

**WASH in Health Care Facilities
Landscape report**

Appendix A
Sustainability Tools Assessment

How do existing tools/models/programs address long-term sustainability of WASH?

WASH services at health care facilities are severely inadequate, with infrastructure failing, remaining in a state of disrepair, or being insufficiently serviced. This report provides a brief assessment on existing efforts globally to address long-term sustainability of WASH services. Through assessing these, we can understand where there are gaps and what can be done to fill them.

The following are assessed in this section:

Program example	<ul style="list-style-type: none"> • Deliver Life Project (by WaterAid Malawi)
Models	<ul style="list-style-type: none"> • Clean Clinic Approach • Circuit Rider Methodology • 5S Management Method
Tools	<ul style="list-style-type: none"> • WASH FIT • Safe Water Sustainability Metric Tool • Health Center Water System Rehabilitation Manual • School-specific WASH Operations & Maintenance Manuals

There is a brief discussion on each example, pros and cons, implications for sustainability, and relevant thoughts to keep in mind in designing a new program or tool. At the end of each section are references for further reading. There are numerous works in the sector, but these were chosen for their particular relevance to WASH and quality health service delivery.

The assessment finds that in general, there are good tools and models in use, but there is still a gap where technical guidance for repair and maintenance should be incorporated into an overall framework for HCF WASH service provision and improvements.

Deliver Life Project

Type: Program example

Developed by: WaterAid Malawi

In support of their WASH infrastructure delivery, WaterAid Malawi supports sustainability efforts through two main branches: 1) engaging with the local government, and 2) community advocacy training. The agency has a strong relationship with the health ministry and government officials, and has secured its spot in several national working groups that are involved in WASH and health policies. By having a direct line to national leadership, WaterAid can influence policy at a high level and ensure that WASH in HCFs is a priority. To promote community advocacy, WaterAid runs community trainings through which they teach people about their WASH rights, and how they can raise related issues with health care staff, advisory committees, politicians, and other leadership. Equipped with knowledge, community members are able to advocate for WASH standards at health facilities, keeping staff and management accountable. Based on a conversation with a project manager at WaterAid Malawi, challenges to their program include lack of coordination among implementing agencies, insufficient financial resources, and occasional disengagement by communities and district governments.

Discussion:

More information is needed to understand the nature of WaterAid's relationship with the government, but having direct contact is certainly a benefit in influencing WASH policies. No evaluation on the effectiveness of their community advocacy work has been conducted yet, but it is reasonable that educating the community would have a positive impact on sustainability. A concern would be the reliance on funding - whether this relationship only works because WaterAid is also providing physical infrastructure in Malawi. Regardless, WaterAid's work in community advocacy and government engagement are important, and replicable in future programs.

Further information:

- Nyaka, A. (2017) No longer business as usual: Deliver Life project. WASH Matters. [online] <https://washmatters.wateraid.org/blog/no-longer-business-as-usual-deliver-life-project> (Accessed December 18, 2018).
- *Transforming health systems - the vital role of water, sanitation and hygiene* WaterAid. [online] <https://washmatters.wateraid.org/publications/transforming-health-systems-the-vital-role-of-water-sanitation-and-hygiene> (Accessed April 12, 2019).

Clean Clinic Approach

Type: Programming Model

Uses: Implementation

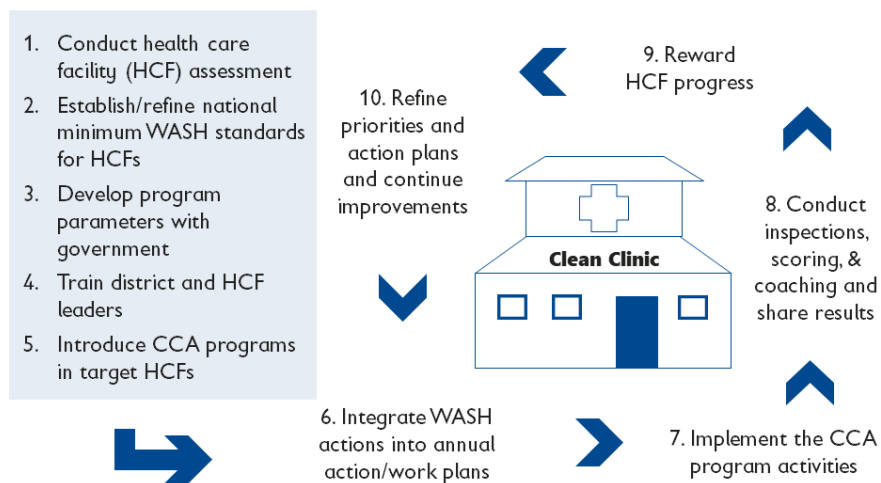
Developed by: USAID's Maternal and Child Survival Program (MCSP), and Save the Children

The Clean Clinic Approach (CCA) is a model to facilitate improvements from both the facility level and ministry level. MCSP has completed CCA implementation in DRC and Haiti, and had programs in Nigeria and Guatemala that were scheduled to be completed in March 2019 (at the time of conversation with a MCSP manager). A formal evaluation of CCA is forthcoming.

Program summary:

As illustrated in the below graphic, the MCSP team engaged with national ministries of health to refine WASH standards, identify criteria for Clean Clinics, and determine incentives for facilities to make improvements. Government and HCF staff were provided with orientation and trainings on Clean Clinic standards. MCSP also worked with HCFs to develop action plans with incremental changes toward achieving Clean Clinic status. WASH FIT and WASHCon (discussed later in this document) were used to guide facilities in their improvements. Participating facilities were given a “starter kit” of basic cleaning supplies such as mops and buckets. Evaluators (from ministry or district gov’t) paid surprise visits to facilities to conduct assessments and determine their scores; these scores were shared publicly. In addition, while MCSP did not provide any funding to HCFs, they helped to identify partners such as UNICEF and WaterAid that could provide funding and/or work on infrastructural improvements.

The CCA Process



The CCA process. (<https://www.mcsp.org/resource/clean-clinic-approach-one-pager/>)

Discussion:

There are several strengths to the CCA:

- By working at the national, district, and facility levels, CCA engages with all parties involved, from decision makers at the top, to implementing staff – ensuring that everyone has an understanding of the program and its goals.
- Standards for “Clean Clinics” are determined at the national level, based on the WHO’s standards. As such, standards are tailored to the local context, making them more appropriate and attainable.
- CCA empowers individual facilities to develop plans and make incremental changes. This assures that even with limited resources (MCSP did not provide any funding to facilities for implementation), facilities can still make significant improvements.
- The certification process was key in incentivizing facilities to make improvements. Surprise evaluation visits ensured that facilities needed to maintain their level of cleanliness at all times. Publishing these results encouraged friendly competition among facilities.

However, the certification process led to a few unintended consequences:

- Motivated by the goal of certification, some facilities would try to bribe evaluators to give them higher scores than they deserved.

- Publishing the results encouraged patients to visit facilities with higher scores. This caused some high-scoring facilities to become overwhelmed with patients, and as a result of being overstretched, their Clean Clinic scores fell.
- Publishing the results also highlighted low-scoring facilities who did not have the resources to make improvements. This emphasized to patients who had no other options for HCFs (due to distance, for example) that they had no choice but to seek care at a poor-quality facility.

The CCA appears to be a replicable model, particularly in the aspects of government engagement and staff training, which are activities that DRI and Transform are already familiar with. Local engagement is a key factor of success, as demonstrated in our organizations' past experience.

The certification process itself may not be completely appropriate for our purpose. However, the idea of having supervisory visits to check on HCFs periodically is reminiscent of the circuit rider model. At the same time, it is important that improvements are also self-motivated and not solely externally motivated as is the CCA certification process. Self-motivation could be addressed by conducting thorough, repeated trainings, implementing appropriate incentives, and ensuring that local leadership is motivated.

Although the CCA is a good framework for improving hygiene, it lacks technical guidance for infrastructural operation and maintenance, which contribute greatly to maintaining clean clinics. According to Save the Children's WASH Advisor, clinics are generally only able to achieve up to a score of 80%, with the final gap being in infrastructural improvements.

Including technical guidance in a framework like CCA, combined with consistent knowledge transfer, could lead to eventual behavior change and sustained WASH practices.

Further information:

- MCSP and Save the Children (2016) Clean Clinic Approach Brief. [online] <https://www.mcsprogram.org/resource/clean-clinic-approach-brief/>.
- WASH in Health Care Facilities: A Toolbox for Improving Quality of Care USAID Maternal and Child Survival Program. [online] <https://washforhealthcare.mcsprogram.org/> (Accessed April 12, 2019).

Circuit Rider Methodology

Type: Programming Model

Use: Implementation

Developed by: National Rural Water Association

Summary:

The CR model is simple and cost-effective: a small group of qualified WASH technicians rotate through a circuit of communities providing advice and training to local operators on issues of sustainability, governance, treatment technologies, operations, and maintenance. Initially launched in the United States, the program has since successfully spread to Canada and select countries in Central and South America. The CR methodology is distinct from other post-construction frameworks in providing training on all essential aspects of WASH system sustainability. Rather than focusing solely on technical capacity, Circuit Riders are trained to also provide management/governance, financial and community

engagement support in the communities they serve. Integral to the program is also the development of strong partnerships with governments, local nongovernmental organizations (NGOS) and the private sector, essential to sustaining program successes over time.

Discussion:

The existing literature on the CR model is promising. A case-control study in El Salvador showed that villages with a Circuit Rider were associated with higher water quality, fee payment, transparency, metering, and repairs. Another study in Bolivia showed that communities who received management-oriented post-construction support visits from external agencies had better performing water systems than communities who did not receive such support. This study also showed that by comparison, engineering-oriented support was not effective, suggesting that “software” support for human capacity is much more important than strictly infrastructural support.

Although the CR model was developed specifically for water infrastructure, this model could be adapted to include sanitation, hygiene, waste management, and cleaning protocols – ie. overseeing not only drinking water systems at health facilities, but also latrines, handwashing stations, waste management, and environmental cleaning. To sustain institutional knowledge, relevant training and user manuals for all of these topics would be important. Evaluations from DRI’s implementation of the CR model in Ghana has shown that continued training and education is desired by the Circuit Riders. Incorporating a wider scope of topics under the CR model would thus require a robust training component.

Further information:

- Davis, J., Lukacs, H., Jeuland, M., Alvestegui, A., Soto, B., Lizárraga, G., Bakalian, A., and Wakeman, W. (2008) Sustaining the benefits of rural water supply investments: Experience from Cochabamba and Chuquisaca, Bolivia. *Water Resources Research*, **44**(12). [online] <http://doi.wiley.com/10.1029/2007WR006550> (Accessed February 1, 2019).
- Kayser, G. L., Moomaw, W., Orellana Portillo, J. M., and Griffiths, J. K. (2014) Circuit Rider post-construction support: improvements in domestic water quality and system sustainability in El Salvador. *Journal of Water, Sanitation and Hygiene for Development*, **4**(3), 460–470.

5S Management Method

Type: Programming Model

Uses: Assessment, implementation

Developed by: Japanese manufacturing enterprises

5S is a lean organization management method which was originally developed in manufacturing settings. In recent years, it has been recognized to be a useful tool for making quality improvements in low-resource healthcare settings. In sum, it is a framework for organization and maintaining cleanliness in facilities so as to streamline work productivity – and in the case of health care facilities, health care delivery.

5S stands for:

- Sort – sorting out and eliminating unnecessary items
- Straighten/Set in order – organizing what’s left
- Shine – Clean the facility and ensure a pleasant environment

- Standardize – Develop protocols for sort, straighten, and shine, detailing specific actions to be taken, responsible persons, and schedule
- Sustain – Continuing to work on the first 4 steps

An evaluation conducted in a Senegal HCF (Kanamori, 2015) showed that among many of the improvements as a result of 5S were higher efficiency as items became much easier to find by staff, increased patient-centeredness as a result of improved labeling in the facility, and safety, since improved orderliness led to an improved sterilization process of equipment.

Although it has not been used in a WASH-specific context, 5S provides a useful framework for WASH service operation and maintenance, since keeping clean facilities is key to ensuring that water, sanitation, and hygiene infrastructure are operational. Further, 5S can be used to guide incremental improvements; for example, even if a facility has insufficient resources to install a piped water system, by consistently ensuring that water is stored in a hygienic manner, they are already working to provide safe water.

The Japan International Cooperation Agency (JICA) has an implementation guide that includes tools encompassing the entire 5S process, from training guidelines to assessment and monitoring checklists. Again, while not WASH-specific, the structure could be adapted to fit a WASH context by creating monitoring checklists specific to water systems, sanitation facilities, and handwashing stations.

As the 5S method is focused on maintaining cleanliness, specific actions pertaining to repair of infrastructure is lacking. However, the method is still a good starting point for sustaining proper operation and maintenance of systems. It may be a useful tool for encouraging change toward more mindful WASH behaviors.

Further information:

- Kanamori, S., Shibanuma, A., and Jimba, M. (2016) Applicability of the 5S management method for quality improvement in health-care facilities: a review. *Tropical Medicine and Health*, **44**(1). [online] <http://tropmedhealth.biomedcentral.com/articles/10.1186/s41182-016-0022-9> (Accessed February 7, 2019).
- Kanamori, S., Sow, S., Castro, M. C., Matsuno, R., Tsuru, A., and Jimba, M. (2015) Implementation of 5S management method for lean healthcare at a health center in Senegal: a qualitative study of staff perception. *Global Health Action*, **8**(1), 27256.
- Manual for Implementation of 5S in Hospital Setting (2015) [online] https://www.jica.go.jp/english/our_work/thematic_issues/health/c8h0vm00009u4yt7-att/case_materials_bangladesh_01.pdf.

Water and Sanitation for Health Facility Improvement Tool (WASH FIT)

Type: Tool

Uses: assessment, implementation

Developed by: World Health Organization

The tool is designed to be used by facility staff and management to make improvements to water and sanitation services. It provides guidance on the formation of a dedicated WASH FIT team, conducting a facility assessment with suggested indicators from WHO, and implementing an improvement plan. The tool includes forms that can easily be printed and used by health care facility staff to perform the WASH FIT program. A training package is also available for download at washinhcf.org.

A pilot evaluation of WASH FIT was performed in Togo in 2017 in three facilities across a 7-month period. The short evaluation period and small sample size are insufficient for making conclusions about the long-term impact of WASH FIT; however, the following challenges in implementation were revealed.





- Staff mentioned the increase in workload brought about as a result of WASH FIT implementation. For WASH FIT and other similar interventions to remain effective, its tasks should be incorporated in staff's routine in such a way that it is not a hindrance to their work, otherwise the intervention may have the opposite effect from what is intended, and staff may revert to old habits.
- Financial constraints posed a barrier for facilities to procure hygiene materials including soap, chlorine, PPE, and educational posters. Even if staff are trained, a lack of financial resources prevents them from implementing improvements.
- The hierarchical organization of management meant that decisions about procuring materials and making facility improvements sometimes were made by staff such as accountants who were unfamiliar with WASH service delivery.

Discussion:

- Financial resources are clearly key, as is training of both medical and non-medical staff. The evaluation highlights the importance of training those with financial decision-making power in relevant WASH knowledge, so that WASH is prioritized when allocating resources.
- The screenshot below is the extent of WASH FIT's improvement plan tool. Though straightforward to use, it lacks guidance on the small steps needed to perform day-to-day operation, maintenance, and improvements. A tool with more explicit guidance on what should be done might help staff not feel overworked, although more evaluation would be needed to understand if this is really the case.

Tool 4: Improvement plan

Date improvement plan written: Date Review 1: Date Review 2:

What specific improvement action will be taken to resolve the hazards identified? <small>The actions to be taken link to the hazards recorded in Tool 3</small>	Who will carry out the task and is there anyone who will supervise it? <small>List people responsible for implementation</small>	What resources are needed to do it? <small>Resources could be staff, technical or financial</small>	When do you expect to complete this action? <small>Indicate target date</small>	Completion date <small>Once the activity has been completed, record the date of completion</small>	Task 5: Monitoring <small>When you review the plan, how does it need to be changed? What, if any, additional efforts are needed?</small>	
					Review 1	Review 2
Water						
						
Sanitation and health care waste						
						
Hygiene						
						
Management						
						

WATER AND SANITATION FOR HEALTH FACILITY IMPROVEMENT TOOL (WASH FIT)

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Tool 4

Improvement Plan form from WASH FIT manual

Further information:

- *Water and Sanitation for Health Facility Improvement Tool (WASH FIT) (2017)* Geneva, World Health Organization.
- Weber, N., Martinsen, A. L., Sani, A., Assigbley, E. K. E., Azzouz, C., Hayter, A., Ayite, K., Baba, A. A. B., Davi, K. M., and Gelting, R. (2018) Strengthening Healthcare Facilities Through Water, Sanitation, and Hygiene (WASH) Improvements: A Pilot Evaluation of “WASH FIT” in Togo. *Health Security*, 16(S1), S-54-S-65.

WASH Conditions Assessment Tool (WASHCon)

Type: Tool

Uses: assessment

Developed by: Emory University Center for Global Safe Water

The WASHCon tool assesses the domains of water supply, sanitation, hand hygiene, environmental cleanliness, and waste management. Data is collected through surveys, observational checklists, and water quality testing, and finally summarized into a score from 1 to 3 demonstrating no service, limited service, or basic service for each WASH domain, as well as an overall score across all domains.

WASHCon is a useful tool for data collection, as it can be applied prior to program implementation to understand pre-existing conditions, or it can be used for collecting monitoring data. It can be particularly useful for comparing across multiple facilities since scores are succinctly summarized.

While the tool includes an enumerator guide, it lacks guidance for facilities to set up a continual

monitoring, evaluation, resolution, and learning process that would incorporate such data collection. It is solely a data collection tool and does not provide a framework for staff to undertake continual MERL processes.

Further information:

- WASHCon Water, Sanitation and Hygiene in Healthcare Facilities. [online] <http://washconhcf.org/research-tools/washcon/> (Accessed April 25, 2019).

Health Center Water System Rehabilitation Manual

Type: Tool

Uses: Technical field manual

Developed by: EWB-USA and Freshwater Project International

This manual is designed to be used by field personnel who are designing, constructing, and operating water systems at health centers. It assumes a certain level of technical knowledge on the part of the manual’s user. As it is designed for health centers with systems including a motorized pump and several distribution lines, it may not be appropriate for smaller rural facilities that do not have this kind of infrastructure. However, the manual does provide guidance for implementing such a system from start to finish, and as such would be a useful tool for facilities that might intend to undertake such a project. This could be incorporated as part of the proposed WASH sustainability tool kit. If accompanied by appropriate training, the manual is a useful tool for contributing to long-term sustainability.

Safe Water Sustainability Metric (SWSM)

Type: Tool

Uses: Assessment, maybe Monitoring

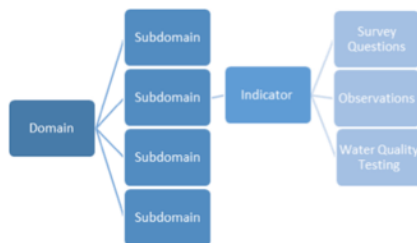
Developed by: Emory University

The SWSM tool kit is used for conducting rapid assessments of drinking water supplies at health care facilities. It consists of surveys, water quality testing, and facility observation guides. Surveys are administered to management, maintenance, and healthcare staff at facilities on an array of topics including oversight, communication, training, satisfaction, and ownership. Four domains are assessed through the SWSM tool: technical feasibility, on-site capability, financial and operation accountability, and institutional engagement. By summarizing these data into a radar plot with a numerical score, the sustainability of a facility’s water system can be easily understood.

Figure 1: Domains and Subdomains of Sustainability



Figure 2: Sustainability Assessment Scoring Structure



**Figure 3: Sustainability Assessment
Output for an Example Hospital**



Although this tool has yet to be formally evaluated, its strength is in its ability to capture “software” factors crucial to sustainability, combine them with technical data on hardware, and incorporate them into an overall score. The SWSM would be useful for conducting a preliminary assessment ahead of program implementation to determine the feasibility of implementation at a given context. It would also be very useful for other implementing agencies or local governments who want to make improvements to facilities. By conducting this assessment and visualizing which aspects of sustainability are lacking, resources can be focused on particular issues. In addition, this tool could be expanded or used as a starting point for assessing sanitation, hygiene, waste management and cleaning protocols.

School-specific O&M Manuals

Manuals designed for schools are remarkably applicable to health care facilities for a few reasons. For one, the audience for the manuals are field-level school staff, analogous to HCF staff, both of whom may lack extensive WASH knowledge but are familiar with the daily dynamics of the facility. As such, these manuals contain straightforward guidance on tasks with clear checklists. Secondly, schools have all of the same basic WASH facilities as HCFs (drinking water supply, latrines, handwashing stations) and thus, some guidelines can be shared. Two particular examples are highlighted here.

WASH in Schools O&M Manual

Developed by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

This manual was developed in 2017 for a Filipino context with a particular focus on toilet O&M, but its format can be extrapolated to include other contexts and topics as well. Apart from guidelines for use, cleaning, and maintenance, the manual includes suggestions for what tools are required for each component (i.e. for proper use of a toilet, necessary tools include a trash bin and toilet brush) with approximate costs. It also outlines the roles and responsibilities of various groups (students, teachers, community etc.) in ensuring proper O&M of the facilities. It is noteworthy that all students are responsible for leaving the toilet clean after their use (hence the availability of a toilet brush in each stall). In a healthcare facility context, this might be analogous to all users, including medical staff and non-cleaning staff, doing their small part to make sure facilities are clean.

Further information:

- GIZ Fit for School (2017) WASH in Schools Operation and Maintenance Manual. [online] <https://programme.worldwaterweek.org/Content/ProposalResources/PDF/2017/pdf-2017-6723-10-04%20GIZ%20-%20DPP%20O&M%20Guide.pdf> (Accessed February 8, 2019).

School WASH Facilities Operation and Maintenance Guidelines

Developed by: USAID/WASHPlus project

This manual was developed in 2015 for a Zambian context and has a strong focus on O&M of water pumps, but also contains guidance on drinking water stations, toilets, and handwashing stations. The manual allots space for users to fill in the names and contact information for daily technicians, area mechanics, spare parts suppliers, and district coordinators, keeping this valuable information easily accessible. It also includes lists of spare parts and their local prices, and a suggested schedule for replacing parts. Having this information available may make it easier for staff to budget and plan for ongoing maintenance.

Further information:

- WASHplus (2015) School WASH Facilities: Operation and Maintenance Guidelines. [online] http://www.washplus.org/sites/default/files/zambia-om_guidelines.pdf (Accessed February 8, 2019).

Does the tool provide a framework for...

demand of WASH services by motivated health workers, and/or a sense of ownership through training and education?

on-site capacity through training and education of workers, guidelines for routine operation and maintenance, and clearly defined responsibilities, protocols, and processes?

external support, particularly by the local government (or other leadership entity) to provide the HCF with technical and administrative supervision?

ensuring technical feasibility of the infrastructure in that they are functioning, conveniently placed, appropriate for the environment and available resources?

maintaining financial resources to supply WASH supplies and equipment, and perform ongoing O&M?

Monitoring, Evaluation, Resolution, and Learning of the WASH services, to be performed by site staff and supervisors?

Water for Life project	✓	✓	✓	✓	✓	✓
Clean Clinic Approach	✓	✓	✓			✓
Circuit Rider	✓	✓	✓		✓	✓
5S management model		✓		✓		✓
WASHFIT		✓		✓		
WASH Con				✓		
Health Center Water system rehabilitation manual (EWB/FPI)		✓		✓		
Safe water sustainability metric (Emory)				✓		
School WASH O&M Manuals	✓	✓		✓		