

Situational analysis of water, sanitation and hygiene and trachoma in Mali: implications and next steps

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Summary

This situational analysis of water, sanitation and hygiene (WASH) and trachoma in Mali is meant to inform a three-year project to support sustainable access to safe water for an estimated 66,000 individuals at healthcare facilities in rural Mali and strengthen national policies and mechanisms to support increased WASH coverage in other facilities. Many healthcare facilities in Mali suffer from a lack of adequately functioning WASH infrastructure and poor infection prevention control (IPC) practices. Common problems include inadequacies in water supply and storage, poorly maintained infrastructure (for example broken water tanks, incinerators and blocked latrines), lack of protective equipment for staff, poor handwashing practices, improper management of medical waste and visibly dirty facilities. Poor governance (in part due to insufficient coordination between many stakeholders), lack of a strong policy framework, limited data and a lack of adequate funding underlie these problems. Advocacy of the importance of WASH and strong leadership and commitment by the government to improve WASH services nationally is needed. At the facility level, healthcare staff should be supported to identify risks and priorities for WASH which are specific to the facility, to design interventions which meet these needs¹.

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Abbreviations

ABHR	Alcohol-based hand rub
ASACO	Association de Santé Communautaire (Community health association)
CAEPHA	Coalition pour l'Accès à l'Eau Potable, Hygiène et Assainissement
CDC	US Centres for Disease Control
CSCom	Centre de santé communautaire (Community health centre)
CSRéf	Centre de santé de référence (Referral health centre)
DNACPN	Direction Nationale de l'Assainissement et le Contrôle des Pollutions et des Nuisances ((National Directorate of Sanitation and Control of Pollution and Nuisances)
DNH	Direction Nationale de l'Hydraulique (National Directorate of Hydraulics)
DNS	Direction Nationale de la Santé (National Directorate of Health)
DRH	Direction Régionale de l'Hydraulique (Regional Directorate of Hydraulics)
HCAI	Healthcare-acquired infections
IPC	Infection prevention control
JMP	Joint Monitoring Programme
MDGs	Millennium Development Goals
NGO	Non-governmental organisation
NTD	Neglected tropical diseases
SARA	Service Availability and Readiness Assessment
SDG	Sustainable Development Goal
SDI	Service Delivery Indicators
UNICEF	United Nations Children's Fund
WHO	World Health Organization
WASH	Water, sanitation and hygiene

¹ WaterAid (2014) Supporting Water, Sanitation & Hygiene (WASH) in Healthcare Facilities (HCF) in Mali WaterAid Proposal submitted to the Conrad N. Hilton Foundation. Proposal developed by WA, WHO and CDC and accepted by CNHF

1. Context

According to a 2015 WHO and UNICEF review concerning data from 54 countries, only 57% of healthcare facilities in sub-Saharan Africa have access to any water source². This figure does not take into consideration quality, quantity, or reliability of the source. When these aspects are taken into consideration, access falls by half. Mali is one such country where coverage of water, sanitation and hygiene (WASH) is poor. Two evaluations of healthcare facilities in Mali³ showed that overall, 61% had poor water quality (water turbidity and lack of chlorination), 24% had an insufficient quantity of water to meet the basic daily requirements for their patients and 68% had insufficient handwashing facilities. At the same time, the lack of toilets in healthcare facilities forces patients to relieve themselves in surrounding areas; for example, in Tombouctou region, a shocking 82% of healthcare facilities showed signs of open defecation.

The lack of safe water, toilets, and handwashing facilities poses significant health risks to patients, healthcare facility workers, and nearby communities. In addition, poor healthcare waste management in healthcare facilities also poses substantial risks. Poor WASH and environmental conditions can cause a range of infections⁴ due to contaminated water, food, hands, medical equipment and other fomites⁵. Without water, healthcare facility workers are unable to wash their hands before caring for patients or provide safe drinking-water for administration of oral medications or for use during surgeries and other procedures, thereby increasing the risk of healthcare-acquired infections (HCAI). Poor WASH provision in healthcare facilities increases the risk of HCAI and undermines global and national efforts to improve maternal, neonatal and child health. Neonatal sepsis for example, kills 400,000 newborns each year, 99% of which occur in low and middle-income countries. These deaths are preventable and adequate WASH in healthcare facilities plays a major role in averting these deaths. HCAI have been estimated at two to twenty times higher than in developed countries, affecting between 2% and 15% of patients in hospitals, and 6% to 46% in surgical wards; the cumulative incidence of surgical site infections ranges from 2.5% to 30.9%^{6,7}. The on-going Ebola epidemic in West Africa has highlighted the grave consequences of the lack of a basic first line of defence for healthcare facility workers.

Ensuring adequate WASH in healthcare facilities minimizes the risk of infection for patients, caregivers, healthcare workers and surrounding communities. Clean and safe healthcare facilities can increase demand and trust in services; reinforce the role of healthcare services and staff in setting societal norms; and improve working conditions to support the motivation and retention of health workers. Figure 1 illustrates the importance of adequate access to WASH in healthcare facilities⁸.

² WHO/UNICEF (2015). Water, sanitation and hygiene in healthcare facilities: status in low- and middle-income countries and way forward. http://www.who.int/water_sanitation_health/publications/wash-health-carefacilities/en/

³ WHO (2013) Évaluation rapide de l'Accès à l'Eau, l'Hygiène et l'Assainissement dans les structures de soins au Mali, WHO-Mali, WHO Mali (2014) Rapport d'évaluation WASH dans les Centres de Santé des régions de Kayes, Koulikoro, Sikasso et du District de Bamako

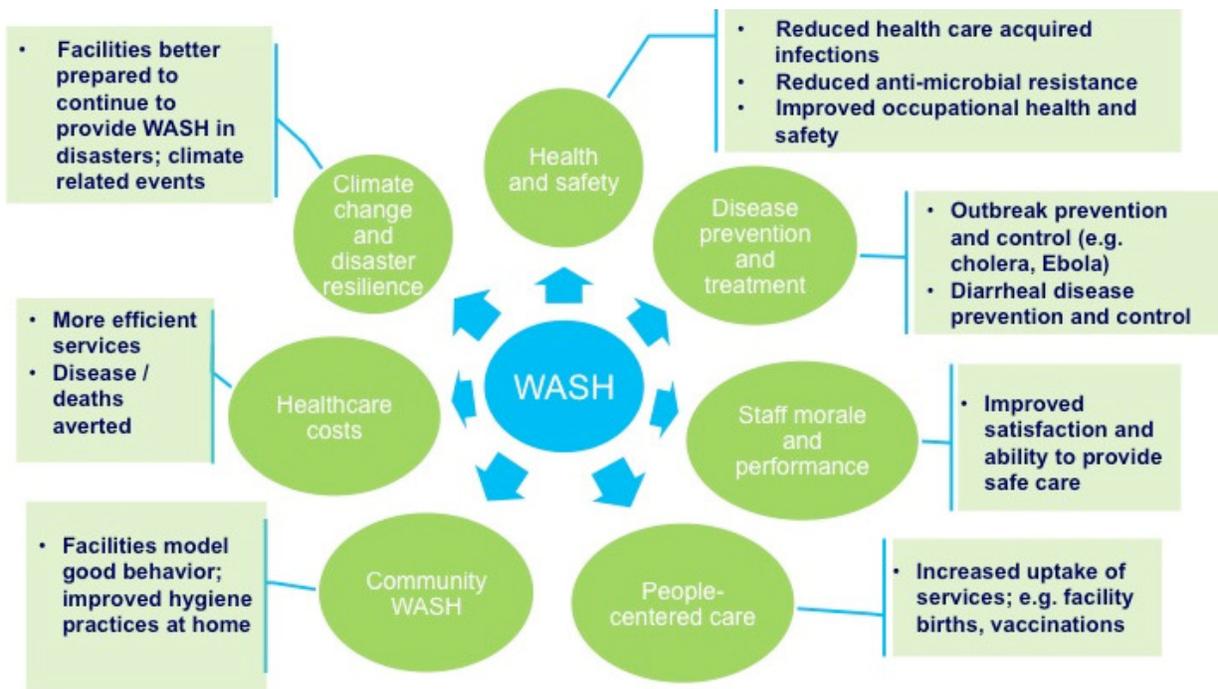
⁴ WHO (2014) Associated adverse health outcomes include these infection types: gastrointestinal, respiratory, surgical site, traumatic wound, post-partum and sharps-related, among others.

⁵ WHO (2008) Essential environmental health standards in healthcare.

⁶ Nejad et al. (2011) Health-care associated infection in Africa: a systematic review.

⁷ Allegranzi et al. (2011) Burden of endemic HAI in developing countries: systematic review and meta-analysis. *Lancet* (377, 228-241).

⁸ WHO/UNICEF (2015) Global Action Plan on WASH in Healthcare Facilities.



Adapted from: WHO/UNICEF, 2015. *Water, sanitation and hygiene in health care facilities: status in low- and middle-income countries and way forward.*

Figure 1: Importance of WASH in healthcare facilities

1.1 Global Action to improve WASH in healthcare facilities

WHO and UNICEF are currently leading global efforts with the goal of achieving universal access to water, sanitation and hygiene in households, schools and health facilities by 2030⁹. In March 2015, a global action plan was drafted calling for health sector leadership and the WASH sector to provide catalytic support⁸. Five key change objectives guide the realisation of the long-term vision for WASH in healthcare facilities:

1. WASH in healthcare facilities is prioritized as a necessary input to achieving all global and national health goals especially as those linked to Universal Health Coverage. Key decision makers and thought leaders champion WASH in healthcare facilities.
2. All countries have national standards and policies on WASH in healthcare facilities and dedicated budgets to improving and maintaining services.
3. Global and national monitoring efforts include harmonized core and extended indicators to measure WASH in healthcare facilities.
4. The existing evidence base is reviewed and strengthened to catalyze advocacy messages and improve implementation of WASH in healthcare facilities.
5. Healthcare facility staff, management and patients advocate for and champion improved WASH services. Risk-based facility plans are implemented and support continuous WASH improvements, training and practices of healthcare staff.

This work in Mali will be used to inform the implementation of these change objectives and provide an opportunity to ‘ground-truth’ the global efforts. It will also serve as an example for other regional and local efforts to follow.

1.2 Improving WASH in healthcare facilities in Mali

A 3-year project (January 2015-December 2017), *Supporting Water, Sanitation & Hygiene (WASH) in Healthcare Facilities in Mali*, has been funded¹⁰ to support sustainable access to safe water for an estimated 66,000 individuals at health clinics in rural areas of Mali and strengthen national policies and mechanisms to support increased WASH

⁹ WHO/UNICEF, 2015. *Water, sanitation and hygiene in healthcare facilities: urgent needs and actions.* Meeting Report. Geneva, Switzerland.

¹⁰ Funding provided by the Conrad N. Hilton Foundation

coverage to other facilities. The project seeks to address the aforementioned challenges by supporting rapid and sustainable access to safe water in healthcare facilities in rural Mali. The objectives of the project are to:

1. Address limited data on WASH coverage in healthcare facilities;
2. Provide short-term and long-term safe water and handwashing facilities in healthcare facilities
 - i. Portable water and hygiene stations in the short term
 - ii. Access to safe, sustainable water supplies through newly installed and rehabilitated infrastructure in the long term
3. Build capacity to operate and maintain safe and sustainable water services and monitor and evaluate our intervention;
4. Increase planning and coordination between local governments and implementing partners to strengthen the enabling environment.

This situational analysis of WASH and trachoma in Mali is to understand more deeply the needs and constraints faced by healthcare facilities. The analysis, along with work conducted by the Government of Mali and project partners (WaterAid, WHO and CDC) will be used to tailor the project to address the specific WASH needs of healthcare facilities in the target areas of Bla and Koro health districts, within the administrative regions of Ségou and Mopti respectively (see Figure 2). The targeted areas were selected because they contain many of the “poorest of the poor” and face challenges accessing safe and sustainable water, as evidenced by low coverage rates (Ségou 67% and Mopti 72%), compared with the national average (75%)¹¹.

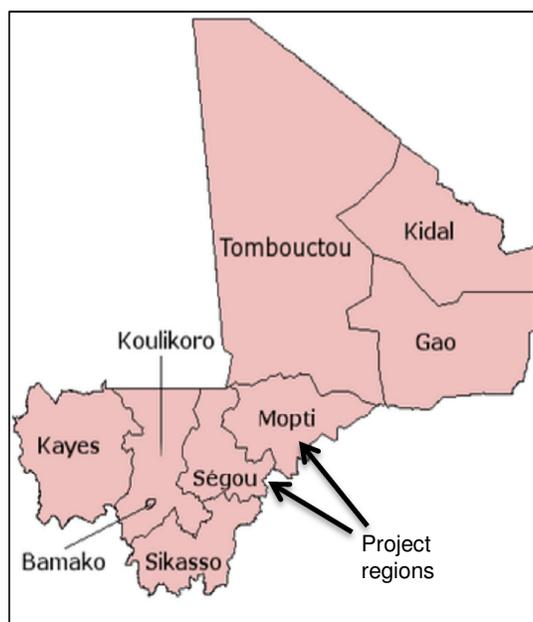


Figure 2: Map of Mali and its regions

2. Objectives and Methodology

The objectives are to:

1. Review available data of WASH and IPC practices in healthcare facilities;
2. Determine coverage of water and sanitation facilities in surrounding communities;
3. Review available data on trachoma¹²;
4. Summarise the status of national policies and programs on WASH and trachoma, and trachoma prevention and control;

¹¹ National Directorate of Water

¹² Trachoma is endemic among communities that lack access to adequate water and sanitation, have over-crowded living conditions, and suffer from limited access to healthcare services. As such, combining it with work on WASH in healthcare facilities provides a useful opportunity to map and help prevent trachoma and it has therefore been included in this work.

5. Collect information on stakeholders' involvement in WASH and trachoma programs and their implementation;
6. Map high priority areas and develop an implementation plan, based on the WASH and IPC data obtained.

The principle activities conducted for the situational analysis were as follows:

1. A desk review of all available data on WASH and trachoma at the national and local level. A number of sources were used, including local and national surveys, (Ministry of Health surveys, Health Demographic Survey (HDS), WHO/UNICEF Joint Monitoring Programme (JMP)), information on trachoma incidence and implementation of SAFE strategy (Trachoma Atlas) and national policies and strategies of WASH in healthcare facilities, provided by WHO Mali and the Malian National Directorate of Health (DNS). A review of data on diarrhoea, malaria and HCAI prevalence was also conducted. These conditions are all reduced by improved WASH services and therefore provide useful context.
2. Participation in the national project launch workshop at which initial findings from the situational analysis were presented to project partners and stakeholders, dialogue took place with participants on WASH in healthcare facilities in Mali and additional information was gathered from presentations and group work to inform the situational analysis.
3. A field visit to three healthcare facilities in Bla (Ségou district) to understand better the context of WASH in healthcare facilities (see Figure 3 for location of facilities). At each centre a walk through was carried out to observe WASH facilities and hygiene practices and discussions took place with healthcare facility staff on the key challenges and solutions. For further information on the methodology, see Appendix 2¹³.
4. Discussions with key stakeholders and partners to understand the needs and priorities for WASH in healthcare facilities at the local and national level and to raise awareness of the project within the government. Specific meetings included:
 - i. WHO Mali
 - ii. WaterAid Mali
 - iii. National Directorate of Health (DNS)
 - iv. Minister for Energy and Water
 - v. Expertise France, a French governmental development agency
5. A report summarising the aforementioned objectives.



Figure 3: Location of Bla, Ségou (yellow) and Koro, Mopti (red), Mali

¹³ More detailed health facility assessments are being carried out by CDC and will provide data on WASH management, infection prevention, handwashing and hygiene, drinking water and labour services. These data will be available in August 2015.

3. National coverage of WASH

3.1 Healthcare facilities

Two large district level surveys, covering eight of Mali's nine regions, provide coverage data on WASH services in 431 healthcare facilities. The first used the WHO Rapid Assessment Tool¹⁴ for WASH in healthcare facilities in emergencies and was carried out in Ségou, Mopti, Tombouctou and Gao in 2013.¹⁵ The second used a national tool and was implemented in Kayes, Koulikoro, Sikasso and Bamako in 2014¹⁶. Kidal, in the far east of the country, was not surveyed. Two methodological issues should be noted, firstly the two surveys use slightly different indicators so only a limited number of indicators can be presented here and secondly the 2014 survey does not present average regional figures for open defecation (so ranges have been presented below). The data should therefore be interpreted with caution. The table below presents a selection of key WASH indicators across the eight regions¹⁷.

	Kayes	Koulikoro	Sikasso	Bamako	Gao	T'tou	Ségou	Mopti
Water supply								
Quantity of water insufficient to meet daily needs	25%	22%	31%	38%	36%	25%	19%	19%
Healthcare waste management								
Insufficient, inappropriate, inadequate or overflowing medical waste containers	42%	56%	92%	67%	64%	97%	38%	4%
Handwashing and cleaning								
No soap or alcohol based hand rub	23%	49%	20%	46%	52%	38%	6%	9%
Insufficient and improper cleaning and disinfection of walls, floors, medical equipment	87%	64%	30%	94%	95%	100%	79%	21%
Sanitation								
Signs of open defecation	18%	14%	0%	4%	20-57%	67-82%	0-42%	0-4%

Table 1: WASH coverage data from two WHO surveys, 2013 and 2014.

Coverage of WASH services is highly variable between regions, for example 19-38% of facilities have an insufficient quantity of water. Certain regions perform very badly on a number of indicators, for example, Tombouctou, where 100% do not clean and disinfect sufficiently and 97% of facilities do not have proper segregation or disposal of waste (compared to 4% in Mopti). As many as 82% of facilities in this region show signs of open defecation (compared to 0% in parts of Mopti, Ségou and Sikasso).

There are currently no nationally representative datasets on WASH coverage in healthcare facilities for Mali - neither the Service Availability Readiness Assessment (SARA) or Service Provision Assessment (SPA) surveys have been conducted and the health monitoring information system does not collect data on WASH in healthcare facilities. The World Bank's Service Delivery Indicators assessment was due to take place in 2014/2015 but has been postponed to early 2016.

3.2 Household

The WHO/UNICEF Joint Monitoring Programme (JMP), of which the most recent available data are based on 2015 estimates, provides data on WASH coverage at the household level¹⁸. Nationally, 77% of households have access to an improved water source and 25% have access to improved sanitation¹⁹. These coverage levels drop when

¹⁴ See Appendix 1 for a copy of the Rapid Assessment Tool

¹⁵ WHO Mali (2013) Évaluation rapide de l'Accès à l'Eau, l'Hygiène et l'Assainissement dans les structures de soins au Mali

¹⁶ WHO Mali (2014) Rapport d'évaluation WASH dans les Centres de Santé des régions de Kayes, Koulikoro, Sikasso et du District de Bamako

¹⁷ In the two project districts, 32 healthcare facilities from two circles were surveyed in Ségou and in Mopti, 40 facilities from 3 circles were surveyed.

¹⁸ It is worthwhile noting that there was a drop in trends for two reasons: the war in the northern part of the country which destroyed a lot of water infrastructures and also after the 2009 census it was realized the actual population growth rate was higher than the one initially applied.

¹⁹ WHO/UNICEF (2015) Joint Monitoring Programme, available at http://www.wssinfo.org/fileadmin/user_upload/resources/Mali.xls

looking at rural coverage only (64% and 16% respectively). Figure 4 shows a summary of the trends for water and sanitation coverage in rural areas between 1990 and 2015. The Millennium Development Goals (MDG) targets for water and sanitation coverage in Mali are 82% and 59% respectively²⁰.

It has been reported previously that Mali is on track to meet the MDG for water, with a national coverage of 76.3% in 2011. However, this figure was calculated using an underestimated population size. Taking into account the most recent estimates of population size (2009), the levels drops to 63.8%, well below the 82% required to meet the target²¹. Split into urban and rural areas, coverage is 68.7% and 61.8% respectively. It should be noted that water coverage does not consider water quality or protection of water sources. There is therefore likely a sizable population without safe drinking-water. Mali is not on track to meet the MDG for sanitation but some improvements have been seen: for example national rates of open defecation have dropped from 29% in 1990 to 10% 2012. When only considering rural areas, a more marked decreased was observed (37% to 15%). Additional data are available in Appendix 1.

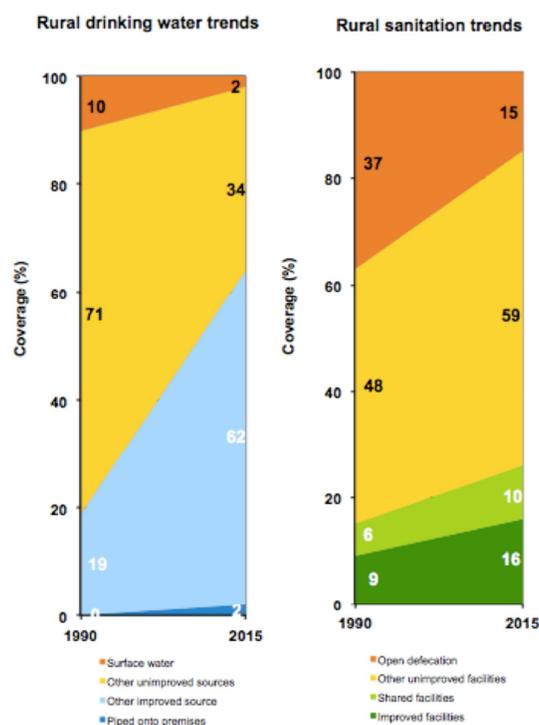


Figure 4: Rural trends of water and sanitation coverage, 1990-2015¹⁹

4. Infectious diseases and conditions related to WASH

The following section provides data on the prevalence of trachoma, diarrhoea, malaria and HCAI. These conditions are included because they are all improved by better access to water, sanitation and hygiene practices. Levels of maternal and child mortality are also presented to provide further context.

4.1 Trachoma

A national trachoma survey (1996-7) found that all health districts had a trichiasis prevalence of 1-4.9% (with the exception of Gao and Kidal which were both under 1%). Following a national programme of work introduced in 1999 to eliminate trachoma using the SAFE strategy, two districts in the north have achieved elimination while the prevalence is less than 1% in the remaining 38 districts which cover Mali. At the end of 2014, the number of patients needing surgical treatment was 20,324 compared to 85,000 in 1997. Most recent estimates for the project

²⁰ Déclaration des Engagements de Mali

²¹ Ministère de l'Énergie et de l'Eau (2015) Rapport Annuel d'Activités au titre de l'année 2014.

districts give a trichiasis prevalence of 0.3% in Koro (2011) and 0.7% in Bla (2010), and trachoma prevalence of 2.9% in Koro (2011) and 0.3% in Bla (2010).

There is currently no written national plan for trachoma. At the time of writing, a plan was being developed and will be ready later in 2015. A Manual for WASH implementers provides diagnostic tools, monitoring and advocacy tools, and advocacy messages to improve awareness of trachoma²².

4.2 Diarrhoea

According to the most recent Demographic Health Survey (DHS) (survey V, 2012-2013), the national prevalence of diarrhoea in children under-five is 9% (measured as a child suffering from diarrhoea in the two weeks preceding the survey being conducted)²³. This prevalence is highest in Bamako district (12%) and Sikasso (10%), and lowest in Kayes (6%). The prevalence is particularly elevated in children aged 12-23 months (13%). The prevalence of diarrhoea is lower than what was recorded by the previous DHS survey (survey IV, 2006) where the prevalence was 13% for under-fives and 22% for children aged 12-23 months²⁴. Highest levels in 2006 were found in Kayes (21%) and Ségou (19%). This decrease is thought to be due to both improvements in access to WASH and improved treatment through ORS (31.8% of children received advice or treatment for their diarrhoea at a healthcare facility in 2012-2013 compared to 17.1% in 2006).

4.3 Malaria

Malaria is a major public health problem in Mali. In spite of recent progress in prevention and treatment, malaria remains the number one cause of death in children less than five years and pregnant women²³. The prevalence of a positive result when screening for malaria was estimated at 52% in 6-59 month olds and 9% of children under-five reported a fever, indicative of malaria, in the two weeks preceding the survey. A national programme for the prevention of malaria has been in place since 1994 and a strategic plan for 2013-2017, written by the Ministry of Health, is in place.

4.4 Healthcare acquired infections (HCAI)

Few recent data exist on the burden of HCAI in Mali but what exists shows the level to be high²⁵. The 2011 Strategic Plan to Prevent and Control HCAI presented the following data: a study of the application of essential hygiene measures carried out by the DNS in 2003 showed that although 98.7% of staff knew the importance of washing their hands and 90% of wearing gloves, only 35.7% and 41.4% were doing so, greatly increasing the risk of HCAI. Surveys carried out in one national hospital (Hôpital du Point G, Bamako) found the prevalence of HCAI from surgical and intensive care services to be 14% in 2001 and 9.7% in 2004. There is also a high frequency of infectious disease markers amongst blood donors in Mali, increasing the risk of transfusion-transmissible infections. The level of positive donors at the National Blood Transfusion Centre in 2009 were 0.08%, 2.34%, 3.79% and 15.48%, respectively for syphilis, HIV, viral hepatitis C and B²⁵.

4.5 Maternal and child mortality

In 2012-2013, maternal mortality accounted for 32% of all deaths in females aged 15-49 years²⁶. Between 2005 and 2013, the maternal mortality ratio fell from 710 per 100,000 live births to 550. The number of women dying during pregnancy, delivery or in the two months following delivery also fell, from 5.8 out of 1000 women in 2001, to 4.6 in 2006 and 3.7 in 2012-2013.

The latest estimate (2011) of national neonatal child mortality rate is 42 per 1,000 live births. Over a third of all under-five deaths occur in neonates²⁷. This marks a slight improvement from 2002-2006 when neonatal mortality was estimated at 46 per 1000 live births. The under-five mortality rate is declining slowly but remains too high to

²² Sightsavers, Department for International Development, The International Trachoma Initiative, Children without Worms, WaterAid, Centre for Global Safe Water Emory University, CARE USA (2013) WASH and the Neglected Tropical Diseases. A Manual for WASH implementers, Mali.

²³ DHS (2014) Enquete Démographique et de Santé Mali (EDSM-V) 2012-2013, available at <http://dhsprogram.com/publications/publication-FR286-DHS-Final-Reports.cfm>

²⁴ DHS (2006) Enquete Démographique et de Santé Mali (EDSM-IV) 2006, available at <http://dhsprogram.com/pubs/pdf/FR199/FR199.pdf>

²⁵ Ministère de la Santé (2011) Plan stratégique de prévention et contrôle des infections associées aux soins

²⁶ WHO (2015) Global Health Observatory Data Repository. Mali statistics summary. <http://apps.who.int/gho/data/node.country.country-MLI?lang=en>

²⁷ Count-down to 2015 (2014) Mali Country profile http://www.countdown2015mnch.org/documents/2014Report/Mali_Country_Profile_2014.pdf

meet MDG Four, to reduce the rate by two thirds between 1990-2015: in 2011, the under-five mortality rate was 179 per 1000 live births.

5. Governance and regulatory environment

Within the Malian government, the responsibility for WASH is held by the Minister for Health and Public Hygiene (MNSHP) (lead by the National Directorate of Health [DNS]), the Minister for Environment, Sanitation and Sustainable Development (lead by the National Directorate of Hydraulics [DNH]), the Minister for Energy and Water and the Minister for Territorial Administration and Decentralisation. The Malian government has been moving towards a more decentralised model of governance, giving power to each of its 703 rural and urban communes who have executive authority in the fields of hydraulics, hygiene and sanitation. This regional autonomy means that communes may deliver and implement WASH services differently, prioritising particular needs and concerns, according to the local context. While WASH services may be better adapted to local needs, this comes with a risk that special interests may determine the implementation of some services. The DNH recognises the need for greater technical and financial support to improve WASH services, better monitoring and the need to improve coordination and dialogue between actors.

In line with the 2008 eThikwini declaration²⁸, which seeks to elevate sanitation and hygiene on the African development agenda, Mali has established the target of achieving universal access to water and sanitation by 2025. This target includes access in healthcare facilities. To this end, Mali has developed a strategic framework for growth and poverty reduction (Cadre Stratégique pour la Croissance et la Réduction de la Pauvreté, CSCRP 2012-2017), which acknowledges the water and sanitation sectors as priority areas. This framework includes two targets: to stop two million people from practising open defecation and to increase access to improved water by 2% a year to 2017 (equivalent to 800,000 people per year). Actions focus on strengthening the capacity of actors as part of the decentralisation process, increasing the mobilisation of funding from the State to the two sub-sectors, and improving sector coordination, monitoring and evaluation.

A national plan for improving access to water (Plan National de l'Accès à l'Eau Potable, PNAEP) was adopted in 2004 which outlined a strategy to achieve the MDG for water. The Sectorial Programme for Water and Sanitation (Programme Sectoriel Eau Potable et Assainissement, PROSEA), under the management of the DNH and the National Directorate for Sanitation and Control of Pollution and Nuisances (DNACPN), is Mali's reference framework to support the implementation of national strategies and policies. The PROSEA enables the implementation of the PNAEP and integrates it with the sanitation sector and management of water resources. Water quality monitoring is the responsibility of the Minister for Energy and Water and the Minister for Health and Public Hygiene, and is carried out by the National Laboratory of Water Quality and the National Health Laboratory. As of 2009, the Unit for Planning and Statistics for Water, Environment, Town Planning and State Sectors have been charged with the operational monitoring of the PROSEA.

In addition to the PNAEP, the following policies and strategies also exist:

- Water Code (written 2002, adopted formally 2006)
- National Water Policy (2006)
- National Strategy for the Management of Waste Water (2007)
- Strategic Plan for the Prevention and Control of Healthcare-related Infections (2011)
- National Plan for the Management of Biomedical Waste (2011-2015)
- Strategic Plan for the Promotion of Hygiene Practices within the context of reducing Diarrhoeal Diseases (2011-2015)

It should be noted that the National Water Policy does not specifically mention healthcare facilities, although healthcare facilities are frequently included in village water programmes and community programmes (though not in a strategic manner). Other health sector policies include promotional activities for hygiene and sanitation generally, without specific reference to healthcare facilities. However in 2011, the Minister for Health and Public

²⁸ AfricanSan (2008) The eThikwini Declaration <http://www.wsp.org/sites/wsp.org/files/publications/eThekwiniAfricaSan.pdf>

Hygiene adopted the Strategic Plan for the Prevention and Control of Healthcare-related Infections, showing commitment to improve WASH and IPC in healthcare facilities.

Training manuals, which address some of the technical aspects of WASH, exist to support these strategies, for example the management of healthcare waste and the prevention of health facility-acquired infections (2011) and access to WASH in healthcare facilities (2014). However, no plan exists to implement these trainings strategically across the country resulting in smaller, ad-hoc trainings that do not address gaps consistently, nor address quality improvement, management, motivation or sustainable operation and improvements of systems. In summary, although a regulatory framework exists, it is fragmented and poorly coordinated between partners, meaning national policies and strategies are poorly implemented and controlled.

5.1 Financing

WASH for households and public services is financed in three-year cycles under the PROSEA and documented under a Framework of Mid-term Spending (CDMT)²⁹. The current cycle (2013-2015), dedicated to achieving the MDGs, is nearing completion. The new framework for the period of 2016-2018 allocates a total of 13,522 million CFA (USD 22.4m) to the water sector³⁰. This budget covers 4 key objectives: 1) to improve access to water in an equitable and lasting manner (81% of funds), 2) to improve access to water for other uses (5%), 3) to promote the integrated management of water resources for all uses (7.3%) and 4) to improve the quality of public water services in an effective and efficient manner (6.7%). As part of the decentralisation process, a budget is allocated to the eight Regional Directorates of Hydraulics (DRH). This annual budget is between 12-15% of the total budget of the DNH for each year.

For 2016-2018, an additional, 3,459 million CFA (USD 5.7m) are available for WASH financing through projects and programmes which have already been funded. However, there remains a 74% shortfall in funding of what is needed to achieve the goal of universal access by 2025. Notably, this shortfall affects water supply (72%), water for other uses (100%) and management of water resources (95%). There is a strong dependence of external aid yet little absorption capacity for external funds. According to the recent UN-Water GLAAS report, less than 50% of official donor capital commitments were utilised for sanitation and 50-75% for drinking water, thus further exacerbating the inadequacies in financing³¹.

From 2015, the government's commitment to WASH includes 0.2% of GDP allocated to sanitation and hygiene and 5% of the national budget allocated to water and sanitation. No specific figures are given for financing of WASH in healthcare facilities. Healthcare facilities are considered part of public services along with schools and markets in the DNH's budget.

5.2 Partners

5.2.1 National

The WASH and Health sectors in Mali are supported by international organizations (WHO, UNICEF), international donors (Governments of Japan, Sweden, Canada, Denmark, The Netherlands, Luxembourg, USAID, European Union), NGOs (including WaterAid, World Vision, Help Assistance, Protos, Eau Vive, Plan, CARE, Save The Children, HELVETAS), national utilities (SOMAPEP [Société Malienne de Patrimoine de l'Eau Potable] and SOMAGEP [Société Malienne pour la Gestion de l'Eau Potable]) and community associations.

Following the humanitarian crisis in 2012, the WASH cluster³² has worked to integrate a minimum package of WASH interventions into nutrition programmes. The specific targets of this strategy include mothers accompanied by their children who are severely malnourished, promoting safe hygiene practices at home and targeting areas where there are high rates (>15%) of severe acute malnutrition. UNICEF has implemented this minimum packet of WASH in 140 healthcare facilities.

²⁹ Programme Sectoriel Eau et Assainissement (PROSEA)

³⁰ Cadre de Dépenses à Moyen Terme 2016-2018, Sous Secteur Eau

³¹ WHO (2014). UN-Water global analysis and assessment of sanitation and drinking-water (GLAAS) 2014 report. Investing in water and sanitation: increasing access, reducing inequalities. Geneva: World Health Organization. http://www.who.int/water_sanitation_health/publications/glaas_report_2014/en/and

³² The WASH cluster is led by UNICEF and is made up of a number of NGOs and governmental partners. It operates solely in emergencies.

According to ps-EAU, an online repository for water and sanitation projects, 61 projects have been active in Mali since 2011³³. These projects are predominately focused in communities or schools, but two have conducted work on WASH in healthcare facilities, both in the Kayes region in western Mali. While many partners continue to be active in the WASH sector in Mali, organisations (particularly NGOs) are not frequently held to account for their work. There is a tendency for services and infrastructure to fall into disrepair once a project has been completed. This problem was stressed by governmental officials during the inception workshop. It is important to work within the existing system where possible, allowing the government and healthcare facilities to make decisions rather than relying on external actors.

5.2.2 Regional: Mopti and Ségou

World Vision is currently the only partner known to work in Mopti. They are working in a number of programmes in the Koro. These include WASH in the community, as well as building and maintaining water points in a number of healthcare facilities. They are also active in nutrition and vaccine programmes, notably providing solar powered refrigerators and motorbikes for the vaccine officers.

In Ségou, the NGOs World Vision and ALPHALOG (an implementing partner of WaterAid) are active. World Vision's work focuses on WASH in schools as well as in community health centres³⁴. They have constructed latrines in four schools and three health centres, renovated water taps in five schools, upgraded the water supply in seven health centres, built incinerators in seven health centres, and distributed WASH kits (consisting of wheelbarrows, handwashing stations [a bucket with a tap and soap], water buckets, cleaning detergents, hand washing soap, shovels and rakes) to seven health centres.

As of 2015, ALPHALOG has begun to work in 11 healthcare facilities in Touna commune, Bla to improve WASH services. Along with improving infrastructure, they are also working to strengthen the capacity of actors and target groups through training and by sharing experiences of WASH through a community platform. This work is due to be completed by 2018.

6. National workshop on WASH in healthcare facilities

In April 2015, a two-day national workshop was held in Bamako to launch the project. The aim of the workshop was to discuss and analyse the current situation of WASH in healthcare facilities both nationally and in the project regions, to discuss in detail the different components of the project, to define the persons and organisations responsible for each component and to decide a detailed work plan for the duration of the project. Thirty-four people from international, national and local partners took part in the workshop. A full list of participants and additional details of the workshop is available in the workshop report³⁵.

Through presentations, group work and plenary discussions, a number of problems and priorities were identified which can be grouped into four main themes: 1) maintenance and improvement of infrastructure and technology, including water treatment and storage, latrines, hand washing facilities, equipment for disposal of medical waste; 2) human resources for WASH, in particular the number of staff, their skills and competences, and the need for clear contracting and finance; 3) coordination of WASH activities within healthcare facilities through communication, monitoring and evaluation; and 4) the mechanism of financing WASH in healthcare facilities. Emphasis was placed on the need to increase the maintenance and sustainability of WASH infrastructure and improve infection prevention and control in healthcare facilities. At the project level, it was agreed that harmonised WASH data in the project areas and the prioritisation of monitoring and evaluation through regular meetings in each project district was called for.

³³ Programme Solidarité de l'Eau (2015), Ressources en ligne, available at http://www.pseau.org/outils/actions/action_atlas.php

³⁴ There are two levels of health centres in Mali: the *centre de santé de référence* (CSRéf, Referral Health Center) are present in each Circle. Their role is to act as a link between the Regional Hospitals and the *centres de santé communautaires* (CSCoM, Community Health Center). Most CSCoM are run by an Association de Santé communautaire (ASACO, Community health association), which provide basic preventative and curative services in maternal and child health. Bla and Koro each have one referral centre (CSRéf) and 27 and 22 community health centres (CSCoM) respectively.

³⁵ OMS (2015) Rapport de Synthèse de l'Atelier National de Lancement de l'Accès à l'Eau Potable, l'Hygiène et l'Assainissement dans les structures de santé des districts sanitaires de Bla et Ségou, du 28 au 29 Avril 2015, Bamako Mali

7. Site visits

A short, exploratory visit to three healthcare facilities in Ségou (Bla CSRéf, Kémeni CSCom and Niala CScom) was conducted to understand better the current situation of WASH in healthcare facilities, the main problems and the priorities for improvement. These facilities were selected by the government to represent a range of size of facilities and were facilities where staff were available on the day of the visit. Each visit consisted of a general walk-through including observations of the maternity wards and other consultation rooms, verification of the water supply and storage, handwashing stations and the presence of soap, visible cleanliness, the number and functioning of latrines, and the management of healthcare waste (including bins for sorting waste and incinerators). Informal interviews were also held with the head of the centre (if available), as well as midwives, healthcare assistants and the local ASACO member.

The main problems identified were a lack of WASH infrastructure and upkeep and maintenance of existing infrastructure (including broken incinerators, blocked latrines and lack of bins for sorting waste), a lack of handwashing stations outside latrines and within consultation rooms, and insufficient water storage capacity. Facilities were not kept visibly clean with medical and household waste exposed both inside and outside the facility. In all three facilities, there was a lack of accountability for WASH with insufficient, or no, staff designated to cleaning latrines and other important areas and no clear system for reporting WASH-related problems. A summary of the information collected at each centre can be found in Appendix 3.

8. Priorities and next steps

Suggestions for next steps and priorities for work, informed by the review of policies, outcomes from the national workshop, site visits and discussions with project partners are presented below. Based on the main issues identified, they are organized in-line with the five change objectives established by the WHO/UNICEF global initiative on WASH in healthcare facilities. These are followed by project-specific recommendations.

8.1 National recommendations

Change objective 1: Key decision makers and thought leaders champion WASH in healthcare facilities and WASH is prioritized as a necessary input to achieving all global and national health goals.

Establish a national taskforce for WASH in healthcare facilities with clear objectives and outputs

Create a taskforce to bring together 10-15 key partners from government, international organizations (WHO UNICEF), the health sector (maternal and child health, infection prevention control), funders (USAID), NGOs (WaterAid, World Vision) and civil society (Coalition pour l'Accès à l'Eau Potable, Hygiène et Assainissement [CAEPHA]). The group should meet bi-annually and be responsible for coordination and standardization of efforts to improve WASH in healthcare facilities on a national scale, providing opportunities for sharing learning, and integrating with existing standards and monitoring. The group should facilitate collaboration between project partners. Detailed and prescriptive terms of reference for the Taskforce should be written as soon as possible.

The government should lead the taskforce through a dedicated focal point and team who will work to champion WASH across Mali. Members from the health sectors and financing should be involved to ensure advocacy of the inclusion of WASH in work stream planning and financing decisions at government level. A preliminary meeting of the taskforce, under WHO and WaterAid's leadership took place in May 2015.

Campaign for better WASH services, with strong leadership and commitment

Conduct a national campaign, with clear support and commitment from the government from the start, to improve WASH services and motivate staff and patients to change their behaviour. The campaign should use multiple channels to maximise impact, including radio and television adverts, banners and notices on roadsides and championing by community leaders. Campaigns should include behaviour change messages (for example hand washing) aimed at the community as well as healthcare facilities, to educate people about the importance of WASH so that patients and healthcare workers demand better quality of care and do not settle for facilities which are not

safe and hygienic. Formative research should be carried out to understand the drivers of the targeted behaviours, the results of which should be used to develop key messages.

Change objective 2: All countries have national standards and policies on WASH in healthcare facilities and dedicated budgets to improving and maintaining services.

WASH in healthcare facilities should be included and prioritized in Mali's national health policies and budgets so that WASH becomes a fundamental component of healthcare, recognised across the health sector. WASH should be recognised as the responsibility of the entire health sector - if WASH is to be considered an essential component of healthcare, a more holistic approach is needed, for example the WASH sector should establish links with IPC and Universal Health Coverage colleagues and work together to align their policies and standards. Furthermore, WASH should be included in the annual health sector review to ensure that national needs are identified, priorities are addressed and progress is monitored. To support this, a budget dedicated specifically to WASH in healthcare facilities (rather than public services more generally as is currently the case), should be included in health sector financing as well as a mechanism to ensure such budgets are managed appropriately and transparently. Where relevant, work in Mali should build on past experiences in other countries. Ethiopia provides a model which could be adapted whereby WASH has successfully been built into IPC efforts in all 150 national hospitals through a government-led initiative in collaboration with partners (including WHO, NGOs and the private sector).

Change objective 3: Global and national monitoring efforts include harmonizing core and extended indicators to measure WASH in healthcare facilities

National data on coverage of WASH in healthcare facilities is not currently systematically collected in Mali. Regular monitoring, using internationally recognised core and extended indicators is needed to determine exact coverage of WASH in all regions across the country. This will enable policy makers to prioritize improvements and interventions and measure their progress towards goals. It will also provide an example of good practice for other low- and middle-income countries to follow to facilitate global efforts to improve WASH in healthcare facilities.

Change objective 4: Existing evidence base is reviewed and strengthened to catalyse advocacy messages and improve implementation of WASH in healthcare facilities.

A lack of appreciation and motivation for improving WASH and IPC may contribute to many of the problems identified in this report. It is essential to advocate the importance of WASH and IPC to increase motivation for improvement. There is an impression in healthcare facilities that people 'accept' receiving care or working in a facility that is not clean and that they do not consider WASH and IPC to be an essential component of healthcare. It may also in part be a matter that people would like to change their situation but do not have the means to do so. Staff may not be motivated, and patients not empowered enough, to change the situation. All facility staff, including cleaners and maintenance staff, should receive regular training on WASH and IPC and be assessed on their competency to improve implementation of WASH in healthcare facilities.

Change objective 5: Risk-based facility plans are implemented and support continuous WASH improvements, training and practices of healthcare staff. Healthcare facility staff, management and patients advocate for and champion improved WASH services.

Strengthen WASH infrastructure through maintenance and accountability

There is currently no system for reporting infrastructural problems therefore facilities accept and 'make do' with improperly functioning infrastructure. For example, at Bla CSRéf, the solar-powered water heater was broken (since 2012), the shower had no water, and 9 of the 10 latrines were blocked or not functioning. Most local districts have an engineer trained in the upkeep and maintenance of WASH services, some of which have access to spare parts in local shops. However, the budget for operation and maintenance and making use of these technicians remains a key issue. A system for reporting breakdowns, and a budget for maintenance which is handled by the facility staff, is needed to ensure machinery is repaired as soon as problems arise. Facility managers must also take responsibility for WASH and be accountable for the cleanliness of their healthcare facility. A system for monitoring cleanliness, with appropriate performance indicators, for example a visible notice where cleaners record when latrines are cleaned, could be used.

Improve water supply and storage facilities

Many facilities have an insufficient water supply and inadequate storage facilities, having to carry water by hand into facilities on a daily basis (sometimes multiple times a day)³⁶. The most recent estimates show that nationally, between 0-91% of facilities are not able to store sufficient supply for 24 hours^{15,16}. Improving water supply and storage inside facilities was identified as a top priority by staff at all three facilities. There is a list of standardised and validated technologies that is regularly revised by the DNH. Efforts should be made to ensure all facilities have access to these technologies. Where possible, sufficient funds should be built into WASH budgets to install the necessary infrastructure. Collaboration with national and international partners will be helpful to achieve this goal.

Ensure healthcare waste is managed effectively and appropriately

Under the 'Code de Couleur', all healthcare facilities are required to sort medical waste into three coloured bins (with sacks inside) and dispose of each type of waste according to a specific protocol. At all three facilities visited, these practices were not observed. Bins were missing, empty, inaccessible or in some cases had infectious and sharp medical waste exposed on top of the upturned lid because staff said they did not want to touch the lid for fear of infection. None of the observed bins had sacks inside them. Sharps were lying exposed in the grounds of the CSRéf and Kémeni had piles of medical waste (gloves, needles and bottles) within the perimeter. At both centres, the incinerators were either not functioning or were being used inappropriately (Niala did not have an incinerator). These findings were also emphasised by participants at the national workshop. There is a clear need for education and training on waste management procedures, and a change in staff behaviour. Additional infrastructure is also required: coloured pedal bins for each room, colour coded waste sacks and addition, and maintenance of existing incinerators.

Provide healthcare workers with sufficient protective equipment and cleaning products to minimise infection risk

In all facilities, protective equipment such as gloves, boots, goggles, aprons, was lacking. This puts patients and staff at significant risk of infection. There were also shortages of cleaning solutions, bleach and other disinfectants. Healthcare workers are not empowered to voice their concerns over such shortages nor do they have the autonomy to purchase such equipment themselves. This lack of autonomy was apparent from interviews with healthcare workers as well as participants during the national workshop. The lack of protective equipment raises the issue of governance: healthcare facilities are managed by a community organisation (the ASACO) consisting of non-health professionals who may not be aware that such equipment is essential. Facility managers should be more aware of the importance of IPC and of the basic equipment needed and enable healthcare workers to purchase essential equipment and cleaning materials as they are required. This could be managed through a small budget with petty cash that staff control themselves.

Keep healthcare facilities visibly clean at all times

Facilities are inadequately cleaned, with litter both inside and outside facilities. At Bla CSRéf, the grounds were covered in plastic bags and other waste. At Kémeni and Niala, the insides were dusty, with piles of rubbish (papers, out of date medication, empty cardboard boxes) in consultation rooms. Cleaning staff are poorly motivated: they are generally informal workers who do not receive regular payment, frequently with poor levels of literacy. Each facility needs a regular cleaner, bound by a contract and recognised as an integral part of the facility, who is responsible for cleaning the interior and exterior (including latrines) of the facility. They should understand the importance of cleanliness at all points of care and be incentivised to ensure that the facility is clean at all times. Their work should be applauded and recognized by senior staff in order to increase motivation and commitment. The Groupement d'Intérêt Economique (GIE) are an established service provider and could be used as a formalised and regulated means of providing cleaning services in healthcare facilities. A detailed memorandum of understanding, including task descriptions, training requirements, mandatory staff protection rules (immunization, PPE) and a mechanism for validating the quality of services should be written.

Determine training needs and support staff development and training

Existing training materials should be reviewed in detail as part of a training needs assessment and the results used to inform the development of additional modules. Training programmes should be tailored to the needs of the facility and to each type of staff. Training should be practical as well as theoretical (for example maintenance of infrastructure and handwashing practices). Novel ideas and approaches to training should also be explored, for example facilitating exchange visits between facilities to share experiences, role modelling, coaching and

³⁶ A more detailed assessment of water supply is being collected by WaterAid and CDC and results will be available soon.

mentoring. Staff should be supported on-site to implement the theory they have learnt. The effectiveness of this training should be closely monitored (and adapted as and when necessary), and staff should be rewarded for adopting positive behaviours to maintain motivation.

Support better staff and patient handwashing practices

There were no handwashing stations next to any of the latrines throughout all three facilities. Provision of hand washing stations (with soap) is needed, as well as a better understanding of the motivating factors which affect handwashing behaviours. Taking into account these motivating factors, additional education on the importance of handwashing in relation to relevant healthcare acquired infections should be undertaken. Alcohol-based hand rub (ABHR) could also be used. Local, sustainable options should be sought to maximise sustainability.

8.2 Project-specific recommendations

The following section presents a number of recommendations to adopt the WHO, CDC and WaterAid project to meet the national and regional specific needs, considering available resources. These recommendations may be adapted further based on the results from the assessment of the 22 selected healthcare facilities.

Establish a management team for the project and define organisational roles and responsibilities

Management of the project must include coordination of efforts by all project partners, regular discussions and information sharing, monitoring budgets and distributing resources appropriately. Representatives from ASACO, medical staff, cleaning staff and community members who share responsibility for the governance of WASH in healthcare facilities should be consulted as much as possible.

Finalise an operational framework for the project

Determine and refine the practical details of the project, including a detailed timeline with milestones and deliverables, roles and responsibilities and mechanisms for monitoring and evaluation. This framework will include priority activities to be conducted during this project, which are within available resources. Ensure that the framework is embedded within IPC and other health initiatives and that it covers all the domains and needs that have been identified by the situational analysis, including training, standardisation of technologies, implementation and maintenance of infrastructure, advocacy and awareness of the problem, and national standards and key messages. The framework should be shared with, and agreed by, all project partners.

Identify priorities for interventions, specific to each facility, using WASH 'safety plans'

Using WASH 'safety plans', health facility staff should be supported to identify the risks and needs for their own healthcare facility in order to determine priorities for intervention. Qualitative indicators to explore perceptions of quality of care, and the motivations and deterrents for attending healthcare facilities, should be included in assessments so that the cultural context and its effect on health seeking behaviour is recognised. Interventions should be adaptable rather than a 'one size fits all' approach across all 22 healthcare facilities. WASH plans must focus on prevention in order to manage risks before they occur.

Incentivise and reward healthcare facilities for improving WASH services and IPC measures

Educate staff on the importance of WASH and IPC measures and incentivise them to provide clean and safe facilities for patients to use. Conduct formative research to help understand what would incentivize staff and maximise the impact on their attitudes and behaviours. Facility staff should be encouraged to take pride in the facilities in which they work, to maintain WASH infrastructure and practice good infection prevention control measures. Using a set of indicators, healthcare facilities could be rated using a five-star system as a measure of their quality of care, which would be reviewed on an annual basis. Managers of healthcare facilities could also be provided with a small sum of money to make simple improvements to the appearance of the facility, for example painting murals on the walls and planting plants.

Integrate messaging about NTDs with WASH and IPC work

Facilities should also serve as models for good hygiene practices to support the prevention of NTDs within the community. Facilities provide opportunities to prevent multiple conditions simultaneously. For example, parents may be educated about hand and face washing practices to reduce trachoma which will also help to reduce diarrhoeal infections. In addition, messages may be given about other public health problems, for example encouraging parents not to let children swim in open water to prevent infection with schistosomiasis.

9. Conclusion

Healthcare facilities in Mali suffer from a lack of adequate WASH infrastructure and poor IPC practices. Common problems include inadequacies in water supply and storage, poorly maintained infrastructure (for example broken water tanks, incinerators and blocked latrines), lack of protective equipment for staff, improper management of medical waste resulting in visibly dirty facilities and poor handwashing practices.

A strong commitment by the government to improve the situation at the national and regional level is needed: putting WASH on the national agenda through the development of a WASH taskforce and enforcing standards should be a priority. At the facility level, interventions that are tailored to address the specific needs and risks of each facility should be developed. WASH is much more than merely infrastructure: attention should be paid to the 'human' aspects of WASH, to motivate and incentivise staff to change their behaviour. Patients should demand good quality of care and not settle for anything other than clean, safe facilities. In turn, facilities should act as role models of good hygiene and IPC practices, to spread messages within the community that will ultimately improve a range of health outcomes.

Appendix 1: WASH in health facilities in emergencies Rapid Assessment Form

Assessor(s): _____ _____	Contact Details: _____ Date of Assessment : ____ / ____ / ____
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SECTION I: HEALTH FACILITY GENERAL INFORMATION

Health Facility Name and location (District, Town, Village etc.): _____ _____	Number of Staff: _____
GPS Long: ____° ____' ____" GPS Lat: ____° ____' ____"	Number of Inpatients: _____
<input type="checkbox"/> Hospital <input type="checkbox"/> Clinic <input type="checkbox"/> Health Post <input type="checkbox"/> Temp. Clinic <input type="checkbox"/> Cholera Treatment Centre	Number of Beds: _____
<input type="checkbox"/> Cholera Treatment Unit <input type="checkbox"/> Therapeutic Feeding Centre <input type="checkbox"/> Other _____	Occupancy Rate: _____%
Contact Person: _____ Position: _____	Outpatients / Day: _____
	Phone Number: _____

SECTION II: WATER QUANTITY *Tick the hazards encountered (one point for each):*
Score ____ / 3

- Insufficient water quantity³⁷ for all the daily needs in the health facility.
- Daily interruptions in water supply or insufficient power or fuel supplies.
- Insufficient water storage (less than 24 hours backup supply).

Comments:
SECTION III: WATER QUALITY *Tick the hazards encountered (one point for each):*
Score ____ / 3

- Water is from an unimproved source³⁸ **or** sources of contamination (latrines, waste, animals etc.) within 30m / 100ft of the water source.
- Water is unchlorinated, insufficiently chlorinated³⁹ **or** is turbid (cloudy).
- Broken water pipes, or uncovered or unsanitary water reservoirs.

Comments:
SECTION IV: WATER POINTS *Calculate functional water point coverage and hazard score*
Score ____ / 3

- (A) Estimate the **maximum** number of people⁴⁰ at the health facility _____
- (B) Count the number of functioning⁴¹ water points _____
- (C) Calculate # people per functioning water point (divide A by B) _____

Comments:

Hazard score	0 points	1 point	2 points	3 points
people per functional water point	<50	50-100	100-150	>200

SECTION V: EXCRETA DISPOSAL *Calculate functional toilet coverage and hazard score*
Score ____ / 4

- (A) Estimate the **maximum** number of people³ at the health facility _____
- (B) Count the number of functional⁴² toilets _____
- (C) Calculate # people per clean functional toilet (divide A by B) _____

Comments:

Hazard score	0 points	1 point	2 points	3 points
people per clean functional toilet	<25	25-50	50-100	>100

- Evidence of open defecation. (1 point)

³⁷ Sufficient water quantity defined as at least 5 litres/consultation/day for outpatients, 40 litres/patient/day for inpatients, 60 litres per/patient/day for CTCs, 30 litres/patient/day for therapeutic feeding centres, 100 litres/patient/day for respiration disease isolation centres, 300 litres/patient/day for viral hemorrhagic fever isolation, 100 litres/intervention for operating theatres. See guidance notes.

³⁸ Unimproved drinking water sources include unprotected wells, unprotected springs, rivers, ponds, streams, and open canals.

³⁹ Insufficiently chlorinated defined as less than 0.5mg/l free chlorine residual at the tap or <1.0mg/l during diarrheal disease epidemics.

⁴⁰ Maximum number of people is defined as an estimate of the daily total number of staff, outpatients, inpatients plus inpatient carers.

⁴¹ A functional water point is defined as one that is in good working order supplying treated water for drinking, handwashing, cleaning or other uses with adequate flow rate (enough to fill a 20l bucket in under two minutes).

⁴² A functional toilet is defined as one that is clean, in working order, of a type and location acceptable to users, and that safely separates excreta from users, groundwater and the environment. Toilets that are full, dirty, broken, or inaccessible should not be counted.

SECTION VI: DRAINAGE <i>Tick the hazards encountered (score one point for each):</i>	Score ____ / 3
<input type="checkbox"/> Pools of standing water observed at water points. <input type="checkbox"/> Potentially infectious wastewater from bathing, cleaning, or laundering activities visible in the health facility environment. <input type="checkbox"/> Stormwater drains or canals blocked, non-existent, or non-functional.	Comments:
SECTION VII: WASTE MANAGEMENT <i>Tick hazards encountered (one point each):</i>	Score ____ / 3
<input type="checkbox"/> Insufficient ⁴³ , inadequate ⁴⁴ or overflowing waste disposal containers. <input type="checkbox"/> No source separation of wastes (e.g. infectious, non-infectious, sharps). <input type="checkbox"/> Health-care wastes (needles, dressings etc.) observed in health facility grounds or public spaces <u>or</u> health-care waste disposal area unfenced.	Comments:
SECTION VIII: DISEASE VECTOR CONTROL <i>Tick hazards (one point for each):</i>	Score ____ / 3
<input type="checkbox"/> Lack of impregnated bed nets, indoor residual spraying, or damaged mosquito window screens in mosquito-borne disease risk areas. <input type="checkbox"/> Kitchen stores or prepared food unprotected from flies, other insects or rats. <input type="checkbox"/> Breeding sites (stagnant pools, food waste etc.) identified in / around facility.	Comments:
SECTION IX: INFECTION CONTROL <i>Tick hazards encountered (one point for each):</i>	Score ____ / 4
<input type="checkbox"/> Lack of at least one month supply of chlorine products, detergent or soap, sufficient cleaning equipment (buckets, mops etc.), or cleaning staff. <input type="checkbox"/> Inadequate ⁴⁵ disinfection of beds, floors, walls, equipment, surfaces, <u>or</u> inadequate ⁴⁶ disposal of faeces and vomit from infectious patients. <input type="checkbox"/> Lack of disinfection of hands (with soap or 0.05% chlorine solution) and feet (spraying or footbaths with 0.2% chlorine) at entry / exit of isolation areas. <input type="checkbox"/> Lack of personal protective equipment (disposable gloves, aprons, masks).	Comments:
SECTION X: HANDWASHING <i>Tick hazards encountered (score one point for each):</i>	Score ____ / 3
<input type="checkbox"/> Absence of functional ⁴⁷ handwashing points in ANY area where health-care is delivered (wards, consulting rooms, delivery rooms, operating theatres, etc.) <u>or</u> service areas (kitchen, laundry, toilets, waste zone, mortuary etc.) <input type="checkbox"/> Patients and carers not informed of essential hygiene behaviours repeatedly starting within 30 minutes of arrival. <input type="checkbox"/> Absence of posters reminding users of correct handwashing procedures.	Comments:
Use the space below or additional pages to capture any additional notes, comments, recommendations, actions, or drawings.	Total Hazard Score ____ / 30 <i>(add individual scores together)</i>
Any Additional Comments:	
Send the completed form to: _____ email address as soon as it is completed.	

⁴³ Sufficient waste containers defined as at least 1 container <5m of where waste is generated or 1 container per 20 inpatients.
⁴⁴ Adequate waste containers defined as containers which protect staff and patients from the health-care waste (typically yellow puncture proof boxes for sharps, and color coded and lined 15-40 litre containers with lids for infectious, non infectious and hazardous waste)
⁴⁵ Adequate disinfection defined as at least daily cleaning of floors with detergent and disinfection of surfaces with 0.2% chlorine solution.
⁴⁶ Adequate disposal defined as disposal into a structure that separates the contents from users, groundwater and environment.
⁴⁷ Functional handwashing station points as one with continuous supply of water, soap, safe disposal of gray water, and possibly alcohol hand rub for repeat decontamination of clean hands. In all cases, there should also be soap and water for cleaning soiled hands.

Appendix 2: WHO/UNICEF Joint Monitoring Programme, 2015 estimates of water and sanitation coverage, Mali

URBAN WATER					
Estimated coverage 2015 update					
Year	Total improved	Piped onto premises	Other improved	Other unimproved	Surface water
1990	53%	18%	35%	45%	2%
1995	62%	21%	41%	36%	2%
2000	70%	25%	45%	29%	1%
2005	79%	29%	50%	20%	1%
2010	88%	33%	55%	11%	1%
2015	97%	37%	60%	3%	0%

URBAN SANITATION				
Estimated coverage 2015 update				
Year	Improved	Shared	Other unimproved	Open defecation
1990	31%	35%	29%	5%
1995	32%	36%	27%	5%
2000	33%	38%	25%	4%
2005	35%	40%	22%	3%
2010	36%	41%	20%	3%
2015	38%	43%	17%	2%

RURAL WATER					
Estimated coverage 2015 update					
Year	Total improved	Piped onto premises	Other improved	Other unimproved	Surface water
1990	19%	0%	19%	71%	10%
1995	28%	1%	27%	63%	9%
2000	37%	1%	36%	56%	7%
2005	46%	1%	45%	49%	5%
2010	55%	2%	53%	41%	4%
2015	64%	2%	62%	34%	2%

RURAL SANITATION				
Estimated coverage 2015 update				
Year	Improved	Shared	Other unimproved	Open defecation
1990	9%	6%	48%	37%
1995	10%	7%	50%	33%
2000	12%	8%	52%	28%
2005	13%	9%	54%	24%
2010	15%	10%	56%	19%
2015	16%	10%	59%	15%

TOTAL WATER					
Estimated coverage 2015 update					
Year	Total improved	Piped onto premises	Other improved	Other unimproved	Surface water
1990	27%	4%	23%	65%	8%
1995	37%	6%	31%	56%	7%
2000	47%	8%	39%	48%	5%
2005	57%	10%	47%	39%	4%
2010	67%	13%	54%	30%	3%
2015	77%	16%	61%	22%	1%

TOTAL SANITATION				
Estimated coverage 2015 update				
Year	Improved	Shared	Other unimproved	Open defecation
1990	14%	13%	43%	30%
1995	16%	14%	45%	25%
2000	18%	16%	45%	21%
2005	20%	19%	44%	17%
2010	22%	21%	44%	13%
2015	25%	23%	42%	10%

Appendix 3: Results of observations and informal interviews from Bla field visit, 30th April 2015

The following table presents the results from exploratory field visits to three healthcare facilities to observe WASH infrastructure and IPC. The visit was conducted by Maggie Montgomery (WHO Geneva), Arabella Hayter (consultant, WHO Geneva), Boubacar Maiga (consultant, WHO Mali) and Moussa Ag Hama (DNS). Observations and questions were informal and exploratory. No formal assessment tools or checklists were used.

Name of centre	Bla CSRéf	Niala CCom	Kémeni CCom
Date of visit	30 th April 2015	30 th April 2015	30 th April 2015
People interviewed	3 midwives, Head of centre	1 birth attendant, 1 ASACO member (doctors not available)	1 nurse, 1 birth attendant (doctors not available)
Average number of patients per day	87	20-30	10
Average number of deliveries per week	30-40	10-12	12
Departments/services available	Maternity, in-patients, dispensary, office/meeting room. Surgical block, but used as inpatient area as don't have full surgical capacity	Maternity, vaccination, dispensary	Maternity, dispensary, vaccination
Number of beds	47	2 (1 delivery bed)	5 (1 delivery bed)
Nearest referral place (distance)	NA	Bla CSRéf, 7km	Bla CSRéf, 20km
Availability of medical doctor	Yes	Yes	Yes
Total number healthcare providers	5 doctors 36 nurses 2 birth attendants 2 health assistants	1 doctor 2 birth attendants 1 pharmacist/dispenser 1 vaccination officer	1 doctor 1 nurse 1 birth attendant 1 vaccination officer
Total number non-health staff	4 cleaners	1 cleaner	1 cleaner (comes every day)
Surgical capacity	Yes (3-4 caesareans /week)	No	No
Water source	Deep borehole (70 m) that provides water throughout the year which is pumped with an electric pump into a storage tank; tank is filled each day when the facility has power.	Deep borehole (70m) with hand pump (India mark), installed by Eau Vive NGO; has never had a major breakdown. Water pump working well but handle was metal and very hot. 5 other pumps in the village, for a population of 3,900. Community uses CS's water pump if others do not work.	Deep borehole (70m) with hand pump (India Mark). No drainage canal; water pooled around the pump base serving as a breeding ground for mosquitoes and other vectors. Not adequately protected or fenced off.

Piped water or storage tank on premises	Yes - 5000L capacity water tank	Water hand pumped from pump within facility grounds and carried into facility 2-3 times per day for handwashing and other needs. No water storage in facility, other than hand washing buckets.	Tap in delivery room (with running water). Bucket in delivery room (with water) filled from tap.
Reliable source of running water	Yes, running water in facility. No regular seasonal or daily shortages	Engineer available in the village to fix the pump, charges 20-30,000 CFA per visit, paid for by ASACO. Pump breaks twice a year on average.	Borehole provides water reliably year round.
Reliable source of energy	No, solar powered water heater broken since 2012. Power for 4 hours in the morning and 4 hours in the afternoon	Yes, solar energy 24hrs a day in maternity room. Installed in 2012.	Solar energy 24hrs a day in maternity room. Kerosene lamp in maternity room when power fails.
Latrines (cleanliness, functionality, gender separation, disabled access)	9: 6 mixed (1 working), 3 outside maternity area not working. No disabled access	3: not divided by sex or patients/staff. No disabled access.	2 for women only outside delivery room (open and functioning). 4 additional, 1 for disabled access (locked, key not on site), 2 open and functioning, 1 additional locked (only used by chief medical office). No regular cleaning. Other staff go home to use their own latrines rather than use these ones.
State of sinks and toilets	Most latrines blocked and not working. Shower outside maternity ward also not working.	Latrines very clean, even though there was no regular cleaner. Latrines sometimes cleaned once a month.	No cleaner, average level of cleanliness
Hand-washing stations (e.g. availability of soap, hand-drying, etc.)	Handwashing stations (with water) by the administration block, none near latrines. Soap available but no ABHR.	Yes inside delivery room, (with water and soap). None near latrines.	Handwashing (suitable for household use) in consultation room, dusty, never used. Bucket with water and soap in delivery room. None near latrines.
Soap	Insufficient liquid soap so nurses take the soap with them between rooms. Women bring their own soap when coming for delivery.		Yes in delivery room.
Handrubs available	No	No	No

Protective equipment available (gloves, masks, goggles, aprons, boots)	Observed boots, did not check for others	None available. Women bring their own gloves for delivery (500 CFA per pair)	Only gloves and masks, no boots or aprons.
Visible crowding (e.g. shared beds, waiting area)	No	No	No
Overall visual cleanliness - inside	Generally tidy but with some dusty areas.	No, dusty inside facility. Piles of empty boxes and other non-medical waste, that hadn't been used for 'over a year' was piled up in maternity room.	No, very dusty. Rubbish and clutter in consultation room. Medical waste, including sharps exposed on top of bin and in easy reach of small children.
Overall visual cleanliness - outside	Lots of litter, black plastic bags throughout grounds, other waste on paths.	Clean and neat with covered waiting area.	Rubbish throughout grounds. Piles of rubbish near water source, stagnant water. Piles of medical and non-medical waste, not contained, exposed to the wind.
Mop available	Yes	Yes, but lying exposed in corridor	Yes
Bleach available	Yes	Don't know	No, had run out that day but someone was due to replace it that afternoon.
Medical waste disposal	3 incinerators but only 2 working. Use incinerators to burn sharps approximately 2 times a week. Local CSComs bring their waste to be burnt here.	No incinerator on site. Pit for burning used once a week.	1 'bruleur' but no incinerator. Bruleur used to do burn sharps although not suitable to do so.
Presence of waste containers (and waste sacks)	Yes, but empty with no sacks inside	No. 1 bin in delivery room with medical waste exposed on upturned lid. No sacks.	All 3 present but in different rooms and not being used. Black big in consultation room with medical waste exposed on upturned lid. Red bin empty under a pile of boxes. Yellow bin in delivery room with mixed waste inside. No sacks.
Signs and policies visible	'IPC prevention' on wall in maternity area Stop Ebola, Handwashing guides in office area, Sorting of medical waste, guidelines for cleaning with bleach, preparation of fresh food	Some visible in entrance (titles not noted).	Notes on schistosomiasis and guinea worm. Others visible, titles not noted.
Mosquito nets	Not present	Not present	Not present
Miscellaneous		Cost of delivery: 2,000 CFA (3.5 USD), caesareans are free.	

Appendix 4: Illustrations of WASH in healthcare facilities: photos from field visits

The following pictures are included for illustrative purposes and sorted into themes: handwashing, latrines, water sources, medical waste and maternity areas.

Handwashing



Handwashing station outside administrative area, Bla CSRéf



Unused handwashing station, consultation room, Kemeni CCom

Latrines



Handwashing facilities (with water), delivery room, Niala



CSCoM Latrine, maternity block, Bla CSRéf

Maternity areas



Delivery room (left) and maternity ward (right), Bla CSRéf

Medical waste



Exposed medical waste, delivery room, Niala CSCom (left) and consultation room, Kémeni CSRéf (right)



Burning pit, Niala CSCom (left) and exposed medical waste, Kémeni CSRéf (right)

Appendix 5: Resources

ICF International. Service Provision Assessment (SPA) (<http://dhsprogram.com/What-We-Do/Survey-Types/SPA.cfm>, accessed May 2015)

WHO. Service Availability Readiness Assessment (SARA) (http://www.who.int/healthinfo/systems/sara_introduction/en/, accessed May 2015)

World Bank. Service Delivery Indicators (<http://www.sdindicators.org/>, accessed May 2015)

WHO/UNICEF. Joint Monitoring Programme for Water Sanitation and Supply (<http://www.wssinfo.org/>, accessed May 2015)

WHO (2003). Practical guidelines for infection control in healthcare facilities. Geneva: World Health Organization. (<http://whqlibdoc.who.int/wpro/2003/a82694.pdf>, accessed May 2015).

WHO (2009). WHO guidelines on hand hygiene in healthcare: first global patient safety challenge. Clean care is safer care. Geneva: World Health Organization. (whqlibdoc.who.int/publications/2009/9789241597906_eng.pdf, accessed May 2015).

WHO (2014) Safe management of wastes from health-care activities. Geneva: World Health Organization. (http://www.who.int/water_sanitation_health/medicalwaste/wastemanag/en/, accessed May 2015).

WHO/UNICEF (2015) WASH in healthcare facilities – Key questions and answers. Geneva: World Health Organization. (http://www.who.int/entity/water_sanitation_health/publications/qa-wash-hcf.pdf, accessed May 2015)