

MOMENTUM

Country and Global Leadership



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WASH AND INFECTION PREVENTION PROGRAM END-OF-PROJECT REPORT

India

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MOMENTUM Country and Global Leadership



USAID
FROM THE AMERICAN PEOPLE



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The success of this program depended on the joint efforts of many people. It is impossible to thank everyone individually for their generous and invaluable support. Our team would like to take a moment to express our special gratitude to the Ministry of Health and Family Welfare, Government of India, and the state governments of Chhattisgarh, Jharkhand, and Madhya Pradesh, whose support was instrumental to the program's success.

The collaborative spirit of all the public and private health facilities and communities with which we worked galvanized our own efforts in support of our shared goal of facilitating rapid improvement in water, sanitation, and hygiene (WASH) and infection prevention and control (IPC) facility readiness for COVID-19 to maintain essential services and protect staff and patients.

As technology partners of MOMENTUM Country and Global Leadership: India-Yash, the contributions of Chakr Innovation and Datakalp was immense in the introduction of innovative solutions for decontamination and reuse of personal protective equipment and use of artificial intelligence technology to promote hand hygiene, respectively.


Special thanks to the MOMENTUM Country and Global Leadership: India-Yash team whose technical expertise made the achievements described in this report possible, as well as the project's global leadership for their support and guidance throughout the planning and implementation of activities.

Finally, a big thank you for the immense contributions of all MOMENTUM Country and Global Leadership staff and consultants, past and present, who crisscrossed towns and villages, including hard-to-reach areas, and ensured that the interventions and activities were implemented as planned and resulted in improvements in the lives of the Indian people.

ABBREVIATIONS

AI	Artificial Intelligence
BMW	Biomedical Waste
CG	Chhattisgarh
CHC	Community Health Center
CMCH	Christian Mission Charitable Hospital
COVID-19	Coronavirus Disease, 2019
DH	District Hospital
DQAC	District Quality Assurance Committee
HFA	Health Facility Assessment
HCD	Human-Centered Design
HCF	Health Care Facility
ICMR	Indian Council of Medical Research
IHI	Institute for Healthcare Improvement
IIT	Indian Institute of Technology
IPC	Infection Prevention and Control
IPCC	Infection Prevention and Control Committee
MP	Madhya Pradesh
NHSRC	National Health Systems Resource Centre
NIV	National Institute of Virology
MQAS	National Quality Assurance Standards
OPD	Out-Patient Department
PPE	Personal Protective Equipment
QI	Quality Improvement
SITRA	South India Textile Research Association
SOP	Standard Operating Procedure
USAID	U.S. Agency for International Development
WASH	Water, Sanitation, and Hygiene
WHO	World Health Organization

COUNTRY SUMMARY

	<h2>GEOGRAPHIC IMPLEMENTATION AREAS</h2> <p>Country: India</p> <p>States: 3 states (8 districts) – Chhattisgarh (Baloda Bazar, Mahasamund, and Rajnandgaon); Jharkhand (Bokaro and East Singhbhum); Madhya Pradesh (Betul, Hoshangabad, and Vidisha)</p> <p>Facilities: 81 facilities – 63 public and 18 private health care facilities</p>																
<h3>TECHNICAL AREAS:</h3> <p>Infection Prevention and Control (IPC), Water Sanitation and Hygiene (WASH), Biomedical Waste (BMW) Management</p>																	
<h3>PROGRAM DATES</h3> <p>August 2020 – September 2021</p> <h3>CUMULATIVE SPENDING THROUGH LIFE OF PROJECT</h3> <p>USAID WASH IPC-CH/MP: \$452,057.41 (including HQ)</p> <p>USAID WASH COVID-Tr-JHK: \$160,408.32</p>	<h3>EXPECTED RESULTS THROUGH THE LIFE OF PROJECT</h3> <ul style="list-style-type: none"> • Implement minimum COVID-19 IPC facility readiness activities • Use a hub-and-spoke capacity-building model via eMentoring approach to support IPC teams • Use key data metrics to drive and adapt quality improvements at facilities level, leveraging ongoing quality work and systems • Transitioning to key stakeholders and design for sustainability 																
<h3>DEMOGRAPHIC AND HEALTH INDICATORS</h3> <table border="1"> <thead> <tr> <th>Indicator</th> <th># or %</th> </tr> </thead> <tbody> <tr> <td>MMR (per 100,000 live births)¹</td> <td>113</td> </tr> <tr> <td>IMR (per 1,000 live births)²</td> <td>41</td> </tr> <tr> <td>U5MR (per 1,000 live births)²</td> <td>50</td> </tr> <tr> <td>TFR² (children per woman)</td> <td>2.2</td> </tr> <tr> <td>CPR (modern, among currently married women)²</td> <td>47.8%</td> </tr> <tr> <td>Households with an improved drinking-water source²</td> <td>89.9%</td> </tr> <tr> <td>Households using improved sanitation facility²</td> <td>48.4%</td> </tr> </tbody> </table> <p>Sources: ¹SRS 2016–18; ²NFHS-4 (2015–16)</p>	Indicator	# or %	MMR (per 100,000 live births) ¹	113	IMR (per 1,000 live births) ²	41	U5MR (per 1,000 live births) ²	50	TFR ² (children per woman)	2.2	CPR (modern, among currently married women) ²	47.8%	Households with an improved drinking-water source ²	89.9%	Households using improved sanitation facility ²	48.4%	<h3>HIGHLIGHTS THROUGH THE LIFE OF PROJECT</h3> <ul style="list-style-type: none"> • Operationalization of IPC mechanism in the facilities through rejuvenating IPC committees and its monthly meeting for resolving IPC and WASH-related issues • Closing of infrastructural and logistics gaps in 70 (86%) health facilities. In 44 (54%) health care facilities through project budget and in 26 (32%) through leveraging government budget • Standards-based improvement in IPC and WASH practices from baseline score 46% to 93% in endline assessment • Capacity building of 2,735 service providers in IPC WASH protocols. Results of this are seen in improved competency of staff from 53% in baseline to 94% in endline assessment 
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EXECUTIVE SUMMARY

Preventing and reducing the transmission of infectious disease like COVID-19 is of paramount importance in hospitals.¹ Additionally, preventing patients and health workers from infections in health care facilities (HCFs) is fundamental to achieving quality care, patient safety, and reducing health care associated infections.¹ Strong and effective infection prevention and control (IPC) programs improve quality of care and protect health workers and patients.¹ Similarly, water, sanitation, and hygiene (WASH) components such as safe water, functional handwashing facilities, and clean lavatory facilities are important not only for improving health outcomes but also to carry out IPC procedures.²

Recognizing the need, MOMENTUM Country and Global Leadership, a five-year global project funded by the U.S. Agency for International Development (USAID), provided support focused on targeted, COVID-19 WASH/IPC facility readiness in high patient load facilities. In India, MOMENTUM Country and Global Leadership: India Yash supported 81 HCFs across three states, Chhattisgarh, Jharkhand, and Madhya Pradesh, with the aim of ensuring basic WASH service provision; appropriate triage and screening capacity for COVID-19; IPC and personal protective equipment materials availability; and establishing the use of priority IPC protocols, applying a full-facility approach.

The project approach was designed using the core components of WHO's guidelines on IPC programs at the national and acute health care facility levels and are aligned and integrated with national quality improvement initiatives such as National Quality Assurance Standards, LaQshya, and Kayakalp.³ Key interventions included: development of Health Facility Assessment Checklist, baseline and endline assessments; contextualized technical support; professional development of facility staff in monitoring and sustainability; quality improvement efforts using quality tools; and data-driven improvements in IPC and WASH practices.

Over the course of project implementation, 2,735 health care providers were trained in WASH/IPC protocols, IPC committees were made functional across 96% (78/81) of the facilities, and infrastructural and logistics gaps were closed at 86% (70/81) of HCFs. These efforts resulted in notable improvement of overall IPC and WASH readiness scores (baseline: 46%; endline: 93%). Furthermore, two technology innovations were introduced and implemented to reduce the burden of biohazardous and medical waste generated due to usage of N95 masks, and to support staff working in labor room to improve their hand hygiene practices. These two innovations have shown promising results in contributing to improvement of WASH/IPC practices and standards in selected facilities.

¹ *Minimum requirements for infection prevention and control*. Geneva: World Health Organization; 2019.

² *Water and Sanitation for Health Facility Improvement Tool (WASH FIT)*. Geneva: World Health Organization; 2017.

³ *Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level*. Geneva: World Health Organization; 2016.

INTRODUCTION

No one should acquire an infection while receiving health care; hence, it is important to minimize the risk of spreading infections to hospital patients and staff. Infection prevention and control (IPC) is a practical, evidence-based approach to preventing patients and health workers from being harmed by avoidable infections by implementing a robust infection control program. Adequate water, sanitation, and hygiene (WASH) services in health care facilities (HCFs) are fundamental for the provision of quality, people-centered care. The COVID-19 pandemic highlighted how poor WASH and IPC led to health acquired infections and transmission of diseases from health facilities to communities, and exacerbated outbreaks and spread of infections.

The first cases of COVID-19 were reported in India on January 30, 2020 in three towns of Kerala. As of December 21, 2021, India had the second-highest number of confirmed cases in the world, with 34,752,154 reported cases of COVID-19 infection and the third-highest number of COVID-19 deaths at 478,007 deaths.⁴

In India, the MOMENTUM Country and Global Leadership COVID-19 response project was rooted in using data and evidence to drive and inform interventions and design, together with fostering country-led action. The project facilitated rapid improvements in WASH and IPC facility readiness for COVID-19 to maintain essential services and protect staff and patients. The project worked to ensure basic WASH service provision, promote appropriate triage and screening capacity for COVID-19, contextualize solutions to ensure availability of IPC and personal protective equipment (PPE) materials, and establish use of priority IPC protocols applying a full-facility approach.

The project built on existing country platforms and quality improvement (QI) initiatives to provide targeted, rapid support to HCFs, working alongside respective state and district government bodies. The project team worked rapidly to produce and iterate on a “minimum viable product” QI approach to improve facility readiness, building on existing priority WASH/IPC standards and QI processes to support incremental WASH/IPC improvements within facilities. To ensure data-driven improvement in practices, data on IPC WASH practices and protocols was collected periodically from intervention facilities and utilized for improvement in competency of service providers.

The program used hub-and-spoke mentorship platforms to continue and sustain progress, while building the state government’s capacity to sustain support services and monitor and enforce IPC standards in intervention facilities. The program also worked with other technology partners to use innovative solution for sterilization and reuse of PPE and to promote hand hygiene.

By July 2020, MOMENTUM Country and Global Leadership’s WASH/IPC addendum was implementing in 61 HCFs (46 public and 15 private) in six districts in two states—Madhya Pradesh (Betul, Hoshangabad and Vidisha) and Chhattisgarh (Balodabazaar, Mahasamund and Rajnandgaon). In December 2020, the project started working in an additional 20 HCFs (16 public and four private) in two districts in Jharkhand (Bokaro and Singhbhum East).

⁴ <https://covid19.who.int/table>

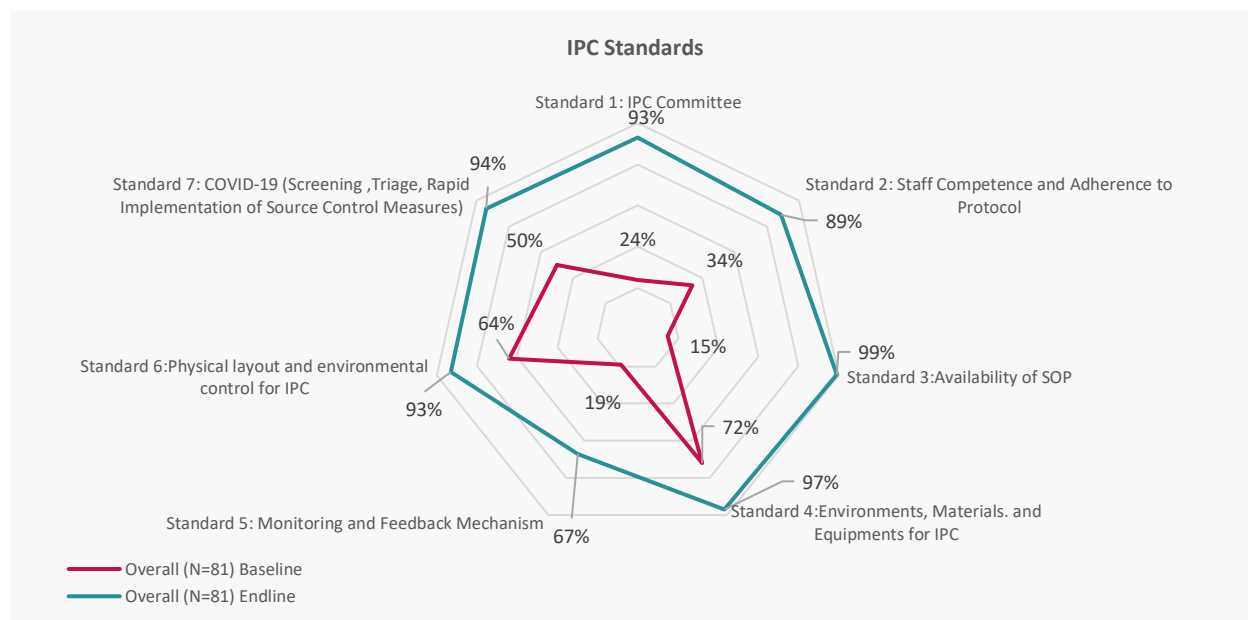
MAJOR ACCOMPLISHMENTS

IMPROVEMENT IN WASH AND IPC STANDARDS AT INTERVENTION FACILITIES

The project conducted an initial **baseline assessment** in September–October 2020, using the **Health Facility Assessment (HFA) Checklist**, developed after a critical review of the national and global guidelines on IPC WASH and national QI initiatives.⁵ The HFA checklist is a comprehensive tool developed with seven performance standards for IPC and six for WASH. In consultation with the intervention facilities, the project team supported development of **Facility Action Plans** to address gaps identified during the baseline assessment, using a standardized template-based tool. The MOMENTUM team worked with existing quality and infection prevention networks at each level of the health system to collect, report, and use data for improved decision-making. The project team contextualized interventions, based on baseline assessment findings, to address gaps in training/capacity building, infrastructure, monitoring, and IPC supplies at intervention facilities.

Facility-level assessments at baseline, then endline, revealed considerable improvements in both IPC and WASH standards. While standards pertaining to resources such as provision of water, electricity, and materials and equipment for IPC were improved, harder-to-achieve standards related to adherence to hand hygiene and environmental cleaning also improved by almost a 50-point percentage between baseline and endline (Figure 1).

FIGURE 1: IMPROVEMENT IN IPC STANDARDS



⁵ Baseline assessments were conducted across all 61 intervention facilities in Chhattisgarh and Madhya Pradesh states in September–October 2020. The baseline assessments at the remaining 20 intervention facilities in Jharkhand state were done in December 2020–January 2021.

FIGURE 2: IMPROVEMENT IN WASH STANDARDS



BUILDING CAPACITY OF HEALTH WORKERS ON IPC AND WASH

Based on the training needs assessment findings, part of the baseline assessments, and review of available resources at intervention facilities, MOMENTUM developed a 12-hour **virtual training package**, delivered over six days, for facility staff of all cadres, including cleaning and housekeeping personnel.

Between August 2020 and July 2021, the project team conducted three batches of virtual training—two initial training sessions, followed by a refresher training session, reaching out to 488 and 226 health care providers, respectively.

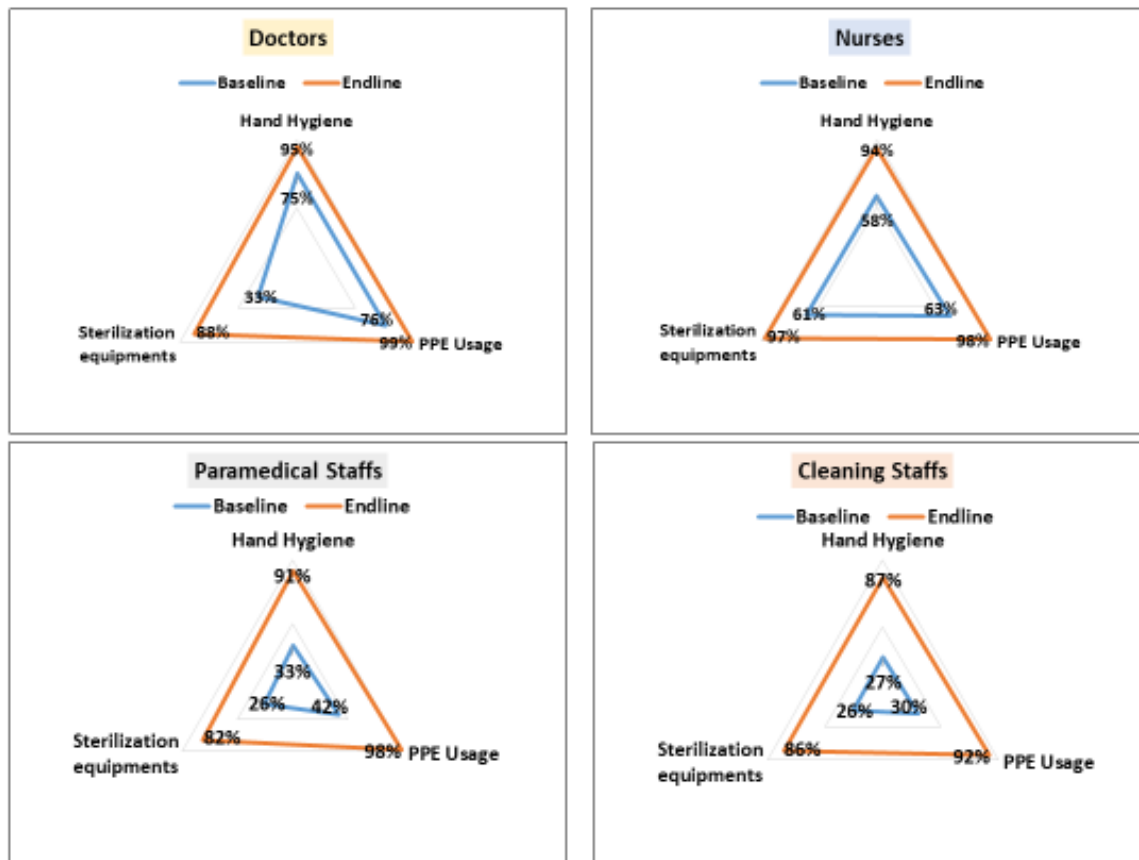
The project adopted a **hub-and-spoke mentoring model**, with the program offices serving as “hubs” and providing virtual and in-person mentoring for “spokes” of IPC teams within networks of facilities for shared learning. This involved regular (monthly) structured in-person and virtual sessions across facilities, targeting teams of providers (IPC or quality teams along with facility in-charges) to focus facility efforts on meeting key quality indicators required for COVID-19 preparedness. Refresher trainings and direct support were provided to facility staff during **in-person mentoring visits** to the intervention facilities.

To sustain these professional development efforts, the project collaborated with the Institute for Healthcare Improvement (IHI) to build the capacity of government officials across the intervention districts on QI tools and methods. The program developed a pool of master trainers or “QI Coaches” in QI processes (six officials, two from each intervention district). After completing the QI workshops, the district-level QI Coaches and MOMENTUM team trained QI Champions and staff in all the intervention facilities to identify IPC and WASH gaps and prioritize improvements by applying QI tools. Using the hub-and-spoke model, QI Coaches were able to train health care providers in Chhattisgarh, Betul, and Vidish. Betul district in Madhya Pradesh had the highest results. There, the QI Coach trained more than 200 health care providers from five districts in Madhya Pradesh and Chhattisgarh in QI tools and processes. However, the project did not train any staff in Jharkhand. Key factors driving training uptake were interest taken by respective QI Coaches and support provided by district administration.



On-site training on IPC and WASH conducted by the MOMENTUM team at DH Vidisha

FIGURE 3: IMPROVEMENT IN ADHERENCE TO PRACTICES AMONG HEALTH WORKERS (BY CADRE)



ENSURING ESSENTIAL AND APPROPRIATE IPC AND WASH INFRASTRUCTURE AND LOGISTICS ARE AVAILABLE AT THE FACILITY LEVEL

The baseline assessment helped identify minor infrastructural repairs at intervention facilities required to improve handwashing practices, sanitation, and water access. The project team advocated facility in-charges to highlight how **minor infrastructural and logistics gaps** are affecting the quality of services and putting staff and patient at risk of infection. These gaps included lack of simple elbow operated water taps in critical procedure areas, lack of operational toilets, leaking pipelines, lack of utility gloves and gumboots for cleaning staff, and lack of biomedical waste (BMW) bin liners.



Before and after images. Installation of elbow tap (right) at Civil Hospital Ganjbasoda following dissemination of baseline results

Once the improvement needs were understood, facility in-charges and the project team mobilized funds to close these gaps. The project provided support in mapping vendors, budgeting, and contracting processes for the required minor infrastructure repairs across 86% (70/81) of the intervention facilities. Project funds were used to complete infrastructure repairs at 44 facilities, while program advocacy led to the remaining 26 facilities using their own funds to close the infrastructural gaps identified during the baseline assessment.

Based on the assessment findings, project interventions focused on procuring critical IPC/PPE commodities for cleaning staff and for BMW management across all 81 intervention facilities.

CREATING A SUSTAINABLE ENVIRONMENT FOR IPC AND WASH STANDARDS AND PRACTICES AT INTERVENTION FACILITIES

The project team galvanized **Infection Prevention and Control Committees (IPCCs)** at intervention facilities. These committees are core to all IPC/WASH interventions at the facilities and are responsible for making action plans and reviewing adherence to IPC/WASH practices. IPCCs were already formed at 39% (32/81) of facilities, of which only 30% (10/32) were active and conducted monthly meetings. Program advocacy and coordinating with respective facility in-charges led to operationalization of already existing IPCCs and formation of newly IPCCs at the



IPCC meeting at CHC Khairagarh, Rajnandgaon

remaining intervention facilities. Currently operational IPCCs are formed and functional at 97% (79/81) facilities, of which 94% (74/79) conduct regular monthly meetings to discuss facility strategies for IPC/WASH.

Facility-based Champions or Mentors: The project team identified one staff nurse at each intervention HCF and provided professional development in training, mentoring, and monitoring mechanisms and designated them as Facility Champions. Professional development was conducted gradually during subsequent supervisory visits. These Facility Champions then initiated needs-based training of facility staff and monitoring of IPC mechanisms at the facility. The project team advocated for building **Quality Assurance and IPC corners** at all intervention facilities, making available relevant standard operating procedures (SOPs) and other WASH/IPC technical resources in one place for easy access to the facility staff.



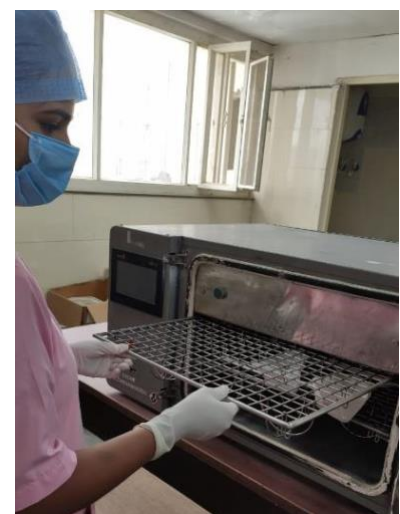
Training conducted by Facility champion at CHC Multai, Betul

TECHNOLOGY INNOVATIONS

MOMENTUM engaged with technology partners to use innovative solutions for decontamination and reuse of PPE and use of artificial intelligence (AI) technology to promote hand hygiene.

CHAKR MACHINE

The Chakr machine is an innovative and scientifically feasible N95 mask decontamination and reuse solution that uses a high-flow ozone system, facilitating the reduction of BMW generated and providing safer ways to address PPE shortages. Chakr effectively reduces SARS COV2 agent by 99.9999% (6 log). The machines are manufactured by the Indian Institute of Technology (IIT), a Delhi-based technology innovation startup, and have received certifications from the Indian Council of Medical Research (ICMR)-National Institute of Virology (NIV) lab, the World Health Organization (WHO), and the South India Textile Research Association (SITRA). Currently, Chakr machines have been installed at two project facilities in Chhattisgarh and Madhya Pradesh. These sites were chosen after thorough consultation with respective state governments and looking at case load that approximates use of N95 masks and eventually availability of used ones for decontamination and reuse.



Chakr machine at District Hospital, Vidisha

During the time the Chakr machine wash used (24 days), 10 masks were decontaminated per cycle on average, totaling 225 masks. The providers mentioned a reduction in procurement of N95 masks as the main advantage; however, they were not confident how effectively the machine can sterilize masks and whether it will be safe

to reuse it. On the other hand, the installation and utilization of the machine did not require a separate place in the facilities, as the machine is small can be fitted easily in any room. Additionally, many providers were of the opinion that the machine can be useful if proper training and sensitization are conducted with health care providers to gain their trust in re-using the masks decontaminated by the Chakr machine.

DATAKALP SAFEHANDS AI SOLUTION AND HUMAN-CENTERED DESIGN

Ensuring round the clock compliance with correct handwashing technique remains a challenge globally, even during the COVID-19 pandemic, thus highlighting its importance. The project partnered with Datakalp, the developer of SafeHands, an AI- powered handwashing solution for HCF staff with integrated software and hardware component that detects hand-movement steps as recommended by WHO protocols. Safehand monitors and provides real-time feedback and a data-driven dashboard, promoting compliance to all recommended steps of handwashing technique. SafeHands AI machines have been installed at seven intervention facilities. Three of the sites are case sites, where real-time feedback is being provided to service providers; three sites are control sites, with only the dashboard data being provided to hospital managers on missed steps and correct steps; and one site is acting as a design site for incubating human-centered design (HCD) solutions to improve hand hygiene behavior.⁶

This research activity is still ongoing and expected to finish in April 2022. To date, the machine calibration and algorithm accuracy has been validated as follows:

1. Examine approximately 60–70 of the most recent video recordings from each site that were above a 20-second duration;
2. Manually examine these episodes for verification of compliant steps as per protocol; and
3. Compare the list of compliant steps as detected by algorithm with the list of compliant steps marked after manual examination.

Based on the above steps, MOMENTUM found that average detection accuracy is 88%. Following calibration, the real-time feedback panels were initiated the second week of November in the three case sites, and data dashboard orientation was conducted in the control sites. Data collection for the HCD process is ongoing and will be followed by testing and then implementing potential interventions for the real-time feedback screens and data dashboard, but also other potential solutions for improving handwashing practices.



Facility staff observing all recommended steps of handwashing with the help of Datakalp SafeHands AI machine, at District Hospital, Mahasamund

⁶ Diagram of HCD process. For more information visit: <https://www.engagehcd.com/hcd-process>



THE WAY FORWARD

LESSONS LEARNED

CHALLENGES FACED

- **Re-allocation of human resources hampered capacity-building efforts:** The second wave of the COVID-19 pandemic in India (April–May 2021) brought an unprecedented surge in COVID-19 cases across the intervention states. As a result, several QI Coaches were assigned roles in COVID-19 response and immunization related activities. This hampered their participation in facility staff professional development activities for QI methods, especially from peripheral HCFs. These trainings were conducted later by project team members.
- **Some members of the cleaning personnel resisted using recommended PPE** such as utility gloves, stating that wearing PPE acts as an obstacle in performing their tasks. Despite repeated reminders and direct support during mentoring visits and trainings, staff behavior did not change. Since the country was in the midst of the pandemic, logistic availability was a challenge. In a similar situation in future projects, we may attempt to search for improved utility gloves that offer better grip. We may also use HCD for qualitative analyses to define and discover such improved gloves and to identify ways to improve adoption of PPE use.
- **Limited presence of cleaning staff in IPC committee meetings and capacity-building sessions:** In this project, efforts were made to empower cleaning staff through trainings and including them in the IPC committee meetings. This was achieved in many facilities; however, in several facilities, the presence of cleaning staff in the training sessions and IPC committee meetings was limited, despite advocacy at multiple levels.
- **IPC WASH supplies are needed to sustain IPC readiness improvements.** Provision of IPC/WASH materials should be coupled with QI training and monthly behavioral observations. State governments should consider developing a list of essential IPC WASH supplies required at HCFs and budgeting for the same. State governments should consider adopting an [Essential Supply List](#), like the one developed by MOMENTUM that was used for the project.
- **Data-driven decision-making is feasible only when the necessary workforce is available.** The project promoted data reporting on availability of cleaning supplies and PPE material at intervention facilities, with the vision to ensure sufficient stock. However, due to insufficient workforce at facilities, patient overload, and lack of incentive and motivation for service providers, data in the monthly progress reports was not collected as planned and could not be used for improving stock availability.
- **Involvement of QI Coaches in trainings:** While QI Coaches were expected to implement downstream training of other colleagues in their district, in four of the eight districts they were not able to involve themselves due to other responsibilities (e.g., COVID-19 management and immunization activities) and therefore could not train staff of peripheral health facilities in QI methods. These trainings were conducted later by project team members.
- **District Quality Assurance Committee (DQAC) meetings can be leveraged as a platform** to resolve inter-departmental issues. DQACs are formed to resolve challenges falling under the purview of different departments (e.g., pollution control board, electricity departments, and water bodies) that directly affect IPC and WASH standards in the health facilities. Advocacy meetings with district authorities were conducted to organize DQAC meetings but did not happen within project timelines.

- **Depending on the nature of the technology innovations, the acceptability and feasibility differs.** While introducing the Chakr machine (ozone-based decontamination system for N95 masks) at selected sites, the project team experienced apprehension across all levels, including policy-makers and facility staff, as to whether the machine could completely decontaminate the N95 masks and whether the decontaminated masks were safe to use, even after receiving the necessary certifications. The project team had to advocate with policy-makers and service providers at the facilities regarding the safety of the decontaminated masks and observed gradual acceptability for the machine. In contrast, Datakalp SafeHands (an AI tool to influence handwashing compliance), which was primarily perceived as a data collection tool to measure handwashing compliance and reduce infection risk, was welcomed by both policy-makers and service providers.

INNOVATIVE APPROACHES FOR CAPACITY BUILDING

- **WhatsApp allowed for just-in-time learning and inter-facility interactions,** as well as participation of staff at multiple levels and cadres. To enable quick updates and IPC/WASH knowledge sharing, the project team coordinated the formation of district-level WhatsApp groups in the intervention districts. These virtual platforms were utilized to share relevant resource material in real time when requested by intervention facilities for government IPC/WASH directives and best practices at facility level, and acted as a source of motivation for peer learning.
- **A low-dose, high-frequency approach should be adopted for professional development to ensure knowledge retention.** Trainings on key WASH/IPC procedures were done using a low-dose, high-frequency approach in which IPC WASH knowledge was imparted to service providers through structured trainings, and reinforced during every supportive supervisory visit conducted by the program team.
- **To empower facility staff for long-term results,** the project team identified one staff nurse at each intervention facility as the designated Facility Champion and built their capacity on training other facility staff on IPC/WASH procedures and monitoring mechanisms. These Facility Champions conducted need-based trainings for facility staff at their respective facilities and monitored IPC mechanisms at the facility. This intervention proved to be a low-cost investment and replicable practice.

SUSTAINING GAINS

- **Infection Prevention and Control Committees (IPCCs) are operational at all facilities.** IPCCs play a vital role in ensuring WASH/IPC standards are maintained at the HCF and in fast tracking actions to be taken to address gaps. Initially, the facilities required direct support to make the IPCCs functional and operational. Project team members supported IPCC members in conducting monthly IPCC meetings, identifying existing IPC and WASH issues, and preparing action plans for mitigating them.
- **Empowering and engaging cleaning and paramedical staff was critical in ensuring sustainability for IPC/WASH standards beyond the life of the project.** Baseline assessments revealed that competency of cleaning and paramedical staff in key IPC procedures was low. Less than 50% of cleaning staff present across intervention facilities had received any training on IPC procedures, and only one-third of the cleaning staff observed adhered to recommended hand hygiene, PPE, and cleaning protocols. The MOMENTUM team conducted capacity-building sessions especially designed for cleaners and paramedics to upgrade their skills and knowledge in key WASH/IPC procedures. Technical resources on IPC were developed for cleaning staff and distributed to them. Further, the project team also advocated for

including cleaning staff in IPCC meetings to further empower them and include them in the decision-making process.

- **Building the government's capacity on IPC/WASH ensures sustainability:** Training government nodal officers as QI Coaches to function as master trainers further ensured sustainability for capacity-building efforts. These master trainers function as a hub for professional development of service providers in peripheral health facilities.

CO-INVESTMENT FROM COUNTRIES

Program efforts and advocacy led to leveraging of government funds in the range of INR 133,000 (USD 1,900) for infrastructure repair, construction of BMW storage rooms, and procurement of logistics (e.g., BMW collection trolley, three-bucket mopping trolley, linen trolley, and installation of doors in the toilets at intervention facilities) as compared with INR 246,198 (USD 3,517) spent through the MOMENTUM budget.

ANNEX A: PERFORMANCE MONITORING PLAN

Indicators as per PMP	Target	Baseline (September 2020– January 2021)	Endline (August 2021)
Number of health care facilities where USAID provided support for IPC and/or WASH for COVID-19, by type of support (e.g., training, commodities, access to water, basic sanitation)	81	81	81
Number of health care facilities that received USG-funded infrastructure assistance	To be decided as per facility needs	NA	46
Number of health care facility staff who received WASH/IPC training or mentoring	All facility staff in the intervention facilities	1516	2735
Proportion of health care facilities with improved infection prevention readiness scores as compared with baseline score	81	NA	81
Number of districts that have a trained and functional team responsible for IPC/WASH, or COVID-19 outbreak response	8	8	8
Number of facilities that have a trained and functional team responsible for IPC/WASH, or COVID-19 outbreak response	81	32	79
Number of health care facility staff infected with COVID-19	As per actual	NA	463
Percentage of COVID-19 cases that are among health workers	As per actual	NA	16%
Number and percentage of USAID-supported facilities in compliance with IPC COVID-19 guidelines/SOPs	80%	50%	97%
Percentage of observed health care facility staff who complied with proper use of PPE	80%	54%	88%
Percentage of observed health care facility staff who complied with proper handwashing protocols	80%	50%	92%
Percentage of observed health care facility staff who complied with cleaning protocols	80%	27%	94%
Number of districts that are using a common monitoring, reporting, and data management system to drive resource and funding allocations for IPC/WASH	8	NA	8

ANNEX B: LIST OF PRESENTATIONS AT INTERNATIONAL CONFERENCES AND PUBLICATIONS

PRESENTATIONS GIVEN AT INTERNATIONAL CONFERENCES

#	Month, Year	Name of Conference	Presenter(s)	Presentation/Poster
1	April 2021	The Global Health Science and Practice Technical Exchange (GHTechX)	Dr. Surendra Sharma	Presentation: Help is just a text away: using virtual means to expand WASH/IPC Facility Readiness

JOURNAL MANUSCRIPT PUBLICATIONS

#	Month, Year	Name of Article	Journal Name	Authors	Hyperlink
1	NA	NA	NA	NA	NA
2					
3					

ANNEX C: LIST OF MATERIALS AND TOOLS DEVELOPED OR ADAPTED BY THE PROGRAM

#	Material or Tool Name	Technical Area
1	IEC poster on hand hygiene	Hand hygiene
2	IEC poster on reminder of hand hygiene	Hand hygiene
3	IEC poster on double masking for prevention of COVID-19	Transmission based precaution
4	IEC poster on mercury spill kit and mercury spill management	Spill management in health care facility
5	IEC poster on blood spill kit and blood spill management	Spill management in health care facility
6	IEC poster on management of needle stick injury	Management of accidental injury
7	Document on Frequently Asked Questions of IPC WASH	Hand hygiene, environment cleaning, biomedical waste (BMW) management, cleaning and disinfection, personal protective equipment (PPE)
8	Job aid on Do's and Don'ts for cleaning staff	Environment cleaning and PPE, BMW management
9	Training material for training of staff nurses, doctors, paramedical staff, and cleaning staff	Infection prevention and control (IPC) mechanism, IPC committee, standard precautions, environment cleaning, cleaning and disinfection, linen management, BMW management, COVID-19 patients triaging and COVID-19 dead body management

ANNEX D: LEARNING MATRIX

Learning question	Funding source	Key results or findings	Key learning	Final products and dissemination
What is operational feasibility, acceptability, and benefit of innovative solution for N95 masks re-sterilization and reuse under the MOMENTUM WASH/IPC COVID-19 program over the life of the project?		Reduction in procurement of N95 masks Low confidence in effectiveness of machine in decontaminating N95 masks	Machine can be useful if proper training and sensitization are conducted with health care providers to gain their trust in re-using the masks decontaminated by Chakr machine	
What is the usability, acceptability, and feasibility of the interventions for improving hand washing compliance, including AI-supported feedback?		This research study is ongoing		