Ministry of Health

World Health Organization

REPORT ON TRAINING OF TRAINERS ON WASH IN HEALTH CARE FACILITIES -WASH PACKAGE&WASHFIT

Training sessions

WHO WCO SUPPORT

FACILITATORS- WASH AND IPC SECTORS

STAFFs and WHO HQ

FINANCIAL – 66,000 USD

TRAININGS

Region	Counties	Status
Southeast Region A (SERA)	**Maryland,Grand Kru, River Gee, Grand Gedeh**	26 trained
Southeast Region B (SERA)	**Sinoe, River cess, Nimba and Bong**	**24 Trained**
Northwest Region (NWR)	Lofa, Gbarpolu, Grand Cape Mount, Bomi	33 Trained
Central Region (CR)	Grandbassa, Margibi, Montserrrado	11 Trained
TOTAL		94

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A. Acronyms

CHDDs	**Community Health Department Directors**
CHO	**County Health Officer**
CHT	**County Health Team**
DEOH	**Division of Environmental and Occupational Health**
ETUs	**Ebola Treatment Units**
EVD	**Ebola Virus Disease**
HCFs	**Health Care Facilities**
WASHFIT **WASH Safety plans**	**Water, Sanitation in health facilities improved tool.** **Refers to WASHFIT.**
ILO	**International Labour Organization**
IPC	**Infection Prevention and Control**
MoH	**Ministry of Health**
OHS	**Occupational Health and Safety**
SOPs	**Standard Operating Procedures**
WASH	**Water, Sanitation and Hygiene**
WHO	**World Health Organization**

B. Acknowledgement

The WASHFIT and WASH Package training of Trainers was a collaborative activity, with varied support from the Ministry of Health, WHO, UNICEF and WHO HQ

We wish to thank MoH deputy Minister for health Dr. Francis Kateh for signing validation of the WASH Package document, WHO Liberia Country office under the leadership of Dr Alex GASASIRA for the support and resources he has allowed the WASH sector to use to prepare and conduct this trainings. Dr Nuha Mahmoud the Technical Coordinator WHO Liberia for her vision, guidance, encouragement and support; WHO headquarters in Geneva sector support under Margaret Montgomery for the review, technical guidance and for initiating the possibility of training for training modules. Thanks to Ms Arabella Hayter for preparing the WASHFIT guidelines, protocols and supporting documents and for facilitating the training in Gbarnga Bong county.

In Liberia WCO Environmental/WASH Coordinator Dr Francis Ndivo thanks for the support and introduction, follow up, guidance and ensuring that this training was actualized. WASH team Liberia WCO members Teklemariam Mesele, Stephen Njoroge and Mastone Zaunda for their contribution in preparing the training modules. The co-facilitator Emilia Raila, WASH Specialist UNICEF, has worked tirelessly from initiation of this package, preparation of training modules, logistics and facilitating the training workshop. The contribution of UNICEF Liberia office, WASH Lead Patrick Sijenyi, Michael Forson, Philip Pawa. Special thanks for the contribution of Sanjay Singh, WASH Specialist UNICEF for the contribution in Behavioural Change and Communication, Training Skills and Hygiene Promotion.

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Department of Environmental and Occupational Health DEOH – Ministry of Health under Dehwehn Omarley Yeabah for the partnership and coordination; DEOH members of staff Wataku Kotimai -WASH Coordinator, Trokon Yeabah -OHS Coordinator, Jeff Esau- Danhlo OHS Supervisor, Pinky White -HCWM.

C. INTRODUCTION

Provision of water and sanitation plays an essential role in protecting human health during all disease outbreaks. Water sanitation and hygiene (WASH) interventions constitute a pillar in Ebola Virus Diseases (EVD) and all other infectious diseases prevention and control. Good and consistently applied water, sanitation and hygiene (WASH) practices, both in health-care settings and the community will further help prevent human-to-human transmission of EVD and many other infectious diseases

Further to this, access to WASH services is essential for the general well-being of the community as most Environmental health problems are a result of poor access to safe drinking water and sanitation services. The war in Liberia to strengthen health services delivery will not be won unless the delivery of safe water, sanitation services and hygiene practices in Health care facilities and to the communities is realized. The EVD crisis's has further worsened the situation.

The problems of the WASH situation in the Health care facilities can be reduced significantly by capacity strengthening of the local healthcare facility staffs. The WASH facilities in the health care facilities need attention especially in the recovery and restoration of resilient health services phase. If the water supply access, hygiene practices and medical & other waste management/disposal issues of Health care facilities are not managed well, the negative impact on the health and safety of the healthcare staff will be much greater than normal situations.

D. Background

WHO has been conducting monitoring visits in HCFs to ensure minimum standards are met to meet basic needs and services.

In early 2015 an IPC/WASH assessment in healthcare facilities found out that only 26% of the HCF had minimum water quantity supplied to the facility and that only 51% had any form of bulk water storage. Between January and October 2015, WASH conducted assessment of WASH activities in 63 HCFs in 8 counties. In River Gee, 90% of the HCF had no maintenance scheme in place to keep latrines clean. The preliminary results indicate that there is a huge challenge in healthcare waste management especially segregation of waste, handling, treatment and final disposal; challenges in water treatment and quality testing, lack of ash pits and placenta pits, lack of protective fencing in waste management areas, poor environmental management and energy use.

WASHFIT Training of Trainers has been designed to support healthcare facilities management identify the risks posed by inadequate and unsafe water supply, poor sanitation and lack of hygiene. To take steps in planning to reduce the risks and gradual improvement in service delivery.

One aspect of WASHFIT is working in facilities to develop risk-based plans to improve WASH services and provide safe, people-centered care. Achieving and maintaining adequate WASH in health care facilities is a necessary step in achieving quality universal health coverage. WASH safety plans are designed to improve these services where they are needed most.

Ensuring that a healthcare facility has adequate water supply, sufficient sanitation, and is clean and hygienic should be a priority of any facility and of all those managing it. Simple measures such as improving cleanliness of toilets or installing low-cost handwashing stations and water treatment have been shown to improve quality of care, increase uptake of services, improve staff morale and also encourage community members to improve WASH practices at home.

WASH Package & WASHFIT contains minimum requirements for Water, Sanitation and Hygiene (WASH) in healthcare facilities as part of the program for Early Recovery and Resilience Building from Ebola Virus Disease (EVD) Outbreak in Liberia. WASH services in healthcare

facilities include availability of safe and adequate water, presence of hand washing stations with running water and soap or alcohol-based hand rub, availability of toilets, wastewater collection system and health care waste management (HCWM) facilities, and functional storm water drainage system.

WASH Package &WASHFIT forms the basis for this ToT Training to support IPC/WASH committees at healthcare facility to prioritize WASH needs based on assessments and risk analysis of their facilities.

Two WASH Package - WASHFIT ToT Trainings were conducted on 10th to 13th November and the second on 24th to 28th November 2015. The first training was in Gbarnga, Bong County and the second was in Kakata, Margibi County. The two trainings were part of the four targeted regional trainings that aims to train 92 master ToT trainers in WASH Package and Wash Safety Plans for Liberia.

E. Objectives

Overall Objective: The overall objective is to improve the quality of healthcare services delivery and ensure healthcare workers safety. To reinforce the infection prevention and control (IPC) measures and rebuild a resilient health system through establishment, promotion and monitoring of water, sanitation and hygiene and health care waste management standards in health care facilities ant at the community level.

Specific Objective 1 : To increase the proportion of healthcare facilities with established and functioning WASH Safety Plans ToT Trainers and committees by end of the government investment plan for building a resilient healthcare system in Liberia (2015 -2021).

Specific Objective 2: To strengthen technical capacity of national staffs on WASH Safety Planning to improve IPC measures while ensuring the safety of health workers and users.

F. WASH IN HEALTH CARE FACILITIES TOT TRAINING IN 15 COUNTIES:

WASH PACKAGE & SAFETY PLANS (WASHFIT - WATER AND SANITATION IN HEALTH CARE FACILITIES IMPROVED TOOL)

Ministry of Health with support from WHO, UNICEF and collaboration with WASH partners implemented a training program for WASH PACKAGE &WASH Safety Plans (WASHFIT) for healthcare facilities in Liberia. The goal is to improve the quality of service delivery and ensure health and safety of healthcare workers as part of the program for Early Recovery and Resilience building from Ebola Virus Disease (EVD) and other infectious diseases outbreak in the country. The specific objective is to increase the proportion of healthcare facilities with established and functioning WASH Safety Plans (WASHFIT) by end of the government investment plan for building a resilient health in Liberia (2015 -2021).

Program strategies for improving the quality of service delivery include training of County Health Teams (County Training of Trainers-ToTs); healthcare workers including service providers and supporting staff patients and visitors, improving WASH facilities /infrastructure and supply of WASH supplies to support behavioural change.

G. Target of the Training

The trainings aim to produce a WASH Safety committee comprised of the following key persons CMD, CHDD, CHSA, WASH Coordinator, IPC coordinator and EHT. This committee forms the core committee to spearhead training at county, district and HCF level (Please See Annex 1, Participants Register).

Participants distribution for the two WASH safety Plans Trainings in Gbarnga and Kakata listed in the table below

County	Number of participants
Bong	6
Sinoe	6
Nimba	6
Rivercess	6
Montserrado	4
Margibi	3
Grand Bassa	4
TOTAL	**35**

Program Implementation

The training in WASHFIT is intended for County Health Teams (County Training of Trainers-ToTs), Environmental Health Technicians EHTs, and other healthcare workers in healthcare facilities in Liberia.

The implementation started with the validation of WASH Safety Plans Training modules in Barclayville, Grand Kru County. The validation was supervised by Ministry of health and facilitated by WHO and UNICEF. EHTs and other WASH related drawn from four counties participated in the validation.

It was envisaged that County ToTs with support from MOH and WASH partners will support healthcare facilities staff especially IPC-WASH committee members including Environmental Health Technicians and officers to conduct their duties safely while observing infection prevention and control measures, WASH minimum standards and WASH/EH and Occupational Health and Safety protocols.

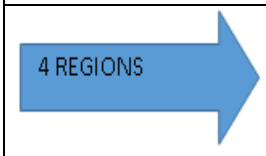
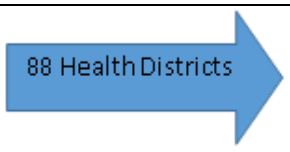
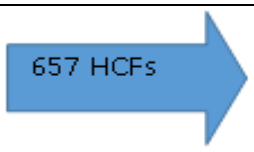
Training of County ToTs preceded district and facility-level training to ensure that each county attain the required number of trainers to facilitate training, supportive supervision and monitoring of WASHFIT interventions at the facility level. To facilitate the training, 15 counties were subdivided into four (4) regions. WASHFIT ToT Training for two regions covering seven counties was conducted in November 2105, 35 ToT trainers completed the training. A database of certified County ToTs was created and made available to all WASH partners to ensure their involvement in district and healthcare facility level training.

Please see table below that outlines the training coverage areas and trainees trained as per the region.

Region	Counties	Status
Southeast Region A (SERA)	Maryland, Grand Kru, River Gee and Grand Gedeh	26 Trained
Southeast Region B (SERB)	Sinoe, River Cess, Nimba and Bong	24 Trained
Northwest Region (NWR)	Lofa, Gbarpolu, Grand Cape Mount and Bomi	33 Trained
Central Region (CR)	Grand Bassa, Margibi, and Montserrado	11 Trained
TOTAL		**94**

After the regional trainings plans were developed on cascading trainings to the districts and facility level.

Training Cascading Plans:

Regional Training	County Training	District Training	HCF Training
County ToTs completed	District ToTs	Healthcare Facility WASH/IPC committees	Frontline WASH Staff All Healthcare Workers
6 ToTs for 15 Counties 10 ToTs for Montserado Completed	88 Health districts	Facility IPC/WASH Committee 6 members/ Hospital 6 members / Health centre 3 members / clinic - Planned	EHT /WASH Staff All Healthcare workers Patients Visitors
Total 94 ToTs concluded			
			

H. Regional, District and Facility level training schedule

Activity Details	Dates	Venue
Regional Training 1 (24 Trainees)	11th – 14th Nov 2015	Gbarnga - Bong
Regional Training 2 (11 Trainees)	24th – 28th Nov 2015	Kakata - Margibi

Regional Training 3 (33 Trainees)	25th -29th Jan 2016	Tubmanburg - Bomi
Regional Training 4 (26 Trainees)	8th – 12th Feb 2016	Zwedru – Grand Gedeh
County level initial training of IPC-WASH committees for each health district	TBC	County Headquarters
District level initial training of IPC-WASH committees for each healthcare facility	TBC	District Centres
Facility level initial and refresher training of healthcare workers.	TBC	Healthcare Facility
Supportive supervision, monitoring, evaluation, sharing lessons learned, conducting operational research in all levels on continuous basis.		

Rollout Plan for district and facility level training.

After completion of the County TOT training the proposed rollout plan for district and health facility level training will start with the training of IPC-WASH committees in healthcare facilities. Six IPC-WASH committee members will be trained per facility for Hospitals and Health Centres and 3 committee members for clinics. Similar training methodology, materials and training schedule will be used. The outcome of the training will be healthcare facility based ToTs who are IPC-WASH committee members. The IPC/WASH committee will develop healthcare facility based plans (WASHFIT) to allow the training of all healthcare workers starting with non-clinical staff or frontline WASH staff and continue to all staff members in a healthcare facility.

I. Coordination and Facilitation

Coordination of training and implementation at central level is under the Ministry of Health whilst at the county level by the County Health Teams.

Training of IPC-WASH committees will be facilitated by County Health Teams (county ToTs) with support from MOH, WHO, UNICEF and NGO partners (for management/institution section). Once trained, IPC-WASH committee with support from county ToTs will train healthcare workers at the facility level.

Outputs/outcomes at county level

The following are expected at the end the training of ToTs:

1. A database of resource persons / trainers/certified ToTs in each of the 15 Counties (94 ToTs for the whole country in total).
2. Plan of activities at each county level (training, supportive supervision, and monitoring) of WASH interventions in healthcare facilities based on WASHFIT Plans at the county.
3. The monitoring and supportive supervision plan will include exchange visits (south to south collaboration) to learn achievements and lessons learned in other counties. A maximum of 2 exchange visits are expected in 12 months period. Each county will submit a signed plan to MOH.

4. Training report well documented by MOH/DEOH and results of pre and post assessment reflected in the report.

J. Monitoring and Quality Control

Implementation of facility-based training programs will be supervised by County Health Teams (County ToTs) with support from MOH. At least 2 County ToTs should be available during facility-based training to ensure the quality of training and provide technical advice where necessary. MOH and WASH partners who will be implementing the training programs will attend the training based on their availability.

Healthcare Facility Training outcomes

The following are expected at the end the healthcare facility training of ToTs:

1. That each health care facility will have trained staff (frontline WASH staff)
2. Well established and functioning WASHFIT.
3. Behavioural change among staff, patients and visitors, and improved quality of service delivery.
4. Occupational health and safety of healthcare workers.
5. Training report well documented by MOH/DEOH and results of pre and post assessment reflected in the report.

Monitoring and Reporting improvement of WASH Services at Healthcare Facilities

A working group composed of MoH and NGO partners working in healthcare facilities will conduct planned and ad hoc monitoring and supervision of WASH interventions at county and health facility level. Facilities with improved WASH and Environmental Health conditions will be awarded certificates and tangible gifts to motivate staff. (Note: County ToTs and IPC-WASH committees will integrate the training, supportive supervision and monitoring activities into their regular activities).

Monthly reports of supportive supervision activities will be shared with MOH and a copy goes to WASH partners implementing training program. Process monitoring will be conducted to evaluate program delivery and indicate corrective measures to ensure quality WASH and Environmental Health interventions. Annual and Mid-term or periodic review of the program will be conducted to examine the progress and challenges towards adjusting activities of the intervention and reports will be shared with WASH partners in the country. Lessons learnt will be applied in future planning programmes to increase efficiency and effectiveness of the programme.

K. WHO MONETARY SUPPORT

WHO supported this training process through provision of facilitation staffs from both WASH and IPC sectors from WHO country office and from WHO HQ in Geneva.

66,000 American dollars was used to plan, organize and execute the training program. This was a cost sharing arrangements agreed with UNICEF to support MoH.

L. CONCLUSION

Provision of WASH is crucial for ensuring practical health service delivery and especially in medium and low income countries without water supply and improved sanitation facilities both in health care facilities and at community level the level of infectious disease will always higher and deaths associated with waterborne diseases will continue to be recorded let us embrace the phrase of ”prevention rather cure”

Dated April 17, 2016

Dr Francis NDIVO

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N. Annexes

Minimum WASH/Environmental Health Package for Different Levels of Healthcare Facilities.

WASH Services/Facilities	Primary Healthcare Facility	Secondary Healthcare Facility	Tertiary Healthcare Facility
Water Supply			
Minimum water supply per day	2688 liters~710 gallons	6057 liters ~ 1600 gallons	23470 liters ~ 6200 gallons
Water reservoir capacity	5376 liters ~ 1420 gallons	12114 liters ~ 3200 gallons	46940 liters ~ 12400 gallons
Regular water testing	YES	YES	YES
Preparation of water safety plan	YES	YES	YES
Sanitation			
Minimum toilets cubicles	2	8	16
Flush toilets connected to septic tank/sewer line	NO	YES	YES
Flush toilet (Biofil)	YES	NO	NO
Bathing facilities	NO	YES	YES
Minimum number of bathing facilities	-	1 in each inpatient ward	1 in each inpatient ward 2 in each operating theater
Hygiene			
Hand washing stations	YES	YES	YES
Staff training in WASH & Environmental Package	YES	YES	YES
Healthcare Waste Management			
Color-coded segregation according to "Three-Bin System"	YES	YES	YES
Healthcare waste transport equipment	YES (wheelbarrow)	YES (handcart for onsite transport)	YES (handcart for onsite transport; truck for off-site transport if required
Healthcare waste storage facility	YES (within Incineration facility)	YES (Refer Figure 10)	YES (Refer Figure 9)
De Montfort incinerator	YES	NO YES (as a back-up)	NO YES (as a back-up)
Pyrolytic incinerator	NO	YES	YES
Healthcare waste Autoclave	NO	YES (for pilot)	YES (for pilot)
Placenta pit	YES	YES	YES
Ash pit	YES	YES	YES
Infection Prevention and Control			
Laundry Facility	YES (bucket washing)	YES (Machine)	YES (Machine washing)
Mortuary	NO	YES	YES

O. How to implement the Software Component of WASH & EH Package in Healthcare Facility using the WASHFIT.

The scope of software component of WASH & EH package in healthcare facilities falls in the domain of WASH safety plans. Water supply, sanitation and hygiene are directly linked to health. The greatest impacts on public health are provided through actions that include improvements in sanitation and hygiene. Adequate WASH services are essential to minimize the risk of health care acquired infections but also for improving staff morale, patient dignity, uptake of services and can reduce the cost of healthcare.

Software component of WASH in health care facilities shall be done by building the capacity of healthcare workers to properly manage WASH facilities. Division of Environmental Health under MOH will conduct training, supportive supervision and monitoring of the implementation of interventions in collaboration with county and district health teams. The scope of software component of WASH & EH package in healthcare facilities include:

- Formulating IPC-WASH committee in each healthcare facility to plan and guide the implementation of software components of WASH interventions in a healthcare facility.
- Capacity building to ensure that there are enough resources and personnel to operate and maintain WASH facilities and enable healthcare staff to perform supportive supervision and deliver behavioural change messages. It covers the following parts:
  - Availability of equipment and supplies to support IPC-WASH interventions.
  - Practicing IPC activities including routine cleaning and disinfection of beds, walls and floors, showers and toilet facilities; disinfection of hands; proper management of linen; proper use of toilets and showers, etc.
  - Training of all healthcare workers and CHTs in the management of software components under part II above.
  - Behavioural change and communication on proper use of WASH facilities by healthcare workers, patients and the general community.
  - Supportive supervision of all healthcare workers by IPC-WASH committees.
- Routine maintenance of WASH facilities.
- Decommissioning HCW pits and latrines (if required) based on the guidelines issued by WHO.
- Enhancing occupational health and safety of healthcare workers including waste management staff.
- Develop, review, endorse and disseminate Essential Environmental Health Standards in healthcare facilities and HCWM documents (SOP, guidelines and training manuals).
- Enhancing sustainability and resilience by integrating WASH interventions into regular healthcare facility programs.
- Monitoring, Reporting and Operational Research by healthcare facilities, CHTs, MOH and implementing partners. MOH and CHTs will maintain a database.

Formulating IPC-WASH Committees

Each healthcare facility will formulate an Infection Prevention and Control-WASH committee. This committee will plan and lead the implementation of the software component of WASH interventions in a given healthcare facility. Also, the members will work as facility Trainer of

Trainers (ToTs) and will train all healthcare workers on IPC-WASH interventions including health care waste management. Below are the composition and job responsibilities of the members.

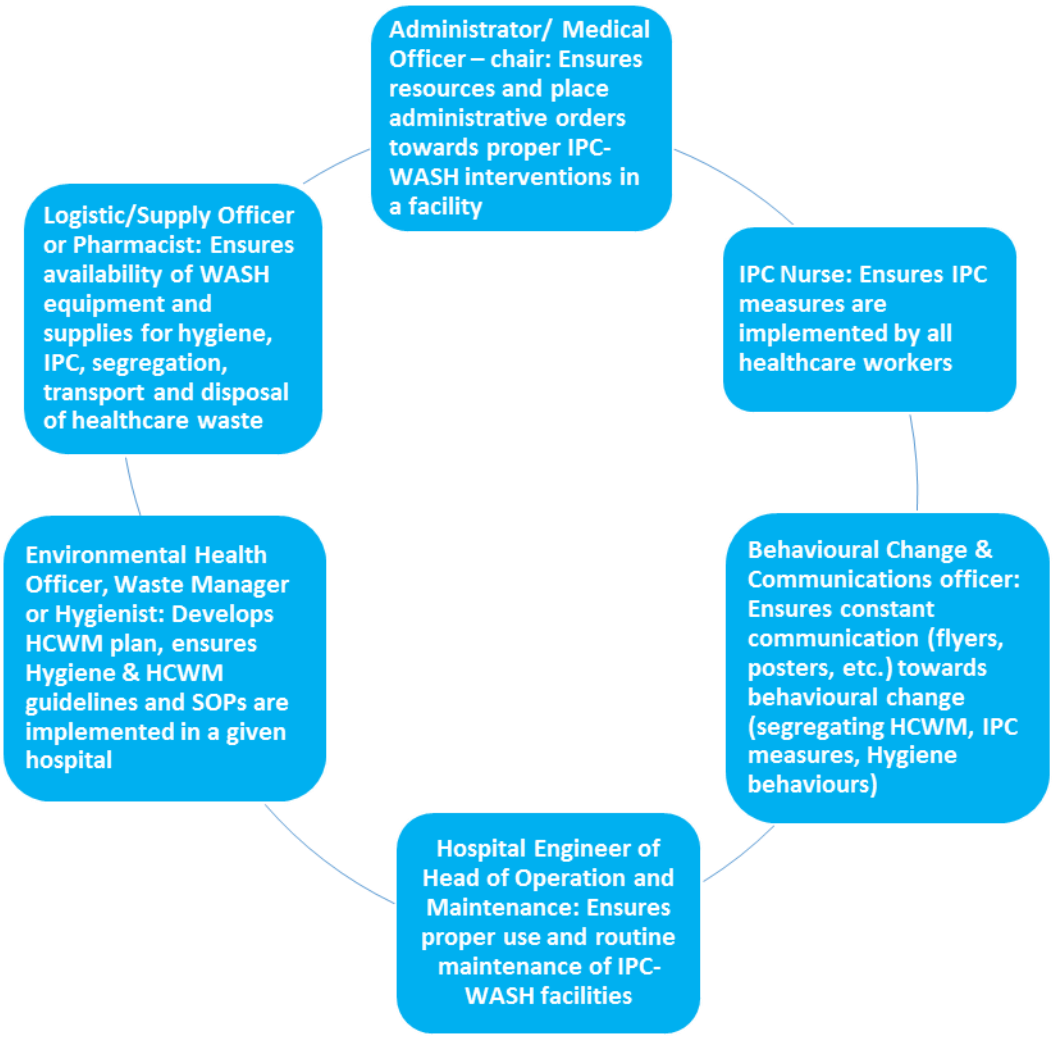


Figure 10: IPC-WASH Facility Committee.

Capacity Building

Ensures that there are adequate resources and personnel to operate and maintain WASH facilities and enable healthcare staff to perform supportive supervision and deliver behavioural change messages.

- **Availability of IPC-WASH equipment and supplies:** Equipment and tools are critical components of IPC-WASH interventions. Annex 2 indicates the minimum required tools, equipment and supplies.
- **Training approach and areas:** Each healthcare facility should provide training for All healthcare workers in the management of software component. MOH with technical support from partners will train 6 master trainers from each of 15 CHTs. These should include CHOs, CHSAs, CHDDs, EHTs coordinators, Resident Engineers and county clinical supervisors. MOH in collaboration with County master trainers will then train facility staff/healthcare workers responsible for environmental health interventions i.e hygienist, waste handlers, morticians etc. CHTs and MOH will backstop facility training for quality assurance and

provide any additional clarification and inputs. Training should be done based on the number of healthcare workers and other facility demands. The purpose will be to conduct on-job training without interfering with the normal facility activities. (*For example, if facility X has 120 healthcare workers, 6 training sessions will be done with 20 participants each*).

- **Training areas:** Areas of training for implementation of this package include:
    a. Infection Prevention and Control (IPC) including IPC on Ebola sharing facts and preparation of cholrine solutions.
    b. Occupational health and safety.
    c. Hand hygiene and hygiene promotion in healthcare settings.
    d. Water supply, chlorination and storage in a healthcare facility including maintenance of water points and distribution lines
    e. Hygiene Promotion in healthcare Settings
    f. Decontamination and environmental cleaning
    g. Healthcare Waste Management, operation and maintenance of Incinerators/autoclaves, HCWM planning for healthcare facilities
    h. Behavioral Change Communication (BCC) in IPC/WASH
    i. LOGISTICS/WASH Supplies Management
    j. WASH Safety Plans
    k. Propoer use, maintenance and decommission of sanitation facilities in healthcare settings (toilets, shower facilities)
    l. Environmental management and Energy

  Behavioural change and communication (BCC): WASH interventions will emphasize effective communication to allow behavioural change towards the proper use of WASH facilities by healthcare workers, patients and the general community. IEC materials including fliers and posters will be produced and posted at strategic locations such as inpatient wards, reception and waiting rooms for outpatients, waste collection points, etc. BCC staff will conduct routine awareness meetings with patients and healthcare workers, and deliver hygiene behaviour change messages. (*Note: IEC materials will be required at each waste collection point*).

- **Supportive supervision:** County health teams and IPC-WASH facility committees will be trained in supportive supervision. IPC-WASH committees will perform planned and ad-hoc supportive supervision and share reports with CHTs and MOH for follow up.

A. Routine Maintenance of WASH Facilities and Decommissioning HCW Pits and Latrines

Health facilities will ensure routine maintenance of WASH facilities. Decommissioning activities for filled HCW pits and latrines will be performed as recommended by WHO.

B. Enhance Occupational Health and Safety

MOH with support from partners will ensure occupational health and safety of healthcare workers including healthcare waste management staff through the availability of PPEs, disinfectants and by vaccination against waste-related diseases. The MoH occupational health guidelines for health care settings should be followed.

C. Documents to Streamline WASH Interventions

MOH with technical support from partners will develop, review, endorse and disseminate Essential Environmental Health Standards in healthcare facilities and HCWM documents (SOP, guidelines and training manuals).

D. Enhancing Sustainability and Resilience

IPC-WASH interventions will be integrated into regular healthcare facility programs.

E. Monitoring, Reporting and Operational Research

Monitoring, reporting and operational research will be conducted by healthcare facilities, county health teams, MOH and implementing partners.

I. WASH Safety Plans-WASHFIT

WASH (Water, Sanitation & Hygiene) Safety Plans have been developed to provide a holistic approach to protecting public health through the assessment and management of risks from insufficient or unsafe water supply, inadequate sanitation and poor hygiene practices. WASH Safety Plans are a powerful tool which quantifies the risks posed to the community and strengthens the decision making process in order to justify that interventions are targeted towards specific needs[1].

A WASH Safety Plan strives to help achieve these aims by providing the following stages of systematic assessment:

- Create a team which includes all relevant stakeholders such as the community, municipality and land owners etc.;
- Identify all the hazards and hazardous events that can affect the safety or security of a water supply from catchment through to the consumer's point of use, as well as any activities which enable the transmission of pathogens through faecal-oral routes
- Assess the risk presented by each hazard and hazardous event;
- Consider if controls or barriers are in place for each significant risk and if these are effective;
- Validate the effectiveness of controls and barriers;
- Demonstrate that the system is consistently safe;
- Regularly review the hazards, risks and controls;
- Keep accurate records for transparency and justification of outcomes

F. Benefits of WASH Safety Plans in HCFs

This field guide is a practical tool for improving water, sanitation and hygiene (WASH) services in health care facilities in order to ensure clean and safe facilities for patients and staff.

Adequate WASH services are essential to minimize the risk of health care acquired infections but also for improving staff morale, patient dignity, uptake of services and can reduce the cost of healthcare.

[1] *Sanderson, R. & McKenzie, N. (2011). "WaSH Safety Plans: A Risk-Based Approach to Protecting Public Health". In: Water Practice and Technology. 6 (2).*

Benefits of WASH safety Plan in a healthcare facility

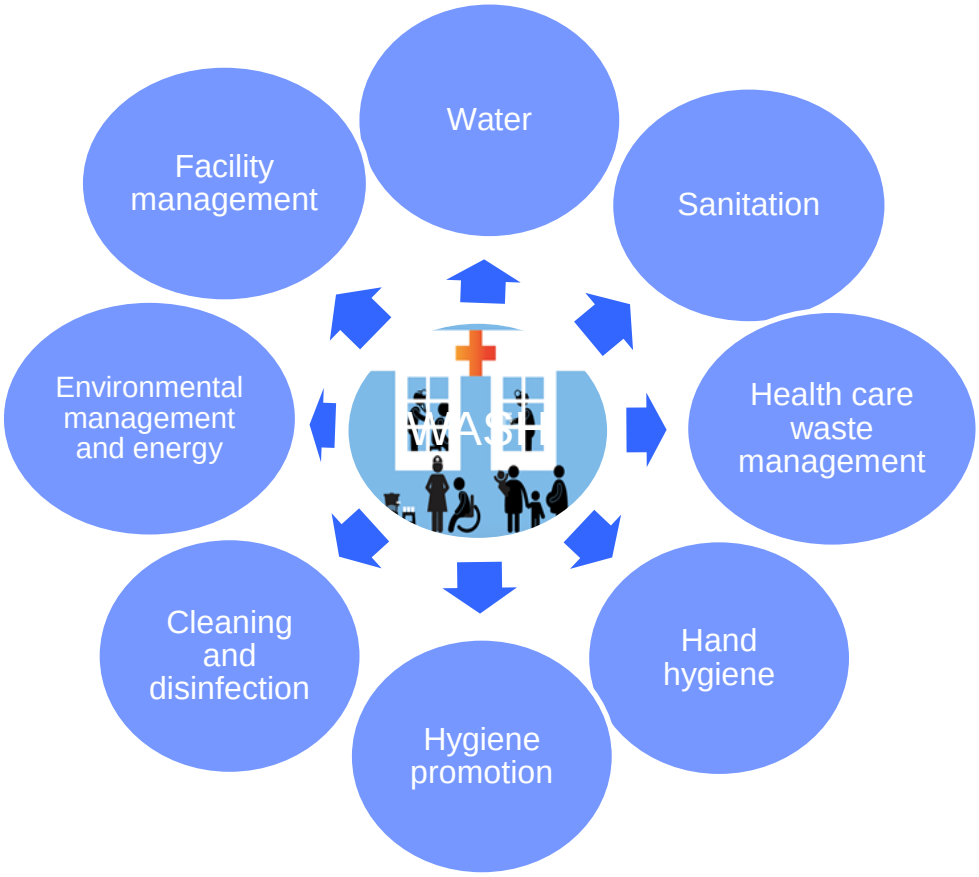
It is primarily designed to be used by a member of staff in a healthcare facility. It may also be useful for members of community health or water committees, local government authorities, nongovernmental organizations (NGO) or other community-based organizations that supports provision of healthcare. Finally, the guide can help inform district or regional health sector planners and donors seeking to understand the inputs required to improve and maintain WASH services.

The field guide explains what a safety plan (SP) is and provides a range of ready-to-use templates to develop your own WASH Safety Plan for a health facility, in order to help improve the WASH services and related safety aspects in a health care facility. Although this requires dedicated staff and resources, even small, incremental improvements can improve the cleanliness and safety of a facility, which can result in improved health outcomes.

G. The Eight domains of a Safety Plan

Domains 1-7 are adapted from the WHO 2008 Environmental Health Standards while Domain 8 is about facility management (see the table below)[2]. Each domain incudes sub-domains and indicators to work towards - these are considered the minimum standards for maintaining a safe, clean and hygienic environment, which enables staff to provide quality care to patients and a safe environment to work in. All of the standards ought to be achievable, but many will require incremental improvements before reaching the ultimate standards.

[2] Note: the eight domains do not include WHO's Environmental Standards on laundry, food preparation or building. These are important but often do not present the most serious risks, nor are they always relevant, in smaller (tertiary) facilities where this tool is first being applied. These may be included at later stages.



Main domains of WASH Safety Plan

The eight domains and their sub-domains

Domain	**Sub-domain**
1. Water	Treatment, supply, storage, (energy[3]), Water quality testing
2. Sanitation	Latrine maintenance, access, cleaning showers
3. Healthcare waste management	Waste sorting, waste disposal, waste transport equipment, waste storage, waste treatment, Final disposal
4. Cleaning and disinfection	Cleaning medical equipment, surfaces, toilets; protective measures
5. Hand hygiene	Infrastructure- hand washing stations, behavior
6. Hygiene promotion	IEC Materials, messages
7. Environmental management and energy	Vector control, general appearance

[3] Energy may be necessary for heating water and is mentioned in Domain 1. However, it is not generally considered a priority for immediate improvements in this guide as most tertiary facilities are only open in the daytime.

8. Facility management	Staffing, problem reporting, accounting/book keeping

The WASH SP approach emphasizes prevention. It helps you to identify, prioritize and manage risks that could threaten a facility, for example water shortages or improper management of healthcare waste, thereby protecting patients and staff before problems occur. A WASH SP also helps staff to take steps, to improve the facility over time using available resources.
The WASH SP should not be viewed as "something extra" that increases the burden on health care staff. The SP process will be most effective if it becomes an integral part of the on-going day-to-day operation, maintenance and management of the facility and is part of broader quality, and people-centred, care efforts. Provided everyone who works in or accesses services at the facility are committed to improving and maintaining environmental standards, it will be seen that a WASH SP is an effective supporting tool that makes it easier to achieve this goal.
The specific benefits of a WASH SP include:

- Improves understanding of all the aspects required to provide quality healthcare. In particular, one will better understand the risks that may affect patient and staff safety in a facility.
- Improves the day-to-day management and operation of a health care facility.
- Encourages a team-based approach by bringing together all those who share responsibility for providing services at the facility, including authorities such as the district health officers or community WASH groups.
- Engages community members, leading to improved hygiene awareness within the community and triggering positive changes in sanitary behaviour.
- Facilitates identification of improvement needs and opportunities for "quick wins" – potential improvements that can be achieved with your facility's own resources and efforts.

WASH SP provides a platform to develop an incremental improvement plan. Particularly when resources are limited, this plan supports in providing the evidence for the improvements required. With a clear and sound facility WASH SP in hand, government, NGOs and other financial supporters may be more inclined to consider supportive funding.

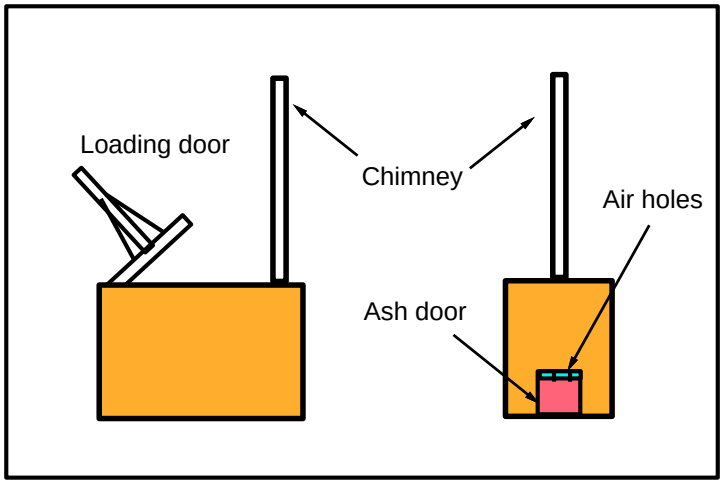


Figure 1: General view of the De Montfort incinerator (Mark III) Model

The steps to follow during the construction of an incinerator[4]:
Select the site and ensure that it is level for 3 m x 4 m. Lay out the base in firebricks as in the Figure 2. The diagram is based on approved standard firebricks (23 cm x 11.5 cm x 7.5 cm) and is approximately 1370 mm long by 686 mm wide. For any other size of firebrick, make up the nearest possible overall dimensions.

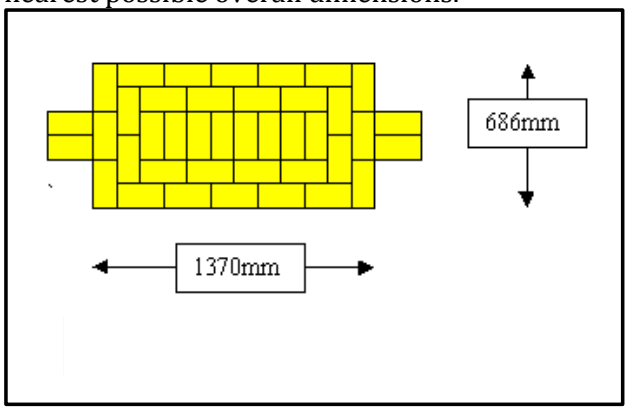


Figure 2: Laying down of the firebrick base
Build the firebrick inner core as in Figure 3. Again, with standard firebricks there are 14 layers of bricks including the base, giving an approximate height of 900 mm. With any other size of brick, build to at least this height. A steel tunnel to fit the ash door frame (230 mm approx.) is incorporated at either end as in diagram stage 2, and air pipes to give an air intake area of about 6200 mm2 are built in at the primary combustion chamber end. Air pipes of about 1000 mm2 are built in at the other end. Note that no mortar or fireclay is used in this construction, if the firebricks are regular in shape. Fire cement (3:1 mixture of high alumina cement and sand) may be used if the firebricks will not meet properly leaving air gaps.

[4]*Ministry of Health and Social Welfare Tanzania. (2006). Healthcare waste management national standard operating procedures. Health Education Unit, Dar es Salaam, Tanzania.*

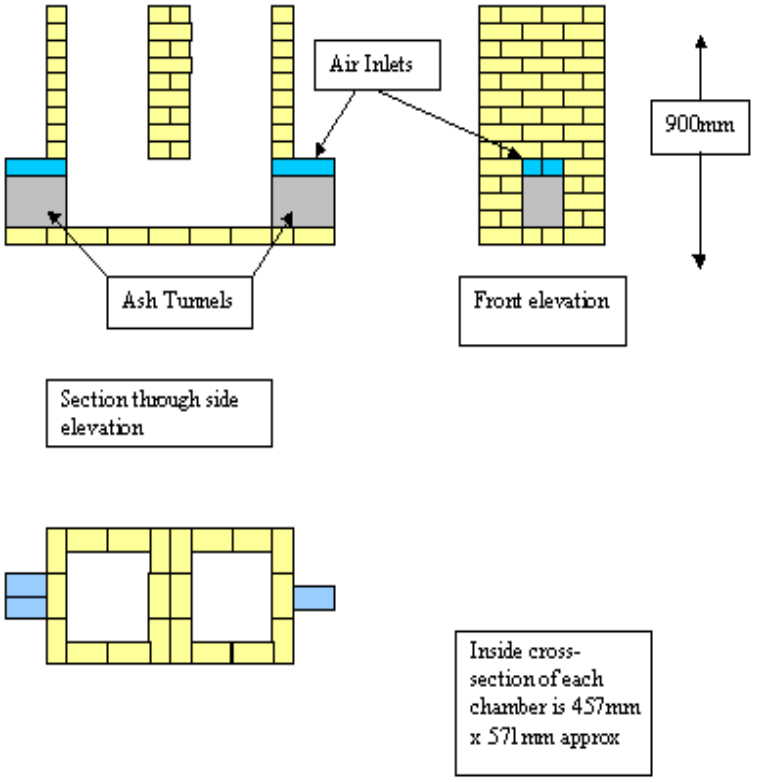
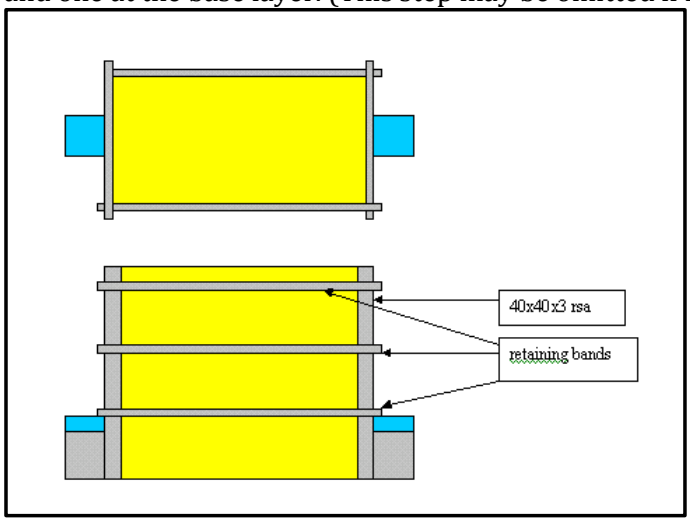


Figure 3: Construction of firebrick core

Fit 4 lengths of rolled steel angles (40 mm x 40 mm x 3 mm approx), one along each corner of the firebrick construction, and tightly strap them together to force the firebricks together as shown in Figure 4. The strap may be either steel cable tightened by a turnbuckle arrangement or steel bars with screwed ends. One strap shall be at the top layer of bricks, one at the centre, and one at the base layer. (This step may be omitted if fire cement has been used).



F*igure 4: Rolled steel angle bound to hold the firebricks together*

Lay out a single layer of common bricks around the whole construction, allowing space for mortar between the bricks, and about one brick thickness between the common bricks and the firebrick core. The outer dimensions of the incinerator can now be measured so that a start can be made on the steel top plate.

Build up the outer frame using ordinary building mortar, and taking care to keep to the measured dimensions. The final height of the outer case must match the inner core, but final

adjustment can be made with mortar and/or fire cement when the top plate is fitted as shown in Figure 5.

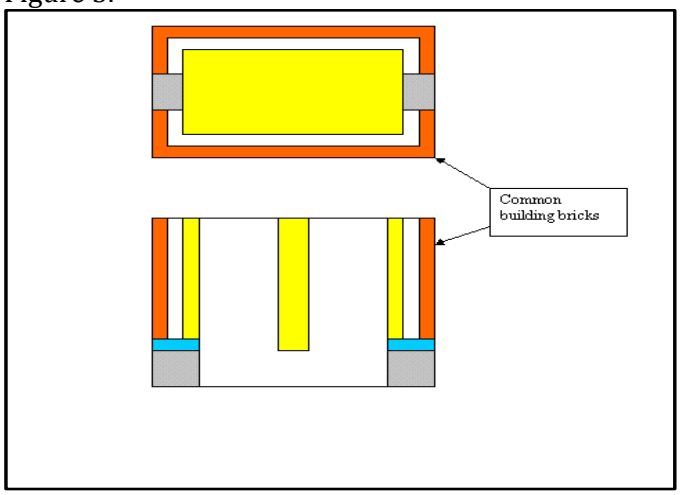


Figure 5: Building the outer insulation wall

Mark out the steel top sheet as in Figure 6. The length and the width shall each be 20 mm less than the corresponding length and width of the brick surround. The circular cutout for the chimney shall be slightly less than the chimney inner diameter. There is considerable latitude in the chimney diameter, which can be between 100 and 150 mm. It is thus necessary to choose the chimney before cutting the hole. Note that the loading door hole shall be the cross section of the combustion chamber, and that both the chimney hole and the smoke door hole shall be within the secondary chamber.

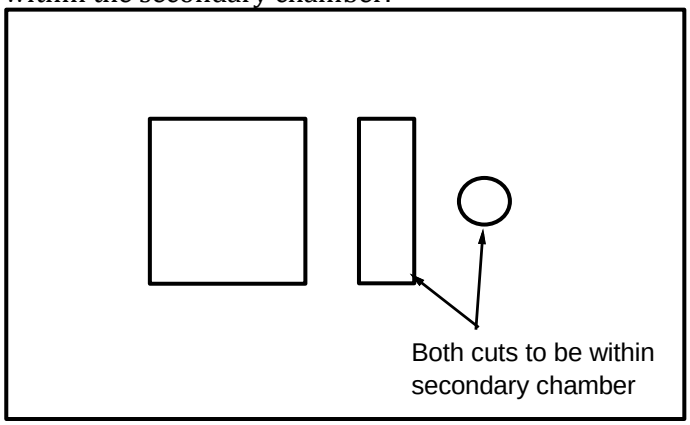


Figure 6: Cuts/openings on the top-plate for the De Montfort incinerator

Rolled steel angle (rsa) of approximate size 40 mm x 40 mm x 5 mm is now attached to the top plate as in Figure 7. These are intended to provide a frame for a sand bed around both doors and the chimney spigot. The inner frames are around the door apertures, and the outer frame is about 70 mm further out. Note that the outer frame of the loading door carries the brackets for the door pivot. The centre brace is about 80 mm shorter than the width of the top plate. Attachment may be by welding or steel rivets. Rolled steel angle stiffeners are then attached to the underside of the top plate as in Figure 7.

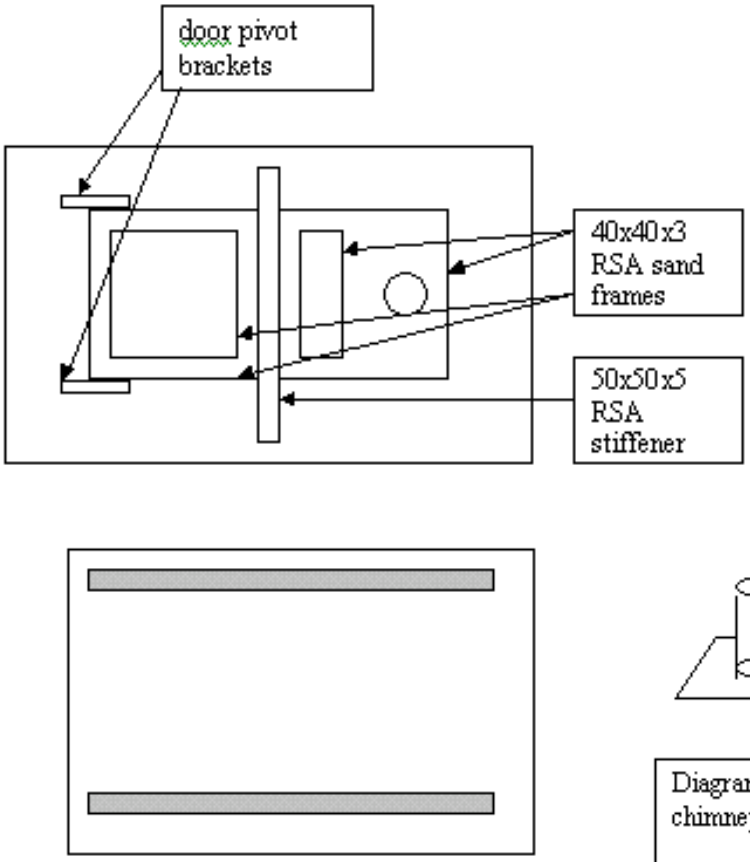


Figure 7: Details of the top plate

The loading door can be made at the same time (Figure 8). The frame is made from 40 mm x 40 mm x 5 mm rolled steel angle, and the size adjusted so that the lower edge of the angle fits into the centre of the sand bed of the frame. The hinge support brackets on both the door and the frame can be made so that the door rests parallel with the frame when suspended (by sand) about 10 mm above the base of the channel. The door is completed by welding or riveting on a top of 5 mm plate, and attaching a handle at the pivot end to make opening and closing easier. The handle shall be about 450 mm long.

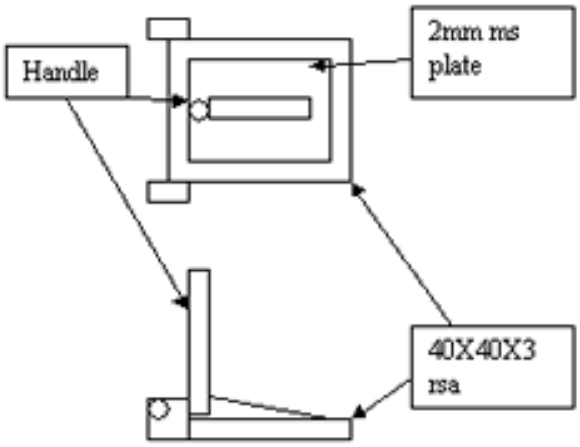


Figure 8: Details of the primary chamber door

The steel top is then fitted over the brick construction in the following manner.
A layer of fire cement is laid on to the firebrick inner core. The top plate is then placed on top

and maneuvered so that it sits firmly on the cement over the whole surface. Ordinary mortar or fire cement can then be pushed between the top plate and the outer bricks to make a seal.

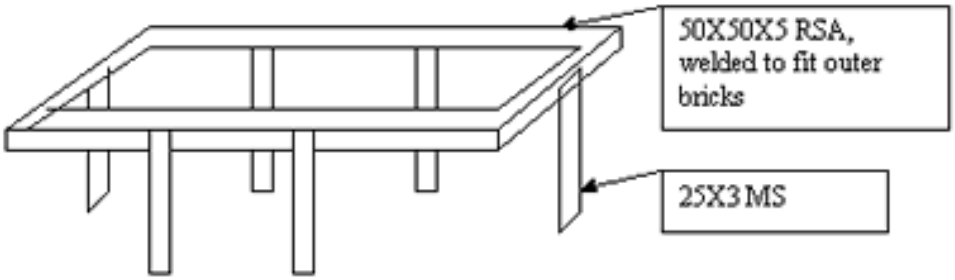


Figure 9: Details of the top plate retaining frame

The steel top is now secured to the brick walls by the steel frame shown in Figure 9. This is designed to pull the top plate down to the bricks, with sufficient mortar and/or fire clay to make sure that the plate fits evenly on both the inner and outer walls.

Ash doors can now be made from steel plate to hinge on to the ash tunnels. These doors shall be latched closed when they are not being used to remove ash.

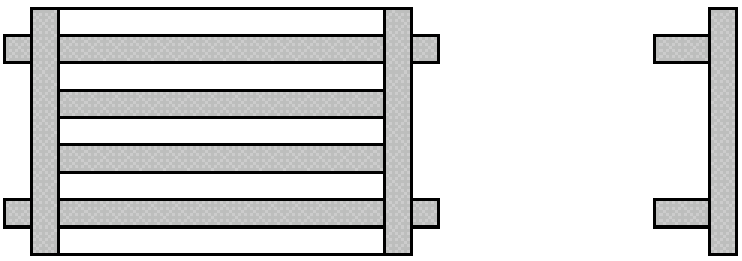
The 4-meter steel chimney can now be fitted over the spigot and secured by steel ties reaching either to the ground or to the sides of the outer case.

For the oil fired version, a fuel tank with a capacity of between 2 and 5 litres shall be fitted to the front of the incinerator at approximately 500 mm above the top of the incinerator. A 6 mm hole shall be drilled through both walls of the combustion chamber, and a steel tube inserted to project about 10 mm into the chamber to carry fuel from the tank via a simple on/off tap.

The secondary combustion chamber shall be loosely filled with wire mesh. This will serve to stabilize secondary combustion, and prevent any light solids reaching the chimney stack.

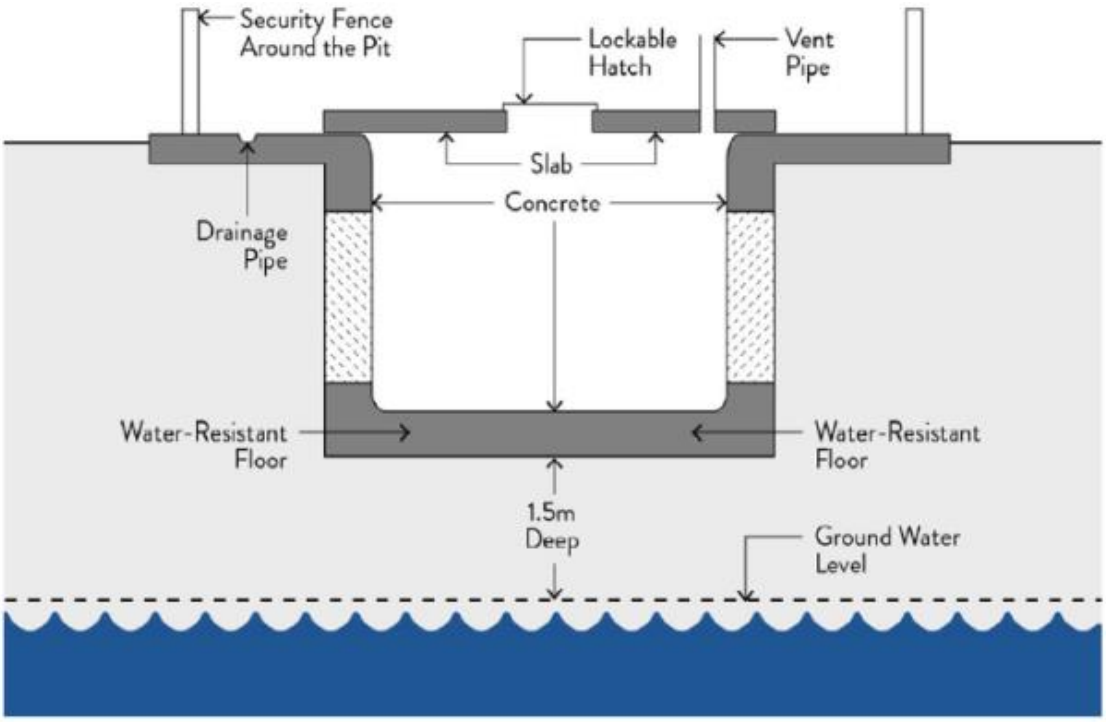
Fine dry sand can now be placed in the loading door frame and the sand seal for the smoke door and chimney.

A simple grate shall be made to fit below the primary combustion chamber. It is constructed using the following dimensions: 44 cm x 44 cm square and 15 cm high, with the gaps between the grids not less than 50 mm. The legs shall be 80 mm long. This shall be inserted from above through the fire door.



Details of the fire grate

Design Criteria and Specifications for Placenta Pit



Source: Ministry of Health. (2013). Infrastructure standards in Liberia pg 311.

Once a pit is filled, it must be closed, marked and location recorded.

The site of the pits must be as far away as possible from publicly accessible areas and from hygienically critically areas (e.g. water wells, kitchens).

Placenta pits must not be built close to buildings due to possible odors.

The bottom of the pit must be at least 5ft (1.5m) above the highest anticipated groundwater level.

The top 20in (50.8cm) or more of the pit must be reinforced with concrete to prevent surface water infiltration.

The base of the pit must be made from concrete to stabilize the structure and to slow the downward movement of liquid towards the water table.

Placenta pits can also be constructed from a standard concrete ring with a diameter of about 3ft (91.4cm).

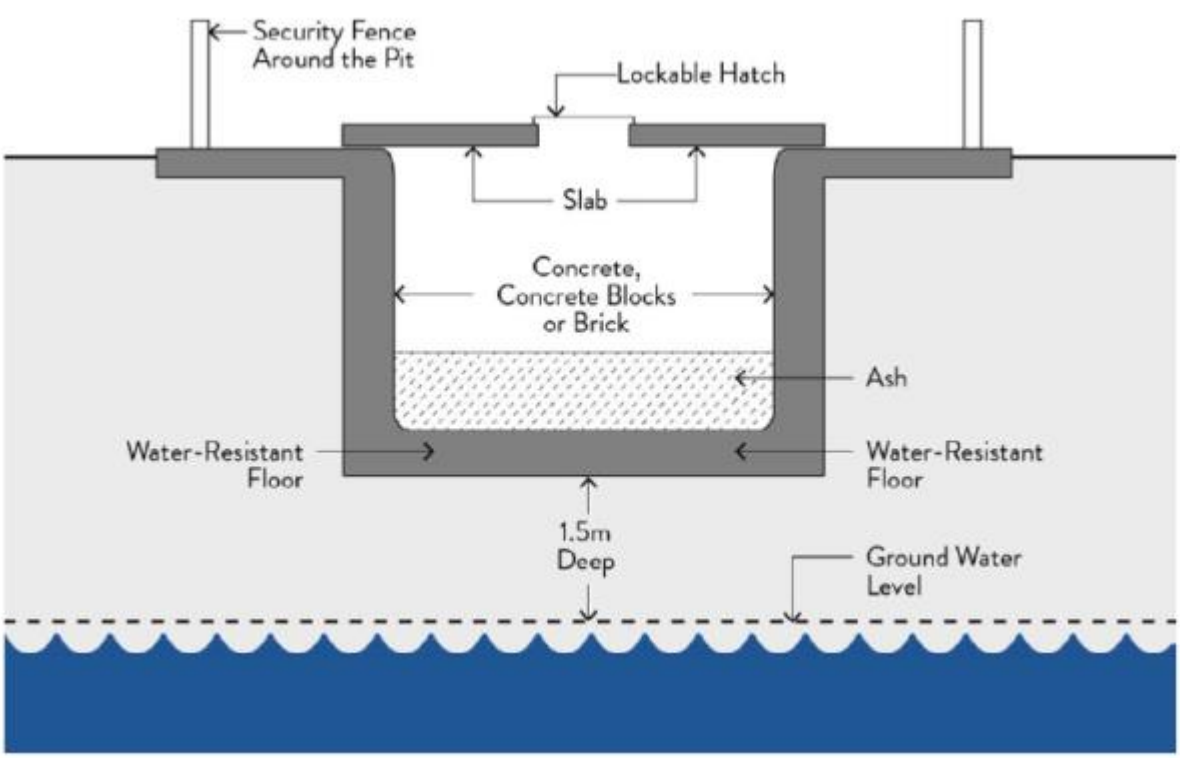
The top slab must be above ground level and made from watertight concrete to prevent surface water infiltration.

The top must be closed by a lockable hatch and a vent pipe installed to ensure that the generated gases can escape and air can get in.

Where soil is particularly sandy, extra precautions must be taken to protect the water table and to prevent the pit from collapsing.

The sides should be reinforced with bricks, laid with gaps between them so that liquids can escape.

Design Criteria and Specifications for Ash Pit



Source: Ministry of Health. (2013). Infrastructure standards in Liberia pg 312.

All sites using incineration must be equipped with an ash pit that has sufficient capacity to store ash for a period of at least 5 years.

The bottom of the pit must be at least 5ft (1.5m) above the highest anticipated groundwater level.

The pit must be positioned to prevent risk of flooding.

The pit must be constructed of concrete, concrete blocks, or brick, with a water-resistant floor to ensure the pit will not collapse.

There must be provisional access to the pit for purposes of leveling or removal of accumulated waste and subsequent transfer to a municipal landfill.

The pit must be protected from access by unauthorized persons.

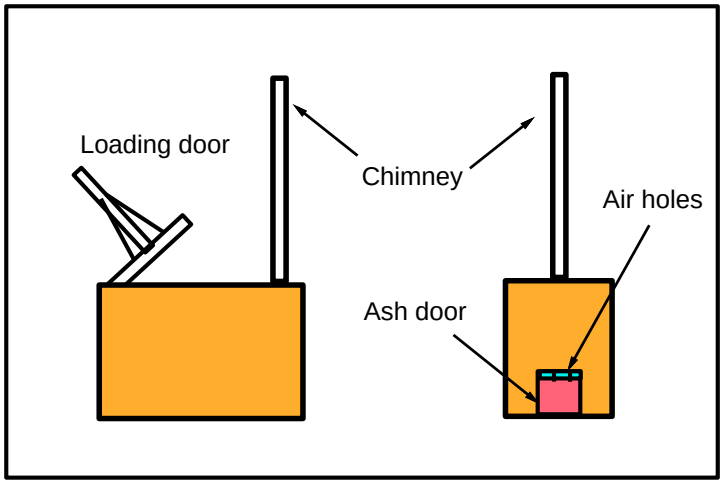
The pit must be located in the immediate proximity of the incinerator to ensure the convenient transfer of ash.

Minimum WASH/Environmental Health Package for Different Levels of Healthcare Facilities.

WASH Services/Facilities	**Primary Healthcare Facility**	**Secondary Healthcare Facility**	**Tertiary Healthcare Facility**
Water Supply			
Minimum water supply per day	2688 liters~710 gallons	6057 liters ~ 1600 gallons	23470 liters ~ 6200 gallons
Water reservoir capacity	5376 liters ~ 1420 gallons	12114 liters ~ 3200 gallons	46940 liters ~ 12400 gallons

Regular water testing	YES	YES	YES
Preparation of water safety plan	YES	YES	YES
Sanitation			
Minimum toilets cubicles	2	8	16
Flush toilets connected to septic tank/sewer line	NO	YES	YES
Flush toilet (Biofil)	YES	NO	NO
Bathing facilities	NO	YES	YES
Minimum number of bathing facilities	-	1 in each inpatient ward	1 in each inpatient ward 2 in each operating theater
Hygiene			
Hand washing stations	YES	YES	YES
Staff training in WASH & Environmental Package	YES	YES	YES
Healthcare Waste Management			
Color-coded segregation according to "Three-Bin System"	YES	YES	YES
Healthcare waste transport equipment	YES (wheelbarrow)	YES (handcart for onsite transport)	YES (handcart for onsite transport; truck for off-site transport if required
Healthcare waste storage facility	YES (within Incineration facility)	YES (Refer Figure 10)	YES (Refer Figure 9)
De Montfort incinerator	YES	NO YES (as a back-up)	NO YES (as a back-up)
Pyrolytic incinerator	NO	YES	YES
Healthcare waste Autoclave	NO	YES (for pilot)	YES (for pilot)
Placenta pit	YES	YES	YES
Ash pit	YES	YES	YES
Infection Prevention and Control			
Laundry Facility	YES (bucket washing)	YES (Machine)	YES (Machine washing)
Mortuary	NO	YES	YES

Construction of De Montfort Incinerators



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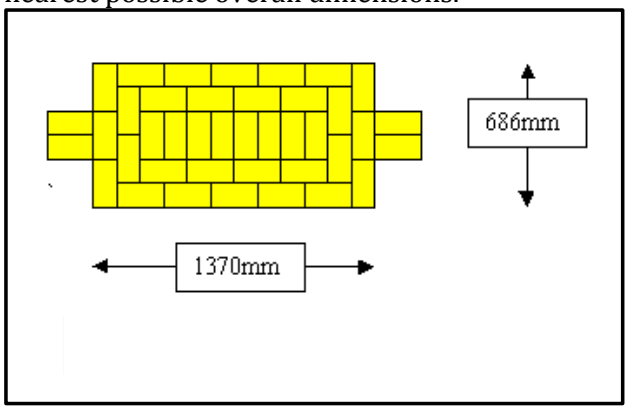

Figure 2: Laying down of the firebrick base
Build the firebrick inner core as in Figure 3. Again, with standard firebricks there are 14 layers of bricks including the base, giving an approximate height of 900 mm. With any other size of brick, build to at least this height. A steel tunnel to fit the ash door frame (230 mm approx.) is incorporated at either end as in diagram stage 2, and air pipes to give an air intake area of about 6200 mm2 are built in at the primary combustion chamber end. Air pipes of about 1000 mm2 are built in at the other end. Note that no mortar or fireclay is used in this construction, if the firebricks are regular in shape. Fire cement (3:1 mixture of high alumina cement and sand) may be used if the firebricks will not meet properly leaving air gaps.

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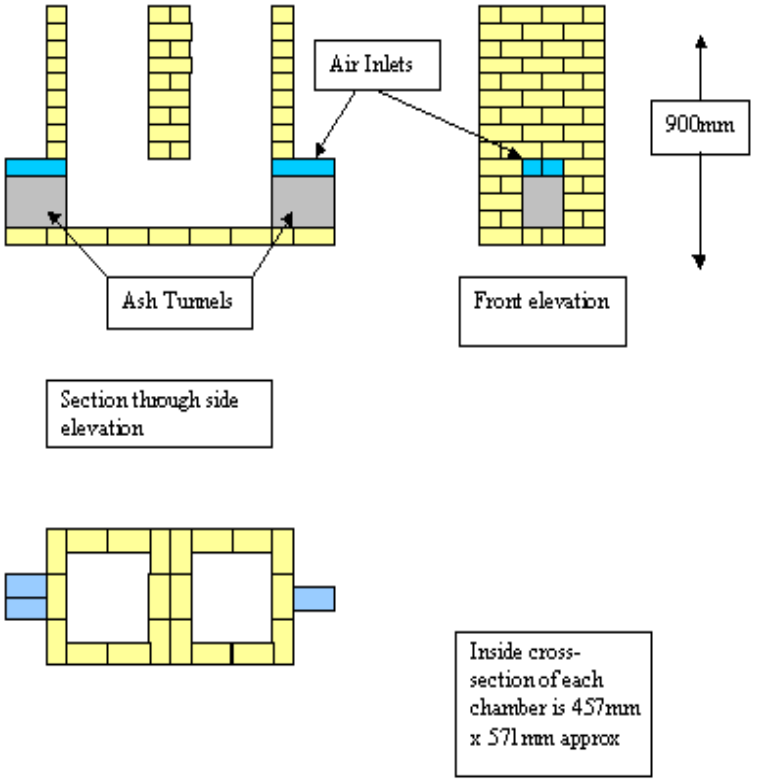

Figure 3: Construction of firebrick core

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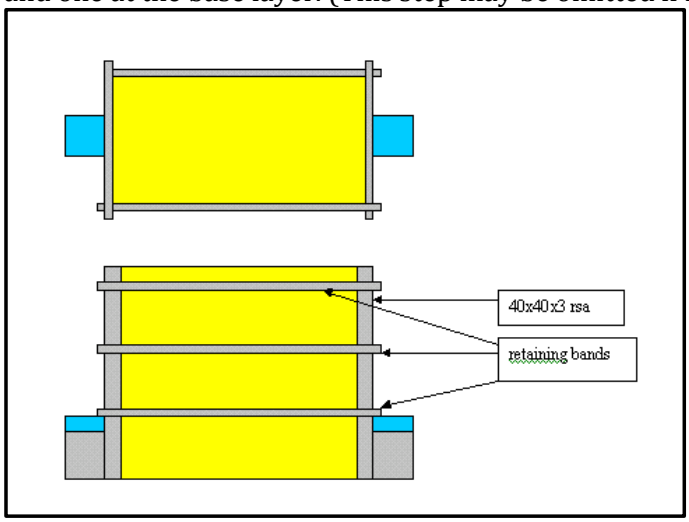

F*igure 4: Rolled steel angle bound to hold the firebricks together*

Lay out a single layer of common bricks around the whole construction, allowing space for mortar between the bricks, and about one brick thickness between the common bricks and the firebrick core. The outer dimensions of the incinerator can now be measured so that a start can be made on the steel top plate.

Build up the outer frame using ordinary building mortar, and taking care to keep to the measured dimensions. The final height of the outer case must match the inner core, but final

adjustment can be made with mortar and/or fire cement when the top plate is fitted as shown in Figure 5.

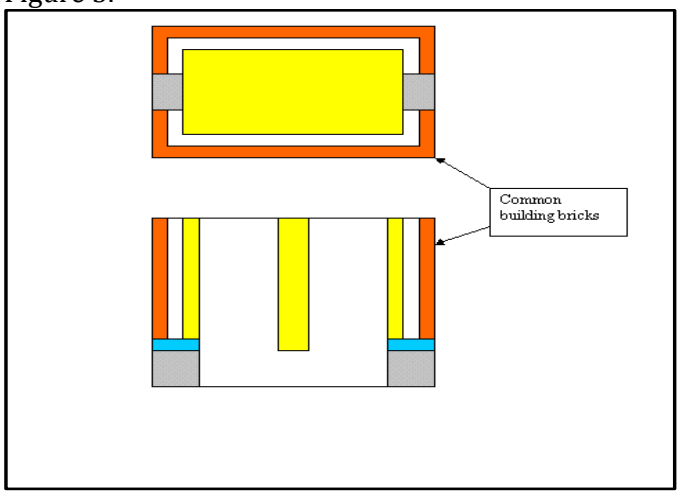

Figure 5: Building the outer insulation wall

Mark out the steel top sheet as in Figure 6. The length and the width shall each be 20 mm less than the corresponding length and width of the brick surround. The circular cutout for the chimney shall be slightly less than the chimney inner diameter. There is considerable latitude in the chimney diameter, which can be between 100 and 150 mm. It is thus necessary to choose the chimney before cutting the hole. Note that the loading door hole shall be the cross section of the combustion chamber, and that both the chimney hole and the smoke door hole shall be within the secondary chamber.

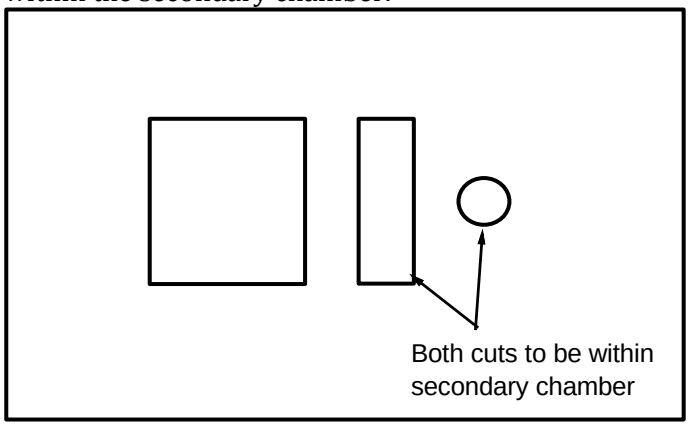

Figure 6: Cuts/openings on the top-plate for the De Montfort incinerator

Rolled steel angle (rsa) of approximate size 40 mm x 40 mm x 5 mm is now attached to the top plate as in Figure 7. These are intended to provide a frame for a sand bed around both doors and the chimney spigot. The inner frames are around the door apertures, and the outer frame is about 70 mm further out. Note that the outer frame of the loading door carries the brackets for the door pivot. The centre brace is about 80 mm shorter than the width of the top plate. Attachment may be by welding or steel rivets. Rolled steel angle stiffeners are then attached to the underside of the top plate as in Figure 7.

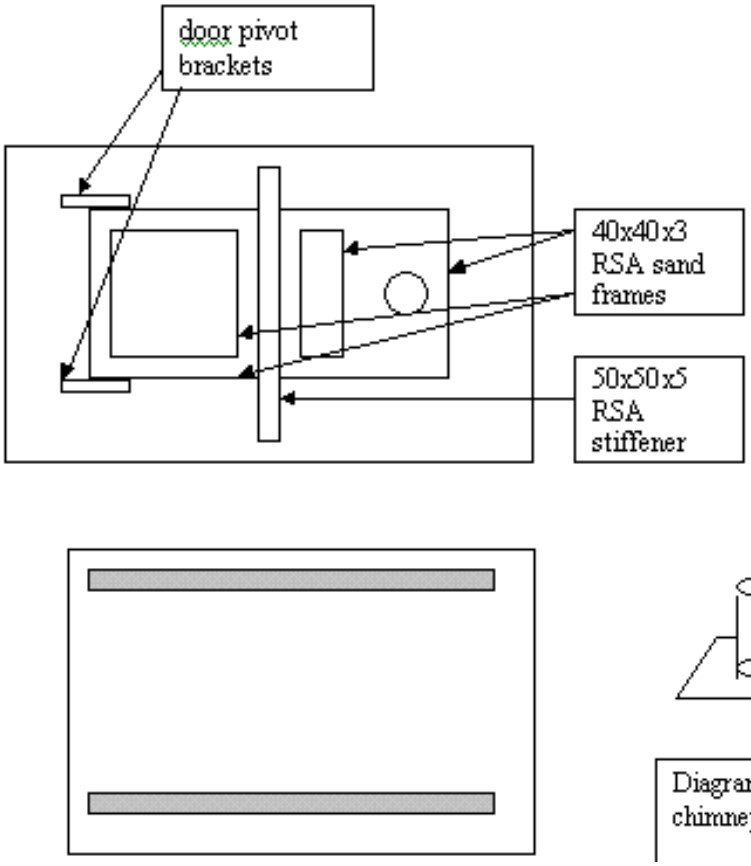

Figure 7: Details of the top plate

The loading door can be made at the same time (Figure 8). The frame is made from 40 mm x 40 mm x 5 mm rolled steel angle, and the size adjusted so that the lower edge of the angle fits into the centre of the sand bed of the frame. The hinge support brackets on both the door and the frame can be made so that the door rests parallel with the frame when suspended (by sand) about 10 mm above the base of the channel. The door is completed by welding or riveting on a top of 5 mm plate, and attaching a handle at the pivot end to make opening and closing easier. The handle shall be about 450 mm long.

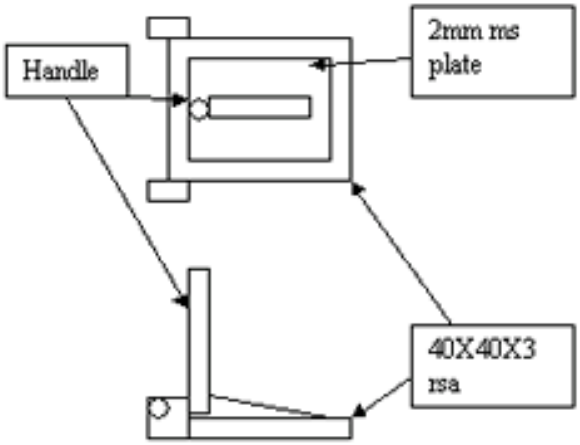

Figure 8: Details of the primary chamber door

The steel top is then fitted over the brick construction in the following manner.
A layer of fire cement is laid on to the firebrick inner core. The top plate is then placed on top

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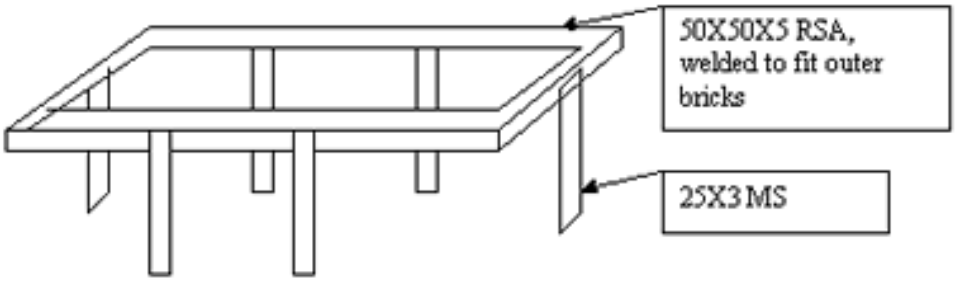

Figure 9: Details of the top plate retaining frame

The steel top is now secured to the brick walls by the steel frame shown in Figure 9. This is designed to pull the top plate down to the bricks, with sufficient mortar and/or fire clay to make sure that the plate fits evenly on both the inner and outer walls.

Ash doors can now be made from steel plate to hinge on to the ash tunnels. These doors shall be latched closed when they are not being used to remove ash.

The 4-meter steel chimney can now be fitted over the spigot and secured by steel ties reaching either to the ground or to the sides of the outer case.

For the oil fired version, a fuel tank with a capacity of between 2 and 5 litres shall be fitted to the front of the incinerator at approximately 500 mm above the top of the incinerator. A 6 mm hole shall be drilled through both walls of the combustion chamber, and a steel tube inserted to project about 10 mm into the chamber to carry fuel from the tank via a simple on/off tap.

The secondary combustion chamber shall be loosely filled with wire mesh. This will serve to stabilize secondary combustion, and prevent any light solids reaching the chimney stack.

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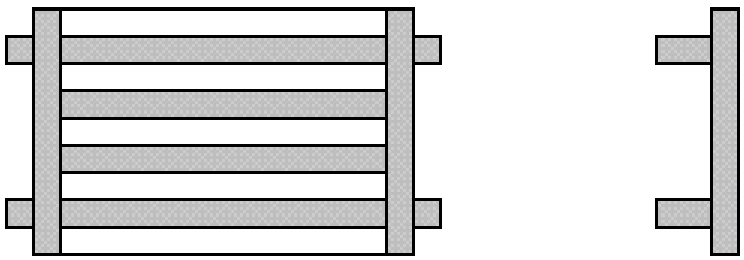
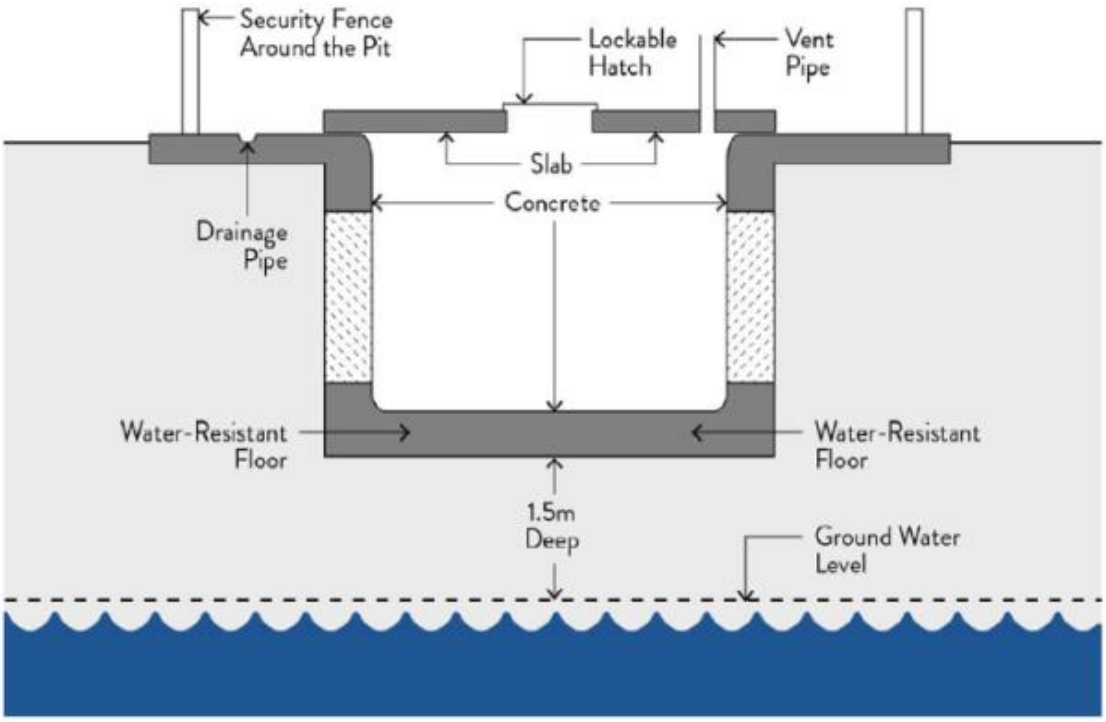
A simple grate shall be made to fit below the primary combustion chamber. It is constructed using the following dimensions: 44 cm x 44 cm square and 15 cm high, with the gaps between the grids not less than 50 mm. The legs shall be 80 mm long. This shall be inserted from above through the fire door.



Details of the fire grate

Design Criteria and Specifications for Placenta Pit



Source: Ministry of Health. (2013). Infrastructure standards in Liberia pg 311.

Once a pit is filled, it must be closed, marked and location recorded.

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Placenta pits must not be built close to buildings due to possible odors.

The bottom of the pit must be at least 5ft (1.5m) above the highest anticipated groundwater level.

The top 20in (50.8cm) or more of the pit must be reinforced with concrete to prevent surface water infiltration.

The base of the pit must be made from concrete to stabilize the structure and to slow the downward movement of liquid towards the water table.

Placenta pits can also be constructed from a standard concrete ring with a diameter of about 3ft (91.4cm).

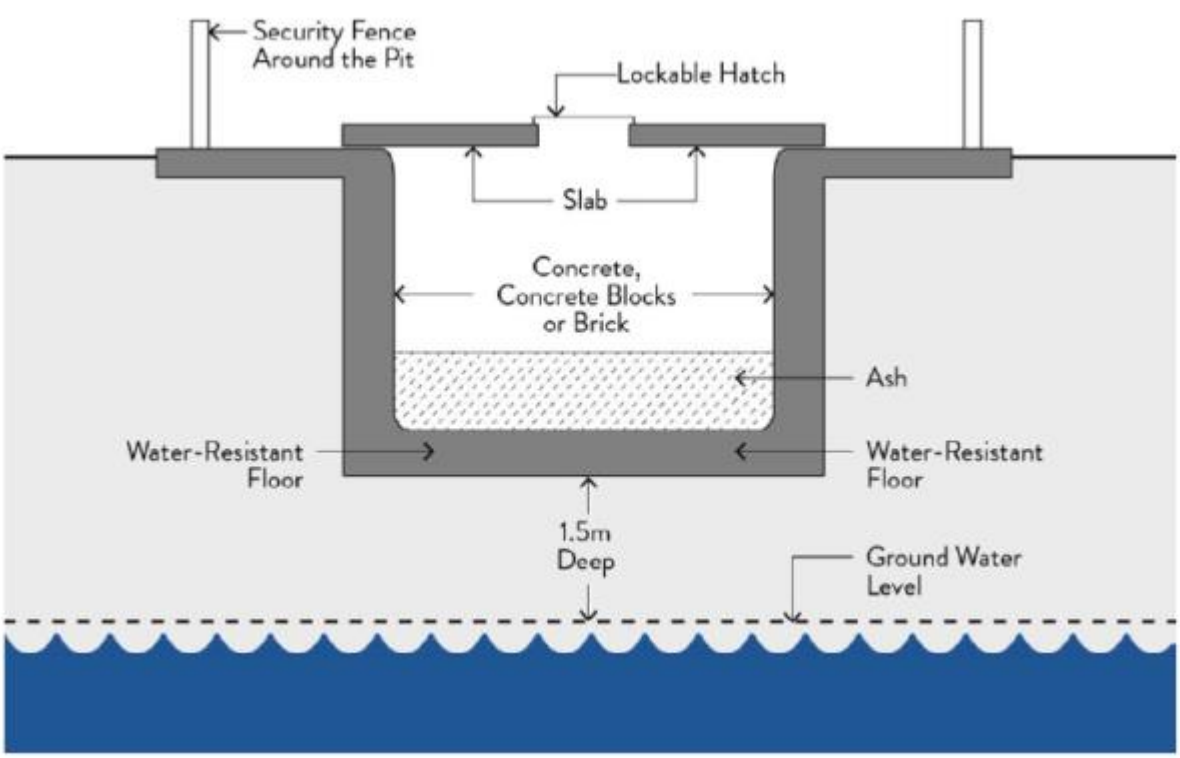
The top slab must be above ground level and made from watertight concrete to prevent surface water infiltration.

The top must be closed by a lockable hatch and a vent pipe installed to ensure that the generated gases can escape and air can get in.

Where soil is particularly sandy, extra precautions must be taken to protect the water table and to prevent the pit from collapsing.

The sides should be reinforced with bricks, laid with gaps between them so that liquids can escape.

Design Criteria and Specifications for Ash Pit



Source: Ministry of Health. (2013). Infrastructure standards in Liberia pg 312.

All sites using incineration must be equipped with an ash pit that has sufficient capacity to store ash for a period of at least 5 years.

The bottom of the pit must be at least 5ft (1.5m) above the highest anticipated groundwater level.

The pit must be positioned to prevent risk of flooding.

The pit must be constructed of concrete, concrete blocks, or brick, with a water-resistant floor to ensure the pit will not collapse.

There must be provisional access to the pit for purposes of leveling or removal of accumulated waste and subsequent transfer to a municipal landfill.

The pit must be protected from access by unauthorized persons.

The pit must be located in the immediate proximity of the incinerator to ensure the convenient transfer of ash.

www.washinhcf.org

P. **Participants photos**

Participants in Gbharnga TOT training

Workshop session

Practical Assessment at CB Dunbar Hospital

A section of the Facilitators

Hand Hygiene Practical Session

Group of Participants

ANNEX 5: WASH TRAINING II KAKATA MARGIBI

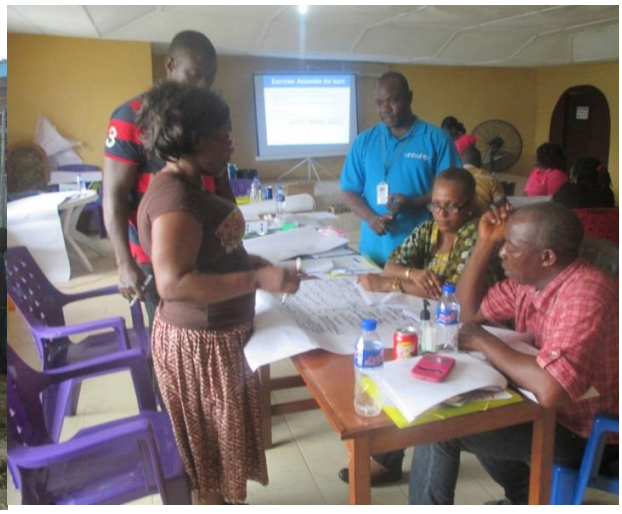
Opening remarks by CHO Margibi County

Workshop session

Groupwork

County Activity Planning

Practical assessment



Group Presentation

Q. List of participants of the TOT training

	NAME	COUNTY	POSITION
1	Augustus K Wylie	Margibi	CHDD
2	Henry Larway	Margibi	EHT Coordinator
3	Dr Kumblytee L Johnson	Margibi	Medical Director
4	Sylvester A Sanyon	Margibi	WASH Coordinator
5	Stephen E James	Grand Bassa	CHDD
6	Joyce W Garblah	Grand Bassa	CHSA
7	V David Duoko	Grand Bassa	EHT Supervisor
8	James Tuckolon	Grand Bassa	IPC Coordinator
9	E Menka Nuah	Grand Bassa	EHT Coordinator
10	Oscar Youngbei	Grand Bassa	MPW WASH Coordinator
11	Dr. Williefrank Benson	Grand Bassa	Medical Director
12	Young A Peagar	BONG	IPC, CFP
13	T Maxwell Ricks	BONG	WASH Co
14	Charles T Kennedy Jnr.	BONG	EHT Supervisor
15	James V Juma	BONG	EHT Coordinator
16	Melopalay K Sumo	BONG	Community Health
17	Fatorma Jusu	BONG	CHSA
18	P Aleson Guwor	NIMBA	Acting WASH
19	Dr Lavela B Kortimai	NIMBA	Medical Doctor
20	C Paul Nyanzee	NIMBA	CHDD
21	Austin G Mehn	NIMBA	Supervisor
22	Rancy W Leesala	NIMBA	CHSA
23	Patrick M Daddah	NIMBA	supervisor
24	James A Kokoi	Rivercess	EHT

25	Bill O. S. Sackor	Rivercess	WASH Coor
26	David K Sumo Jnr	Rivercess	Proxy CHDD
27	Marcus Y Gboco	Rivercess	IPC Focal Person
28	Joshua Z Kortee	Rivercess	CHSA
29	Dave Wuo Kehnel Jr	Rivercess	Proxy Hospt Admin
30	Yeabea Clarke	Sinoe	CHSA
31	Samson W Sayeh	Sinoe	Hosp Admin
32	Stephen K Jekeh	Sinoe	EHT Coordinator
33	Joseph K Morris	Sinoe	EHT / CCHSS
34	Vera D Weah	Sinoe	Health Promotion
35	Binda K Johnson	Sinoe	Coordinator
36	Gabriel E Moore	Bomi	IPC Coordinator
37	John K Kollie	Bomi	CHDD
38	Jimmie Sloboh	Bomi	EHT Coordinator
39	James O Matadi	Bomi	WASH Coordinator
40	Davidson O Rogers	Bomi	CHSA
41	Dr Williamatta S Gibson	Bomi	CMD
42	Hawa K Kromah	Grand Cape Mt	IPC Coordinator
43	Massayan K Jallah	Grand Cape Mt	CHDD
44	James K Gobon	Grand Cape Mt	CHSA
45	Abel M Sherman	Grand Cape Mt	Coordinator
46	Dr Keita Sekou S	Grand Cape Mt	CMD
47	Jeremiah K Pewu	Grand Cape Mt	
48	Levi O Yarnay	Montserrado	
49	Margaret Togba	Montserrado	IPC Coordinator
50	Holie Dee Toweh	Montserrado	HCWM
51	Momo J Kamara	Montserrado	EHT Coordinator

52	Emmanuel B Lassana	Montserrado	OPD Supervisor
53	Dr Weh Wesseh	Montserrado	CMD
54	Emmanuel Elsar	Montserrado	WASH Coordinator
55	Amelia W Nmah	Montserrado	EHT
56	Rashida Kamara	Montserrado	CHSA
57	Leemu K Tarpeh	Montserrado	HCWM
58	Henry Bundor	Montserrado	EHT Supervisor
59	Doris W Fahngon	Montserrado	Supervisor-MCC
60	Francis Saysay	Lofa	WASH Coordinator
61	Blima R Sirleaf	Lofa	IPC Coordinator
62	William K Sherman	Lofa	EHT Coordinator
63	Dr Musa Zuanah	Lofa	CMD
64	Edmul T Eisah	Lofa	CHDD
65	Prince K Sesay	Lofa	CHSA
66	Augustine W Saye	Gbarpolu	EHT Coordinator
67	Annie T M Norris	Gbarpolu	IPC Coordinator
68	Yuan A Nemah	Gbarpolu	CMD
69	Isaac W Duah	Gbarpolu	CHSA
70	Edward S Mason	Gbarpolu	CHDD
71	Marvin Sharka	Gbarpolu	WASH Coordinator
72	Alfred N Collins	Grand Gedeh	CHSA
73	Sylvester N Toe	Grand Gedeh	CHDD
74	Otis C Zarzar	Grand Gedeh	MPW WASH Coordinator
75	Joseph M Kormah	Grand Gedeh	IPC Focal Person
76	Francis M Bee	Grand Gedeh	EHT Coordinator
77	E Sayouh Davies	Grand Gedeh	Medical Director

78	**Karsloh S. Turo**	**River Gee**	**CHSA**
79	**S Olasford Wiah**	**River Gee**	**CHDD**
80	**Dr. Detoh T King**	**River Gee**	**Medical Director**
81	**Noah S K Korpu**	**River Gee**	**IPC Focal Person**
82	**John S Kenda**	**River Gee**	**EHT Coordinator**
83	**Nicholas F Faryombo**	**River Gee**	**MPW WASH Coordinator**
84	**James Y. Joah**	**Maryland**	**CHSA**
85	**Cyrus B Sneh**	**Maryland**	**CHDD**
86	**Ojuku W Brown**	**Maryland**	**IPC Focal Person**
87	**John D Gbah**	**Maryland**	**EHT Coordinator**
88	**William S Nyepan**	**Maryland**	**MPW WASH Coordinator**
89	**Kay Sieh Smith**	**Grand Kru**	**CHSA**
90	**Dr. Augustine N Fannieh**	**Grand Kru**	**Medical Director**
91	**Gebah M Mannah**	**Grand Kru**	**IPC Focal Person**
92	**Andrew A Saah**	**Grand Kru**	**EHT Coordinator**
93	**Michael K W Tawreh**	**Grand Kru**	**MPW WASH Coordinator**