Start Fund Learning from Disease Outbreaks

"*When I first went to the hospital, I felt terrible. I had a fever of 41 degrees Celsius. The doctors gave me medicines to lower my fever and reduce the aches. They also put me on an IV drip. I slept a lot. But soon I started to feel better*" – Yacouba, Ougadougou. Alert 128 Burkina Faso (Dengue Fever). Credit: Sophie Garcia, ALIMA.

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List of Abbreviations	Key Terminology
ACAPS - ASSESSMENT CAPACITIES PROJECT **AWD** - ACUTE WATERY DIARRHOEA **CFR** - CASE FATALITY RATE **CHW** - COMMUNITY HEALTH WORKER **CHV** - COMMUNITY HEALTH VOLUNTEER **DRC** - DEMOCRATIC REPUBLIC OF THE CONGO **DFID** - DEPARTMENT FOR INTERNATIONAL DEVELOPMENT **DI** - DEVELOPMENT INITIATIVES **IDP** - INTERNALLY DISPLACED PERSONS **IEC** - INFORMATION, EDUCATION AND COMMUNICATION **IPC -** INFECTION PREVENTION AND CONTROL **INGO** - INTERNATIONAL NON-GOVERNMENTAL ORGANISATION **NFI** - NON-FOOD ITEM **NGO** - NON-GOVERNMENTAL ORGANISATION **PDM** - POST-DISTRIBUTION MONITORING **PPE** - PERSONAL PROTECTIVE EQUIPMENT **VHF** - VIRAL HAEMORRHAGIC FEVER **WASH -** WATER, SANITATION AND HYGIENE **WHO** - WORLD HEALTH ORGANISATION	**Alert,** the submission of an alert note by Start Network members notifying the Start Fund to a crisis. **Activated alert,** an alert selected for funding by the Start Fund. **Allocation amount,** the amount of funding released for the crisis response, decided during an allocation meeting. **Allocation meeting,** the meeting in which a decision is made to allocate funding or not to a crisis. **Allocation committee,** a committee comprised of Start Network Members who decide on whether a response should receive funding. **Awarded amount,** the final amount awarded to each response. As decided during project selection. **Learning exchange**, a virtual debrief / review of the crisis response conducted by the Start Fund Monitoring, Evaluation, Accountability and Learning (MEAL) team with the responding agencies after their projects' end. **Member Survey,** a survey completed by Start Network members giving what information they have regarding the crisis, if they are considering a response and if they agree with the alert note. **Project selection,** the process of selecting projects based on their proposed responses. **Project selection group,** a committee comprised of Start Network Members who decide which projects to select. **Recommended amount,** the recommended funding amount for a response given in the alert note by the alerting agency/ies. **Start team,** the core members of Start Fund staff. **Start Network members,** and 'members' are used throughout to refer specifically to INGOs who are part of the Start Network and, therefore, eligible to receive Start Network funding.

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Introduction: A review of responses

The Start Fund is a multi-donor pooled rapid response fund that initiates disbursement of humanitarian finance within 72 hours. It is collectively owned and managed by the Start Network members, a group of 42 national and international aid agencies from five continents. The fund was officially launched on 1st April 2014 and has an annual disbursement of approximately £11 million (GBP). It is designed to fill gaps in the humanitarian funding architecture in three main areas: underfunded small to medium scale crises; forecasts of impending crises; and spikes in chronic humanitarian crises.

This review is one in a series of learning products developed by the Start Fund Monitoring, Evaluation, Accountability and Learning team and explores what the Start Fund has learnt about responses to disease outbreaks. This learning report was led by David Burt and Gerbrand Alkema of World Vision, with input from a reference group made up of Start Fund Committee members and subject matter experts.

Between the inception of the Start Fund in April 2014 and September 2017, there were 19 crisis alerts raised related to disease outbreaks. This learning report attempts to understand the drivers for, and barriers to, effective implementation as well as review the experiences of Start Fund members in responding to these outbreaks to support evidence-based decision-making within the Start Network at project, crisis, and system level. Specifically, it analyses the effectiveness, efficiency, and relevance of Start Fund disease outbreak responses by reviewing and analysing funding, decision-making and response activities before ultimately exploring implications and recommendations.

Methodology

This review quantitatively and qualitatively analysed data from funded and non-funded alerts, contrasting findings and identifying common themes. Data was obtained from 19 alert notes and allocation meeting minutes, 16 project selection meeting minutes, 32 project reports, and 14 learning exchanges, as well as learning activities funded by the Start Fund 1% Learning Budget[1].

Limitations of the study

Although in general the data was of sufficient standard to analyse, the data captured over time and throughout the response cycle was of inconsistent quality. Similarly, project report forms do not provide consistent data on coverage or efficiencies to the same extent due to differing organisational interpretations of the reporting criteria, such as reporting on activities versus outcomes.

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[1] The Start Fund sets aside 1% of its total funding specifically for Start Network member agencies to strengthen humanitarian response through additional learning from past experiences and through increased involvement of communities.

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1. Overview of Alerts

Of the 19 alerts raised between 25 June 2014 and 20 July, 18 were for countries in sub-Saharan Africa and one for Yemen. All but three were awarded funding.

The 19 alerts were for the following diseases: cholera (7 times), Ebola (3), Lassa fever (3), dengue fever (1), hepatitis E (1), meningitis (1), Rift Valley fever (1), typhoid (1) and yellow fever (1).

Alert Name	Country	Alert Date	Disease	Transmission Type	Activated
006 Sierra Leone Ebola	Sierra Leone	25 June 2014	Ebola	Contact-borne	Yes
009 Cameroon Cholera	Cameroon	29 July 2014	Cholera	Food and / or Water-borne	Yes
018 Nigeria Cholera	Nigeria	30 October 2014	Cholera	Food and / or Water-borne	Yes
061 Liberia Ebola	Liberia	20 November 2015	Ebola	Contact-borne	No
066 Nigeria Lassa Fever	Nigeria	18 January 2016	Lassa Fever	Contact-borne	Yes
069 Benin Lassa Fever	Benin	22 February 2016	Lassa Fever	Contact-borne	Yes
087 Somalia Cholera	Somalia	12 May 2016	Cholera	Food and / or Water-borne	Yes
092 DRC Yellow Fever	Democratic Republic of the Congo	22 June 2016	Yellow Fever	Vector-borne	Yes
108 CAR Cholera	Central African Republic	24 August 2016	Cholera	Food and / or Water-borne	Yes
120 Niger Rift Valley Fever	Niger	11 October 2016	Rift Valley Fever	Contact-borne / Food and /or Water-borne / Vector-borne /	Yes
128 Burkina Faso Dengue Fever	Burkina	09 November 2016	Dengue Fever	Vector-borne	Yes
136 Zimbabwe Typhoid	Zimbabwe	10 January 2017	Typhoid	Food and / or Water-borne	Yes
151 Togo Lassa Fever	Togo	02 April 2017	Lassa Fever	Contact-borne	Yes
153 South Sudan Cholera	South Sudan	05 April 2017	Cholera	Food and / or Water-borne	No
154 Nigeria Meningitis	Nigeria	10 April 2017	Meningitis	Contact-borne	No
159 Niger Hepatitis	Niger	03 May 2017	Hepatitis E	Food and / or Water-borne	Yes
160 DRC Ebola	Democratic Republic of the Congo	09 May 2017	Ebola	Contact-borne	Yes
162 Yemen Cholera	Yemen	17 May 2017	Cholera	Food and / or Water-borne	Yes
168 South Sudan Cholera	South Sudan	05 June 2017	Cholera	Food and / or Water-borne	Yes

These responses to disease outbreak reached approximately 3.4 million people. All projects were implemented and closed within the Start Fund 45-day timeframe. On average there were 10 days between the start date of project implementation and affected communities receiving assistance.

2. Funding Amounts and Decision-Making

Overview of Funding Amounts

When member organisations raise an alert, they suggest a 'recommended amount' they deem appropriate for a 45-day response. After reviewing the member-completed crisis survey responses, the Start Fund allocation committee, or the Start team reviewing the alert decide whether to allocate funding and, if so, whether to award more, less, or the same as the recommended amount. Although the committee may often include people with significant experience in delivering health programmes, these meetings have never included third party subject matter experts.

The total amount allocated to disease outbreak responses since the inception of the Start Fund is £3,240,000; which, represents 12 per cent of the total allocation during this period. Of that amount, some £2,820,342 was subsequently awarded to agencies. Six agencies received the recommended amount, six received less, and one received more. Minutes from the allocation meetings record a variety of reasons for both lowering and in one case, increasing the allocation amount, including limited Fund balance remaining in five instances. On several occasions, including DRC's yellow fever alert (092) and Niger's Rift Valley Fever alert (120) members appeared concerned about the spending rate of the Fund and that the full amount could not be absorbed by the few agencies present in the outbreak areas. For the typhoid outbreak in Zimbabwe and the cholera outbreak in Yemen (alerts 136 and 162, respectively), the allocation committee argued that other funding would soon be made available and therefore the amount could be lowered, which proved to be correct based on information gleaned from post-project learning exchanges. In contrast, during the same meetings, members also suggested increasing the amount, fearing the amount requested would not cover all the needs.

When amounts were lowered, justifications were provided for the reduction, but not always for how the final amount was decided. In one example, the £300,000 allocated to the cholera outbreak in Yemen (alert 162) was arrived at as a compromise as three organisations wanted to allocate £400,000 and two organisations £200,000. Conversely, in the allocation of funding to the Lassa fever response in Benin, the Start team noted that the scale of the crisis was broader than that specified in the alert note and subsequently allocated £24,000 (19 per cent) more than originally recommended.

Disease responses were, on average, allocated 77 per cent of the recommended amount, slightly less than the average for all other alert types[2] (83 per cent). The same difference is noted at the project selection stage, with disease responses on average awarded 87 per cent of the allocated funding, whereas all other alert types were awarded 95 per cent. This decrease can be partly explained by decision makers choosing to fund just one project at the selection stage, in each case prioritising agencies that had an existing presence in the affected area and a clearly outlined proposal.

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[2] All non-disease related alerts of the same date range

Of the amount awarded, agencies spent £2,712,488 or 96 per cent. Underspends were attributed to many different reasons, yet the spend rate appears to be relatively consistent with other crisis causes.
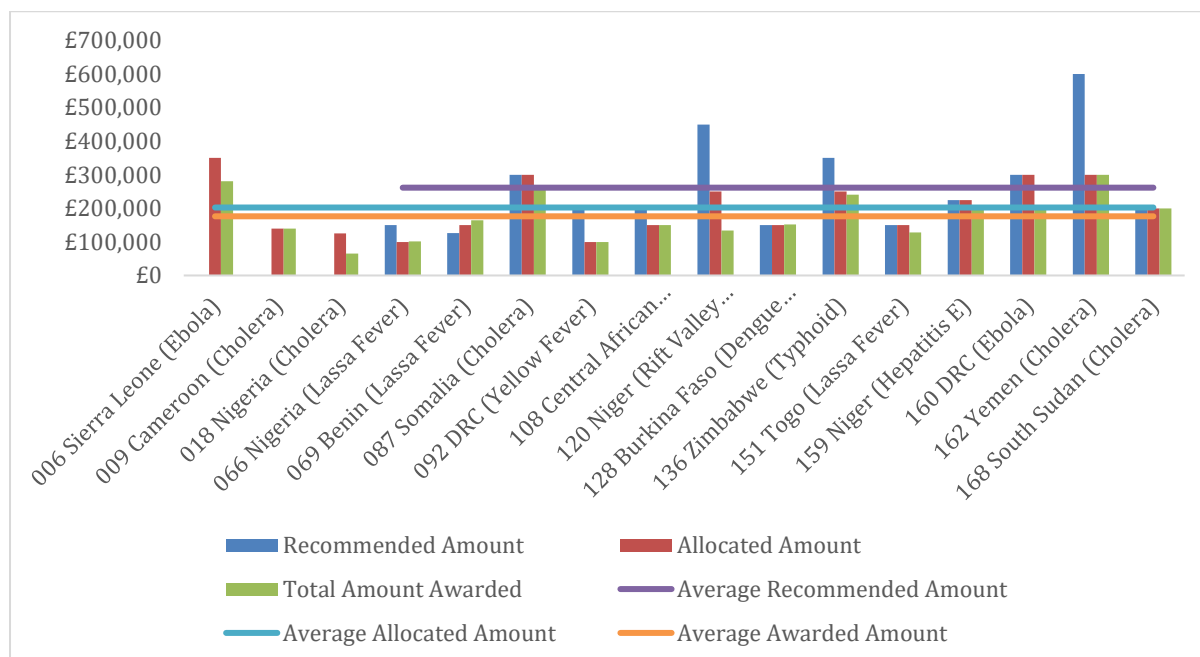
Overview of decision-making

The decision whether to allocate funding is made by either a committee composed of staff members from across the Start Network membership, known as an allocation committee, or by Start Network staff, known as the Start team. Further data on the outbreak is sought as needed from Start Network members, through a survey, Skype or emails. Independent briefing notes prepared by the Assessment Capacities Project (ACAPS) are also made use of, which provide further information on the crisis and context and Development Initiatives (DI), which focus on funding landscapes.

However, it is not always clear from the documentation to what extent the same criteria are applied in decision-making nor if the decisions reflect epidemiological principles. One way to mitigate this would be to include subject matter experts in the decision-making meetings and provide documentation from other data sources, such as WHO or UNICEF to further triangulate the alerting agency's data and verify the need for intervention. Another would be to have a standardised process that has clear criteria for decision making.

Of the 19 reviewed disease alerts, 16 were activated (84 per cent), compared to 64 per cent for all other alert types. Eleven of these decisions were made by the Start team and 8 by an allocation committee. The Start team can make allocation decisions based on a clear steer from the Start Network membership, ensuring that Start Network member time commitments to Fund processes are minimal. Although this cross-section of alerts is too small to identify clear trends, it reflects a risk of inconsistency in allocation of funding.

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Regardless of which body made the allocation decision, at the system level the following themes emerged in allocation meeting minutes as justifications for activating alerts:

- Timeliness and the need to contain and prevent the spread of the disease (14 mentions)
- Lack of other funding available (8 mentions)
- Spikes in reported cases of a disease (7 mentions)
- Crisis is considered 'under the radar', i.e. lack of attention from external audiences (6 mentions)
- Coordination (6 mentions).

Similarly, the following rationale were identified for not activating alerts:

- The alert is not considered timely (2 mentions)
- Ongoing crisis without a clear spike (2 mentions)
- Availability of other funding (2 mentions)
- Unclear added value of Start Fund (2 mentions).

Analysis of the meeting minutes shows that arguments generally follow these themes, but do not necessarily lead to the same outcome.

Timeliness and the need to contain and prevent the spread of the alert	Some 14 allocation meeting minutes state the need for a rapid response to contain the outbreak and prevent the spread of the disease. This is perhaps best exemplified by the quote "*We should be acting now as the focus of disease outbreak should be to contain*" from the minutes of the Ebola outbreak in the Democratic Republic of the Congo (alert 160) meeting. However, in the case of the non-activated alert for meningitis in Nigeria (alert 154) it was noted that although a rapid response was required to mitigate the impact, the alert was not considered timely as the disease was endemic and the outbreak had been present for approximately five months.
Lack of available funding	Eight of the meeting minutes mention the funding situation in the country where the alert was raised. The consideration of other available funding is to ensure that Start Fund resources can be used strategically in responding to underfunded small- and medium-scale emergencies. On this basis the alert raised during the Ebola outbreak in Liberia (alert 061) was not activated as the Ebola response was thought to be well funded, whereas the previous Ebola alert in Sierra Leone (alert 006) was, as it was raised closer to the start of the outbreak. In 8 of the 16 activated alerts, a gap in funding was given as a reason to activate the alert. In contrast, the cholera alert in Mingkaman, South Sudan (alert 153), was not activated as an allocation committee concluded that the alert was at least partly raised due to a gap in funding to cover ongoing programmatic costs of an already present agency programme.
Spikes in reported cases of a disease	In 2017 two alerts (153 and 168) were raised for cholera in South Sudan, where cholera is endemic, within two months of each other. Each alert specified a locality and registered a local spike. In the first instance for alert 153, the decision-making body, the allocation committee, simultaneously noted that although the outbreak was at an 'acute level', the outbreak formed part of a wider crisis for which the Start Fund was not the appropriate mechanism to respond and the alert was too agency and geographically specific. This same specificity, was also noted by the decision-making body for alert 168, the Start team.

	Both meetings further recognised the lack of capacity of the national health system and local health cluster to effectively respond to these localised cholera outbreaks. However, the two meetings had different outcomes: alert 168 alert was activated and the Start team recommended that its scope be expanded from its original locality to the whole country, whereas alert 153 was not. While the meeting minutes present the reasons for and against activating each alert, there is little evidence to show how the allocation committee and Start team weighed up the arguments that resulted in these different outcomes. Another allocation committee meeting on a typhoid outbreak in Zimbabwe (alert 136) did not recognise a clear spike in typhoid cases in Zimbabwe compared to previous years. However, it decided to activate the alert to prevent the outbreak escalating into a larger crisis, recognising that the outbreak was very much driven by the lack of access to sanitation facilities.
Crisis is considered 'under the radar'	In several cases, notably the dengue fever outbreak in Burkina Faso (alert 128) and typhoid in Zimbabwe (alert 136) the allocation committee and the Start team considered the crises 'under the radar' and used that criteria as a rationale for activation. The assumed understanding of this term is akin to a crisis being underreported in the media and generally suffering from a lack of international attention, however the Start Network has no set definition.
Coordination	It appears that poor available coordination can be a reason both for, and against activating an alert. Minutes from the allocation meeting for the Lassa fever alert in Togo (alert 151) noted good ongoing coordination with the government and WHO as a rationale for activation. Likewise, the minutes for the typhoid outbreak in Zimbabwe (alert 136) noted both a lack of clearly identified gaps in response and mention of how the government and Ministry of Health would be involved in the response. Yet a team member reviewing the Central African Republic cholera alert (alert 108) felt that the Start Fund should not be activated as there was a good level of coordination in the health cluster. In the allocation meeting minutes for a Lassa fever alert in Nigeria (alert 066) the Start team expressly state that funds accessed through the Start Fund could only be used to supplement the government's response to the outbreak. Whereas the team meeting minutes for the yellow fever outbreak in the Democratic Republic of the Congo (alerts 092) mention the need for closer coordination between the responding agencies. While coordination and cooperation with health clusters is mentioned in one of the allocation meetings, no further mention is made of health or WASH clusters in UN-classified L3[3] emergencies. Lastly, during allocation meetings decision-makers have raised the issue of outbreaks being rooted in developmental issues (e.g. alert 136 Zimbabwe typhoid). It has been suggested that after the 45-day implementation period, conversations should take place about which longer term activities could prevent future outbreaks. There is however, no evidence of whether these conversations took place, or what result they had.

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[3] A level 3/L3 emergency is defined as a major sudden-onset humanitarian crisis triggered by natural disasters or conflict which requires a system-wide mobilisation

At the project selection stage, the responding projects are chosen by a project selection group who determine which projects to select by grading them on a scale of one to five against four criteria: relevance and appropriateness, efficiency, effectiveness and additional.

Information, education and communication (IEC) materials and broadcasting through speakers, Ondo State, Nigeria (Alert 066 Nigeria Lassa fever). Credit: ActionAid.

3. Timeliness and Effectiveness

Overview of Timeliness
Once an alert had been raised, a decision on whether to activate was taken within 24 hours for all alerts, which was highlighted by agencies as an essential factor for response effectiveness. In most cases activation was decided by examining the period between the onset of the outbreak and the submission of an alert (median 26 days; range 2-117 days).

However, it is the finding of this review that criteria such as crisis profile, coverage rates and intervention gaps should carry more weight than timeliness during activation decision making, to ensure a focus is kept on potential for containment, regardless of the approximate start date of the outbreak. The reasons for delays in alerting are not always reported but some projects identified late declaration of outbreaks by governments and late recognition by an agency as reasons for delayed alerts, sometimes related to information gaps as the crises evolved.

Ten of fourteen learning exchanges acknowledged that the alert could have been raised sooner. Six of these, attribute the delay to the need for government action in declaring an epidemic or emergency, or having previously conducted little epidemiological work.

Although, after the funding had been allocated the speed of the Start Fund in responding to crises was noted several times in project reporting as an essential factor, and driver for an

effective response. All agencies responding to the cholera outbreak in Yemen (alert 162) noted that they were among the first to respond. International Medical Corps stated that the "*Start Fund enabled us to quickly purchase essential medical supplies in country. Given the regulations regarding pharmaceuticals from other donors and the difficulties in importing anything into the country, the speed in which this was completed would not have been possible without Start Fund*".

This sentiment was shared by ALIMA, who in their Ebola response in the Democratic Republic of the Congo (alert 160) stated that the Start Fund grant permitted them "*to rapidly carry out a quality investigation and support laboratory testing for diagnosis*".

Response Activity Relevance and Effectiveness

Breakdown of activities

Clear humanitarian guidelines have established that response to disease outbreaks should meet minimum standards for preparedness, detection, investigation and control (Sphere Handbook, 2011[4]. The Start Fund mechanism should seek to strengthen a robust response to outbreaks, identifying and meeting gaps in the minimum standards for any given crisis.

The data available from this review shows the main areas of intervention from project reports:

Activity Type	WHO / Sphere Category	Number of Activities	% of All Activities	Number and Proportion of Projects
Capacity Development	Human resources	39	19%	13 (81%)
Distribution to Households	Drugs and medical supplies	34	17%	11 (69%)
Face-to-Face Communication / Sensitisation	Health service delivery (prevention)	26	13%	12 (75%)
Water Treatment and Quality Monitoring / Disinfecting	Health service delivery (prevention)	17	8%	7 (44%)
Provision of IEC materials	Health service delivery (prevention)	15	7%	8 (50%)
Mass-Communication (Radio etc.)	Health service delivery (prevention)	15	7%	6 (38%)
Provision of Medical Supplies to Healthcare Facilities	Drugs and medical supplies	14	7%	8 (50%)
Coordination	Leadership and coordination	10	5%	5 (31%)
Medical Treatment for Affected People	Health service delivery	9	4%	7 (44%)

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[4] *Sphere Handbook 2011: http://www.spherehandbook.org/en/essential-health-servicescontrol-of-communicable-diseases-standard-3-outbreak-detection-and-response/*

Establishing Patient Referral System	Health service delivery	6	3%	4 (25%)
Disease Surveillance Activities	Health information management	4	2%	3 (19%)
Installation / Construction of Amenity	Health service delivery	4	2%	2 (13%)
Laboratory Testing	Health service delivery	3	1%	3 (19%)
'Clean Up' Campaign	Health service delivery	3	1%	2 (13%)
Establishing Patient Treatment Structure	Health service delivery	3	1%	2 (13%)
Assessment	Health information management	1	0%	1 (6%)
Conducting Advocacy	N/A	1	0%	1 (6%)

The available data shows three main areas of intervention in project reports:

- Awareness raising, including sensitisation, health and hygiene promotion, as well as provision of IEC materials and mass communication, constituted 27 per cent of all activities and formed part of 14 responses.
- Capacity development, constituted 19 per cent of all activities and formed part of 13 responses
- Distribution of goods, constituted 17 per cent of all activities and formed part of 11 responses

It should be noted that medical treatment, referral systems and surveillance made up a relatively small proportion of activities conducted by agencies, despite being critical activities related to "equal access to effective, safe and quality health services that are standardised and follow accepted protocols and guidelines" (Sphere Handbook, 2011[5]are critical activities related to service delivery which typically contribute substantially to containment of an outbreak.

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[5] Sphere Handbook, 2011: www.spherehandbook.org

Community sensitisation on Ebola using IEC materials, Freetown (Alert 006 Sierra Leone Ebola). Credit: Save the Children.

Almost all projects had an element of awareness raising, whether it was face-to-face communication and sensitisation, mass communication or production / provision of IEC materials. All focused on the same key points: what the disease is, transmission methods and preventative measures that people can take.

Face-to-Face Communication and Sensitisation	Much of awareness raising took place during face-to-face communication, often conducted by community health workers (CHWs) trained by the responding agencies. In many cases this was highlighted as an essential activity. Several agencies noted the importance of the people conducting the sensitisation to be from the community they were working in. Plan International, responding to Lassa fever in Benin (alert 069) noted that direct communication with local community volunteers and leaders was more effective in influencing behaviour change than other methods. World Vision additionally noted from their response to hepatitis E in Niger (alert 159) that by spreading health messaging through CHWs, including traditional healers and midwives, they could reach a broader cross section of the community than by other methods. Focus groups discussing International Medical Corps' response to cholera in Cameroon (alert 009) noted the importance of gender awareness and varying community contexts in implementing sensitisation activities, identifying a lack of gender awareness as a barrier to effective messaging practice.

Health and Hygiene Promotion	Hygiene promotion is a main component of most responses. Christian Aid, whose Lassa fever response in Nigeria (alert 066) was almost completely made up of hygiene promotion activities, stated in the learning exchange that their hygiene promotion activities "*helped contain the spread of the epidemic by empowering community members with knowledge, allowing them to take action and change behaviours surrounding personal hygiene and sanitation.*" It was stated that this was achieved by using community 'champions', i.e. community and religious leaders to educate their communities and congregations on prevention methods. The assumption that hygiene promotion will affect behavioural change is present throughout the data reviewed, yet there is little evidence shown to support this in Start Fund documentation. This is most likely due to the Start Fund implementation and reporting timeframes, which do not always allow for formalised baseline and endline surveys. However, a small number of agencies have been able to report on outcomes, although it is not a reporting requirement, which makes discerning impact a challenge. For example. Concern Worldwide, in their response to the cholera outbreak in Somalia (alert 087) reported a 25 per cent increase in people using latrines and hand washing and 9 per cent increase in treating water after hygiene promotion activities. This data was collected through their local implementing partner, Lifeline Gedo, in their endline survey.
Mass Communication Methods	Mass communication activities took various forms, from motorcades, radio spots and jingles to a popular song, arranged by Plan International in their response to Lassa fever in Togo (alert 152). The song entitled 'STOP à la fièvre de Lassa[6]' was sung in a mixture of local languages and French and included prevention measure to stop transmission and was deemed an appropriate method to reach itinerant people in northern Togo: https://soundcloud.com/plan-international-togo/stop-a-la-fievre-de-lassa Again, similarly to other methods of awareness raising, there is little evidence to support the effectiveness of mass communication from the documentation and from an agency perspective this method presents greater challenges in measuring its impact due to the potential for unknown reach. Such approaches should be supported where there is evidence of past success in the specific context.
Provision of IEC materials	Provision of IEC materials (posters, flyers, banners etc.) were also often used by agencies in their responses as a method to reach more people at-risk of infection. For example, in the Lassa fever response in Benin (alert 069) Plan International distributed some 26,000 cartoon pictorial messages to children in school and through home visits to ensure that children could also recognise the disease. Several agencies identified the need to have health messaging sanctioned by governing bodies and the time taken to produce such materials as a barrier to effective implementation. To avoid delays due to the printing of IEC materials, such as ActionAid experienced in their Lassa fever response (alert 066); members may need to have IEC materials readily available

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[6] Fr: STOP Lassa fever

	and contextually appropriate, as well as implemented alongside a comprehensive set of interventions tailored to the needs of the affected or at-risk community, with a clear commitment to participatory development and community involvement.

In the alert documentation, there appears to be some disagreement among decision-makers on the appropriateness of awareness raising, particularly in terms of how it is prioritised, and its effectiveness subsequently measured. Prevention and awareness raising is highlighted as a positive aspect by the allocation committee and the Start team respectively in the Sierra Leone Ebola and Cameroon cholera alerts (alerts 006 and 009). However, the allocation committee meeting for the Zimbabwe typhoid alert (136) noted that awareness and education activities were not suitable for Start funding and should be conducted through regular agency programming and funded through the normal operating budget, a position that was later echoed by the allocation committee for the meningitis alert in Nigeria (154), who stated: "*Awareness raising and education are not appropriate for Start Fund –this should be included in agencies programmes instead*".

Nevertheless, it is the finding of this report that in some cases, awareness raising activities can have a direct link to the prevention of disease transmission. In the ALIMA response to Rift Valley fever in Niger (alert 120), it was noted that the disease was not common, or well known within the country and, in some cases, lack of knowledge about the disease prevented affected people from seeking treatment. As this disease also affects livestock it was noted that due to concerns of economic impact many livestock owners did not wish to present themselves for treatment for fear of exposure. ALIMA subsequently increased awareness at the community level, one of several factors that enabled the response to reduce the CFR from around 40 per cent to close to 0.

However, without more outcome or impact data it is impossible to speak to the effectiveness of awareness raising activities, which can also be of varying quality. In one response an agency noted in their post-distribution monitoring, that some 44 per cent of the people reached through awareness raising sessions could not cite the clinical signs of the disease after the project ended. It was the finding of an external third party that awareness raising sessions could have been further adapted based on the beneficiaries' existing knowledge of the disease. Due to the confluence of limited existing knowledge of the disease, religious and traditional beliefs and the potentially negative perception of some key hygiene messages, it was recommended that future programming ensure stronger links to traditional and religious leaders and place greater emphasis on collective action and ensure a multitude of channels to transfer messages.

Capacity Development	Capacity development activities in this context can be broadly divided into two categories: the training of Community Health Workers (CHWs) and Community Health Volunteers (CHVs) to conduct sensitisation, hygiene promotion and surveillance activities and the training of medical staff on case detection, management, surveillance and infection prevention and control. The former, was employed by ACTED, who in the project report for their hepatitis E response in Niger (alert 159), highlighted the capacity development of the local community as one of the most significant achievements of the project which "*triggered strong reactions among people who took the initiative to implement one public health day per week, set up health committees in different villages, and adjust the distances between their livestock and water points*". In many cases, the capacity development was also conducted in coordination with the local and regional authorities. In the dengue fever response in Burkina Faso (alert 128) Doctors of the World / Médicos del Mundo in consortium with Humanity and Inclusion (formerly Handicap International),

	provided the necessary technical support to the Regional Directorate of Health, who organised training sessions per district for all the CHWs (ASBC[7]) to ensure harmonised and validated messaging from the Burkina Faso Ministry of Health.
	The latter category, training of frontline medical and government staff to implement outbreak response activities, has usually been related to direct medical treatment and lifesaving. ALIMA, in the Ebola response in the Democratic Republic of the Congo (alert 160) trained medical and paramedical staff at health centres and peripheral health structures on the diagnosis and treatment of VHFs. ALIMA noted in their reporting that this capacity development "*had an impact beyond the project period*".
	While capacity development efforts are likely to benefit health workers in emergency contexts in some way, their relevance and effectiveness in contributing to the control of an outbreak needs to be better measured.
Distribution	Distribution in this context has mostly been divided into two main categories, distributing non-food items (NFIs) such as hygiene and water, sanitation and hygiene (WASH) kits to affected or at-risk communities, and providing medical supplies to hospitals, clinics and health centres. The bulk of these responses were for food and / or water-borne diseases (e.g. cholera), for which responses generally distributed water purification tablets or chlorine, oral rehydration salts and water storage containers to affected and at-risk people.
	For other diseases, agencies distributed items such as disinfectants and soap. These types of distributions are generally seen as effective methods of disease control and prevention, as this report could discern from the Concern Worldwide response to cholera in Somalia (alert 087), in which households that received hygiene kits saw a 93 per cent reduction of AWD/cholera cases (reduced from 30 at baseline to 2 at endline, in eight settlements).
	Nine responses included some aspect of providing medical supplies, ranging from personal protective equipment or PPE (disposable gloves, protective gowns etc.) to Ringer's lactate solution and Doxycycline[8]. As International Medical Corps reported in their post-project learning exchange discussing the cholera response in Yemen, "*providing pharmaceuticals at cholera sites and rapidly distributing hygiene supplies to the most at-risk populations undoubtedly prevented beneficiaries from contracting cholera and saved lives*".
Coordination	Regardless of which activities were conducted, throughout the reviewed documentation, coordination between agencies and local authorities emerged as a key driver to effective project implementation.
	In the case of the Ebola response in Sierra Leone (alert 006) coordination with the Ministry of Health and Sanitation was necessary to ensure a focused response which was directly in line with the government's Ebola response plan. Attendance of coordination meetings, at both district and

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[7] ASBC: Agent de Santé à Base Communautaire
[8] Both used in the treatment of cholera

national levels, enabled shared learning and updates with other agencies and through participation had the added benefit of ensuring Ministry support towards the project responses.

Coordination with regional health authorities in Cameroon also enabled Plan International to respond to the cholera outbreak in Cameroon (alert 009) with a harmonised mitigation and response plan, which avoided duplication of interventions in the field. Christian Aid also noted that by coordinating with the state government in their response to lassa fever in Nigeria (alert 066) they were better situated to advocate for the government to adopt quality health messaging and practices and could access existing networks and national information on case management, surveillance and social mobilisation.

Coordination mechanisms were also a key method of identifying the strengths and weaknesses of local capacities (i.e. local government and civil society). In the Ebola response in Sierra Leone (alert 006) ActionAid stated that by working with partners who were part of district coordination mechanisms to implement an interactive approach when communicating messages, they could quicken the pace of knowledge transfer when time was critical and found that levels of knowledge and understanding increased faster than through an uncoordinated approach.

Effective Implementation: Key drivers and barriers

Other identified drivers to effective implementation included: integrating the response activities to community primary health care and any other local health programmes, early support to national staff in form of training for epidemic preparedness and response, and pre-developed standardised approaches for readiness and response to major epidemic-prone diseases.

In addition, the involvement of the people affected by, or at-risk of disease in each stage of the project was identified as a major driver to effective implementation. Plan International responding to Lassa Fever in Benin (alert 069), noted that involvement of community stakeholders (community volunteers, community animators and teachers), local people trusted by the communities to communicate and conduct awareness raising, strengthened the project and created a sense of ownership within the community and observed more changes in behaviour because of community-led communication.

Agencies identified several barriers to effective project implementation. Among the most prevalent included: time consuming bureaucratic governmental processes, such as the process of having health messaging validated, or authorisation to work in certain government-run institutions e.g. schools; as well as the procurement of stocks and supplies within the context of a 45-day response and the movement of IDPs limiting the retention of hygiene awareness. To mitigate time constraints as well as itinerant communities, it is recommended that agencies propose realistic activities given the time frame that consider the migratory status of the people they propose to reach. Access and security issues, which in several cases, notably in North Eastern Cameroon during Plan International's cholera response (alert 009), also affected the speed of the response. Prohibitions against using motorbikes in the area slowed the work of CHWs to disinfect and supervise households of identified cholera patients and visit health centres. Similarly, the remoteness of certain health facilities combined with the transport restrictions caused logistical issues in the supply of medicine to health facilities. Plan International subsequently were required to rent vehicles for

community health workers to travel to certain areas where several cholera cases were identified in remote areas to conduct sensitisation and disinfection. Likewise, in the DRC, ALIMA found that logistics was the biggest challenge for rapid implementation of interventions. In one area, access was possible only by motorcycle on 95 kilometres of poor road conditions and helicopter rotations were subsequently required, thanks to the support of UNHAS and the WHO (alert 160 DRC Ebola). In the report documentation it was noted that issues such as these can be mitigated through conducting an initial rapid assessment with a logistics element before implementation.

The importance of protecting organisational programme staff throughout a disease response was also identified as a crucial factor to effective implementation. Save the Children noted increasing fear and anxiety among their own field staff in the response to Ebola in Sierra Leone (alert 066) related to the risk and danger of contracting the disease through activities and, as a result, arranged for weekly orientation and psychosocial support meetings for staff, as well as providing protective supplies for their families.

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Reach and Effectiveness

To assess whether projects reach the groups they intend to reach, this report compared the number of planned beneficiaries and actual beneficiaries. Approximately 42 per cent of intended beneficiaries are under the age of 18 in both male and female groups; 47 per cent are between 18 and 50, and the rest over 50. Across all age groups and sexes, agencies reached more people than planned. Regarding the proportions agencies intend to reach and the proportion they reach, the data suggests that activities mainly focus on the 18-50 group, despite agencies stating children under five are one of the two most vulnerable groups. The largest proportion of people reached are in the 18-50 age group (55 per cent females and 45 per cent males). In the under 18 age group, 39 per cent of the total, the proportion reached is 54 per cent female and 46 per cent male, which is proportionately fewer than intended.
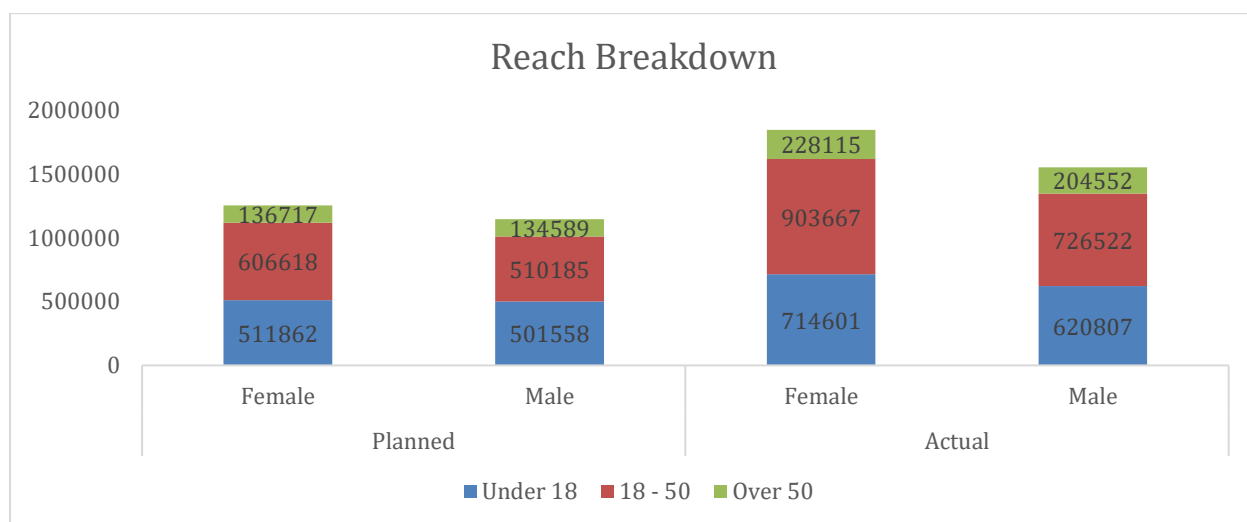
The increase between planned and actual reach, a 47 per cent increase for female and 35 per cent for male, can at least be partially explained by calculating reach using awareness raising activities, which invariably reach more people than originally proposed.

From the submitted reporting documentation, different agencies have different methods for calculating the number of people reached. One agency produced two numbers of potential people reached, a lower number of health workers that received resources and training, and a larger estimated number of the people these workers would subsequently treat. The agency then justified the use of the larger number due to its size. Other agencies count the number of households they have reached during a door-to-door campaign and multiply this by the average number of household members found in the latest census.

Although not counted as 'direct reach' in the table above, when agencies have, for example, used mass communication methods such as radio in awareness raising, they have generally taken a percentage of the population that listen to a radio station, or used other estimation figures.

Most alerts and proposals state that children and women are the main groups classed as vulnerable that activities will particularly target. Later report forms disaggregate the activity reach number by migration status and disability, but in all but two cases this data was not included. As an example, in the hepatitis E response (alert 159) approximately 34 per cent of those reached were IDPs and 12 per cent refugees.

Determining reach in these alerts was problematic for several reasons. Although the Start Fund invariably discounts those reached indirectly by mass communication, this same rule does not appear to have been consistently applied for those reached by other mass awareness activities or presented with IEC materials. This is repeatedly the reason responses often reach more people than proposed.

This also affects reach and coverage rates. Agencies calculating their reach for disease responses usually include those reached through awareness raising. The people involved in these activities are often not at that time suffering from the disease, but can be termed 'at-risk' of the disease. If this figure is compared to the number of individuals who have previously contracted the disease the reach rate is often skewed to be well over 100 per cent.

Efficiency

Efficiency was analysed at four levels:
- Budgeted average cost per beneficiary
- Actual average cost per beneficiary
- Budgeted average cost per project per person
- Actual average cost per project per person.

First, this report analysed budgeted cost per beneficiary at organisational level. On average £7.25 was budgeted per person, with an actual realisation of £12.36. This increase is mainly due to one project that spent the full budget allocated but reached only a third of the affected people planned. This activity supplied medical drugs and supplies to a hospital, which in comparison to other activities is relatively expensive. Taking these activities out of the equation as an outlier, the average budgeted cost per person is £4.32 with an actual expenditure of £3.30. Generally, organisations reach more people than planned to come in accordance with or under the budget.

Analysis at response level (all organisations responding to a single outbreak) found a budgeted average cost per project per person of £4.86 and an actual expenditure of £3.56, with the main driver for a lower actual cost being the increased number of people reached. What is of interest is the difference in budgeted and actual cost per beneficiary between organisations responding to the same outbreak in the same context and implementing the same activities. One organisation realised seven times the cost per person compared to another organisation implementing similar activities in the same context. From the documentation available, it is not clear what drives these variations.

Given the spread of the reported costs per person it is problematic to establish the efficiency of responses.

Advantages of Start

Throughout the documentation the speed of Start Fund decisions and the timely availability of funds was noted as the biggest advantage of Start. A decision on funding for projects was made on average, 64 hours after the alert and funding was usually available for responses within a week of the project selection meeting; the median average was 6 days between project selection and funds being available, in range of 2 days to 28 days. In many cases, this speed regarding funding being made available was cited as a key driver to timely intervention.

Several agencies also mentioned that with the Start funding, they could conduct activities or make purchases that other donors would not have authorised. In some cases, this is stated to be a driver to the effectiveness of the project, International Medical Corps, discussing the cholera response in Yemen (alert 162) noted in the learning exchange that: "*The Start Fund's flexibility with purchasing essential medical supplies in Yemen, compared with regulations from other donors requiring importing items from abroad, enabled a speed in response that would not have been possible without the Start Fund*".

Oxfam similarly noted that with Start funding they could purchase protective health equipment, which "*would not have been funded by anyone else*" in their response to Lassa fever in Benin (alert 069). It also appears that this flexibility had an influence at the system-level in at least one country, Welthungerhilfe discussing the response to typhoid in Zimbabwe (alert 136) stated that they could conduct activities that other "*earmarked funding wouldn't have allowed, like introducing hand pumps and water treatment through household chemicals, both of which it was able to influence the sector to adopt*".

Repairing a water borehole in Harare (Alert 136 Zimbabwe Typhoid). Credit: Welthungerhilfe.

Another advantage appears to be the alert process itself, which can become a platform for coordination and information sharing.

After raising an alert, an agency may receive support from other network agencies, who often provide further information and detail their presence in-country. In this way, the process provides a more holistic perspective and can serve to triangulate the data that each agency provides.

Project selection meeting minutes show that they also serve as a platform for agencies to discuss working together in responding to a disease outbreak. It appears from the meeting minutes that agencies already working in a country prior to a disease outbreak are often willing to work together or to at least coordinate areas of work, to avoid duplicating efforts.

The Start Network can also provide an opportunity for staff in a country to learn from a similar outbreak response in another country. This is evidenced by the documentation following the Lassa fever outbreak in Togo (alert 151), where responding staff could access lessons learned from the Lassa fever responses in Nigeria and Benin (alerts 066 and 069, respectively) – led by different agencies in different countries but responding to a similar outbreak. Whilst only from a small sample, this would suggest that agencies being members of the Start Network provides an opportunity for staff at field level to learn from other responses in other countries – an opportunity that is generally not available when responses are funded through other donors.

Implications

System level

This review suggests that the Start Network can serve as a platform where timely information is exchanged and where organisations can triangulate data quickly to establish whether raising an alert is justified. Where an organisation recognises an anomaly in disease patterns, it appears to be quickly established whether this is localised or part of a bigger outbreak. This makes reaction times quicker than when each organisation would only report these anomalies through established WHO pathways. A potential disadvantage of this is that the Start Network may establish a parallel reporting system to existing reporting lines. In none of the alerts was Ministry of Health or WHO data presented, though that is not to say that the organisations concerned hadn't communicated with these institutions.

The short communication lines between organisations, especially where organisations justify the need to raise an alert, seem to result in cooperative agreements. This enables Start Network members to agree which organisation will work where and which activities they will implement. Project selection meetings identify comparative advantages of different NGOs, as well as the areas in which they work.

Crisis level

While each individual decision presented the logic for whether to activate an alert, there appears to be little consistency in how a decision is reached. In at least one case, similar parameters have been used to reach contradictory conclusions pertaining to the same disease outbreak in the same setting, while on the other hand the same parameters may be used to activate responses to different disease outbreaks in different settings.

A recurring theme was hygiene promotion. In many cases this appeared to have been weighted in favour of activating an alert, while others stated that WASH activities should be funded through other means. While hygiene promotion has a role to play in responding to a disease outbreak, the question the Start Network would need to answer is what weighting this aspect is given in deciding whether to activate an alert. To do this technical guidance may be required in decision-making meetings, the Start Fund should be wary about being prescriptive when debating which projects to fund based on activities.

A second theme identified is the amount of money that should be made available to respond to an outbreak. The data shows that most of the alerts did not fully utilise the funds that were made available and still exceeded the targets set for number of affected people reached. At the same time decisions on the amount do not appear to be driven by costings, rather by the amount of money left in the fund. Again, the documentation does not provide any information as to what drives this.

Project level

A major theme emerging from the findings at project level is the issue of affected people reached. There does not appear to be a consistent method for counting which people reached have been impacted by the various projects. While a few counts the actual numbers of people who have been admitted or vaccinated, other projects include the number of people who have attended mass sensitisation sessions. As such it is difficult to establish the true cost per beneficiary as it is obviously more expensive to treat someone for a disease than sensitise them through an awareness campaign. This makes it impossible to compare the numbers of affected people reached or establish figures on efficiency and value for money.

Projects in Sierra Leone, Niger and Burkina Faso reported on the case fatality rate (CFR) during the response. This provides good insight into the effectiveness of a project, especially when it can be compared with the CFR before the response was started. Reporting on the CFR or attack rates is not yet standardised in the reporting format of the Start Fund.

Conclusions and recommendations

The Start Network provides sufficient and fast funding opportunities to agencies responding to alerts of disease outbreaks. It further provides a platform where agencies coordinate responses, formulate common approaches to disease outbreaks and forge opportunities for cooperation where appropriate.

This review makes the following recommendations:

Crisis Level
- The Start Fund should ensure that WHO and SPHERE standards are considered by agencies when designing and selecting proposals at the project selection stage.
- The Start Fund should review decision-making within its mechanism, involving Start Network members and including subject matter experts (SMEs), to ensure:
    - Allocation committees and the Start team have a consistent approach in weighting the criteria for allocating funding
    - Gaps in minimum standards for preparedness, detection, investigation and control and prioritised by the Start Fund alerts
- The Start Fund should consider how it is making use of Early Warning, Alert and Response Systems (EWARS) to trigger anticipatory and early responses to disease outbreaks and strengthening these systems as part of a short-term response.
- The Start Fund should create clear criteria, tools and guidance that are relevant to disease outbreaks, including scale of crisis, scope of work and potential for containment in its documentation.
- The Start Fund should better document and track decision-making, particularly justifications for and against allocating funding in its meeting minutes.

- Agencies initiating an alert should provide documentation from other data sources to further triangulate their own data about the crisis an verify the need for and type of intervention, when possible.
- Agencies should include information about current health / WASH cluster coordination and cooperation in alert notes
- Agencies should include information about underlying development issues / activities that could prevent future outbreaks in alert notes.

Project Level
- The Start Fund should consider the involvement of SMEs at the project selection stage to ensure epidemiological principles are applied for disease outbreak alerts. This could be accomplished by establishing a voluntary roster of experts called in to assist, time and availability permitting.
- The Start Fund should improve monitoring of activities and outcomes by:
    - Improving quantitative data collection by disaggregating reach to classify those 'at-risk' of the disease and those 'affected' in reporting, which would render the reach figure compatible with how the Start Fund could track scale, enabling the calculation of coverage rates
    - Including clear definitions for direct and indirect beneficiaries and requiring agencies to distinguish between the two in project reporting. This would help to clarify activity impact as well as cost per person, to inform future allocation decision-making, including predictions of available funds for other outbreaks
- Agencies should demonstrate a clear commitment to participatory development and community involvement in their proposals
- Agencies should include information within project proposals about how each project is considering WHO and SPHERE standards, who well early warning systems are used, as well as the wider context of which agencies are present, covering which essential elements
- Agencies should mitigate access and security challenges by conducting an initial rapid assessment with a logistics element before implementation, when possible.
- Agencies should include accurate information on attack and case fatality rates as well as response outcomes in the project reporting, if possible.
- Agencies should consider the 45-day window for implementation and potential for time delays when designing their projects. Especially regarding the migratory status of the target population as well as the provision of IEC materials when planning projects e.g. due to sanctioning requirements by governing bodies, before proposing activities.