

Netherlands 2020 *The COVID-19 crisis has caused the number of people in need of food aid in the Netherlands to increase. Thousands no longer have enough money to buy groceries but are not entitled to conventional forms of food aid, such as undocumented migrants. The Netherlands Red Cross is handing out food vouchers to these groups. Thousands of people will receive food vouchers that will cover one meal a day in the months to come.*
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USE DATA TO HELP COMMUNITIES



Data collection and analysis must be strictly focused on communities' needs as determined by them

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INTRODUCTION

Data and digital technologies are essential to the management of any emergency or disaster. They are needed at all stages, from understanding the situation, planning and implementation, through to monitoring and evaluation. The COVID-19 pandemic saw great triumphs in data collection. However, there were major gaps around quality, consistency and use of data. Furthermore, the data was often not acted upon.

If future emergencies are to be handled better, we must improve our ability to store, manage and use data to inform decision making. Doing so will, in turn, create more demand for data in the future, giving rise to even more informed decision making. **The aim must be to collect, manage, analyse and disseminate data and information to support decision making.** It is crucial to do a better job of collecting data about the people at risk, including their contexts, the local dynamics of power, and the socio-behavioural factors shaping their perceptions and attitudes. We must improve our feedback loop with communities so they have greater control over the data they hand over and over the resulting decisions. At the same time, we must learn to make better use of data by combining and triangulating disparate datasets and linking them to actions.

5.1 WHAT WE SAW

WE HAD HUGE VOLUMES OF DATA ON COVID-19 BUT THEY WERE NOT ALWAYS HARNESSSED

Humanity's response to the COVID-19 pandemic was shaped by data. Huge volumes of data were rapidly collected and shared, enabling rapid decision making on everything from the initial public health and social measures to vaccine development and uptake. However, some kinds of data were not collected in sufficient quantity, completeness or detail. Furthermore, the available data was sometimes not used to drive decisions. There are many lessons here for future public health emergencies and for future disaster management, both in the successes and in the failures.

5.1.1 The data gathered during the COVID-19 pandemic

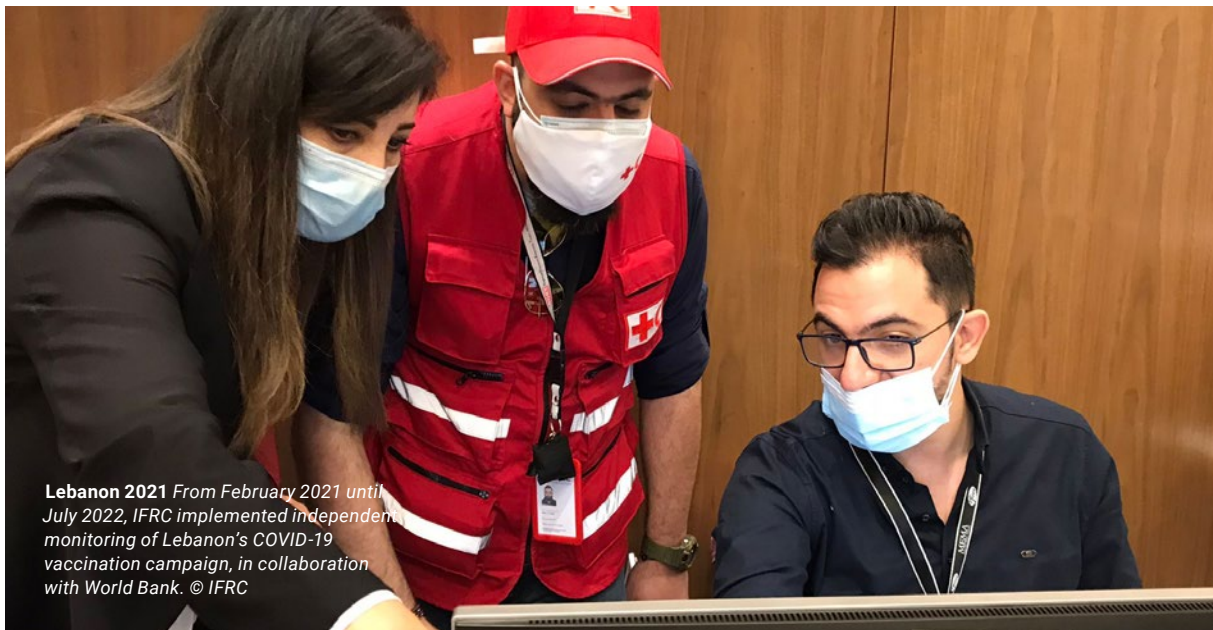
On the face of it, the COVID-19 pandemic was a triumph for the sharing and gathering of timely data. There is more data globally available on COVID-19 than for many outbreaks or public health emergencies, or even many other disasters. For example, new variants of SARS-CoV-2 like alpha and omicron were sequenced and openly published rapidly compared to previous outbreaks ([Nextstrain, no date](#)). This bounty of data extends beyond virology and epidemiology. Many countries have generated good estimates of excess mortality, economic impact, educational impact, and much more. There has also been data on people's knowledge, perceptions and attitudes, including online metadata, socio-behavioural data collected through social media, and community feedback data. All this is far better than the data usually available in emergencies.

Nevertheless, there are major issues with our data on COVID-19. In particular, there are huge global disparities in data availability. Countries that had better data had the opportunity to design more effective and equitable responses. But many countries had limited data on which to rely. Under-reporting has also been widespread.

This is exemplified by disparities in diagnostic testing. The countries that were most successful at controlling the pandemic in 2020, before the development of effective vaccines, typically had highly effective test-and-trace systems. This was partly thanks to their recent experience responding to highly transmissible respiratory pathogens, notably severe acute respiratory syndrome (SARS) in 2003. As of 25 October 2022, the Republic of Korea has seen only 28,952 confirmed deaths from COVID-19 ([WHO, no date](#)), a remarkable achievement for a densely populated nation of over 51 million people. It emphasized testing and tracing from the outset, rapidly developing diagnostic test kits to determine who had the virus. In conjunction, infected people were told to self-isolate. Crucially, they were supported in doing so, ensuring

that self-isolation did not cause them to lose their livelihoods and thus bolstering compliance (Cohen and Kupferschmidt, 2020). Enforced self-isolation without state support causes disproportionate financial harm to the poor and vulnerable; the Republic of Korea's approach mitigated this and thus promoted **equity**. Likewise, people's willingness to report and share data was crucial to the success of the strategy and reflects a degree of **trust** in the Republic of Korea's authorities and health systems. This data-driven approach enabled the Republic of Korea to tightly control the first wave of the virus. Crucially, the country did so without resorting to full lockdowns; while there were restrictions, the rapid and accurate data collection meant such maximal tactics were unnecessary (Kang et al, 2020). The country did eventually see larger waves of COVID-19 cases, but only after large vaccination campaigns that created significant immunity (IFRC GO, no date b).

Unfortunately, in many countries and regions, diagnostic testing was not available, or there were practical and logistic problems that meant in practice many people did not have access to tests. According to FIND, the global alliance for diagnostics, just 21.3% of tests administered to date have been used in low- and lower-middle-income countries, even though 50.8% of the global population lives in those countries (FIND, no date). Rates of testing vary sharply. In the US, an average of 27 tests have been performed every day for every 1,000 people – but in Malaysia the equivalent figure is just two (FIND, no date). Even some higher income countries have struggled with testing. In the UK in early 2020, the government began a limited programme of testing and contact tracing, only to abandon both in March of that year. It took several months to get the test-and-trace system functioning again. In its absence, the UK government was faced with spiking case numbers and chose to implement repeated, prolonged lockdowns (Majeed et al, 2020). In contrast, where local actors were integrated with governments (see Chapter 2), they were able to contribute to testing (see Box 5.1). Meanwhile, Djibouti rapidly built capacity for diagnostic testing and performed over 17,000 tests between March and May 2020 (Elhakim et al, 2020).



Lebanon 2021 From February 2021 until July 2022, IFRC implemented independent monitoring of Lebanon's COVID-19 vaccination campaign, in collaboration with World Bank. © IFRC

5.1.2 Our data on other kinds of disasters is also incomplete

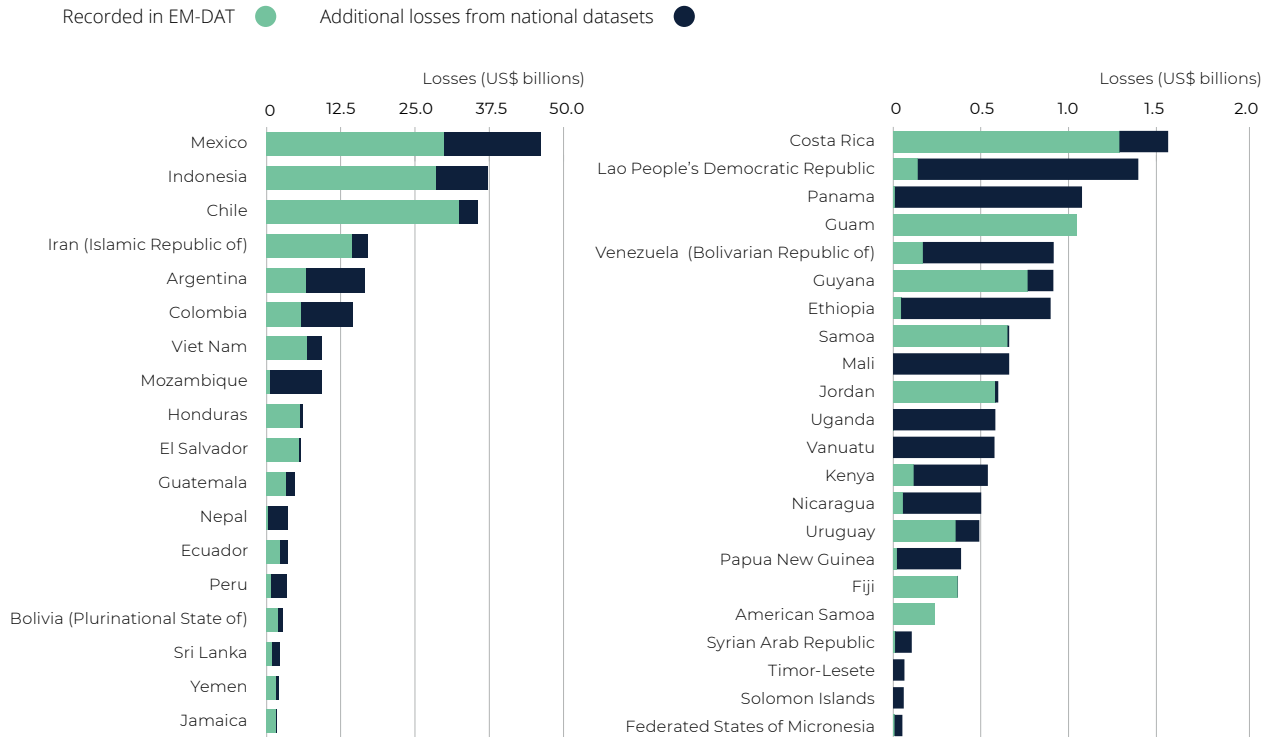
The COVID-19 pandemic was one of the biggest crises the world has faced in years and generated more data than most disasters. When we broaden the scope of our vision/analysis, we see that the ‘data landscape’ is just as patchy, or worse, when it comes to other disasters.

On the positive side, record keeping has improved enormously in recent decades and disasters are far better monitored than they were even 20 years ago ([UNDRR, 2022](#)). For example, hydrometeorological hazards are now monitored by satellites and a vast network of weather stations – although significant gaps remain ([World Bank, 2021](#)). Similarly, global telecommunications and enhanced early warning systems alert people to avoid tsunamis and tell disaster agencies where earthquakes have occurred so that they can respond more quickly. Nevertheless, the gaps in the global disaster dataset and breakdowns in the chain of communication channels continue to inhibit effective alerts and actions ([Wallemacq and House, 2018](#)).

While the impacts of large-scale disasters are generally recorded and available via databases like EM-DAT ([EM-DAT, no date a](#)), the impacts of small and medium-sized events are less well recorded and shared. Indeed, these often-overlooked small-scale disasters occur in such numbers that their cumulative toll is very large (see Figure 5.1). Global data records are also strongly biased towards events that occur in high-income countries, where reporting is most comprehensive, and events that cause large numbers of fatalities ([UNDRR, 2015](#)). This is particularly true for economic impacts ([UNDRR, 2020](#)). The largest reported financial losses are often in high-income countries, but this is largely based on insurance data and reflects confounding factors like the higher values of property in those regions ([IFRC, 2020b](#)). Countries often do not keep their data on economic losses in a centralized database, and many databases are hazard-specific rather than multi-hazard ([OECD, 2016](#)).

A key issue is the lack of standardization across disaster types and regions. Conspicuously, disease outbreaks like the COVID-19 pandemic are generally treated separately from other forms of disasters. For instance, in the EM-DAT international disaster database, two of the criteria for declaring an event a disaster are that 10 or more people are reported killed, or 100 or more people are reported affected ([EM-DAT, no date b](#)). Disease outbreaks are not defined in the same way. A single case of a disease can constitute an outbreak if it occurs in a region where that disease is not endemic. For instance, the first case of COVID-19 was clearly an outbreak. However, a single extra case of cholera in a region where the disease is endemic would not constitute an outbreak. The situation is further complicated by the political interests that affect whether an outbreak or epidemic is declared. It is therefore difficult to analyse disease outbreaks alongside other hazards like earthquakes. Partly for this reason, diseases are poorly reflected in global disaster datasets like EM-DAT. Indeed, EM-DAT does not have an entry for COVID-19.

Figure 5.1: Global disaster datasets are often incomplete. The international EM-DAT database misses many disasters that are recorded in countries' national datasets



Source: [UNDRR, 2015](#)

BOX 5.1 / CASE STUDY

PHILIPPINES RED CROSS DELIVERS COVID-19 TESTS

The Philippines Red Cross was a pioneer in delivering COVID-19 testing services to complement those put in place by government authorities. It did so from early in 2020 (IFRC, 2020a). By September 2021, it had administered four million tests (Philippine Red Cross, 2021). The Philippines Red Cross also offers saliva-based tests, which are cheaper and less invasive (Philippine Red Cross, 2022).



Philippines 2021 The Philippine Red Cross started using the saliva RT-PCR test. It is a faster, cheaper, and less invasive but reliable way to detect the presence of COVID-19. © Philippine Red Cross / IFRC

5.2 WHAT WE LEARNED WE HAVEN'T COLLECTED AND USED ENOUGH OF THE RIGHT KINDS OF DATA

Enormous volumes of data have been collected during the COVID-19 pandemic. However, many crucial types of data have been under-gathered. This needs to change if we are to reduce the risks and impacts of future disease outbreaks. To understand this, consider the full range of types of data that would ideally be available in future crises. They can be roughly divided into three categories of question:

- 1. To what potential hazards are communities exposed?** All communities face a wide range of hazards. These include different types of diseases, from airborne viruses like SARS-CoV-2 to parasites spread by mosquitoes like malaria. Such pathogens occur alongside other types of hazards, such as storms and conflicts. Hazards may overlap and reinforce one another (see Chapter 1).
- 2. Who is at risk? In particular, who is most vulnerable and why?** If responders are to help people withstand a hazard like a disease outbreak or hurricane, they must know what their vulnerabilities are and the forms of aid they most need. For instance, if people are living in overcrowded conditions, they will not be able to self-isolate to reduce the spread of a disease. In this case, personal protective equipment like face masks would be more useful than advice on social distancing ([RCCE Collective Service, no date b](#)).
- 3. What are those people's attitudes, beliefs and needs?** Put another way, what are the behavioural and social drivers that affect their willingness to take particular actions ([WHO, 2022](#))? For instance, a key challenge of the COVID-19 pandemic, and other disease outbreaks, has been encouraging hesitant people to take a life-saving vaccine. Vaccine acceptance can only be achieved if we first understand vaccine hesitancy. This requires understanding communities' ideas, beliefs and attitudes – and changing the response accordingly.

In the following three sections we look at each of these questions in turn. However, simply having all this data is necessary but not sufficient. It is also essential to operationalize the data: to use it to guide actions. The final section explores how to do that.





Saudi Arabia 2022 Saudi Arabia and other countries in the Middle East and North Africa in 2022 spent the holy month of Ramadan providing Iftar meals to the most vulnerable families, workers and remote communities as well as reminding people on how to stay safe from COVID-19 and providing emergency medical services during Ramadan. Saudi Red Crescent Authority provided emergency medical services to thousands of people for them to enjoy the holy month safely and securely. © Saudi Red Crescent Authority

5.2.1 Identifying hazards using data

The first step is to identify the hazards communities face. A key challenge is identifying the diseases that pose a hazard, whether they are endemic pathogens that have been circulating for decades or emerging diseases like COVID-19. This requires disease surveillance.

At the beginning of the COVID-19 outbreak, health systems would have benefitted from stronger community and participatory surveillance methods, including community-based surveillance ([IFRC Health & Care, 2020](#)). (The value of the community-based surveillance diminishes once a disease becomes widespread.) Signs and symptoms related to disease and/or other hazards are typically identified first by local actors with strong links within the communities in which they live. These local actors can also provide the first line of data and information sharing within the public health or animal health surveillance system (see Chapter 2). Capitalizing on this enables rapid detection of disease outbreaks, which may spread more widely if not rapidly contained. If a person begins to show signs and symptoms of illness the first people to know will be family, friends and neighbours. The most effective disease surveillance systems tap into these social networks. Community-based surveillance is most effective when integrated into the wider health surveillance systems, which can then respond to alerts from local actors. Such an active, responsive use of data helps to build and maintain **trust** between governments, humanitarians and communities, enabling more effective responses when threats emerge ([McGowan et al, 2020](#)).

Community-based surveillance has once again proven its value during the COVID-19 pandemic. For example, in Niger an existing community-based surveillance network established to monitor for polio was adapted to scan for COVID-19 ([Maazou et al, 2021](#)). Between April and November 2020, 150 community health workers were trained in how to spot and manage COVID-19. The community health workers reported 143 valid alerts, including two positive COVID-19 cases, and assisted in the contact tracing of 37 individuals. Alongside this, they raised awareness of COVID-19 prevention strategies among over 2 million people. Similarly, the IFRC has supported community-based surveillance capacity in multiple countries, including through its ongoing Community Epidemic and Pandemic Preparedness Programme (CP3) ([IFRC, no date a](#)). For example, community-based surveillance for COVID-19 has been carried out by Indonesian Red Cross volunteers at a monitoring station in Karangmojo village, where volunteers also distributed COVID-19 prevention information. However, as we saw in Chapter 2, many health systems do not yet effectively integrate local actors like community health workers.

Going further, health practitioners must develop integrated disease surveillance that tracks pathogens in both humans and animals. This is key because many disease outbreaks are zoonoses, where a disease passes from animals to humans (and many in turn can also pass from humans to animals). COVID-19 is a notable example of a zoonosis; the closest known relatives of SARS-COV-2 are found in Asian bats ([Morens et al, 2020](#)). Crucially, it is not yet clear how this happened, and this is partly due to our limited information on the viruses bats harbour and on interactions and transmission pathways between bats, other animals and humans ([Worobey et al, 2022](#)). There are many other examples of zoonotic diseases, for example people most often catch rabies from dogs. Therefore, the best way to stop outbreaks at source (see Chapter 1) is to monitor the health of both humans and relevant animals concurrently, and their shared environments. Traditionally, human and veterinary medicine have been siloed, with little cooperation or interaction between the two fields. This urgently needs to change.

Integrated surveillance of animal and human health is a key component of the related 'One Health' and 'Planetary Health' frameworks. In One Health, human health is understood not as a singular problem but as part of a global social-ecological system ([Mremi, 2021](#)). Similarly, Planetary Health emphasises the many ways humanity has disrupted Earth's natural systems ([The Lancet, 2015](#)), with knock-on consequences for all life including ourselves ([Planetary Health Alliance, no date](#)).

Similar lessons apply to non-disease hazards. In particular, local surveillance again has its advantages. It is better at capturing minor but recurrent disaster risks, or 'extensive risk'. These are often overlooked by global databases like EM-DAT and handled solely by local responders. However, globally they are highly significant. Mortality and economic loss from extensive risk has increased in recent decades ([UNDRR, 2015](#)).

Finally, it is crucial to monitor multiple classes of hazard simultaneously, from diseases to floods and algal blooms. One reason is that all communities face multiple potential hazards (see Chapter 1), so it is a mistake to over-monitor for one class of hazard at the expense of the others. It is natural that in the wake of COVID-19 there will be increased monitoring for disease outbreaks, and this is a good thing. However, it should not come at the expense of seismometers to track earthquake risk and other classes of hazard. It is also worth remembering that hazards interact, so that the presence of one hazard increases the risk of another. For example, floods disrupt supplies of clean water leading to an increased risk of water-borne diseases, so risk mapping and flood forecasts are vital mechanisms for providing early warning of outbreaks.

5.2.2 Using data to identify the people most at risk

To respond effectively to hazards like diseases and hurricanes, we need better information on who is most at risk. Risk is typically defined by exposure to a hazard (see section 5.2.1) combined with a factor of vulnerability. For example, two people may be similarly exposed to SARS-CoV-2, but if one is vaccinated he or she will have reduced vulnerability to severe illness and death. In one study conducted in the US in early 2022, people who had received a booster dose of COVID-19 vaccine were less likely to be hospitalized with COVID-19. People who had not had a booster were 2.5 times more likely to be hospitalized, while unvaccinated people were hospitalized 10.5 times more often ([Havers et al, 2022](#)). It's therefore not enough to know who is being exposed to SARS-CoV-2; practitioners also need information on who is vaccinated, previous infections and much more.

There are various tools to assess risk. Many are hazard-specific. For example, the Zurich Flood Resilience Alliance has developed a tool called the Flood Resilience Measurement for Communities ([Flood Resilience Portal, no date](#)). Similarly, the US Environmental Protection Agency has the Community Health Vulnerability Index, which they use to identify communities facing high health risks from wildfire smoke in order to prioritize public health strategies ([US EPA, no date](#)). Such indices are useful but by themselves do not capture the full range of hazards a community faces. In contrast, the IFRC uses the Enhanced Vulnerability and Capacity Assessment (EVCA) to help communities assess all kinds of hazards they can identify and what means they have to manage the associated risks ([IFRC VCA, no date](#)). The EVCA identifies the hazards facing a community and who is most at risk, then works through potential responses. Communities conduct the assessment themselves, with the IFRC's guidance (see Chapter 2). In a multi-hazard world, such comprehensive vulnerability assessments are indispensable.

Unfortunately, the COVID-19 pandemic highlighted limits to our information about the people most at risk. This issue should not be overstated, as considerable information was and is available. For example, even early in the pandemic it was possible to make predictions about likely outcomes of COVID-19 in different populations based on their age and chronic disease structure. There is also meaningful data on which countries are most at risk; for example, the INFORM Epidemic Risk Index incorporates a wide range of data to estimate countries' risk of epidemics ([EC DRMKC, no date](#)), and the Global Health Security Index performs a similar analysis ([Global Health Security Index, 2021](#)). However, community-level vulnerability data is not always discoverable at scale. Nor is there an easy way of overlaying other forms of risk information. This means it remains very challenging to continuously update risk indices that assess multiple, overlapping hazards, which is what communities actually face (see Chapter 1).

Efforts are now underway to catalogue EVCA-type data on a global level. IFRC has begun tagging the information it holds to make it discoverable on its [vcarepository.info](#) website ([IFRC, no date c](#)).

To help communities prepare for future hazards, disaster risk assessments need to be performed more widely and regularly. Assessments like the EVCA should become more standardised, incorporate more observational data, and be rolled out to exposed communities around the world. They should be validated with more observational data and repeated regularly to ensure the information remains up to date. This scaling up requires a significant increase in institutional capacity in disaster risk management. It is therefore dependent on long-term funding. Health and disaster risk management teams need to be put on a sustainable funding model, instead of the long-standing situation where they receive surges of money only when a disaster strikes. One way to do that is to integrate this work into longer term preparedness programming. Again, it is more cost-effective to prepare for hazards ahead of time – including by collecting data on who is at risk.

5.2.3 Identifying what people need and believe

To help people effectively, health workers and humanitarians must understand who they are. They must gather data on their needs, environment, concerns, knowledge, practices and behaviours ([Baggio, 2021](#)). Only with this information can practitioners determine whether the solutions being offered are the most appropriate. In other words, to prepare for disease outbreaks and other hazards, it is necessary to put community engagement and accountability at the heart of the planning process. Health workers and humanitarians must recognize community members as equal partners. Their diverse contexts, needs, priorities and preferences should guide all policy choices.

People's needs do not always conform to outsiders' preconceptions. For example, since 2020 it has been natural to assume that COVID-19 is the greatest source of health worry for everyone, but this is not true for everyone (see Box 5.2). For some communities, other diseases, or other hazards, remain more of a threat. These included non-communicable diseases that required continuing care, cholera, hurricanes, and complex humanitarian contexts like that seen in the Sahel. Similarly, it is tempting to send food parcels to people experiencing a food shortage, but depending on their circumstances they may need cash more. The environment in which people live always shapes the vulnerabilities they have and the forms of assistance they need. Factors like these will shape the kinds of assistance that people consider relevant and are willing to accept, and the actions they will take to shape changes in their own lives and communities.

Alongside this, it is vital to find out about people's beliefs, concerns and perceptions. For instance, they are at the heart of vaccine confidence and uptake. Mistrust and hesitancy about interventions like vaccines and face masks have been stumbling blocks throughout the pandemic. Yet the social and economical factors driving these behaviours have historically been neglected, including in many parts of the COVID-19 response. To correct this, disease outbreak plans must emphasize social data and community feedback (see Box 5.3). A community-centred approach requires plans and measures to be sensitive to context, agile and receptive to change (see Chapter 2).

Failing to act on lessons from community engagement can backfire. The 2018–2020 Ebola outbreak in the Democratic Republic of the Congo was marked by unprecedented violence against all responders. A 2022 study highlights issues with the way community feedback data was used by decision makers, leading to breakdowns of trust. The study found that the decision makers in the Ebola response were often medical personnel and epidemiologists, who regarded the evidence from the community feedback as lacking rigour: it was qualitative and they preferred quantitative data. As a result, the feedback was often disregarded. Furthermore, 'evidentiary inertia' was a feature of the response. This meant that even when there was a demonstrated need to change practice, the size and scale of the response made it difficult to change course within a reasonable timeframe.

This often led to mounting frustration in the communities being listened to. The volunteers receiving and analysing the feedback became aware of increasingly frequent threats, which soon manifested in attacks on health facilities and staff. Had the feedback been taken more seriously, some of this violence might have been avoided. The researchers recommend that community feedback systems be deployed as a matter of course in future outbreaks, and that acting on this feedback be normalized ([McKay et al, 2022](#)).

In contrast, an example of health workers embracing community data is the Collective Service. Founded in 2020 as a partnership between the IFRC, United Nations Children's Fund (UNICEF) and the World Health Organization (WHO), it aims to help create a coordinated, community-led and data-driven approach to build preparedness for future disease outbreaks. The Collective Service has developed and launched a socio-behavioural data dashboard, which compiles, structures and measures socio-behavioural data and evidence from almost 250 data sources around the globe. This information builds a bridge between people's needs and responders, enabling resources and attention to be focused on the most vulnerable people's most pressing needs ([RCCE Collective Service, no date a](#)).

At the heart of all this data gathering is **trust**. It is essential that communities have a high degree of trust in the people involved. For example, during risk assessment the information gathered is often of a sort that would normally be considered private, such as whether a person is vaccinated against COVID-19 or whether their partner is abusive. Communities will only provide such information to people and organizations in whom they place trust. Therefore, it is essential that such data is held securely and handled responsibly. It is also crucial that communities have access to their own shared data, so it is necessary to enable digital access for them. All this means engaging closely with key stakeholders in the community, ranging from religious leaders to teachers and traditional healers ([Community Engagement Hub, no date](#)).

BOX 5.2 / CASE STUDY

COVID-19 WASN'T ALWAYS PEOPLE'S BIGGEST FEAR

Local actors are well placed to listen to community feedback and find out what people are most afraid of. “You feel a duty to listen to what patients are going through,” says Suzanna, a volunteer team leader with the Lebanese Red Cross in Aley.

Lebanon has been experiencing a severe economic crisis and this looms large in many people’s minds. “I remember there was one patient in my hometown, an older woman,” says Suzanna. “Even more than COVID-19, she was worried about how to provide for her grandchildren” (IFRC, no date d).



Lebanon 2021 Lebanon has been in the grip of a compounded humanitarian crisis since late 2019. Following the devastating Beirut Port Explosions in August 2020, Lebanese Red Cross provided unconditional cash assistance to over 11,000 affected families as well as cash assistance to small businesses, shelter repair support, relief items, and essential medical services. © Lebanese Red Cross

BOX 5.3 / CASE STUDY

TO HELP CONTROL DISEASE OUTBREAKS, EMBRACE COMMUNITY FEEDBACK DATA

From 2018 to 2020, the Democratic Republic of the Congo endured an outbreak of Ebola – the 10th recorded in the country. Early in the outbreak, the Democratic Republic of the Congo Red Cross and the IFRC developed a community feedback mechanism to gather community perspectives on the Ebola outbreak and response ([Earle-Richardson et al, 2021](#)). This feedback data was analysed and used to inform policy and programming collectively at all levels of the response, both to improve the response and to engage communities in the fight against the virus.

A study published in February 2022 demonstrated the value of this approach. During the outbreak, many communities wished to continue to honour their dead. This seemed to create a conflict because procedures for safe and dignified burials meant bodies were interred in sealed bags to reduce the risk of the disease spreading. However, compromises were found. In the North Kivu region it was important that family members could see the faces of the dead, so clear windows were added to the body bags. This allowed funeral rites to be honoured while maintaining health security, and it built a degree of trust ([McKay et al, 2022](#)).



Democratic Republic of the Congo 2019 Well trained and well protected Red Cross teams have been providing safe and dignified burials since the onset of the outbreak, approaching every burial as if the person was infected. This protects not only themselves, but communities as well. By engaging communities in the Ebola response, teams have been able to better understand concerns from communities. © Corrie Butler / IFRC

5.3 WHAT WE NEED TO DO

CREATE AND USE A DATA ECOSYSTEM FOR HEALTH AND HAZARDS

What does a better collection of health and hazard data look like? The guiding principle should be that the data and evidence must be as useful as possible. It must be suitable to help answer key questions and inform decision making.

5.3.1 Building the new hazard data ecosystem

It is crucial that disparate data sources be integrated as much as possible. For example, data from community-based surveillance needs to be integrated directly into local and national health surveillance systems. This poses considerable technical challenges. However, two positive developments should facilitate better global datasets on disasters.

First, the IFRC is convening a group of key partners to develop an improved global database of disasters: the Global Crisis Data Bank. This database will curate information from the IFRC's global network of 192 National Societies, plus other sources including the UN and national and local governments. The National Societies are an under-utilised resource. While some maintain their own databases or support government databases, many do not – yet their staff and volunteers have access to a huge amount of information about natural hazards, the people impacted by them, and responses by humanitarians and other actors. The Global Crisis Data Bank will synthesize these three kinds of information by providing a system through which National Societies can readily upload the information they have, in a universal and accessible format. The entire dataset will be made available through the IFRC's GO platform ([IFRC GO, no date a](#)) (see Box 5.4). The project's initial phase is being funded by the US Agency for International Development (USAID) and is being implemented in partnership with United Nations Office for Disaster Risk Reduction (UNDRR), United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), the World Meteorological Organization, the World Bank/Global Facility for Disaster Reduction and Recovery, academia – including the EM-DAT team at the Centre for Research on the Epidemiology of Disasters hosted by the Catholic University of Louvain – and others. Development is currently underway, with a view to bringing an initial version of the Global Crisis Data Bank online by 2025.

Second, the UN is also supporting disaster data through the newly formed UN Complex Risk Analytics Fund (CRAF'd) ([CRAF'd, no date](#)). The scheme was launched in October 2021. CRAF'd will offer funding for disaster data initiatives, with the aim of creating “a stronger data ecosystem”. This will enable humanitarians and other actors to better anticipate disasters, to prevent them where possible, and otherwise to respond effectively. UNDRR also has ongoing projects supporting national disaster loss accounting systems ([DesInventar, no date](#)), while the World Bank has established its Global Crisis Risk Platform ([World Bank, 2018](#)). All these platforms offer useful foundations on which to build.

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Just 21.3% of tests administered to date have been used in low- and lower-middle-income countries, even though 50.8% of the global population lives in those countries.

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A key challenge for all such integrated hazard datasets is standardization. As we have seen, disparate methods of recording data have hampered attempts at integration and holistic analysis. While some impacts like economic losses and fatalities have been well recorded, other impacts such as displacement and building damage are defined and recorded differently around the world. Second-order impacts, such as loss of livelihoods or access to services, have been even more difficult to record.

One initiative that points the way forward is the Common Alerting Protocol (CAP), with caveats ([GDPC, no date](#)). This is a standardized message format for emergency alerts, which can work across multiple communications media. CAP enables rapid and systematic dissemination of health and hazard data across an entire country, prompting the public to take the necessary actions to protect themselves. The CAP illustrates that it is possible to create a standardized system for conveying complex, usable information to multiple audiences. The key is to adapt such global standards to local contexts. To this end, the IFRC has built the Alert Hub to amplify the use of CAPs ([IFRC Alert Hub, no date](#)). This digital service enables National Societies to work with national authorities to adapt messaging to suit local languages, cultures and preferences ([IFRC, no date b](#)). It should be stated that, at this point, adapting such a standardized approach for all health-related hazards remains a challenge because alerts and key messages must all be disease-specific. Discussions on how to address this challenge are ongoing.

5.3.2 Turning data into real learning and, most importantly, action

Societies can have short memories for traumatic events like pandemics. There is an understandable desire to forget, and many other issues to deal with. Famously, the 1918 influenza pandemic left little cultural footprint. Something similar is happening in 2022, with many public figures declaring that the COVID-19 pandemic is over despite ongoing waves of infection. There is a risk that, despite all the data and documentation, the lessons of the pandemic will be forgotten.

Governments and other actors, including humanitarian organizations, need to embed the lessons they've learned from the pandemic for the long term by translating them into institutional changes. States are currently trying to do this by amending laws related to health and hazards and by creating new ones (see Chapter 6). Here are three additional ways to ensure that this process of learning and adaptation actually takes place.

Make learning a standard institutional practice. Many organizations, from governments to community-level aid organizations, are set up in a way that prioritizes existing practices at the expense of learning and adaptation. Decisions are often based on people's experiences rather than data ([Hankey, 2020](#)). However, in a world beset by multiple hazards, all changing in complex ways, this static approach is inadequate. Instead, learning must become a central aim of every organization and government department involved in health and disaster management, whether a government department or a community health centre. This entails challenging but necessary cultural shifts, like prioritizing experimentation and enabling dialogue between groups (Senge, 1990). If a local volunteer finds a better way to solve a problem, their colleagues should feel empowered to embrace and disseminate the new approach. In 2021, IFRC released an app called

V-Community for volunteers to exchange knowledge freely, regardless of geography or language ([Google Play, no date](#)). However, for major changes to occur, organizations must trust their people and create an environment of psychological safety. IFRC's Learn to Change initiative is trying to create environments where genuine change can occur ([Learn to Change, no date](#)).

Manage and organize data so it is accessible and comprehensible. The volume and range of data on disasters and emergencies is growing ever larger. This is a good thing, but data is more noise than signal if not managed correctly. To learn from this firehose of data, and make decisions based on it, we must make it both available and understandable. The COVID-19 Dashboard created by teams at Johns Hopkins University is a prominent example ([Johns Hopkins University, no date](#)). The site compiles data from a wide range of sources and synthesizes it in easily understood formats like world maps and graphs. UNICEF Data and Analytics has built a comprehensive site presenting its data on multiple aspects of children's wellbeing ([UNICEF, no date](#)). Similarly, the World Bank's Data Catalog collates all its data on development in a single site so that users can easily find, download and share ([World Bank Data Catalog, no date](#)). IFRC has moved in this direction with its online databases. The GO platform "aims to make all disaster information universally accessible and useful" by maintaining an up-to-date record of all the emergencies to which the IFRC network is responding ([IFRC GO, no date a](#)). It also has data about risks that National Societies face and imminent events to which they may need to respond. A new dashboard was added in 2022 that visualizes learnings from COVID-19 according to subject and location ([IFRC GO, no date c](#)). Furthermore, GO also collects instances of learning and challenges from National Societies' response operations and categorizes them, enabling peer learning ([IFRC GO, no date d](#)). Meanwhile the Federation-wide Databank and Reporting System (FDRS) collects data annually from the IFRC's 192 National Societies. It shows their finances, how many people their programmes reach, and more ([IFRC FDRS, no date](#)). This information can be used by members of National Societies, and other humanitarian actors, to guide decision making. Finally, the Data Entry and Exploration Platform (DEEP) assists in needs assessment by enabling structured management of secondary data ([DEEP, no date](#)). GO, FDRS and DEEP are models of good information management that others can emulate.

Consider staffing and capacity needs to power this change. Embracing learning and managing information will enable better responses to hazards. However, digital technologies and data are ultimately powered and translated by human beings. Planning, reinventing processes, and collecting and analysing data all require dedicated staff with the time and security to iterate and improve. In contrast, when organizations are short staffed they dash from crisis to crisis, repeatedly reinventing the wheel. This is particularly true for humanitarian organizations, which often find themselves underfunded during 'good times' and shed staff and volunteers, along with all their shared knowledge, only to have to rapidly redeploy when a new emergency occurs (see Chapter 3). When organizations like National Societies have more predictable staffing and financial resources, they have time to absorb lessons from each crisis and reform their practices for next time. Similarly, with greater access to necessities like databases, and the training to use them, learning can become a regular practice (Johnston, 2022). Alongside this, digital and data literacy in communities should be prioritized. This gives communities agency over the flow of their data. Likewise, data literacy and analysis should be performed as locally as possible. This way, communities and local actors can become core participants in the use of data (see Chapter 2).

BOX 5.4 / CASE STUDY

THE ROLE OF IFRC GO IN THE COVID-19 PANDEMIC

GO is one of IFRC's primary data platforms. Launched in 2018, it receives and visualizes data from National Societies all around the world. It includes data on emerging hazards, appeals and National Society responses ([IFRC GO blog, 2020](#)).

COVID-19 posed a considerable challenge for the GO team, which has rapidly developed multiple new features. They added a COVID-19 dashboard; this provides key data in an interactive way, helping to guide analysis of the ongoing pandemic response. It includes case and mortality trends, humanitarian severity level, vaccination implementation and acceptance rates, and pandemic data. The database enabled National Society teams to quickly access all the relevant information, even when movement restrictions meant they were working remotely for weeks at a time ([IFRC GO blog, 2021](#)).



KEY RECOMMENDATIONS

Link crisis data to action. All data collection should be focused on shaping and driving actions that are beneficial to people and communities. For example, it should identify people's vulnerabilities so they can be protected or their capacities so that they can be built on. To achieve this, we must design information products and services to support evidence-based decision making. The right data must be supplied to the right people at the right time. Alongside this, we must ensure preparedness for effective response in terms of information technology, information management, and digital emergency operations centre platforms.

Agree on a common set of indicators and update those that proved to be flawed. We need an internationally agreed set of indicators for hazards, risks and vulnerabilities. They must be easily shared and understood, including by local actors, and adaptable to a wide range of emergencies and disasters.

Build integrated crisis data systems and invest in the human beings who analyse and communicate their findings. Such systems must collect useful data on the multiple hazards communities face, the impacts of those hazards, who is most at risk, and our societal responses. Community-based surveillance has proven its value once again during the COVID-19 pandemic: it should be expanded and integrated into wider health systems. The data formats must be standardized as much as possible to enable easy comparison and overlaying of multiple datasets. Furthermore, it is essential to collect more sociological and qualitative data to understand people's needs, contexts and attitudes. Only with such sociological data can responses be designed appropriately.

Ensure community insights and feedback drive data collection and use, and decision making. Communities must have a strong role in the collection, analysis and use of crisis data. Everyone must have access to the digital world to give them agency over their data and prevent digital exclusion. Community feedback data must be gathered during all phases of emergency management and its messages listened to and implemented. This requires emergency management teams to become more responsive and agile. Integrating community perspectives into decision making requires coordinated efforts, financial sustainability, and long-term capacity strengthening of local organizations and community systems.

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