



## Water, Sanitation and Hygiene in Health Care Facilities

### THE CONTEXT

**In India, 130 mothers die for every 100,000 babies born, and 28 out of every 1,000 newborns do not survive beyond their first month<sup>1,2</sup>. The country has among the highest rates of maternal and neonatal mortality in the world. A leading cause of this is sepsis, an infection associated with poor hygiene at birth and soon after. The Government of India has taken steps to improve maternal and child health under the National Health Mission. For instance, the Janani Shishu Suraksha Yojana entitles all women to a free delivery at a public health care facility to ensure safe childbirth. As a result of concerted efforts, the proportion of women who give birth in a health care facility in India has improved significantly from 38.7% in 2005-2006 to 78.9% in 2015-16<sup>3,4</sup>.**

With more expectant mothers accessing health care, health facilities now have to deal with the quality of care—the extent to which health care services provided to individuals and patient

populations improve desired health outcomes<sup>5</sup>. To improve patient outcomes, health care must be safe, effective, timely, efficient, equitable and people-centred<sup>6</sup>. Deaths and illnesses from maternal and early neonatal sepsis are suggestive of substandard quality of care<sup>7</sup>. When health care facilities have an unhygienic environment, with inadequate supply of running water and handwashing facilities, and poorly maintained or dysfunctional toilets, women may avoid or delay seeking care and are likely to leave such facilities sooner than they should after delivery<sup>8</sup>. Health care providers working under such conditions are unable to maintain hygiene and prevent infections. Such circumstances place a new mother and her baby at the risk of sepsis, which, when untreated, can be life-threatening. Sepsis accounts for 11% of maternal deaths, with the highest rate in Southern Asia (13.7%)<sup>9</sup>. In places with high mortality such as India, up to 50% of neonatal deaths are due to infections, with 30-40% of infections that result in fatal neonatal sepsis transmitted at the time of birth<sup>10</sup>.

With regard to hygiene practices of health care

**TABLE 1** Snapshot of maternal and child health

Indicator		Details
<b>Number of children born annually<sup>11</sup></b>	-	25,794,000
<b>Number of public health care facilities in India</b>	Primary Health Centre	25,650
	Community Health Centre	5,624
	District Hospital	734
<b>Proportion of population seeking care at public health facilities (rural data)<sup>12</sup></b>	Public health sector	46.4%
	Private health sector	49%
	Other source	4.5%
<b>Institutional births (rural only)<sup>13</sup></b>	Proportion of institutional births	75.1%
	Proportion of institutional births – public facility	54.4%
<b>Maternal and child health</b>	Neonatal mortality rate <sup>14</sup>	28 (per 1,000 live births)
	Infant mortality rate (rural) <sup>15</sup>	46 (per 1,000 live births)
	Maternal mortality ratio (2014-16) <sup>16</sup>	130 (per 100,000 live births)

providers, evidence worryingly suggests that hand hygiene among them is abysmal across the world. Poor hand hygiene contributes to health care associated infections (HCAI) and anti-microbial resistance (AMR), two rapidly emerging concerns that lead to chronic health conditions, lengthy hospitalisation and high treatment costs for the patient and the public health system. HCAs result from unsafe, unhygienic patient care. Evidence suggests at least 10% of the patients acquire such infections<sup>17</sup>. HCAs are also among the leading risk factors for AMR<sup>18</sup>, a deadly threat predicted to cause 10 million deaths every year and cumulatively cost over USD100 trillion in terms of lost global production by 2050<sup>19</sup>.

Lastly, when patients, both those seeking inpatient and outpatient services, are not provided toilets in the health facility, they may defecate in the open, dirtying the area around the hospital and increasing risks for faecal contamination<sup>20</sup>.

## STATUS OF WATER, SANITATION AND HYGIENE IN HEALTH CARE FACILITIES

Addressing water, sanitation and hygiene (WASH) in the context of health care will catalyse action towards achieving the inter-related Sustainable Development Goals 3 and 6 (Table 2).

**TABLE 2** Sustainable Development Goals for WASH and Health

<p><b>Goal 6:</b> Ensure availability and sustainable management of water and sanitation for all</p>	<p><b>Target 6.1:</b> By 2030, achieve universal and equitable access to safe and affordable drinking water for all</p>	<p><b>Target 6.2:</b> By 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations</p>	
<p><b>Goal 3:</b> Ensure healthy lives and promote well-being for all at all ages</p>	<p><b>Target 3.1:</b> By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births</p>	<p><b>Target 3.2:</b> By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births</p>	<p><b>Target 3.8:</b> Achieve universal health coverage (UHC), including financial risk protection, access to quality essential health care services, and access to safe, effective, quality and affordable essential medicines and vaccines for all</p>

As India makes rapid strides towards becoming open defecation free, improving WASH in institutions such as health care facilities is critical to achieving adequate and equitable sanitation for all, especially women and children. The landmark 2015 report of the World Health Organisation (WHO) and UNICEF on WASH in health care facilities states that only 72% of such facilities in India have water, and only 59% have sanitation amenities<sup>21</sup>.

WaterAid India assessed 343 health care facilities in 12 districts of the country (in 2014-2016) and found that<sup>22</sup>:

- Water, sanitation and hygiene amenities may be available in health care facilities, but their adequacy, accessibility, functionality and quality are often questionable
  - Safe storage of water and availability of safe drinking water were particularly problematic
- Functional and adequate number of toilets in patient care areas, labour rooms and maternity wards, as well as for the caregiver were lacking
- Hand hygiene is of significant concern given that handwashing stations are poorly equipped with soap and instructions for handwashing steps and handwashing at critical times. Further, the staff do not practise hand hygiene regularly
- Solid, liquid and medical wastes are poorly managed in most facilities, even in those having the mechanism to segregate medical waste
- Guidelines and policies on facility cleanliness, infection control and personal protective equipment are either lacking or poorly and inconsistently implemented. Training of the health care staff in these areas is resultantly inadequate

**TABLE 3** Importance of WASH in health care facilities

	Inadequate WASH	Adequate WASH
<b>Disease prevention and treatment</b>	<ul style="list-style-type: none"> <li>Increased incidents of infections and diseases</li> </ul>	<ul style="list-style-type: none"> <li>Improved diarrhoeal disease prevention and control</li> <li>Improved outbreak prevention and control</li> </ul>
<b>Health and safety</b>	<ul style="list-style-type: none"> <li>Increased use, misuse and overuse of antibiotics, accelerating antimicrobial resistance</li> </ul>	<ul style="list-style-type: none"> <li>Reduced health care associated infections</li> <li>Reduced antimicrobial resistance</li> </ul>
<b>Staff morale and performance</b>	<ul style="list-style-type: none"> <li>Decreased health care worker motivation</li> <li>Fetching water by health care staff diverts precious time from treating and caring for patients</li> </ul>	<ul style="list-style-type: none"> <li>Improved health care provider satisfaction and ability to provide care</li> </ul>
<b>People-centred care</b>	<ul style="list-style-type: none"> <li>Lower patient satisfaction and reduced uptake of care</li> </ul>	<ul style="list-style-type: none"> <li>Increased uptake of health care services (e.g., institutional births, immunisation) by patients</li> </ul>
<b>Community WASH</b>		<ul style="list-style-type: none"> <li>Health staff, a model of good behaviour</li> <li>Improved hygiene practices at home</li> </ul>
<b>Health care costs</b>	<ul style="list-style-type: none"> <li>Increased health care costs (individual)</li> <li>Longer stays in hospital and repeated visits due to health care associated infections, especially antibiotic-resistant infections</li> </ul>	<ul style="list-style-type: none"> <li>More efficient services</li> <li>Fewer deaths and diseases</li> <li>Shorter hospital stays</li> <li>Lower out-of-pocket payments</li> </ul>

- A major issue is the lack of cleaning staff in all facilities, resulting in poor overall cleanliness
- Some differences were noted between the types of health care facilities, with primary health centres (PHCs) and community health centres (CHCs) typically performing poorly compared to district hospitals
- Although data on allocation and utilisation of funds for hospital upkeep, maintenance and infection control practices was not gathered in most studies, findings and discussions with hospital staff and Rogi Kalyan Samiti (RKS) members suggest inadequate funds could be an underlying cause of poor hygiene

Adequate WASH infrastructure and hygiene behaviour (i.e., handwashing at critical times, infection prevention and control practices) are an important component of the quality of care framework defined by the World Health Organisation (2016). They influence both the delivery of care and the experience of care, and can confer several benefits (see Table 3).

While evidence on the extent to which WASH interventions can improve health outcomes is limited, some studies have found that clean birth practices in homes and facilities are associated with a significant reduction in neonatal deaths related to all-cause sepsis and tetanus, and that washing hands with soap and water by birth attendants protects babies against neonatal sepsis and chord infection<sup>23</sup>.

## PROMISING APPROACHES TO IMPROVING WASH IN INSTITUTIONS

The Global Action Plan for WASH in health care facilities envisions that “...every health care facility in every setting, has safely managed, reliable water, sanitation and hygiene facilities and practices to meet staff and patient needs in order to provide quality, safe, people-centred

care, with particular attention to the needs of women, girls and children”<sup>24</sup>. Achieving this will require an approach that strengthens health systems, whereby WASH is positioned within the health systems building blocks, namely leadership and governance; health care financing; health workforce; medical products and technologies; information and research; and service delivery (Figure 1)<sup>25</sup>.

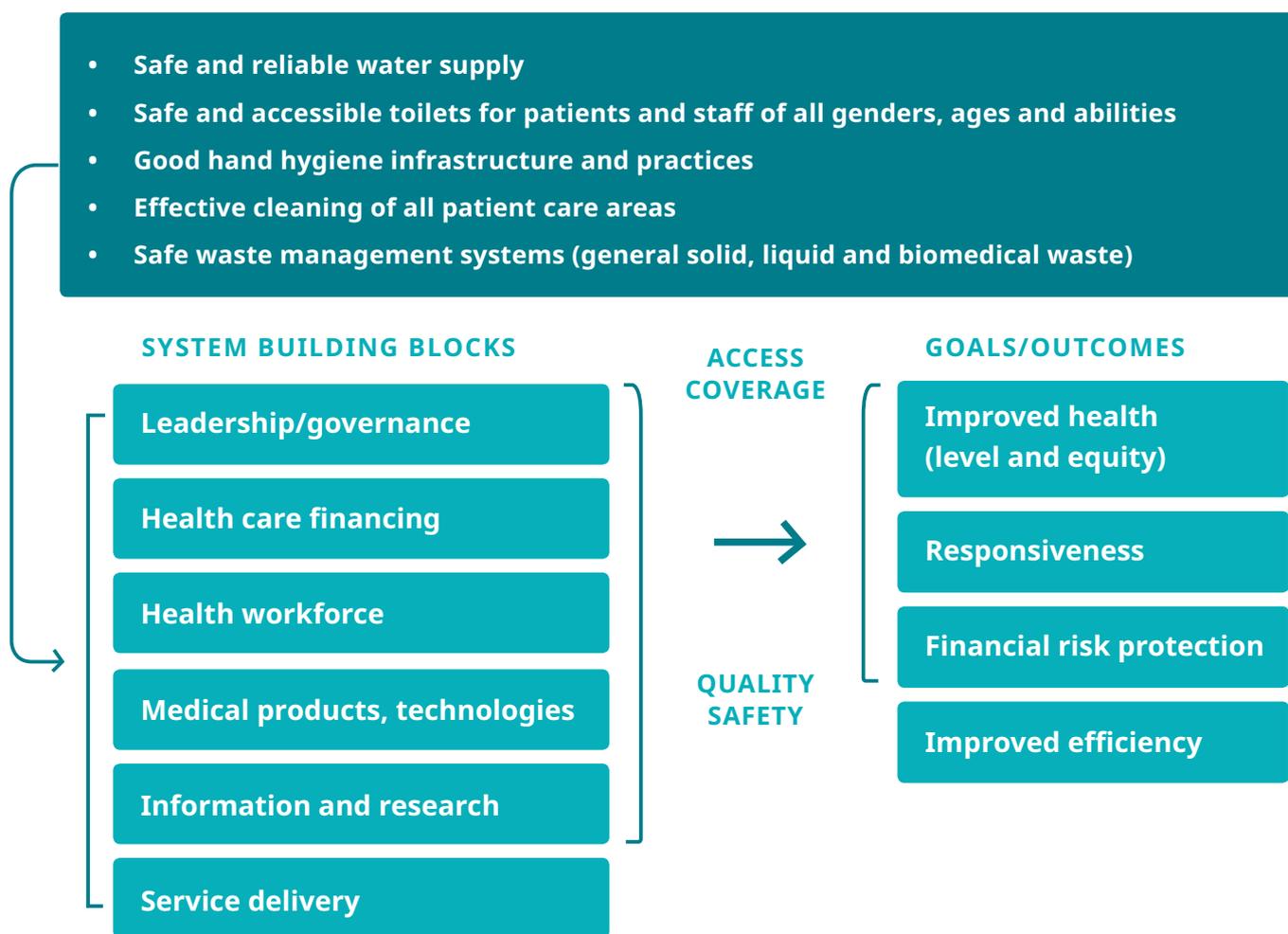


Figure 1: Integrating WASH into the health system building blocks

Promising WASH interventions in health care facilities in India (Table 4) can be organised under four inter-related components: 1) leadership, policies and standards, and links with health priorities; 2) strong monitoring

mechanisms and research to inform effective practice; 3) adequate, well-trained human resources and citizen-led accountability; and 4) technology<sup>26</sup>.

**TABLE 4** WASH interventions in health care facilities in India

Component	Intervention strategy	Description of intervention
<b>Leadership, policies and standards &amp; Links with health priorities</b>	National Health Policy (2017)	The policy states that access to safe water and sanitation for all by 2020 is a cross-sectoral goal related to health.
	Swachhta Guidelines <sup>27</sup> and Kayakalp Awards criteria	Ministry of Health And Family Welfare launched a national initiative in 2015 to promote cleanliness and enhance the quality of public health facilities. The purpose of this initiative is to appreciate and recognise efforts to create a healthy environment.
	Swachh Swasth Sarvatra <sup>28</sup>	<ul style="list-style-type: none"> <li>Enables Gram Panchayats where Kayakalp awarded PHCs are located to become open defecation free (ODF).</li> <li>Strengthens CHCs in ODF blocks to achieve a high level of cleanliness to meet Kayakalp standards through a support of INR 10 lakh under the National Health Mission.</li> <li>Build capacity by training nominees from such CHCs and PHCs in WASH.</li> </ul>
	Development of and adherence to guidelines and protocols for infection prevention and control	<ul style="list-style-type: none"> <li>Indian Public Health Standards<sup>29</sup> for PHCs, CHCs and district hospitals</li> <li>Dakshata Guidelines<sup>30</sup>: multipronged approach to address the determinants of quality of care during the intrapartum and immediate postpartum period, with special emphasis on standardising the clinical competencies of the providers and creating an enabling environment at health facilities.</li> </ul>
<b>Research to inform effective practice &amp; Strong monitoring mechanisms</b>	Tools and formats to assess WASH status in health care facilities for planning and budgeting for improvements and to facilitate monitoring	The Kayakalp criteria <sup>31</sup> developed by the Ministry of Women and Child Development enables government health facilities (PHCs, CHCs, district hospitals) to assess the cleanliness of the facility on six parameters: 1) hospital/facility upkeep; 2) sanitation and hygiene; 3) waste management; 4) infection control; 5) support services; 6) hygiene promotion.
		WASH FIT tool <sup>32</sup> : Developed by WHO and UNICEF, WASHFIT is designed to help health care facilities improve quality of care through provisioning of improved water, sanitation and hygiene. It is a framework to guide a continuous cycle of improvement through assessments, prioritisation of risk and defining specific, targeted actions. Built on the mWater (digital monitoring platform), WASHFIT digital includes a set of forms for implementing a risk-based management approach. The site also includes a dashboard to visualise the process and keep track of the progress.
		WASH and Clean Toolbox <sup>33</sup> : A comprehensive toolbox to objectively capture levels of cleanliness and its key determinants include: 1) walk-through checklist; 2) facility needs assessment tool; 3) interviews with hospital management; 4) photo elicitation with health care providers, cleaners and patients (using photos to facilitate discussion and identify solutions, a participatory approach).

**TABLE 4** WASH interventions in health care facilities in India

Component	Intervention strategy	Description of intervention
<p><b>Research to inform effective practice &amp; Strong monitoring mechanisms</b></p>	<p>Qualitative tools</p>	<p>Use of the Gender Action Learning System assessment tool<sup>34</sup> that uses gender indicators to understand the specific needs and priorities of different user groups, patients, attendants and staff members. The findings are then used to make the case for infrastructure-related changes.</p>
	<p>Environmental microbiology to assess the status of hygiene and infection prevention and control measures in facilities, particularly labour and delivery rooms</p>	<p>Microbiological swab<sup>35</sup> samples taken from key health care sites are assessed in laboratories to identify potential pathogens and antibiotic resistance. Key health care sites include labour and delivery room, especially bed/table on which women deliver; maternity ward; cleaning apparatus (mops and buckets) used in the labour and delivery room.</p>
	<p>Disease surveillance<sup>36</sup> to identify and monitor the incidence and prevalence of hospital acquired infection and anti-microbial resistance</p>	<p>Routine surveillance of health care associated infections can provide data that can help implement effective strategies to reduce the incidence of drug-resistant infections as well as the following in Health Monitoring Information Systems and Integrated Disease Surveillance Program:</p> <ul style="list-style-type: none"> <li>• Sepsis (maternal and early neonatal sepsis)</li> <li>• Meticillin resistant Staphylococcus aureus (MRSA)</li> <li>• AMR</li> </ul> <p>Examples of such initiatives include AMR Surveillance Networks (by Indian Council for Medical Research and National Centre for Disease Control)</p>
	<p>WHO/UNICEF Joint Monitoring Programme (JMP)<sup>37</sup> for water supply and sanitation in health care facilities</p>	<p>Joint monitoring of WASH in health care facilities includes tracking basic water, sanitation, hand hygiene and health care waste. Definitions of basic services have been developed by a global task team convened by the JMP and incorporated into new JMP service ladders for WASH in health care facilities.</p>
<p><b>Adequate, well-trained human resources &amp; Citizen-led accountability</b></p>	<p>Capacitating health care providers and staff to practise infection control and hygiene behaviours</p>	<p>In Gujarat hospitals, a study<sup>38</sup> tested the use of Appreciative Inquiry (AI) that builds on recognition of positive actions, behaviours and attitudes. It found that AI can contribute to better infection control by catalysing and creating forums for team building, shared decision making and problem solving in an enabling environment, along with technical inputs and training to address gaps.</p>
	<p>Building the capacity of cleaners to improve hygiene in maternity and newborn units</p>	<p>The Soapbox Collaborative is undertaking a 'Clean Study'<sup>39</sup> to investigate whether training 'cleaning champions' to educate hospital cleaners in best practices improves environmental hygiene in maternity and newborn units in Tanzania. The team will use Soapbox's participatory training package, which includes "clean boxes", one for each of the seven modules in the kit, including hand hygiene and cleaning the hospital environment.</p>

**TABLE 4** WASH interventions in health care facilities in India

Component	Intervention strategy	Description of intervention
<b>Adequate, well-trained human resources &amp; Citizen-led accountability</b>	Strengthening mandated institutions to plan for WASH improvements and allocate budgets	<p>Capacitate Rogi Kalyan Samiti (RKS)<sup>40</sup>/Hospital Development Society (HDS) by:</p> <ul style="list-style-type: none"> <li>• Enhancing the understanding of the importance of WASH in health care facilities</li> <li>• Improving knowledge of the roles and responsibilities of RKS</li> </ul> <ul style="list-style-type: none"> <li>• Understanding current budgetary allocations and planning for future allocations to improve water, sanitation and hygiene services in a facility based on gaps assessed (using Kayakalp)</li> <li>• Activating or reactivating RKS in health facilities where inactive</li> <li>• Seeking membership of development partners (NGOs) in RKS to influence it from within</li> </ul> <p>District Health Society (DHS)<sup>41</sup> is responsible for managing all health and family welfare programmes in the district. It serves as a facilitating mechanism for the district health administration. DHS can be influenced by development partners to participate in HDS meetings every quarter or every six months to share field level insights and community experiences in health facilities, and suggest solutions</p>
<b>Technology</b>	Innovations in WASH infrastructure to overcome challenges like paucity of handwashing stations at patient care areas	HappyTap portable sink <sup>42</sup> placed in critical patient care areas that lacked running water (Cambodia)

## SPOTLIGHT

**Systems strengthening approach in Sehore (Madhya Pradesh) and Kamareddy (Telangana) helped transform health care facilities into Kayakalp awardees**

### Ichhawar Community Health Centre in Sehore, Madhya Pradesh

In Sehore district, WaterAid India and its partner Samarthan worked closely with the hospital and district administration to:

1. Deploy the Kayakalp checklist to assess WASH services in select health facilities in collaboration with the facility staff. The assessment findings were used to identify intervention areas and budgetary

needs. The team developed action plans through which several WASH infrastructure improvements were undertaken within a year.

2. Collaborate with the Rogi Kalyan Samiti (RKS) and the Infection Prevention and Control Committee in select health care facilities to enhance their understanding of the importance of WASH and infection prevention and control in health care. RKS budgets were jointly reviewed to identify budgetary allocation to WASH services and reallocations were made based on the gaps identified by facility assessments and action plans.
3. Engage with the RKS by attaining membership as the NGO representative,



WaterAid/Shakti Rathi

**A renovated maternity ward post WaterAid India and Samarthan's intervention in Ichhawar Community Health Centre in Sehore, Madhya Pradesh**

- and by influencing the local member of the Legislative Assembly (MLA) during RKS meetings to position WASH as an important component of health care in health facilities. RKS members, including the MLA, regularly visit the health facility to monitor efforts.
4. Participate in the District Health Society meetings to highlight the status of WASH in health facilities, represent community concerns and provide solutions to how WASH in health care facilities can be improved based on the ongoing work in the district.
  5. Conduct regular trainings for cleaners in health facilities to ensure appropriate management of general and biomedical waste.

As a result of these efforts, the Community Health Centre (CHC) in Ichhawar, Sehore, became the first health facility in Madhya Pradesh to receive the Kayakalp award in 2016, with a financial reward of INR 5 lakh. Ichhawar CHC has spent 60% of this amount to further strengthen WASH infrastructure. This CHC caters to a population of 1.5 lakh people and was the only major health facility in the district for decades. With significant improvements in hygiene infrastructure and practices, the quality of care given to patients, patient's experiences and health care provider satisfaction have increased<sup>43</sup>. The CHC continues to meet the Kayakalp standards two years later, and is considered to be a model facility in the district.



Separate male and female toilets and a handwashing station equipped with soap and running water post WaterAid India and Samarthan's intervention in Ichhavar Community Health Centre in Sehore, Madhya Pradesh

## Banswada Area Hospital, Kamareddy, Telangana

WaterAid India and its partner Lepra Society used a multi-pronged approach to improve WASH facilities in the Banswada Area Hospital in Kamareddy district. They took the following actions:

1. Training of auxiliary nurse midwives (ANMs) and Accredited Social Health Activists (ASHAs) on:
  - Importance of water, sanitation and hygiene in the context of health care facilities
  - Overview of Kayakalp criteria and assessment processes
  - Testing water quality
  - Water treatment procedures (e.g., chlorination) in health care facilities
  - Operations and maintenance (O&M) of sanitation amenities in health facilities (drawing upon O&M models used in schools)
  - Importance of hand hygiene in the context of health care, as well as other hygiene messages such as handwashing at critical times, safe handling and storage of drinking water, food hygiene and latrine use

2. Capacitating the Rogi Kalyan Samiti/ Hospital Development Society (HDS) through trainings on:
  - Importance of water, sanitation and hygiene in the context of health care facilities
  - Overview of Kayakalp criteria and assessment processes
  - Understanding the functioning of the District Health Society and budgetary allocations in general, and WASH services in particular
3. Facilitating the establishment of an Infection Prevention Control Committee to oversee the monitoring of handwashing practices by health care providers and regular cleaning of health care facilities.
4. Analysing budgetary allocations and spending under HDS on WASH-related services using a budget analysis format. Further, the Kayakalp assessment criteria were used to identify gaps in WASH infrastructure, hygiene promotion and training needs, and the requisite budget to address these lacunae.
5. Participating in quarterly or six monthly HDS meetings to continually position WASH in health care facilities as crucial to promoting patient health and wellbeing.

This comprehensive set of actions helped the Banswada Area Hospital receive the Kayakalp award in 2018.

## CURRENT CHALLENGES AND AREAS FOR ACTION

The launch of the Kayakalp awards in 2015 has catalysed actions to improve water, sanitation and hygiene services in health care institutions. For achieving adequate and equitable sanitation and hygiene for all, the following areas need attention:

### 1. WASH infrastructure technical solutions:

- Toilet facilities in all patient care areas (in-patient, out-patient, and procedure areas)
- Appropriate toilet designs for people of all genders, ages and abilities
- Reliable water supply in summer months and water quality testing for bacterial and chemical contamination
- Handwashing stations in all patient care areas with running water and soap
- Hand washing stations designed to minimise the risk for contamination (e.g., elbow taps)
- Waste disposal systems for general solid, liquid and biomedical waste
- Operations and maintenance plans for WASH infrastructure

### 2. Governance and monitoring:

- Data on WASH coverage in health care facilities, both public and private, at all levels of care from primary to tertiary
- Inclusion of WASH standards in accreditation and regulatory systems for public and private health care institutions
- Surveillance data on the prevalence of health care associated infections

### 3. Research:

- Action research and assessments to understand what works to promote WASH in health care facilities



WaterAid/ Ronny Sen

**A mother holds her nine day old son in a newborn intensive care unit at Banswada Area Hospital, Kamareddy, Telangana**

#### **4. Integrating WASH into health policies and programmes:**

- Positioning WASH in health facilities not just in terms of infrastructure, but also behavioural change; training and capacity building; research and monitoring; and financial allocations
- Activating and strengthening mandated institutions such as Rogi Kalyan Samitis or District Health Societies to integrate WASH into health interventions and allocate budgets

#### **5. Financing:**

- State governments to budget for new or upgraded WASH infrastructure; operations and maintenance; capacity building and training of health care providers; and behavioural change initiatives

## CALLS TO ACTION

1. Integrate WASH in health care facilities as a core component in health policies, programmes and strategies relevant to quality of care and universal health coverage.
2. Review Kayakalp criteria, other tools for monitoring WASH in health care facilities, and the recently released Joint Monitoring Program indicators for WASH in health care facilities to arrive at comprehensive standards that allow classification of facilities in relation to WASH “service ladders” to monitor progress.
3. Measure WASH in health care facilities routinely within health, water and sanitation related monitoring systems (e.g., the Swachh Bharat Mission MIS) and national level surveys (e.g., the National Annual Rural Sanitation Survey). Use the findings to inform action plans and budgetary allocations to improve water, sanitation and hygiene facilities (including infrastructure and operations and maintenance; training and capacity building of health care providers and mandated institutions; and campaigns to promote hygiene).
4. Finance WASH in health care facilities as part of a broader health system, as well as sanitation and water supply investments, with sustainable long-term domestic financing.
5. Contribute to the evidence base on what works and how multi-sectoral action and investment in WASH can contribute to improvements in health outcomes.
6. Leverage convergence platforms such as the Swachh Swasth Sarvatra to catalyse and align efforts across sectors, ministries and organisations to maximise the impact.

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