

Set- up and appropriate utilization of an Ebola Treatment Unit in co-operation with GerLib Clinic Monrovia, Liberia

Case situation

Since the Ebola outbreak in West Africa was officially declared on 22 March 2014 in Guinea, it has claimed more than 4,808 lives in Liberia (as of July 19th 2015, WHO situation report). The outbreak is the largest ever, and therefore effected and weakened the national health system in a dramatic way.

The GerLib Clinic in Paynesville, Monrovia, Liberia has been the customer and recipient of donations of medicines and medical equipment from action medeor e.V. Germany for more than 10 years. According to action medeor's principle, GERLIB clinic serves all people without making a difference regarding social or economic status, and is thus promoting **health equality**.

In early summer 2014 more and more cases of Ebola were suspected in Liberia, the total number of cases was reported to be 172 (WHO situation report 15 July 2014). In July 2014 the founder of GerLib health centre had an urgent request for personal protective equipment (PPE) after one of the nurses has died of the disease. On 11 July 2014 action medeor sent the first shipments with overalls, gloves, over shoes, masks and soap to the GerLib clinic.

Action proposed

Soon it was obvious that this point support was insufficient. As more and more cases emerged and the number of patients rose (1 082 total cases in Liberia according WHO situation report 20 August 2014), additional facilities to isolate and treat patients were needed. At this time there have been reports of provisory facilities to be set up in Liberia. Early action medeor decided to look for ways to find a more state-of- the art solution. This solution was found in a reputable manufacturer of deployable medical facilities based in the US (<http://www.blu-med.com/en/>) which has supplied UN bodies in the past. The special isolation tents maintain a negative pressure, air is filtered by HEPA filters and the tents are air conditioned and fully equipped for the use in extremely contagious diseases. For example for each patient a separate toilet was available to avoid further spread of the disease.

Methodology

State-of-the-art Ebola Treatment Unit (ETU)

Thanks to donations from citizens, private trusts, German government and the pharmaceutical industry action medeor was able to answer this need fast; action medeor procured two isolations tent on 08 September 2015. The isolation tents and all necessary equipment were transported to Monrovia and set up at the ELWA-II hospital in September 2014.

The ELWA-II hospital was selected as the optimum site for the ETU for a number of reasons. At this time Ebola patients at the ELWA II-hospital were isolated in an old chapel and a makeshift building. Treatment was limited. In the two isolation tents 44 isolation beds were provided in addition to 60 simple beds in the existing building. At ELWA –II there was already some expertise to handle and treat the disease. Moreover, there was enough room to set up the tents and combine them with the provisory ETU. The set up was coordinated by Dr. Jerry Brown. Due to his extraordinary efforts during the Ebola outbreak along the Ebola fighters Dr. Brown was later

nominated “Person of the Year 2014” by the TIME magazine (<http://time.com/3823160/jerry-brown-2015-time-100/>).

Whilst emergency efforts were taken action medeor started to work on **sustainable recovery of the health system**. GERLIB clinic was supported by procurement of X-Ray, ultrasound instrument and laboratory instruments. Training on the new instruments is currently ongoing. By these measures, GerLib Clinic was able to continue their regular work and offer help to other patients like pregnant women.

During the time of setting up the isolation tents the ELWA II hospital continued to isolate and treat Ebola patients. The grounding was prepared, staff toilets, showers and a kitchen were built and additional supplies like PPE, disinfection and bed sheets for the ETU were procured. A special vehicle for the ETU and incinerators to burn the infectious material were purchased. In the project the **medical expertise** of Liberian staff **was pooled**. Health workers were trained in all aspects of Ebola **prevention** and treatment during the set up the tents. A relatively low salary for four doctors and 116 other medical and technical staff working in shifts was paid by the Liberian Government. By topping this salary up action medeor assured the quality of healthcare and succeeded to keep the knowledge of experienced and trained health workers within the organization.

Accompanying Measures

During the complete period described in this application the “ETU-project” was imbedded in a number of accompanying measures.

In the vicinity of the GerLib Clinic two **prevention projects** were realized for 4,700 households (more than 10,000 individuals) to **enhance health literacy**. The greatest part of the households neither had equipment nor knowledge about hygiene measures and how to prevent infections. In addition to information and training about the disease and prevention, each household got an Ebola bucket (bucket with tap), disinfection agents, and soap. After the death of patients, facilitators visited the families and checked whether all family members were abiding by the preventive measures like quarantine.

In April 2015 the project was expanded to other parts of Monrovia. Currently groups of young people who have been trained by health professionals educate people and raise awareness about infectious diseases such as Ebola, Malaria and Cholera. They inform the population about preventive measures and distribute disinfectants as well as mosquito tents.

In addition patients and staff were **supplied with food. Survivors and their families** as well as the families, who have to mourn the death of family members from Ebola got food aid, disposable sheets, mattresses, household articles, free healthcare at GerLib Clinic and an unconditional cash transfer to help setting up their economic life after surviving Ebola.

The project features continued post-rehabilitation support for survivors from November 2014 to date. Close personal supervision helped about 70 survivors to restore themselves economically, an important contribution to include Ebola survivors, which are reported to be stigmatized, in the community.

ELWA II, GerLib clinic and other health centres in the vicinity received sets disposable PPE together with information regarding **effective prevention and hygiene measures to prevent and control infections**.

Kits of PPE were delivered to more than 400 health centres in the countries of wide-spread transmission Liberia, Sierra Leone and Guinea. As with other highly infectious diseases it is important to **prevent cross-border transmission**.

Results

The new ELWA-II ETU consisting of the old buildings and the two isolation tents were officially inaugurated on 29 October 2014. The complete area was secured by a wall (See drawing below).

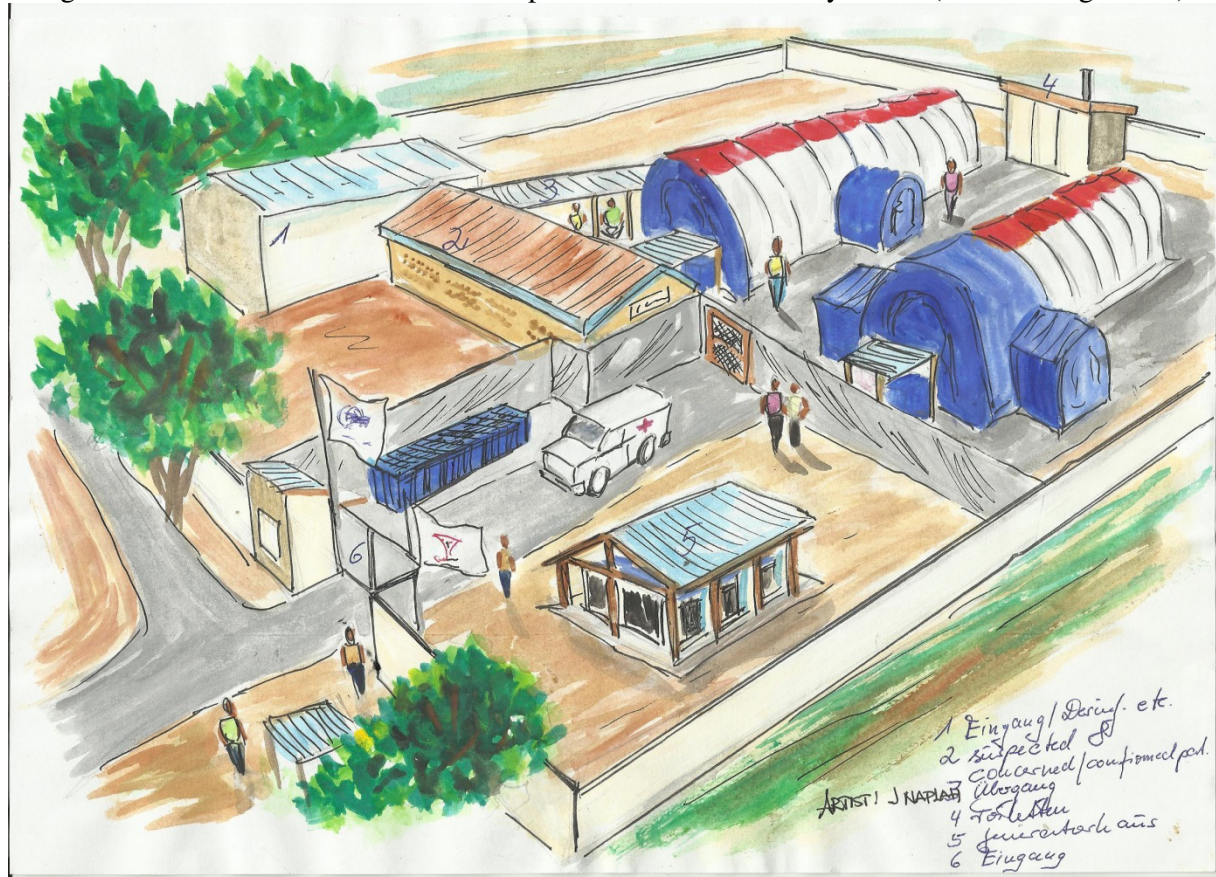


Figure 1 (1) Entrance, Disinfection (2) suspected cases (3) confirmed cases (4) toilets (5) generator (6) separate entrance

There are no accurate figures regarding number of patients in the old unit up to end of October. From November 2014 – April 2015 252 Patients had been admitted, tested, isolated and treated in the expanded and improved ETU. Out of these 128 patients were confirmed Ebola cases. 89 patients died in the ETU in spite of all efforts taken. The last patient of ELWA-II ETU in which Ebola has been confirmed was discharged February 2015. The ELWA-II ETU was hold available until May 2015 so that it could have been reactivated immediately when the number of case would have increased again.

Additional benefits

By setting up the additional air-conditioned isolation tents the quality of healthcare was significantly increased, for the medical staff to facilitate their difficult task as well as for the patients to relieve their fate. Thus, the programme **enhanced the quality of care to the patients**. By end of December 2014 the numbers of newly infected persons decreased in Liberia. Several NGOs began to close their ETUs. Because of the high quality of the ELWA-II ETU and the excellent team work of ELWA II staff, the Liberian government decided that the action medeor ETU should be hold available until May 2015.

End of May the tents have been deconstructed. In contrast to other temporary established ETU the **innovative health unit** can be used in a different setting. It was decided to use them as Maternity Wards and OP theatre in Sasstown, Grand Kru County, Liberia. This is an important step to link crisis intervention with **sustainable development of the health system** in Grand Kru, addressing especially the vulnerable groups of pregnant women, mothers and new-borns.

All other additional equipment (e.g. incinerators) were not transported back but are used at GerLib Clinic or other health centres.

Outlook

Action medeor is currently assessing future potential project to **improve the quality of medicines and medical equipment as well as the health system** in different parts of the country.

Conclusions

According to our mission action medeor works **with and through its regional partners** in close co-operation with and **complementing and supporting national** governmental structures. The programme **SETTING UP AND APPROPRIATE UTILIZATION OF AN EBOLA TREATMENT UNIT** was designed to not only give emergency aid but to contribute to a **sustainable contribution to the health system**.

Action medeor was part of the European response to the Ebola crisis contribution to epidemic surveillance, treatment and medical supplies, deployment of medical staff and training of health workers.

- a) The initiative of **SETTING UP AND APPROPRIATE UTILIZATION OF AN EBOLA TREATMENT UNIT** in the capital of Liberia, Monrovia contributes to the objective and several thematic priorities to **support effective response to communicable disease** and, **support capacity building against health threats, patient safety and quality of healthcare, promotion of effective prevention and hygiene measures to prevent and control infections**.
- b) As with other highly infectious diseases it is important to prevent cross-border transmission. The initiative was developed in Liberia and Germany and **prevented the spread of disease also to EU member states**.
- c) All methods and measures taken were done through our Liberian partners, the GerLib Clinic and ELWA-II Hospital in close consultation with the Liberian Ministry of Health. With this action medeor assures that **all social technical, cultural and political considerations** have been taken into account.