

Barriers and Challenges of Implementing WASH FIT in Healthcare Facilities in Bangladesh

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Abstract

The World Health Organization and UNICEF developed the Water, Sanitation, and Hygiene Facility Improvement Tool (WASH FIT) as a continuous risk-based quality improvement tool to strengthen WASH services in healthcare facilities. Despite its increasing global adoption, evidence about the operationalization of WASH FIT in public health systems in resource-limited settings is still insufficient. Therefore, the study aims to investigate operational, institutional, and systemic barriers to WASH FIT implementation at 16 government healthcare facilities located across six divisions of Bangladesh in 2023. In-depth interviews, focus group discussions, participatory workshops, and key informant interviews were used to collect data, which were then thematically analyzed. The findings indicate that the implementation of WASH FIT is not hampered by a lack of awareness or acceptability, but rather by a fundamental misalignment between the tool's design and the realities of the decentralized public health system in Bangladesh. Five interrelated thematic barriers were identified: chronic workforce shortages that impede team-based implementation; insufficient training and limited technical capacity to operationalize complex assessment and monitoring requirements; lack of dedicated and flexible financing for WASH improvements; weak governance, accountability, and intersectoral coordination; and weak monitoring, feedback, and continuity mechanisms. These difficulties stopped WASH FIT from being consistently adopted and institutionalized. Effective scaling up and institutionalization require dedicated budget, simplified and digitized monitoring tools, regular training, protected time for WASH responsibilities, and intersectoral coordination between the health sector and local government authorities. Contextual adaptation of WASH FIT is critical for long-term improvements in WASH services at healthcare facilities.

Introduction

Provision of adequate water, sanitation, and hygiene (WASH), and healthcare waste management are critical elements in delivering basic healthcare services. They are significant in preventing diseases and infections, reducing antimicrobial resistance, improving the management and control of disease outbreaks, staff morale, and the health and safety of patients and healthcare workers [1, 2]. However, it still persists in most low- and middle-income countries (LMICs) to have unacceptably wide gaps in WASH services, with an elevated risk of healthcare-associated infections (HAIs) and lowering the quality of the service [3]. HAIs are a major cause of morbidity and mortality in health care settings [4]

In response to these inadequacies, to improve WASH services and infection prevention and control (IPC) practices in healthcare facilities (HCFs), a tool named Water and Sanitation for Health Facility Improvement Tool (WASH FIT) was developed by WHO and UNICEF. This is a risk-based facility improvement tool that enables healthcare facilities to assess the prevailing WASH conditions, identify gaps, and enable continuous quality improvement activities [4]. WASH FIT was created in response to global evidence that among more than 60,000 healthcare facilities that were assessed, 40% lacked basic water services, 33% lacked adequate hand hygiene facilities, and more than half lacked proper healthcare waste disposal facilities, most of which were in LMICs [4, 5]. This tool facilitates the

achievement of global WASH coverage in all healthcare facilities by 2030, which corresponds to Sustainable Development Goals (SDGs) 3 and 6.

WASH FIT is structured with seven key domains: water, sanitation, healthcare waste, hand hygiene, environmental cleaning, energy and environment, facility management, and health workforce. Each domain has a range of indicators and standards that facilities can use to measure their status and identify areas for improvement. The tool promotes an ongoing process of assessment, planning, implementation, and evaluation so that facilities can maintain high standards of WASH services [5].

WASH FIT has been implemented in 75 countries and has been adopted as an important component of national strategies for environmental health services in healthcare facilities in at least 13 (WHO/UNICEF,2024). It is designed to apply broadly across low-resource settings but recognizes the need for tailoring across contexts. Existing literature on WASH FIT implementation across LMICs, however, reveals an important imbalance. Most studies have emphasized facility-level indicator scoring and compliance assessments, documenting deficits across domains such as water supply, sanitation infrastructure, hand hygiene, and waste management [3, 6]. While these studies provide valuable snapshots of WASH conditions, they offer limited insight into how and why implementation succeeds or fails in real-world health system contexts. Emerging evidence suggests that successful WASH FIT implementation requires adequate resourcing, governance structures, and leadership, providing WASH FIT teams with sufficient training and autonomy to implement improvements [7]. These factors are often underexplored in indicator-driven assessments.

WASH challenges in healthcare facilities are reflective of broader systemic constraints common to decentralized LMIC health systems, where chronic workforce shortages, institutional responsibilities, and limited fiscal autonomy characterize subnational levels. Previous studies conducted in Bangladesh and similar LMICs have identified several barriers, including inadequate WASH-specific budget lines, a lack of technical expertise, weak coordination between health and public works authorities, and limited training opportunities for frontline staff [8, 9]. However, much of this evidence remains contextually fragmented or embedded within broader facility assessments, rather than explicitly examining the implementation processes, decision-making dynamics, and lived experiences of stakeholders responsible for operationalizing WASH FIT.

Despite the widespread use of WASH FIT for its effectiveness in assessing WASH conditions within healthcare facilities, there is limited scientific research on how it is implemented. Past studies have mostly focused on quantitative indicator scoring, which provides limited qualitative insight into real-world health systems challenges and processes for adapting and implementing WASH FIT. Specifically, there is very limited insight into factors such as staffing shortages, clinical workflow pressures, governance issues, and financial and accountability mechanisms that affect the feasibility and sustainability of forming assessment teams, developing action plans, and implementing changes over time. The dynamics affecting healthcare facilities at the district and upazila levels in Bangladesh are largely unknown. As a result, current evidence explains what WASH gaps exist but provides insufficient

understanding of why WASH FIT implementation stalls beyond initial assessments. This study aims to explore the perceived barriers and challenges to implementing WASH FIT in healthcare facilities in Bangladesh by examining the experiences and perspectives of key stakeholders at district and upazila levels. This study will help inform context-specific strategies to strengthen the implementation, scale-up, and sustainability of WASHFIT.

Methodology

Study Design and Setting

This study is qualitative in nature for determining the perceived barriers and challenges associated with implementing the WASH FIT tool in healthcare facilities of Bangladesh. We conducted the study from October to December of 2023 within six regions of Bangladesh, specifically 16 healthcare facilities located in Mymensingh, Sylhet, Khulna, Rajshahi, and Chittagong. The selection of different settings aims to provide an overall view of WASH-related concerns and opportunities in various geographical and socioeconomic circumstances. We selected 16 government-level hospitals (6 at the district level and 10 at the upazila level) from these divisions to ensure nationwide representation (Table 1).

Table 1
List of District and Sub-district level healthcare facilities to implement WASH FIT

Division	District Hospital (DH) (District)	Upazila hospital (Rural)
Mymensingh	(1) Sherpur District Hospital	(2) Sreebordi Upazila Health Complex (3) Nakla Upazila Health Complex
Sylhet	(4) Sunamganj District Hospital	(5) Bishwambarpur Upazila Health Complex
Barishal	(6) Bhola District Hospital	(7) Charfession Upazila Health Complex (8) Tajumuddin Upazila Health Complex
Khulna	(9) Shatkhira District Hospital	(10) Asasuni Upazila Health Complex (11) Kalaroa Upazila Health Complex
Rajshahi	(12) Chapai Nawabganj District Hospital	(13) Shibganj Upazila Health Complex
Chittagong	(14) Cumilla District Hospital	(15) Monohorganj Upazila Health Complex (16) Muradnagar Upazila Health Complex

Study Population and Participants

The study engaged a wide range of district and upazila-level stakeholders who are responsible for or contribute to the management of WASH services and the related decision-making process in healthcare facilities. At the time of the study, these stakeholders had been introduced to the WASHFIT tool through orientation and sensitization workshops conducted as part of the national WASHFIT implementation process. These workshops aimed to provide a strategic overview of WASHFIT, including its objectives, steps, and relevance to healthcare facility management, followed by technical capacity-building activities for implementation.

WASHFIT implementation follows a standardized framework that requires the establishment of a multidisciplinary WASHFIT team at each healthcare facility. Team composition, leadership structure, and roles and responsibilities are clearly defined in the WHO/UNICEF WASHFIT guidelines. In line with this framework, participants were purposively selected based on their predefined roles within WASHFIT teams and their responsibilities in healthcare service delivery, facility management, engineering, maintenance, and governance.

Participants in district-level workshops included civil surgeons, Upazila Parishad chairmen; hospital superintendents; Upazila Health and Family Planning Officers (UH&FPOs); Resident Medical Officers (RMOs); Medical Officers (MOs); assistant surgeons; nursing supervisors and senior staff nurses; senior health education officers; sanitary inspectors; social services officers; statisticians; and technical personnel from the Department of Public Health Engineering (DPHE), Public Works Department (PWD), and Health Engineering Department (HED), including executive, sub-assistant, and assistant engineers.

Senior decision-makers and officials who could offer strategic, managerial, and policy-level perspectives on WASHFIT implementation were chosen for key informant interviews (KIIs). These included civil surgeons, UH&FPOs, hospital superintendents, executive engineers from DPHE and PWD, and Upazila Parishad Chairmen. In-depth interviews (IDIs) were conducted with mid-level professionals and technical staff involved in day-to-day service delivery and facility-level management, including RMOs, MOs, Senior Staff Nurses, WASH Coordinators, Sanitary Inspectors, and Assistant Surgeons.

As part of the WASHFIT orientation workshops, a WASHFIT team was constituted for each participating healthcare facility in accordance with the guideline requirements. Focus group discussions (FGDs) were conducted with WASH FIT team members and related support staff, such as nurses, cleaners, and mechanics, to obtain collective inputs regarding operational practices and implementation challenges.

This multistakeholder platform allowed representation from clinical, administrative, technical, and community-based roles to obtain a comprehensive understanding of the implementation of WASH FIT.

Sample Size and Data Saturation

The sample size was decided by data saturation principles rather than predetermined numbers. Data was gathered until thematic saturation, the point at which no new themes, viewpoints, or barriers to implementation arose from subsequent interviews and discussions. Through continuous review of

transcripts and field notes throughout data collection, saturation was evaluated iteratively across KIIs, IDIs, and FGDs. This multistakeholder platform ensured representation from clinical, administrative, technical, and community-level roles, enabling a comprehensive understanding of WASHFIT implementation across different levels of the health system.

Data Collection

Data was collected using participatory and qualitative methods to ensure a comprehensive understanding of WASH FIT implementation at the facility level. Data was collected using four qualitative methods: KIIs, IDIs, FGDs, and participatory workshops.

Six participatory workshops at the district level were held initially, to which personnel from the health and engineering sectors were invited. The workshops acted as an orientation and training on the WASH FIT initiatives. The participants were introduced to the key elements and steps of WASH FIT, such as its purpose, process for implementation, and monitoring. An open discussion session was held following each workshop, where participants expressed their experiences and difficulties they encountered while attempting to provide appropriate WASH environments at healthcare facilities. Additionally, we gathered recommendations to improve WASH FIT procedures at the facility level.

After the workshops, our research team conducted extensive visits to all of the targeted healthcare facilities. The field visits included the gathering of data through IDIs, FGDs, and KIIs. We conducted semi-structured interviews following a pre-designed guideline. Its objective was to understand their experience with WASH FIT implementation, perceived challenges, institutional readiness, interdepartmental coordination, and concerns regarding sustainability. To gain a collective insight about the daily operations of the facilities, roles and responsibilities, teamwork, collaboration among teams, issues regarding WASH improvement, and training requirements, FGDs were conducted. All discussions and interviews were conducted in Bangla, and audio was recorded with consent. Field notes and observations were also written down to contextualize responses.

Data Analysis

All the field notes and audio recordings of the FGDs, KIIs, IDIs, and participatory workshops were transcribed verbatim in Bengali and then translated into English. The qualitative data were thoroughly analyzed using a thematic analysis approach. Initially, the research team developed a coding framework using the semi-structured interview guidelines and themes that emerged during data familiarization (see Table 2). Each transcript was then coded and categorized based on this coding framework.

An Excel data matrix was used to organize the data and facilitate structured coding. The coding framework and themes were interactively refined through regular team discussions. Data were triangulated from four sources.

Table 2
Thematic Distribution of Codes and Selection (WASH FIT)

Thematic Area	Category	Codes (Barrier-focused)	FGD	IDI	KII	PW
Misalignment Between WASH FIT Team-Based Design and Workforce Realities	Workforce availability	Shortage of doctors and nurses limiting non-clinical engagement	✓	✓	✓	✓
		Shortage of cleaners and support staff for WASH operations	✓	✓	✓	✓
	Competing clinical priorities	Clinical workload prioritized over WASH FIT activities	✓	✓	✓	✓
		Emergency and routine care override WASH FIT responsibilities	✓	✓	✓	✓
	Role feasibility	Absence of protected time for WASH FIT tasks	✓	✓	✓	✓
		WASH FIT responsibilities informally added to clinical roles	✓	✓	✓	✓
	Team formation constraints	Difficulty forming and sustaining functional WASH FIT teams	✓	✓	✓	✓
		Absence or non-functionality of IPC/WASH/QI committees	×	✓	✓	✓
Inadequate Capacity to Operationalize WASH FIT Beyond Orientation	Training insufficiency	Absence of formal WASH FIT training	✓	✓	✓	✓
		One-time orientation without refresher or supervision	✓	✓	✓	✓
		Lack of structured capacity-building plans	×	✓	✓	✓
	Technical comprehension gaps	Poor understanding of WASH FIT indicators and scoring	✓	✓	✓	✓
		Difficulty with risk prioritization and action planning	×	✓	✓	✓
	Practice substitution	Reliance on informal or experience-based	✓	✓	×	✓

Thematic Area	Category	Codes (Barrier-focused)	FGD	IDI	KII	PW
		practices instead of tool guidance				
Financial Incompatibility Between WASH FIT Action Plans and Facility Budget Structures	Budget absence	No dedicated WASH/WASH FIT budget line	×	✓	✓	✓
		No linkage between WASH FIT findings and funding decisions	×	✓	✓	✓
	Budget rigidity	Dependence on general operational funds for WASH improvements	✓	✓	✓	✓
		Competition with medicines, emergencies, and core service costs	✓	✓	✓	✓
	Infrastructure execution barriers	Inability to repair toilets, water systems, and waste infrastructure	✓	✓	✓	✓
		Delays in maintenance approval and procurement processes	×	✓	✓	✓
Governance, Leadership, and Accountability Limitations	Administrative bottlenecks	Delayed approvals for WASH-related improvements	×	✓	✓	✓
		Bureaucratic procurement and clearance procedures	×	✓	✓	✓
	Leadership limitations	Limited decision-making autonomy at the facility level	×	✓	✓	✓
		Absence of accountability mechanisms for WASH FIT actions	×	✓	✓	✓
	Stakeholder role ambiguity	Limited engagement of local government representatives	✓	×	✓	✓
		Minimal community participation in WASH planning	✓	✓	×	✓
	Intersectoral coordination failure	Weak coordination with DPHE, PWD, and municipalities	✓	✓	×	✓

Thematic Area	Category	Codes (Barrier-focused)	FGD	IDI	KII	PW
Monitoring, Feedback, and Continuity Failures in the WASH FIT Cycle	Monitoring system gaps	Absence of formal waste management agreements	✓	✓	✓	✓
		Absence of routine review and monitoring mechanisms	✓	✓	✓	✓
		Lack of feedback loops following assessments	✓	✓	✓	✓
	Data integration failures	Lack of integration with HMIS or national reporting systems	×	✓	✓	✓
	Documentation weaknesses	Incomplete or inconsistent WASH documentation	✓	✓	✓	✓
	Continuity breakdown	Loss of institutional memory due to staff transfers	×	✓	✓	✓
		Abandonment of action plans due to follow-up gaps	✓	✓	✓	✓
		Absence of formal handover mechanisms for WASH FIT roles	×	✓	✓	✓

Ethical Consideration

The study received ethical approval from the ITN-BUET's Institutional Review Board in Dhaka, Bangladesh. We followed ethical standards to safeguard the rights, welfare, and dignity of every respondent. Formal invitation letters were sent to all targeted healthcare facilities before field visits. The letters clarified the aim of the study and the proposed dates of facility visits and workshops. The study ensured comprehensive informed consent by providing eligible participants with both verbal and written information about the study, allowing for discussion of concerns and the right to refuse participation. Written informed consent was sought from study participants before conducting participatory workshops and FGDs, KIIs, and IDIs. The clinical trial number is not applicable since we didn't apply any clinical trial.

Role of the funding source

The funder of the study had no role in study design, data collection, data analysis, data interpretation, or writing of the report.

Results

WASH FIT implementation in Bangladesh faces numerous challenges in healthcare facilities. The tool follows a structured, five-step interactive process involving: (1) establishing a WASH FIT team, (2) conducting facility assessments and scoring, (3) identifying and prioritizing areas for improvement, (4) developing actionable improvement plans, and (5) executing, monitoring, reviewing, and adapting those plans. This structured process is designed to be adaptable at the national level and aligns well with existing national health programs.

Table 1 (see supplementary material) summarizes the descriptive characteristics of 16 HCFs in this study. Of the 16 HCFs we surveyed, 10 (62.5%) were Upazila Health Complexes (UHCs), and the remaining six (37.5%) were district hospitals.

We identified several interrelated barriers arising from the interaction between the design and operational requirements of the WASH FIT tool and the structural realities of Bangladesh's public health system. These were grouped into five major thematic areas. Barriers to WASH FIT implementation across all facilities resulted from a misalignment between the tool's fundamental assumptions and the operational reality of Bangladesh's public health system, not from a lack of appreciation for the significance of WASH. The following themes show how this imbalance shows itself in financial, governance, monitoring, workforce capacity, and skills.

Misalignment Between WASH FIT's Team-Based Design and Workforce Realities

The WASH FIT guideline assumes that each facility has a functional, multidisciplinary team with clear roles and protected time for regular planning, assessment, and monitoring. However, this fundamental assumption is inconsistent with the workforce reality of healthcare facilities in Bangladesh. The majority of respondents said that they were unable to complete the WASH FIT procedure as intended due to significant human resource limitations in every study area.

The WASH FIT guideline calls for an integrated, team-based approach that needs coordination from healthcare professionals, facility management, support staff, local government officials, and community stakeholders. In reality, it was mostly impossible to form and sustain such teams in both district hospitals and UHCs. Most facilities didn't have enough medical officers, nurses, cleaners, and security guards to make a dedicated WASHFIT team. Because of this, essential components of the tool, like regular team meetings, scoring of indicators, prioritizing of risks, and follow-up monitoring, were either only partially implemented or not implemented at all.

Most of the time, the current staff were busy with delivering clinical services, so they didn't have much time to conduct other non-clinical tasks that WASH FIT needed, such as facility-wide assessments, recordkeeping, and progress tracking. Many facilities lacked formal WASH-related positions, and WASH

FIT responsibilities were unofficially added to clinicians' already demanding schedules. One Medical Officer (MO) noted,

"In our UHC, we have fewer doctors than required. We barely cope with the daily patient load. To introduce things like WASHFIT assessments is something no one has time to do." — Medical Officer, Kolaroa Upazila Health Complex

Out of 16 healthcare facilities, 7 (43.75%) had no operational WASH FIT, IPC, or Quality Improvement team. Even in facilities where such teams existed, there was little evidence of official documentation, role clarity, or structured protocols. In most cases, MOs or RMOs were made focal persons for WASH by default without receiving systematic support, clear role delineation, or allocated time for these additional responsibilities.

The incompatibility between WASH FIT responsibilities and clinical roles was particularly evident for RMOs, who were routinely observed prioritizing emergency patient care over WASH-related activities during field visits. At Kolaroa UHC, the RMO interrupted an interview twice to attend to emergency cases, which underscores how emergency clinical duties routinely override WASH-related responsibilities. Engaging clinical staff in this time-consuming process, such as monitoring WASH facilities, poses difficulties in tool implementation. This burden was also mentioned by an RMO at Sreebordi Upazila Health Complex, who stated:

"I am the only RMO here, and I already have too many patients to see. If I am designated as the WASH focal point, then either the WASH activity or patient care will be affected. There is no other option." — Resident Medical Officer, Sreebordi Upazila Health Complex

These results highlight a significant barrier of the WASH FIT tool, which makes the assumption that core clinical staff can handle more coordination, evaluation, and monitoring duties without sacrificing patient care. This presumption is not realistic in low-resource settings like Bangladesh. The team-based implementation paradigm at the heart of WASH FIT cannot be operationalized as intended without more staffing, protected time, and explicit role delineation. This will result in fragmented uptake and inconsistent tool application across facilities.

Inadequate Capacity to Operationalize WASH FIT Beyond Initial Orientation

In addition to understanding WASH standards, WASH FIT implementation requires technical proficiency in applying a 96-indicator assessment, conducting risk assessment and prioritization, documenting results, and converting findings into phased improvement plans. Respondents in the majority of study areas stated that the one-day orientation sessions were inadequate for developing these skills, which led to a limited capacity to operationalize the WASH FIT procedure after initial exposure. Participants emphasized that these capacity gaps were not solely a consequence of insufficient training, but also reflected the inherent technical complexity of the WASH FIT tool, which assumes a level of data literacy,

analytical capacity, and familiarity with structured assessment tools that is rarely available at the facility level.

The guideline expects that nurses and support workers actively participate in evaluation, scoring, documentation, and monitoring activities, which became a major implementation barrier. Because these employees typically lacked technical skills, prior experience with structured assessment tools, analyzing data, indicator-based scoring, and documentation processes, this expectation was rarely realistic in practice. In contrast to using WASH FIT standards, participants from all facilities observed that support staff mostly relied on routine or experience-based procedures, indicating a limited ability to operationalize the tool as intended.

Senior-level officials, including UHFPOs, Civil Surgeons, and Superintendents, frequently acknowledged that WASH FIT training was either never offered or was delivered as a single session without follow-up, mentoring, or supervision. As a result, responsibility for WASH FIT activities was often informally delegated to junior staff without ensuring their technical readiness to apply the tool. One UHFPO stated:

“We never used to carry out such reviews of WASH or have received such training, so this is relatively new to us. We have often left part of the monitoring of WASH services to our staff officers, without forming dedicated teams or providing adequate training on how to use the WASH FIT tool.” – Upazila Health & Family Planning Officer, Muradnagar Upazila Health Complex

Many respondents mentioned they had trouble with the documentation and monitoring requirements of the WASH FIT tool, even though it had a systematic framework. Tracking WASH indicators necessitates routine data entry, basic analytical abilities, and consistent record-keeping, which most facilities fail to provide. Field visits showed that, especially in hospitals with high patient numbers and staff shortages, WASH monitoring logs were frequently missing, inconsistently updated, or discontinued.

The majority of participants stated that their one-day training sessions did not provide them with enough in-depth knowledge to comprehend the technical requirements of implementing WASH FIT or the reasoning behind the 96 indications that are integrated into the Excel-based evaluation tool. As a result, employees expressed trouble deciphering risk prioritizing, interpreting scores, and applying findings for continuous monitoring.

Although longer or multi-day training might be able to address these deficiencies, respondents frequently stated that low staffing and high clinical workloads made such training impossible in the context of Bangladesh. The majority of facilities have very few employees, and the release of nurses, cleaners, or maintenance personnel for multi-day sessions is practically impossible due to high patient loads. It was impossible to release maintenance workers, nurses, and cleaners for prolonged training without interfering with the provision of services.

Moreover, the complexity of the WASH FIT Excel tool emerged as an additional barrier. Many healthcare workers reported limited computer literacy, insufficient time, or lack of technical support to accurately

enter, analyze, and interpret data across multiple indicators. Without simplified digital platforms or ongoing technical assistance, facilities struggled to maintain data-driven use of the tool.

These findings indicate that WASH FIT's reliance on one-day training, combined with its technical complexity and shortage of skilled manpower, significantly constrains its operationalization in public healthcare facilities in Bangladesh. The gap between the tool's technical requirements and facility-level capacity remains a central barrier to sustained, consistent implementation. It is unrealistic to expect such compliance with WASHFIT standards in low-resource countries like Bangladesh without proper training, supervision, and role definition.

Financial Incompatibility Between WASH FIT Improvement Plans and Facility Budget Structures

WASH FIT implicitly implies the availability of flexible, facility-level financial authority to implement plans, even though it defines evaluation, prioritization, and planning as low-cost activities. The assumption is inaccurate when considering Bangladesh's public healthcare system. The WASH FIT tool's incompatibility with current facility budget structures and decision-making processes is a major obstacle.

Actions like infrastructure repair, the procurement of cleaning supplies and personal protective equipment, and routine maintenance are frequently generated by WASH FIT improvement actions, which require operational and capital budgets. However, facility managers stated that the tool does not offer recommendations on how facilities could operationalize plans within inflexible and centralized public funding systems, nor does it include a specific budget line for WASH or WASH FIT implementation at the facility level. The guideline highlights the significance of national-level investment, but it makes no mention of facility-level fiscal autonomy or designated funds.

"We don't have a separate budget for WASH. We occasionally use funds that are allocated for other purposes to ensure cleanliness and basic sanitation in the facility. Most of the budget goes towards medicines and emergency needs. There is no scope to bring improvement in the long term unless external support is provided." — Upazila Health & Family Planning Officer, Nakla Upazila Health Complex

This budget deficiency has forced facility administrators to reallocate funds from other essential services. Consequently, WASH activities continue to be irregular, fragmented, and unsustainable. Health workers acknowledged that they were aware of what needed to be done, but they were unable to put plans into action because of a lack of resources. This implementation limitation was observed across facility levels, including district hospitals. Even when managers demonstrated strong awareness of WASH deficits and expressed willingness to act, the absence of financial authority stalled progress on even basic improvements. One superintendent of a district hospital claimed that budgetary constraints slowed even the most basic improvements:

"We understand what has to be improved in terms of sanitation and hygiene at our facility because we face these challenges on a daily basis. But without any resources, how will we fix the toilets, repair broken infrastructure, or even buy the necessary cleaning supplies? We are expected to maintain standards, yet we are not given the means to do it." – Superintendent, Chapai Nawabganj District Hospital

This realization draws attention to a notable discrepancy between execution and awareness. Lack of finance prevents healthcare managers from improving facility conditions, despite their willingness and awareness.

Furthermore, routine operations and maintenance are not feasible due to financial constraints and bureaucratic barriers. Even with little funding, facility managers stated that they require approval from the Health Engineering Department (HED) for even minor infrastructure repairs, like replacing stolen fixtures, restoring water supply systems, or repairing toilets. This procedure was frequently slow, resulting in months-long delays that prevented facilities from having operational WASH infrastructure. Although these delays are mediated through administrative and governance processes, respondents consistently framed them as consequences of the absence of facility-level fiscal authority embedded within the WASH FIT implementation model.

While the foundational steps, like team formation, facility assessments, and risk-based planning, can be completed with little funding, the core implementation phases of the WASH FIT process, like infrastructure upgrades, buying cleaning supplies and personal protective equipment, enhancing waste management systems, and continuous monitoring, require large resource expenditures. Without a dedicated WASH budget and efficient maintenance clearance systems, the effectiveness and sustainability of WASH FIT in Bangladesh's healthcare facilities remain threatened.

Governance and Accountability Limitations in WASH FIT Tool Implementation

The absence of well-defined governance, accountability, and ownership structures beyond the assessment phase is a major implementation drawback of the WASH FIT approach. A major obstacle to the effective deployment of WASH FIT in healthcare institutions was the existence of inadequate governance frameworks and low involvement from relevant stakeholders. Despite the WASH FIT guideline's emphasis on the value of community involvement, coordinated multi-sectoral effort, and strong leadership, these practices were hardly ever used in the facilities.

The WASH FIT guideline places a strong emphasis on community involvement, leadership, and multi-sectoral coordination, but it offers no practical advice on how to incorporate these governance principles into the current administrative structures. Because of this, facility managers stated that WASH FIT assessments often produced recommendations that lacked the necessary mandate, authority, or accountability framework to carry them out. The tool's capacity to go beyond documentation and toward corrective action is constrained by this structural flaw. As one Civil Surgeon reported:

"Even if we can identify gaps through WASHFIT, getting approval to fix them takes months. We send letters, attend meetings, but the process is so slow. By the time we get approval, either the issue has gotten worse, or something else has become more urgent." — Civil Surgeon, Bhola District Hospital

This illustrates how WASH FIT-generated evidence often fails to trigger timely corrective action, not due to a lack of awareness, but because the tool does not embed mechanisms for responsive governance or decision-making authority.

Efforts to institutionalize WASH FIT within broader health system monitoring and quality assurance structures were similarly constrained. Respondents reported that attempts to integrate WASH indicators into routine supervision or performance monitoring systems were deprioritized at higher administrative levels. This reflects a broader implementation gap within the WASH FIT framework itself, which promotes integration in principle but does not provide clear guidance or incentives for alignment with national accountability systems.

The inadequate operationalization of stakeholder and community engagement was another significant drawback of the WASH FIT implementation. WASH FIT does not explicitly outline the roles, responsibilities, or engagement modes for local government representatives or community actors, despite the fact that community participation is marketed as a key component of the initiative. Facility staff found it challenging to organize stakeholders at the upazila or district level, who frequently viewed WASH as additional tasks along with their main duties and were unclear of what role they played in the WASH FIT process.

"If we approached someone from the Upazila Parishad, they did not show that much interest. Everyone has a workload and priorities." — Health Inspector, Monohorganj Upazila Health Complex

The lack of structured community involvement was another key component of WASH FIT that was evident in most study sites. In some cases, official invitations to WASH meetings and workshops were ignored by respective stakeholders. The tool does not include mechanisms for sustained engagement, capacity strengthening, or accountability of non-health stakeholders, undermining its multi-sectoral intent.

Overall, the WASH FIT tool's limited articulation of governance, accountability, and intersectoral coordination pathways constrains its transformative potential. In the absence of clearly defined mandates, ownership structures, and mechanisms for collective action, WASH FIT implementation risks remaining superficial and episodic. Addressing these tool-level governance limitations is critical if WASH FIT is to function as a catalyst for health system strengthening rather than as a standalone assessment checklist.

Monitoring, Feedback, and Continuity Failures Undermine the WASH FIT Cycle

A critical limitation of the WASH FIT tool in the context of Bangladesh lies in the design and operationalization of Step 5: “Monitor, Review, Adapt, Improve.” While WASH FIT conceptualizes monitoring as a continuous learning cycle, the tool does not sufficiently account for the structural, institutional, and human resource realities of low- and middle-income health systems. As a result, Step 5 remains the least implemented component of the WASH FIT cycle and highlights a fundamental misalignment between the tool’s expectations and system-level capacities. Unlike earlier barriers related to workforce availability or financing, the challenges described here reflect design-level omissions within WASH FIT itself, particularly the absence of mechanisms for institutional memory, data integration, and decision-linked feedback.

The WASH FIT framework is predicated on the existence of reliable, multidisciplinary facility teams that can convene on a regular basis, evaluate progress, and modify development plans as needed. Nevertheless, the tool lacks ways to address issues that are common to Bangladesh's public health system, such as frequent administrative transfers, high staff turnover, and a lack of institutional memory. Importantly, WASH FIT does not include guidelines for documentation ownership, transfer procedures, or continuity measures, meaning that monitoring processes are easily disrupted when key personnel are reassigned. This omission restricts the tool's capacity to maintain cycles of quality improvement over an extended period of time.

The lack of an integrated monitoring and feedback architecture is another significant tool-related barrier. The tool is vague about who should examine WASH FIT data, where it should be published, and how results should lead to decisions or remedial measures. As a result, WASH FIT data frequently stay separate at the facility level and are not routinely included in other standard monitoring frameworks or national Health Management Information Systems (HMIS). This ambiguity is a result of a structural flaw in the WASH FIT tool. Monitoring turns into a reporting exercise rather than a catalyst for adaptation and progress in the absence of well-defined feedback loops.

“Suppose we complete the assessment using the Excel file, but what happens next? Who is responsible for making the repairs? Who allocates the budget?” — Civil Surgeon, Sunamganj District Hospital

Furthermore, the human resource intensity needed to operationalize continuous monitoring is not sufficiently addressed by WASH FIT. Step 5 is predicated on the availability of supervisory support, staff, time, and facilitation for follow-up evaluations, adaptive planning, and recurring meetings. For low-resource settings, the tool does not provide context-appropriate substitutes, such as streamlined monitoring indicators, reduced meeting frequency, or task-shifting techniques. Without these modifications, the WASH FIT monitoring component is not feasible in high-burden service delivery settings.

The monitoring cycle is further compromised by the tool's limited data usage guidelines. WASH FIT does not specify how assessment results should be used in real-time decision-making, nor does it identify thresholds or triggers for action when requirements decline or stay unfulfilled. Data produced by WASH FIT assessments are therefore either underutilized, inconsistently archived, or unrelated to the planning

and budgeting procedures. This inadequate connection between data generation and action undermines the tool's credibility as a quality improvement mechanism and diminishes motivation for ongoing engagement.

Overall, design-level constraints in the monitoring, feedback, and continuity components of WASH FIT in Bangladesh restrict its efficacy and sustainability. Step 5 of the WASH FIT cycle is aspirational rather than functional if there are no built-in mechanisms for data integration, institutional memory, adaptive supervision, and decision-linked feedback. Enabling WASH FIT to operate as a continuous quality improvement framework instead of a one-time assessment exercise in health systems with limited resources requires filling up these tool-level shortcomings.

Discussion

Our findings show that implementing WASH FIT in Bangladesh is challenging due to misalignment between the tool's design assumptions and the operational capacity of public healthcare facilities in low- and middle-income countries. WASH FIT necessitates consistent staffing, delegated authority, data literacy, and access to discretionary budgets, all of which are rarely met in decentralized health systems such as Bangladesh's. Without adaptation, WASH FIT risks functioning as a periodic assessment exercise rather than a sustained quality improvement mechanism.

Implementing WASH FIT in healthcare facilities, particularly in low- and middle-income countries like Bangladesh, is fraught with contextual and systemic challenges. This qualitative study explored these constraints in detail and identified key areas hindering effective implementation. Our research indicates that a combination of administrative delays, poor community involvement, lack of technical expertise, inadequate funding, and human resource shortages severely limits the successful implementation of WASH FIT across healthcare facilities in Bangladesh. These are reflected in broader WASH literature on WASH interventions in low- and middle-income countries (LMICs), in that Bangladesh faces both shared and context-specific challenges in achieving sustainable improvements in WASH services within health facilities.

One of the repeated themes in our results is the severe lack of trained staff and overburdening of existing personnel, particularly in Upazila Health Complexes (UHCs), where clinical staff handle patient care as well as WASH responsibilities. Similar findings from Ethiopia, Pakistan, Sierra Leone, and Uganda show that WASH FIT faces difficulties when it depends on healthcare staff without institutional recognition, protected time, or incentives [3, 10, 11]. This implies that although WASH FIT's multidisciplinary team-forming model is theoretically robust, a certain degree of adaptation may be required when operating in a context where there are chronic shortages of the workforce. Without any role differentiation or task-shifting strategies, WASH FIT would become an additional administrative burden.

The insufficiency of formal training is another significant hindrance. The majority of the staff members interviewed in our study had never undergone formal training on WASH FIT, resulting in fragmented and

improvisational practices. Evidence from Nepal and other LMICs also reported that short-term or one-day training sessions failed to establish the necessary competence to successfully monitor and implement the WASH FIT tool [3, 7]

Financial constraints emerged not only as a resource limitation but also as a governance failure in prioritization and budget integration. While initial steps on the WASH FIT require limited financial support, an inability to finance improvement plans exposes a critical disconnect between assessment and action. This has already been identified in countries such as Nepal, Malawi, Zambia, and Bangladesh, where facilities routinely conduct WASH assessments but are unable to implement improvements because of a lack of funding [12–14]. These countries' experiences highlight that WASH FIT must be implemented along with dedicated budget lines, capital investment planning, and procurement systems to translate assessment outputs into tangible improvements.

The Bangladesh evidence further supports these findings. A study conducted by [8] found that a lack of sufficient financial investment from both the government and other non-government stakeholders undermines the sustainability of WASH chains and infrastructure, particularly in rural health facilities. Across multiple LMIC contexts, adequate financial support has emerged as a key enabler of successful WASH FIT piloting and scale-up [6, 13–17]

Digital and technical challenges were also observed in using the WASH FIT Excel tool. The majority of healthcare workers lacked digital literacy, time constraints, and limited analytical skills to input, analyze, and use data effectively for evidence-based planning. Additionally, understanding the scoring system and conducting risk assessment posed difficulties for the members of the WASH FIT team. Similar challenges have been reported in Kenya, Uganda, and Zambia, where WASH FIT implementation was weakened by ineffective monitoring tools and very limited use of routine data [6]

Although monitoring and feedback mechanisms form the backbone of the WASH FIT, they remain critically underdeveloped in the Bangladesh context. Our study revealed infrequent team meetings, poor documentation, and a lack of real-time data usage. One study in Uganda [18] emphasized that regular feedback loops and community monitoring improved the sustainability of WASH interventions. In contrast, our findings suggest that such mechanisms remain largely absent in Bangladesh, contributing to weak accountability and disjointed planning.

Policy and leadership challenges further contributed to WASH FIT implementation challenges. Our study documented administrative delays, procurement bottlenecks, and weak inter-sectoral coordination. A study in Bangladesh [9] reported that decentralized governance and weak cross-sector coordination remain challenges in WASH development in Bangladesh. Effective implementation of WASH FIT requires formalized coordination between the Ministry of Health and Family Welfare (MoHFW), which oversees the health sector, and the Ministry of Local Government, Rural Development & Co-operatives (MoLGRD&C), responsible for municipal services and waste management. But facility managers were reluctant to invest resources without explicit instructions or mandates [19]

Though WASH FIT emphasized a participatory approach, community engagement was minimal in most of the study areas. The local government representatives and community members were either not responsive or could not make any meaningful contribution towards WASH planning. Similar findings were also observed in studies from Uganda, Bangladesh, and the Democratic Republic of Congo, where limited participatory spaces, deficits of trust, and insufficient community engagement have been identified as the greatest obstacles to participation [18, 20]. In our study, an absence of formal mechanisms for community feedback led to exclusion and disengagement.

Findings from this study and other LMICs indicate that while WASH FIT provides a valuable framework for improving hygiene and sanitation in healthcare facilities, its effectiveness depends on key factors, including trained personnel, leadership, technical assistance, community engagement, and long-term funding. Adopting WASH FIT into the current national health policy, automating the monitoring process, and pressing for budget increases would help to address some of these problems. The adaptation of WASH FIT to the decentralized and resource-constrained health system of Bangladesh is essential for its long-term effectiveness and sustainability.

To improve WASH FIT's impact, recommendations include better resourcing, government leadership, and providing adequate training and autonomy to the WASH FIT teams. Further research is needed to critically evaluate the impact of WASH FIT on healthcare outcomes and enhance its implementation strategies.

Policy, Practice, and Research Implications

From the point of view of policy, the findings underscore the necessity of institutionalizing WASH FIT within national health planning frameworks, rather than regarding it as a project-based activity. This involves making WASH FIT indicators a part of regular health facility surveillance, linking the results of assessments to budget allocations, and ensuring the accountability of ministries. To ensure that improvement plans can be put into action, there needs to be separate budget lines and capital investment paths for WASH.

For professionals, the research highlights the necessity of simplifying tools and allocating time for WASH-related duties. Longitudinal studies can be conducted for future research to evaluate the impact of WASH FIT implementation on health outcomes, infection prevention and control, and service quality across time.

Conclusion

This study identifies the key barrier to the WASH FIT tool in Bangladesh as a misalignment between its design and the operational realities of public healthcare facilities. The usage of the tool beyond initial assessment was hampered by a number of factors, including a lack of dedicated funding, a lack of technical expertise to apply a complicated assessment technique, a shortage of workforce, weak governance and accountability mechanisms, and insufficient monitoring and continuity procedures.

Because of this, WASH FIT mostly served as a one-time assessment tool rather than a tool for ongoing quality improvement. These findings indicate that contextual adaptation of WASH FIT is essential for effective and sustainable implementation in decentralized, resource-limited health systems. Future research should focus on assessing WASH FIT's influence on health outcomes and infection prevention, in conjunction with cost-effectiveness and finance evaluations, to facilitate evidence-based expansion and successful integration into national health systems.

Declarations

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Author contributions

TA, MI, NN, AHR, MTAB, and MUA contributed to the conceptualization, study design, and funding acquisition. MI, NN, AHR, MTAB, SMAS, and MUA performed the data collection, data analysis, data visualisation, and data triangulation. AHR and NN wrote the first draft with guidance from MUA and TA. MI, MR, SA, TA, and MUA critically reviewed the manuscript and provided guidance on the analysis, data presentation, validation, and visualization. All authors reviewed the manuscript and provided significant suggestions to improve the draft.

Data availability statement

All relevant data are included in the manuscript. Accordance Statement

Accordance statement

The study was conducted in accordance with the research guidelines and institutional policies of the icddr,b to ensure compliance with established ethical and research standards [21].

Conflict of interest

The authors declared no conflicts of interest. One of the authors is on the editorial board of the Journal of Water, Sanitation, and Hygiene for Development.

Ethics statement

Free and informed consent of the participants was obtained, and the study protocol was approved by the appropriate committee for the protection of human participants [ITN-BUET's Institutional Review Board, Dhaka, Bangladesh].

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