

WASH in rural health care facilities

E-Group discussion summary

10 April – 3 May 2019

An email discussion was held on SNV's Rural Sanitation and Hygiene E-group platform from 10 April to 3 May 2019 on the topic, 'WASH in Rural Health Care Facilities'. This document is a summary of the E-group discussion, based on the 53 contributions from 35 participants representing 19 countries across Africa, Asia and Latin America. Outcomes of the discussion were used to inform a multi-stakeholder learning event on the same topic held in Punakha, Bhutan from 6 to 9 May 2019.

The discussion brought together government representatives, practitioners and researchers to exchange ideas and deepen understanding on existing efforts to improve WASH in rural health care facility settings. It engaged participants in a process of reflection that explored WASH in HCFs in their own contexts, the gaps in data and information, and the opportunities and priorities to improve WASH in HCFs, with a focus on intermediate levels of government.

This summary is organised as follows:

- Topic 1 [Status of WASH in health care facilities: what do we know, what don't we know?](#)
- Topic 2 [Opportunities and priorities for improving WASH in HCFs from the intermediate levels of government](#)
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The following text is the unedited version of the WASH in Health Care Facilities E-Group discussion summary. For more information, contact Antoinette Kome, Global Sector Coordinator, WASH, akome@snv.org.

Status of WASH in health care facilities: what do we know, what don't we know?

Improving WASH in health care facilities is fundamental to the achievement of the SDG targets under goals 3, 5 and 6. Both WASH and health are also human rights. In April 2019, WHO published its SDG baseline for WASH in health care facilities which highlights the importance of improving WASH in health care facilities. It states that 74% of health care facilities globally had basic water services, and that for all other indicators, there were not enough countries with sufficient data to calculate a global average. The information for the new JMP baseline report comes from different sources, such as the SARA (Service Availability and Readiness Assessment) and SPA (Service Provision Assessment) assessments.

Data was used from 217 data sources from 125 countries; in total from 550,000 health facilities across the world. The report shares how many countries and regions had sufficient data to estimate coverage, showing the data gaps:

- For basic water supply services in health care facilities, these were 38 countries
- For basic sanitation health care facilities, these were 18 countries
- For hand hygiene, these were 14 countries
- For management of health care waste these were 48 countries
- For cleanliness these were 4 countries in the world

Every country has its own health care structure, with different types of health care facilities, e.g. hospitals, health centres, clinics, health posts, maternal clinics, and own information sources. The first topic asked participants to reflect on the type of information exists about WASH in rural health care facilities, and where they see the most important data gaps.

For our first topic on the status of WASH in health care facilities there were 22 contributions from 22 people across 14 countries, including both the Africa and Asia regions.

The questions for this first week were

1. What type of information is available about WASH in rural health care facilities for your country? Are there any clear data gaps?
2. Based on the available information, what is the situation of WASH in rural health care facilities? And what does this mean for priorities in your country?

Types of information available on WASH in rural health care facilities (HCFs)

Reflecting the recently released SDG baseline for WASH in HCFs by WHO and UNICEF, the participants commented on a lack of quality information being collected systematically about WASH in health care facilities at the national level. Further, as Rick Johnston, WHO/JMP summarized, that whilst for example WASH in schools data is routinely collected, almost all of the data WHO could find as part of the baseline came from third-party facility assessments.

Rinchen Wangdi, Ministry of Health (MoH) in Bhutan shared that before 2015 there was no information available and it was not until late 2018/2019 that a structured survey was undertaken from the national level, following 2 small scale scoping studies starting in 2015. Abdoul Hamid Abdou, SNV shared that the data available in Mali was primarily from a series of rapid assessments carried out by the Ministry of Health from 2012-14. Apollinaire Hadonou, SNV Benin, shared that with no updated national level data available, the data was mostly from project related surveys which may be unreliable and of a small sample. Florence Muleka Kabinga, Ministry of Health, Zambia also shared that data was mainly based on a series of assessments and surveys, or from Individual Risk Assessment Tools whilst the HMIS has no indicators for WASH in Health Facilities.

Sorsa Faltamo Jama, MoH and Andualem Anteneh, SNV described that in Ethiopia there were national level data sources available through for example the national programme (provision of toilet, handwashing and water in health care facilities), regular monitoring data based on CASH/WASH audit tools and Service Availability and Readiness Assessment (SARA) data which includes data on safe storage and disposal of sharp and infectious wastes. Dejene Kumela reflected though on the disparity between different reports coming from administrative and HMIS reporting in the sector in Ethiopia.

Yulian Gressando, SNV shared that the Government of Indonesia publicly updates its data annually for all of its 9,825 public health care units and includes information on WASH facilities. In addition, every 3 years HCFs in Indonesia are accredited and this process includes WASH indicators - water quantity and quality, sanitation facilities.

Participants also shared further examples of data at the facility level or sub-national administration levels (e.g., districts) collected through the use of tools, risk and performance assessments. Sahidul Islam, from UNHCR, Bangladesh gave the example of the use of the WASH Fit Tool with HCFs serving refugee camps in support WASH to be prioritized. Patrick Mwape, Ministry of Health in Zambia also shared the use of the WASH Fit tool at the facility level within districts managed by the health care workers as a self-assessment tool. He added that the status of WASH in the facilities is monitored and regulated through a bi-annual monitoring mechanism as a performance assessment which is conducted by the District Health Office (DHO) and then validated by the Provincial Health Office against 7 thematic areas and standards. Mwangala Mulundano, SNV in Zambia shared that part of the information on WASH in rural HCFs available was also sourced from a performance assessment tool which is administered by district health office staff bi-annually. Information in this tool though is more focused on health care waste management and no specific attention is paid to sanitation.

Mind the gap

Whilst data was more readily available in terms of the provision of water and sanitation facilities, gaps were identified that were seen as important to ensuring improved health outcomes, quality of care and to protect health care workers, commonly for hand hygiene, health care waste and environmental cleaning.

Andualem Anteneh identified that in Ethiopia, despite the national systems and programmes, data was not reliably available for example for water quality, continuity and sufficiency in water supply; location and/or number ratio of hand washing stations/toilets/waste bins to patients, distance to toilet, cleanliness, connection to sewer line and FSM; location, functionality of incinerators, disposal of radioactive and chemical wastes, availability of fuel/power for incineration in waste management; and cleaning frequency, cleaning methods used, location and number of cleaning stations and presence of cleaning supplies including disinfectants in environmental cleaning.

Aminata Bara, SNV shared that in Burkina Faso within the national data there was no data about environment cleaning, about hygiene at care points or for waste management.

Yulian Gressando noted that in Indonesia with reference to the JMP service ladders, the data gap for the Ministry of Health was the absence of data for the "hand hygiene" and "health care waste" indicators. Accessibility for people with disabilities was also not always considered.

Getachew Belaineh, SNV added that the available information on rural HCFs in Rwanda was more specific to access to water supply and toilet facilities. As Philbert Nema also shared it is not adequately addressed within the national systems in that the existing reporting systems (such as HMIS) do not capture information on the availability of hand hygiene materials at each points of care and toilets, health care waste safely segregation, and safe treatment of disposal of sharps and infectious waste, including incinerators and placenta pits.

Rick Johnston, WHO/JMP and Thea Bongertman with Simavi in Tanzania both raised the issue of data not being disaggregated into urban and rural areas, or by different types of health care facilities. In Tanzania for example the national data did not distinguish between the different levels/types of health care facilities, like hospitals, health centres or dispensaries.

What does this information tell us about the situation of WASH in rural health care facilities?

Overwhelmingly, the participants highlighted the urgent need for improvements to WASH within HCFs. Several also shared that they were seeing increased recognition of the need to prioritise what is a complex issue. This included the example of the increased investment within the One WASH National Program Phase II launched last month shared by Mahteme Tora, SNV Ethiopia.

Waste management was a common issue with implications for safety of health care workers, patients and the surrounding environment/communities as shared by participants from Zambia, Burkina Faso, Ethiopia, Niger, Nepal and Mali. As Rick Johnston summarised, there were two critical aspects: segregation of hazardous and non-hazardous wastes into separate bins and safe treatment and disposal of sharps and infectious waste (including burying in a lined pit or incineration but not open burning). These were also highlighted by Yacouba Chaïbou, SNV Niger, Mwangala Mulundano, SNV Zambia and Aminata Bara, SNV Burkina Faso who felt an issue in waste management was in ensuring staff were applying what codes and guidelines there already are.

Examples of the data available included

- JMP/WHO - 1 in 4 health care facilities (27%) in had both elements of a basic waste management service in place
- Mali - 53% of healthcare facilities have a functional incinerator, insufficiency of sorting of medical waste in 75% of health facilities (2012-14 National Assessments, MSHP)
- Ethiopia - Safe disposal of infectious wastes 52%, appropriate disposal of sharp waste in health care facilities 28%, appropriate storage of infectious wastes 16% (SARA, 2018)
- Nepal - 62% have proper solid waste storage, collection or disposal (USAID, 2016)

Water, sanitation and hygiene services - Drawing on the types of data available the participants raised issues with the access to, use and quality of WASH services. Rick Johnson, JMP/WHO highlighted that for sanitation, every HC facility should have usable toilets that meet the needs of staff and patients, women and men and those with limited mobility yet the available data show that 1 in 5 health care facilities (21%) had no service and there was limited data on functionality, ratios and accessibility. Further, globally 1 in 4 health care facilities (26%) lack a basic water service and HCFs face issues with distance, quality and also supply interruptions.

Sanitation facilities faced issues for many of the country contexts, including for example Benin, Zambia and Ethiopia. As Dejene Kumela from Ethiopia summarized – these related to not only their presence, but also inadequate or inappropriate design (including for gender and disability considerations), poor construction quality; and inadequate attention to their proper management (governing the use, cleaning, repair and replacement of the facilities and safe emptying).

For several countries, water services were lagging in comparison to access and usage of sanitation facilities and there were issues such as Getachew Belaineh shared for Rwanda, with adequacy, non-functionality and reliability in the water supply. Rinchen Wangdi, MoH Bhutan shared that data from a scoping study in 2016 highlighted that 43% of the health facilities did not have sufficient water supply for their daily need, 71.4% reported water supply interruptions. For Zambia, only 50% of rural health facilities have access to basic water supply services.

The referenced JMP report presents data on the presence of hand hygiene facilities at points of care and soap and water at the toilets and finds that 1 in 6 health care facilities worldwide (16%) had no service (meaning they lacked both these elements). This resonated with the participants, data shared by Kailash Sharma included that in Nepal, a survey of 107 HCFs supported by USAID in 2016 found that 53% do not have hand washing facilities at point of care. In Indonesia, Yulian Gressando indicated that UNICEF data found that 72% lacked handwashing facility with soap in all three locations (general consulting room, immunization room and delivery room) and in Mali, Abdoul Hamid Abdou shared that whilst 75% of health facilities have handwashing facilities, of these 25% have no soap to wash their hands and no water in handwashing tools (MoH data, 2018)

What does this mean for priority setting?

Without quality data and strengthened monitoring systems participants felt that priority setting for WASH in health care facilities would continue to be challenging. To bring about progress, this was seen as the priority, along with better coordination and collaboration.

Improve the data and monitoring systems, including addressing the data gaps (noting specific shortage of data on environmental cleaning as shared by Rick Johnston) and ensuring it is collected systematically. As Kumbulani Ndlovu shared for Zambia, the priority for the sector is to have a baseline for all health care facilities. Philbert Nema, Rwanda and Mwangala Mulundano, Zambia, Yulian Gressando, SNV Indonesia wished to see the national health management information systems strengthened. Selemani Abdi Yondu, Tanzania felt that what data was available was not being used effectively. Whilst Aaron Ndaa, Zimbabwe reflected that during monitoring visits to clinics, WASH facilities are the least to be visited by those who conduct the monitoring exercise. This makes the recognition of WASH a second fiddle.

The need to strengthen coordination and collaboration was raised including by participants from Mali, Bhutan, Zambia and Tanzania. Abdoul Hamid Abdou, SNV shared that the establishment of functional coordination led by the Ministry of Health and Public Hygiene at national, regional and local level was a priority for Mali. Florence Muleka Kabinga, MoH Zambia and Aminata Bara, Burkina Faso both identified strengthening coordination and organization of services as a priority.

Rinchen Wandu, MoH in Bhutan and Thea Bongertman reflected on the need for government programmes and sectors to collaborate more closely (e.g. PHED and Infection Control). Thea elaborated that in Tanzania, where WASH in health care facility has no institutional home, there is quite a mismatch between planning and implementation of WASH resources and tools between the various ministries (MoH and MoWI) and Local Government Authorities. To sustain the gains of current and future investments by government and donors, strong coordination between the various government stakeholders is needed.

Opportunities and priorities for improving WASH in HCFs from the intermediate levels of government

It is clear that management of WASH at the health facility level is important and can be improved through action plans based on for example the WASH FIT tool. However, many of the structural challenges in health care facilities depend on decisions and services at other levels. This may be national, but in many countries, this will be the intermediate levels of government, districts and provinces. These may be decisions about budget, training, staffing, investments, but also services like timeliness of supply services and waste collection or treatment services.

Another reason to consider the role of intermediate levels of government in WASH in Health care facilities is scale. Just like village by village activities are insufficient for scaling of rural sanitation, activities focussing exclusively on individual health care centres may not reach scale. Wards, districts or provinces can bring people from multiple centres together for training or change processes, ensure oversight and monitoring. Of course, this depends on the structure and roles at the local level. In a decentralised context, such roles, responsibilities and budgets might lie with local government, whereas in a more centralised country this may be with regional or provincial health offices.

For the second topic on the opportunities and priorities for improving WASH in health care facilities from the intermediate levels of government there have been 21 contributions from 21 people across 12 countries, including both the Africa and Asia regions.

The questions for this second week were

1. In rural health centres, who is in-charge of the management of water supply, sanitation, hand hygiene, cleanliness and waste?
2. Beyond the health centre in-charge, who are responsible at the local (ward, district, province) level? And what are their roles?
3. Do you see opportunities for improving supporting roles within the current structure? (from health side or WASH side or both)
4. And/or do you consider that changes are needed within the structure, roles or responsibilities itself?

Firstly, who is in-charge of the management of water supply, sanitation, hand hygiene, cleanliness and waste? In rural health centres, the local health facility staff were seen as the front line for many of the participants based on their contexts in Asia.

For example;

- In Bhutan, Rinchen Wangdi, MoH shared that the Health Assistants of the rural health centres (Basic Health Units) are overall in-charge of the management of WASH in their own facility with support from caretakers, many of which are untrained.
- In Lao PDR, Bouakeo Suvanthong from the Center for Environmental Health and Water Supply, MOH wrote that the technical health staff working in Health Center (e.g., nurses, doctors, primary health care staff) are, of whom do not have WASH backgrounds.
- In Cambodia, Alison Macintyre from WaterAid shared that whilst the MoH has overall responsibility, at the facility, the facility manager had overall oversight and responsibility of the WASH services in their facility with Health care staff having responsibilities for hand hygiene, cleaning and performing waste segregation.
- In Nepal, Kailash Sharma from SNV shared that the Health post in-charge is responsible for the overall management, services and health care facilities including water supply, hand hygiene, cleanliness and waste. They are also a regular member of local level WASH coordination committee (CC).

In the examples share from Tanzania, Ethiopia, Rwanda and Zambia, Environmental Health professionals played this role. For example in Rwanda, Environmental Health Officers (EHOs) based at Health Centres at sector level are in charge of WASH management –Juste Kayihura and Getachew Belaineh. In Zambia, Environmental Health technologists (EHTs) are in-charge of management of water supply, sanitation, hand hygiene, cleanliness and waste. Both the EHT and the newly introduced Community Health Assistants, work hand in hand with Health facility in-charges to facilitate WASH in Health Facilities - Florence Muleka Kabinga, MoH.

In Ethiopia, as Andualem Anteneh, SNV shared, the Environmental Health Officer is in-charge of the management of water supply, sanitation, hand hygiene, cleanliness and waste with support from Health Center Head. Although as Dejene Kumela, SNV noted, there is a shortage in environmental health professionals and officials are not always willing to fill the post, even if they have trained professionals. Chemisto Satya Ali, SNV Uganda felt that whilst in an ideal situation, every Health Centre is expected to have a WASH focal point they are commonly not in place. As such, the role then reverts to the Facility or Health Centre In-charge to ensure availability of WASH services, cleanliness and waste management.

Extending beyond the government structures, in Mali, Abdoul Hamid Abdou shared the example of Community Health Associations operating through a mutual assistance agreement (CAM) with the municipality. The CAM defines the reciprocal commitments of the municipality and the ASACO. As such, it is the ASACO which is responsible for the management of WASH installations, hand hygiene, cleanliness and waste under the direction of the municipality. In Cambodia, Alison Macintyre shared the example of the many as yet unregulated private sector operators.

In Tanzania, Rwanda and Benin, examples were shared relating to the management of water points. For example in Benin, as Apollinaire Hadanou shared, the management of the water point can be entrusted to a private operator. In cases where the water point is shared with the community, then the companions of the patients fetch water. When the water point belong to the health centre, its management is entrusted to by the health centre's management committee (COGES). In, Rwanda, Juste Kayihura gave the example of the management of rural piped water supply facility being the responsibility of private operators under delegated management by the districts with oversight by Ministry of Infrastructure (MININFRA) and Water and Sanitation Authority. Thea Bongertman reflected that rural public primary health care facilities in Tanzania will continue to be dependent on community water supply systems for their water intake in the coming years.

At the local (ward, district, province) levels the arrangements became more complex. Yulian Gressando shared that in the decentralized context of Indonesia, within the sub-sector of WASH in Health Care Facility, the development authority of the National Government is partly delegated to the District / Municipality Health Office (DHO/MHO), while the HCF operations are directly below each health centre. In this context, management of water supply, sanitation, hand hygiene, cleanliness and waste is managed directly under the HCF, even though regulations are ruled from national and district / municipality levels. Main facilities and infrastructures in the HCF are actually under the responsibility of the district / municipality government.

District levels were prominent in many of the participant contexts, including for Rinchen Wangdi from Bhutan, for Getachew Belaineh, Rwanda, for Alison Macintyre in Cambodia, Selemani Abdi Yondu in Tanzania, Andualem Anteneh in Ethiopia and Bouakeo Suvanthong in Lao PDR. Roles though can be split between the health and engineering sectors. For example, Rinchen Wangdi, MoH explained for Bhutan, the District Engineering Sector is responsible for Rural Water Supply while District Health Office is mandated to promote sanitation & hygiene and maintain the WASH related data. In practice though the local government's role to support the health facilities in the management of WASH facilities is very limited. Likewise, in Rwanda, where Getachew Belaineh explained that Sanitation and Hygiene Officers (SAHOs) based at district health office are responsible for sanitation and hygiene related interventions in the district. SAHOs though may not necessarily have Environmental Health backgrounds whereas, the Water Engineer as 'One Stop Center' at District Infrastructure/WASAC office was in charge of the water supply in the community, health facilities, and schools in the district. In Ethiopia, Andualem Anteneh shared that the District Health Office is responsible to manage water supply, sanitation, hand hygiene, cleanliness and waste at local level in the health care facilities. Whilst the District water office is also responsible for the construction of water facilities when requested with support from district health. Dejene Kumela gave examples of the types of roles the district health office play in Ethiopia including behaviour change, infection prevention, reporting, coordination, inspection and also construction. In Lao PDR, the District Health Office and Province have 1-2 staffs working on WASH who respond to requests for support by the facilities - Bouakeo Suvanthong.

Linkages between the different administration levels and regulatory roles were shared for district, regional, provincial and municipalities. For example

- In Uganda, there are clear arrangements and qualifications for health inspectors at sub-county, county and district who are in charge of environmental health in their level, including planning, monitoring, enforcement, staff management and capacity building - Chemisto Satya Ali.
- In Rwanda, the regional and district health bureau/ office regulate the standards of health care facilities, monitor performance and plan/ approve budget for new construction activities - Getachew Belaineh.
- In Ethiopia, the Regional and district health bureau/ office regulate the standards of health care facilities, monitor performance, plan and approve budget for new construction activities. The District/ Woreda water offices contract out and supervise water supply schemes design & construction activities when budget is approved. Whilst the Kebele and district administration or municipalities facilitate the development of health care facility plans, check if WASH related challenges are being solved based on priorities, participate as a member in the board of health care facilities, mobilize communities to contribute for WASH facilities operation, maintenance and management - Yemane and Seid, SNV Ethiopia.

- In Benin, there is a water supply strategy as well as a management strategy for health centres. The municipality, according to the decentralization's laws, is responsible for planning, implementing and managing water supply and sanitation in health centres although it may have limited resources and capacities. It plays this role through the management committee of the health centre (COGES)- Apollinaire Hadanou
- In Mali the Regional Health Directorate (DRS) is responsible for the implementation of the strategic plan for improving access to water, hygiene and sanitation in health facilities, for assessing WASH conditions in healthcare facilities, preparing technical guidelines/standards and strategic investment plans. It also offers a support and advisory service to health personnel to maintain good hygiene practices in health care facilities. Whilst at the municipality level, the municipality authorities are responsible for monitoring and controlling the management of the ASACO, implementing the Mutual Assistance Agreement (CAM) and monitoring and controlling the effective transmission of information data including financial data to the district level - Abdoul Hamid Abdou

Opportunities for improving supporting roles within the current structure

Participants were positive there were good opportunities, for improvement from both the health and WASH sides as Ratan Budathoki, Nepal and Yemane Gebree'gziabher from Ethiopia shared.

Opportunities for improving coordination was raised by Chemisto Satya Ali, Uganda, Bouakeo Suvanthong, Lao PDR, Juste Kayihura, Rwanda and Shrijana Shrestha, SPHA, Nepal and Helen Tessema, Amhara National Regional State Health Bureau. Rinchen Wangdi, MoH felt that proper protocol could be established at the District Level as to how Engineering Sector and District Health Sector should work in a coordinated manner and support the rural health centres in Bhutan. Alison Macintyre felt streamlining WASH activities as much as possible with the existing quality of care process would assist in reducing additional burden on all levels of staff for addressing WASH in Cambodia.

Leadership was raised in a several examples. Alison felt that improving leadership at all levels is critical, including through coaching and improving management skills. Without leadership from the central MoH, the importance of WASH does not trickle down to lower levels. Whilst Florence Kabinga identified raising the profile of WASH in management and advocacy for priority setting at all levels.

Capacity building was raised, including training of health care workers by Patrick Mwape-Nakonde, Zambia and Rinchen Wangdi in relation to basic O&M training of the caretakers in facilities in Bhutan. In Uganda, Chemisto Satya Ali felt that the opportunities for improving supporting roles in the current structure are immense and first and foremost, capacity building of existing staff with WASH/Medical Waste Management (MWM) concepts by the District Health Teams. Selemani Abdi Yondu shared that in Tanzania, with the changes from centralized financing to direct Health Facility financing last year there is an opportunity to progress faster if more capacity building were provided.

Further, engagement with community and patients, was raised by participants from Bhutan, and Ethiopia. Andualem Anteneh identified opportunities to improve patient/family and community engagement and accountability mechanisms.

Are changes needed within the structure, roles or responsibilities itself? Many participants felt that no major changes were needed, but as Yulian Gressando, Indonesia shared "The government structure needs no change. It has to be strengthened and understanding of roles and responsibilities improved. Apollinaire Messan Agossa Hadanou, in Benin also agreed, "the architectural structure is not in itself in question but it needs support in capacity building at all levels to fully play their roles and responsibilities. Where as in Cambodia, Alison felt that roles and responsibilities are clear and do not need to change.

Some countries have just been through recent changes, including in Nepal and Lao PDR. As Le Huong, SNV shared, the Government of Lao has just approved a new WASH Strategy, with roles/responsibilities and mandates clearly defined. It is still to be seen how these are going to be translated and implemented in practice and how the proposed coordination structure will work.

Finally, human resources was raised in terms of adequate numbers, training and capacities. As Florence Muleka Kabinga, Zambia explained, there is a need to create, strengthen and enrich the job descriptions for key staff (management, surveillance/M&E, and Environmental Health) to include WASH. Getachew Belanaih and Andualem Anteneh raised the need for improving training, capacity and staffing numbers of EHOs at district and sector levels along with improving knowledge of Infection Prevention and Control (IPC) standards.

Management and integration of waste streams

In the management of waste streams, we consider:

- Human waste from toilets (solid and liquid, so sludge and effluent)
- General solid waste
- Health care waste

All these waste streams have their management chain from generation of the waste till treatment and/or disposal. Very often people who use and are responsible at the beginning of the chain are not the same as those who manage the end (transport, treatment, disposal). However, if management towards the end of the chain fails, the motivation for the users to practice the correct behaviour is affected. For example, the motivation to correctly segregate health care waste is affected if this is then collected in a single container and dumped.

In rural contexts, assuring safe management of the whole chain is not easy. If distances are large, most of the management needs to be done on-site. For that, equipment and infrastructure are needed, and once there is equipment & infrastructure, this needs to be maintained (requiring again capacity as well as budget).

The data show that while there is some attention for management of the health care waste chain, a lot still needs to be improved in terms of the practices around segregation, storage as well as treatment/disposal. The focus of sanitation (human waste) is on the functionality of toilets as management it is not a daily/ weekly issue, while solid waste management is variable. Of course, all require planning and resources.

For this final topic there were 10 contributions, from 10 people across 10 countries, including the Africa, Asia and Latin America regions.

The questions for this third week were

1. In your context, what are the main issues around safe management of waste streams in rural health care facilities? (at health care facility level and/or district level)
2. What do you see as opportunities to improve the treatment and/or disposal of health care waste in rural areas, specifically sharps and hazardous waste?
3. Do you consider that there are opportunities to reduce the amount of waste or even for safe re-use?

Issues were identified along the management chain for health care waste streams.

Segregation by health care waste type was an issue raised by Patricia Solórzano, SNV Honduras and Andualem Anteneh, SNV Ethiopia. Contributors saw this as partly due to attitudes, but also related to a lack of follow-up training, enforcement or appropriate bins.

Transport, in Mali for example in the absence of incinerators, transport of medical waste to other health care facilities with treatment capacities cannot be assumed to be done safely. Abdoul Hamid Abdou raised its risks to the handlers of this waste, to the population, and even the final destination of this waste.

Treatment presented issues. Commonly done on site in rural contexts such as Bhutan due to distances, Rinchen Wangdi observed that most facilities do not have autoclaves, as incineration is not permitted it is then buried in deep pits. Where incinerators were used, there were issues with improper use and maintenance as Yacouba Chaïbou, SNV Niger observed. In Mali, poor incineration practices and low acceptability from surrounding residents presented challenges - Abdoul Hamid Abdou. In Ethiopia, Andualem Anteneh shared that some of health centres used local types of incinerators using low temperature and single chambers, while others used open burning though they had incinerators.

Finally, unsafe disposal practices, including open dumping, diluted and discharged into waterways, unsealed containment or mixing with general waste was raised by many of the contributors. In some case, even when segregation had initially occurred. Both Abdoul Hamid Abdou, SNV Mali and Yacouba Chaïbou, SNV Niger observed that in their contexts, the management of health care waste and general waste is mixed, with limited protocol. In Mali, this was identified further of risk for clinics and private practices. Chemisto Satya Ali observed that in Uganda it was noticeable that all health facilities including referral hospitals even after segregating waste at the point of treatment, when it came to final disposal, all waste was combined and burnt together. This practice solicited famous quotes from some of the health workers "What is the logic of segregating waste here when a few meters from this point within the Health Center, they mix it up and burn them together?"

Enabling environments

Rinchen Wangdi, MoH felt that in Bhutan, whilst the knowledge of the health workers on this topic is very high, when combined with factors such as lack of treatment facilities, budget constraint and sometimes behaviour/attitudes they were not following the SOPs. Chemisto Satya Ali, Uganda surmised that protocols were not adhered to due to attitudes and lack of enforcement.

Resource constraints were elaborated on further by Kumbulani Ndlovu, SNV Zambia who felt that whilst training and enforcement was important, unless facilities have sufficient resources to provide appropriate equipment and materials for HCWM, it remains a pie in the sky. Sonja Hofbauer, Uganda reflected that experience has shown that it can be easier for facilities to get support to build their own infrastructure rather than adequately budget for usage of existing systems. This then she felt led health facilities then trying to run water supply, solid waste incineration and sludge stabilisation ponds alongside their core business.

Yulian Gressando, SNV Indonesia raised issues with the enabling environment and a "missing middle". This included the absence of related targets at sub-national level, provinces without specific regulations regarding WASH in HCF, no linkages with national medium term planning, no related specifics in the TORs of the sanitarians and low district budget allocation, in particular for "left behind" health care facilities.

Opportunities for improvement of treatment and/or disposal of rural health care waste

Focusing specifically on sharps and hazardous waste, several participants raised the need for improving the provision of regular training for staff and other actors, including Yacouba Chaïbou in Niger. Andualem Anteneh added the need for rigorous supervision on the health care waste treatment and disposal sites by line managers or responsible health offices.

Specific examples included;

- In Ethiopia, using disinfectants for non-sharp infectious wastes before disposal (Andualem Anteneh)
- In Ethiopia, maintaining and using the existing water tight placenta pit for the proper disposal of pathological wastes;
- In Mali, setting up waste management areas with an incinerator, a waste pit, a transit storage area, a placenta pit, fenced inside the HCF (Abdoul Hamid Abdou)
- In Bhutan, generating biogas from kitchen waste and human waste generated by hospitals (Rinchen Wangdi).

Reducing the amount of waste or safe re-use

Participants felt that the scope for reducing and recycling of hazardous waste safely is limited. As Yulian Gressando, Indonesia further commented the reuse of equipment has almost disappeared due to the marketing of single use items. Participants did feel there was good opportunities for general waste, specifically paper, metal and plastics (non-hazardous only). As Rinchen Wangdi reflected, global estimates estimate about 85% of the total waste generated from the health facilities are general and non-hazardous waste. There were examples of waste being sold to private operators for recycling, including vials, plastic bags, etc., which are sorted and treated according to the required safety conditions issued by the Ministry of Health and Public Hygiene in Mali. Mouftaou Gado shared that along with recycling, there was also the promotion of reuse/recovery in the craft sector in Benin.

Finally, in relation to sanitation, Alex Grumbley shared from the context of Mozambique that if pilots of the urine-diverting dry toilets and twin-pit systems are successful then there is potential for the re-use of the toilet pit waste as fertilizer/soil-conditioner depending on pit content, demand and acceptability amongst the local community.