ALTERNATIVES HUMANITAIRES
HUMANITARIAN ALTERNATIVES

*Inaugural Issue – February 2016*
*p. 66-80*

# Breaking the Ebola virus transmission chains: the story of a deployment in Sierra Leone

*Gaëlle Faure, Jérôme Besnier, Pauline Lavirotte, Magalie Vairetto* • **Handicap International**
*Jean-Baptiste Richardier* • **Handicap International Foundation**

**This article illustrates two of the ambitions of our review. First, encourage and promote the production of knowledge from the humanitarian sector itself where it is not lacking, while the sector is too often relegated to the role of "actor": actors think, and well, let it be known! Secondly, explore and unveil thematics too little developed. This is the case here with this analysis, performed near the end of the epidemic, of the project platform Ambulance and Decontamination initiated by the NGO Handicap International in Sierra Leone.**

Handicap International has been present in Sierra Leone since 1996, attending to the victims of the civil war and handicapped persons, mainly in the West districts (Freetown), of Bo and Kono in the center and East of the country. Until the outbreak of the Ebola epidemic in this country in May 2014[1], the interventions of the organisation were organised around the installation of braces and artificial limbs and re-education, the promotion of handicapped person's rights, their inclusion in the community fabric, access to services for all and psycho-social support activities. These activities, characterised by a reinforcement of the capacities of local actors, were practically interrupted because of the epidemic, giving way to information and prevention activities directed towards the organisation's partners.


Cleaning of the intervention equipment

In August 2014 the decision is taken to contribute to the combat effort against the propagation of the epidemic which will lead in particular to the establishment of the

[1] Epidemic data of November 29th 2015 indicates 28,109 Ebola cases (suspected, probable or confirmed), with 11,315 deaths for all the countries concerned. Sierra Leone is the hardest hit of the 3 West African countries affected (with Liberia and Guinea), with 49% of the cases (14,122). Source: WHO.

*Inaugural Issue – February 2016*
*p. 66-80*

project platform Ambulance and Decontamination in the district of Freetown. The vehicle fleet of this centralised system is composed of fifty ambulances and decontamination vehicles dedicated to community interventions. Since the beginning of the project 3,827 suspected or confirmed patients have been transported towards diagnosis or treatment centrers and 1,834 houses have been decontaminated. Up to 300 national employees have contributed their know-how to this project and their remarkable engagement in spite of the risks. At the peak of the epidemic, teams ran up to 65 transportations per day. 50% of community interventions take place in an urban environment, within a perimeter that includes in particular seven Freetown slums. But, beyond the technical challenges linked to this intervention, the organisation found itself confronted with the difficulties arising from maintaining the indispensable environment of acceptance and humanity.

**Pushing further our limits and getting involved as close as possible with Ebola patients.**

He is sitting in front of his house, obviously weakened, skinnier and with a worrisome gaze. His wife and grand-daughter are at his sides. The ambulance and the decontamination team were called to transport this man to a diagnosis and isolation center. The team members also have the mission of decontaminating the house, so as to avoid any propagation of the virus. The "armada" of vehicles and personnel that literally "disembark" can effectively impress this family as well as the dozens of neighbours and assembled members of the community. With the agreement of the family, accomplishing slow and precise gestures dressed in a protective suit now sadly famous, called Individual Protection Equipment (IPE), team members accompany this man towards the ambulance. A predefined process than follows, of an absolute rigour, so as to eliminate the soiled material (his mattress, his personal effects) and to decontaminate his house, room by room, insisting on the places where he usually stayed. This extreme technicity, deprived of any spontaneity and the impersonal appearance of the suit would not allow alone this intervention if an important dose of humanity and empathy were not distilled in permanence by the intervention team. In the heart of the community, how to succeed in countering the propagation of this epidemic, break the transmission chains and protect the teams, while conferring a human look to the intervention? Or how to try making possible the impossible?

On interventions, Handicap International teams remove mattresses and other items that have been in contact with potentially infected fluids and that cannot be decontaminated. They are evacuated and destroyed and then replaced with new items.

*Inaugural Issue – February 2016*
*p. 66-80*

Everything starts at the end of June 2014 when Médecins sans Frontières (MSF) launched its first call for an international mobilisation -followed on August 8th by the International Public Health Emergency Declaration by the WHO. The consequence of this was putting on stand-by of regular projects and the protection of Handicap International teams, as was the case for most NGOs. After intense internal discussions debating the added value of the presence of the organisation in this crisis and concerning its possible withdrawal, Handicap International then chooses to stay and to engage in different projects, using in particular the network of its community partners, for actions relating to sensitisation in the field of prevention and protection. Encouraged by MSF calls that nourished "boldness" and the acceptability of the necessary risk taking, this engagement was taken respecting the limits of the medical expertise of the organisation, which than excluded being directly in charge of patients.

At the beginning of December 2014, the Ebola epidemic was still at its peak in Sierra Leone; Freetown and its peninsula are severely affected. In this context in which the urgency is first of all to eradicate the propagation of the disease and at the invitation of DFID (UK Department for International Development), Handicap International decides to get directly involved, as closely as possible to the patients, in the fight against this epidemic. The understanding that a new sanitary and humanitarian crisis is under way and the evidence of an unsatisfied need – intrinsically linked to the control of transmission chains- spur the organisation to intervene by betting on the logistical know-how of its Division for Emergency Action. In Freetown and it's district, there effectively does not exist any centralised ambulance system dedicated to Ebola, that is to say the capacity to transport to appropriate centrers the hundreds of people who present at home, in the community, the symptoms of the sickness. Besides, the houses of patients arriving at the care centrer by their own means are not systematically decontaminated, as national and international protocols nonetheless require.

Handicap International staff put on PPE (personal protective equipment) for intervention.

It is this way that the project of an Ambulance and Decontamination Platform, financed by DEERF (DFID Ebola Emergency Response Fund), was born. The expertise of the organisation in the management of emergency logistic platforms -including the management of important vehicle fleets- no more needs to be proven and this competence constitutes the foundation of the project. But it was just as clear that a new field of expertise, and also new know-how had to be developed in parallel, in particular in terms of decontamination processes and of prevention and control of the infection (IPC), all within extremely short delays. Strong with its old expertise and conscious of the indispensable training, Handicap International saw in effect its possible added value in this response, without nonetheless being able to measure the amplitude off the adaptation that implementation would require. This crisis, its nature and this specific project will

*Inaugural Issue – February 2016*
*p. 66-80*

in effect oblige Handicap International to rethink from top to bottom the internal organisation of the program and the conditions of headquarter support.

**A requirement of technical quality**

Once identified the location of the project, the teams worked relentlessly to install the new Ambulance and Decontamination Platform in Freetown. A platform where the calls coming from the Command Center (Coordinator of the district's response) are received and dealt with by the regulation team. A platform from which depart simultaneously towards the district's villages the ambulances, the vehicles assigned to the decontamination of houses and those in charge of contaminated material. A platform with the capacity to assure for vehicles, after each intervention, a demanding decontamination process. A platform capable of maintaining and repairing an important vehicle fleet. A platform that can receive and train simultaneously the hundreds of employees dedicated to this new project. The construction and logistical installation of this site were for these reasons of great magnitude. The logistical support of several actors (MSF, German Development Cooperation, World Food Program, UNICEF, British Army) was also very precious.

Handicap International staff helping man evacuated to an Ebola testing centre.

But the greatest challenge was the practical organisation and the structuring –without precedent at Handicap International- of a strict process of decontamination of the ambulances, implying the planning of a division by zone, based on the contamination risk; an appropriate management of the flow of people, materials and vehicles through these zones; a specific protocol to dispose of contaminated waste as well as a supply of chlorinated water at different degrees of dilution. In short, an ambulance platform meeting practically the same principles and the same requirements as those of an Ebola Treatment Centre (ETC), where each detail, each gesture counts. Such a level of technical expertise could never been attained without the continuous training of teams in the decontamination process. For this, it was also necessary to recruit new expatriate profiles, experts in this field, to accompany the national teams. If the epidemical context and the gravity of the menace have generated difficulties in recruitment for all types of actors, finding these specific profiles, ready to depart for an organisation intervening in an area that is not within its usual field of expertise, represented a true bet. The relevance of the project, its technically attractive character, and probably the good reputation of the organisation, allowed gathering the required skills.

*Inaugural Issue – February 2016*
*p. 66-80*

This kind of intervention within the community also requires a great technical strictness, an irreproachable following of protocols and a level of training that are just as demanding. To break a transmission chain by isolating a patient from his household, evacuating him and decontaminating his house, while ensuring a high level of protection for the teams –the first duty of an employer- represents a permanent challenge of intricated and diversified technical know-how. Each context of intervention within a community is unique by its geographical, climatic or social dimensions, calling in fact for other levels of expertise, those of innovation, team autonomy, analysis and adaptation to each unusual situation: a patient or a house inaccessible to vehicles; a household situated in a ravine over the road; an intervention in a slum where streets are so narrow and houses so small that a man cannot easily slip inside with a stretcher and wearing protection equipment; a crowd gathered in the intervention zone that it is necessary to control to avoids any risk of propagation or even hostility; continuous rain or gusts of wind so typical of the rainy season in Freetown…Getting dressed and undressed and even the decontamination process itself are then rendered practically impossible. To face these technical challenges, specific protocols have been progressively elaborated for risky interventions, in particular in shanty-towns or in rainy weather, the fruit of experience acquired. In parallel, prototypes of inflatable tents have been specifically developed for dressing and undressing in the rain. Accompanied by different water-proof materials and equipment, these tents are now regularly used with teams specially trained for their utilisation, thus showing that taking charge of a patient is possible under almost any circumstance.

Decontamination with chlorine solution on a zone potentially infected by the

**Acting on the transmission chain, but also being a carrier of reassurance**

An intervention in a community is initiated once a new patient is identified and reported to authorities as suspected of having contracted the Ebola virus (that is to say presenting the symptoms of the disease). A standard intervention comprises not less than four vehicles: the ambulance serving for the transportation of the patient towards the diagnosis and treatment center; the decontamination vehicle transporting equipment and the teams that will decontaminate the house; the vehicle in charge of the soiled material to be evacuated and the car transporting the effects systematically supplied in replacement of the materials evacuated (mattress, sheets, mosquito net). The twelve team members are divided between the four vehicles, each one with a precise role to play (taking charge of a patient, deployment of equipment, pulverisation off the house with chlorinated water…). Several of these, six at the minimum, get dressed with protection equipment. The patient is evacuated in less than an hour, but the full operation represents an average three hours presence on the spot. Even with the support of the community leader, it is easy to understand the fear –sometimes even the defiance of populations- that this massive deployment can entail. With this convoy of vehicles and the numerous people deployed, seeing the protection equipment that conceals faces, what with the intrusive pulverisation of chlorinated water, the objective of which they do not always understand, the family and close friends and relatives are always in anguish and sometimes on the

*Inaugural Issue – February 2016*
*p. 66-80*

defensive. These fears, this defiance are a source of pressure that has to be managed case by case, in function of the context of each village or slum neighbourhood.

Before anything else, this is the story of people and knowing "how to be". National teams now engaged since December 2014 in this enterprise, are largely devoted to their mission. Relentlessly, seven days a week, they intervene. They have acquired an irreplaceable knowledge of each place and the gratitude of the communities living there, and this ever more so that they sometimes also come from there. Working on the relation with the community is central, so that the intervention is not only accepted but also carried by the patient, if he can, the family and the community itself. In this perspective, two persons within the intervention team – a health promoter and the team leader- are specifically assigned to the explanation of the intervention and to the dialogue with the community, the family and the patient. Not carrying protective equipment, they keep a "human face" and maintain a permanent link with the community during the whole intervention. This dialogue also permits to carry out a good analysis of the situation and to keep the balance between public health requirements and respect of the patient and his rights (confidentiality, respect off his/her choice). The team is thus in a position to propose, depending on each context, intervention protocols more acceptable by all: how to evacuate the patient (walking or on a stretcher), which limits to impose for the intervention zone (off limits for a crowd) so that the community can perceive the action as transparent, while preserving a bit of confidentiality and intimacy, when, for example, the personal effects of the person will be taken out and exposed in the sun or chlorinated in front of his/her house, under the eyes of the assembled neighbours.

Decontamination with chlorine solution on a zone potentially infected by the virus.

The humanity and empathy put into this dialogue, be it through confidential exchanges with the family or in the public discourse for the community, are absolutely essential. Continuous training is dispensed in this way to team members, the behaviour of which is a carrier for maintaining social links. Actors in the response of the different pillars[2], in particular the pillars "Social mobilisation" and "Protection" are largely involved in the training and in the demonstrations[3] organised in different communities. In this field also, the teams have benefited from the initial support of MSF, organisation thanks to which ad-hoc training and coaching have been able to be organised over several weeks at the beginning of 2015.

[2] The answer to Ebola is subdivided and coordinated by thematic pillars (a functioning close to that of "clusters"). There thus exists the pillars "Isolation and care of patients", "Follow-up of contact cases", "Dignified and secure burial", "Social mobilisation" or also transverse pillars like "Protection".
[3] These demonstrations permit to simulate a mock intervention in certain villages and to initiate a dialogue so as to prepare communities to this kind of intervention. The communities showing the most defiance or presenting particular difficulties from a technical point of view (for instance those living in slums) are particularly considered.

*Inaugural Issue – February 2016*
*p. 66-80*

**Patients perceived by the community as victims, heroes or as a menace**

This "knowing how to be", this humanity, this dialogue are essential to already prepare the "afterwards". So much has been said about the stigmatisation endured by cured patients but also by their family and the people put in quarantine. Patients considered as "suspects" and transported, following the same protocol, in a diagnosis centre are affected just as much by this situation. When it appears, following a consultation and laboratory exams, that they suffer from another sickness (for instance malaria) and even if they are rapidly at home with a specific treatment, they sometimes encounter difficulties upon returning to their community. Working on the "after" is thus necessary upon the first contact with the family and the community. It is the role of the Health Promoter to pass on the adequate messages, to give rise to exchanges, to answer questions and thus prepare the field for the return to the community, favouring comprehension and support for the patient and his family.

If this work within the community is rendered sufficiently visible, by going towards people, it can be a tremendous lever to generate the confidence of populations towards the response system in its entirety, establish its credibility and its seriousness; this is a unique occasion to generate a global qualitative impact through technically mastered and humanly assumed interventions. The search for this balance still remains today a true stake. Handicap International is not altogether exempt from the criticisms that aim at the community interventions carried out by all the actors of the response: true lessons remain to be drawn from these long months of a very intense intervention. This process is under way, in the form of dynamic thinking, so as to improve practices. As of now, it clearly appears that it is the acquisition of technical capacity and mastership that allow to refocus efforts and attention on human quality and the approach of patient relationship, that of his family and the community. Intervening teams are altogether confronted with the patient's fear, the anguish of the family concerning the loss of a loved one and with the defiant gazes of the community towards the patient and his family…Relating to this, following recent information about the possible transmission of the virus by cured patients, the perception of "survivors" evolves and brings up new difficulties and antagonistic questioning: readily put forward by authorities as heroes who have been able to overcome a terrible trial, they can fall again brutally into the status of victims or appear as new menaces. This resurgence of the fear and the rejection afflicting former patients and their families represent a new challenge for community interventions that must, more than


Intervention in a community to drive a potentially suspect patient towards a centre for diagnosis and isolation and to decontaminate the house and the environment.

ever, manage with skill the dialectics between technicity and humanity. The efficiency of those intervening in the reconstruction and preservation of social links is at this expense.

**Enlisting in coordination to break the transmission chains**

It is known that precociously taking in charge a patient in the community, his (her) rapid isolation and his (her) treatment in a specialised center have a direct impact, just as well on the control of the transmission chains as on the vital diagnosis. It is all together that the actors of the response have to be reactive and rapid. The Ambulance Platform project, like the interventions in communities cannot be implemented in an isolated fashion. To be integrated in a coordination takes all its meaning when one knows up to what point the surveillance, the alert, the notification of cases, regulation by 117 (emergency Ebola number in Sierra Leone), the management and sharing of epidemical date are essential. A centralised, coordinated system is thus a necessity and a centralised ambulance system represents added value in this coordinated response system. This avoids a patient going to a saturated or maybe even closed structure. This allows ensuring that each suspected patient is effectively taken in charge and that each house that requires it is effectively decontaminated.

It is the call of the District Ebola Coordination Command Center that initiates each intervention in the community, supplying details on the location and the status of the patient as well as the indication of the structure towards which to direct him/her. And it is to the Command Center that the Ambulance Platform reports once the intervention is finalised. Lastly, it is again the Command Center that plans the next steps (follow-up of contact cases, links with the family, release of protection alert).

**Putting in perspective**

This Ambulance and Decontamination project imposed itself as an essential link to break the transmission chains and participate in the control of the propagation of the Ebola disease. A centralised and coordinated system is absolutely crucial to allow a total coverage of the territory. It requires of those intervening a difficult dosage between imperatives of rigorous technicity and humanity so as to assume the fact of being at the same time vectors of the breaking (authoritarian "extraction" of the patient from his environment) and the maintaining of the social link (reassurance and confidence of the community in the global system and goodwill of the community for the return of healed patients). The system must be continuously adapted, depending on the evolution of the epidemic. Today, even if the number of confirmed cases is close to zero, the system in Sierra Leone continues to face an important volume of activity, the rainy season favouring a high incidence of sicknesses with similar symptoms, such as malaria. For the time being, all people "suspected" of having Ebola must continue to be taken in charge by this centralised system.

The next months will be determinant in the fight against this epidemic: to attain –and maintain- zero cases is the major stake. But the risk of having the epidemic reintroduce or re-emerge is truly there and the uncertainties linked to the new knowledge of this disease as regarding its transmission represent an insufficiently documented menace. Those intervening are thus confronted to two essential challenges. The first one is the definition and maintenance of a residual system in Freetown and its peninsula, with ambulances and teams capable of rapid redeployment if necessary, as the re-emergence of Ebola cases in June 2015 show. The second one is the capitalisation of acquired expertise in view of a replication that will necessarily occur. For Handicap International, this is a capitalisation with internal aims for the organisation. (new

know-how to preserve, coordination stakes, lessons learned), so as to have the capacity to deploy immediately an efficient action when an epidemic will reappear. But this is also a capitalisation with external aims, to allow the organisation to be enlisted in a global response system, to contribute to it and promote the immediate search of the best possible balance between a demanding technical rigour and the preservation of strong community links. It is by answering these requirements that the organisation will be able to help the affected population in overcoming and passing beyond the crises generated by the advent of Ebola virus epidemics.

*Translated from the French by Philip Wade*

**Biographies**

Within Handicap International, **Gaëlle Faure** • is technical referee for Safety of the Ebola unit, holder of a master in public health (London School of Hygiene and Tropical Medicine), of a certificate in tropical medicine (IMT Antwerp) and nurse by training;

**Jérôme Besnier** • is in charge of the Program Humanitarian Watch and Emergencies, holder of a master in cooperation and development (IFAID Bordeaux);

**Pauline Lavirotte** • is project manager Ambulance and Decontamination in Freetown. She holds a master in international relations (Institute of Political Studies, Grenoble);

**Magalie Vairetto** • is a member of the Ebola program team, holder of a master in crisis analysis and humanitarian action (University of Savoy, Chambéry).

**Jean-Baptiste Richardier** • is executive director of the Handicap International Foundation, doctor in medicine, speciality re-education and functional re-adaptation.