Photo: J. Boethling

What went wrong in Ebola response?

Nobody can tell what the outcome of the recent Ebola epidemic would have looked like had national governments and international organisations responded more swiftly and appropriately. The large number of analyses on organisational, institutional and operative weaknesses ought to at least help avoid a second disaster of such magnitude. But can they really?

Two years after the latest Ebola outbreak in West Africa claimed its first victim, reports on the deadly disease have subsided. In September 2015, WHO declared Liberia free of Ebola, followed by Sierra Leone in November. It looks as though the three countries most affected by the epidemic – Guinea, Liberia und Sierra Leone – are on the road to recovery. So is there any point in further discussing the topic?

In the opinion of Joanne Liu, President of the organisation Médecins Sans Frontières (MSF), there certainly is. For in a BBC interview in October 2015, Liu maintained that some of the factors responsible for the failure of Ebola response still persisted, referring to weak health care systems, communities and their not understanding the disease, and International Health regulations, ... "for which we are still not meeting the minimum requirements."

But let's first of all recap on what happened in the Ebola crisis (also see the diagram on page 9). On the 26th December 2013, a little boy in Guinea became infected with Ebola, and died two days later. The disease initially remained undetected, for Ebola had hitherto been unknown in this country. On the 30th March 2014, Ebola was confirmed in Liberia. In late March 2014, MSF declared that the spread of the epidemic was 'unprecedented'. On the 26th May, the Government of Sierra Leone officially declared an Ebola outbreak. Towards the end of June, Médecins Sans Frontières again warned that Ebola was 'out of control', stressing that on its own, it could no longer cope with the situation because too many people were becoming infected in too many regions.

However, nothing happened: It was not before August 2014, when the first cases of Ebola were diagnosed in the USA and Europe, that the international community woke up. In mid-August, the WHO declared Ebola a 'public health emergency of international concern'. But it took international actors well into the autumn to launch large-scale measures. The Peace and Security Committee of the African Union initiated its response initiative ASEOWA (see pages 20–22), the UN Secretary General together with WHO set up the Public Health Mission UNMEER, and many donor governments and the European Union pledged financial, material, human and political support. Several philanthropic foundations also offered contributions. By this time, however, the number of cases had long assumed dramatic proportions, with more than 6,300 people dying alone in the last four months of 2014, a figure set to grow to over 11,300 by the (initial) "official" end of the epidemic.

THE EBOLA VIRUS

Disease outbreak in West Africa

December 28th, 2013: Two-year-old Guinean boy dies two days after catching the disease.

March 14th, 2014: Guinean Ministry of Health gives Médecins Sans Frontières alert of "unidentified" disease.

March 21st, 2014: Laboratory tests confirm Ebola in Guinea.

March 30th, 2014: Ebola is confirmed in Liberia.

March 31st, 2014: Médecins Sans Frontières warns that epidemic's spread is "unprecedented."

August 6th, 2014: Liberia declares state of emergency.

August 8th, 2014: WHO declares Ebola a "public health emergency of international concern."

October 31st, 2014: China announces plan to send 480 military health staff to West Africa.

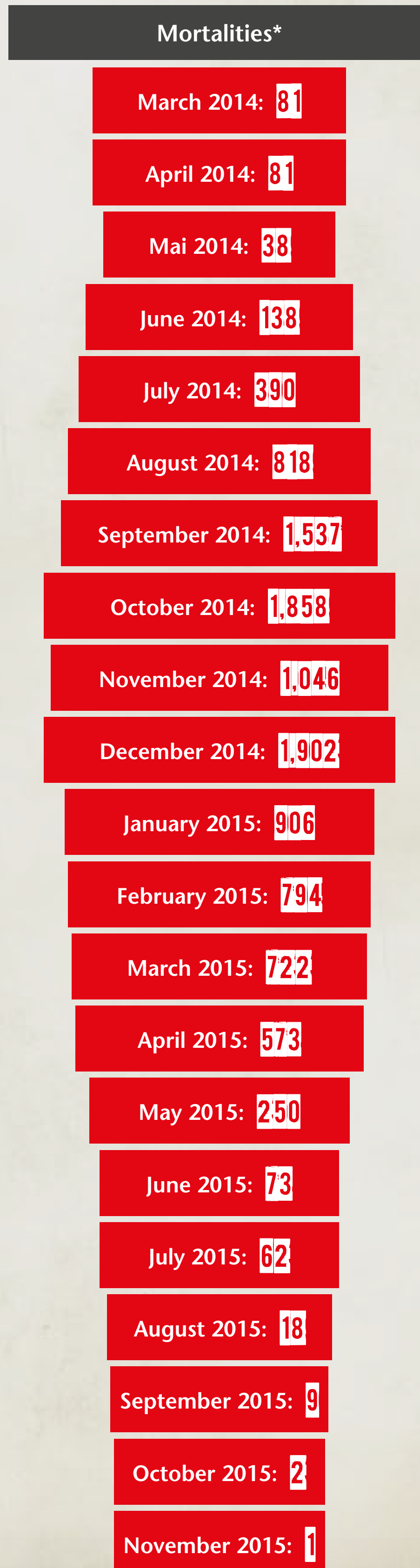
November 2014: Liberia declares end of state of emergency.

December 9th, 2014: Doctors go on strike in Sierra Leone, demanding better pay and support.

July 10th, 2015: International Ebola Recovery Conference is held at New York/USA.

July 31st, 2015: UNMEER closes.

Mortalities*



May 26th, 2014: Government of Sierra Leone officially declares an Ebola outbreak; WHO sends teams to the country.

June 21st, 2014: MSF warns that Ebola is "out of control" and calls for "massive deployment of resources."

July 31st, 2014: Sierra Leone declares state of emergency.

September 5th, 2014: European Union commits 140 million euros.

September 8th, 2014: UK announces plans to build Ebola treatment centre in Sierra Leone, and a month later says it will send 750 troops to Sierra Leone.

September 18th, 2014: UN Security Council declares the outbreak "a threat to peace."

September 19th, 2014: The UN Mission for Ebola Emergency Response (UNMEER) is established.

September 26th, 2014: Cuban government announces plans to send 300 doctors and nurses to West Africa.

Early 2015: First Ebola vaccine clinical trials begin in West Africa.

May 9th, 2015: WHO declares Liberia free of Ebola virus transmission. (New cases are confirmed in late June and early July).

September 3rd, 2015: WHO declares end of Ebola outbreak in Liberia.

November 7th, 2015: WHO declares end of Ebola outbreak in Sierra Leone.

* Official statistics started in March 2014; Source: World Health Organization, Médecins Sans Frontières, Centers for Disease Control

Bad marks for the health systems

Over the last few months, numerous studies have addressed the weaknesses of world-wide Ebola response. In their Working Paper "The Ebola response in West Africa: exposing the politics and culture of international aid", Marc DuBois, Caitlin Wake and their colleagues of the Humanitarian Policy Group (HPG) at the UK's Overseas Development Institute (ODI) attempt to perform an analysis of the underlying systemic flaws. As part of this analysis, they have examined the state of the health systems in the three countries concerned prior to the crisis, finding that there were an insufficient number of healthcare workers, and that these were poorly trained, that there were low levels of access to health facilities, and that funding was insufficient. In Sierra Leone and Liberia, this state of affairs had also resulted from the protracted civil wars. In addition, there were poor infection prevention and control (IPC) measures and a widespread lack of confidence among the population in the health system. The three Ebola-affected countries belong to the countries with some of the lowest health spending in the word; none of these countries is anywhere near the minimum of one health care worker for every 439 people recommended by the World Health Organization. The inadequate numbers of beds, staff, protective equipment, disinfectant and basic medical supplies and the poor infrastructure with which the already small number of hospitals had to muddle through became acutely apparent during the Ebola outbreak. Many patients could be only insufficiently treated or had to be sent home again by hospitals and health centres owing to insufficient capacities. In addition, the laboratories could not meet the demand for case testing, resulting in delays in diagnosis and an increased likelihood of transmission. Insufficient equipment levels had dire consequences – and not only for the patients. According to WHO figures from May 2015, 881 doctors and nurses contracted Ebola while working in the three countries, 512 of whom died.

A further weakness revealed by the HGI paper is the framing of the Ebola outbreak as a health crisis without considering the humanitarian crisis going hand in hand with it. By concentrating on Ebola-related health services, the treatment of other important diseases such as malaria or HIV/AIDS as well as vaccination programmes or caring for pregnant women and young mothers was neglected. Furthermore, the predominance of top-down communication, particularly in the early stages of the intervention, had a negative impact. "Much communication intended to fight Ebola in fact had the opposite effect. Some messages were inaccurate, while others created inaccurate perceptions," the authors wrote, explaining that the mainly bad news had led to many patients being reluctant to consult the health centres and preferring to rely on their families or traditional healers. Insights on these aspects are also contained in the contributions on Liberia and Sierra Leone (pages 12–15 and 16–19).

In a recent publication in *The Lancet*, Professor Suerie Moon and her team from the Independent Panel on the Global Response to Ebola of the Harvard Global Health Institute and the London School of Hygiene & Tropical Medicine described the reforms needed to mend the fragile global system for outbreak prevention and response, and above all to prevent future disasters. For this purpose, they carefully examined the individual phases of Ebola outbreak and response. In their analysis, they arrive at the conclusion that "major reforms are both warranted and feasible". In this context, they also severely criticise the WHO's crisis response, as is reflected in their ten recommendations (see Box on page 11).

Reasons to be optimistic?

So both the analyses of shortcomings and recommendations for action are there. Strengthening health systems in Africa assumes a central role in this context, as was also recently demonstrated at the 8th World Health Summit in Berlin/Germany. However, not everyone is convinced that things will be so straightforward. For example, with regard to the more than 500 healthcare workers who died working with Ebola patients in West Africa, MSF President Liu warns: "To replace this human resources workforce, it will take years. We know how long it takes to train a doctor, how long it takes to train a nurse, that will not happen overnight. We would like to think that the systems will be strengthened, but unless there are doctors or nurses, people who will run a hospital or a clinic, you will not strengthen the healthcare system."

Many of the more than 15,000 Ebola survivors in Liberia, Sierra Leone and Guinea are still ostracised because they are held to be contagious. In addition, they frequently suffer from severe health complaints that are also referred to as the post-Ebola syndrome. These complaints range from pain in the joints and headaches, vision disorders and inflammations of the eye, through hearing problems and spells of dizziness to insomnia, depressions and posttraumatic stress syndrome.

In October 2015, a paper published in the *New England Journal of Medicine* demonstrated that men who have survived an Ebola attack still carry elements of the virus in their seminal fluid for at least three months. The researchers had examined samples of semen from 93 Ebola survivors in Sierra Leone. Among all men who had still had the disease just three months before, the genetic material of the Ebola viruses was contained in the samples. In the group with a period of four to six months after the disease, this was the case with just under two thirds of the men, and with just over a quarter of them after a period of seven to nine months. The authors write that the detection of Ebola genetic material need not imply that infectious viruses are still there, although this is not ruled out. "These results come at a crucial time and remind us that even in times of a steadily dropping number of Ebola cases, survivors and their families continue to fight the impacts of the disease", said WHO Special Representative for the Ebola

Response Bruce Aylward. It is still not clear whether women have become infected via seminal fluid containing viruses; neither has any certainty been established over whether women patients surviving an Ebola infection can reckon with impacts when they become pregnant and whether this can result in malformations of the foetus.

In September 2015, WHO officially declared Liberia free of Ebola. Two months later, the country reported three confirmed cases of Ebola – a fifteen-year-old boy, his eight-year old brother and his father. The fifteen-year-old died on the 23rd November.

Silvia Richter

"We failed. This must not be allowed to happen again"

Walter Lindner, Ebola Commissioner for the Federal Republic of Germany.

"Ebola will not be over as long as there are no drugs and vaccines against it"

Dr med. Tankred Stöbe, President of Médecins Sans Frontières Germany until May 2015.

"Ebola will not be gone in any country until it is gone from every country"

David Nabarro, the UN Secretary-General's Special Envoy on Ebola.

Recommendations for preventing and responding to major disease outbreaks

- All countries need a minimum level of core capacity to detect, report, and respond rapidly to outbreaks. The global community must agree on a clear strategy to ensure that governments invest domestically in building such capacities and mobilise adequate external support to supplement efforts in poorer countries. This plan must be supported by a transparent central system for tracking and monitoring the results of these resource flows.
- WHO should promote early reporting of outbreaks by commending countries that rapidly and publicly share information, while publishing lists of countries that delay reporting. Funders should create economic incentives for early reporting by committing to disburse emergency funds rapidly to assist countries when outbreaks strike and compensating for economic losses that might result.
- A dedicated centre for outbreak response with strong technical capacity, a protected budget, and clear lines of accountability should be created at WHO, governed by a separate Board.
- A transparent and politically protected WHO Standing Emergency Committee should be delegated with the responsibility for declaring public health emergencies.
- An independent UN Accountability Commission should be created to do system-wide assessments of world-wide responses to major disease outbreaks.
- Governments, the scientific research community, industry, and non-governmental organisations must begin to develop a framework of norms and rules operating both during and between outbreaks to enable and accelerate research, govern the conduct of research, and ensure access to the benefits of research.
- Research funders should establish a world-wide research and development financing facility for outbreak-relevant drugs, vaccines, diagnostics, and non-pharmaceutical supplies (such as personal protective equipment) when commercial incentives are not appropriate.
- The creation of a Global Health Committee is recommended as part of the UN Security Council to expedite high-level leadership and systematically elevate political attention to health issues, recognising health as essential to human security.
- Decisive, time-bound governance reforms will be needed to rebuild trust in WHO in view of its failings during the Ebola epidemic. With respect to outbreak response, WHO should focus on four core functions: supporting national capacity building through technical advice; rapid early response and assessment of outbreaks (including potential emergency declarations); establishing technical norms, standards, and guidance; and convening the global community to set goals, mobilise resources, and negotiate rules. Beyond outbreaks, WHO should maintain its broad definition of health but substantially scale back its expansive range of activities to focus on core functions (to be defined through a process launched by the WHO Executive Board).
- The Executive Board should mandate good governance reforms, including establishing a freedom of information policy, an Inspector General's office, and human resource management reform, all to be implemented by an Interim Deputy for Managerial Reform by July 2017. In exchange for successful reforms, governments should finance most of the budget with untied funds in a new deal for a more focused WHO. Finally, member states should insist on a Director-General with the character and capacity to challenge even the most powerful governments when necessary to protect public health.

Source: Moon et al., 2015: *Will Ebola change the game? Ten essential reforms before the next pandemic.* Executive summary, abridged.

The paper can be publicly accessed at: ➤ **www.thelancet.com**