

# National guidelines for sanitation services: Addressing the unmet need of standardizing cleaning practices in tertiary care public health facilities of a developing country

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## ABSTRACT

**Background:** Cleanliness is one of the main reasons for poor satisfaction among the patients and their attendants visiting healthcare facilities. **Objective:** To elevate and transform the sanitation in public sector facilities, a committee was constituted by Ministry of Health and Family Welfare, Government of India to study the existing system of Housekeeping in Central Government Hospitals and draft the Guidelines for house-keeping services, since no such literature is available in context of the healthcare facilities in India. **Methods:** The committee ascertained the housekeeping services in three tertiary care hospitals of Central Government and simultaneously conducted the literature review of the best practices in hospital sanitation and housekeeping. **Results:** Formulated national guidelines focus on various aspects of sanitation services in health facilities, i.e., hospital infrastructure; organization of sanitation services; human resource requirements; qualification, experience and training needs of sanitation staff; roles and responsibilities of different personnel; risk categorization of hospital areas; mechanized cleaning; cleaning agents; cleaning standards and standard operating procedures; effective supervision and monitoring; procurement of these services, etc. **Conclusion:** Formulated guidelines can be adopted by developing countries aiming for standardizing cleaning practices in public health facilities.

**Keywords:** Cleaning, housekeeping services, National Guideline, outsourcing, public health, sanitation

## Introduction

Cleanliness, a major challenge that every public hospital in India faces, is something that is not just soothing to the ailing patients

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but essential in terms of prevention of healthcare associated infections. Cleanliness is pervasive to all healthcare facilities, from a tertiary care hospital to a single doctor clinic; hence, it is especially important to have good scientific cleanliness practices in place for better infection control and for better public image. Keeping hospitals clean is a crucial patient safety issue. The importance of the hospital environment in patient care has only recently been recognized widely in infection

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prevention and control.<sup>[1]</sup> A healthcare facility must have policies and procedures to ensure that cleaning is regular and continuous.<sup>[2,3]</sup> To transform the hospital experience of patients and attendants in this journey, a need was felt to develop clear and reliable guidelines that would provide a roadmap for public hospitals which struggle under the constraints of lack of clear guidelines/policies, trained manpower, and administrative machinery. To address this concern, a committee was constituted by Ministry of Health and Family Welfare, Government of India to draft the “National guidelines for clean hospital and engagement of housekeeping services in government hospitals through outsourcing,” consistent with the Swachh Bharat Mission launched by Honorable Prime Minister of India. The committee comprised of technical experts from All India Institute of Medical Sciences (AIIMS), New Delhi; Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh; Directorate General Health Services (DGHS), New Delhi; Director General, Central Public Works Department (CPWD); Chairman, National Accreditation Board for Hospitals and Healthcare Providers (NABH); Principal, Institute of Hotel Management, Catering & Nutrition, New Delhi and Ministry of Health and Family Welfare (MOHFW), Government of India.

## Materials and Methods

To understand the existing system of housekeeping services, an observational and descriptive study was conducted in three tertiary care Central Government Hospitals in August 2014. During this study, interactions were held with key stakeholders (Head of the institute/hospital, Medical or Administrative officer in charge for sanitation services, Nursing Head, Microbiologists looking after infection control, sanitary supervisors, and sanitary attendants) in view to understand the system of sanitation and housekeeping services in these hospitals. The housekeeping practices in different patient care areas viz. outpatient department, inpatient ward, staff areas, toilets, emergency department, waiting areas for patients and their attendants, circulation areas, waste collection facility, infrastructure were also observed. Review of tender document for outsourcing of sanitation services of all three central government hospitals was also done. The findings of the above studies were duly considered by the committee members while drafting the national guidelines on housekeeping.

The study did not involve any human intervention/interaction; hence, ethical approval was not obtained. After understanding the existing system of housekeeping services in central government hospitals, the committee conducted review of literature on housekeeping services in hospitals. In addition, tenders/contracts of public and private hospitals were also studied. The committee reviewed over 50 international standards and scientific references related to hospital sanitation services from countries across the globe, i.e., Canada, Australia, South Africa, UK, Tasmania, USA, UAE, Thailand, etc.

Ethical considerations: This study deals with the formulation of National Guidelines for Hospitals in India, by the recommendations of a High-Level Group on Health constituted by Ministry of Health & Family Welfare, Government of India and did not involve any interaction with patients; hence, no ethical clearance was required.

## Salient Features of Guidelines

The guidelines deliberate upon the following mentioned key areas pertaining to the housekeeping services apart from a tender document template for engagement of sanitation services through outsourcing, which will come useful for organizations not having competency to develop the same. Guidelines deliberate upon hospital infrastructure; organization of sanitation department; human resource requirements; qualification, experience, and training needs of sanitation staff; roles and responsibilities of different personnel; risk categorization of hospital areas; equipment for mechanized cleaning; cleaning agents; cleaning standards, and standard operating procedures (SOPs); supervision and monitoring and tendering (quality and cost-based selection criteria).

## Organogram

The guidelines recommend establishment of a housekeeping department with the following organogram [Figure 1]. The guidelines explicitly delineates the responsibilities of the employees within the hierarchy of Hospital Sanitation Services to be headed by Officer in charge, a full time faculty from Department of Hospital Administration, reporting to Medical Superintendent, with responsibility for the implementation of hospital sanitation program, policies and standards, selection, and proper use of cleaning supplies and equipment, etc.<sup>[4]</sup>

Sanitation Officers will have the overall responsibility of sanitation program, establish SOPs for cleaning, supervision, preparation of duty roster, logbook for all employees, verification of work and payment bills, liaison with other agencies viz. those involved in pest control, biomedical waste management, etc.; induction and in service training, maintenance of stores, assist top management for planning the housekeeping services, budget control and forecasting, and look for newer techniques in sanitation services. Senior Sanitation officers may be appointed depending on the quantum of workload.

In case of sanitation services being engaged on outsourced basis, contract must clearly spell out infection control-related issues.<sup>[3]</sup> It should include sanitation procedures, employee health (vaccination, personal protective equipment), and training required for same.<sup>[5,6]</sup> Sanitation services, infection control, and nursing services must work in unison to ensure effective infection control and meet the expectations of patients, staff, and visitors.<sup>[7]</sup> Contractual barriers should be straightened.<sup>[8,9]</sup> Guidelines defines education qualification for sanitation personnel [Figure 1].

Medical Superintendent		
Officer Incharge Sanitation Asst. Prof. Hosp. Admin. or Deputy Medical Superintendent, Exp. 1 year		
Sanitation Officer Bachelors degree in Hotel Management or Diploma in Sanitary Inspectors, Exp. 10 years		
Sanitary Inspector Bachelors degree in Hotel Management or Diploma in Sanitary Inspectors, Exp. 3 years		
Sr. Facility Manager (Depends on size of organisation) Diploma in Hotel Management or One Year PG Diploma in Accommodation Operation, Exp. 10 years		
Facility manager (Depends on size of organisation) Graduate, Exp. 7 years		
Sanitation Supervisor Graduate, Exp. 5 years		Store keeper Graduate, Exp. 5 years
Sanitation Attendant 10th pass, Skill dev./trained	Machine operator 10th pass, Trained	Plumber 10th pass, Trained

**Figure 1:** Recommended Organogram (Adopted from AIIMS, New Delhi, India)

## Training

Accessible and standardized training on performance of cleaning tasks viz. mop handling, equipment cleaning and disinfection of blood/body fluids, cleaning equipment, and biomedical waste management must be provided.<sup>[6,10]</sup> There should also be a training on use of cleaning agents and disinfectants.<sup>[11]</sup> Training during change in cleaning products, materials, or equipment is essential.<sup>[5]</sup> Training should be provided at beginning of job and as an ongoing continuing education.<sup>[12]</sup>

Induction training topics for sanitary attendants and supervisors should include detail on job description, use of personal protective equipment (PPE), cleaning chemicals uses and dilution rates, handling equipment, SOPs for different areas/surfaces, etc., Ongoing training should include monitoring reports, skills audit, or competency reviews.<sup>[11]</sup>

## Risk categorization of hospital areas

A functional area refers to any hospital area that requires cleaning.<sup>[13]</sup> Different functional areas represent different degrees of risk. All functional areas should be categorized in one of the following three categories which require different cleaning frequencies, training requirements for cleaning, and levels of monitoring and evaluation<sup>[7,14]</sup> [Table 1].

## Human resource requirement

The guidelines recommend that every healthcare facility should be encouraged to perform time motion study to determine staffing levels for cleaning/supervisory staff taking into consideration various factors viz. building, occupancy, equipment, training, infection control, and outbreaks. However, the guidelines also prescribe the thumb rules for calculating manpower requirement for a tertiary care hospital. *Guidelines recommend one Sanitary Attendant for two hospital beds, One Sanitary Supervisor for 12-15 Sanitation Attendants, one Sanitary Inspector for five to seven Sanitary Supervisors, one Sanitation Officer for five to seven Sanitary Inspectors and a dedicated cleaning gang of four to eight sanitary attendants for intensive cleaning and washing of patient care areas and other areas. One plumber/ sewer man should always be*

*physically available depending upon the size of the healthcare organization. Provision for additional environmental cleaning capacity during any exigency should be built in.*<sup>[15]</sup>

## Equipment details for mechanized cleaning

Wide variation was observed in the quantity of equipment demanded by various organizations. The quantity may be determined based on the requirement and extent of mechanization. *The equipment's recommended are heavy duty scrubber dryer, vacuum cleaner, high pressure jet cleaners/washer, road sweeper (manual and ride on machine/ vehicle), polishing and cleaning machine.*

## Effective supervision and monitoring

Regular and ongoing monitoring and audits using measurable quality indicators facilitate a positive feedback and ensure that cleaning is carried out correctly and to an appropriate standard.<sup>[15]</sup> Data from monitoring should be used in trend analysis and compared with benchmark values.<sup>[11,16]</sup> *The peer review process should include representation from the following hospital officials and general public representative:*

- Officer I/C Sanitation.
- A member of the public.
- An Infection Control team member.
- Sanitary Inspector/ Sanitation Officer.
- A member of the Quality Team.
- Civil Engineer.

*The outsourced agency should submit following reports to Officer I/C Sanitation or sanitation officer:*

- Daily reports of staff on duty in all shifts, status of equipment and its utilization, washing activity undertaken, chemicals and the consumables used, general sanitation, etc.*
- A monthly feedback report from user areas based on Turnaround time (TAT) and Key Performance Indicators (KPI).*

*Feedback should also be received from sanitation department itself, the end user i.e., patient care areas and hospital administration.*

## Evaluation of sanitation services

Several methods of evaluation available to determine, if effective cleaning has taken place, including traditional observation of the environment following cleaning as well as newer technologies that show promise in assessing routine cleaning practices in healthcare settings:<sup>[17]</sup> Direct and indirect observation (e.g., visual assessment, performance assessment, patient/resident satisfaction surveys).

1. Residual bio burden (e.g., environmental culture, adenosine triphosphate – ATP – bioluminescence).
2. Environmental marking tools (e.g., fluorescent marking).

## Cleaning agents

Safe use of cleaning agents and disinfectants appropriately labeled and stored; Material Safety Data Sheet must be readily available for each item in case of accidents.<sup>[18]</sup> The expired products should be discarded.

**Table 1: Functional areas in the hospital and requirements as per the risk category**

Functional area risk category	Hospital areas	Frequency of cleaning	Level of cleaning/ disinfection	Method of cleaning/ disinfection (1)	Evaluation/ auditing frequency	Staffing	Induction training	Refresher training/ on the job training
High risk areas	OT, ICU, HDU, ED, LR, Post-op. units/surgical wards, CSSD, RT/CT, Dialysis, Burns unit, Isolation wards, etc.	Once in two hours and spot cleaning as required	Cleaning and Intermediate level disinfection	Soap & detergent plus disinfection with alcohol compound, aldehyde compounds	Weekly by Officer I/C Sanitation and Infection Control Team	OT: 1 SA for 2 OT's for each shift ICU: 1 SA for up to 6 ICU beds in each shift	24 h of intensive training on general cleaning and infection control followed by 7 days of supervised duties	Training of 4 h every month
Moderate risk areas	Medical and allied wards, Labs, Blood Banks, Laundry, Rehab, Mortuary, Pharmacy, Medical Staff areas, etc.	Once in four hours and spot cleaning as required	Cleaning and low level disinfection	Cleaning with soap & detergent plus disinfection with aldehyde compounds	Once in a by Officer I/C Sanitation and Infection Control Team	Wards: 1 SA per ward in each shift for a ward size of up to 30 beds; More than 30 beds- one additional SA in morning shift	16 h of training on general cleaning and infection control followed by 5 days of supervised duties	Once in every months for 2 h
Low risk areas	OPD, MRD, Manifold, Stores, Offices, Library, other staff areas.	For areas working round the clock at least once in a shift or in areas having general shift at least twice in the shift & Spot cleaning as required	Only cleaning	Physical removal of soil, dust or foreign material followed by cleaning with water and detergent	Once in three months	OPD: one dedicated sanitary attendant for each public toilet	8 h of training on cleaning practices followed by three days of supervised duties	Every six months for 2 h

## Cleaning standards

Various items within a healthcare facility (surfaces, articles, or fixtures) have been classified under four major elements: building elements viz. external features, staircases, walls, ceilings, doors, windows, etc.; electrical, furnishings, pantry, toilet fixture elements; patient and cleaning equipment elements and environmental elements viz. general tidiness that should be free from free of dust, grit, dirt, leaves, cobwebs, rubbish, etc.

## Standard operating procedures

*Guidelines focus on strengthening and development of suitable policies/procedures (SOPs) for cleaning methods.* The guidelines describe standard operating protocol for cleaning patient care areas, washrooms, mopping floors using different types of mops, cleaning in operating rooms, sterile areas, and ambulance. The guideline touches upon the much ignored issue of removal of variety of stains as well.

The general cleaning for all settings included the sequence of cleaning procedures beginning right from gathering material for cleaning, through proper dilution and contact time for cleaning adhering to manufacturer's instructions, progressing from least soiled areas to most soiled areas, removing gross soil first. It is recommended that turbulence should be minimal to prevent dispersion of dust and double dipping of cloths or mops to be avoided to avoid recontamination. The mop should be re-dipped after every 120 square feet of cleaning and solution changed after 240 square feet.<sup>[19]</sup>

Wet mop should begin with putting a wet floor caution sign, dividing the floor into sections such that it does not affect the usual traffic. Figure of eight using swivel motion and not lifting it are recommended while overlapping the mop area turning mop head every 5-6 strokes.<sup>[3]</sup> Standardized process of mop cleaning using mechanized laundering of mops can help in bringing down the hospital acquired infection.<sup>[20]</sup>

Spill management of blood and body fluids involves timely containment, cleaning, and disinfection by hospital grade disinfectant allowed standing for manufacturer recommended contact time. It is to be done by personnel entrusted and trained in advance using appropriate PPEs followed by proper disposal of waste.<sup>[21]</sup>

## Hospital infrastructure

Bacteria and viruses survive for long on dry surfaces in the environment of the patient.<sup>[22,23]</sup> SOPs should be in place for cleaning of the healthcare facility. Finishes, furnishings, and equipment should be smooth (non-porous) and cleanable.<sup>[24-26]</sup> Cleaning agents should be compatible with the items/surfaces to be cleaned. Products having "antibacterial" claims should be carefully evaluated before replacing items. Cloth furnishings harbor higher concentrations of fungi than nonporous furnishings.<sup>[26]</sup> Hence, wherever feasible, an alternative should be used. Adequate provision of sanitation infrastructure like sluice rooms, janitor's closets, mop washing area, etc. should be there in all areas.



**Table 2: Technical criteria and weightage matrix for evaluation (Total: 100 marks)**

Criteria	5 marks	10 marks	15 marks	20 marks	25 marks
Total years of experience in the field of Housekeeping services (Determined from years of incorporation) Firms <3 years' experience will not be considered. (25 marks)	Minimum 3 years	>3 up to 5 years	>5 up to 8 years	> 8 up to 10 years	> 10 years
Total annual turnover in the Business of providing housekeeping services (determined from last year balance sheet) (25 marks)	Up to 5 Crores	>5 Crores up to 7 Crores	>7 Crores up to 10 Crores	> 10 Crores up to 12 Crores	> 12 Crores
Total number of manpower (Determined from Form 9A EPF & 5-Return of Contribution to ESI) provided by the firm. (25 marks)	Up to 200	>200 to 300	>300 to 400	>400 to 500	>500
Training, Site Visit, satisfactory work performance & work plan presentation (Total 25 marks)	Tie up for vocational training in sanitation from Govt. approved Institutes	Satisfactory Performance & work plan: Performance certificate issued by organization head, M.S. or authorized nominee {certifying total manpower, duration of the contract, complaints, number of penalties & their quantum, warnings & show cause notices} and/or site visit by a committee. Presentation of the work plan in consonance with the tender document and guidelines, not more than 15-20 min. Visit to healthcare organization where the bidder is providing sanitation services 15 marks			

## Tenders evaluation

The guidelines have recommended the adoption of quality and cost-based selection (QCBS) criteria for incorporation in tenders being done for outsourcing of sanitation services to ensure quality (70% technical + 30% financial). The guidelines have recommended the following technical criteria for tender evaluation<sup>[28]</sup> [Table 2].

## Conclusion

The formulated guidelines are foremost in the area of housekeeping and sanitation services in India keeping in view of the unmet need for standardizing cleaning practices in public healthcare facilities. These guidelines have been drafted considering the existing practices in housekeeping services and will be extremely useful for tertiary care hospitals especially public sector hospitals. These guidelines are very comprehensive and focus in detail on various intricate aspects of cleaning practices. Most importantly, it provides with a model tender document having detailed terms and conditions, QCBS criteria for ensuring that technically sound outsourced agency can be engaged for cleaning services. These guidelines are contextual to South East Asia and can be adopted by various developing nations aiming for standardizing cleaning practices in public health facilities.

## Key Points

- Organogram of the sanitation services must be clear and there should be a dedicated official supervising the cleanliness of the healthcare facility.
- Adequately trained and experienced personnel should be engaged in cleanliness services. All the workers should be trained before assigning them cleanliness responsibilities.
- Risk categorization of hospital areas should be carried out for determining the frequency and type of cleaning.

- Time motion study should be carried out for assessing human resource requirement; however, ball parked figure of one sanitation workers for every two hospital beds can be taken for calculating human resource requirement.
- Effective supervision and objective methods should be used for evaluating cleanliness in hospitals.
- SOPs should be drafted for ensuring uniform cleanliness and standard cleaning agents in right dilution should be used.
- Robust tender specifications need to be drafted for engaging competent agencies for sanitation services.

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## Conflicts of interest

There are no conflicts of interest.

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