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TRANSFORMATION TOWARDS SUSTAINABLE
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**Rapid response to efficiently counter cholera:
lessons from a 45-days intervention in Eastern DRC**

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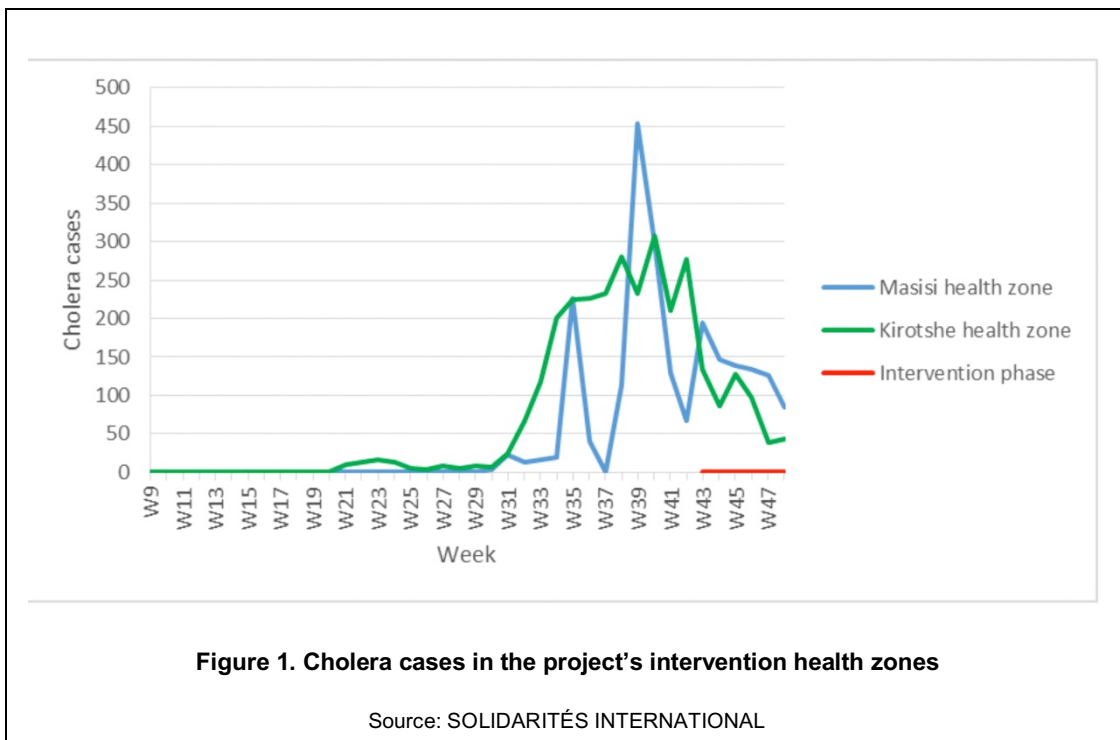
Since the 1970s, the Democratic Republic of Congo faces recurrent cholera outbreaks and frequent sporadic cases. Numerous zones in the eastern provinces are hotspots and endemic pockets that cause epidemics that can even spread to cities and villages hundreds of kilometres away. In 2017, the Democratic Republic of Congo experienced its biggest cholera epidemic since 1994. SOLIDARITÉS INTERNATIONALE intervened in two health zones in North Kivu, two highly underfunded and forgotten affected areas. Thanks to the rapid reactivity and flexibility of the response, the epidemic curve of cholera cases was rapidly controlled. Several lessons from this intervention are worth highlighting and sharing.

Background

Cholera is endemic in many provinces of the Democratic Republic of Congo (DRC), especially in eastern regions along the Great Lakes. Epidemics occur on a yearly basis, varying by season, rainfall and fishing activities (Jean Jacques Muyembe *et al.*, 2013). The presence of lakes favours the environmental survival of the cholera vibrio, and through precarious conditions of access to water and sanitation. Ports, markets and at-risk populations, such as fishermen and traders, constitute the ideal vector of the disease within the territories. The movements of these traders and other travellers can cause the spread of the disease to cities hundreds of kilometres away (Dr. D. Bompangue, 2008).

Starting in June 2017, the Democratic Republic of Congo (DRC) experienced its biggest cholera epidemic since 1994. By the end of the year, over 55,000 cases had been reported, and over 1,100 deaths (WPA Cholera Platform, 2017). Comparatively, in 2016, there had been 28,162 cases and 772 deaths, and 15,907 cases and 232 deaths over the same period in 2015 (WPA Cholera Platform, 2015, 2016). Analysis of the evolution of the crisis and cholera caseload demonstrated that this outbreak had reached a stage where it is not simply the usual yearly rise, but a full blown outbreak threatening the life of thousands in the region where populations are already extremely vulnerable due to frequent population movements. This resurgence can be explained by inadequate access to clean safe water and sanitation. Added to this, funding for improving this access in DRC and for response is insufficient, especially in 2017, and contributes to a general inability to prevent and quickly interrupt such cholera outbreaks. Some organisations generally present in these zones have been unable to continue their activities due to cholera fund cutbacks.

In Masisi and Kirotshe Health Zones specifically, the epidemic took large proportions, reaching a record number of cases. Between early August and early October, the number of cases in Kirotshe Health Zone rose from 7 to 307 at its peak; similarly in Masisi Health Zone, there was a peak of 453 cases in late September (UNICEF, 2017) (see Figure 1). Despite a low number of deaths, medical partners on ground solicited the support of WASH partners positioned in the region to work on cholera prevention and interruption of the cycle of transmission. In light of exponential projections, it was necessary to intervene very rapidly to curb the number of cases and prevent deaths.



A rapid and flexible response to fight cholera

SOLIDARITÉS INTERNATIONALE published a manifesto to raise awareness on the alarming situation and raised an alert to the international community and donors. It was supported by the Start Fund¹ from October 20th onwards, which can provide funds within 72 hours after the allocation decision, thus allowing great reactivity and quick deployment in both Masisi and Kirotsho Health Zones (Rubaya, Ngungu, Bweremana, Kihindo, Shasha, Sake and Nyabiondo health areas). This was a vital element of success that enabled SOLIDARITÉS INTERNATIONALE to launch a 45-days (6 weeks) response very rapidly and prevent the further spread of the vibrio to other villages. Five days after obtaining the funds, the first activities started with local and regional health actors after a rapid assessment to select the priority areas where the epidemiological data showed highest risks.

Prevention and control activities

Standard WaSH activities were implemented:

- Chlorination at water point level: 48 chlorination points were installed, 42 in the Kirotsho Health Zone, 6 in the Masisi Health Zone. The control of free residual chlorine (FRC) was regularly monitored in households served by the 48 chlorination points. Out of 342 households concerned, 92% were within standard (between 0.3 and 1mg/l).
- Disinfection of infected houses: groups of disinfection agents were trained and equipped in each health area. Once the cases were notified to the nearest Cholera Treatment Centre (CTC), these agents intervened within 48 hours in the households in order to break the cholera transmission chain. Out of 585 reported cases, 540 victim households and over 2,300 neighbouring dwellings were disinfected. A 5-day disinfection campaign was also organised in two highly infected villages, with agents and sensitizers doing door-to-door sensitisation to disinfect filled latrines and garbage bins.
- Construction of latrines: 78 latrines were constructed in public areas (markets, health centres, schools) in order to prevent open defecation. These latrines are available for 3900 persons.
- Disinfection and rehabilitation of water points: 65 water points were rehabilitated and chlorination was carried out on all the tanks of the water supply systems serving three highly affected main villages, Ngungu, Nyabiondo and Rubaya. These villages were targeted because they host the referral health centers for the management of cholera cases. These water points serve 41,000 persons.

- Sensitisation and hygiene promotion: door-to-door and mass sensitization was done to raise awareness on cholera transmission modes and to pass messages on good hygiene and sanitation practices. Sensitisation was also done at water point level by Community Relays.
- Waste management: sensitisation was done in public areas. Garbage holes were dug to improve hygienic waste management.

Partnerships with local health and administrative actors

The response was facilitated by SOLIDARITÉS INTERNATIONALE's knowledge of the area and stakeholders: health staff, Ministry of Health staff, health actors, etc. All necessary contacts were made upstream in order to prepare the intervention and to be ready for a rapid deployment. Consultations were organised with local health authorities in order to define the package of activities to implement. The collaboration with these partners allowed effective sharing of sanitary and epidemic data.

Numerous stakeholders were otherwise implicated in the response:

- administrative authorities (district governor, territorial administrator): ensure administrative access to the area and support for the proper implementation of project activities,
- sanitation authorities (Health Zone Central Offices, area chief doctors, nurses, community relays),
- community leaders: influential stakeholders for community mobilisation and participation,
- teachers, pastors, imams: influential stakeholders for community mobilisation and participation,
- CSO, women and youth representatives: influential stakeholders for community mobilisation and participation,
- other local organisations (Congolese Red Cross Society): implementation partners throughout the length of the project and following SOLIDARITÉS INTERNATIONALE's exit.

Keys of success and lessons learned

A rapid participatory assessment

A rapid sociological study was undertaken to understand the social dynamics at playⁱⁱ and the behaviours in terms of WaSH. This highlighted the inadequacy of the hygiene awareness approach initially launched, and the consequent need for a mass sensitisation strategy, instead of doing the usual door to door sensitisations. Some households in certain localities were indeed reluctant to having strangers (from a different region) coming into their home in the absence of the head of household. The team used tools from the Participatory Rapid Appraisal (PRA) (Theis, Grady, 1991), an approach aiming for a strong community participation in activities, and particularly adapted to quick investigations in rural areas. This enabled the teams to quickly understand the causes of the situation, and to make swift but informed strategic decisions that increased efficiency and effectiveness.

Reactivity of the response

The Start Fund enabled the very rapid implementation of the cholera response just five days after the alert was raised. The project proved to be very flexible and managed to follow epidemiological trends and evolutions instead of focusing on a needs assessment/response type of response, one based on fixed project targets and planning defined during the original assessment. For instance, the sensitisation strategy evolved halfway through the project when it was observed that door-to-door awareness raising was not sufficient. The number of water infrastructures concerned by the project was also greatly increased in comparison to what was planned, as following a deeper assessment, a higher number of water points was deemed unsafe for drawing water. Flexibility of intervention was a daily endeavour: teams were deployed according to the number of cases notified by partner health centres the day before with a customized action plan in line with the situation assessed in each newly affected area. Operational and financial flexibility allowed by the Start Fund, and the speed by which the funds were obtained were key to the success of the project.

A large scope of actors involved

Generally, it is mainly regular doctors and nurses working in the health centres concerned who are implicated in a rapid cholera response. In this response however, it was decided to include as many actors as possible in order to have everyone concerned by the issue and contributing to the control response. Administrative authorities were implicated because it is their mandate to prevent and control cholera. Community leaders (277 in total) were sensitised and served as whistle-blowers for potential cases and for ensuring the transmission of messages to all. Given their area of influence, this collaboration was of great value to ensure

the positive impact of the fight against cholera on a large number of people. Being a conflict zone, the teams also negotiated access with military authorities controlling certain areas in order to reach a maximum of affected populations.

At water point level, community relays, supervised by the local Health Zone Central Offices, were organised to man emergency chlorination points and decontaminate the water fetched by local populations. Community relays also delivered cholera awareness messages in order to inform the population on contamination routes and prevention means and practices.

Mass sensitisation for prevention at community level

Although the project started with door-to-door and water point level sensitisation, persistence of the cases halfway through the project led the teams to shift the awareness strategy to reach as many people as possible with effective messages and means of dissemination in order to enact actual behaviour change. The objective was for cholera to be at the heart of the conversations and the debates within households and communities, and for the link between hygiene and the disease to be well-known and disseminated. The population was placed at the centre of the project; everybody in the area had to feel concerned about the epidemics. By the 5th week of the intervention and onwards, civil society organisations, women and youth representatives were mobilised to carry out plays to raise awareness. They made up slogans to raise attention and to pass on clear, catchy phrases and messages. Teachers organised hygiene promotion sessions with sensitizers, as well as pastors and imams during worship. A large scale media push was also done, with radio programmes passing on prevention messages. A total of 89,000 people were sensitized. The sensitisation led some households to build or rehabilitate their own latrines.

Intensive labour force for quick and efficient works

The rehabilitation and construction of water points were carried out in such a short timeframe thanks to a highly intensive labour force. Up to 300 daily workers were mobilised overall. Both men and women were organised into groups and were involved in the works and rehabilitations by transporting some of the materials (cement, iron bars, aggregates, gravel...) from the quarries to the sites. Particular attention was paid to the profiles of the technicians recruited, who had to manage many workers and were responsible for carrying out the works very rapidly and efficiently. Team spirit was encouraged in order for everyone to be fully invested in the activities. Significant logistics planning work was also a vital key of success to the effective realisation of the activities, with a great number of vehicles deployed.

Sustainable infrastructures in a rapid response

The project benefited from a different style of intervention than usual sword responses. The Masisi and Kirotshe Health Zones are classified as type A according to the national multi-sectoral strategic plan for the elimination of cholera: they are endemo-epidemicⁱⁱⁱ, which informed the decision to integrate more durable actions in this rapid response. The intervention hence cumulated both outbreak response activities and longer term prevention activities in order to have a more sustainable impact in the area. Water networks were thus rehabilitated (pipework, replacing taps and valves, repairing water supply networks, cleaning and disinfecting catchments), but new water infrastructures were also built in areas in which populations did not have access to a water point and drew water from unsafe sources. The bacteriological analysis confirmed the water quality with 0 faecal coliform for 100% of the rehabilitated and constructed water points. Similarly, the teams built semi-permanent latrines instead of temporary latrines usually constructed in rapid cholera responses.

Exit strategy

The rapidity of the response did not stop the teams from considering issues of sustainability. Over 230 members of Water Point Management Committees (COGEPE) and Public Latrine Management Committees (COGELA) were trained. They were also left with maintenance and upkeep kits to ensure functionality and thereby contribute to reducing future risks of cholera outbreaks. Trainings on emergency intervention techniques were carried out and contingency kits distributed to health facilities and to the National Red Cross Society, so that they now have the capacity to respond to a potential future cholera outbreak. They were also provided with sensitisation materials so they could continue undertaking awareness raising sessions. The implication of community leaders was also an added value to the sustainability of the project, as they have great moral influence on the population. Their implication is thus essential at all stages of the project to ensure the sustainability of the activities; their strong awareness of the issue should allow quick and informed reactivity in the future.



Photograph 1. Sensitisation through theatre in Saké



Photograph 2. Latrines completed in Rubaya

Conclusions

While based on standard cholera response approaches, the flexibility and rapidity of the response were essential to the success of the response. Funding modalities can therefore have significant impact on the rapidity and subsequent success of cholera response projects. The time frame given for the response (six weeks) was sufficient to implement the heavy emergency response activities and to reinforce the capacities of local stakeholders to handover activities in order for an outbreak to be controlled. Thanks to anticipation, good knowledge of the area, upstream work and communication with local authorities and health centres, the teams were able to deploy in 5 days in numerous places across the two health zones, and to set up localised activities involving high numbers of people. Many infrastructures were constructed and communities were strongly mobilised. The use of media to disseminate messages was an effective means to raise awareness and help curb the spread of cholera. With over 232 cases in Kirotshe and 453 cases in Masisi in late September, the numbers decreased respectively to 43 and 85 by the end of the project early December. By the end of January 2018, these numbers were still low, with less than 26 cases in both zones.

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References

- BOMPANGUE, D., GIRAUDOUX, P., HANDSCHUMACHER, P., PIARROUX M., SUDRE, B., EKWANZALA, M. et al 2008 *Lakes as source of cholera outbreaks, Democratic Republic of Congo*. Emerging Infectious Diseases Vol 14, No 5, pp. 798-800
- MUYEMBE, J.J. et al 2013 *Elimination of cholera in the Democratic Republic of the Congo: the new National Policy*. The Journal of Infectious Diseases Vol 208, Issue suppl 1, pp. 86-91
- MINISTERE DE LA SANTE, WHO, UNICEF 2015 *Cholera outbreaks in Central and West Africa bulletins*. Available on: http://www.platformecholera.info/attachments/article/219/WCA%20Cholera_Update_W52.pdf
- MINISTERE DE LA SANTE, WHO, UNICEF 2016 *Cholera outbreaks in Central and West Africa: 2016 Regional Update – week 52*. Available on: http://www.platformecholera.info/attachments/article/338/WCA%20Cholera_Update_W52.pdf
- MINISTERE DE LA SANTE, WHO, UNICEF 2017 *Cholera outbreaks in Central and West Africa: 2017 Regional Update – week 52*. Available on: http://www.platformecholera.info/images/WCA_Cholera_Update_W52.pdf
- SOLIDARITES INTERNATIONAL 2017 *SI Nigeria Cholera Response Strategy*.
- THEIS, J. and GRADY, H.M. 1991 *Participatory Rapid Appraisal for Community Development – a training manual based on experiences in the Middles East and North Africa*. IIED, London, UK

UNICEF 2017 *Information point on cholera in the Eastern zone – week 48.*
WEST AND CENTRAL AFRICA CHOLERA PLATFORM 2017 *Overview of the strategy to control and prevent cholera in West and Central Africa – The “Shield and Sword” concept.*

Notes

- i <https://startnetwork.org/start-fund>
 - ii The communities in the two zones are either Congolese or people of Rwandan origin, with very different cultures.
 - iii The multi-sectoral national plan for the elimination of cholera epidemics establishes a typology of health zones in 3 categories: zones A are source zones of cholera where cases are notified all year long as long as there is no effective and sustainable access to water and sanitation infrastructures; zones B are coined as “epidemic zones” and should be subject to reinforced measures of prevention; zones C are “nodes/junction zones” as they represent crossroads of communication.
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