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The need for standardised methods of data collection, sharing of data and agency coordination in humanitarian settings

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ABSTRACT

Humanitarian crises and emergencies are prevalent all over the world. With a surge in crises in the last decade, humanitarian agencies have increased their presence in these areas. Initiatives such as the Sphere Project and the Minimum Initial Service Package known as MISP were formed to set standards and priorities for humanitarian assistance agencies. MISP was initiated to coordinate and standardise data and collection methods and involve locals for programme sustainability. Developing policies and programmes based on available data in humanitarian crises is necessary to make evidence-based decisions. Data sharing between humanitarian agencies increases the effectiveness of rapid responses and limits duplication of services and research. In addition, standardising data collection methods helps alleviate the risk of inaccurate information and allows for comparison and estimates among different settings. Big data is a new collection method that can help assemble timely data if resources are available and turn the data into information. Further research on setting priority indicators for humanitarian situations can help guide agencies to collect quality data.

Summary box

- ⇒ Using data for evidence-based planning and decision-making in humanitarian crises is necessary for the success of interventions.
- ⇒ Data sharing between humanitarian agencies increases the agencies' effectiveness through rapid response with specific and coordinated interventions.
- ⇒ Humanitarian agencies should coordinate data, standardise data collection methods and involve locals for programme sustainability.
- ⇒ The characteristics of good data are relevancy, accuracy, timeliness and accessibility and applicability in humanitarian crises.

BACKGROUND

Syria, Yemen, the Democratic Republic of Congo, South Sudan, Somalia, Palestine and Ethiopia are only some countries currently enduring a humanitarian crisis. A humanitarian crisis or emergency is an 'event or series of events that represents a critical threat to the health, safety, security or wellbeing of a community or other large group of people, usually over a wide area'. It can be a natural disaster such as an earthquake or tsunami or manmade disasters like armed conflicts and wars, fires or industrial accidents.[1] These emergencies can be short-term or long-term. Those in charge of health systems usually face difficult decisions in helping respond and adapt to ease suffering and benefit the most people possible. Humanitarian crises can also be an obstacle in allowing the system to function correctly.

A health information system organises the flow of information at different levels to function correctly during regular and emergency periods. During non-emergency periods, it helps in clinical settings in dealing with patients, where healthcare providers can decide what course of action to take with patients. Also, used at a health facility level, where human resources, medications and supplies are all tracked to determine what further resources are needed.[2]

There is a real and urgent need to provide humanitarian assistance as soon as possible to improve the population's suffering in humanitarian settings.[3] Also, data are needed to justify humanitarian aid and assistance by donors without full consideration of information and knowledge obtained from data that is already readily available.[4] Some of the most significant issues when accurate health information is not available is the misplacement of funds, resources and time into programmes and services that are not significant, taking away from other priorities. Only two collect data on health and nutrition in an article describing 12 humanitarian health information initiatives in humanitarian settings, including databases to help strengthen health

information. These two health information initiatives mainly provide platforms for donors and agencies to store data and assess health outcomes.[5]

This article describes the minimum standard of care guidelines and their use in humanitarian crises as an example of what should be done with policies and interventions during such emergencies. It then examines the use of data for various groups' evidence-based planning and decision-making to ensure an effective humanitarian response. Finally, it analyses the different components of available data, such as timeliness, up-to-date characteristics, accessibility, and relevance.

STANDARD OF CARE

The minimum standard of care guidelines in humanitarian crises helps guide services rendered in the field, led by the Minimum Initial Service Package (MISP) and the Sphere Project.[6] Many countries have successfully used MISP for reproductive healthcare. MISP was added as part of the Sphere Project in 2004. This package is a minimum list of reproductive health indicators to ensure most critical services are provided during and after humanitarian crises.[7] MISP also helped guide the collection of crucial reproductive health data in emergencies that sometimes gets lost in the overburden of data in humanitarian areas. Here they were able to distinguish priority indicators for reproductive health.[8]

The Sphere Project is an initiative established after the Rwanda refugee crisis of 1994. The Rwanda refugee crisis witnessed the arrival of many other humanitarian agencies in the region.[9] However, it did not stop the most astounding total mortality rate from occurring in a humanitarian crisis. Humanitarian actors thought it was necessary to evaluate why there was an increase of agencies but an inadequate response to ensure the lack of duplication in other situations. Many non-governmental and humanitarian agencies drafted a humanitarian standard and charter from 1994 to 1999, which became the Sphere Project.[10] The Sphere Project is a minimum set of standards and indicators covering humanitarian assistance in water, nutrition, shelter and health. The handbook has produced four editions, with the most recent one being in 2018.[8] Each revision sought to include more specific standards and indicators for humanitarian assistance. It is one of the most widely used charters by humanitarian agencies.

INDICATORS: WHICH ONES SHOULD BE A PRIORITY?

An indicator is a tool that measures a particular situation or context.[11] A measurement is usually a number or percentage representing the current condition at a set time and place. For example, the maternal mortality ratio indicator tracks the annual female deaths among 100 000 live births.[12] It assesses the hospital's ability to deal with birth complications and insight into women's health during and after pregnancy. Indicator selection is based on the measurability and relevance of a country or programme's planned objectives. In 2002, the WHO had recommended 3500 indicators to cover all suggested areas in their several programmes. Many of these indicators have no metadata, making it impossible to measure the indicators themselves.[13]

Indicators are a way to use complex data and turn it into a number, rate or percentage.[14] They are easier to comprehend and use by policymakers[15] and can help identify priorities and direct the use of data in humanitarian settings. Many humanitarian donor agencies use several indicators to help lead their relief campaigns during humanitarian settings or crises. Unfortunately, it is not clear how these agencies decide which indicators are a priority. In addition, such indicators are standard and not adjusted for different situations. In 2016, the European Commission Humanitarian Office reduced its vital results indicators from 113 to 35. They realised it was not the number of indicators collected which can help determine the success but the key results of a selected few. The reduction of indicators was decided by instinct.[16] However, the use of quantitative indicators alone also has its limitations. In her book, 'The Seduction of Quantification', Sally Engle Merry points out that indicators work best when paired with qualitative data provided by local encounters. The need for interviews and focus groups to understand the results of the indicators.[17]

What exactly is the definition of success? If at least 10 of the 300 indicators are reached? Which indicators are considered to be prioritised over the others, and why? Which age groups are recipients of Sphere indicators? These are just a few questions the Sphere Project has yet to address. Although the Sphere is one of the most widely used indicator lists in humanitarian settings, it is still problematic to use. Over half of the indicators included were classified as unquantifiable, and less than 15% were considered related to health at the population level.[18] However, defining relevant priority indicators during humanitarian settings will allow agencies and governments to focus on the central issues at hand, provided the data used for decision-making is up-to-date and timely.

UP-TO-DATE AND TIMELY DATA

After Haiti's earthquake in 2010, a Rapid Initial Needs Assessment for Haiti was one of the first needs assessments done. It cost about 3 million dollars. When the results were finally released, they were obsolete and no longer reliable—timeliness is one of the issues needed for reasonable data use. Humanitarian agencies then had to do their own needs assessments, spending more time and money away from other country initiatives.[19] In Darfur in 2001, a rapid needs assessment showed the area did not need food aid. An international non-profit organisation suspended food aid to the region even though other data stated otherwise. Thus, issues such as the local context and knowledge of the area are considered in such assessments and when decisions are taken, which can affect a large population.[20] In 2014, this problem of insufficient

access to data happened in the Ebola crisis in West Africa. The early opportunities to stop the outbreak were missed. Data showed cases numbers were increasing, but treatment was delayed. More recently, we can note that history is repeating itself with the fight on COVID-19. Countries which responded to what available data was indicated and early on were able to contain the pandemic, while countries such as the USA that delayed the response has lost over 500 000 people and continue to be unable to control the virus.[21] A lack of action on available data has allowed the pandemic to continue.

SHARING OF DATA

Setting priorities and ensuring data is timely and up-to-date is equally important as sharing data among organisations. The best way to share data for fear of duplication or invalidation would be for humanitarian agencies to coordinate their research, interventions and programmes.[22] Data sharing between humanitarian agencies, particularly during crises, increase the agencies' effectiveness through rapid response with specific and coordinated interventions. In many cases, coordination does not occur because of the high competition between agencies' fundraising processes.[23]

Crowdsourcing big data from locals and volunteers is known to have helped in complementing humanitarian responses. Platforms were designed after the earthquakes in Haiti and Nepal where locals and volunteers could add information about affected areas on the map to help humanitarians on the ground gather data at a more micro-level. Although there was an influx of misinformation or an under-representation of areas that were not internet accessible or used much, big data crowdsourcing helped aid reach areas that needed it the most.[24] The earthquake in Haiti was the turning point in the use of technology. Digital humanitarianism could help humanitarian action lead to more accurate, timely data for various purposes.[25] One of the main motivations behind big data development is the thought that technology will solve all our data needs.[26] While big data helps develop policies and interventions, it should complement humanitarian responses as no new data is produced with such a scheme. Instead, brought together to analyse and share data.[27]

COORDINATION OF HUMANITARIAN AGENCIES

Coordination among humanitarian aid groups in service provision is one of the main priorities in a humanitarian crisis. No law forcibly requires coordination between groups during a crisis, but successful coordination allows the use of limited resources efficiently. For many groups using the same charter, coordination would allow for the list of standards and indicators to be distributed. Then it will enable groups to focus on specific areas instead of allowing for duplication of services. A recent systematic review identified published papers on the coordination of health services and funding. There were 34 papers included in the study, identifying five coordination models for health services but none for funding.[28]

One of the many reasons coordination does not occur is that many groups and agencies each have their donors, ideas and agendas that need to be fulfilled and do not feel the need to share their information with others. Aid agencies compete for funding, and sometimes specific activities have available funding. Therefore, data were collected to attract more donors and assess the impact of relief to secure more funding. We move from relieving harm among vulnerable populations and the original mission to satisfying donor objectives.[29] Donors encourage collaboration between organisations to decrease the duplication of data and services. It also helps free up resources for other efforts.[30] In 2002, Vietnam had approximately 350 non-governmental organisations and over 40 different donors in charge of over 8000 projects.[31] It is not realistic to coordinate the work and monitor the results of all organisations and projects efficiently.

The cluster system formed following the coordination problems faced during the Darfur crises of 2004/2005 and the Indian Ocean tsunami.[32] It is composed of a group of humanitarian organisations that take the lead in trying to coordinate and collaborate in a humanitarian setting.[22] There are 11 clusters, and different United Nations bodies and non-profit government organisations run each group. The Inter-agency Standing Committee decides which clusters should be in place as necessary. In assessing the use of clusters, they lead to better performance, less duplication of services but are problems concerning the inter-cluster organisation and lack of proper information management and analysis systems.[33] Recently, the cluster system played a significant role in the cholera epidemic in Yemen. One of the main challenges was the need for integration among clusters.[34] The system has allowed for improved leadership in humanitarian response, covering thematic areas such as gender-based violence, wash and sanitation, and disability. Still, the main issue is the lack of including local and national organisations in coordinating relief efforts.[35]

The lack of coordination in the field mainly occurs because no one actor or group is in charge. Most times, it is the country's responsibility to manage humanitarian agencies. Due to the crisis's onset, the government often cannot control the many actors who arrived to help. As actors increase in size and various programmes coincide, a functioning health information system ensures duplicate data is not collected, limited resources pooled and informational gaps determined. Although the efforts to coordinate data collection, many groups continue to work separately.[36] After the tsunami, in Aceh, Indonesia, one agency reported that some children had received up to four measles vaccinations.[37] Also, in Haiti, after the earthquake in 2010, some areas of the country were receiving duplicated services while others had no access.[38]

It is often the case that humanitarian agencies are international organisations that do not have local knowledge

and assume baseline data is unavailable. For example, after the tsunami in Sri Lanka in 2004, many humanitarian agencies wanted to provide what they thought was necessary basic needs such as shelter, clean water and sanitation. The agencies did not know that even before the tsunami, half of the population did not have toilets, and as a community, they did not think this was a priority.[39] Research shows that more success occurs after the humanitarian crisis with shorter recovery periods when locals are involved in humanitarian relief. In Sri Lanka, when locals were initially involved, it led to active participants and the sustainability of programmes.[39]

DATA QUALITY

Data quality builds on timely production and sharing of data. There has been a push for more data collection than the six system factors involved in proper data quality and proper health information systems: timeliness, accuracy, simplicity, flexibility, acceptability and usefulness. A study showed that in five low/middle-income countries (LMICs), the lack of adequate data quality and use resulted from at least one of these factors not being achieved.[40] The barrier of suitable data quality in LMICs occurs in countries that are not facing humanitarian crises and can be enhanced should a natural disaster or manmade emergency transpire. One of the main issues faced in routine health information systems is that even though field workers are fully trained in data collection, collecting unessential data wastes time and causes data quality to go down.[4]

STANDARDISATION OF DATA COLLECTION METHODS

Standardisation in data collection methods would help with an increase in data quality overall.[20] The fastest methods for obtaining the needed information for implementation are rapid needs assessments or causal analysis.[41] Rapid needs assessments can sometimes be faced with inconsistent assessment tools and indicators. They are completed by agencies who do not have the adequate experience to perform them and can then be hampered by the low quality of data collection. They often do not reach the most vulnerable groups that need the most assistance because of security measures and the ambiguity of the indicators required to define the population's current needs.[42] Result-based approaches are usually standard practice. Donors and agencies want quantifiable results, that is, quantifiable and measured results.[43] Although randomised control trials and systematic reviews can provide the most appropriate evidence, they are not always feasible in humanitarian settings. Other methods can be employed to provide evidence-based data use.[41] Recently, the humanitarian community has pushed for more evidence-based policies than the typical approaches that do not rely on evidence for policies and actions.[43]

Although the lack of coordination among humanitarian agencies is an issue, the lack of standardisation in data collection methods risks the use of inaccurate data to inform decisions. In Ethiopia's famine in the early 2000s, the quality of data collected in nutritional surveys throughout the country was uncertain. Some of the surveys were collected simultaneously, with some areas duplicated and lacking representation in others. In addition, separate 'agencies' sample sizes did not represent the population. The results of these surveys were then used to access funding.[44] If the data collection methods were standardised, there would have been less likely a chance of bias and results used to make evidence-based decisions.

CONCLUSION

While health interventions in humanitarian settings call for evidence-based decision-making, the data is often not used or available to make such decisions due to the severity of the situation. Most of the time, countries facing such predicaments already suffer from fragile health information systems before the onset of wars, conflicts or natural disasters.[4] Yet, it is critical to have baseline data to predict what areas will need focus in a potential crisis.[45] It is unclear how agencies currently decide on health services priorities and target populations' programmes and interventions. Focusing on improving the health information systems of the countries at hand helps achieve quality, timelessness and shared data use, leading to evidence-based services, practical programmes and interventions. Functioning health information systems provide timely and up-to-date quality data, ensure local stakeholders' involvement and prevent the duplication of research and waste of resources in vulnerable areas.

The following key actions will help address the problems around evidence-based data use. First, further research on setting core indicators for humanitarian settings can guide the information needed. Countries are more likely to collect quality data on fewer important indicators than managing hundreds of indicators. A set of core health indicators adapted for humanitarian settings is one way to start using decision-making data. It will allow agencies to maximise investments and use resources efficiently. Second, data sharing by big data and similar approaches will organise, collect and process data; but requires humanitarian agencies and governments to have the capacity to manage and analyse the data. Finally, the need for government regulation of policies and programmes implemented by different agencies be evidence-based. Collective efforts in services and data sharing between providers are the key to successful evidence-based policies and programmes.

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