activities put in place to prepare a society for a disastrous event. The activities are geared towards prevention and mitigation. Prevention means taking actions to prevent disasters from occurring, while mitigation is to have a plan in place so when a disaster occurs, the damage is as minimal as possible. Thus, two main strategies are needed in this phase: *legislation and development of procedures for response plans*. Unarguably, humans are at risk for hazardous events that is something no country can control. In terms of legislation, we can have disaster prevention such as when the country set building regulations to prevent collapses from happening. Similarly, for disaster mitigation, we can have countries at higher risk for disaster such as hurricanes plan to secure safe shelters in buildings to avoid life losses. In terms of developing procedures for response plans, a country needs to develop a national emergency policy and procedure, conduct training for implementing those procedures, establish an emergency communication system, and set aside resources for emergency responses (Abulnour, 2013).

The warning phase is the scientific indicator put in place to predict or forecast a disastrous event and its magnitude. It is the monitoring of hazards and warning the population at risk to minimize damage and human loss and to better deploy and mobilize aid, which in turn decreases the long-term effects of disasters on the effected community (Abulnour, 2013). For example, to have an earthquake tracking and alarm system to warn people to take the necessary steps to decrease the loss of life.

The post-disaster phase includes all the activities and actions that are implemented after the occurrence of a disaster, which includes the emergency response,

rehabilitation, reconstruction and development of the effected community (Abulnour, 2013).

- Countries' Preparedness and Responses to Emergencies

1. China:

Being a disaster-prone country, China has developed an advance system for community-based disaster management (CBDM) capacities. Domestic major emergency incidents, disasters and international disaster reduction activities are the bases of formation of the CBDM concept, also including the implementation of capacity building activities, and the improvement of policy and laws. Moreover, disaster reduction activities, such as the construction of the national comprehensive disaster reduction community and national safe community, have been promoted nationwide. As a result, China's disaster-resistance capacity has largely improved (Lixin et al., 2011).

2. Thailand:

Thailand's disaster preparedness and management has been built over 4 decades from 1979. In 1979 the Civil Threat Prevention Act was the country's first comprehensive disaster management law. In 2002, the Royal Thai Government established the Department of Disaster Prevention and Mitigation under the Ministry of Interior as the lead agency for Disaster Risk Management and disaster response. In addition to the government-led system, a vast network of Non-Government Organizations, charities, academic institutions, business and private enterprises, and community and citizen-led networks support the country's disaster management capabilities (Disaster management reference handbook, 2022).

- C. Countries' responses

In the US, three major hurricanes—Harvey, Irma, and Maria—made landfall in the United States and its Caribbean territories over the course of two months in late summer 2017. This was the first time the United States experienced three Category 4 or greater hurricanes during a single hurricane season. The Center for Diseases and Control (CDC) activated an incident management system (IMS) and its emergency operations center (EOC) on August 31, 2017. Epidemiologists, environmental health specialists, emergency managers, health communicators, and scientists with expertise in waterborne and vector-borne diseases worked together to monitor and address public health threats in the aftermath of these record-breaking storms (CDC, 2017), pointing to the active role government can play to implement an efficient, timely and effective response that minimizes the long-term effects of disasters.

In Thailand, following the 26th of December 2004 tsunami, which was the worst natural disaster in Thailand's history, affecting six provinces: 5,395 persons died, 2,817 disappeared and 8,257 were seriously injured; 3,302 houses were destroyed and 1,503 were partially damaged; more than 35,000 families lost their livelihoods. The tsunami response in Thailand was characterized by several distinct factors including: 1- declined international financial assistance yet welcoming technical assistance; 2- activating pre-existing Acts such as the 1979 Civil Defense Act, bypassing the need to create a new tsunami coordination office, which freed up resources and maximized the capacities of national and local line ministries; 3- International agencies provided assistance only for certain population groups (Tsunami evaluation coalition , 2006). This is another example that highlights the role of the government in rolling out efficient disaster management plans. Moreover, it also highlights that having pre-existing emergency preparedness and response plans is crucial to the recovery of a nation post disaster.

D. Emergency preparedness in Lebanon

Lebanon, a small country of 10,452 km² in the Middle East on the Mediterranean Sea. Lebanon has always been a country of political, economic and security unrest (Al Hajj et al, 2021). Lebanon and the Lebanese population have lived through numerous disasters raging from earthquakes with corresponding tsunamis in the south, floods, civil and external wars, an economic collapse and many explosions that have happened across the years. Moreover, the vulnerability of the Lebanese population to these disasters have increased by the fact that Lebanon has haphazard housing and uncontrolled urban expansions, lack of building codes enforcement and land legislation and use (relief ,2020). Hence, Lebanon needs a disaster management and preparedness in place to prevent, mitigate, prepare and respond to these threats.

Since 2005, Lebanon has been a signatory country of the Hyogo Framework. Hyogo is a global framework for disaster risk-reduction efforts. The aim of the Hyogo Framework is to develop the institutional foundation needed to adopt a disaster reduction risk in the country, to reduce losses in lives, economic and social assets (Haase, 2014).

When Lebanon signed the Hyogo framework, the government put some efforts towards progress by expanding the authority of the High Relief Committee (HRC), which was established initially during the civil war to distribute relief supplies to those affected, thus became responsible for disaster prevention and mitigation activities (Haase, 2014). At the time, the Lebanese government had the intent to protect natural environment, reduce forest fires, regulate construction and enhance public safety, thus placing Lebanon as a pioneer in the region towards efforts of disaster management policy. Unfortunately, that did not happen. In his study, Haase described Lebanon's

disaster management system to be underfunded, short staffed and uncoordinated (Haase, 2014). The political, ideational and economic restraints crippled these efforts.

The little disaster response capacities that do exist in the country are all through the individual efforts of the Lebanese Red Cross, Civil Defense movements and the Lebanese Armed forces, and even these agencies are operating in short capacities.

Since 2019, the situation has plummeted when the country faced months of antigovernment protests, the collapse of the Lebanese pound plunging the country into an economic crisis and the global COVID-19 pandemic. All combined strained an already over strained country the lack and need of a disaster management plan was further highlighted when Beirut, Lebanon's capital witnessed its biggest disaster of all, the Beirut Port blast explosion (FSC, 2020).

SECTION II.

D. MSF's Long-standing history in Lebanon

MSF first came to Lebanon in 1976 in response to the civil war. It was the first emergency response MSF coming to the aid of Lebanon and the first for MSF in a war zone since it was founded. Then, in 1982, Israel invaded Lebanon reaching up to Beirut and occupied parts of South Lebanon for more than 2 decades. MSF also responded by conducting surgical and rehabilitation activities for the war wounded.

MSF left Beirut in 1984 only to return in 1987 and stay until 2000. Although the civil war ended, following Taaif agreement signed in 1989, many residents of Lebanon still needed aid particularly medical care.

In 2000, the Israeli forces withdrew from South of Lebanon and MSF winded down its activities to mental health activities in the South and Palestinian refugee

camps. However, when Israel and Lebanon went to war again in 2006, MSF scaled up its medical and logistical activities while working with Greenpeace on "Break the Blockage" activity in Lebanon.

In 2008, MSF decided to start a 3-year project in Lebanon with an emphasis on mental health across different parts of the country mostly affected by the protracted wars. In 2011, these activities scaled up and changed in nature following the Syrian war and its impact on Lebanon. Since then, MSF's presence has really grown in Lebanon, and now MSF has projects in 14 different locations in Lebanon with three operational sections intervening and a Middle East and North Africa (MENA) office located in Beirut. In 2020, MSF had 627 employed staff in Lebanon with an expenditure of 31.3 Million Euros.

E. The WHO emergency response framework

In 2017, the World Health Organization produced a strategic framework for emergency response. The WHO's strategic framework was developed initially as a guide for organizational staff to assist during emergencies. The framework systematically provides a roadmap for assessing, grading and responding to public health events and emergencies. The framework is split into 5 different chapters covering from the moment an emergency occurs till the planned exit, and suspension of emergency activities. The WHO emergency response framework provides specific procedures in the way it approaches, plans and executes their emergency response (World health organization, 2017).

The WHO framework provides a guideline for assisting international organizations as well as governmental organizations in building capacities specific to emergency response and making a clear plan in paving the way out of emergency status.

WHO has supported in conducting 41 risk profiling workshops in Africa and have had 83% of high-risk countries integrate emergency preparedness plans derived from this framework in 2018 (World health organization, 2017). A detailed account of the WHO Framework is presented in the Methodology section.

F. Significance of the WHO framework

Many disaster responses plans/frameworks exist around the world such as the CDC pacific emergency health preparedness in the United states (CDC, 2018) and the association of southeast Asian nations (ASEAN) center for humanitarian assistance and emergency response in Asia (Floristella, 1970). These plans/ frameworks are government-focused, and the implementation is based on governmental agencies. The WHO framework is targeting low-income countries and is meant to guide NGOs and humanitarian workers on how to respond to disasters and to easily incorporate their response to the emergency response plans. This framework was used in conducting 41 risk profiling workshops in Africa and have had 83% of high-risk countries integrate emergency preparedness plans derived from this framework in 2018 (WHO, 2019).

CHAPTER III

METHDOLOGY

A. Study Design

This study is based on a mixed method approach where the quantitative is embedded in the qualitative, using secondary data obtained from MSF. The data covered the period MSF started the emergency response, that is, August the 7th until September 30th 2020, the end of the response.

B. The WHO Emergency Response Framework

As indicated above, we used the WHO emergency response framework as the conceptual framework for data collection and analysis (world health organization, 2020). The constructs from this framework consisted of the following key chronological points: situational analysis, incident management system, and standards and key performance indicators (KPIs), all of which have subcategories and actions. Table 1 below lists these key points along with a short description of each category (world health organization, 2020).

Table 1- WHO emergency response framework short description.

WHO emergency response framework	
Key points	Short Description
Situational analysis	<i>An analysis of the effected countries situation in terms of resources and capacities in response to the emergency status, and response that should be done within the first 24 hours of an emergency.</i>
Grading system	<i>The WHO's rubric for grading health related emergencies /natural disasters in terms of scope and scale. Grading should be done within 24-48 hours. This grading allows to determine the resources needed to be dispatched to the effected country.</i>

Incident management	<i>This indicates the management of the incident within the WHO from decision making to field operations. Starts from the onset of the emergency to the exist and follow up.</i>
Standards and KPIs	<i>This summarizes the minimum standards of operations for the WHO along with the key performance indicators in emergency response.</i>

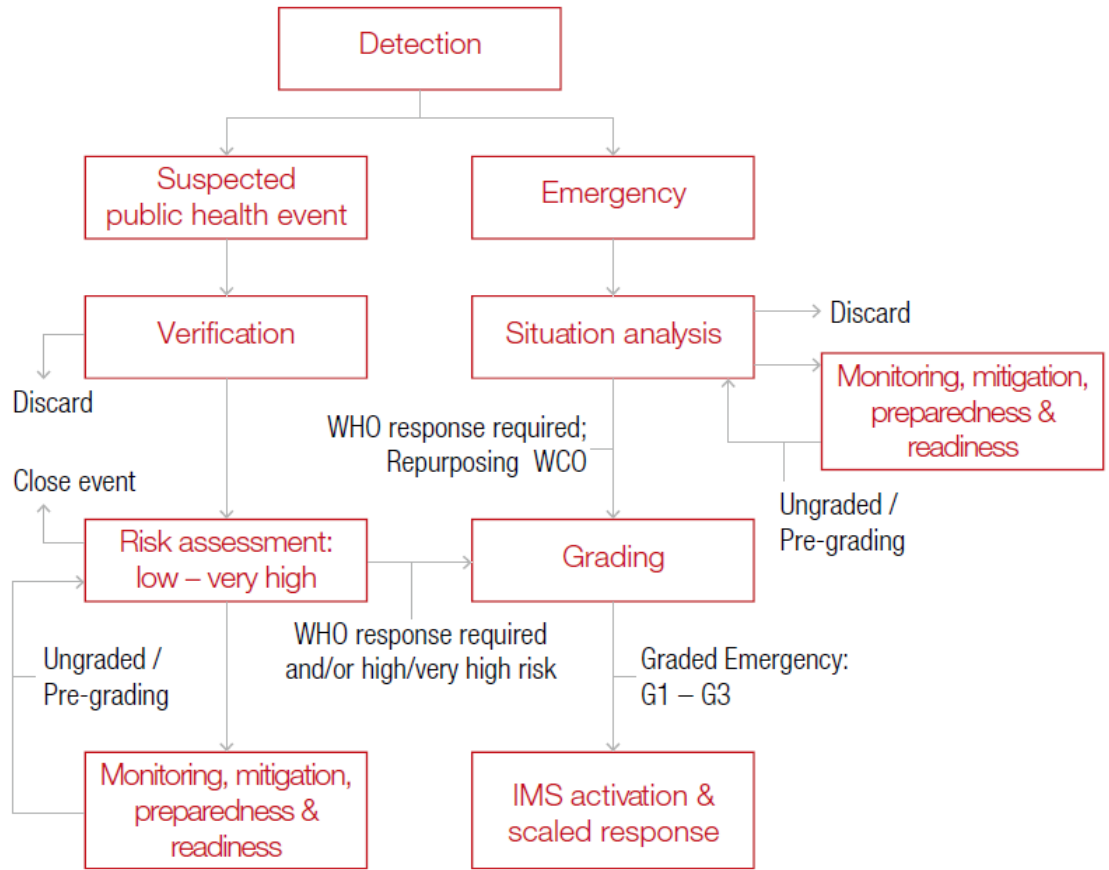
- **Situational analysis:**

It consists of two steps: a quick risk assessment followed by the situational analysis (World health organization, 2017).

In the WHO framework, the first step following an emergency is to do the rapid risk assessment (World health organization, 2017). The rapid risk assessment is as the title implies a rapid assessment of the event in terms of turning it into a public health risk or not. The WHO as the health reference and safeguard of global organization is ***responsible for conducting this risk assessment, issuing a situational analysis and grading the disaster as public vs not public health risk***. The WHO communicates the results of this risk assessment to other organizations including the MSF.

The below graph highlights the steps of risk assessment, situational analysis and grading system (World health organization, 2017).

Figure 1: Linking risk assessment and situation analysis to WHO grading and operational response



For acute events and emergencies, grading occurs within 24 hours of risk assessment/situation analysis

In the above figure 2, we see that on the left side of the chart, WHO observes when an incident occurs anywhere in the world, whether this incident is a suspected public health risk, e.g. COVID. Then, WHO moves to verifying the incident either to discard it or to conduct a risk assessment. If the risk assessment is low, then the event is closed. If high risk, WHO moves to grade it. In the case of an emergency, i.e. Beirut Port blast, the WHO moves into conducting a situational analysis to examine the preparedness and readiness of the country and accordingly to grade it. Following the grading, the emergency response is activated and scaled upon need.

The WHO considers the following criteria in assessing the scale and significance of consequences related to the emergency:

Impact which includes the scope and scale of the emergency, numbers of people affected, disaggregated by sex and age wherever possible. It also covers the size of geographic area affected, underlying causative factors and drivers of the emergency, ongoing hazards and associated risks to health. Further, primary and secondary effects, e.g. forced displacement, conditions of the affected population, extent and type of health consequences and risks are examined. The vulnerabilities and vulnerable groups, functionality of national health system, physical damage to health facilities and other vital infrastructure, disruption of health service delivery, including cessation of programmes are also assessed (World health organization, 2017).

Operational environment which is the response capacity. This includes national and local capacities and response management. The health and other related sectors and whether international capacities and response – both in country and out of country are available for mobilization. The WHO capacities and response; coordination capacity, physical, political and security access to the affected area, coverage and gaps of essential health services and other related services, overall strategic humanitarian priorities, context and/or conflict analysis are also examined (World health organization , 2017).

As a result of this risk assessment, WHO issues a situational analysis to proceed with the grading system.

Grading system:

Grading emergencies is a very important step for the WHO for it sets the foundation for how the emergency response or incident management will look like and what label of support the WHO should give the effected populations.

Grading scale:

The scale ranges between '0' indicating "ungraded" to '3' indicating "Grade three" described as follows:

0= ungraded. Ungraded public health events or emergencies are ones where the assistance of the WHO is not required, for example the collapse of the Notre-Dame fire in France in 2019.

1= Grade one. Usually involves one country, with limited or no response from the WHO needed but the emergency is still above the country's capacities for response and the capacities of the WHO office in that country. Usually this is a small event done with collaboration of other key actors and NGOs. An example of this can be the wildfires in Australia year 2020.

2= Grade two. Can involve one or more countries, but will need moderate support from WHO globally, yet the member states and the WHO country office will require assistance and resources. An example of this could be the cultural Sudanese civil war that took place from 1983 until 2005 and ended up with two sovereign nations, Sudan and South Sudan,

3= Grade three. Grade three emergencies or public health events are events that involve one or more countries and that require major or maximal involvement of the WHO and their resources, an example of this can be the COVID-19 pandemic (World health organization, 2017).

Incident management:

The WHO maps out and guides how to respond to an emergency. After conducting the situational analysis and the grading, the WHO goes on to the incident management system, setting up the appropriate response to the emergency, from assembling a team to field activities.

Key performance indicators:

The WHO selects specific procedures based on the grade of the emergency (any emergency that scores 2 or 3), monitor them throughout the response and at the end of the response measure the performance to ensure effectiveness of the WHO response and to inform course corrections when applicable (World health organization, 2017).

C. Data Sources.

We obtained the secondary data from MSF in the form of:

- 1- Quantitative data consisting of aggregate data of activities during the response. This data contained de-identified records of activities conducted within the emergency response including wound care, mental health, and NCD medication distribution. Along with COVID-19 health promotion activities.

- 2- Qualitative data consisting of emails, minutes of meeting, situational reports and presentations done by the staff at the end of the emergency response for the purpose of planning, organizing or evaluating the response.

D. Nature of the data

We obtained a total of 11 data sources from MSF, all de-identified as follows:

Six emails, one meeting report, two presentations, one quantitative data spreadsheet and one resource guide and service mapping

We used and extracted data from five out of the six emails. Each email was 3-4 pages including a detailed report covering every 2 days of the response. The emergency cell within MSF was communicating via emails in lieu of a report due to the evolving nature of the emergency.

We, also, used and extracted data from one meeting report composed of 4 pages describing in more details the activities taking place throughout the response by all departments (medical, logistics, HR..).

Presentation_02 which was a 35-slide presentation capturing the whole response done by MSF and presented at the end of the response was used in the data analysis.

Quantitative data spreadsheet, which was the aggregated data gathered throughout the response at the three different locations as described above was used in the data analysis.

Unused secondary data were:

- 1- One email, which lacked the necessary data for the purpose of the study
- 2- One presentation, which was a survey conducted at the end of the response with no relevant data to the response.

- 3- The resource guide which mapped out all activities done by other actors and had no impact on the data we were analyzing.
- 4- Service mapping which was a duplication of the resource guide done at a later stage of the response.

E. Data management

After we obtained the qualitative data from MSF, the data was managed as follow:

- 1 First, the data was categorized into emails, reports and presentations.
- 2 Second, emails, reports and presentations were labelled chronologically, e.g. *Email_august8*.
- 3 The third step was to create tables that specify the key moments and actions that should be taken in an emergency response according to the WHO framework, which were divided into 3 major steps, the situational analysis, incident management and key performance indicators as indicated above.
- 4 Then, NK slated the extracted data from MSF into the corresponding action points of the WHO emergency response framework (Gale, 2013). For example, if the email is regarding the situational analysis, NK flagged it and placed it in a slot in the corresponding cell of the WHO step in situational analysis. Once all the data was distributed, NK was able to get an exhaustive data of all the activities of MSF compared to the WHO emergency response framework (Gale, 2013).

Once this was completed, we proceeded with the data analysis. Annex 1:

Qualitative database.

F. Data analysis.

We used the framework thematic analytical approach to gather and analyze the qualitative data (Gale, 2013). This approach is particularly important when there is prior conceptual framework to guide the research but also allowing space for additional comments that highlight the difference in operations between the WHO and MSF.

This analytical approach consisted of seven stages (Gale, 2013).

In stage 1, as indicated above is the data management. NK extracted the minutes, emails, reports, presentations by date and content and slated them into the corresponding step recommended by WHO.

In Stage 2, NK familiarized herself with the content of the data by reading each data source and taking notes and memos to reflect on the meaning of this activity and whether or not it is corresponding to the right step of the WHO framework.

In stage 3, NK provided a label for each meaningful datum (primary coding).

In stage 4, GHA and NK met to discuss the labeled data and key moments and created preliminary themes and sub-themes.

In stage 5, NK continued filling the labeling of the remaining data from MSF into the analytical framework. If needed, added categories as she saw fitting.

In stage 6, NK had an evaluation of all the data analysis in order to finalize the findings and reflect on how it compares to the WHO emergency response framework.

In stage 7, GHA and NK met to finalize the themes and sub-themes and to identify the connections between them while comparing them to the WHO emergency response. The resulting findings were meant not only to describe but also to interpret the findings in terms of what were success points to the response, challenges and lessons learned.

Finally, a complete narrative of the findings was created. These findings were supported with a thick description of the events that took place in the emergency response.

For the quantitative data analysis, we simply conducted a descriptive analysis. The results were presented as percentages for categorical variables and means for continuous variables. No bivariate nor multivariate analyses were conducted.

G. Ethics.

We obtained exempted Institution Review Board from the American University of Beirut and approval from the operational research department at MSF and the operational cell before proceeding (Annex 2: IRB approval form)

CHAPTER IV

RESULTS

Before reporting the results, we need to highlight a very important distinction between WHO and MSF missions. The WHO as a global guiding organization holds the role of supporting and guiding governments and NGO such as MSF in the decision-making process and interventions (World health organization, 2020). MSF, on the other hand, is an implementation partner for WHO. Unlike the WHO, MSF does not support countries, governments and other NGOs post emergencies but rather is a first responder to emergencies through setting operations rather than an organization that guides and delegates.

The findings are organized into three main categories or key moments of action based on the WHO framework: **Risk assessment and situational analysis, Incident management system, Emergency performance standards and KPIs**. For each category, we map and report the actual activity conducted by MSF supported by extract from the secondary data. We reflect on the gaps in implementation.

A. Situational Analysis: Success and Gaps.

- **Successful report on the situation**

MSF sent an email to MSF's emergency unit dated August 08, 2022 and a presentation was presented on September 30 to MSF Lebanon mission detailing the situation. The purpose of the email was to describe the situation as proposed by the WHO in terms of impact and operational environment in order to relay the assessment

of the situation to the emergency office for transparency and support. The email was also meant to redirect the local staff to respond to this disaster.

The purpose of the presentation was to recap post-emergency response and advocate that the humanitarian need is still present. In those documents, the causative factors of the disaster, the associated hazards and the consequences of the disaster as well as a description of the functionality of the national health care system and the operational environment in the aftermath of the disaster were detailed.

Table 2: Excerpts of the situational analysis.

Situational analysis	
<i>Impact</i>	<i>Scope and scale: destruction of infrastructure in areas 15 km from the port. - number of people affected; >6000 directly injured from the blast. size of geographic area affected; 3 locations with catchment area 10km around the port (Email_august8)</i>
<i>Causative factors</i>	<i>On august 4th,2020 the world witnessed Lebanon being plunged into further decay as containers of ammonium nitrate stored in Beirut port exploded, destroying with it the port and surrounding neighbourhoods (presentation_02)</i>
<i>Hazards and associated risks</i>	<i>The explosion killed more than 200 people, injured more than 6000 and left around 30,000 people homeless (presentation_02).</i>
<i>Health consequences and risks</i>	<i>Injured people flooded the hospitals inside and outside of Beirut; people who have lost their houses lost all their belongings including their medications. Water and power cuts were happening frequently leaving people with huge needs (presentation_02).</i>
<i>Functionality of national health system</i>	<i>The explosion destroyed the main dispensary for non-communicable disease drugs (Email_august8th) Three of Beirut's major hospitals were left non-functional another two hospitals were severely damaged the loss of countless containers with essential medical supplies at the port (Email_august 8th) Physical damage to health facilities decreased; 500 beds from the bed capacity of the capital in the time of COVID19. 17 containers of medical supplies and drugs were completely damaged in the blast the Karantina dispensary, which is the central ministry of health warehouse that stores and dispenses medications such as NCD medications, vaccines, cancer and tuberculosis treatments and much more, was severely affected by the blast and left non-functional (Email_august8th).</i>
<i>Operational environment</i>	<i>Response capacity in the immediate aftermath of the explosion, it was civil society, social movements and communities themselves that responded to the needs in addition to international communities (Email_august 8th)</i>
<i>National and local</i>	<i>Civil societies and local NGOs rushed to the affected areas to offer different types of aid (Email_august8th)</i>

<i>capacities and response</i>	
<i>International capacity and response</i>	<i>An experienced team of primarily detached staff from existing projects (Email_august8th)</i>

- *Summary:*

Successes

Out of the 18 sub-functions that WHO assesses while conducting a situational analysis, we found that MSF reported on 15 of them. This information was shared by email to the staff so they can be aware of the situation

Gaps

The gaps in MSF management of the situational analysis were:

First, the situational analysis is meant to be conducted within the first 24 hours. MSF exceeded the 24-hour mark of finalizing the report and starting emergency activities in Beirut as reported in the email of August 8:

The emergency response did not come without its challenges. MSF was slow to initially respond in the first 24-48 hours of the blast – Email_august8

Second, there was no proper systematic documentation of the response. The WHO recommended clearly the details on what to report in the situational analysis. From the email and presentation, the documentation was rather patchy and did not follow the recommended details of the WHO Framework. Should MSF use the WHO Framework, the reporting of the results would have been more complete.

Third, in our opinion, a clear and transparent communication about the local capacity of MSF in terms of human and non-human resources was required in a situational analysis in order to plan the response. We believe this was missing from the documents received.

B. Grading system

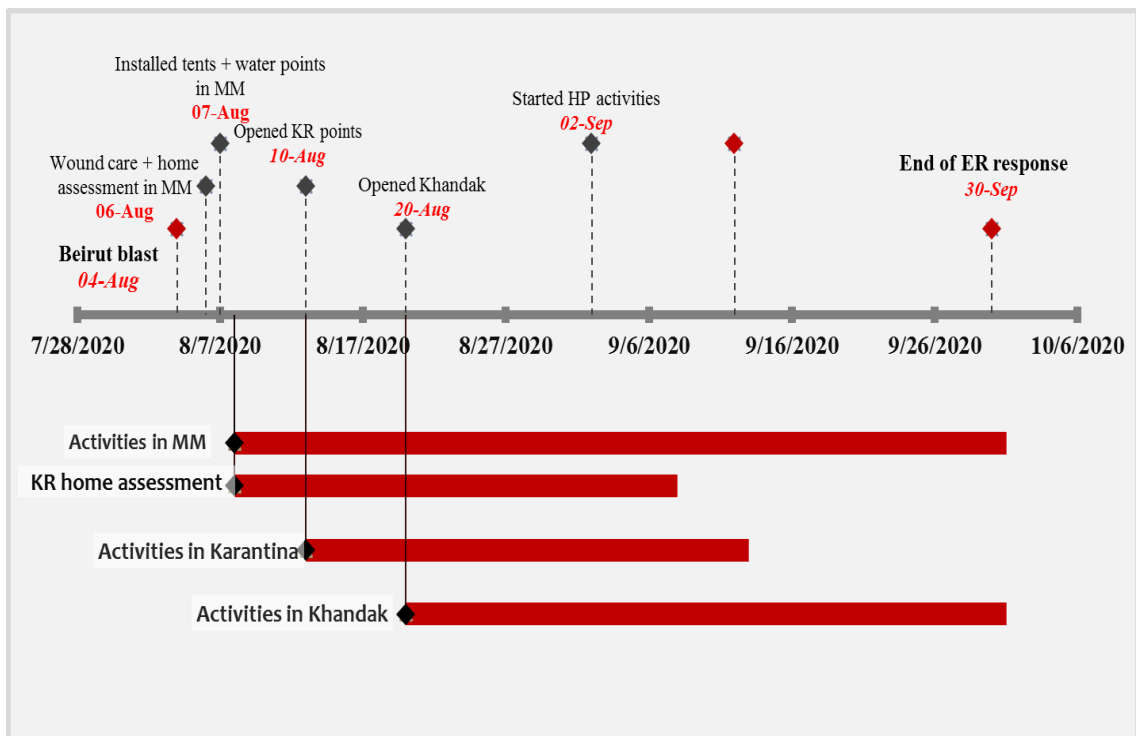
This step was rightfully missed as MSF does not have to do the grading system for emergencies, since it is the sole responsibility of the WHO as shown above, talk about uniqueness of organizations.

C. Incident management: successes and gaps

- **Successes**

The response of MSF towards the community started two days after the blast, August 6, 2020 to be specific, followed by a series of interventions depicted in the figure below.

Figure 3. MSF's emergency response timeline



Also supported by the information retrieved from the emails and presentations

MSF emergency response pool started medical and non-medical operations in 3 of the most affected locations by the blast, karantina, Mar Mikhail, and khandak, by setting up wound care clinics, distribution of NCD medications and mental health consultations. Alongside the medical activities, MSF started a

distribution of hygiene and essential items for people in need. (Presentation _02)

MSF was also **able to establish an incident management team** of detached national staff to manage and start emergency activities within the first week following the blast. As per the WHO recommendation, MSF had an emergency department called the emergency cell, which was responsible for assessing and intervening to emergencies. However, rather than mobilizing and flying a team into Lebanon, managers from existing projects inside Lebanon were detached and assembled the response teams on the spot. This proved to be both very beneficial and challenging at the same time. The fact that all managers on the project and most staff were national staff and knew the gravity of what had happened helped mobilize things in a fast and efficient way. The team was extremely motivated, compassionate and dedicated to the project, working 7 days a week, sometimes up to 16 hours/day, which really helped start and build the foundation of the response in a short time. Moreover, everyone detached from their projects were of managerial positions and have been with MSF for some time. Therefore, the values and principles of MSF were reflected from the moment the response started Please refer to below table and appendix to support these findings. The challenge faced was because many of these managers were key people in their own projects, and after a couple of weeks the projects were requesting them back. There was a need to detach other managers to provide support to the emergency cell. The slight disruption in ongoing activities and more strain on people working the emergency and in coordination was the drawback.

“When we did get started, we were able to work fast with an experienced team of primarily detached staff from existing projects. However, when those team members returned to their projects our activities slowed down as we needed to recruit and on board a new team” -Email_august8

“.. More than 45 people. Also increase the size of the team to be able to cover other areas and to allow detached staff to go back to their regular projects. Recruitment for nurses, psychologists, HP, CHWs and logistics profiles is ongoing” -Email_august10th

“We have an e-team that is under the coordination of the e-pool in Brussels and that is working in coordination with the regular mission. In the coming days we will receive an Emergency LogCo, Emergency HR, PMR and project log so that we don't detract from the existing activities of the mission. We are lucky to have a great team joining us that will be able to hit the ground running”. –Email_august8

Field operations, the day-to-day incident management was another key point in the WHO framework. It started with **operational overview** (World health organization, 2017). For MSF, the operational priorities were set as three priority areas to begin response (Marmkhail, karantina and Bourj Hammod , Bourj Hammod was later switched to khandak after an assessment of the area) the emergency pool was mobilizing a project medical referent, logistical coordinator and logistical supervisor as technical and operational supports to the activities. The field coordinator (FieldCo) establishing and starting the response, oversaw the field operations and the day-to-day activities. The operational oversight and link between what was happening on the ground and the coordination and operational cell was the emergency coordinator. The project medical referent was overseeing medical activities in terms of human capacities, staff health, supplies, coordination between field and medical offices and constant reporting and evaluation of needs. The medical activity manager (MAM) along with the pharmacy manager were overseeing the day to day medical activities happening in the three respective clinics, managing all the medical field staff (doctors, nurses, pharmacists, dispensers, ext....). For the setup and logistical services there was the logistical coordinator that was responsible for overseeing and giving support. The

logistical services in MSF helped identify safe places in all effected areas, prioritized and set up the medical clinics. They oversaw security of staff and patients and they also coordinated movements between clinics and to/from MSF warehouses for supplies as was indicated by the private conversation with MSFOCB's emergency coordinator.

The **technical and operational support** is according to the WHO framework includes the provision of day-to-day support for each of the incident management system critical functions from other levels of the organization. MSF placed support technically and operationally so the front liners of the response can be fully committed to the day to day activities and actions that made up the emergency response.

We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).

X is detached from the mission as Emergency FieldCo.

And of course, we rely on the very generous support of the existing projects to lend us their expertise to get the emergency activities off the ground. A huge thank you to the project teams that have mobilised. Your enthusiasm and flexibility has been massively appreciated (Email_August8)

MSF also had two social workers who conducted a mapping and referral network with other actors responding to the Beirut blast, acting like the **liaison officer**, which according to the WHO framework would bring concerns from the incident management to the stakeholders (World health organization, 2020). MSF's social worker aimed to do by mapping the referral network and noting down the needs of the population , the information they gathered helped shape the integration of mental health activities that MSF tried to do within the MOPH structure post the Beirut blast response.

“Lead by our social workers Assess how some of our activities can be integrated into MOPH PHCs until other actors start working and have discussions with MoPH to offer concrete options.” – Email _august 21.

On **information and data management**, a data manager from the coordination office was detached to build up a data collection network and had two data officers collecting data on activities throughout the response. This data was used to create the situational report post the response and for internal organizational reports hence, this data extracted and used here as shown in the table below.

Health service delivery, according to the WHO framework the section about the health service delivery is to clarify and design what type of health service package is needed and the standards in which this care is delivered (World health organization, 2020).

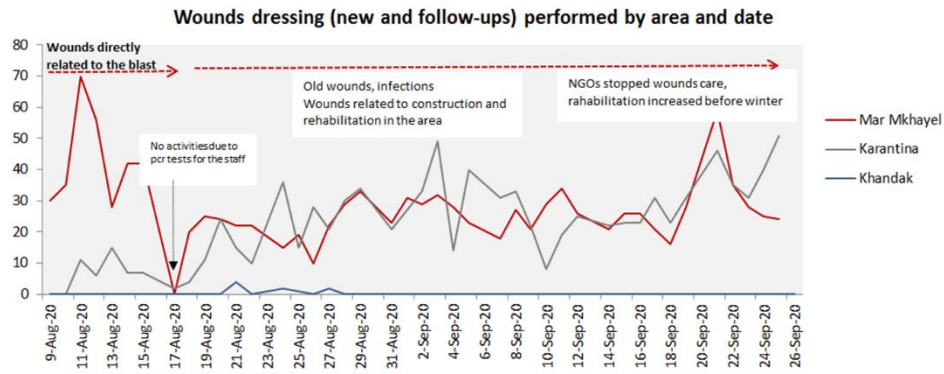
After the quick household assessment done by MSF for the Beirut Port blast, the priority locations were first identified as Marmkhail, Karantina and Burj Hammoud which later was switched to Khandak. From August 6th to August 10th MSF started activities by distributing 2,750 hygiene kits and 150 kitchen kits to the effected populations in the above-mentioned locations, while the logistical teams were working on setting up the NCD/mental health and wound care clinics in Marmkhail and Karantina. On August 10th medical activities started in Marmkhail and Karantina, the activities were wound care activities in response to wounds sustained by the blast, dispensing NCD medications to replace those lost in the explosion and decrease the gap of supply present and mental health activities, in both clinics at first. These activities extended to Khandak clinic, which was opened on August 20th.

- *Preparation of 4 locations for running of activities + the office*
- *NFIs distribution (hygiene kits + diapers + water) – based on needs + general distribution*
- *Kitchen kits distribution*

Presentation_02

From the secondary aggregate data obtained from MSF, we report the type and intensity of activities by date

Figure 3. NCD and wound care activities MSF



# patients registered	4553
% outside catchment	27%
# (%) distributions (partly or all meds)	4185 (92%)
# visits	6434
% on-site visits	93%
% home visits	7%

MSF performed a total of 2,112 wound care dressings, 54% of which in the Marmkhail clinic, 45% in Karantina and 1% in Khandak. 4,185 patients received NCD medication replenishment from MSF, 93% were on site visits to one of the three sites and 7% home visits to the most vulnerable. Further, 292 mental health sessions were held, 16% of which were held with a psychiatrist and 84% with a psychologist. 1,141 health promotion sessions were held by MSF’s health promotion team, aiming to raise awareness on and decrease the spread of COVID-19, reaching the most vulnerable and effected by the blast and promoting MSF activities to the communities around the locations, moreover to mapping and establishing contact with the other actors and activities responding to the blast. (Health promotion and social work were under the one department).

MSF was able to establish the safety and wellbeing of its staff. From the time of the incident and moving forward, the organization offered support to staff members whose houses were affected by the blast in terms of reconstruction within weeks into the emergency. Moreover, MSF set up insurance plans for all the hired national staff, which is a common practice even for short emergency responses even more so with the COVID-19 pandemic.

A staff health system was set for all the staff working in the emergency response from the Lebanon office, meal vouchers and weekend compensations were given and planned out, and guest house accesses was given to detached staff coming from outside of Beirut- MOM_01

Establishing contact with the government, relevant stakeholders and other partners MSF was able to establish contact with the government, stakeholders and other partners at the onset of the blast but differently than outlined by the WHO (World health organization, 2020). As mentioned previously MSF has a long-standing history in Lebanon and has active projects, so the contact at first was one to offer support rather than assess capacities and the means of the government in responding to the situation, but also important to mention that MSF at this early stage did not establish contact with other actors.

“Informed the Minister of Health about our willingness to receive patients for post op care in Bar Elias” -Email_august8

1. Gaps

The main points in incident management where MSF did not have a similar system or did the same as the standard by the WHO were in **monitoring and evaluation**, and **finance and budget management** (World health organization, 2017).

WHO put in place in their emergency responses the component of monitoring and evaluation, which tracks the evolution of the emergency and tracks if the objectives

of the activities are being met at key moments during implementation (World health organization, 2017). In the way that MSF went with the Beirut Port blast response and looking at the data, it did not show that such a system was put in place, the evaluation that took place according to the situational report was presented upon exiting the emergency as an overall evaluation to the response.

As for the finances and budget, MSF for the Beirut Port blast in particular had a budget set by the Emergency Cell, which displays a core difference between MSF and WHO. MSF is a mostly private donation funded NGO, which means people rather than organizations donate on personal basis and that is what funds the movement of MSF. MSF is an independent NGO which is one of its guiding principles which means it is independent in its decision making on how and when to respond and conduct activities, therefore budget planning and financing for MSF is done differently and not with a lot of donor engagement as identified by the WHO in their document (World health organization, 2020).

Table 3. Excerpts from the incident management.

WHO recommendation	MSF activity	Exemplary quote
Within 24 hours of grading of acute emergencies WHO will: Ensure the safety and security of all staff.	MSF ensured the safety of staff after the response and also helped repair the damaged houses of colleagues	<i>MSF within the first week of the blast renovated houses for colleges that were affected by the blast Email_ august 8th</i>
Activate the emergency SOPs.	MSF contracted the emergency pool and started discussions to shift to emergency activities	<i>The emergency pool was contacted directly and the emergency team began to assemble Email_ august 8th</i>
• Establish an initial Incident Management Team (IMT) in-country, to cover the six critical IMS functions. This will be done initially through repurposing of country office staff.	MSF established an incident management team, from detached staff from existing projects.	<i>A team of Detached emergency national staff was assembled and started building operations from august 7th onward , more than 45 people Also increase the size of the</i>

		<p><i>team to be able to cover other areas and to allow detached staff to go back to their regular projects. Recruitment for nurses, psychologists, HP, CHWs and logistics profiles is ongoing.</i></p> <p><i>Email_august15th</i></p>
<ul style="list-style-type: none"> • Establish contact with government officials, partners and other relevant stakeholders. 	MSF contacted the minister of health for support.	<p><i>Informed the Minister of Health about our willingness to receive patients for post op care in Bar Elias.</i></p> <p><i>Email_august8</i></p>
<ul style="list-style-type: none"> • Elaborate the initial response objectives and action plan, until a more detailed plan is developed (see below). 	MSF identified initial response areas	<p><i>Our priority areas for activities for the moment is Mar Mikael, Bourj Hammoud and Karantina.</i></p> <p><i>Email_august8th</i></p>
<ul style="list-style-type: none"> • Appoint an Emergency Coordinator and Incident Management Support Team (IMST) at regional or headquarters levels to coordinate Organization-wide support for the response to Grade 2 and Grade 3 emergencies. A focal point will be appointed at both regional and headquarters levels for Grade 1 emergencies to coordinate any required support. 	As seen by this expert from the email, first MSF appointed an incident management team with a coordinator and focal point.	<p><i>We have an e-team that is under the coordination of the e-pool in Brussels and that is working in coordination with the regular mission. In the coming days we will receive an Emergency LogCo , Emergency HR, PMR and project log so that we don't detract from the existing activities of the mission</i></p> <p><i>Email August 8th</i></p>
<p>Operational oversight: This entails direct supervision of the WHO/WR for the emergency operations, day-to-day monitoring of the effectiveness of the Organizational response to the emergency, and delegated authority to make technical, operational and management decisions regarding the response.</p> <p>Technical and operational support: This includes the</p>	<p>Operational oversight was not clear in documentation.</p> <p>For the technical and operational support as we can see from the email extracts MSF had technical and operational</p>	

<p>provision of day-to-day support for each of the IMS critical functions from other levels of the Organization. It is the responsibility of the Programme Area Manager (PAM) for Emergency Operations for support from the Regional Office and the Director of Emergency Operations (EMO) for support from Headquarters.</p>	<p>support for the locations and the staff.</p>	<p><i>We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).</i></p> <p><i>X is detached from the mission as Emergency FieldCo.</i></p> <p><i>And of course we rely on the very generous support of the existing projects to lend us their expertise to get the emergency activities off the ground. A huge thank you to the project teams that have mobilised. Your enthusiasm and flexibility has been massively appreciated</i> <i>Email_August8</i></p>
<p>1.2 Staff health, wellbeing and security This sub-function tracks security issues and takes concrete measures to ensure the safety and wellbeing (both physical and mental) of all personnel in WHO's response team. It ensures that reasonable occupational health measures are in place and that WHO staff have ready access to medical care, medical evacuation, psychosocial services and counselling, as required. WHO programmes</p>	<p>Staff health was observed and systems were put in place by MSF to preserve staff health especially in COVID times.</p>	<p><i>A staff health system was set for all the staff working in the emergency response from the Lebanon office, meal vouchers and weekend compensations were given and planned out, and guest house accesses was given to detached staff coming from outside of Beirut.</i> <i>MOM_01</i></p>

and operations are implemented in accordance with UN and WHO security policies, protocols and context specific guidance.		
<p>2 Liaison Led by the Liaison Officer, this sub-function responds to requests or concerns from both health and non-health stakeholder groups. The Liaison Officer brings issues and concerns related to inter-organizational issues to the attention of the Incident Manager with a recommended course of action.</p>	MSF had social workers working as Liaison officers.	<p><i>Led by our social workers: Assess how some of our activities can be integrated into MOPH PHCs until other actors start working and have discussions with MoPH to offer concrete options.</i></p> <p><i>Email_August21</i></p>
<p>3. Information and planning This function collects, analyses and disseminates information on health risks, needs, service coverage and gaps, and performance of the response. It uses information to develop and continually refine the response, as well as inform recovery planning.</p>	MSF had data manager and a data officer for information and planning.	<p><i>Within the response, MSF had a data manager and 2 data officers collecting data on services, needs, mapping of resources and was capitalized on at the end of the response.</i></p> <p><i>MOM_01</i></p>
<p>4 Technical expertise, science and research. This sub-function ensures that health operations are informed by the best available technical expertise and guidance, and adhere to recognized standards and best practices.</p>	MSF had technical expertise.	<p><i>When we did get started, we were able to work fast with an experienced team of primarily detached staff from existing projects. However, when those team members returned to their projects our activities slowed down as we needed to recruit and on board a new team.</i></p> <p><i>Email_august8</i></p>
<p>Operations Support and Logistics This function ensures that WHO staff – and, where agreed, operational partners through GOARN, the Health Cluster and EMTs – have a reliable operational platform in order to deliver effectively</p>	The following extract shows for the operations support and logistics used by MSF.	<p><i>MSF has their own operational and logistics support that was mobilized within the Emergency team that came to Lebanon to help with the response , the LOGCO that came set up the system from the ground up.</i></p>

<p>on the WHO action plan and joint operational plan. It may also support the logistics capacities of the Ministry of Health.</p>		<p><i>Personal communication with the emergency coordinator of MSF.</i></p>
<p>Supply chain management This sub-function ensures an end-to-end, timely and efficient provision of consumables and equipment to support the emergency operations. This includes selection, forecasting, procurement, transportation, customs clearance, storage and distribution of these material assets.</p>		<p><i>MSF has SOPs for the supply chain management in emergencies, even more in the case of Lebanon as we have an office and the activities that were designed as needs are duplicate to activities done in the country.</i></p> <p><i>Personal communication with the emergency coordinator of MSF.</i></p>
<p>Field support This sub-function provides logistics strategy, management and field support to response teams. This includes secure and comfortable accommodations, functional and secure working spaces and equipment, communications capabilities, safe staff transport and effective fleet management.</p>	<p>The following shows the field support MSF gave to the field operations of the Beirut Port blast.</p>	<p><i>This includes the objectives of the Emergency team that came from Brussels , where they supported and provided logistical /medical emergency strategies .</i></p> <p><i>We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).</i> <i>Email _August 8th</i></p>
<p>Health logistics This sub-function provides technical expertise, tools, methods and means to meet the specific logistical needs of medical facilities, cold chain management, laboratories and blood banks.</p>	<p>For MSF health logistics fall under the responsibility of PMR (primary medical referent)</p>	<p><i>The E-pool PMR set the strategy for the medical activities done during the emergency response. The medical activity management</i> <i>Personal communication with the emergency coordinator of MSF.</i></p>
<p>Human Resources and Surge</p>	<p>The following extract shows the human</p>	<p><i>Human Resources; We have an e-team that is</i></p>

<p>This sub-function fills the human resource needs of the WHO response team, as determined by the Leadership function, including sourcing, recruitment, medical clearance, travel to the relevant duty station, entry formalities, briefing and training, on-site administrative support, de-briefing and performance evaluations. It tracks and reports on HR requirements against plans, status of filled positions/vacancies, and projected HR needs.</p>	<p>resources for the emergency response.</p>	<p><i>under the coordination of the e-pool in Brussels and that is working in coordination with the regular mission. In the coming days we will receive an Emergency LogCo, Emergency HR, PMR and project log so that we don't detract from the existing activities of the mission.</i> <i>Email_august10</i></p> <p><i>We are lucky to have a great team joining us that will be able to hit the ground running. We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency). a team 60 people, including detachments from other projects.</i> <i>Email_August8</i></p> <p><i>We continue to increase the size of the team to be able to cover other areas and to allow detached staff to go back to their regular projects. Recruitment for nurses, psychologists, HP, CHWs and logistics profiles is ongoing,</i> <i>Email August 13</i></p>
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1. In Summary:

The WHO had 26 sub-functions that made up the incident management of the emergency framework as seen above. They range from activating the emergency

Standards of Practice (SOPs) to the day-to-day management of the incident response. Out of the 26 sub-functions, it was shown that MSF followed 18 of them. Six criteria were found to be unique to WHO funded NGOs. Meaning that they are criteria that MSF inherently does not follow as it has a different operating mandate than UN funded NGOs.

The gaps included training of staff for the activities of the emergency response and monitoring and evaluation.

D. Key performance indicators not realized by MSF

MSF sets performance indicators also as part of its project planning and they are monitored throughout the project and assessed on quarterly and annually basis for effectiveness or the need for improvement. However, for the Beirut Port blast, we found no data supporting that MSF had key performance indicators set for this response. The only datum we found was a quote expressing the willingness to assess the effectiveness of the health care system for the exit strategy.

“Assess the effectiveness of the overall health sector as part of a survey at the end of the emergency response to assess effectiveness and way forward” - Presentation 01.

CHAPTER V

DISCUSSION

After going through the data of MSF's emergency response to the Beirut Port blast, we were able to map the MSF response and compare it to the WHO Framework. We identified the implementation processes successfully completed by the MSF and the gaps in implementation.

Overall, the situational analysis and the incident management system were implemented with some accordance to the guidelines of WHO with key exceptions such as:

- 1- The systemic chronological documentation/ reporting on the situational analysis.
- 2- The analysis of national and international capacity response.
- 3- Monitoring and evaluation component as part of the incident management.

In addition, the key performance indicators were not conducted as per the WHO guidelines

Strengths of using secondary reports in emergency responses have been applied in organizations interested in organizational learning (Savoia et al., 2012). The literature refers to this approach as "after action reports". The examination of past experiences sheds the light on important lessons learned for improving performance. It is a particularly crucial step, in disaster management similar to the Beirut Port blast as its impact on minimizing avoidable deaths and disaster's consequences is substantial (Savoia et al., 2012). The main weakness in this study is not capturing the views and perceptions of this disaster's actors. We were unable to conduct interviews with key people that worked the response and or take testimonials of staff due to logistical

limitation. The ethical approval process at our institution was the major challenge due to the backlog because of the lockdown during the pandemic. We acknowledge that it would have enriched the study and made it better rounded and it would have further highlighted and advocated the challenges faced during the response.

- The lessons learned.

MSF-specific lessons learned

This study is meant to build on the successes and to address the gaps in performance for future events.

In terms of successes, we found that MSF was able to deliver on several of the sub-functions of the WHO Framework.

Building on the successes

The agile response in communicating the situation to its stakeholders as seen in the email of August 8, 2020, and thereafter forming the team, and enacting the response was among the successful lessons identified in this analysis, albeit its imperfection. Agility has been key in natural and man-made disasters' responses. In a study tackling the factors that affect agility in a COVID-19 hospital response, it was found that collaboration and resilience were two key factors (Suresh et al., 2021), and those factors were both very present in the emergency conducted by MSF. There was collaboration at all levels of the response, the team was quick, efficient and most importantly highly motivated to help. The fact that MSF created this opportunity for nationals to join in the response boosted resilience, it gave people a purpose within the storm of crisis.

Another success was the ability to harness the expertise in the field and form a team of responders who were very familiar with the Lebanese context. Collaboration between public environmental health emergency response programs and the community increased governmental organizations confidence in their worker's efficacy, and ability and willingness to act in emergency responses, highlighting best practices to combat organizational barriers that might be face. (Gamboa-Maldonado et al., 2012). MSF was successful in building an emergency response that was mostly national staff, which successfully decreased the resistance or barriers to uptake and participate in the response. In another study which tackled the use of traditional knowledge of indigenous populations in emergency response in the United States revealed that using traditional knowledge and natives in emergency preparedness and response was more effective because of community buy-in and collaboration (Becker et al., 2008), further highlighting the importance of using local capacities in emergency responses.

- **The systemic chronological documentation/ reporting on the situational analysis.**

There is a need for proper documentation of emergency responses and major incidents. This proper documentation allows to have adequate data for improvement, quality control and for scientific evidence that can later feed into research (Radestad et al., 2013).

Given the history and capacities of MSF, we believe if there was systemic and chronological documentation MSF would have been able to identify, coordinate and support other actors thus reducing duplication of activities. As well as to the development of its own internal evolution.

Gossip et al. suggested that disaster response needs to secure the following
Firstly, support accurate documentation and assessment of a disaster response, local health departments should consider how they can Establish a culture of learning within health departments; Using embedded training methods; Or facilitate external partnerships. Secondly, to enhance the widespread dissemination of lessons learned and facilitate inter-agency learning, evaluation reports should use standardized formats and terminology. Lastly, to increase commitment to improvement processes, local health department leaders should possess positive leadership attributes and encourage shared decision making (Gossip et al ,2022).

- **The analysis of national and international capacity response**

The liaison and coordination with other actors was another gap during the response and upon the exit. MSF inherently has always been very independent in its activities. But, for the unique situation of Lebanon, where many other actors responded and had their own activities, it would have been an added value for MSF to have the input from other actor's activities in order to avoid duplication and maximize capacity. For the example of the Beirut Port blast, MSF did a lot of effort towards connecting with other actors throughout the response and even after. However, this was not done prior to starting activities and in all fairness other organizations functioning in the area where MSF responded, did not also take into consideration the MSF response (world health organization, 2020).

A qualitative study done post the Beirut blast on interagency approach revealed that absent Disaster Management Plan, lack of Clear Response, lack of leadership and lack of local government were the major themes surrounding the response. This further

highlights the obvious gap of the government and the need for NGOs to collaborate to achieve an effective response that is efficient and timely (Haddad, 2022)

- **Monitoring and evaluation component as part of the incident management.**

MSF did not have clear objectives set before the response and measured through and after. We argued because of the nature of emergency responses that was hard or even impossible to do. But in the context of Lebanon, where human capacities is high and MSF has been in the country for long, we believe having a model for such key performance indicators such as the WHO have to monitor the standards of the response and evaluate its effectiveness is very important (world health organization, 2020). In principle, a monitoring process will allow moments of reflection in the response to see if we are on the right path, what changes should occur and to reflect on the overall quality of care. As we indicated, there was a redundancy in services, it is possible that if we were monitoring, we would have planned for different services to avoid duplication.

In a study called “ Strengthening emergency preparedness and response systems: experience from Indonesia” (Kumara Rai 2020) it was determined that by introducing the aspect of monitoring and evaluation to their emergency preparedness plan, the Indonesian government was able to strength its system for emergency. Through continuous quality checks, the outcome was more desirable, and they were able to redirect resources to serve a wider group of people. If MSF introduces monitoring and evaluation in its plan, the performance will improve.

- **Key performance indicators were not conducted as per the WHO guidelines.**

MSF sets performance indicators also as part of its project planning and they are monitored throughout the project and assessed on quarterly and annually basis for effectiveness or the need for improvement for regular projects. However, this was unclear and undocumented for the Beirut Blast. We think this might be due to the fact that this was Emergency response that required fast mobilization and consisted of very short interventions. Yet, in the the study “*Are we prepared? the development of Performance Indicators for Public Health Emergency Preparedness using a modified Delphi Approach*” by Khan, et al, 2019. highlights that measurement and reporting of performance indicators have been shown to impact system performance. Establishing indicators, measuring performance, and supporting quality improvement (QI) can be viewed in a continuum to support building system resilience (Khan, 2019).

The ultimate purpose of this study was to evaluate and present recommendations for improving the performance of MSF should they be called for another disaster response. There were two points of recommendations derived from the WHO framework that MSF needs to improve. Those were capitalized as gaps in performance.

It is important to emphasize that MSF was an implementation actor among many others. Ideally, a governing entity should be responsible for coordinating the activities between the different actors. In the WHO framework, the role of the government was really capitalized in the emergency response. Unfortunately, in reality, this governing entity was lacking in the Beirut Port blast. Thus, the lack of coordination was not just an issue from the side of MSF. Many other NGOs faced the same challenge. The overall lack of governance trickled down to the very streets affected by

the blast. We saw people cleaning the streets of debris. The families of missing people provided electricity for lighting so the search parties (that were also organized by the missing people's families, friends and volunteers) could continue.

A. Country specific recommendations

In developing countries, governments clearly have neither the financial infrastructure nor the know-how to respond adequately to disaster (Haddad, 2022). As a result, they rely on non-governmental organizations. NGOs with funding and human resources in place are willing to fill the role of the state but are also failing due to lack of coordination, know-how, and governmental support (Haddad, 2022).

Lebanon is a developing country that is continuously being subjected to emergencies, some more serious than others. Therefore, the up and foremost recommendation would be for the government to re-establish its system for disaster preparedness and management plans, which has been paralyzed for years. However, given the stalemate that the country has been facing for years, perhaps other actors need to assist in filling this gap.

Haase argued that alternatively local and international actors could fill this agenda as part of their activities and start looking for outside funds and capacities to build a disaster preparedness and management. NGOs such as MSF can help start and assist in this initiative (Haase, 2014).

B. NGO's and Government's collaboration in emergency preparedness plans

1. The Orissa experience:

Orissa is an eastern Indian state, categorized as one of the poorer states in India where almost 70% of people live in rural settings and work in agriculture (Behera M,

2002), In 1999 Orissa was hit by a cyclone which killed more than 50 people and damaged heavily housing and infrastructure (Behera M, 2002). After this event, according to the article NGOs that already had a presence in Orissa increased their activities to respond to this disaster. NGOs responded in three phases, immediate, short term and long term. The long term being helping the community of Orissa develop a disaster preparedness plan. This was done by activities such as awareness raising, training, local volunteer mobilization, contingency planning and institution building. The government saw the important role NGOs have to play in emergency preparedness and created Orissa State Disaster Mitigation Authority (OSDMA) as an autonomous nodal agency for coordinating efforts relating to disaster response, preparedness, and reduction created space for stronger institutional coordination with NGOs (Behera M, 2002).

2. The China experience:

China is categorized one of the world's most vulnerable countries to small and medium scale natural hazards (Lu et al., 2021). NGOs operating in china have developed a nationwide NGO disaster relief networks (NDRNs) , the key factors to the sustainability and effectiveness of this network are having a combined hierarchal and organizational network structure , so collaborating with the governments while keeping the NGO structure and a coordinating external and internal network that have specific objectives to ensure that health care workers have constant trainings from NGOs to enhance their emergency response capacities (Lu et al., 2021) .

These two examples can show us how the collaboration between NGOs and governments can be achieved to have a successful, sustainable and effective emergency preparedness and response plans

NGOs can start small and ambitiously build up capacities around emergency preparedness and management. They need to train their own staff on this system and extend these trainings to local NGOs. More importantly, train local population such as in high school or universities on the emergency preparedness and management steps. (Haase, 2014).

The scarcity of research in LMIC on disaster management needs to be addressed. In the study done post the Lebanon/ Israeli war of 2006, it was identified that Lebanon lacks adequate emergency preparedness plans and the need for government influence to drive emergency preparedness and response plans was very evident (Taylor, 2018). The gaps in literature in Lebanon on disaster management needs to be filled (O'Brien et al., 2020). Pulling efforts to do more research on the topic will help shed the light of the situation to the international communities and better equipped local and international NGOs for their emergency responses in the future (Haase, 2014). If we have more evidence to back up the fact that having an effective emergency prevention is better than disaster management, maybe this conversation can become one local and international actors bring to the table and introduce as part of their activities in countries such as Lebanon that do not have a working disaster prevention plan. Moreover, it is something that involves the community as partners and has a clear exist plan, which in this day and age all humanitarian actors are shifting their perspective towards.

Finally, advocacy, which happens to be one of MSF's core values is critical for the Lebanese situation. MSF has managed to gather data and conduct a quick survey post the Beirut blast that exposes the vulnerability of the Lebanese situation and the eminent pending disaster in the future. It is very important for International NGOs to

advocate on these points to the international communities, for they have a unique position as being first responders in Lebanon and internationally recognized (O'Brien et al., 2020).

For example, in a case study on health emergency architecture in 2021, the WHO emergency response framework was found to have significantly contributed to the emergency response in Europe when COVID -19 pandemic hit. The Framework allowed for quick access to resources, the ability to delegate authority, and carry responsibilities all the while allowing member states to remain accountable for their actions (Smallwood, 2021). Using the WHO framework would be a great tool to utilize in Lebanon, which further highlights the above-mentioned points on the importance of increasing our research and advocacy capacities on emergency prevention and preparedness.

C. Interdisciplinary approach to emergency response highlighting nurse's role:

Health care providers play a big role in emergency preparedness and response (Grochtdreis et al, 2022). Nurses make up a big percentage of the health care system of any country, and when disaster hits, nurses and doctors are seen on the frontlines ready to give aid.

In the Beirut Port blast, the author of this thesis, a nurse by training, was the medical activity manager of the response, responsible for all medical staff and all medical activities taking place in the three medical stations, and that was a unique role to play by a nurse.

MSF is one of many organizations that allow this flexibility of nurses to explore leadership opportunities beyond their clinical role, which in turn allows nurses to build

their capacities and be active players and decision makers in the future of health care. However, there are several caveats to strengthen that role. Hammad et al. found that emergency nurses in South Australia were not prepared for disaster experience. and there is scarce literature on the role of nurses as leaders in emergency responses (Hammad et al., 2010).

Yet, nurses have shown resilience and leadership capabilities in emergency responses. They were emotionally intelligent, capable of reacting to changing situations, and to managing resources in highly stressful environments (Xue et al., 2020).

D. Limitations:

Even after our best efforts, this study did not come without challenges nor limitations. Upon reflecting, we can say the major limitations of this study were the gaps in data documentation, lack of more evidence such as interviews or testimonials, lack of literature review on the WHO framework, and the relatability of the WHO framework to the nature of the Beirut Port blast .

The data that was received from MSF, although sufficient for the organization's internal reporting systems did not provide us with rich evidence and details of the nature of the response. Moreover, there were gaps in the data at certain points of the response making it hard to map the timeline and compare it to the WHO framework. However, we keep in mind that it is an emergency response after all that was set up quickly and efficiently, yet it will remain a recommendation for MSF to focus more into improving their documentation so they can capitalize on future responses,

The Beirut Port Blast was labeled the third biggest explosion worldwide and the first non-nuclear explosion of magnitude, making it a hopefully once in a lifetime event.

Thus, while looking at the WHO framework and the uniqueness of the situation one cannot help but deviate from the framework. Therefore, one of the limitations was the difficulty in categorizing the event and thus using preexisting standards in responding to it.

E. Strengths:

There are strengths too. The fact that the author is part of MSF and was part of the Beirut blast emergency response and the maturity of the data presented for secondary review were its major strengths.

Having the author in the organization provides more insight and richness on how MSF operates and especially since she was part of the emergency response, which provided more credibility and understanding to the challenges faced during the emergency response which in turn allowed for better advocacy and capitalization on them in this study. Moreover, the fact that the author is part of MSF, this helps the reader get a deeper understanding of how this humanitarian organization functions in emergencies.

Although as mentioned previously there were many gaps in the documentation and the data. However, MSF has an established system for data collection, which was also a point of strength in this study. This helped with having a quantitative side to this study rather than only a qualitative narrative which in turn helped the study be more coherent and wholesome.

CHAPTER VI

CONCLUSION

In conclusion, this description of the emergency response that took place after the Beirut Port blast points that MSF conducted the emergency response comparable to the WHO framework, yet key gaps were identified that can be lessons learned for improvement of MSF performance to mitigate the risks from similar disasters moving forward.

I would like to highlight that with no responsibility to uphold the WHO guidelines, MSF nonetheless was able to design an emergency response in Lebanon that helped and touched many lives at a very dark moment in the country's history, and for that, I applaud them. On the other hand in the spirit of continuous self-improvement I hope that the points of recommendations mentioned in this study, such as documentation, liaison and monitoring and evaluation will be points that MSF will improve on in their emergency responses not only in Lebanon but globally .

I would also like to highlight that the description of the emergency response was the main focus of this study. Yet, it naturally touched on the countries capacity for emergency preparedness and response, and from there I can say that I urge MSF and all other major humanitarian actors to advocate for Lebanon to work on and build a stable and effective emergency preparedness and response system. As we have seen, the history and current situation of Lebanon is a clear indicator that the Beirut Port blast sadly will not be the last emergency to befall this country. Therefore, I believe this is very much needed and it should be pushed onto the agendas of all aid workers.

APPENDIX

Table 1

Situational Analysis	
WHO Standards	MSF
<p>The need for an operational response by the Organization. Is usually based on a review of secondary data and conducted within 24–72 hours of onset If an operational response is required, WHO immediately repurposes the country office, activates the emergency contingency plan and business continuity plan¹⁸, initiates response activities and proceeds to grading within a maximum of 24 hours of the situation analysis</p>	<p>The need for an organizational response was apparent and brought forward by the Lebanon office , On August 7th, after a brief assessment of the most damaged areas; MSF emergency response pool started medical and non-medical operations in 3 of the most affected locations by the blast, karantina, Mar Mikhail, and khandak, by setting up wound care clinics, distribution of NCD medications and mental health consultations. Alongside the medical activities, MSF started a distribution of hygiene and essential items for people in need. Email_august8th</p>
<p>WHO considers the following criteria to assess the scale and significance of health consequences related to the emergency and the associated needs of the affected population²⁰:</p> <ul style="list-style-type: none"> • Impact -- Scope and scale · Numbers of people affected, disaggregated by sex and age wherever possible. · Size of geographic area affected. · Underlying causative factors and drivers of the emergency. · Ongoing hazards and associated risks to health. · Primary and secondary effects, e.g. forced displacement of refugees complicated by outbreak, earthquake complicated by fire 	<p>MSF considers the following;</p> <ul style="list-style-type: none"> • Impact; -scope and scale: destruction of infrastructure in areas 15km from the port. - number of people affected; >6000 directly injured from the blast. -size of geographic area affected; 3 locations with catchment area 10km around the port. -causative factors; on august 4th ,2020 the world witnessed Lebanon being plunged into further decay as containers of ammonium nitrate stored in Beirut port exploded, destroying with it the port and surrounding neighbourhoods. -hazards and associated risks that affected population; the explosion killed more than 200 people, injured more than 6000 and left around 30,000 people homeless. -health consequences and risks; Injured people flooded the hospitals inside and

<ul style="list-style-type: none"> -- Conditions of the affected population · Extent and type of health consequences and risks. · Vulnerabilities and vulnerable groups, e.g. women, children, older people, disabled, ethnic and minority groups. -- Functionality of national health system · Physical damage to health facilities and other vital infrastructure. · Disruption of health service delivery, including cessation of programmes. • Operational environment -- Response Capacity · National and local capacities and response, including in emergency management, and in health and other related sectors. · International capacities and response – both in-country and available for mobilization. · WHO capacities and response · Coordination capacity. -- Access and gaps · Physical, political and security access to the affected area. · Coverage and gaps of essential health services and other related services. -- Overall strategic humanitarian priorities. -- Context and/or conflict analysis. 	<p>outside of Beirut; people who have lost their houses lost all their belongings including their medications. Water and power cuts were happening frequently leaving people with huge needs.</p> <p>The explosion destroyed the main dispensary for non-communicable disease drugs. People who were already struggling to afford medicine now had to rebuild their homes and replace their belongings. Many of them were wounded, had limited access to water due to blast related damage and suffered from severe trauma impacting on mental health.</p> <p>- functionality of national health system; three of Beirut's major hospitals were left non-functional another two hospitals were severely damaged the loss of countless containers with essential medical supplies at the port. The blast exposed vulnerabilities that were barely hidden beneath the surface. With the economic crisis worsening, more patients were accessing public health services in a country where most people prefer private health care. The explosion destroyed the main dispensary for non-communicable disease drugs. People who were already struggling to afford medicine now had to rebuild their homes and replace their belongings. Many of them were wounded, had limited access to water due to blast related damage and suffered from severe trauma impacting on mental health.</p> <p>-physical damage to health facilities; decreasing 500beds from the bed capacity of the capital in the time of COVID19, 17 containers of medical supplies and drugs were completely damaged in the blast the karantina dispensary, which is the central ministry of health warehouse that stores and dispenses medications such as NCD medications, vaccines, cancer and tuberculosis treatments and much more, was severely affected by the blast and left non-functional.</p> <p>Operational environment</p> <p>-response capacity; The overall aid response was slow and disorganized.</p>
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	<p>-national and local capacity; In the immediate aftermath of the explosion, it was civil society, social movements and communities themselves that responded to the needs.</p> <p>-international capacity and response; Alongside MSF, civil societies and local/international NGOs rushed to the affected areas to offer different types of aid.</p> <p>-MSF Capacities and response; MSF emergency response pool started medical and non-medical operations in 3 of the most affected locations by the blast, karantina, Mar Mikhail, and khandak, by setting up wound care clinics, distribution of NCD medications and mental health consultations. Alongside the medical activities, MSF started a distribution of hygiene and essential items for people in need. This response lasted until the end of September 2020.</p> <p>-coordination capacity; Alongside MSF, civil societies and local/international NGOs rushed to the affected areas to offer different types of aid.</p> <p>-access and gaps; The emergency response did not come without its challenges. MSF was slow to initially respond in the first 24-48 hours of the blast. When we did get started, we were able to work fast with an experienced team of primarily detached staff from existing projects. However, when those team members returned to their projects our activities slowed down as we needed to recruit and on board a new team. The lessons learnt from this emergency is that in Lebanon we have the skills needed to launch a first response to such a crisis, however we can benefit from pre-identifying a team of people from existing projects that can be quickly detached to rapidly start up and run short term emergency activities.</p> <p>-physical, political and security access to the affected are; The estimated damage adds up to 15billion USD as per official analysis. which further accelerates the state of Lebanon's dying economy and impending humanitarian crises, even before the blast 50% of Lebanese surveyed that they do not</p>
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	<p>have enough to eat according to survey done by the WFP, and knowing that Lebanon imports 80-85% of its food products, the percentage of people going hungry post this terrible event is expected to grow higher.</p> <p>-Coverage and gaps of essential health services; MSF started its activities in solidarity with those affected by the blast and in the three diverse communities of Karantina, Mar Mikael and Khandak providing wound care consultations, health promotion, water point installation, hygiene kit distribution and NCD medication and mental health consultations.</p> <p>-overall strategic humanitarian properties.</p> <ul style="list-style-type: none"> • We placed a medical point in Mar Mikael which as you know is an area very badly damaged by the blast. A medical team from Bar Elias – equipped with wound care material and the ambulance – provided treatment to patients at a fixed point. • a team of 15 volunteers from South Beirut project visited 70 households in the neighbourhood to identify needs related to dressings, chronic disease / continuation of medications. • We have recruited an NCD doctor and will expand the medical team for these activities • A mental health team joined the medical. • 490 Hygiene kits restocked from the warehouse. We distributed bars of soap, diapers and sanitation pads while the full kits were being prepared. • installed many water points and also distributed some bottled water. • informed the Minister of Health about our willingness to receive patients for post op care in Bar Elias. • The Med team in coordination has been gathering information from the different hospitals in Beirut and we will make a direct offer to some specific hospitals to receive patients. <p>-context and/or conflict analysis; In 2017 the world health organization produced a strategic framework for emergency response;</p>
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	<p>this framework will be used as a guide in this study to help us see what implementations in the emergency response done by MSF where points of strength, what were challenges and what points could be improved, for future emergency responses.</p> <p>Email_august8 Presentation_02</p>
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Incident management

Table 2:

Incident Management System	
WHO Standards	MSF
<p>Within 24 hours of grading of acute emergencies WHO will:</p> <ul style="list-style-type: none"> • Ensure the safety and security of all staff. 	<p>Ensure the safety and security of team members. MSF within the first week of the blast renovated houses for colleges that were affected by the blast</p> <p>Email_ august 8th</p>
<p>Activate the emergency SOPs.</p>	<p>The emergency pool was contacted directly and the emergency team began to assemble We have an e-team that is under the coordination of the e-pool in Brussels and that is working in coordination with the regular mission. In the coming days we will receive an Emergency LogCo (many of you know Rafa), Emergency HR (many of you know Claire), PMR and project log so that we don't detract from the existing activities of the mission. We are lucky to have a great team joining us that will be able to hit the ground running.</p> <p>We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).</p> <p>Alaa is detached from the mission as Emergency FieldCo.</p> <p>Email_august8</p>

<ul style="list-style-type: none"> • Establish an initial Incident Management Team (IMT) in-country, to cover the six critical IMS functions. This will be done initially through repurposing of country office staff. 	<p>A team of Detached emergency national staff was assembled and started building operations from august 7th onward , more than 45 people Also increase the size of the team to be able to cover other areas and to allow detached staff to go back to their regular projects. Recruitment for nurses, psychologists, HP, CHWs and logistics profiles is ongoing.</p> <p>Email_august15th</p>
<ul style="list-style-type: none"> • Establish contact with government officials, partners and other relevant stakeholders. 	<p>Informed the Minister of Health about our willingness to receive patients for post op care in Bar Elias.</p> <p>Email_august8</p>
<ul style="list-style-type: none"> • Determine the need for surge support to the country to cover the critical IMS functions. This determination is made following an analysis of WCO capacity to manage the emergency. 	
<ul style="list-style-type: none"> • Begin the deployment of surge support on "no regrets" basis, as needed. 	
<ul style="list-style-type: none"> • Elaborate the initial response objectives and action plan, until a more detailed plan is developed (see below). 	<p>Our priority areas for activities for the moment is Mar Mikael, Bourj Hammoud and Karantina.</p> <p>Email_august8th</p>
<ul style="list-style-type: none"> • Appoint an Emergency Coordinator and Incident Management Support Team (IMST) at regional or headquarters levels to coordinate Organization-wide support for the response to Grade 2 and Grade 3 emergencies. A focal point will be appointed at both regional and headquarters levels for Grade 1 emergencies to coordinate any required support. 	<p>We have an e-team that is under the coordination of the e-pool in Brussels and that is working in coordination with the regular mission. In the coming days we will receive an Emergency LogCo (many of you know X), Emergency HR (many of you know X), PMR and project log so that we don't detract from the existing activities of the mission. We are lucky to have a great team joining us that will be able to hit the ground running. We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).</p> <p>Email_august8th</p>

<p>Field operations: This entails day-to-day management of the in-country response.</p>	<p>.</p>
<p>Operational oversight: This entails direct supervision of the HWO/WR for the emergency operations, day-to-day monitoring of the effectiveness of the Organizational response to the emergency, and delegated authority to make technical, operational and management decisions regarding the response.</p> <p>Technical and operational support: This includes the provision of day-to-day support for each of the IMS critical functions from other levels of the Organization. It is the responsibility of the Programme Area Manager (PAM) for Emergency Operations for support from the Regional Office and the Director of Emergency Operations (EMO) for support from Headquarters.</p>	<p>We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).</p> <p>X is detached from the mission as Emergency FieldCo.</p> <p>And of course we rely on the very generous support of the existing projects to lend us their expertise to get the emergency activities off the ground. A huge thank you to the project teams that have mobilised. Your enthusiasm and flexibility has been massively appreciated Email_August8</p>

<p>Table 1: Operational Responsibilities and Organizational Accountabilities for Emergencies</p>	
<p>1.2 Staff health, wellbeing and security This sub-function tracks security issues and takes concrete measures to ensure the safety and well-being (both physical and mental) of all personnel in WHO’s response team. It ensures that reasonable occupational health measures are in place and that WHO staff have ready access to medical care, medical evacuation, psychosocial services and counselling, as required. WHO programmes and operations are implemented in accordance with UN and WHO security policies, protocols and context specific guidance.</p>	<p>A staff health system was set for all the staff working in the emergency response from the Lebanon office, meal vouchers and weekend compensations were given and planned out, and guest house accesses was given to detached staff coming from outside of Beirut. MOM_01</p>
<p>2 Liaison Led by the Liaison Officer, this sub-function responds to requests or concerns from both health and non-health stakeholder groups. The Liaison Officer brings issues and concerns related to inter-organizational issues to the attention of the Incident Manager with a recommended course of action.</p>	<p>Lead by our social workers Assess how some of our activities can be integrated into MOPH PHCs until other actors start working and have discussions with MoPH to offer concrete options. Email_august21</p>
<p>3. Information and planning This function collects, analyses and disseminates information on health risks, needs, service coverage and gaps, and performance of the response. It uses information to develop and continually refine the response, as well as inform recovery planning.</p>	<p>Within the response MSF had a data manager and 2 data officers collecting data on services ,needs , maping of resources and was capitalized on at the end of the response.</p>
<p>3.1.3 Monitoring & evaluation This sub-function systematically tracks the evolution of the emergency and the progress of the WHO and health sector response in meeting the objectives of the operational response plan. It involves identifying technically sound indicators and the sources of information; setting operational targets; gathering and interpreting data; and tracking progress to determine whether the response is meeting its objectives. If the response is not on track, personnel responsible for this sub-</p>	

<p>function analyse the reasons for it and make recommendations regarding corrective actions and/or modification of targets, in collaboration with partners and other responsible areas.</p>	
<p>3.2.1 Strategic and operational planning The planning sub-function coordinates the development of emergency-specific plans, with detailed inputs from other functions, especially Information and Health Operations and Technical Expertise. Effective planning requires contributions from governmental agencies, non-governmental organizations, civil society entities, private sector and others, both from health and those outside. It involves the development of common strategic priorities, joint operational objectives and plans, and strong coordination within and among sectors and clusters.</p>	
<p>3.2.2 Project management This sub-function supports the design, structure and content of donor updates and other reports; monitors project implementation; and promotes standardized management throughout the project management cycle. In humanitarian settings, it applies the IASC's Humanitarian Programme Cycle, especially when contributing to multi-sectoral, interagency plans such as Flash Appeals and HRPs.</p>	
<p>Health service delivery WHO coordinates and collaborates with the Ministry of Health and partners, including through the Health Cluster, GOARN and EMTs, to ensure the delivery of essential health services. This involves clarifying standards and defining an essential package of health services that covers community, primary and referral levels.</p>	<p>MSF have their own health delivery modules to follow , in the situation of Lebanon at the time , no involvement was done with governmental facilities .</p>
<p>4.4 Technical expertise, science and research. This sub-function ensures that health operations are informed by the best available technical expertise and guidance, and adhere to recognized standards and best practices.</p>	<p>When we did get started, we were able to work fast with an experienced team of primarily detached staff from existing projects. However, when those team members returned to their projects our</p>

	<p>activities slowed down as we needed to recruit and on board a new team. Email_august8</p>
<p>Training of health staff in most emergency response, WHO supports the training of health staff, including local and international personnel. This training is often related to the sub-functions outlined above, including on information management (e.g. risk assessments, HeRAMS), risk communication, disease surveillance, disease prevention and control, and various aspects of clinical care.</p>	
<p>Operations Support and Logistics This function ensures that WHO staff – and, where agreed, operational partners through GOARN, the Health Cluster and EMTs – have a reliable operational platform in order to deliver effectively on the WHO action plan and joint operational plan. It may also support the logistics capacities of the Ministry of Health.</p>	<p>MSF has their own operational and logistics support that was mobilized within the Emergency team that came to Lebanon to help with the response , the LOGCO that came set up the system from the ground up.</p>
<p>Supply chain management This sub-function ensures an end-to-end, timely and efficient provision of consumables and equipment to support the emergency operations. This includes selection, forecasting, procurement, transportation, customs clearance, storage and distribution of these material assets.</p>	<p>MSF has SOPs for the supply chain management in emergencies , even more in the case of Lebanon as we have an office and the activities that were designed as needs are duplicate to activities done in the country .</p>
<p>Field support This sub-function provides logistics strategy, management and field support to response teams. This includes secure and comfortable accommodations, functional and secure working spaces and equipment, communications capabilities, safe staff transport and effective fleet management.</p>	<p>This includes the objectives of the Emergency team that came from brussels , where they supported and provided logistical /medical emergency strategies .</p> <p>We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD MD and the two social workers as full time staff on the emergency).</p> <p>X is detached from the mission as Emergency FieldCo. And of course we rely on the very generous support of the existing projects to lend us their expertise to get the emergency activities off the ground. A huge thank you to the project teams that have mobilised.</p>

	Your enthusiasm and flexibility has been massively appreciated. Email_August 8 th
<p>Health logistics This sub-function provides technical expertise, tools, methods and means to meet the specific logistical needs of medical facilities, cold chain management, laboratories and blood banks.</p>	The E-pool PMR set the strategy for the medical activities done during the emergency response. The medical activity management
<p>Finance & administration This function provides finance, management and administrative support to enable the smooth functioning of the WHO response.</p>	An HR manager from the emergency pool joined to manager administration and finance
<p>Finance, budget & grants management This sub-function develops WHO work-plans and budgets based upon WHO action plans as determined by the Leadership function; manages funding allocations and awards; tracks and reports on financing against budget; supports, monitors and reports on financial implementation; monitors and follows-up on donor proposals and reporting deadlines; supports resource mobilization in the preparation of proposals and reports; and facilitates local payments.</p>	
<p>In coordination with Operations Support and Logistics, this sub-function procures all necessary supplies for the response and for the response team, tracks inventory, coordinates with logistics and human resources (HR) sub functions to provide supplies and equipment to the local response team.</p>	
<p>Human Resources and Surge This sub-function fills the human resource needs of the WHO response team, as determined by the Leadership function, including sourcing, recruitment, medical clearance, travel to the relevant duty station, entry formalities, briefing and training, on-site administrative support, debriefing and performance evaluations. It tracks and reports on HR requirements against plans, status of filled positions/vacancies, and projected HR needs.</p>	Human Resources; We have an e-team that is under the coordination of the e-pool in Brussels and that is working in coordination with the regular mission. In the coming days we will receive an Emergency LogCo, Emergency HR, PMR and project log so that we don't detract from the existing activities of the mission. We are lucky to have a great team joining us that will be able to hit the ground running. We will also start recruiting an emergency team (we already have a driver/fixer, two night-watchmen, the NCD

	<p>MD and the two social workers as full time staff on the emergency). a team 60 people, including detachments from other projects. We continue to increase the size of the team to be able to cover other areas and to allow detached staff to go back to their regular projects. Recruitment for nurses, psychologists, HP, CHWs and logistics profiles is ongoing, Email_august8 Email_august10 Email_august 13</p>
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Standards and KPIs (Table)	
WHO Standards	MSF
<p>Progress in implementation of a select number of response procedures (see chapter 5) will be monitored during each Grade 2 and 3 emergencies to document the effectiveness of the WHO response and to inform course corrections, as appropriate. These performance standards are outlined in Table 4.</p> <p>Progress against meeting the performance standards will be documented by using the ERF Monitoring Tool that is activated following the grading decision for Grade 2 and Grade 3 emergencies. The responsibility for completing the ERF Monitoring Tool is with the Country Office, with oversight from the Regional Office. Timelines for meeting the performance standards may be adjusted by the grading team, based on the context.</p> <p>The WHO performance standards are monitored primarily through process indicators. To assess the effectiveness of the overall health sector/Health Cluster response, these will be complemented by a number of key performance indicators, which will measure at the output and/or outcome level. The key performance indicators will be agreed upon on a case-by case basis and reported monthly and should initially be limited to no more than eight indicators.</p>	<p>Assess the effectiveness of the overall health sector as part of a survey at the end of the emergency response to asses effectiveness and way forward;</p> <ul style="list-style-type: none"> - Patients seen as part of the response have high vulnerabilities. - Impact of the financial crisis on the national NCD drug medications supply from the patient perspective is clear and big. - Financial challenges preventing patients to secure their NCD medications seemed to have been increasing over the past year with an acceleration over the last 3 months. - Financial difficulties are pushing people to interrupt or ration their NCD medications, including insulin (future high consequences on health and burden of health system). - Fees paid for NCD medications can go as up as 90% from a home income (median of 30%). <p>recommendations;</p> <ul style="list-style-type: none"> - Raise awareness on the PHC network and availability of drugs for free/at low cost. - Advocate for access to NCD drugs amidst the financial crisis (understand supply chain, gaps, donor’s perspective/contributions, etc., to identify what and where MSF can play a role).

	<ul style="list-style-type: none"> - Better understand the over-medicalization in terms of NCDs – MSF role? - Operationally - use the ER NCD database to identify highly vulnerable people at risk of interrupting their NCD meds and link them to care. <p>Presentation_02</p>
<p>Table 4: WHO Performance Standards for Emergency Response</p>	

APPENDIX II

IRB approval form:



AMERICAN UNIVERSITY OF BEIRUT INSTITUTIONAL REVIEW BOARD (IRB)

Application for Exemption/Limited Review Limited Review is a new category of review under Exemption

(FOR more INFORMATION on any topic [CLICK ON THE BLUE TEXT BELOW](#))

Definition of “ Human Subject Research” as defined by DHHS (45 CFR 46) ALL should be “YES” to submit an Application for Exemption:	
<input type="radio"/> No	Is the activity a <u>systematic investigation</u> ?
<input type="radio"/> Yes	Is the activity <i>designed</i> to develop or contribute to <u>generalizable knowledge</u> ?
<input type="radio"/> No	Does the activity involve living individuals about whom an investigator (whether professional or student) conducting research either: <ol style="list-style-type: none"> i. Obtains information or biospecimens through intervention or interaction with the individual, and uses, studies, or analyzes the information or biospecimens ; OR ii. Obtains, uses, studies, analyzes, or generates identifiable private information or identifiable biospecimens

Notes:

- Studies that involve pregnant women, fetuses & neonates are eligible for exemption under all categories.
- Exemption DOES NOT APPLY to Research Involving Prisoners.
- Children are allowed in categories 1, 4, 5, 6, 7 & 8; Limitations and Exclusion of Children in Categories 2 & 3.
- Limited review: It is a process that is required only for certain exemptions, categories 2 (iii), 3 (C), 7 and 8. In limited IRB review, the IRB must determine that certain conditions that are specified in the regulations are met. Limited IRB review is done by the Chair/Co-Chair or an experienced IRB member designated by the Chair (although it can also be conducted by the full IRB).
- Standard annual is not required for Exemption/Limited review studies.
- AUB IRB does not plan to implement exemption categories 7 & 8 at this time. Limited exceptions may be considered.
- Research on sensitive topics which may cause undue stress or embarrassment to participants are not eligible for exempt/limited review.
- Please press CTRL + link to access links throughout the document.

An application is considered complete if it includes at minimum: *(To all documents except Appendix I, Arabic version or any other language depending on the targeted population is required for non-English speakers)*

- Completed and signed IRB application along with Appendix I
- Informed consent documentation or script

*Institutional Review Board
American University of Beirut*

22 SEP 2021

APPROVED

REQUEST TO CREATE a DE-IDENTIFIED DATASET FROM RESEARCH DATA,
CLINICAL DATA or OTHER IDENTIFIED DATA SOURCE

Principal Investigator requesting the dataset:

Name: Gladys Honcin Designation: Assistant Professor Department: School of Nursing

Phone: 81 299 508

E-Mail: Gh30@aub.edu.lb

Device on which the de-identified data set will be stored and used:

Laptop of Ms Nada Kazoun, graduate student at the school of nursing, AUB

Background and definitions:

Note 1: This form is to be used when a researcher desires to create a completely de-identified dataset for research purposes. This is NOT a request to create a coded dataset.

Note 2: Private information and data are not considered individually identifiable when they cannot be linked to a specific individual by anyone, including the Principal Investigator, either directly or indirectly through coding systems.

Note 3: Use of an existing identified research dataset for a new aim requires:

- An IRB approval for a protocol amendment if the study is still open
- An IRB approval for a new protocol if the study is closed
- Or
- A request to fully de-identify the dataset using this form

The following identifiers must be deleted from a dataset to be considered completely de-identified:

1. Names (individual, employer, relatives, etc.)
2. Address (street, city, county, precinct, postal code, etc. – initial 3 digits if geographic unit contains less than 20,000 people, or any other geographical codes)
3. Telephone numbers
4. Fax numbers
5. Any government issued identification numbers
6. Medical record numbers
7. Dates (except for years)

Version 2.0
Version date: July 2016

Institutional Review Board
American University of Beirut

22 SEP 2021

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