

Contingency plan for continuity of HIV services during emergencies: qualitative research

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Background/aim

Public health emergencies such as the current COVID-19 crisis, impose a major burden on health systems, complicating access to quality health services. With an already exhausted health system and scarce resources, the burden is greater, placing the most vulnerable groups at higher risk of being left behind. This paper was done to develop a risk assessment and contingency plan guide built on the good practices developed in the context of COVID-19 epidemic in Egypt to ensure continuity of HIV services.

Participants and methods

Qualitative survey was done to collect data included individual interviews and focus group discussions with people living with HIV (PLHIV) and most at risk populations to collect their experiences and perspectives about how HIV/AIDS is managed during emergencies and the impact of emergencies on PLHIV

Results

The majority of PLHIV (80%) together with key population emphasizes the availability of antiretroviral drugs all the times except for few of them (20%) who experienced one- or two-times unavailability of one of lines of treatment. It was repeated that existing health services were interrupted during the COVID-19 pandemic and access to HIV prevention, care was disturbed and hindered due to many factors (insecurity, fear and lack of information and lack of social and financial support).

Conclusion

In any emergency crisis there is an increase vulnerability to HIV transmission but also disrupt adherence to HIV care and treatment services.

Keywords:

contingency plan, emergency, HIV, sustainability

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Introduction

Worldwide, 78 million persons have been infected with HIV and 35 million have died from AIDS-related complications since its discovery 40 years ago [1]. Since 1986, when the first case of AIDS was officially reported in Egypt, a total of 10 922 cases have been documented with the National AIDS Program (NAP). According to a fresh assessment made in March 2019, there are around 26 000 (19 000–34 000) adults and children living with HIV in Egypt. New infection estimates have doubled in 2019 to reach 5000 cases compared to 2500 cases in 2015. Antiretroviral (ARV) medication is estimated to be reimbursed for 32% of people living with HIV (PLHIV) in 2019 [2].

According to the 2010 HIV/AIDS Biological and Behavioral Surveillance Survey (IBBSS), the overall prevalence of HIV/AIDS in key populations in Egypt is 0.5% among street boys and girls, 6.1% among men who have sex with men (MSM), and 7.2% among people who inject drugs (PWID). PWIDs accounted

for 43% of new HIV infections at the regional level in 2019, while men who have sex with men accounted for around 23% [2].

Humanitarian crises, both natural (earthquakes, floods, droughts, etc.) and man-made afflict millions of people every year across the world (e.g. external and internal conflicts). PLHIV make up a major fraction of those affected by these crises [3]. During humanitarian crises, essential services that existed previously may be disrupted. People may no longer have access to HIV prevention information, condoms, or prevention of mother to child transmission services. Disruption of antiretroviral therapy (ART) and treatment for opportunistic infections is common among HIV patients [4]. The increasing incidence of crises, which are frequently linked to displacement, food

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insecurity, and poverty, increases HIV vulnerability and has a detrimental impact on HIV-positive people's life

Public health emergencies such as the current COVID-19 crisis, impose a major burden on health systems, complicating access to quality health services to all genders [5]. As resources are shifted from existing health services to support responses to crises, the result is often shortages in finances, health services, medications, and capacity of health professionals. With an already exhausted health system and scarce resources, the burden is greater, placing the most vulnerable groups and their caregivers at higher risk of being left behind [6].

PLHIV are among the most vulnerable populations affected by the pandemic where HIV services have been neglected due to a lack of epidemiological data and programme experiences, as well as a lack of political will to meet the needs of affected communities. Also, with the associated protective measures, as lockdowns and curfew hours, restricted movement can prevent people from going to clinics, restricting their access to care and treatment [7–9].

A critical first step toward ensuring the continued availability of HIV critical services is the participatory process of developing a Contingency Plan that included multiple dimensions to ensure that the National Response is not disrupted [community awareness; prevention and harm reduction; infection control and disinfection measures; antiretroviral therapy (ART); ART patient management; community involvement and administration] [10–12].

Contingency plans should ideally be in place from the start, prior to the occurrence of an emergency. The contingency plan is a proactive strategy, describes the course of actions or steps the management and staff of an organization need to take in response to an event that could happen in the future. A contingency plan have to be set up to account for those disruptive events, so we're prepared if and when they arrive. It helps programs and organizations to be prepared for unforeseen events and minimize their impact and ensuring sustainability of services after the event has occurred [12].

The purpose of this paper is to expand current knowledge on the interactions between HIV and different emergencies in Egypt to inform and improve outcomes for PLHIV. Specifically, to

describe the impact of emergencies on PLHIV as well as to develop a risk assessment matrix and contingency plan guide built on the good practices developed in the context of COVID-19 epidemics in Egypt to ensure continuity of services while adapting them during emergency. This paper is generic, meaning it can be used in any emergency and/or changed to fit different conditions. It is only driven by the COVID-19 pandemic which stimulates the development of such contingency plan based on risk assessment.

Participants and methods

Participants

The present study enrolled 82 participants through convenient sampling methodology (snow ball) where the researcher conducted both individual interviews with the Al-Shehab team (listening officer, voluntary counseling and testing officer, laboratory physician, gynecology physician and the lawyer), other two civil society organizations (CSOs) in HIV (Caritas in Alexandria and Friends El-Menia) and focus group discussions (FGDs) as follows, a total of 12 FGDs with total number of 74 participants; one FGD with outreach workers (five participant), three FGDs with PLHIV including 19 participants, eight FGDs with most at risk populations (men who have sex with men, female sex workers, and PWIDs) including 18, 22, and 10 participants, respectively to be able to identify the current process, challenges, and risks as well as solutions.

Study design

Qualitative research methods focusing on obtaining in depth information through open ended questions and conversational communication with PLHIV as well as stakeholders in the field of HIV. This is to collect, analyze and interpret non numerical data about their experiences, beliefs and interactions concerning HIV services during emergencies specifically COVID-19 pandemic and the impact of emergencies on PLHIV.

Data collection plan

This study was done during the period from May to July 2020 through Al-Shehab Institution for comprehensive development which facilitate recruitment of participants and interviewing them by the researcher, as most of the participants are continuously visiting the institute to receive different types of services together with Al-Shehab outreach experience in the community to identify participants.

The researcher conducted both individual in-depth interviews (IDIs) together with FGDs to be able to

verify the situation through a set of open ended questionnaire prepared by the researcher to; understand the participants experiences and insights about HIV services during the COVID-19 pandemic as well as participate in the process of contingency planning development through identifying risks, risk analysis, and finally set their suggested mitigation activities to the identified and prioritized risks. All individual IDIs and FGDs were audio recorded after having consent from the participants. IDs lasted about 30 min while FGDs lasted up to 2 hours

Contingency plan development were done through the following steps:

- (1) Hazards identification: participants identifying the possible hazards that might influence or interrupt HIV service and care.
- (2) Risk assessment: this was done through analyzing the identified risks based on their impact, probability and system preparedness where each item were given a score. Impact from 1 to 3 where 1 means minimal impact and 3 means high impact, Probability score of 3 means high probability of occurrence while 0 means never occurred, lastly system preparedness score from 0 to 3 where 0 means excellent system preparedness and 3 means poor preparedness. Gaining consensus on the score for each item was done by the researcher.
- (3) A final risk score was done through multiplication of the score given for the impact *preparedness *system preparedness. Final risk score more than or equal 7 is needed to be treated.
- (4) Risk treatment: a set of suggested mitigation activities were identified through interviews and focus group discussions with participants to formulate the final contingency plan.

Ethical considerations

Informed consents were obtained from all participants prior of the study. Privacy and confidentiality of data were ensured. The study was approved from the Research Ethics Committee of Faculty of Medicine, Alexandria University with approval number 0305396.

Prior to the interviews, participants were informed of the purpose of the study and oral consent was obtained.

Data management and analysis

Data obtained from IDIs and FGDs were transcribed. All the transcripts were then uploaded to NVIVO software program version 10 for coding (A qualitative data analysis computer software package produced by QSR international (developer)

Headquartered in the United States). The researcher then categorizes the identified transcripts and thematic areas were identified based on the original research question to describe emerging patterns from IDIs and FGDs. Recurrent themes identified and patterns established from the two data sources were summarized. Information obtained from the FGDs was used to complement the IDIs and to seek data saturation. Mapping and interpretation was done by searching for associations of concepts and explanations in the data. The findings were summarized according to predeveloped themes and the subthemes that emerged during the coding process. Finally checking for new ideas as well as seeking for new patterns and relationships.

Results

Participant's characteristics

The researcher interviewed a total of 82 participant (74 participant in FGDs and eight IDIs) with their ages ranging from 29 to 45 years. FGDs participants (74) demographic characteristics are summarized in Table 1.

The results of the qualitative analysis are presented in two main sections as follows:

Interviews and FGDs with Al-Shehab team, PLHIV and most at risk populations, CSOs revealed the following information based on the following themes.

Table 1 Demographic characteristics of focus group discussions participants

Variable	N (%)
Age category (years)	
20–30	13 (18)
30–40	35 (47)
40–50	26 (35)
Sex	
Male	44 (59)
Female	30 (41)
Marital status	
Married	40 (54)
Widow, separated, divorced	34 (46)
Occupational status	
Employed	32 (43)
Unemployed	42 (57)
Level of education	
No formal education	33 (45)
Formal education – primary	23 (31)
Formal education – secondary	10 (14)
Formal education – university	8 (10)
Total	74
Outreach workers	5
People living with HIV (PLHIV)	19
Men who have sex with Men (MSM)	18
Female sex workers (FSWs)	22
People who injects drugs (PWIDS)	10

Assessment of the current situation and gaps (access to health and HIV-related services).

All interviews with PLHIV and most at risk population (men who have sex with men – MSM, female sex workers – FSWs, PWIDs) was influenced too much with their experience during and throughout COVID-19 pandemic in the following areas.

Treatment and access to medicines

During the COVID-19 epidemic, the majority of PLHIV interviewed (80%) together with most at risk population emphasizes the availability of ARVs drugs all the times except for few of them 20% who experienced one- or two-times unavailability of one of lines of treatment. However, most of them complained of not being able to have any other service like counseling, psychological support or any other medical advice which might be due to overwhelmed medical team involved in the COVID-19 response or unavailability of a specialist which was very frustrating for most of them. One of them described this 'I could not even speak one word while receiving my drugs'.

Therefore, if PLHIV wanted services related to HIV, they were forced to visit private doctors and this might be impossible for many of them.

Another important challenge, all of the participants highlighted that they would not receive their drugs if they cannot go by themselves, which might be somewhat difficult from some people (due to fear from infection, feeling insecure, unable to take the decision, transportation difficulties) and this might hinder their accessibility to drugs and hence continuity of care. For example, one respondent describe the insecurity and fear from infection had prevented access to his medication 'I was scared to leave my home even if to step out of the door, how I will go to the fever hospital that was designed mainly for COVID patients—that doesn't make sense' When another participant was asked about his fear and accessibility to drugs, this was the response: 'What could I do? I had to stand there. I needed my medication, I didn't want to die. I could do nothing'.

Few of the participants (30%) noted that that they get their medications easier than before directly upon entrance to the fever hospital which makes them more satisfied however others did not experience this in other fever hospitals .

More than half of them (75%) received their other related health service from nongovernmental

organizations (NGOs) even if during lockdown measures. Psychological, social, and legal support were all provided through CSOs on an irregular basis.

Additionally, one of the main concerns which all of them highlighted even before the COVID-19 situation was loss of control to follow up because of unavailability and delay of laboratory tests.

Prevention

Throughout the data collection, it was repeated that existing health services were interrupted during the COVID-19 pandemic and access to HIV prevention, care during emergencies, was disturbed and hindered due to many factors. (insecurity, fear and lack of information and lack of social and financial support).

Respondents confirmed that no condoms were distributed in the government and were made available only from NGOs. Not all of them can access CSOs at different times. Although they all stated that these were very important especially during the periods of complete lockdown unless transmission of infection will be high.

Respondents noted that sometimes information-sharing and prevention meetings related to condom use and protection against sexual transmitted infections, including HIV, were carried out, but were implemented sporadically and often they were unorganized in certain NGOs.

Respondents also highlighted that no attention was paid for PLHIV in prevention messages and information target fears of PLHIV especially during COVID-19. They get their information from webpages and peers that might not include specific information for PLHIV. One of the women said 'I was in urge of knowing correct information about my status and relation to COVID and I can't get any trustable source, why we are not considered in the plans of the government'.

To conclude, prevention and care were among the major gaps that emerged. Condoms and Health education messages were nonexistent in general or even during the COVID-19 pandemic. However, one important thing highlighted by respondents that the provision of ARV s in some fever hospitals were near from the door which not necessitate the PLHIV with low immunity to go further in the fever hospital.

Another challenge that has emerged is voluntary counseling and testing services. Respondents

confirmed that, at some point, voluntary counseling and testing services were made available, but these appeared inconsistent among different places. According to many respondents, follow up CD4 testing services were mainly unavailable.

During the fieldwork for this plan, some gender issues emerged as a strong factor for HIV risk which was added to the COVID-19 pandemic, Gender issues impacted on participants' perception of the need to be tested and treated. For example, one female participant described one issue.

Women refused to be tested for fear of being discriminated from all surroundings even from health care providers, so what do you think from my friends, family, and neighbors. The above participant explained that health service delivery did not protect people and placed them in a situation where discrimination would likely occur and, as a result, their human rights were violated.

Access to hygienic facilities

Most of the respondents confirmed the provision of hygienic packages (gloves, masks, and alcohol) however this was on an interrupted irregular basis and mainly from CSOs very minimal times, few of them received it from some fever hospitals.

Key risks identified

Some potential risks and problems were identified from participants during interviews. This was the first step to develop contingency plan based on identified risks. This will be discussed further in the next section (Figs 1 and 2)

During CSOs interviews for this plan, the following points were identified

Capacity of health care system

It was reported that there were few partners supporting HIV and AIDS activities during the recent outbreak. Immediate response to the crisis was unplanned and faced a lot of challenges and limitations together with governmental policies and interventions. It becomes increasingly difficult to timely address emerging health concerns, including chronic diseases such as HIV/AIDS.

Inclusion of fever hospitals at the beginning of the epidemic was a major issue for provision of ARVs as well as involvement of all health care providers in the response. That is why all stakeholders agreed to have a contingency planning for any other emergency to be

Figure 1



Hazards identified.

ready in place that might help to have a coordinated integrated response from the start to ensure continuity and quality of services provision especially for vulnerable groups like PLHIV.

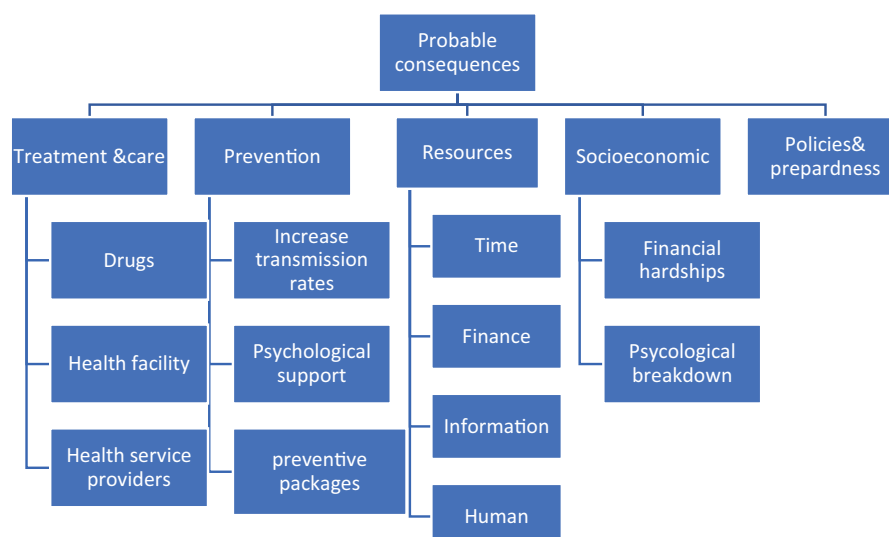
Based on the interviews conducted, respondents demonstrated limited knowledge and described weak involvement of vulnerable groups in preparedness and response planning. As well, interviewees expressed there is little advocacy for PLHIV in general, let alone in emergencies. Interviewees claimed that HIV in emergency received little attention, resulting in the needs of PLHIV not being met during emergency situations and with little or no rations allocated for PLHIV and other vulnerable groups.

There are no guidelines or checklists for emergency planning to incorporate how to manage HIV. Moreover, the financial capacity of the health care system cannot accommodate any additional fund for HIV services, however, later on in the response emergency funds were provided through many international organizations and donors and this might make HIV included under the pillar of continuity of health services.

Coping strategies and adaptation of service policies

It was mentioned that there is a national response toward emergencies and specifically for COVID-19

Figure 2



Mind map for potential consequences from the identified risks.

response however, HIV was not mentioned clearly in the plan which make it difficult to mobilize funds or resources specifically for HIV and it depends mainly on sporadic funds from different agencies.

Support provided to NAP to procure and deliver ARVs during the critically fragile global procurement and supply chain system mobility allowances were provided to facilitate access of PLHIV to treatment and promote adherence and PLHIV were provided with personal hygiene kits with a focus on most vulnerable population.

Hence the NAP succeeded to provide HIV medication stocks available so PLHIV can receive their ARVs for 3 months further to minimize their mobility and presence in fever hospitals.

Also the NAP changed the layout in the ARV centers for PLHIV to receive their treatment directly without the need to go further in the hospital In order to minimize their chances to get infected.

CSOs reported facing some challenges in this regard. Following government decisions at the start of the crisis, participant CSOs stopped their activities. Being the entry point for many most at risk populations, through outreach, and sometimes acting as the only trusted platform for PLHIV through support groups, the closure of CSOs deprived many from essential services they could not access elsewhere.

Moreover, reduced working hours and night curfews imposed more stress on CSO staff to be able to

compensate for limited work hours. Also, handling the concerns and questions by PLHIV through phone calls posed additional burdens on staff and did not fill the gap of mental health services needed by PLHIV. Moreover, some staff were themselves suspected cases of COVID-19, decreasing the workforce available to face the crisis.

Phone calls and WhatsApp groups were the official communication channels between PLHIV, their CSOs and health providers at fever hospitals. Sharing basic information about protection measures, methods of infection, symptoms and possible home management of COVID-19 were important sources of information beside television and social media. Upon resuming activities gradually recently, face to face information sessions at CSOs were held using the MOHP visuals and recommendations, along with distribution of sanitizers, soap and masks at testing and treatment facilities. With many concerns about the safety of activities and the health status of both PLHIV and the staff. Some individual consultations and online support groups took place at CSOs contingent on the available funds.

Reprioritization and budget reallocations were made to provide relief packages to PLHIV, those that consisted mainly of food assistance, coinciding with Ramadan and Eid Al Fitr. Normally, CSOs provide such support during these occasions. However, the sustainability of such relief assistance was a real challenge for CSOs.

CSOs continue to support PLHIV legally and psychological providing health counseling through a

network of medical doctors through WhatsApp was mediated by one CSO to bridge the health services gap during the pandemic. Upon resuming activities gradually, there was an increased burden on CSOs staff to reschedule support groups in a different manner to allow for social distancing, with more appointments and time slots. Also, a considerable amount of money was directed to purchasing protective measures including masks and sanitization equipment.

However, not all PLHIV have an internet package to use these services which depend mainly on good internet connection so they did not receive any social or educational support. Moreover, the CSOs staff did not receive any guidance about handling of services to ensure standardized and high-quality information during the epidemic.

Contingency plan layout

Effective planning should contain the following items based on risk and vulnerability mapping, needs assessments, and situation analyses:

- (1) Gap analysis and key risks identified; this was done previously through data collection and information collected from participants. Mind mapping of the identified risks were developed (Figs 1 and 2).
- (2) Risk management plan: include risk identification, prioritizing risks, risk analysis (scoring of the impact, probability and system preparedness, finally multiplication of those scores for each risk identified and then having a final risk score for each item used to prioritize the identifies risks. Following prioritization of risks, risk treatment was done through identification of the proposed activities and suggested mitigation efforts. All these process were participatory engaging all participants (PLHIV, most at risk populations, CSOs). Risk assessment matrix (Table 2). Mitigation activities (Table 3).

This contingency plan was triggered by the emergency of COVID19 pandemic and its major health and nonhealth consequences on PLHIV and key populations. A lot of mitigating activities were developed by governmental and nongovernmental

Table 2 Risk assessment matrix

Program Components	Probability				Impact=severity			System preparedness				Score
Potential Risks/Problems	High	Med	Low	Never	High	Moderate	Minimal	Poor	Fair	Good	Excellent	≥7
	3	2	1	0	3	2	1	3	2	1	0	
A. Treatment and care												
Drugs												
1. Availability of ARVs	3				3				2			18
2. Accessibility to treatment centers	3				3				2			18
Health facility												
1. Transportation difficulties	3				3				2			12
2. Too long waiting time		2			3			3				18
Health service providers												
3. Poor communication	3					2			2			12
4. Unqualified		2			3				2			12
5. Deficiency in specialists	2			3				2				12
6. Provision of other services	3				3			3				27
B. Prevention activities												
1. Increase transmission rates		2			3				2			12
2. psychological support	3				3			3				27
3. prevention packages	3				3			3				27
C. Resources												
1. Human		2			3				2			12
2. Nonhuman												
2.1 Time		2				2				1		4
2.2 Information		2				2				1		4
2.3 Money	3				3			3				27
D. Socioeconomic												
1. Financial hardships	3				3			3				27
E. Policy procedures												
Breakdown of policies			1		3					1		3
New policies-related to the situation		2				2			2			6

Table 3 Proposed activities for contingency planning

Identified Risks	Objective	Preparation/Activity
1. Provision of other services ***	To ensure continuity of other services for PLHIV and key pop	Establish an official communication mechanism (remotely) through a platform to provide counseling services for PLHIV Activation and scaling up for the hotline services to respond for PLHIV inquires Strengthen the activities of community support networks
2. Financial hardships***	To ensure financial support for PLHIV in emergencies	Secure part of the fund for emergencies to support PLHIV
3. Psychological support ***	To ensure safe and mental health wellbeing of PLHIV during emergencies	Training workshops for CSOs staff to establish standardized psychological relief messages Training for CSOs staff on management of mild cases and when to refer Establish formal support groups with representatives
4. Prevention packages ***	1. To form a community awareness and support team.	Create fresh information messages and materials for the specific humanitarian environment. Use radio and public gatherings to disseminate culturally relevant and field-tested messages and materials about HIV prevention, gender-based violence prevention, and accessible services to respond to it, as well as AIDS treatment and care.
	2. Use appropriate channels and materials to disseminate them	Identify a small number of high-priority communication and support measures that may be implemented right now, make contact with representatives of HIV-positive people's networks and other community-based groups to find out what information and support they require.
	3. Ensure supply and access to condoms	Collaborate with organizations already working on HIV prevention in these areas to establish what their needs are and to unify messages.
	4. Ensure availability of contraceptives	Use whatever communication channels are available to inform the public about how and where to obtain condoms, such as radio and posters
	5. Ensure access to nutritional care and support	Provide information on the effectiveness and safety of contraceptive methods for preventing pregnancy and the risk of HIV transmission to the infant through counseling and family planning services. Examine the diets of people living with HIV in order to ensure that the protein and micronutrient intake are adequate for the patient's energy needs.
5. Low funds available***	To strengthen mobilizing funds	Inclusion of HIV elements into emergency planning into proposals for major grants Regular HIV funds from national sources, bilateral donors, and the Global Fund are being reprogrammed
	To ensure availability of emergency funds	Allocating current HIV money to emergency response Integrating HIV programmes into other funding packages
6. Availability and retention on ARVs**	1. To ensure continued availability of ARVs for PLHIV	Preposition buffer stock of ARV in strategic and safe locations for at least 3 months
	2. Identify people requiring continuation of ART	Provide PLHIV with additional drug supplies as well as inform them what to do in case of treatment interruption Follow up with persons who are receiving ART using current health care records or patient cards, if available
	3. Ensure that PLHIV continue to receive care	Disseminate information about continued ART services through current HIV-positive networks as well as other community networks Set up a hotline to advise individuals about ART and where they can get treatment. Establish new community home-based care systems. Establish an emergency phone number to call if they run out of medications

(Continued)

Table 3 (Continued)

Identified Risks	Objective	Preparation/Activity
7. Accessibility to treatment centers**	Give instructions on how to obtain ART	Decentralization of ART delivery services Using cell phones to assist with patient follow up and sending adherence reminders Deliver messages through community support networks, media and others to inform PLHIV on how they can access their medications in a safe manner. Facilitate peer to peer ART delivery
8. Too long waiting time**	To provide timely response to management and care	Reschedule timings for PLHIV to receive their care and treatment
9. Deficiency of specialists *	To ensure the availability of specialists all the time	Build the capacity of medical officers/physical assistants to prescribe and monitor ART services, including PMTCT
10. Unqualified staff*	To build capacities of the already present staff as well as attracting others in the field To enhance their capacity to deal with violence cases	Include HIV and STIs management in the pre graduation medical curricula Mentoring new staff Clinical attachment training exercise Ensure that staff capacity is built and that they are trained to offer adequate ART care, especially pediatrics. Give instructions on how to obtain ART. Education of staff on how to prepare in case of an evacuation or violent cases as well as education of patients in case of routine counseling sessions
11. Poor communication *	To enhance different communication mechanisms specially during emergencies	Build official electronic platform of communication between experts and PLHIV Build capacities of health care providers on communication skills
12. No human resources *	To scale up human resources in the HIV and STIs field	Seek out ways to deliver HIV awareness and workplace training and education to newly hired employees as soon as possible Inform newly deployed personnel (including contractors and transport personnel) about HIV prevention, including how to get free counseling and testing, as well as treatment and support. Provide training and build the capability of partners

ART, antiretroviral therapy; ARV, antiretroviral drugs; CSO, civil society organization. *Lowest priority risk. **Moderate priority risk.

***Highest priority risk.

sectors to ensure continuity of services especially during the lockdown time. Some of these activities were done as an immediate response like providing financial, psychological support for PLHIV and others on a longer term like provision of 3 months drug supply.

Development of the plan

The plan was developed through four sections as follows:

- (1) The first section details hazards and risks identified, scenarios, planning assumptions, and consequences for each of the hazards.
- (2) The second section summarizes the risk assessment prioritization matrix.
- (3) The third section lays out the mitigation activities identified by participants to be undertaken by different clusters of stakeholders during preparedness, emergency response and early recovery.
- (4) The fourth section on sharing and communicating the plan with relevant parties.

Section one

Hazards identification and potential consequences

- (1) After interviews and FGD with participants, some hazards were identified that might cause negative impacts on the course of management and care for PLHIV and on the key resources (Fig. 1).
- (2) The researcher used a mind map to organize and categorize the information gathered from the brainstorming sessions during interviews and FGDs with participants to identify possible or potential risks/problems as a consequences from the previous identified hazards (Fig. 2).

Section 2:

Risk assessment matrix (risk analysis and prioritization of risks)

After identification of the risks, risk assessment matrix was developed based on their impact and probability as well as system preparedness (Table 2).

The potential consequences/problems/risks were grouped into the following categories to be easily met: 1. Treatment and care, 2. Prevention activities, 3. Resources, 4. Socioeconomic, and 5. Policy and procedures.

A risk score was identified for each risk through multiplication of the agreed score (gaining consensus from all participants) for impact, probability of occurrence and system preparedness.

A risk score more than 7 need to be worked on and treated accordingly. The researcher identified three broad categories of risks according to the risk score.

Risk score of 27 were identified as high priority risks for provision of other services (e.g. Counseling, follow up, any other medical care), financial hardships, psychological support, prevention packages and low available funds.

Risk score of 18 were identified as moderate priority risks for availability of ARVs, accessibility to treatment facilities and long waiting time.

Risk score of 12 were identified as low priority risks for, transportation difficulties, poor communication. Unqualified health care service providers, deficiency of specialists, increase transmission rates and no human resources.

Section 3

The data represented in Table 3 exhibited formulate contingency plan and activities to be undertaken. According to the previously prioritized risks identified, the researcher developed a plan for each identified risk, the objective to be achieved and the mitigation activity suggested by participants to be undertaken.

Section 4

Sharing and communicating the plan

A one day workshop was conducted virtually with Al-Shehab team (outreach workers, psychiatrist and program manager). The workshop was conducted on June 23, 2020, 11 persons from AL-Shehab was actively participating and engaged in the discussion. The consultant displayed the proposed risk assessment plan as well as the suggested activities, group work was done to discuss every risk and the activity proposed. They all agreed that this step is very crucial to set a unified hands on document ready for use by all the team in case of any emergency.

The workshop was carried on to disseminate and communicate the risk assessment plan and the activities among all workers in Al-shehab to be oriented with.

Also to have their feedback and other suggested interventions and recommendations.

Other ideas and interventions emerged:

- (1) The plan can be customized in other way specifically to every target population.
- (2) Standardized Referral document should be available to enhance immediate response in case of any emergency.
- (3) Create electronic baseline data accessible to all concerned team to make it easy communicate with beneficiaries.
- (4) Create data base for some health care service providers to permit easy and timely communication in case of any emergency.
- (5) Specify part of financial contributions to be available during emergencies.
- (6) Establish streamline communication between different PLHIV networks to allow easy reach out to all beneficiaries in case of emergencies.
- (7) Create different and unique patterns of home care ready to use in emergencies (e.g. use of mobile apps and services for case follow up).
- (8) Create Mobile app to coordinate visits of beneficiaries to the drop in center to ensure short waiting time, easy and smooth entrance to health care service providers.

Discussion

According to the literature, HIV and emergencies have a unique interaction. The factors that determine HIV transmission during emergencies are complex and depend on the context and overall response strategy. Pre-existing gender imbalances may be reinforced, putting women and children at a higher risk of contracting HIV. The loss of livelihood and the lack of employment can result in an increase in sex work and sexual exploitation. Mass population displacement may lead to family separation and the breakdown of social structures and norms that regulate behavior [3].

In December 2005, the United Nations General Assembly passed a resolution to expand HIV prevention, treatment, care, and support, with the goal of providing universal treatment access to all those who need it by 2010. Universal access targets will not be met until HIV prevention, treatment, care,

support, and mitigation in emergency situations are addressed, according to most experts. Human rights and gender must be considered in any response to HIV in an emergency [13,14].

Moreover, antiretroviral therapy (ART) is critical for PLHIV. The first step was to mitigate the risk of a supply chain disruption in order to ensure continuous supply of ARV medications; this included preparing international shipping, increasing warehouse storage capacity, and increasing the flow of medicines to support decisions on long-term take-home doses or multimonth dispensing (MMD) of ART [15].

During the COVID-19 pandemic in Sub-Saharan Africa, a 6-month suspension in antiretroviral medication (ART) will increase HIV-related fatalities by more than 500 000, according to the Joint United Nations Program on HIV/AIDS (UNAIDS) and the WHO. And this was in accordance with our study where the NAP provide a 3 months ARV drug provision for PLHIV, however, this step comes after some period of the epidemic [16].

The NAP rapidly adopted a new 3-month dispensing policy, providing ARV therapy for 3 months rather than monthly. The policy's objective is to ensure treatment for PLHIV while also providing a sense of security, particularly in light of concern about ART stockouts. In general, there were no significant disruptions in treatment supply. Only four out of 14 sites reported an unavailability of a single medicine, which was replenished following clinical consultations. The policy was not disseminated to all PLHIV in a timely manner. Nonetheless. The NAP and local partners such as UNAIDS disseminated information about the new policy, and a digital communication platform was built with all partners CSOs and PLHIV networks [17].

This is supported by five well-described HIV epidemic models, which predicted that a 6-month interruption in ART supply across the entire population of PLWH on treatment would result in a twofold increase in HIV-related deaths over a year (ranging from 1.87- to 2.80-fold across models) [6].

Individuals affected by emergencies are often underserved, which is one of the numerous hurdles in reaching more people with HIV. Emergency situations afflicted 1.6 million HIV-positive people in 2014, with 81 percent of those affected living in Sub-Saharan Africa and over two-thirds (1 million) lacking access to antiretroviral medication [18,19].

The UN organizations had been collaborated and united together to support the GOE by adopting 9 month country response and preparedness plan (CPRP) to help the government in its response toward COVID-19, HIV was integrated in the last pillar of the plan under sustainability of services late in the second phase of the plan [20].

Another research conducted by Hongbo Jiang published on maintaining HIV care during COVID-19 pandemic identified also the same challenges in our study where timely linkage to HIV care could be hindered during the COVID-19 pandemic in addition to ART continuation.

The Chinese National Center for AIDS/STD Control and Prevention issued a notice guaranteeing free antiviral drugs for selected treatment management agencies in China, and released a list of ART clinics. PLHIV can refill antiviral drugs either at the nearest local Center for Disease Control and Prevention or by post, to maintain enrollment in treatment programmes and to continue ART, where in our study, the primary contact channels between PLHIV, their CSOs, and health providers at fever hospitals were phone calls and WhatsApp groups. Apart from television and social media, sharing basic information regarding prevention measures, infection methods, symptoms, and probable home care of COVID-19 were essential sources of information. While provision of treatment were only available in Fever hospitals and must be provided to the patient himself which was found to be challenging sometime [16,18,21,22].

Hospitals in Thailand are to dispense antiviral drugs in 3–6-month doses to meet the needs of PLHIV and reduce facility visits [20,21]. and this was in accordance with our study.

In a study carried out in Northern Italy on a cohort of PLHIV in a single center, it showed a raise of missed visits from 5 to 8%, a reduction in the number of new HIV diagnosis from 6.4 in 2019 to 2.5 per month in 2020 ($P=0.01$), a drop in ART dispensation and an increase of hospitalized HIV patients due to COVID-19 and this was in accordance with this study except for ART dispensation where in our study there were no significant disruptions in ART supply where the NAP applied three regimen strategy [23].

Another study concluded that the COVID-19 epidemic had a direct and indirect impact on PLHIV; direct impact included disrupted access to

essential medicines, commodities, and services such as antiretroviral treatment, HIV pre-exposure prophylaxis, viral load monitoring, HIV and sexually transmitted infections testing, condoms, and syringes; indirect impact included disruption of access to essential medicines, commodities, and services such as antiretroviral treatment, HIV pre-exposure prophylaxis.

Significant collateral damage can result from prevention efforts that restrict human rights, raise or impose criminal fines, and expand police powers to target vulnerable and criminalized people. PWIDs and sex workers face unique challenges as a result of the COVID-19 pandemic, the underlying HIV epidemic, and the ability of key populations to protect themselves due to significant heterogeneity in the COVID-19 pandemic, the underlying HIV epidemic, and the ability of key populations to protect themselves [24].

Conclusion

HIV is not included in current disaster and emergency management structures. Where there has been inclusion, such as in the latest UN-CPRP. It was late and not integrated within planning. PLHIV are left out during emergency interventions as a result of lack of integration of HIV/AIDS into emergency programming and because of HIV stigma. there is no evidence of sustainability of HIV prevention, care and treatment services during emergencies. HIV risk increases during emergencies as a result of negative coping mechanisms and lockdown measures with no prevention packages. This calls for contingency planning for HIV response based on the context that HIV remains a public health problem.

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Al-Shehab Foundation for Comprehensive Development is an Egyptian local NGO based in Cairo and founded in 2001 working mainly in the

field of HIV/AIDS supporting the government in HIV response through outreaching facilities to PLHIV providing them with prevention packages. Al-Shehab focuses its actions on marginalized populations of informal areas of Greater Cairo, addressing the social and economic problems they face on a daily basis (gender-based violence, sexual harassment, limited access to basic services). Since 2005, the association has broadened its scope of action by establishing its first Drop-In center to provide a comprehensive package of services to marginalized women. The packages of services include Psychosocial Support, Legal Support and Voluntary Counseling & Testing and Vocational Trainings.

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Conflicts of interest

There are no conflicts of interest.

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