

4. Cholera camp

The surface area required for 320 beds is approximately 11.000 m² -110 x 100m- (see the MSF document "Guideline for cholera control").

The cholera camp should consist of special wards for the isolation and treatment of patients separate to those of the dispensary or hospital.

The enclosure around the cholera camp should be solid to minimize any unplanned contact with the exterior.

The cholera camp should be separated into four sections to regulate and limit the flow of patients and medical personnel:

section 1: a centre for triage and observation where all those suspected of having cholera are examined,

section 2: a hospitalization/isolation area including a disinfecting zone,

section 3: a convalescence area, which should be located outside of the isolation area,

section 4: a so-called neutral zone, where the kitchen, office stocks and changing room etc. are located,

No material in the cholera camp should be taken from the cholera camp due to the high risk of contamination. The cholera camp is an autonomous unit, which needs to be supplied not only with the necessary medical material but also in terms of food and sleeping requirements.

The cholera camp operates 24 hours a day independently of the other health facilities and therefore the necessary staff has to be recruited (day/night/rest). See the book "Management of cholera camps".

- **Global estimation of material required**

This list is not exhaustive as it does not enumerate the requirements specific to a cholera camp such as basins, protective gear, boots, etc..

-	For temporary shelters		
.		82 m ² tents	22
.		27 m ² dispensary tents	1
.		semi-rigid building for 60 m ² kitchen	1
.		semi-rigid building for 36 m ² store	
for firewood			1
.		fence	710 m'
.		15 m ³ bladders	2
.		latrines	26
.		shower (units)	16
.		degreasing pits	2
.		incinerator	1
.	furniture: tables, chairs, shelving units, cupboards, cholera beds, beds, water containers, 3.3 kWh lighting kit.		
-	For semi-permanent shelters		
.		84 m ² classic or modular constructions	23
.		36 m ² classic or modular construction	1
.	furniture: as above.		

- **Enclosure**

See "Therapeutic feeding centre".

Access to the isolation area should only be possible via the central foot bath. The enclosure should be constructed with solid and durable materials (plastic sheeting or iron sheets). The total parameter of the enclosure is 710 m', the section surrounding the isolation area should be double-fenced to create a buffer where the effluence of the camp can be treated.

- **Entrance - observation- triage**

The consultation and observation areas should be located in the same building or tent, which should be divided into two sections. As the patients usually only have a short wait, a simple shelter will suffice for the waiting room. Access to water, the latrines, and showers should be provided for.

Estimation of material required:

- For temporary shelters
- . For the observation and consultation area
- . 82 m² tent,
- . furniture: table, chairs, shelving unit, water container with tap, receptacle,
- beds.
- For semi-permanent shelters
- . 84 m² classic or modular construction,
- . 84 m² classical or modular construction for waiting room,
- . furniture: as above.

- **Isolation -hospitalization areas**

Patients must enter this area via the foot bath then the disinfecting zone, which consists of the spraying area, showers, and a washing area for the clothes and uniforms. The patients should be placed in rooms containing a maximum of 15 to 20 beds.

Estimation of material required:

- For temporary shelters
- . 82 m² tent 16
- . furniture: cholera beds, water containers with taps.
- For semi-permanent shelters
- . 84 m² classic or modular constructions 16
- . furniture: as above.

- **Convalescence**

Patients, who no longer vomit and require less medical supervision, should be placed in this area. Patients can be installed on mats at this stage. The possibility to extend should be provided for.

Estimation of material required:

- For temporary shelters
- . 82 m² buildings 3
- . furniture: mats, water containers with taps.
- For semi-permanent shelters
- . 84 m² classic or modular constructions 3
- . furniture: as above.

- **Store - office**

Both the store and office should be located in the neutral zone. The building or tent should be divided into two sections. The store room, where primarily medical material is stored, usually requires more space than the office.

Estimation of material required:

- For temporary shelter
- . 82 m² tent,
- . furniture: table, chair, shelving units, cupboard.
- For semi-permanent shelter
- . 84 m² classic or modular construction,
- . furniture: as above.

- **Kitchen**

The kitchen should also be located in the neutral zone and for safety reasons not in a tent. Two to three meals a day will have to be prepared mostly for the staff, who should not leave the camp whilst on duty. Food should be stored on a daily basis in the kitchen (see "Supplementary feeding centre").

Estimation of material required:

- For semi-permanent shelter
- . 60 m² building,
- . furniture: tables, chairs, shelving units, cupboard or cabinet, cooking pots, kitchen utensils.

- **Firewood Store**

See "Supplementary feeding centre".

Estimation of material required:

- 36 m² semi-permanent structure.

- **Changing room - rest area**

This area is reserved for staff and one room should suffice.

Estimation of material required:

- For temporary shelter
- . 82 m² tent,
- . furniture: table, chairs, cupboards, beds.
- For semi-permanent shelter
- . 84 m² classic or modular construction,
- . furniture: as above.

- **Morgue**

The morgue should be located apart from the tents or other buildings. The door should open outward.

Estimation of material required:

- For temporary shelter
- . 27 m² dispensary tent.
- For semi-permanent shelter
- . 36 m² classic or modular construction.

4.1. Water

The quantity required to cover all the needs of the camp (washing, drinking water, kitchen etc.) is at least 50 litres per patient/day, in total 50 l x 320 = 16 m³.

Therefore at least one 30 m³ water bladder, which should be easily accessible for the water trucks, should be installed in the neutral zone. In our example, two flexible 15 m³ bladders are shown, a 30 m³ semi-rigid one is also suitable. All water used in the camp should be treated systematically.

The drinking water containers with taps for the patients should be placed close to the observation/hospital and convalescence tents or buildings. At the exit of each tent or building, a container of chlorinated water and a bar of soap should be placed. Both the staff and the patients must wash their hands with chlorinated water and soap when exiting the latrines, treatment areas and the cholera camp. A sufficient number

of water points should be installed to ensure that these hygiene measures can be adhered to.

4.2. Sanitation

- **Showers**

Each shower requires approximately 20 litres of water per person/day. This quantity has been calculated into the total of 50 litres per patient/day (see "*Therapeutic nutritional centre*").

- **Wash Basins**

Three wash basins in the isolation area and one in the convalescence zone should be provided to wash contaminated clothes.

- **Latrines**

The number of latrines required is calculated on one latrine per 25 patients (including the caretakers). In the neutral zone 2 latrines should be installed for staff. The latrines should be clearly identified as male or female (see the MSF document "*Public health engineering in emergency situation*").

- **Garbage Pit**

See "*Therapeutic nutritional centre*".

- **Incinerator**

The medical waste as well as the used mats or soiled plastic sheeting should be burnt in the incinerator (see "*Therapeutic nutritional centre*").

- **Foot bath**

Feet, shoes, and boots need to be systematically disinfected in the compulsory foot bath installed in the centre of the cholera camp. The foot bath should be connected to a drainage system to facilitate its emptying and regular cleaning (see *fig 26*).

- **Garbage Pit**

See "*Therapeutic nutritional centre*".

- **Incinerator**

The medical waste as well as the used mats or soiled plastic sheeting should be burnt in the incinerator (see "*Therapeutic nutritional centre*").

4.3. Drainage

- **Rain water**

Rain water should be contained in drainage channels surrounding each structure and drained into an infiltration system (pit, trench, or absorbent platform, which is a very large shallow trench). A drainage belt should be dug around the entire camp to avoid any contaminate from the outflow. This will require extensive excavation especially if the soil is not very absorbent during the rainy seasons. If the infiltration pits are not efficient enough (speed or saturation) trenches will have to be dug or lengthy absorbent platforms. The drains should be enclosed to prevent any access.

- **Waste water**

Liquid waste produced by the washing areas and showers, which has been treated but is still potentially dangerous, should be drained into a degreasing pit then into an infiltration system.