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National Guidelines for Clean Hospitals

*Applicable to Tertiary Care Hospitals,
Hospitals associated with Medical Colleges &
Super-specialty Hospitals in India*

2015



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**MINISTRY OF HEALTH AND FAMILY WELFARE
GOVERNMENT OF INDIA**



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*Tertiary Care Hospitals,
Hospitals associated with Medical Colleges &
Super-specialty Hospitals*

Disclaimer

- These guidelines are generic in nature and healthcare organizations are advised to adapt them judiciously
- In addition to the prescribed guidelines for sanitation, healthcare organizations must comply with any statutory or legal obligations from time to time

Year 2015

Note: References have been quoted in parenthesis () wherever required



Executive Summary


A committee under the Chairmanship of Medical Superintendent, AIIMS, New Delhi was constituted by Ministry of Health and Family Welfare, Government of India subsequent to the summary record of presentation to Hon'ble Prime Minister of India, wherein it was desired that appropriate steps must be taken to change the perception and mindset of people about public hospitals through highest level of hygiene and sanitation. The committee was mandated to study the existing system of Housekeeping in Government Hospitals and draft the National Guidelines for the same keeping in view the ground realities.

This committee initially visited three central government hospitals in Delhi to understand the existing system of housekeeping services. During these exploratory visits, it was observed that the housekeeping services in these hospitals are currently being carried out in a combined manner by both in-house employees as well as outsourced staff, though the method of awarding the same to an external agency varied between the hospitals. Wide disparity was observed in the management structure and staffing levels of housekeeping services between these hospitals and officials therein expressed difficulties in developing suitable tender documents for outsourcing of such services due to lack of expertise and knowledge of housekeeping chemicals, equipment, etc in this field. Merits and de-merits of service contract vs manpower contract for outsourcing of these services was a major dilemma for officials and was further compounded due to conflicting opinions in this regard amongst different stakeholders. The ability of these hospitals to handle such issues was found to be genuinely limited vis-a-vis autonomous institutions like AIIMS-New Delhi, PGIMER-Chandigarh, etc. where doctors with professional training (postgraduate degrees in hospital administration) manage these services on a fulltime basis. Further, unlike at autonomous institutions, these hospitals despite being of almost the same or larger size, do not have an in-house engineering department and the maintenance works are carried out by the contractors appointed by the public works department. The hospital authorities are not

empowered to expend on even minor / urgent repair works and are totally dependent on the public works department officials - on whom they have no direct administrative control.

The committee members then analyzed the tenders & contracts of these and other public & private sector hospitals to get a national perspective of the existing system and the challenges being faced therein. To find solutions to the identified problem, a detailed literature review of the existing best practices in the field of hospital sanitation & housekeeping in India & globally was done and relevant extracts from the same were adapted with suitable changes in the final guidelines.

These guidelines focus on strengthening and streamlining of proper selection and maintenance of infrastructure, development of suitable policies for housekeeping services, selection & training of manpower, development and implementation of suitable cleaning methods in the form of protocols / SOP's, effective supervision and monitoring by adequate staff and in-built mechanisms in the contracts coupled with an organizational structure which puts a premium on good housekeeping and sanitation. They also describe the structure of the housekeeping department / service, roles & responsibilities of workers & supervisors, qualification, experience & training needs of sanitation staff, equipment details for mechanized cleaning, chemicals & cleaning agents to be used, etc. The guidelines encourage that every health care setting should ideally perform their own time management studies to determine appropriate staffing levels for cleaning and supervisory staff. However, based on the experience of various stakeholders, the following broad thumb rules for housekeeping manpower have been prescribed in the guidelines so as to ensure appropriate 24-hour coverage in all hospital areas:

- 1 Sanitary Attendant for 2 Hospital Beds*
 - 1 Sanitary Supervisor for 12-15 Sanitary Workers*
 - 1 Sanitary Inspector for 5-7 Sanitary Supervisors*
 - 1 Sanitary Officer for 5 – 7 Sanitary Inspectors*
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Taking a cue from the Spaulding's classification for disinfection and in line with the best practices, it has been recommended that for the purpose of housekeeping, various areas in the hospital should be broadly classified as high risk, medium risk and low risk. Accordingly, the frequency & type of cleaning required, standard operating procedures, key performance indicators, etc. have been detailed for each broad area. These guidelines also lay emphasis on the availability of basic sanitation infrastructure in the form of sluice rooms, janitor cupboards, etc. in all areas, use of appropriate housekeeping tools & equipment, laundering of re-used mops & dusters, cleaning standards, quality assurance and health & safety of sanitation staff. Due diligence has been recommended regarding pest control while tendering for housekeeping services by ensuring that either this service is included as one of the scopes of the housekeeping tender or a separate tender for the same is floated concurrently.


At the end, a draft tender template for housekeeping services that can be adopted with minor customization to a particular healthcare setting has been given to aid the hospitals in designing their tenders. Use of weighted average score method for tender evaluation has been prescribed to ensure that the technical competence, service deliverability & past performance of the bidders is also given due weightage along with their financial strength.




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Glossary of terms

Alcohol-based Hand Rub (ABHR): A liquid, gel or foam formulation of alcohol (e.g., ethanol, isopropanol) which is used to reduce the number of microorganisms on hands in clinical situations when the hands are not visibly soiled. ABHRs contain emollients to reduce skin irritation and are less time-consuming to use than washing with soap and water.(1)

Antiseptic: An agent that can kill microorganisms and is applied to living tissue and skin.

Audit: A systematic and independent examination to determine whether quality activities and related results comply with planned arrangements, are implemented effectively and are suitable to achieve objectives.

Biomedical Waste: means any waste, which is generated during the diagnosis, treatment or immunisation of human beings or animals or in research activities pertaining thereto or in the production or testing of Biologicals, and including categories mentioned in Schedule I of Biomedical Waste Management Handling Rules 1998.

Cleaning: The physical removal of foreign (e.g., dust, soil) and organic material (e.g., blood, secretions, excretions, microorganisms). Cleaning physically removes rather than kills microorganisms. It is accomplished with water, detergents and mechanical action.

Contamination: The presence of an infectious agent on hands or on a surface such as clothes, gowns, gloves, bedding, toys, surgical instruments, patient care equipment, dressings or other inanimate objects.

Detergent: A synthetic cleansing agent that can emulsify oil and suspend soil. A detergent contains surfactants that do not precipitate in hard water and may also contain protease enzymes (see Enzymatic Cleaner) and whitening agents.

Discharge/ Transfer Cleaning: The thorough cleaning of a client/patient/resident room or bed space following discharge, death or transfer of the client/patient/resident, in order to remove contaminating microorganisms that might be acquired by subsequent occupants and/or staff. In some instances, discharge/ transfer cleaning might be used when some types of Additional Precautions have been discontinued.

Disinfectant: A product that is used on surfaces or medical equipment/devices which results in disinfection of the equipment/device. Disinfectants are applied only to inanimate objects. Some products combine a cleaner with a disinfectant.

Disinfection: The inactivation of disease-producing microorganisms. Disinfection does not destroy bacterial spores. Medical equipment/devices must be cleaned thoroughly before effective disinfection can take place.

Environment of the Patient: The immediate space around a patient that may be touched by the patient and may also be touched by the health care provider when providing care. The patient environment includes equipment, medical devices, furniture (e.g., bed, chair, bedside table), telephone, privacy curtains, personal belongings (e.g., clothes, books) and the bathroom that the patient uses. In a multi-bed room, the patient environment is the area inside the individual's curtain. In an ambulatory setting, the patient environment is the area that may come into contact with the patient within their cubicle. In a nursery/neonatal setting, the patient environment is the incubator or bassinet and equipment outside the incubator/bassinet that is used for the infant.

Enzymatic Cleaner: A pre-cleaning agent that contains protease enzymes that break down proteins such as blood, body fluids, secretions and excretions from surfaces and equipment. Most enzymatic cleaners also contain a detergent. Enzymatic cleaners are used to loosen and dissolve organic substances prior to cleaning.

Fomites: Objects in the inanimate environment that may become contaminated with microorganisms and serve as vehicles of transmission.

Healthcare Organisation: Generic term used to describe the various types of organisations that provide healthcare services. This includes hospitals, ambulatory care centres etc. (2)

High-Touch Surfaces: High-touch surfaces are those that have frequent contact with hands. Examples include doorknobs, call bells, bedrails, light switches, wall areas around the toilet and edges of privacy curtains.

Hospital Clean: The measure of cleanliness routinely maintained in client/patient/resident care areas of the health care setting.(3) Hospital Clean is 'Hotel Clean' with the addition of disinfection, increased frequency of cleaning, auditing and other infection control measures in client/patient/resident care areas.

Low-Level Disinfectant: A chemical agent that achieves low-level disinfection when applied to surfaces or items in the environment.

Low-Level Disinfection (LLD): Level of disinfection required when processing non-invasive medical equipment (i.e., non-critical equipment) and some environmental surfaces. Equipment and surfaces must be thoroughly cleaned prior to low-level disinfection.

Low-Touch Surfaces: Surfaces that have minimal contact with hands. Examples include walls, ceilings, mirrors and window sills.

Material Safety Data Sheet (MSDS): A document that contains information on the potential hazards (health, fire, reactivity and environmental) and how to work safely with a chemical product. It also contains information on the use, storage, handling and emergency procedures all related to the hazards of the material. MSDSs are prepared by the supplier or manufacturer of the material.

Occupational Health and Safety (OHS): Preventive and therapeutic health services in the workplace provided by trained occupational health professionals, e.g., nurses, hygienists, physicians.


Personal Protective Equipment (PPE): Clothing or equipment worn by staff for protection against hazards.

Precautions: Interventions to reduce the risk of transmission of microorganisms (e.g., patient-to-patient, patient-to-staff, staff-to-patient, contact with the environment, contact with contaminated equipment).

Sanitation - Promotion of hygiene and prevention of disease by maintenance of sanitary condition.(4)

Above given definitions have been adapted from:

Provincial Infectious Diseases Advisory Committee (PIDAC). Best practices for environmental cleaning for prevention and control of infections in all health care settings - 2nd Edition. Ontario; 2012.



1. Housekeeping – an Introduction

It may be simply be defined as “Provision of clean, comfortable, safe & aesthetically pleasing environment”.

“Housekeeping is a support service department in a hospital, which is responsible for cleanliness, maintenance & aesthetic upkeep of patient care areas, public areas and staff areas”. It is also known as sanitation department/ sanitation section/ sanitation services etc.

Housekeeping services in a hospital is entrusted with maintaining a hygienic and clean hospital environment conducive to patient care. The hospital housekeeping services comprises of the activities related to cleanliness, maintenance of hospital environment and good sanitation services for keeping premises free from pollution. Housekeeper literally means "keeper of the house". Hospital housekeeping management may be defined as that branch of general management which deals with cleanliness of the hospital, general environmental hygiene, sanitation and disposal of waste using appropriate methods, equipment and manpower. The housekeeping services can be summarised as "All the activities directed towards a clean, safe and comfortable environment'.(5)

1.1 Objectives of Housekeeping Department (5)

- *To attain and maintain high standards of cleanliness and general upkeep.*
- *To train, control and supervise staff under its establishment.*
- *To attain good relations with other departments.*
- *To ensure safety and security of all staff under its department and to keep superior authorities informed about day to day activities.*
- *Control and issue of cleaning materials and equipment.*
- *To maintain official records on staffing, cleaning materials and equipment.*

2. Principles of Cleaning in a Health Care Environment

Health care organisations are complex environments that contain a large diversity of microbial flora, many of which may constitute a risk to the patients, staff and visitors in the environment. Transmission of microorganisms within a health care organisation is complicated and very different from transmission outside health care settings; and hence the consequences of transmission may be more severe. High-touch environmental surfaces of the health care organisation hold a greater risk due to the nature of activity performed in the health care organisation and the transient behaviour of employees, patients and visitors within the health care organisation, which increases the likelihood of direct and indirect contact with contaminated surfaces.

Transmission involves:

- Presence of an infectious agent (e.g. bacterium, virus, fungus) on equipment, objects and surfaces in the health care environment.
- A means for the infectious agent to transfer from patient-to-patient, patient-to-staff, staff-to-patient or staff-to-staff.
- Presence of susceptible patients, staff and visitors.

In the health care organisation, the role of environmental cleaning is important because it reduces the number and amount of infectious agents that may be present and may also eliminate routes of transfer of microorganisms from one person/object to another, thereby reducing the risk of infection.(1)

Health care organisations may be broadly categorized into two components for the purposes of environmental cleaning:

a) Hotel component is the area of the facility that is not involved in direct patient care; this includes public areas such as lobbies and waiting rooms; offices; corridors; elevators and stairwells; and service areas. Areas designated in the hotel component are cleaned with a “Hotel Clean” regimen.

b) Hospital component is the area of the facility that is involved in direct patient care; this includes patient bed space/room (including nursing stations); procedure rooms; bathrooms; clinic rooms; and diagnostic and treatment areas. Areas designated in the hospital component are cleaned with a “Hospital Clean” regimen.

2.1 Evidence for Cleaning

The environment of the health care organisation has been shown to be a reservoir for infectious agents such as bacteria (e.g., methicillin-resistant *Staphylococcus aureus* (MRSA), vancomycin-resistant enterococci (VRE), *Clostridium difficile*, *Pseudomonas spp* etc.), viruses (e.g., influenza, respiratory syncytial virus - RSV, rotavirus etc.) and fungi (e.g., *Aspergillus spp.*). However, the presence of microorganisms alone on objects and items in the health care environment is not sufficient to demonstrate that they contribute to infection.(1)

Various studies worldwide have shown that microorganisms can survive after inoculation onto items/ surfaces; and/ or can be cultured from the environment in health care organisations; and/ or can proliferate in or on items/surfaces in the environment. There is a direct means for microorganisms from contaminated items/surfaces in the environment to be transferred to hands of healthcare providers. Exposure to contaminated items/surfaces in the environment is associated with acquisition of colonization or infection; and this proves that decontamination of items/surfaces results in reduction of infection transmission, i.e., lower rates of colonization or infection.(1)

Therefore environmental cleanliness is intrinsically linked to infection prevention and control. A clean, well ordered environment provides the foundation for excellent infection control practice to flourish. The primary objectives of hospital cleanliness are two folds:(6)(7)

- To disinfect so that the threat of nosocomial infection is reduced
- To create a clean and safe, attractive environment for patient, staff and visitors.

2.2 The Hospital Environment and Sanitation

Patients shed microorganisms into the health care environment, particularly if they are coughing, sneezing or having diarrhoea. Bacteria and viruses may survive for weeks or months on dry surfaces(8)(9)(10) in the environment of the patient (the space around a patient that may be touched by the patient and may also be touched by the health care

provider). The designation of a patient's environment varies depending upon the nature of the health care organisation and the ambulation of the patient. (1) For example:

- In acute care, the patient environment is the area inside the curtain, including all items and equipment used in his/her care, as well as the bathroom that the patient uses.
- In intensive care units (ICUs), the patient environment is the room or bed space and items and equipment inside the room or bed space.
- In the nursery/neonatal setting, the patient environment is the incubator or bassinet and equipment outside the incubator/bassinet that is used for the infant.
- In ambulatory care, the patient environment is the immediate vicinity of the examination or treatment table or chair, and waiting areas.
- In some care environments, e.g., mental health, long-term care, paediatrics, the patient environment may be shared space, such as group rooms, dining areas, playrooms, central showers and washrooms etc.

Cleaning disrupts transmission of these microorganisms from the contaminated environment to patients and health care providers. Improving cleaning practices in hospitals and other health care organisations will contribute towards controlling health care-associated infection and associated costs.(1)

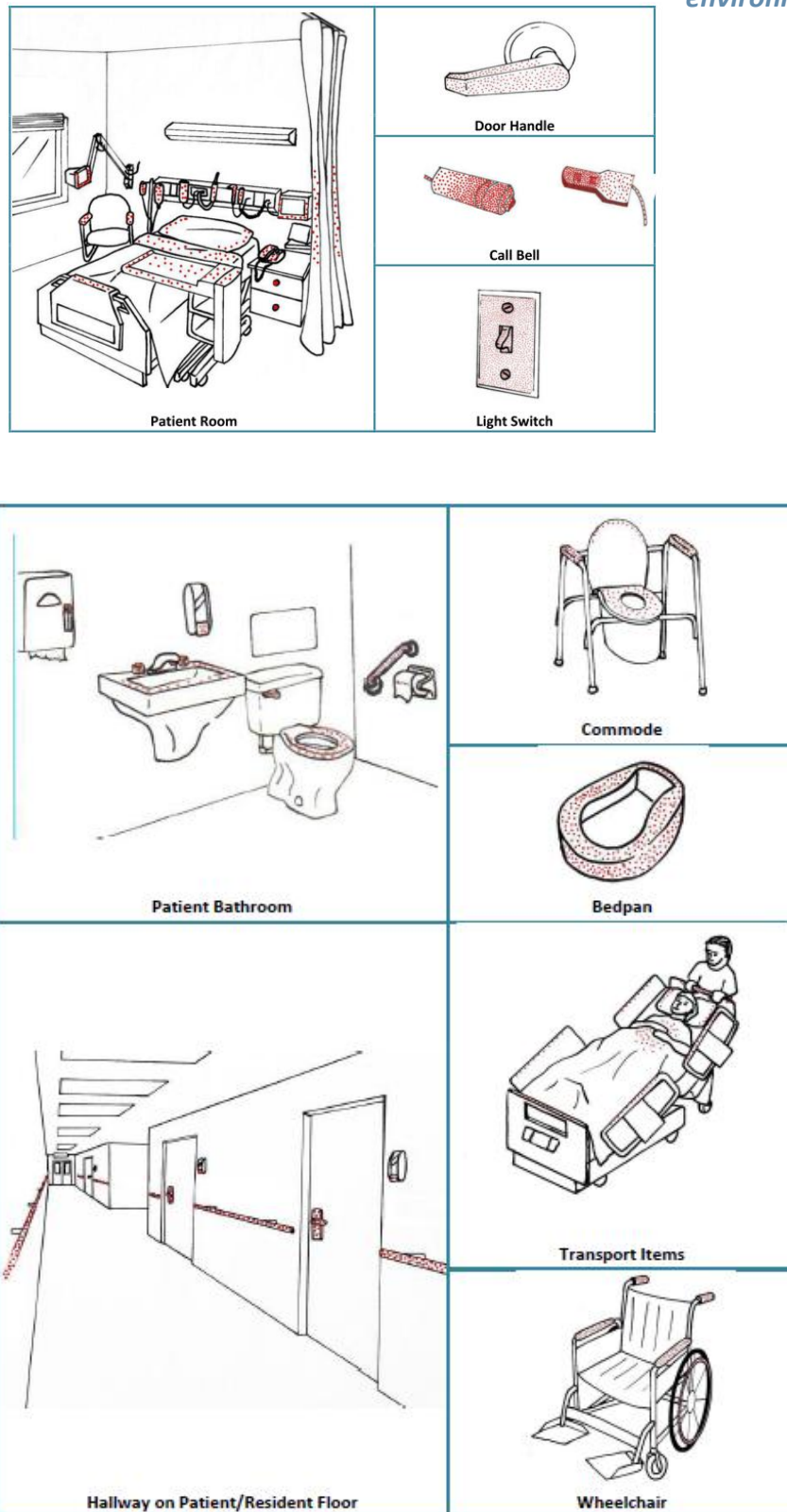
Table 1 Items found to harbour microorganisms in the healthcare environment (11)-(12)

Bed	Bed frames	Bed linen	Bedside table
Bedside locker	Bed rail	Call bell	Curtains
Blood pressure machine	Dustbin	Key board	Faucet handle
Couch	Door handle	Thermometer	Patients bathroom
Floor around bed	Light switch	Overbed table	Patient lift
Pen	Pillow	Mattress	Sink
Stethoscope	Tables	Telephones	Television
Toilet commode	TV remotes	Stationery items	Window frames

Following figure shows the most common high touch surfaces in the healthcare environment, therefore due attention must be paid while cleaning them.

Figure 1

High touch surfaces in environment (1)



Health care organisations should have policies that include the criteria to be used when choosing furnishings and equipment for patient care areas. Prior to purchase, compatibility of materials and finishes with hospital-grade cleaners, detergents and disinfectants should be assured. When there is doubt about product compatibility, the manufacturer of the item should be consulted. A process must be in place regarding cleaning of the health care environment that includes(1):

- *Choosing finishes, furnishings and equipment that are cleanable.*
- *Ensuring compatibility of the health care organisation's cleaning and disinfecting agents with the items and surfaces to be cleaned.*
- *Identifying when items can no longer be cleaned due to damage.*

The ease of cleaning is an important consideration in the choice of materials for health care organisations. This applies to medical equipment and all finishes and surfaces including materials for floors, ceilings, walls, and furnishings.

Although new products are being developed that are coated with materials that retard bacterial growth, there is no evidence that antimicrobial impregnation of items in the environment is associated with a reduced risk of infection or cross-transmission of microorganisms in health care. Product 'antibacterial' claims should be carefully evaluated before replacing items.(13)

All finishes (e.g., wall treatments, floor finishes) in clinical areas should be chosen with cleaning in mind, especially where contamination with blood or body fluid is a possibility.(14) the preferred surface characteristics, including but not limited to (15):

- *Ease of maintenance/repair and cleanability*
- *Inability to support microbial growth*
- *Smoothness (non-porous) (16)*
- *Good sound absorption/acoustics inflammability (Class I fire rating)*
- *Durability*
- *Sustainability*
- *Presence of low levels of volatile organic compounds (voc) to reduce off-gassing*
- *Low smoke toxicity*

- *Initial and life cycle cost-effectiveness slip-resistance*
- *Ease of installation, demolition and replacement*
- *Seamlessness*
- *Resilience and impact resistance.*
- *Non-toxic and non-allergenic.*

Hospital surfaces require regular cleaning and removal of dust. Dry conditions favour the persistence of gram positive cocci in dust and on surfaces, whereas moist soiled environment favour the growth and persistence of gram negative bacilli. Fungi are also present in dust and proliferate in moist, fibrous material.(17) Cloth furnishings have been shown to harbour higher concentrations of fungi than non-porous furnishings.(13) In general, pathogenic bacteria cannot be effectively removed from the surfaces of upholstered furniture. Contaminated stuffing and foam cannot be decontaminated if breaks in fabric or leaks of body fluids or spills have occurred. Wherever feasible, an alternative to cloth surfaces should be used.(1)

Safe practices for plastic coverings, including mattress covers and pillow covers, include:

- *Clean plastic coverings on a regular basis.*
 - *Inspect for damage.*
 - *Replace mattress and pillow covers when torn, cracked or when there is evidence of liquid penetration. The mattress or pillow should be replaced if it is visibly stained.*
- (13)

There must be a process to enable reporting, removal and replacement of torn, cracked or otherwise damaged coverings. Clean plastic coverings (e.g., mattress covers, keyboard covers) with hospital-grade disinfectants that are compatible with the covering.

Electronic equipment poses a challenge to environmental cleaning and disinfection. When purchasing new equipment, only keypads, mouse and monitoring screens that may be easily cleaned and disinfected should be considered and should be compatible with the health care organisations cleaning and disinfecting products. Plastic skins may be effective to cover computer keyboards, allowing ease of cleaning. Electronic equipment that cannot be

adequately cleaned, disinfected or covered to allow appropriate cleaning, should not enter the immediate patient care environment.(1)

3. Organisation of Sanitation Department

3.1 Guiding Principles

All health care organisations must devote adequate resources to sanitation services which include:

- *An individual with assigned overall responsibility for the sanitation services of the hospital (18)*
- *Written procedures for cleaning and disinfection of patient care areas and other areas:*
 - *Defined responsibility for specific items and areas.*
 - *Clearly defined lines of accountability.*
 - *Procedures for daily and discharge/ transfer cleaning and disinfection.*
 - *Procedures for cleaning in construction/renovation areas.*
 - *Cleaning and disinfection standards and frequency.*
- *Adequate human resources to allow thorough and timely cleaning and disinfection.*
- *Priority for cleaning given to patient care areas rather than to administrative and public areas.*
- *Provision for additional environmental cleaning capacity during any exigency that does not compromise other routine patient care cleaning. (19)*
- *Education and continuing education of sanitation staff.*
- *Monitoring of environmental cleanliness and results reported back appropriately to become a part of the employee's performance review. (19)*
- *Supervision of cleaning staff by those who are trained and knowledgeable in cleaning standards and practices.*
- *Ongoing review of procedures.*

These cleaning practices are applicable to all healthcare organisations whether cleaning is conducted by in house staff, or contractual staff. They are designed to be used as a standard

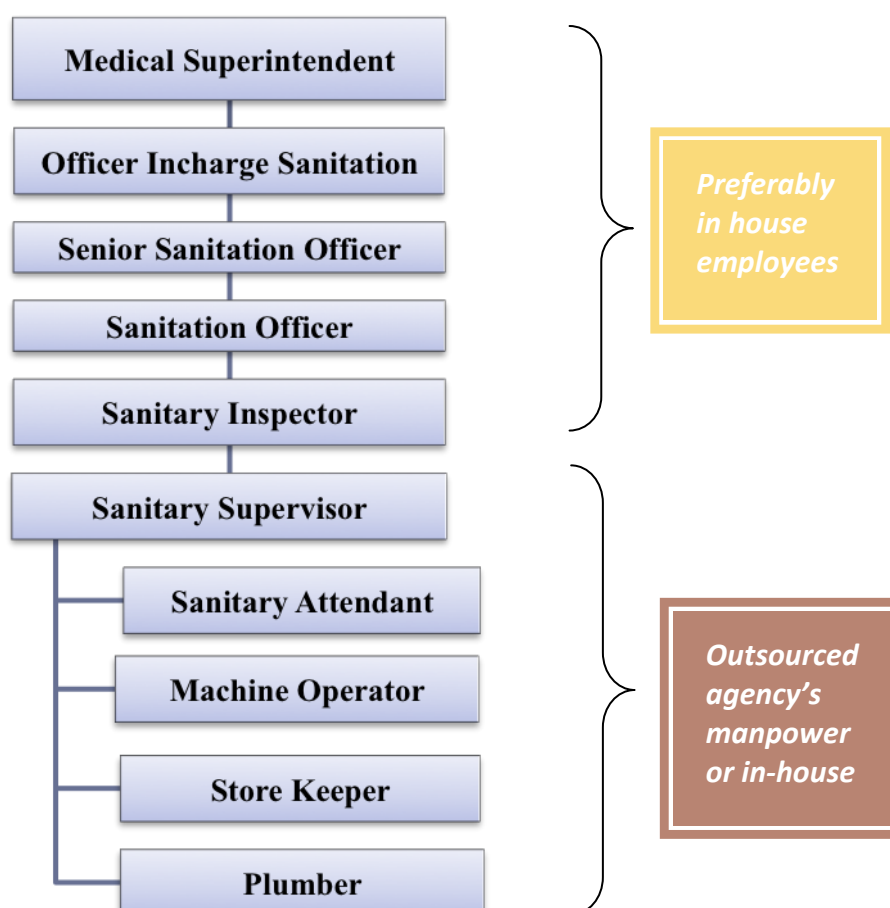
against which in-house services can be benchmarked, as the basis for specifications if sanitation services are being outsourced and as the framework for evaluation of sanitation services by sanitation supervisors and Officer in charge.(1)

When sanitation services are being outsourced, the contract must clearly define the infection control-related responsibilities. These should include not only the sanitation procedures, but also the outsourced agency's responsibility for employee health and mandatory training.(18) Outsourced agency must work collaboratively with Nursing Department and Infection Control Committee to ensure the safety of patients, staff and visitors; contractual barriers that prevent this from happening should be removed.

3.2 Organogram

Following is the proposed Organogram of the sanitation services/ department:

Figure 2 Recommended Organogram of Sanitation Section/ Department



Depending upon the size of the organisation, requirement of Senior Facility Manager and Facility manger may also be built into the manpower requirement for sanitation services from the outsourced agency. The tender document should explicitly contain the eligibility qualification of the outsourced manpower for sanitation services. The following given table summarises the eligibility qualification of different categories of personnel:

Table 2 Eligibility qualification for different categories of manpower for sanitation services

S. no.	Designation	Eligibility/Qualification	Experience
1	Officer in charge Sanitation	Faculty, Department of Hospital Administration or rank of Deputy/Addl. Medical Superintendent	One year experience in overseeing sanitation services of a hospital
2	Senior Sanitation Officer	Bachelors degree in Hotel Management or Diploma in Sanitary Inspectors course from a recognized Institution or equivalent	Should have worked on the post of Sanitation Officer or its equivalent for 5 years in healthcare or hospitality industry
3	Sanitation Officer	Bachelors degree in Hotel Management or Diploma in Sanitary Inspectors course from a recognized Institution or equivalent	Should have worked on the post of Sanitary Inspector or its equivalent for 10 years in healthcare or hospitality industry
4	Sanitary Inspector	Bachelors Degree in Hotel Management or Diploma in Sanitary Inspectors course from a recognized Institution or equivalent	Three years' experience in Supervision of sanitation in a recognized hospital or Institute.
5	Sr. Facility Manager	Diploma in Hotel Management or One Year PG Diploma in Accommodation Operation	10 years in Supervision of sanitation in a recognized hospital or Institute.
6	Facility manager	Graduate	07 years in Supervision of sanitation in a recognized hospital or Institute.
7	Floor Supervisor	Graduate	05 years in Supervision of

			<i>sanitation in a recognized hospital or Institute.</i>
8	<i>Store Keeper</i>	<i>Graduate</i>	<i>03 years in managing stores in a recognized hospital or Institute.</i>
9	<i>Plumber</i>	<i>10th pass with vocational training course in plumbing</i>	<i>Nil</i>
10	<i>Equipment Operators</i>	<i>10th Pass with suitable training</i>	<i>Nil</i>
11	<i>Sanitary Attendant</i>	<i>10th Pass with skill development course in housekeeping/sanitation or in house structured training programme or its equivalent</i>	<i>Nil</i>

3.3 Roles and Responsibilities of different personnel

Roles and Responsibilities of Medical Superintendent

- *Overall supervision and monitoring of the sanitation programme of the Hospital/ Institution/ Organisation.*
- *Chairing the committee on sanitation services and providing the guidance whenever required.*
- *Oversight of planning, development and budget monitoring.*
- *Manpower planning.*
- *Appointing and disciplinary authority.*
- *Interaction and assigning duties to immediate subordinate officers.*

Roles and Responsibilities of Officer in charge Sanitation (21)

- *He/she should either be a Faculty from Department of Hospital Administration or equivalent to the rank of Deputy/Addl. Medical Superintendent.*
- *Has full administrative responsibility for the hospital sanitation program.*
- *Usually reports to the top management for sanitation services i.e. Medical Superintendent, Medical Director etc.*

- *Fully responsible for planning, organizing, staffing, directing, controlling and evaluating the sanitation programme.*
- *Coordination of hospital sanitation activities with other programs and activities in the hospital.*
- *Initiate, shape and set policy, procedures, standards and goals; develop and apply an internal program of management review, appraisal and improvement.*
- *Establish the balance between quality and quantity in light of budget and ceiling constraints.*
- *Development and maintenance of standards for cleanliness and sanitation. These standards encompass various aspects, e.g. frequency of cleaning; the methods, procedures and safety precautions to be followed.*
- *The selection, measurement and proper use of housekeeping and cleaning supplies; and the use and maintenance of housekeeping equipment.*
- *Any other duty assigned by Head of Institution/Hospital.*

Roles and Responsibilities of Senior Sanitation Officer (22)

- *Overall responsibility for supervision of subordinate staff in maintenance of cleanliness in Hospital.*
- *Preparation of duty roster of Sanitary Inspector(s) and Sanitary Supervisor(s).*
- *To certify the work done during contract period and verifying payment bills for daily wages.*
- *To take regular rounds of wards / departments to ensure proper sanitation.*
- *Monitoring and liaison with other agencies for e.g. Civil engineering department for opening of blocked sewage lines, drains etc.*
- *To organize pest control programme in the hospital at regular interval.*
- *Liaison with municipal corporations/civic agencies for daily removal of garbage (municipal waste) etc.*
- *Ensure proper implementation of Biomedical Waste Management Handling Rules 1998 and standard precautions while handling Bio-Medical Waste.*
- *Induction and in service training of sanitation staff and supervisors.*

- *To educate and or train sanitation staff properly to enable them perform their duties efficiently specially about the use and safety aspects of cleaning agents and chemicals.*
- *Stores-indenting, maintenance of stores of sanitation item and inventories of expandable and non-expandable items.*
- *Responsible for maintenance of proper sanitation in the hospital premises including other areas i.e. administrative block, offices and hostels.*
- *Assist top management for Planning of sanitation services.*
- *Monitoring work of Sanitation officer and Sanitary Inspectors*
- *Search constantly for and test new techniques and products.*
- *Any other duty assigned by Head of Institution.*

Roles and Responsibilities of Sanitation Officer (21)

- *Provide formal and on-the-job training.*
- *Assume an active role in the overall management responsibility for a health care organisation through participation and service in the committee structure.*
- *Sanitation Officer should formulate, implement, coordinate and control comprehensive environmental sanitation programs under guidance of Sr. Sanitation Officer/ Hospital Administrator.*
- *Respond to the numerous components of the health care environment and have the administrative authority to use discretion in effecting needed change for the benefit of patients, staff and visitors.*
- *Organize, supervise, and coordinate the work of housekeeping personnel on a day-to-day basis.*
- *Ensure excellence in housekeeping sanitation, safety, comfort, and aesthetics for patients, staff and visitors.*
- *Draw up duty rosters for sanitation staff.*
- *Assure proper communication within the department by conducting regular meeting with all personnel.*
- *Hire new employees, warn employees when policies are violated, and discharge employees when necessary.*

- *Counsel employees on various duties and on work-related issues.*
- *Motivate his/her staff and keep their morale high.*
- *Establish standard operating procedures (SOP) for cleaning under guidance of Hospital Administrators and maintain them; and to initiate new procedures to increase the efficiency of sanitation staff and product use.*
- *Ensure the provision of proper uniforms for the sanitation staff.*
- *Ensure observance of hygiene and safety precautions.*
- *Offer suggestions to the human resource department concerning selection recruitment, replacement, duty alterations, up gradation, and so on.*
- *Organize and supervise on-the-job and off-the-job training of staff.*
- *Liaise between the engineering maintenance and other departments in healthcare organisation.*
- *Inspect and approve all supply requisitions for the sanitation services/ department, and to maintain par stock, inventory control, and cost-control procedures for all materials.*
- *Check the feedback reports and the registers maintained by both in house staff and outsourced agency.*
- *Maintain a time logbook for all employees within the department.*
- *Provide a budget to the management, and undertake budget control and forecasting.*

Roles and Responsibilities of Sanitary Inspector (23)

- *He/she is sanitation in charge of the assigned area.*
- *To supervise and guide sanitary supervisors in their work.*
- *To report to Sanitation Officer, regarding administrative constraints faced by Sanitary Attendants of the area.*
- *To take surprise round of ward/OT etc. for cleanliness of toilet etc.*
- *Any other responsibility assigned by Sanitation Officer or Hospital Administration*

Roles and Responsibilities of Sanitary Supervisor (23)

- *To supervise the work of Sanitary Attendants*
- *To provide replacement of Sanitary Attendants if regular Sanitary Attendant is on leave.*

- *To ensure the cleanliness and proper sanitation of the area under his/her supervision.*

Roles and Responsibilities of Sanitary Attendant (23)

- *He/she is responsible for keeping the area neat and clean, assigned to him/her.*
- *He/she will promptly give spotlessly clean urinals and bed pan as and when required by patients.*
- *He/she will assist nursing staff in collection of urine and stools specimens.*
- *He/she will assist in cleaning and disinfection of soiled linen, mattresses, articles etc.*
- *Any other task assigned by nursing staff, sanitary inspector and other higher officials.*

Roles and responsibilities of plumber

- *He will be on the rolls of the agency to which sanitation services are outsourced.*
- *He will do routine minor repairs of sanitary fittings for ensuring effective sanitation and hygiene level in healthcare organisation.*
- *He will promptly attend to calls received form patient care areas, administrative and other areas.*
- *He will not carry out any major repair work and report such issues to engineering department through his/her supervisor.*
- *Any other task assigned by Sanitation Department.*

3.4 Staffing

Adequately staffed sanitation department is one of the most important factors that govern the success of environmental cleaning in a health care organisation. Staffing levels must be appropriate to each department of the health care organisation, with the ability to increase staffing in the event of any exigency.

General staffing levels may be calculated by adding the average time taken for a worker to complete individual tasks. Average cleaning time is the normal time required for a qualified worker, working at a comfortable pace, to complete an operation when following a prescribed method.(24) Education and training are important factors in determining average cleaning time; a new worker will not work at the same pace and as efficiently as an experienced worker. Written procedures and checklists for cleaning will assist in

standardizing cleaning and disinfection times and will ensure that items are not missed during the cleaning.

Each health care organisation should be encouraged to perform their own time management studies to determine appropriate staffing levels for cleaning and supervisory staff, taking into consideration the following factors:(1)

- *Building factors*
 - *Age of the facility – older buildings are harder to clean*
 - *Design of the facility – e.g., amount of walking required to complete a task*
 - *Size of the facility*
 - *Climate*
 - *Season*
 - *Exposure of facility to outside dust and soil, e.g., construction site*
 - *Type of floors and walls*
- *Occupancy factors*
 - *Occupancy rate and volume of cases*
 - *Patient mix and type of care in the area (e.g., acute care, long-term care, clinic) vs. No care in the area (e.g. public area)*
 - *Frequency of cleaning required in an area (e.g. once daily vs. after each case)*
 - *Square meters to be cleaned in patient care areas*
 - *Square meters to be cleaned in non-patient care areas*
 - *Admissions/discharges/transfers by unit/area – more rapid turnover requires a shorter turnaround time for rooms and equipment and more frequent discharge/ transfer cleaning.*
- *Equipment factors*
- *Training factors*
- *Infection control factors*
- *Presence of outbreaks*

As general rules of thumb it is proposed that for calculating human resource requirement for sanitation services for a hospital, district level and above, following parameters can be used:

- 1. Total requirement of sanitary attendants for a hospital - One Sanitary Attendant for two hospital beds (It takes into account the total manpower requirement of entire hospital premises for all three shifts including personnel for reliever duty and leave reserve).***
- 2. One Sanitary Supervisor for 12 -15 Sanitary Attendants***
- 3. One Sanitary Inspector for 5 – 7 Sanitary Supervisors***
- 4. One Sanitary Officer for 5 – 7 Sanitary Inspectors***
- 5. One Senior Sanitation Officer and Officer Incharge for a Healthcare Organisation***
- 6. One plumber should be physically available at all times depending upon the size of the healthcare organisation.***

However, the following manpower requirement is recommended according to the type of patient care area:

- 1 Wards:*** Minimum 1 sanitary attendant per ward in each shift for a ward size of up to 30 beds, if more than 30 beds then one additional sanitary attendant may be provided in the morning shift.
- 2 Operation Theatre:*** One sanitary attendant for two operation theaters for each shift.
- 3 Intensive Care Unit:*** One sanitary attendant for up to six ICU beds in each shift and thereafter additional for each six beds in the morning shift. However, in the evening and night shift allocation can be halved.
- 4 OPD:*** In OPDs one dedicated sanitary attendant should be posted for each public toilet considering the number of footfalls and for other areas separate allocation should be made.
- 5*** Wherever two sanitary attendants are posted effort should be made to post a female sanitary attendant when other being male.
- 6*** There should be a dedicated cleaning gang of 4 to 8 sanitary attendants depending upon the size of the healthcare organisation which will be utilized for intensive cleaning and washing of patient care areas and other areas.

- 7 *Dedicated sanitary attendants may be posted for cleaning of toilets in patient care areas so as to ensure highest level of hygiene and cleanliness.*

3.5 Training

Staff training and development is a core activity in any department involved in the sanitation service and a structured approach to training should be developed and controlled by Sr. Sanitation Officer, with direct inputs from Hospital Administrator, Infection Control Nurses and other relevant healthcare professionals, as required. Organisations should ensure that training is readily accessible to all staff involved in the provision of the service, and that training levels and technical competency are standardized throughout shift patterns.(25) As a minimum, training must be given in the performance of cleaning tasks, the use of cleaning equipment, control of infection, manual handling, fire, health and safety and site orientation. Where there is a change in cleaning products, materials or equipment, retraining of staff will need to be brought forward and completed before the new products are deployed for the first time.(20)

All aspects of environmental cleaning must be supervised and performed by knowledgeable, trained staff. Regular education and support must be provided by health care organizations and contract agencies to help staff consistently implement appropriate practices. Education should be provided at the initiation of employment as part of the orientation process and as ongoing continuing education.(1)

Sanitation department must provide a training program that includes:

- *A written curriculum.*
- *A mechanism for assessing proficiency.*
- *Documentation of training and proficiency verification.*
- *Orientation and continuing education.*

Education provided should include:(1)

- *Handling of mops, cloths, cleaning equipment cleaning and disinfection of blood and body fluids.*
- *Handling and application of cleaning agents and disinfectants*

- *Handling of biomedical waste*
- *Techniques for cleaning and disinfection of surfaces and items in the health care environment.*

The following table gives the frequency of training to be provided as per the risk categorization of functional areas:

Table 3 Duration and Frequency of Training of Sanitary Attendants as per risk categorization of patient care areas

<i>Functional Risk category</i>	<i>Induction Training</i>	<i>Refresher Training/ on the job training frequency</i>
High risk area	<i>24 hours of intensive training on general cleaning and infection control followed by 7 days of supervised duties</i>	<i>Training of four hours every month</i>
Moderate risk area	<i>16 hours of training on general cleaning and infection control followed by 5 days of supervised duties</i>	<i>Once in every months for 2 hours</i>
Low risk area	<i>8 hours of training on cleaning practices followed by three days of supervised duties</i>	<i>Every six months for 2 hours</i>

Induction Training Topics for Sanitary Attendant

1. *Orientation.*
2. *Organization.*
3. *Job Description—duties & responsibility*
4. *Grooming*
5. *Uniform and protective gear*
6. *Leave Procedures*
7. *Cleaning chemical—Use & dilution rate*
8. *Handling equipment – with demonstration*
9. *Step by step cleaning procedures for different areas and surfaces (for example)*
 - *Cleaning of furniture*
 - *Light fixtures*

- *Maintaining upholstery*
 - *Floor care*
 - *Glass cleaning*
 - *Metal polishing*
 - *Tiles cleaning*
 - *Elevator cleaning*
 - *Stair case cleaning*
 - *Dado & skirting cleaning*
 - *Corridor cleaning*
 - *Dusting*
 - *Mopping*
 - *Stain removal*
 - *Any other areas or surface*
10. *Reporting repair and maintenance*
 11. *Safety & security*
 12. *Garbage removal*
 13. *Fire safety*
 14. *Penalties for misconduct/ not working*

Induction Training Topics for Sanitation Supervisor

1. *Orientation.*
2. *Organization.*
3. *Job Description—duties & responsibility*
4. *Grooming*
5. *Uniform and protective gear*
6. *Leave Procedures*
7. *Cleaning Chemicals*
8. *Equipment handling*
9. *Inspection and filling up checklist*
10. *Reporting repair and maintenance*
11. *Step by step cleaning procedures (as mentioned for attendants)*
12. *Safety and security*

13. Fire training
14. Documentation of records (work done, attendance, leave etc.) and knowledge of computers
15. Garbage removal
16. Penalties for misconduct/ not working

Training programmes should be systematically applied and may well include a variety of training techniques including 'classroom' and 'on the job' training sessions. Training programmes should be evaluated regularly to ensure that they meet the needs of the service and that staff are able to readily assimilate the information provided to them. On-going training should take cognizance of the outcomes of monitoring reports, skills audits or competency reviews by appropriate responsible persons or managers.(25)

3.6 Work Planning

All duties relating to sanitation services must be clearly defined and should be clearly and accurately reflected in job descriptions and in contract document. Work schedules should be as detailed and complete as possible. They should describe each cleaning task to be performed by cleaning staff in a particular area and indicate approximately when it will be done and how long it will take. Work schedules should be agreed between key stakeholders and should be prominently displayed within the work area they relate to.(20)

The optimal resourcing of sanitation services is a priority for all healthcare providers. However, sanitation staff, and sanitation managers and supervisors, must be allowed adequate time to perform their duties. Resource planning should take account of what is realistically achievable.(20)

It should be clearly recognised, as part of the work planning process, that events may alter the resource requirement of the cleaning service. For example, the management of infection outbreaks will require additional resource. Such events cannot be forecasted with complete accuracy, but an informed budgetary estimate should always be made and in-year variance assessed during each financial period. (20)

4. Cleaning in Healthcare Organisation

Good cleaning practices are essential for reducing the risk of transmitting infectious diseases. This will contribute to a culture of safety by providing an atmosphere of general cleanliness and good order. Cleaning best practices are designed to meet the following needs: (1)

- The primary focus must remain the safety of the patient, staff and visitors.
- The practices must help reduce the spread of infections.
- The practices are easily understood and achievable.
- The practices incorporate workflow measurement to guide human resource issues.
- The practices must be reviewed as often as required to keep abreast of changes in the health care.

Cleaning in the health care organisation should be performed on a routine and consistent basis to provide for a safe and sanitary environment. Maintaining a clean and safe health care environment is an important component of infection prevention and control.(1)

4.1 Environmental Cleaning

Sanitation staff must adhere to routine practices while cleaning. Routine cleaning practices are practices that are used wherever cleaning is being carried out. The principles of routine practices are based on the premise that all patients, their secretions, excretions and body fluids and their environment might potentially be contaminated with harmful microorganisms. By following simple preventive practices at all times regardless of whether or not an illness is 'known', staff will be protecting patients and themselves from an unknown, undiagnosed infectious risk. Routine Practices related to environmental cleaning include:(1)

- Hand hygiene.
- Use of personal protective equipment (PPE) when indicated.
- Standardized cleaning protocols.

Hand hygiene is the most important and effective measure to prevent the spread of health care-associated infections. Therefore, hand hygiene must be practiced:

- Before initial patient/patient environment contact (e.g. before coming into the patient room or bed space).
- After potential body fluid exposure (e.g. after cleaning bathroom, handling soiled linen, equipment or waste etc.).
- After patient/patient environment contact (e.g., after cleaning patient room; after cleaning equipment such as stretchers; after changing mop heads etc.).

Dedicated hand washing sinks are required for hand washing with soap and water, to avoid splash back of microorganisms onto clean hands during rinsing. Hand washing sinks must not be used for other purposes, such as disposal of fluids or cleaning of equipment.(1)

Personal protective equipment (PPE) for health care providers and other staff refers to a variety of barriers used alone or in combination to protect mucous membranes, airways, skin and clothing from contact with infectious agents and from chemical agents. Cleaning staff should wear PPE:(1)

- For protection from microorganisms.
- For protection from chemicals used in cleaning.
- To prevent transmission of microorganisms from one patient environment to another.

Figure 3 Personal Protective Equipment



Hospital Administrators must ensure that PPE are available adequately and accessible to all sanitary /cleaning staff in their work area. Adequate induction and in-service training should be provided in infection control and use of PPE.

PPE includes the following:

- *Heavy duty gloves*
- *Impermeable plastic apron*
- *Gum boots*
- *Disposable mask and caps*
- *Eye protection wherever required*

4.2 Cleaning Frequency (1)

The frequency of cleaning and disinfecting individual items or surfaces in a particular area or department depends on: (1)

- *Whether surfaces are high-touch or low-touch.*
- *The type of activity taking place in the area and the risk of infection associated with it (e.g., critical care areas vs. meeting room)*
- *The vulnerability of patients in the area.*
- *The probability of contamination based on the amount of body fluid contamination surfaces in the area might have or be expected to have.*

4.2.1 Frequency of contact with surfaces

All surfaces in a health care organisation have the potential to harbour pathogenic microorganisms. The potential for exposure to pathogens is based on the frequency of contact with a contaminated surface and the type of activity involved. For example, a conference room table would have less potential for exposure to pathogens than the doorknob in a patient care area. High-touch surfaces will require more frequent cleaning regimen.(1) Most, if not all, environmental surfaces will be adequately cleaned with soap and water or a detergent/disinfectant, depending on the nature of the surface and the type and degree of contamination.(13)

High-touch surfaces are those that have frequent contact with hands. Examples include doorknobs, elevator buttons, telephones, call bells, bedrails, light switches, computer keyboards, monitoring equipment, hemodialysis machines, wall areas around the toilet and edges of privacy curtains.(1) High-touch surfaces in patient care areas require more frequent cleaning and disinfection than minimal contact surfaces.(13) Cleaning and disinfection is usually done at least daily and more frequently if the risk of environmental contamination is higher (e.g., intensive care units).

Low-touch surfaces are those that have minimal contact with hands. Examples include walls, ceilings, mirrors and window sills.(1) Low-touch surfaces require cleaning on a regular (but not necessarily daily) basis, when soiling or spills occur, and when a patient is discharged from the health care setting.(13) Many low-touch surfaces may be cleaned on a periodic basis rather than a daily basis if they are also cleaned when visibly soiled.

4.2.2 Vulnerability of the Patient/Resident Population

Different populations of patients have differing vulnerabilities based on their susceptibility to infection due to their medical condition or lack of immunity. In some populations, such as bone marrow transplant or burn patients, and those undergoing invasive or operative procedures, susceptibility to infection is very high and may be impacted by their environment. The frequency of cleaning may be higher in areas with vulnerable patients. For the purpose of risk stratification for cleaning, all other individuals are classified as less susceptible.

4.2.3 Probability of Contamination of Items and Surfaces

The probability that a surface, piece of equipment or patient care area will be contaminated is based on the activity in the area, the type of pathogens involved and the microbial load. Areas that are heavily soiled with blood or other body fluids will require more frequent cleaning and disinfection than areas that are minimally soiled or not soiled.

Heavy Contamination

An area is considered to be heavily contaminated if surfaces are exposed to copious amounts of blood or other body fluids (e.g., birthing suite, autopsy suite, cardiac catheterization

laboratory, burn unit, haemodialysis unit, Emergency Department, bathroom if the patient has diarrhea or is incontinent).

Moderate Contamination

An area is considered to be moderately contaminated if surfaces are contaminated with blood or other body fluids as part of routine activity (e.g., patient/resident room, bathroom if patient is continent) and the contaminated substances are contained or removed. All patients' bed space/rooms and bathrooms should be considered to be, as a minimum, moderately contaminated.

Light Contamination

An area is considered to be lightly contaminated or not contaminated if surfaces are not exposed to blood, other body fluids.

4.3 Cleaning Practices

Each health care setting must have policies and procedures to ensure that:(1)

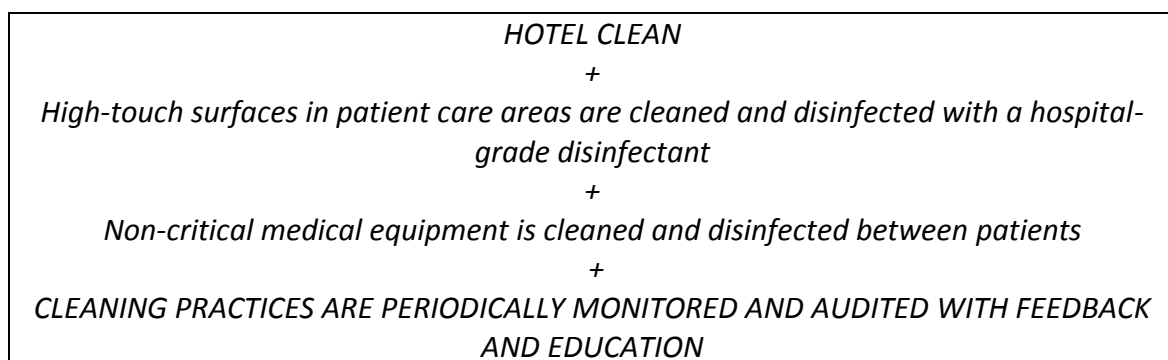
- *Cleaning is a continuous event in the health care organization.*
- *Cleaning procedures incorporate the principles of infection prevention and control.*
- *Cleaning standards, frequency and accountability for cleaning are clearly defined (i.e., who cleans, what and how do they clean and when do they clean it).*
- *Cleaning schedules ensure that no area is missed from routine cleaning.*
- *Statutory requirements are met in relation to:*
 - *Biomedical waste management*
 - *Environment Protection Act*
 - *Food hygiene standards*
 - *Pest control*

Routine cleaning is necessary to maintain a specific level of cleanliness i.e. Hotel Clean, Hospital Clean. Routine cleaning practices must be effective and consistent to reduce the transmission of microorganisms. The frequency of cleaning is dependent upon the risk classification of the surface or item to be cleaned. (1)

Hotel Clean is a measure of cleanliness based on visual appearance that includes dust and dirt removal, waste disposal and cleaning of windows and surfaces. Hotel Clean is the basic cleaning that takes place in all areas of a health care setting. Hospital Clean is a measure of cleanliness routinely maintained in care areas of the health care organisation.(3) Hospital Clean is hotel Clean with the addition of disinfection, increased frequency of cleaning, evaluation and other infection control measures in patient care areas. Following are the components of hotel clean:(1)

- *Floors and skirtings are free of stains, visible dust, spills and streaks.*
- *Walls, ceilings and doors are free of visible dust, gross soil, streaks, spider webs and handprints.*
- *All surfaces are free of visible dust or streaks (includes furniture, window ledges, overhead lights, phones etc.).*
- *Bathroom fixtures including toilets, sinks and showers are free of streaks, soil, stains and soap scum.*
- *Mirrors and windows are free of dust and streaks.*
- *Dispensers are free of dust, soiling and residue and replaced/replenished when empty.*
- *Appliances are free of dust, soiling and stains.*
- *Waste is disposed of appropriately.*
- *Items that are broken, torn, cracked or malfunctioning are replaced.*
- *The area in general should have an aesthetic appearance.*

While components of hospital clean are as:



4.4 Equipment Cleaning

The health care organisation should have written policies and procedures for the appropriate cleaning and disinfection of equipment that clearly define the frequency and level of cleaning and assign responsibility for cleaning. Non-critical medical equipment that is within the patient's environment and used between patients (e.g., imaging equipment, electronic monitoring equipment etc.) requires cleaning and disinfection after each use. Selection of new equipment must include considerations related to effective cleaning and disinfection. A system should be in place to clearly identify equipment which has been cleaned and disinfected.(1)

5. Risk categorization of hospital areas

All healthcare environments should pose minimal risk to patients, staff and visitors. However, different functional areas represent different degrees of risk and, therefore, require different cleaning frequencies, and levels of monitoring and evaluation.(26) A functional area refers to any area in a healthcare facility that requires cleaning.(27) Consequently, all functional areas should be assigned in one of the following three categories:

- **High risk areas**
- **Moderate risk areas**
- **Low risk areas.**

Regular monitoring should take place in areas where standards are considered poor or where routine monitoring reveals consistent weaknesses. These functional area risk categories are explained below. (28)

5.1 High Risk Areas

Consistently high cleaning standards must be maintained in these areas. Required outcomes will only be achieved through intensive and frequent cleaning. Both informal monitoring and formal evaluation of cleanliness should take place continuously. Patient care areas and other facilities designated as high- risk category should be evaluated at least once a week until the Officer I/C Sanitation and Infection Control Team are satisfied that consistently high standards are being maintained, after which the frequency of evaluation may be reduced to once monthly. This will be in addition to the routine monitoring done by the Hospital Administrator and Sanitation Department i.e., Sanitation Officer, Sanitary Inspector, nursing staff etc.

High risk functional areas typically include operating theatres (OTs), ICUs, HDUs, Emergency department, post operative units, surgical ward, labour room, haemodialysis unit, Central sterile supply department(CSSD)/Theatre sterile supply unit (TSSU) and other facilities where invasive procedures are performed or where immuno-compromised patients are receiving

care. Bathrooms, toilets, staff lounges, offices and other areas adjoining high-risk functional areas should be treated as having the same risk category, and receive the same intensive levels of cleaning.

5.2 Moderate risk areas

Outcomes in these areas should be maintained by regular and frequent cleaning with 'spot cleaning' in-between. Both informal monitoring and formal evaluation should take place continuously. Patient care areas in this category should be evaluated at least once a month until the Officer in charge, Sanitation and Infection Control Team are satisfied that consistently high standards are being maintained, after which the evaluation frequency may be reduced to once in two months. This will be in addition to the daily monitoring done by the Hospital administrator and Sanitation Department i.e., Sanitation Officer, Sanitary Inspector, nursing staff etc.

Moderate -risk areas may include Medical wards, Laboratory areas, Blood bank, Pharmacies, Dietary services, Laundry services, Mortuary, Nurses/ Doctors rest rooms, Rehabilitation Areas and Psychiatric wards. Bathrooms, toilets, staff lounges, offices and other areas adjoining high-risk functional areas should be treated as having the same risk category and receive the same regular levels of cleaning.(28)

5.3 Low-risk areas

In these areas, high standards are required for aesthetic and to a lesser extent, hygiene reasons. Outcomes should be maintained by regular and frequent cleaning with 'spot cleaning' in-between. Both informal monitoring and formal evaluation of standards should take place continuously. Patient care and other areas within a low-risk area should be evaluated at every three months. This will be in addition to the daily monitoring done by the sanitation department i.e. Hospital administrator, Sanitation Officer, Sanitary Inspector, nursing staff etc.

Low-risk functional areas may include administrative areas, faculty and doctors offices, seminar rooms, stores, staff rooms, non- sterile supply areas, record storage and archives etc. Additional internal areas bathrooms, staff lounges, offices and other areas adjoining

low-risk functional areas should be treated as having the same risk category and receive the same level of cleaning.

The following given table describes the various hospital areas stratified according to risk categories:

Table 4 Classification of Hospital areas into risk categories

<i>High Risk areas</i>	<i>Moderate risk areas</i>	<i>Low risk areas</i>
<i>Operation theatre units including recovery area – Major & minor</i>	<i>Medical and allied wards</i>	<i>Departmental areas/office areas</i>
<i>Intensive care units/ Cardiac care units/Neonatal ICU etc.</i>	<i>Laboratory areas</i>	<i>Outpatient department</i>
<i>High dependency units</i>	<i>Blood bank</i>	<i>Non sterile supply areas</i>
<i>Emergency department/casualty</i>	<i>Pharmacies</i>	<i>Libraries</i>
<i>Labour room</i>	<i>Dietary services</i>	<i>Meeting Rooms</i>
<i>Post operative units</i>	<i>Laundry services</i>	<i>Medical records section</i>
<i>Surgical wards</i>	<i>Mortuary</i>	<i>Stores section</i>
<i>Central sterile supply department/Theatre sterile supply unit</i>	<i>Nurses/ Doctors rest rooms</i>	<i>Manifold services/room</i>
<i>Radiation Treatment Areas</i>	<i>Rehabilitation Areas</i>	<i>Telephone rooms, electrical, mechanical, External surroundings</i>
<i>Chemotherapy ward/room</i>	<i>Psychiatric wards</i>	<i>Staff areas</i>
<i>Renal Dialysis facility</i>		
<i>Burn Units</i>		
<i>Isolation wards/ rooms & attached internal areas like bathrooms / toilets</i>		

Taking cue and extending the logic of Spaulding's classification to environmental cleaning, the following level of disinfection is recommended for different risk categories:

Table 5 Cleaning frequency, level of cleaning/disinfection and evaluation/auditing frequency according to the type of functional area risk category

Functional Area Risk Category	Frequency of cleaning	Level of cleaning/disinfection	Method of cleaning/Disinfection (29)	Evaluation/auditing frequency
High risk areas	Once in two hours and spot cleaning as required	Cleaning and Intermediate level disinfection	Cleaning with soap & detergent plus disinfection with alcohol compound, aldehyde compounds (Formaldehyde, glutaraldehyde) hydrogen peroxide and phenolics (not feasible in the nurseries)	Weekly or monthly if cleanliness of high standards is maintained as certified by Officer I/C Sanitation and Infection Control Team
Moderate risk areas	Once in four hours and spot cleaning as required	Cleaning and low level disinfection	Cleaning with soap & detergent plus disinfection with aldehyde compounds (Formaldehyde, glutaraldehyde) hydrogen peroxide phenolics	Once in a month or once in two months if cleanliness of high standards is maintained as certified by Officer I/C Sanitation and Infection Control Team
Low risk 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

6. Standard Operating procedures for cleaning

6.1 General Cleaning Practices for All Health Care Settings (1)

Before cleaning:

- *Check for additional precautions signs.*
- *Follow precautions as indicated.*
- *Remove clutter before cleaning.*
- *Follow the manufacturer's instructions for proper dilution and contact time for cleaning and disinfecting solutions.*
- *Gather materials required for cleaning before entering the room.*
- *Clean hands before entering the room.*

During cleaning:

- *Progress from the least soiled areas (low-touch) to the most soiled areas (high-touch) and from high surfaces to low surfaces.*
- *Remove gross soil (visible to naked eye) prior to cleaning and disinfection.*
- *Minimize turbulence to prevent the dispersion of dust that may contain microorganisms.*
- *Never shake mops.*
- *Use dust control mop prior to wet/ damp mop.*
- *Wash the mop under the running water before doing wet mopping.*
- *Do not 'double-dip' cloths (dip the mop only once in the cleaning solution, as dipping it multiple times may recontaminate it).*
- *An area of 120 square feet to be mopped before re-dipping the mop in the solution.(30)*
- *Cleaning solution to be changed after cleaning an area of 240square feet.(30)*
- *Where facility of laundering mops is not available, mops should be changed at following defined intervals:*
 - *High risk areas - In each shift*
 - *Moderate risk areas - Each day*
 - *Low risk areas - Every week*

- *Change cleaning solutions as per manufacturer's instructions. Change more frequently in heavily contaminated areas, when visibly soiled and immediately after cleaning blood and body fluid spills.*
- *Be alert for needles and other sharp objects. Safely handle and dispose sharps into puncture proof container. Report incident to supervisor.*
- *Collect waste, handle plastic bags from the top (do not compress bags with hands).*
- *Clean hands on leaving the room.*

After cleaning:

- *Do not overstock rooms.*
- *Tools used for cleaning and disinfecting must be cleaned and dried between uses.*
- *Launder mop heads daily.*
- *All washed mop heads must be dried thoroughly before re-use.*
- *Clean sanitation cart and carts used to transport biomedical waste daily.*
- *All attachments of machines should be removed, emptied, cleaned and dried before storing.*

6.2 Cleaning of Patient Care Area/Room

6.2.1 Daily Routine Patient Bed Space / Room Cleaning

Hospital Cleaning of patient care areas/rooms should follow a methodical, planned format that includes the following elements: (1)

1. Assessment:

- Check for additional precautions signs and follow the precautions indicated.*
- Walk through room to determine what needs to be replaced (e.g., toilet paper, paper towels, soap, alcohol-based hand rub (ABHR), gloves, sharps container) and whether any special materials are required; this may be done before or during the cleaning process.*

2. Gather supplies:

- Ensure an adequate supply of clean cloths is available.*
- Prepare fresh disinfectant solution according to manufacturer's instructions.*

3. Wash hands and put on gloves.

4. Clean room, working from clean to dirty and high to low areas of the room:

- *Use fresh cloth(s) for cleaning each patient bed space:*
 - *If a bucket is used, do not 'double-dip' cloth(s)*
 - *Do not shake out cloth(s)*
 - *Change the cleaning cloth when it is no longer saturated with disinfectant and after cleaning heavily soiled areas such as toilet and bedpan cleaner.*
- *Start by cleaning doors, door handles, push plate and touched areas of frame.*
- *Check walls for visible soiling and clean if required.*
- *Clean light switches and thermostats.*
- *Clean wall mounted items such as alcohol-based hand rub dispenser.*
- *Check and remove fingerprints and soil from low level interior glass partitions, glass door panels, mirrors and windows with glass cleaner.*
- *Check privacy curtains for visible soiling and replace, if required.*
- *Clean all furnishings and horizontal surfaces in the room including chairs, window sill, television, telephone, computer keypads, over bed table etc. Lift items to clean the table. Pay particular attention to high-touch surfaces.*
- *Wipe equipment on walls such as top of suction bottle, intercom and blood pressure manometer as well as IV pole.*
- *Clean bedrails, bed controls and call bell.*
- *Clean bathroom/shower (applicable for single room) (see bathroom cleaning procedure).*
- *Clean floors (see floor cleaning procedure).*

5. Disposal

- *Place soiled cloths in designated container for laundering.*
- *Check sharps container and change when 2/3rd full (do not dust the top of a sharps container).*
- *Remove soiled linen if bag is full.*
- *Place waste in colour coded bins as prescribed under BMW rules 1998.*
- *Remove waste.*

6. Remove gloves and clean hands with alcohol based hand rub; if hands are visibly soiled, wash with soap and water. Do not leave room wearing soiled gloves.

7. Replenish supplies as required (e.g., gloves, ABHR, soap, tissue roll/paper towel etc.)

Hospital Clean includes a monitoring/ evaluation component, and this should be done by a sanitation supervisor after the cleaning procedure has been completed.

In addition to routine daily cleaning of patient care areas/rooms, the following additional cleaning should be scheduled: (1)

- High dusting using damp mop (weekly)
- Clean corners (weekly)
- Removal and laundering privacy curtains/screen.
- Clean window curtains/ coverings when soiled or atleast monthly.
- Dust window blinds at least monthly.

High dusting includes all surfaces and fixtures above shoulder height, including vents. Ideally, the patient/resident should be out of the room during high dusting to reduce the risk of inhaling spores from dust particles.(1)

6.2.2 Procedure for Routine, Discharge/Transfer Cleaning of a Patient Bed Space/ Room (1)

1. Assessment:
 - a. Check for Additional Precautions signs and follow the precautions indicated.
 - b. Walk through room to determine what needs to be replaced (e.g., toilet paper, paper towels, soap, alcohol-based hand rub (ABHR), gloves, sharps container) and whether any special materials are required; this may be done before or during the cleaning process.
2. Gather supplies:
 - a. Ensure an adequate supply of clean cloths is available.
 - b. Prepare fresh disinfectant solution according to manufacturer's instructions.
3. Wash hands and put on gloves.
4. Remove dirty linen:

- a. *Strip the bed, discarding linen into soiled linen bag; roll sheets carefully to prevent aerosol formation.*
- b. *Inspect bedside curtains and window treatments; if visibly soiled, clean or change.*
- c. *Remove gloves and clean hands.*

5. Clean room, working from clean to dirty and high to low areas of the room:

- *Use fresh cloth(s) for cleaning each patient/ resident bed space:*
 - *If a bucket is used, do not 'double-dip' cloth(s).*
 - *Do not shake out cloth(s).*
 - *Change the cleaning cloth when it is no longer saturated with disinfectant and after cleaning heavily soiled areas such as toilet.*
- *Start by cleaning doors, door handles, push plate and touched areas of frame.*
- *Check walls for visible soiling and clean if required.*
- *Clean light switches and thermostats.*
- *Clean wall mounted items such as alcohol-based hand rub dispenser.*
- *Check and remove fingerprints and soil from low level interior glass partitions, glass door panels, mirrors and windows with glass cleaner.*
- *Check privacy curtains for visible soiling and replace, if required.*
- *Clean all furnishings and surfaces in the room including chairs, window sill, television, telephone, computer keypads, over bed table etc. Lift items to clean the tables. Pay particular attention to high-touch surfaces*
- *Wipe equipment on walls such as top of suction bottle, intercom and blood pressure manometer as well as IV pole.*
- *Clean inside and outside of patient/ resident cupboard or locker.*

6. Clean the bed

- a. *Clean top and sides of mattress, turn over and clean underside.*
- b. *Clean exposed bed springs and frame.*
- c. *Check for cracks or holes in mattress and have mattress replaced as required*
- d. *Inspect for pest control.*

- e. *Clean headboard, foot board, bed rails, call bell and bed controls; pay particular attention to areas that are visibly soiled and surfaces frequently touched by staff.*
 - f. *Clean all lower parts of bed frame, including castors.*
 - g. *Allow mattress to dry.*
7. *Clean bathroom/ shower (see bathroom cleaning procedure)*
 8. *Clean floors (see floor cleaning procedure)*
 9. *Disposal*
 - a. *Place soiled cloths in designated container for laundering.*
 - b. *Check sharps container and change when 2/3rd full (do not dust the top of a sharps container).*
 - c. *Remove soiled linen bag and replace with fresh bag.*
 - d. *Place waste in colour coded bins as prescribed under BMW rules 1998.*
 - e. *Close waste bags and remove and add a clean bag.*
 10. *Remove gloves and clean hands with ABHR; if hands are visibly soiled, wash with soap and water. Do not leave room wearing soiled gloves.*
 11. *Remake bed and replenish supplies as required (e.g., gloves, ABHR, soap, paper towel, toilet brush).*
 12. *Return cleaned equipment (e.g., IV poles and pumps, walkers, commodes) to clean storage area.*

6.3 Routine Bathroom Cleaning (1)

NOTE: Bathrooms require Hospital Clean

Working from clean areas to dirty areas:

- *Remove soiled linen from floor; wipe up any spills; remove waste.*
- *Clean door handle and frame, light switch.*
- *Clean chrome wall attachments.*
- *Clean inside and outside of sink, sink faucets and mirror; wipe plumbing under the sink; apply disinfectant to interior of sink; ensure sufficient contact time with disinfectant; rinse sink and dry fixtures.*
- *Clean all dispensers and frames.*

- *Clean call bell and cord.*
- *Clean support railings, ledges/ shelves.*
- *Clean shower, faucets, walls and railing, scrubbing as required to remove soap scum; apply disinfectant to interior surfaces of shower, including soap dish, faucets and shower head; ensure sufficient contact time for disinfectant; rinse and wipe dry; inspect and replace shower curtains monthly or as required.*
- *Clean bedpan support, entire toilet including handle and underside of flush rim; ensure sufficient contact time with disinfectant.*
- *Remove gloves and wash hands.*
- *Replenish paper towel, toilet paper, waste bag, soap and ABHR as required.*
- *Report mould and cracked, leaking or damaged areas for repair.*

Additionally for discharge/transfer cleaning:

- *Change all colour coded waste bags, clean colour coded bin, if dirty.*
- *Scrub shower walls.*

6.4 Mopping Floors using Dust Control Mop (microfiber) (1)

Working from clean areas to dirty areas:

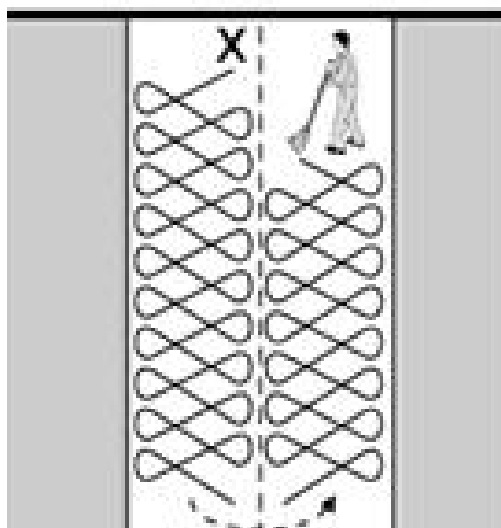
- *Remove debris from floor and dry any wet spots with paper towel.*
- *Remove gum or other sticky residue from floor.*
- *Starting in the farthest corner of the room, drag the mop toward you, then push it away, working in straight, slightly overlapping lines and keeping the mop head in full contact with the floor.*
- *Do not lift dust mop off the floor once you have started, use swivel motion of frame and wrist to change direction.*
- *Move furniture and replace after dust mopping, including under and behind bed.*
- *Carefully dispose off debris, being careful not to stir up dust.*
- *Replace mop head/pad when soiled and after mopping a room.*

6.5 Mopping Floors using Wet Loop Mop and Bucket(1)

Working from clean areas to dirty areas:

- Prepare fresh cleaning solution according to the manufacturer's instructions using appropriate PPE according to Material Safety Data Sheet (MSDS).
- Place 'wet floor' caution sign outside of room or area being mopped.
- Divide the area into sections (eg. Corridors may be divided into two halves, lengthwise, so that one side is available for movement of traffic while the other is being cleaned.)
- Immerse mop in cleaning solution and wring out.
- Push mop around skirting's first, paying particular attention to removing soil from corners; avoid splashing walls or furniture.
- In open areas use a figure eight stroke in open and wide spaces, overlapping each stroke; turn mop head over every five or six strokes. While in small spaces, starting in the farthest corner of the room, drag the mop toward you, then push it away, working in straight, slightly overlapping lines and keeping the mop head in full contact with the floor.

Figure 4 Figure of eight stroke technique for mopping



- Repeat until entire floor is done.
- Change the mop head when heavily soiled or at the end of the day.

6.6 Mopping Floors using a Microfiber Mop(1)

Working from clean areas to dirty areas:

- Fill plastic basin with cleaning solution.

- *Place microfiber pad(s) to soak in basin.*
- *Take a clean pad from the basin, wring out and attach to mop head using Velcro strips.*
- *Remove pad when soiled and set aside for laundering.*
- *Use a fresh microfiber pad for each room.*
- *Send soiled, reusable microfiber pads for laundering at the end of the day.*

6.7 Cleaning Operating Rooms

Environmental cleaning in surgical settings minimizes patients' and health care providers' exposure to potentially infectious microorganisms. The Operating Room Nurses Association of Canada (ORNAC) has published standards for environmental cleaning in surgical settings that include:

- *The ultimate responsibility for ensuring a clean surgical environment rests with the peri-operative registered nurse.*
- *Environmental cleaning must be performed by trained staff according to the protocol of the health care setting.*
- *A regular cleaning schedule must be established, posted and documented.*

Responsibility for cleaning anaesthetic machines and carts should be clearly defined.

6.7.1 Cleaning Operating Rooms in between Cases*

- *Place a cautionary 'Wet Floor' sign at the entrance of the room.*
- *Prepare fresh disinfectant solution according to manufacturer's instructions.*
- *Clean hands and put on gloves.*
- *Collect and remove waste.*
- *Collect and remove all soiled linen.*
- *Remove gloves and clean hands.*
- *Use a cloth dampened in hospital-grade disinfectant solution to clean and disinfect surfaces that have come in contact with a patient or body fluids, including tops of surgical lights, blood pressure cuffs, tourniquets and leads.*
- *Clean suction canisters, reflective portion of surgical lights.*
- *Clean and disinfect OT table.*

- *Clean electronic equipment (i.e., monitors) according to manufacturer's instructions.*
- *Damp mop floor in a 1 to 1.3 metre (3 to 4 feet) perimeter around the OT table (larger area if contamination present).*
- *Insert colour coded bags in waste bins.*
- *Damp-dust equipment from other areas such as X-ray machines, C-arm etc. before being brought into the operating room and prior to leaving.*
- *When cleaning is complete, remove gloves and clean hands.*

** Adapted from the Operating Room Nurses Association of Canada (ORNAC) Standards, Guidelines and Position Statements for Perioperative Registered Nursing Practice. 10th Edition. Section 2, Infection Prevention and Control. 2011.*

6.7.2 Procedure for Terminal Cleaning of Operating Rooms

- *Place a cautionary 'Wet Floor' sign at the entrance of the room.*
- *Prepare fresh hospital-grade disinfectant solution according to manufacturer's instructions.*
- *Clean hands and put on gloves.*
- *Collect and remove waste.*
- *Collect and remove all soiled linen.*
- *Clean hands and change gloves.*
- *Clean and disinfect lights and ceiling-mounted tracks.*
- *Clean and disinfect all door handles, push plates, light switches and controls.*
- *Clean and disinfect telephones and computer keyboards.*
- *Spot-check walls for cleanliness.*
- *Clean and disinfect all exterior surfaces of machines and equipment (e.g., anaesthesia carts), allowing adequate drying time for the disinfectant before storage.*
- *Clean and disinfect all furniture including wheels/ casters.*
- *Clean and disinfect exterior of cabinets and doors, especially around handles.*
- *Clean and disinfect all surfaces.*
- *Clean scrub sinks and surrounding walls.*
- *Mop floor, making sure the OT Table is moved and the floor is washed underneath; move all furniture to the centre of the room and continue cleaning the floor; apply a*

sufficient amount of disinfectant/ detergent to ensure that the floor remains wet for 5 minutes; use a fresh mop/ mop head and fresh solution for each room.

- Replace all furniture and equipment to its proper location.
- Wash the colour coded bins, dry them and put colour coded bags once it is dried..
- Report any needed repairs.
- Clean and store cleaning equipment.
- Remove gloves and clean hands.

** Adapted from the Operating Room Nurses Association of Canada (ORNAC) Standards, Guidelines and Position Statements for Perioperative Registered Nursing Practice. 10th Edition. Section 2, Infection Prevention and Control. 2011.*

Table 6 Scheduled Cleaning in Operating Room Suites

<i>Item to be cleaned</i>	<i>Frequency</i>
• Ceilings, including air conditioning and ventilation grills/vents and light fixtures	Twice yearly
• Walls, including all doors and windows	Monthly
• Floors, including skirtingss, corners and edges	Monthly
• Store rooms and storage areas	Monthly
• Exterior surfaces of machines and equipment	Monthly
• Refrigerators	Monthly
• Furniture, including wheels/casters	Weekly
• Sterilizers, cabinets and doors (interior and exterior)	Weekly
• All horizontal surfaces (all shelving, computers, keyboards etc.)	Weekly
• Offices, lounges and locker rooms	Daily

6.8 Cleaning of Sterile Areas

*Sterile Processing Areas in CSSD/TSSU **

- Clean all counters and floors daily.
- Clean shelves daily in sterilization areas, preparation and packing areas and decontamination areas.
- Clean shelves daily in sterile storage areas.
- Clean case carts after every use.

- Clean walls once every month.
- Clean light fixtures, sprinkler heads and other fixtures once every month.

User Units/Clinics, Endoscopy Suites and Other Sterile Storage Areas

- Clean counters and floors daily.
- Clean shelves daily.
- Clean walls once every month.
- Clean light fixtures, sprinkler heads and other fixtures once every month.

** Adapted from the Canadian Standards Association, Z314.3-09, Effective Sterilization in Health Care Facilities by the Steam Process: Table 1, Cleaning Frequencies.*

6.9 Cleaning an Ambulance (1)

Routine clean following each transport:

- Place biomedical waste (e.g., dressings, bandages, contaminated sheets that are saturated with blood) in a colour coded bins as per Biomedical Waste (Management and Handling) Rules 1998.
- Remove used linens/ blankets for laundering.
- Clean and disinfect/ sterilize equipment used during the call.
- Clean and disinfect patient compartment as required.
- Inaccessible areas should be vacuum cleaned.
- If the vehicle is heavily contaminated it will be taken out of service and intensively cleaned.
- Restock vehicle as required.

Intense Cleaning as Required and When Scheduled:

- *Driver's Compartment.*
 - Remove all equipment from the front of the vehicle.
 - Clean and disinfect all interior surfaces, including walls, doors, radio equipment, dash and windows.
- *Patient Compartment*
 - Remove stretchers, clean and disinfect including mattress and belts; check for wear or damage.

- *Remove wall suction, clean and disinfect.*
- *Remove contents of cupboards and shelves; clean and disinfect all surfaces.*
- *Clean, disinfect and dry all hard surface items before returning to cupboard or shelf; inspect for damage and expiration dates; repair/ replace as needed.*
- *Sweep, vacuum, clean and disinfect floor.*
- *Clean and disinfect chairs, bench seats, seat belts.*
- *Clean and disinfect all interior surfaces, including ceiling and walls.*
- *Check interior lighting.*
- *Empty, clean and disinfect waste containers.*
- *Clean interior windows.*
- *Equipment Storage Compartment*
 - *Remove all equipment and sweep out compartment.*
 - *Clean and disinfect compartment and restock.*

6.10 Cleaning Spills of Blood and Body Substances (1)

Spills of blood and other body substances, such as urine, faeces and emesis, must be contained, cleaned and the area disinfected immediately. The health care organisation shall have written policies and procedures for dealing with biological spills that include:(31)

- *Clearly defined assignment of responsibility for cleaning the spill in each area of the health care setting during all hours when a biological spill might occur.*
- *Provision for timely response.*
- *A method for the containment and isolation of the spill.*
- *Training of staff who will clean the spill.*
- *Access to PPE, equipment, supplies, waste and linen disposal for staff who will clean the spill.*
- *Proper disposal of waste.*
- *Procedure to be followed if there is a staff exposure to biological material.*
- *Documentation of the spill incident.*

6.10.1 Cleaning a Biological Spill*

- *Assemble materials required for dealing with the spill prior to putting on PPE.*
- *Inspect the area around the spill thoroughly for splatters or splashes.*

- *Restrict the activity around the spill until the area has been cleaned and disinfected and is completely dry.*
- *Put on gloves; if there is a possibility of splashing, wear a gown and facial protection (mask and eye protection or face shield).*
- *Confine and contain the spill; wipe up any blood or body fluid spills immediately using either disposable towels or a product designed for this purpose.*
- *Dispose off materials by placing them into regular waste receptacle, unless the soiled materials are so wet that blood can be squeezed out of them, in which case they must be segregated into the biomedical waste container (i.e., yellow bag).*
- *Disinfect the entire spill area with a hospital-grade disinfectant and allow it to stand for the amount of contact time recommended by the manufacturer.*
- *Wipe up the area again using disposable towels and discard into regular waste.*
- *Care must be taken to avoid splashing or generating aerosols during the clean up.*
- *Remove gloves and perform hand hygiene.*

** Adapted from Health Canada's Hand Washing, Cleaning, Disinfection and Sterilization in Health Care, 1998 (p. 32) and Fallis, P. Infection prevention and control in office-based health care and allied systems, 2004.*

6.11 Stain Removal

Principles of stain removal:

1. *All stains should as far as possible, be removed while still fresh.*
2. *Before using any reagent, it should be tested on a hidden or small portion of the surface.*
3. *If the nature of the stain unknown, it should be treated first by the least harmful method, passing on from one process to next more active until an effective reagent is reached.*
4. *The nature and texture of the surface should be borne in mind while selecting the reagent for stain removal.*
5. *The reagent bottle should be tightly capped after each use.*
6. *The room should have good ventilation.*

7. After stain removal, the reagent should be neutralized. An acidic solution is neutralized with an alkaline one and vice-versa. A thorough rinsing with clean water is essential after each treatment.

Table 7 Stain removal from floors

Type of stain	Methodology
Rust	Apply a poultice of sodium citrate, glycerine, precipitate of calcium carbonate and water. Let it dry and scrape off.
Ink	From marble and terrazzo – apply a poultice of sodium perborate and turpentine oil. Let it dry and scrape off.
Chewing Gum	Harden with ice, scrape off. If stain is left, rub with steel wool dipped in cleanser, rinse dry and polish.
Acid	Clean with dilute general purpose cleaner. Neutralize with ammonia. If stain persists, use steel wool dipped with cleanser. Rinse dry & polish.
Blood	Rub with concentrated cleanser and in case of stubborn stains use zero degree steel wool dipped in cleanser. Rinse dry and polish

Table 8 Stain removal from polished wood

Type of stain	Methodology
Ink	Mop it as quickly as possible. Rub with fine steel wool or use hot solution of a weak acid and then rinse. In both cases, the stain, colour and polish will be removed. So rub with linseed oil or shoe polish to darken it and later apply polish
Spills, slight heat or burn marks	a) Rub with a rag moistened with a drop or two of liquid metal polish or methylated spirit and then re polish. b) Rub with a very fine abrasive like cigarette ash, steel wool and re polish.
Scratch Marks	If newly scratched cover with iodine or potassium permanganate solution or shoe polish, which will be used according to the colour of the surface i.e. if necessary remove the polish first and then re polish.
Alcohol	a)Wipe up and rub with finger dipped in silver polish, linseed oil or cigarette ash and re polish

b) Wipe up. Put a few drops of ammonia on a damp cloth and rub. Repolish immediately.

Table 9 Stain Removal from Carpet and Upholstery

Type of stain	Methodology
Mud	Vacuum when dry. Use carpet spotting kit or shampoo method. Use dry cleaning method (methylated spirit) if required.
Candle Wax	Remove deposit. Cover with the blotting paper and press with warm iron. Repeat until absorbed. Change paper often. Remove traces with methylated spirit or any grease solvent.
Ink Writing	Flush with soda siphon. Blot. Sponge with a solution of 50% Vinegar and 50% water. Blot. If necessary consult professional.
Ink Ball Pen	Use dry cleaning method. Dab with methylated spirit plus a little white vinegar or use vinegar and milk in sponging and soaking method.
Tar	Remove deposit. Rub with glycerine solution. Rinse, blot. Shampoo and brush the pile.
Urine	Flush with soda siphon. Blot. Sponge with vinegar solution. Sponge with antiseptic solution.
Vomit	Remove deposit. Flush with soda siphon. Blot or sponge with borax solution. Sponge with antiseptic solution.
Curry	Remove excess. Use carpet shampoo method(ice cream, chocolate use dry cleaning method)
Dyes	Use dry cleaning method with methylated spirit plus a few drops of ammonia. Test first.
Burns	From carpet trim burnt fibers first with scissors. Then use carpet shampoo plus 1 tbs white vinegar. Call for professional advice if required.
Battery Acid	From carpet act fast. Blot. Sponge with solution of borax.
Grease, Oil, Cream, Hair Oil	Remove deposit. Use dry cleaning method or use iron and blotting paper. Use carpet shampoo method later.

7. Cleaning Agents and Disinfectants

Cleaning is the removal of foreign material (e.g., dust, soil, organic material such as blood, secretions, excretions and microorganisms) from a surface or object. Cleaning physically removes rather than kills microorganisms, reducing the organism load on a surface. It is accomplished with water, detergents and mechanical action. The key to cleaning is the use of friction to remove microorganisms and debris. Thorough cleaning is required for any equipment/device to be disinfected, as organic material may inactivate a disinfectant. This may be accomplished through a two-step process involving a cleaner followed by a disinfectant, but is more commonly accomplished in the health care organisation through a one-step process using a combined cleaner/disinfectant product.(1)

Disinfection is a process used on inanimate objects and surfaces to kill microorganisms. Disinfection will kill most disease-causing microorganisms but may not kill all bacterial spores. Only sterilization will kill all forms of microbial life. (1)

Detergents remove organic material and suspend grease or oil. Equipment and surfaces in the health care setting must be cleaned with approved hospital-grade cleaners and disinfectants. Equipment cleaning/disinfection should be done as soon as possible after items have been used. A variety of products from a number of suppliers can be used to achieve effective cleaning. It is important to follow the manufacturer's instructions when using cleaning agents.(1)

Hospital-grade disinfectants for use in all health care settings include:

- Alcohols
 - 60-90% ethyl or isopropyl alcohol
- Chlorine
 - Sodium hypochlorite ('bleach')
 - Calcium hypochlorite
- Phenolics
- Quaternary Ammonium Compounds ('QUATs')
- Iodophors
- Hydrogen Peroxides (1)

Table 10 Advantages and Disadvantages of Hospital-grade Disinfectants and Sporicides Used for Environmental Cleaning (1)

Process Option	Uses/Comments	Advantages/Comments	Disadvantages/Comments
Alcohols (70-95%)	<ul style="list-style-type: none"> • External surfaces of some equipment (e.g., stethoscopes) • Noncritical equipment used for home health care • Disinfection is achieved after 10 minutes of contact. • Observe fire code restrictions for storage of alcohol. 	<ul style="list-style-type: none"> • Non-toxic • Low cost • Rapid action • Non-staining • No residue • Effective on clean equipment/devices that can be immersed 	<ul style="list-style-type: none"> • Evaporates quickly - not a good surface disinfectant • Evaporation may diminish concentration • Flammable - store in a cool well ventilated area; refer to Fire Code restrictions for storage of large volumes of alcohol • Coagulates protein; a poor cleaner • May dissolve lens mountings • Hardens and swells plastic tubing • Harmful to silicone; causes brittleness • May harden rubber or cause deterioration of glues • Inactivated by organic material • Contraindicated in the O.R.
Chlorines (e.g., sodium hypochlorite or bleach)	<ul style="list-style-type: none"> • Hydrotherapy tanks, exterior surfaces of dialysis equipment, cardiopulmonary training mannequin, environmental surfaces (use 0.1% for surface 	<ul style="list-style-type: none"> • Low cost • Rapid action • Readily available in non hospital settings • Sporicidal at higher 	<ul style="list-style-type: none"> • Corrosive to metals • Inactivated by organic material; for blood spills, blood must be removed prior to disinfection • Irritant to skin and mucous membranes • Should be used immediately once diluted

	<p><i>cleaning and soaking of items)</i></p> <ul style="list-style-type: none"> • <i>Noncritical equipment used for home health care</i> • <i>Blood spills (use 0.05% sodium hypochlorite for a minor blood spill and 0.5% for a major blood spill)</i> 	<p><i>concentrations</i></p>	<ul style="list-style-type: none"> • <i>Use in well-ventilated areas</i> • <i>Must be stored in closed containers away from ultraviolet light & heat to prevent deterioration</i> • <i>Stains clothing and carpets</i>
Phenolics	<ul style="list-style-type: none"> • <i>Floors, walls and furnishings</i> • <i>Hard surfaces and equipment that do not touch mucous membranes (e.g., IV poles, wheelchairs, beds, call bells)</i> • <i>DO NOT use phenolics in nurseries</i> 	<ul style="list-style-type: none"> • <i>Leaves residual film on environmental surfaces</i> • <i>Commercially available with added detergents to provide one-step cleaning and disinfecting</i> • <i>Slightly broader spectrum of activity than QUATs</i> 	<ul style="list-style-type: none"> • <i>Do not use in nurseries or equipment contacting infants (e.g., baby scales)</i> • <i>Not recommended for use on food contact surfaces</i> • <i>May be absorbed through skin or by rubber</i> • <i>May be toxic if inhaled</i> • <i>Corrosive</i> • <i>Some synthetic flooring may become sticky with repetitive use</i>
Quaternary ammonium compounds (QUATs)	<ul style="list-style-type: none"> • <i>Floors, walls and furnishings</i> • <i>Blood spills prior to disinfection</i> 	<ul style="list-style-type: none"> • <i>Non-corrosive, non-toxic, low irritant</i> • <i>Good cleaning ability, usually have detergent</i> 	<ul style="list-style-type: none"> • <i>Do not use to disinfect instruments</i> • <i>Limited use as disinfectant because of narrow microbicidal spectrum</i> • <i>Diluted solutions may support the growth of</i>

	<i>properties</i>	<i>microorganisms</i>
	<ul style="list-style-type: none"> • <i>May be used on food surfaces</i> 	<ul style="list-style-type: none"> • <i>May be neutralized by various materials (e.g., gauze)</i>
<i>Iodophors (Non-antiseptic formulations)</i>	<ul style="list-style-type: none"> • <i>Hydrotherapy tanks</i> • <i>Thermometers</i> • <i>Hard surfaces and equipment that do not touch mucous membranes (e.g., IV stands, wheelchairs, beds, call bells)</i> • <i>DO NOT use antiseptic iodophors as hard surface disinfectants</i> 	<ul style="list-style-type: none"> • <i>Rapid action</i> • <i>Non-toxic</i> • <i>Corrosive to metal unless combined with inhibitors</i> • <i>Inactivated by organic materials</i> • <i>May stain fabrics and synthetic materials</i>
<i>Hydrogen peroxide enhanced action formulation (HP-EAF) 0.5% (7% solution diluted 1:16)</i>	<ul style="list-style-type: none"> • <i>Isolation room surfaces</i> • <i>Clinic and procedure room surfaces</i> • <i>Low-level disinfection is achieved after 5 minutes of contact at 20°C.</i> • <i>Monitoring not required, however test kits are</i> 	<ul style="list-style-type: none"> • <i>Safe for environment</i> • <i>Non-toxic</i> • <i>Rapid action</i> • <i>Available in a wipe</i> • <i>Active in the presence of organic material</i> • <i>Excellent cleaning</i> • <i>Contraindicated for use on copper, brass, carbon-tipped devices and anodised aluminium</i>

	<i>available from the manufacturer</i>	<i>ability due to detergent properties</i>	
Hydrogen peroxide enhanced action formulation (HP-EAF) 4.5%	<ul style="list-style-type: none"> • <i>Disinfection of toilet bowls, sinks, basins and commodes in washrooms of C.difficile patients</i> • <i>Following cleaning, sterility is achieved with a 4.5% solution after 10 minutes of contact.</i> • <i>Do not use on medical devices or equipment or as a general environmental surface cleaner or disinfectant.</i> 	<ul style="list-style-type: none"> • <i>Sporicidal</i> • <i>Available in a gel format to ensure vertical surface adherence during required contact time</i> • <i>Safe for environment</i> • <i>Non-toxic</i> 	<ul style="list-style-type: none"> • <i>Expensive</i> • <i>Contraindicated for use on copper, brass, carbon-tipped devices and anodised aluminium, rubber, plastics</i> • <i>Do not use on monitors</i>
Hydrogen peroxide 3% (Non-antiseptic formulations)	<ul style="list-style-type: none"> • <i>Noncritical equipment used for home health care</i> • <i>Floors, walls, furnishings</i> • <i>Disinfection is achieved with a 3% solution after 30 minutes of contact.</i> 	<ul style="list-style-type: none"> • <i>Rapid action</i> • <i>Safe for the environment</i> • <i>Non-toxic</i> 	<ul style="list-style-type: none"> • <i>Contraindicated for use on copper, zinc, brass, aluminum</i> • <i>Store in cool place, protect from light</i>

General principles while using a hospital disinfectant:(1)

- *It is most important that an item or surface be free from visible soil and other items that might interfere with the action of the disinfectant, such as adhesive products, before a disinfectant is applied, or the disinfectant will not work.*
- *A hospital-grade disinfectant may be used for equipment that only touches intact skin.*
- *It is important that the disinfectant be used according to the manufacturer's instructions for dilution and contact time.*
- *Minimize the contamination levels of the disinfectant solution and equipment used for cleaning. This can be achieved by ensuring proper dilution of the disinfectant, frequently changing the disinfectant solution and by not dipping a soiled cloth into the disinfectant solution (i.e., no 'double-dipping').*
- *Personal protective equipment must be worn appropriate to the product(s) used.*
- *There should be a quality monitoring system in place to ensure the efficacy of the disinfectant over time (e.g., frequent testing of product).*

8. Equipment used for cleaning

The following is the list of advised equipment which can be used for sanitation purposes. The list is not exhaustive and different hospitals can identify the number and types as per their organizational characteristics and workload.

- a) Heavy duty scrubber dryer*
- b) Ride on scrubbers*
- c) Walk behind scrubbers*
- d) Vacuum Cleaner wet & dry*
- e) High Pressure Jet Cleaners/Washer*
- f) Road Sweeper (Manual and ride on Machine/vehicle)*
- g) Scrubbing & Vacuuming (Combined)*
- h) Small battery operated scrubber Machine*
- i) Polishing & Cleaning Machine*
- j) Double bucket wringer trolleys/Multi use trolleys/ Bucket carrying trolleys*
- k) Spray pump for pest control as per(Indian Pest Control Association) IPCA recommendations*
- l) Rubber squeezers*
- m) Ladder (24ft and 12ft)*
- n) Scissor Ladders*
- o) Dust Control mop*
- p) Caddy Baskets*
- q) Any other Cleaning Equipment as per the need / requirement of the hospital*

9. Biomedical Waste Management

Biomedical waste may be defined as

“Any waste, generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biological.”

It is very important to have proper biomedical waste management and handling system as prescribed in the Biomedical Waste (Management and Handling Rules) 1998, otherwise it exposes the patients, visitors and staff to following hazards:

- *Transmission of infections for e.g. hepatitis B, HIV, other microbes etc.*
- *Mechanical injury*
- *Re-circulation of waste*
- *Air pollution*
- *Water pollution*
- *Land pollution*
- *Fire*
- *Breeding of flies and insects*
- *Proliferation of rodents*
- *Loss of aesthetics*
- *Nuclear waste hazards & carcinogenic effects*

With regards to biomedical waste management, following are some of the key functions of hospital administration:

- *To get authorization of State Pollution Control Committee/ State Pollution Control Board*
- *To ensure the effective implementation of all the provisions of the Biomedical Waste Management and Handling Rules 1998.*

- *Constitute BMW management committee*
- *Identify and designate a nodal officer as Officer I/c*
- *Survey and evaluation of waste generated in the hospital*
- *Identification of locations for placement of bins/ equipment*
- *Procurement of equipment, materials and supplies (colour coded bins, bags, needle destroyer, puncture proof containers, colour coded covered waste collection trolleys etc.)*
- *Source reduction by encouraging reusable*
- *Strategy implementation by*
 - *Proper segregation as per policy*
 - *Proper collection and transportation*
 - *Adequate treatment and disposal*
- *Contract finalization with outside agency*
- *Safety measures for all categories of staff*
- *Awareness and training– all categories*

Segregation of biomedical waste is the most important step in the management of Biomedical Waste. The biomedical waste from different patient care areas should be collected and transported to the central biomedical waste collection facility by the hospital attendant or by the staff of the agency to whom biomedical waste disposal services are being outsourced. The various collection points may be identified within the healthcare organisation for handing over the biomedical waste to the outsourced agency under the supervision of sister i/c or staff of that patient care area.

For further details, Biomedical Waste (Management and Handling) Rules 1998 and its subsequent amendments may be referred.

10. *Pest control*

Pest control is an integral component of sanitation services. For hospitals of 200 bedded or more, separate tender can be floated for work by specializing agencies, in smaller hospitals, the same housekeeping tender shall include pest control services. The following points should be taken into consideration while drawing the terms and conditions of the contract for pest control agency:

- *Functional details*
- *Manpower details*
- *Details of chemicals to be used*
- *Quality control.*

11.1 *Functional details*

It should contain the scope of work for pest control services and the total floor area provided

11.2 *Chemicals details*

This is the most important component for outsourcing of pest control services and due care should be taken while drafting the terms and conditions. Only those chemicals should be used in hospital setting, which are fit for usage in healthcare setting.

Details of chemicals should contain - Name of chemical, Name of company, Concentration, Chemical composition, Quantity consumed, Size of packing, Batch no, Manufacturing & expiry date

- *Chemical Procurement*
- *Quality Certification – by using chemicals certified by only following bodies*
 - *WHOPES (World Health Organisation Pesticide Evaluation Scheme)*
 - *CIB (Central Insecticide board)*
 - *BIS (Bureau of Indian Standards)*
- *Details of chemicals and alternate chemicals*
- *Small stock of antidote*

- *No open baiting*
- *Periodicity of spraying chemicals*

11.3 Manpower details

- *Supervisor*
- *Workers*
- *Vendor license – Plant protection officer, Ministry of Agriculture, Govt. of Delhi*

11.4 Quality control

- *Records of application*
- *Emergency calls*
- *Monthly feedback*
 - *Application of chemicals*
 - *Attending emergency calls*
- *Pest Evaluation*
 - *Rat, cockroaches, mosquito, flies, bed bugs, termite*
 - *Good, average, poor*
- *Penalty clauses Rs. 1000/- per adverse event (unsatisfactory report from the user area)*

11. Storage of Cleaning Supplies and Utility Rooms

All chemical cleaning agents and disinfectants should be appropriately labeled and stored in a manner that eliminates risk of contamination, inhalation, skin contact or personal injury. Chemicals must be clearly labeled and a Material Safety Data Sheet (MSDS) must be readily available for each item in case of accidents. If a refillable bottle is filled with a disinfectant solution, it should never be topped up with fresh disinfectant. Always use a clean, dry, appropriately-sized bottle, label the product and date it. The product should be discarded when past the expiry date for stability.(1)

Equipment used to clean toilets (e.g., toilet brushes, toilet swabs) should not be carried from room-to-room. If feasible, the toilet brush may remain in the room; if not, consideration should be given to using disposable toilet swabs. Toilet cleaning and disinfecting equipment should be discarded when the patient leaves or as required. In patient care cubicles having multiple beds, a system should be developed for replacement of toilet brushes on a regular basis or as required. When choosing a tool for cleaning toilets, consideration should be given to equipment that will minimize splashing.(1)

The following areas are deemed to be essentially provided for efficient and effective functioning of sanitation services:

- 1. Sitting room/staff room: To be utilised by both for sanitary attendants, hospital attendants and other group D staff of that area.*
- 2. Sluice room: For storing dirty supplies (linen, biomedical waste etc.). A dedicated area shall be provided within the sluice room for washing and cleaning of mops as well as other sanitary equipments.*
- 3. Storage space for cleaning supplies/ Janitors closet: Janitors closet shall be provided in each area for storage of supplies by the sanitary attendant meant for sanitation for e.g. dust control, swivel brush, mops etc.*

12. Assessment of Cleanliness and Quality Control (1)

The Sanitation department is responsible to ensure that the quality of cleaning maintained in the health care organisation meets appropriate best practices. The responsibility for ensuring that the standardized cleaning practices are adhered to lies not just with the person performing the task but also with the direct supervisor and management of the department or agency providing the sanitation services. To that end, it is important to incorporate elements of quality improvement into the program, including monitoring, audits and feedback to staff and management.(1)

Monitoring should be an ongoing activity built into the routine cleaning regimen. Regularly scheduled monitoring should take place immediately after cleaning, to ensure that the cleaning has been carried out correctly and to an appropriate standard. Data from monitoring should be retained and used in trend analysis and compared with benchmark values that have been obtained during the validation of the sanitation program.(33)

Evaluating the cleanliness of the health care organisation periodically and whenever changes to methodologies are made is essential to ensure that achievable cleanliness standards are maintained and to ensure consistency of standards throughout time in changing circumstances. Audits should:(1)

- *Be measurable*
- *Highlight areas of good performance, facilitate positive feedback and identify areas for improvement*
- *Provide a measurement that may be used as a quality indicator.*

Round the year, Hospital Administration should monitor all areas. It should cover monitoring of a proportion of the facilities/areas within Hospital or may be entire hospital in a phase wise manner. It is recommended that compliance is assessed using a standardized monitoring template. The purpose of the peer review audit is to provide a degree of independent scrutiny within the monitoring system. The peer review process may include

representation from the following, accompanied by a representative from Sanitation Services.(1)

- 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.

It is important to identify and use both cost and quality information to assess performance. Comparing processes across organisations (e.g. how the job is done, how the service is provided) should also be part of benchmarking activity, as context often enables comprehension of numerical and qualitative data.(25)

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

- i. A daily report of staff on duty in all the shifts*
- ii. A daily report of the status of the equipment and its utilization*
- iii. A daily report of the washing undertaken*
- iv. A daily report of the chemicals and the consumables used*
- v. A daily report of the general sanitation from the Sanitation Officer or any other officer deputed for the purpose based on the designated Performa*
- vi. A monthly feedback report from the user areas as based on Turnaround time (TAT) and Key Performance Indicators (KPI).*
- vii. A centralized complaint reporting and redressal mechanism to be manned by the bidder. The redressal has to be certified by the complainant.*
- viii. Any other reporting mechanism as desired by the Institute.*

The feedback mechanism for the reporting of performance should be three tiers as given below:

- i. Feedback received from the sanitation department itself*

- ii. *Feedback received from the end user*
- iii. *Feedback received from the hospital administration*

There are 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 health care settings:(1)

- *Direct and indirect observation (e.g., visual assessment, observation of performance, patient/resident satisfaction surveys)*
- *Residual bioburden (e.g., environmental culture, adenosine triphosphate – ATP – bioluminescence).*
- *Environmental marking tools (e.g., fluorescent marking).*

Fast, reproducible, and reliable methods are needed for environmental cleaning evaluation in order to predict timely clinical risk.(34) The following table provides the various advantages and disadvantages of different kind of methodologies adapted for evaluation of cleaning practices. The institution as per their competency and financial capability can choose any of the below given methods for evaluation of cleanliness.

Table 11 Summary of methodologies (34)

	Advantages	Disadvantages
Assessing Performance		
Visual inspection	<ul style="list-style-type: none"> • <i>Can be used for large areas (wards, rooms)</i> • <i>Can be done with minimal training</i> • <i>Benchmarking possible, simple and inexpensive</i> 	<ul style="list-style-type: none"> • <i>Subjective</i> • <i>Does not assess bioburden</i> • <i>Does not correlate with bioburden</i> • <i>Can be confounded by clutter, fabric deficits and odours</i>
Fluorescent gel	<ul style="list-style-type: none"> • <i>Quick</i> 	

	<ul style="list-style-type: none"> • <i>Provides immediate feedback on performance</i> • <i>Minimal training required</i> • <i>Objective Benchmarking possible</i> • <i>Relatively inexpensive</i> 	<ul style="list-style-type: none"> • <i>Does not assess bioburden</i> • <i>Could be labour intensive as surfaces must be marked before cleaning and checked post cleaning</i>
Assessing Outcome		
ATP bioluminescence	<ul style="list-style-type: none"> • <i>Quick</i> • <i>Provides immediate feedback</i> • <i>Minimal training required</i> • <i>Objective</i> 	<ul style="list-style-type: none"> • <i>Expensive Low sensitivity and specificity</i> • <i>No current standardisation of tests</i> • <i>Variable benchmarks Technology constantly changing</i>
Microbial cultures	<ul style="list-style-type: none"> • <i>High sensitivity and specificity</i> • <i>Objective</i> • <i>Provides direct indication of the presence of whatever pathogen is isolated</i> • <i>May suggest environmental guidelines reservoir(s) and/or source of outbreak</i> 	<ul style="list-style-type: none"> • <i>Expensive</i> • <i>Prolonged time for results</i> • <i>Requires accessible laboratory resources and trained personnel for interpreting results</i> • <i>Not supported for routine use by local and international guidelines</i> • <i>Few laboratories NATA accredited to perform these Outbreak tests</i> • <i>Requires standardised benchmark to assess infection risk</i>

13. Cleaning standards

Elements (26)

Fifteen items to be cleaned within a health care service (surfaces, articles or fixtures) have been grouped under four major headings: building elements, fixture elements, equipment elements and environmental elements. (26)

14.1 Building elements

Building elements	Required cleaning standard
<p>1. External features, fire exits and stairwells Handrails are clean and free of stains</p>	<p>Landings, ramps, stairwells, fire exits, steps, entrances, porches, balconies, eaves and external light fittings are free of dust, grit, dirt, leaves, cobwebs, rubbish, cigarette butts and bird excreta. Handrails are clean and free of stains. Garden furniture is clean and operational.</p>
<p>2. Walls, skirtings and ceilings</p>	<p>Internal and external walls and ceilings are free of dust, grit, dirt, lint, soil, film and cobwebs. Walls and ceilings are free of marks caused by furniture, equipment or staff. Light switches are free of fingerprints, scuffs and any other marks. Light covers and diffusers are free of dust, grit, dirt, lint and cobwebs. Polished surfaces are of a uniform lustre.</p>
<p>3. Windows (internal)</p>	<p>Surfaces of glass are clear of all streaks, spots and marks, including fingerprints and smudges. Window frames, tracks and ledges are clear and free of dust, dirt, grit, marks, spots and cobwebs.</p>
<p>4. Doors</p>	<p>Internal and external doors and doorframes are free of dust, grit, dirt, lint, soil, film, fingerprints and cobwebs. Doors and door frames are free of marks caused by furniture, equipment or staff. Air vents, relief grilles and other ventilation outlets are kept unblocked and free of dust, grit, dirt, soil, film, cobwebs, scuffs and any other marks. Door tracks and door jambs are free of grit, dirt and other</p>

debris. Polished surfaces are of a uniform lustre.

- | | |
|-----------------------------------|---|
| 5. Hard Floors | <p><i>The floor is free of dust, grit, dirt, litter, marks and spots, water or other liquids.</i></p> <p><i>The floor is free of polish or other build-up at the edges and corners or in traffic lanes.</i></p> <p><i>The floor is free of spots, scuffs or scratches on traffic lanes, around furniture and at pivot points.</i></p> <p><i>Inaccessible areas (edges, corners and around furniture) are free of dust, grit, dirt, lint and spots.</i></p> <p><i>Polished or buffed floors are of a uniform lustre.</i></p> <p><i>Appropriate signage and precautions are taken regarding pedestrian safety near newly cleaned or wet floors.</i></p> |
| 6. Ducts, grills and vents | <p><i>All ventilation outlets are kept unblocked and free of dust, grit, dirt, soil, film, cobwebs, scuffs and any other marks.</i></p> <p><i>All ventilation outlets are kept clean and uncluttered following cleaning.</i></p> |

14.2 Fixture elements

Fixture element	Required cleaning standard
1. Electrical fixtures and appliances	<p><i>Electrical fixtures and appliances are free of grease, dirt, dust, encrustations, marks, stains and cob webs.</i></p> <p><i>Electrical fixtures and appliances are kept free from signs of use or non-use.</i></p> <p><i>Hygiene standards are satisfied where the fixture or appliance is used in food preparation.</i></p> <p><i>Range hoods (interior and exterior) and exhaust filters are free of grease and dirt on inner and outer surfaces.</i></p> <p><i>Motor vents etc. are clean and free of dust, dirt and lint. Drinking fountains are clean and free of stains and mineral build-up.</i></p> <p><i>Insect killing devices are free of dead insects, and are clean and functional.</i></p>
2. Furnishings and fixtures	<p><i>Hard surface furniture is free of spots, soil, film, dust, dirt, fingerprints and spillages.</i></p> <p><i>Soft surface furniture is free from stains, soil, dirt, film and dust.</i></p>

Furniture legs, wheels and castors are free from mop strings, soil, dirt, film, dust and cobwebs.

Inaccessible areas (edges, corners, folds and crevices) are free of dust, grit, dirt, lint and spots. All high surfaces are free from dust, dirt and cobwebs.

Curtains, blinds and drapes are free from stains, dust, dirt, cobwebs, lint and signs of use or non-use. Equipment is free of tapes/plastic etc that may compromise cleaning. Furniture has no odour that is distasteful or unpleasant.

Shelves, bench tops, cupboards and wardrobes/lockers are clean inside and out and free of dust, dirt and litter or stains. Internal plants are free of dust, dirt and litter.

Waste/rubbish bins or containers are clean inside and out, free of stains and mechanically intact.

Fire extinguishers and fire alarms are free of dust, grit, dirt and cobwebs.

3. Pantry fixtures and appliances

Fixtures, surfaces and appliances are free of grease, dirt, dust, encrustations, marks, stains and cobwebs.

Electrical and cooking fixtures and appliances are kept free from signs of use or non-use.

Motor vents etc are clean and free of dust, dirt and lint. Refrigerators/freezers are clean and free of ice build-up.

4. Toilets and bathroom fixtures

Porcelain and plastic surfaces are free from smudges, smears, body fats, soap build-up and mineral deposits.

Metal surfaces, shower screens and mirrors are free from streaks, soil, dirt, smudges, soap build-up and oxide deposits.

Wall tiles and wall fixtures (including soap and cream dispensers and towel holders) are free of dust, grit, dirt, smudges/streaks, mould, soap build-up and mineral deposits.

Shower curtains and bath mats are free from stains, smudges, smears, odours, mould and body fats.

Plumbing fixtures are free of smudges, dust, dirt, soap build-up and mineral deposits.

Bathroom fixtures are free from odours that are distasteful or unpleasant.

Polished surfaces are of a uniform lustre. Sanitary disposal units are clean and functional. Consumable items are in sufficient supply.

14.3 Equipment elements

Equipment element	Required cleaning standard
1. Patient equipment	<p><i>Equipment is free from soil including blood or body fluids, smudge, dust, dirt, fingerprints, grease and spillages.</i></p> <p><i>Equipment is free of tapes/plastics etc that may compromise cleaning.</i></p> <p><i>Equipment legs, wheels and castors are free from mop strings, soil, film, dust, dirt and cobwebs.</i></p> <p><i>Equipment has no odour that is distasteful or unpleasant. Equipment is free from signs of non-use.</i></p>
2. Cleaning equipment	<p><i>Electrical appliances (and filters), wet and dry vacuum cleaners and burnishes/buffing machines are stored free of grease, dirt, dust, encrustations, marks, stains and cobwebs.</i></p> <p><i>Electrical and battery operated appliances have visible, current tags displaying safety check, service and inspection information.</i></p> <p><i>Battery-operated equipment (auto scrubber) is stored free of dirt, dust, marks, stains and cobwebs.</i></p> <p><i>Legs, handles, wheels and castors on cleaning equipment are free from stains, soil, dirt, film, cotton, fluff, cobwebs and dust.</i></p> <p><i>Cleaning equipment using water is stored clean and dry.</i></p> <p><i>Vacuum head and hose are free from dust and blockages and vacuum bags are in good condition and not over full.</i></p> <p><i>Annual review and risk assessment of cleaning equipment is documented and current. Cleaning trolleys are free from spillages, dirt and dust.</i></p> <p><i>Use of cleaning chemicals complies with chemical safety data sheets, dilution and storage instructions.</i></p>

14.4 Environmental elements

Environmental element	Required cleaning standard
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-
- 1.** *General tidiness* *The area appears tidy and uncluttered*

Floor space is clear, only occupied by furniture and fittings designed to sit on the floor. Furniture is maintained in a way that allows for cleaning. Fire access and exit doors are left clean and unhindered.
 - 2.** *Odour control* *The area smells fresh.*

There is no odour that is distasteful or unpleasant.

Room deodorisers are clean and functional.
-

14. Occupational Health and Safety (1)

Sanitation staffs are exposed to chemical agents and may be exposed to the same infectious agents in the workplace as are health care providers. Many tasks may require the use of personal protective equipment for protection from chemicals or microorganisms. There are also many ergonomic issues related to housekeeping activities, such as pushing, pulling, lifting and twisting.(1)

Occupational Health and Safety Issues include staff immunization, appropriate use of PPE, staff exposures to blood and body fluids and other infection hazards, work restrictions and staff safety issues. There must be written policies and procedures for the evaluation of staff (employees or contract workers) who are, or may be, exposed to blood or body fluids and other infectious hazards that include:

- *A sharps injury prevention program (19)*
- *Timely post-exposure follow-up and prophylaxis when indicated (19)*
- *A respiratory protection program if staffs are entering an airborne infection isolation room and a mechanism for following staff that have been exposed to tuberculosis review.*
- *Reporting of exposures to appropriate authorities.*

Personal Protective Equipment, or PPE, may be defined as all equipment, including clothing affording protection against the weather, which is intended to be worn or held by a person at work and which protects him/her against one or more risks to his/her health and safety. PPE is to be supplied and used at work whenever there are risks to health and safety that cannot be adequately controlled in any other way. PPE must be: (20)

- *Properly assessed before use to ensure that it is suitable;*
- *Maintained and stored properly;*
- *Provided with instructions on how to use it safely;*
- *Used correctly by employees.*

Selection of housekeeping cleaning equipment must follow ergonomic principles. Care should be taken in the choice of buckets, mops and other materials. Due to the repetitive nature of many of the tasks, products that are lighter in weight, easily emptied and having proper handle length help reduce the risk of injury.

15. Evaluation of Bids for Outsourcing of Sanitation Services

The bidder should fulfill all the eligible criteria for qualification as prescribed by respective healthcare organisation. **The tendering evaluation shall be done on weightage with 70% to Technical Evaluation and 30% to financial evaluation.**

16.1 Technical Bid Evaluation Criteria

The technical bid evaluation committee should be constituted by the hospital to evaluate the Technical Proposals on the basis of their responsiveness to the tender terms, applying the evaluation criteria, sub-criteria and point system specified. During the technical evaluation stage, each bidder shall be assigned different marks out of a total of 100 marks, as per the criteria specified below. The following table gives the evaluation criteria illustrative for a 1000 bedded hospital. The values can be determined by respective hospitals depending on their requirements. 60 marks shall be minimum score for qualification in the technical bid.

Illustration 1 (for Technical Weightage)

If a Bidder has secured 80 marks out of the total 100 marks in technical evaluation, the technical evaluation score shall be: 56 i.e. $\{80 \times 70\%$

16.2 Financial/ Price Bid evaluation Criteria:

The financial evaluation shall be carried out and financial bids of all the bidders shall be given 30% of weightage. The Bidder with the lowest bid Prices (L1) shall be assigned full 30 marks (i.e. $30\% \times 100$).

Illustration 2

If, the bidder at Illustration 1 is L1 and quoted Rs.100/-, then his total score shall be **86** i.e. (56 Technical Score + 30 Financial Score). The financial scores of the other bidders (i.e. L2, L3... and so on) shall be computed as under and as explained at illustration 3 below:

$$30 \times \text{Lowest Price (L1 Price)} / \text{Quoted Price (L2 OR L3....)}$$

Table 12 Technical criteria and weightage matrix for evaluation (Total: 100 marks)

S.No.	Criteria					
1.	Total years of experience in the field of Housekeeping services (Determined from years of incorporation) Firms less than 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
		5 marks	10 marks	15 marks	20 marks	25 marks
2.	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
		5 marks	10 marks	15 marks	20 marks	25 marks
3.	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
		5 marks	10 marks	15 marks	20 marks	25 marks
4.	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 organisation 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 organisation where the bidder is providing sanitation services			
			10 marks	15 marks		

Illustration 3

If the Bidder at Illustration 1 is L2 Bidder and he quoted Rs.125, therefore 30% being the weighted value, the financial scores for L2 shall be computed as under

$$30 \times 100 (\text{lowest prices L1}) / 125 (\text{quoted prices} - \text{L2}) = 24 (\text{financial score})$$

Therefore L2 Bidder shall have total value of **80** (56 Technical Value + 24 Financial Value)

16.3 Financial Bid Evaluation and Determination of the Successful Bidder

The Bidder meeting the minimum eligibility criteria and with the **highest marks/ rank** (i.e. the **total** of technical evaluation marks and financial evaluation marks) shall be deemed as the **successful Bidder** and shall be considered eligible L1 Bidder for further process.

16. Additional Considerations (1)

17.1 Cleaning Food Preparation Areas

These guidelines does not address sanitation practices required for facility kitchens, cafeterias, commercial food premises or any area where food is prepared or stored (e.g., unit kitchens). Healthcare organisations should have policies and procedures that address the cleaning of these areas that follow the requirements of food safety regulations.

17.2 Construction and Containment

Construction activities generate dust and contaminants that may pose a risk to patients, staff or visitors in all health care organisations. Wherever required, work must be performed under appropriately controlled conditions.(19) Cleaning is of particular importance both during construction and after completion of the construction project. What is considered to be 'clean' may be interpreted differently by contractors and hospital/ health care staff:

- *'Construction Clean' is the level of cleaning performed by construction workers to remove gross soil, dust and dirt, construction materials and workplace hazards within the construction zone.(3) This is done at the end of the day, or more frequently if needed, to avoid accumulation of dust.*
 - *Floors are swept to remove debris*
 - *Large pieces of drywall, wiring etc. are removed*
 - *Work surfaces may be wiped clean*
- *Hotel Clean and Hospital Clean begin where the construction site ends, i.e., outside the hoarding, and are generally done by the staff of the health care setting.*

It is important that there is good liaison between the contractor, and housekeeping. The level of cleaning that is expected during construction and at commissioning must be stated in the contract and the responsibility for cleaning both the job site and adjacent areas must be clearly defined. Wherever there is transport of construction materials (both clean and used materials) through the health care organisation, a clear plan for traffic flow that bypasses care areas as much as possible must be established and adhered to.

17.3 Environmental Cleaning following Flooding

In the event of a flood (e.g., overflow from system, toilet, and sewer), the area must be immediately assessed by Infection Control team to determine the risk of contamination. Until confirmed as a clean water source, all staff should assume that the water is contaminated. Immediate contamination may occur if the source of the flood water harbours pathogenic bacteria (e.g., sewer or toilet overflow) and the area will need to be cordoned off until cleaning and disinfection are completed. If the flooding involves a food preparation area, all food products that have come into contact with flood water must be discarded and Public Health notified. Public Health must also be notified if vaccine refrigerators are involved in a flood or if flooding leads to a prolonged power outage that compromises food or vaccine refrigeration.

17.4 New and Evolving Technologies

New methods for cleaning and disinfection are continually evolving. Some, such as the use of microfiber technology for surface cleaning and mopping, have been quite successful and are now widely used. Before considering a change from current methods for cleaning and disinfection in a health care setting, the newer product must be weighed against current products in terms of efficacy, ease of implementation, toxicity, effects on patient care, ergonomic considerations and cost implications. Hospital administration, Infection Control Department and Sanitation Department must be involved in all decision-making relating to changes in cleaning and disinfection methodologies and products in the health care setting.

Microfiber

Microfibers (MF) are densely constructed polyester and polyamide (nylon) fibers that are approximately 1/16 the thickness of a human hair.⁽³⁵⁾ The positively charged microfibers attract dust and bacteria (which have a negative charge), using a combination of static attraction and capillary action, from the surface pores of most surface and flooring materials and hold it tightly so that it is not redistributed around the room during cleaning. MF materials are more absorbent than conventional cloths or cotton-loop mops, enabling them to hold six times their weight in water.⁽³⁵⁾ MF materials can be wet with disinfectants.

Figure 5 Microfiber Mops



Ultra-microfibers (UMF) are thinner than regular MF and are woven from a continuous strand. They are designed to be used with low volumes of water containing neither detergent nor biocidal additives. Ultra-microfiber is used for cloths used in cleaning.

Microfiber Mops

A microfiber mop consists of a synthetic pad fit on a plastic handle. MF mop pads provide a cleaning surface 40 times greater than conventional string mops and increased absorbency. In a 2007 study,(36) an MF mop and bucket were compared with traditional mop and bucket system; the MF system demonstrated superior microbial removal compared to cotton string mops used with a detergent cleaner. The use of a disinfectant did not improve the microbial elimination demonstrated by the MF system, suggesting that a disinfectant is not required when using an MF mop for cleaning floors.

Microfiber and Ultra-microfiber Cloths

MF cloths may be used either dry for dusting or wet for general-purpose cleaning. When used dry on a dry surface, MF cloths do not perform better than other types of materials at

reducing bioburden or organic material,(37) but may be better for dusting due to its electrostatic properties. When wet, however, MF cloths remove significantly more soil than general-purpose cloths or paper towel and transfer significantly less organic debris than general-purpose cloths.(37)

UMF cloths conform better to surfaces containing small abrasions invisible to the naked eye, in which bacteria might lodge and remain after passage of conventional cotton or wet loop cloths. UMF cloths are particularly effective on older surfaces containing micro-fissures.(38) Some UMF cloths are designed to be used without disinfectants. Product claims should be validated before use.

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Appendix I Draft Tender Template

COMPREHENSIVE TENDER-DRAFT

“This tender document is a suggested generic template and suitable amendments may be made in line with the national guidelines for clean hospitals as per the size of the hospital.”

Tender Ref. No. : _____

Subject : Outsourcing of Housekeeping Services at the Hospital

The bidders should be given reasonable time to send their bids.

Performa Document Stating Terms & Conditions for Outsourcing of Housekeeping Services At the Hospital.

Earnest Money Deposit (EMD)

To safeguard against a bidder’s withdrawing or altering its bid during the bid validity period in the case of advertised tender, Bid Security (also known as Earnest Money) is to be obtained from the bidders. Amount of bid security should ordinarily range between two percent to five percent of the estimated value of the services to be outsourced. The bid security is normally to remain valid for a period of forty-five days beyond the final bid validity period.

TENDER for

Selection of Service Agencies to Outsource Housekeeping Services at the Hospital

I. INTRODUCTION

The introduction about the Hospital in terms of the following shall be provided:

- General/Specialty/Super specialty
- Scope of the Services provided at the Hospital
- Total Beds including number of Critical Care Beds (ICU/HDU/Emergency)
- Emergency & OPD Attendance

II. SCOPE OF WORK/SERVICE PROVIDER’S RESPONSIBILITIES FOR HOUSEKEEPING:

1. The Bidder shall provide round the clock Housekeeping services at the Hospital in the specified areas, details of which can be as follows:

Details of areas of Hospital

Sr. No	Location- Risk Areas Wise	No. of areas by risk type	Total floor area
1	High Risk Area		
2	Moderate risk area		
3	Low risk area		

2. The indicative list of manpower based on category and quantity shall be specified. However, provision for varying requirements on dynamic basis for deployment of staff shall be provided. Contingency staffing requirements shall also be included.

Details of manpower:

Staffing Levels:

S. No.	Designation of Category	Manpower Strength
1.	Sr. Facility Manager	As per the size of the organisation
2.	Facility manager	As per the size of the organisation
3.	Sanitary Supervisor	1 for 12-15 S.A.s
4.	Sanitary Attendant (S.A.)	1 S.A. per 2 Hospital Beds
5.	Equipment Operators	As per the machine requirements
6.	Store Keeper	One or more depending on the inventory & workload
7.	Plumber	One plumber should be physically available at all times

The following manpower requirement is according to the type of patient care area shall be maintained by the bidder:

- a) **Wards:** Minimum 1 sanitary attendant in each shift for a ward size of up to 30 beds, if more than 30 beds then one additional sanitary attendant may be provided in the morning shift.
- b) **Operation Theatre:** One sanitary attendant for two operation theatres for each shift.

- c) **Intensive Care Unit:** One sanitary attendant for up to six ICU beds in each shift and thereafter additional for each six beds in the morning shift. However in the evening and night shift allocation can be halved.
- d) **OPD:** In OPD's one dedicated sanitary attendant should be posted for each public toilet considering the number of footfalls and for other areas separate allocation should be made.
- e) Wherever two sanitary attendants are posted effort should be made to post a female sanitary attendant when other being male.
- f) There should be a dedicated cleaning gang of 4 to 8 sanitary attendants depending upon the size of the healthcare organisation which will be utilized for deep cleaning and washing of patient care areas and other areas.
- g) Dedicated sanitary attendants may be posted for cleaning of toilets in patient care areas so as to ensure highest level of hygiene and cleanliness.

3. Qualifications of the Housekeeping manpower:

S. no.	Designation	Eligibility qualification	Experience
1	Sr. Facility Manager	Diploma/Degree in Hotel Management or One Year PG Diploma in Accommodation Operation	10 years in Supervision of sanitation in a recognized Hospital or Institute.
2	Facility manager	Graduate	07 years in Supervision of sanitation in a recognized Hospital or Institute.
3	Floor Supervisor	Graduate	05 years in Supervision of sanitation in a recognized hospital or Institute.
4	Store Keeper	Graduate	03 years in managing stores in a recognized hospital or Institute.
5	Plumber	10 th pass with vocational training course in plumbing	
6	Equipment Operators	10 th Pass with suitable training	
7	Sanitary Attendant	10 th Pass with skill development course in housekeeping/sanitation or in house structured training programme or its equivalent	

Roles and Responsibilities of Sanitary Supervisor

- *To supervise the work of Sanitary Attendants*
- *To provide replacement of Sanitary Attendants if regular Sanitary Attendant is on leave.*
- *To ensure the cleanliness and proper sanitation of the area under his/her supervision.*
- *To report major Engineering works/major repairs to the concerned authorities (PWD, Engineering control room, maintenance department, etc.)*

Roles and Responsibilities of Sanitary Attendant

- *He/she is responsible for keeping the area spick and span, assigned to him/her.*
- *He/she will promptly give spotlessly clean urinals and bed pan as and when required by patients.*
- *He/she will assist nursing staff in collection of urine and stools specimens.*
- *He/she will assist in cleaning and disinfections of soiled linen, mattresses, articles etc.*
- *Any other task assigned by nursing staff, sanitary inspector and other higher officials.*

Roles and responsibilities of plumber

- *He will be on the rolls of the agency to which sanitation services are outsourced.*
- *He will do routine minor repairs of sanitary fittings for ensuring effective sanitation and hygiene level in healthcare organisation.*
- *He will promptly attend to calls received from patient care areas, administrative and other areas.*
- *He will not carry out any major repair work and report such issues to engineering department through his/her supervisor.*
- *Any other task assigned by Hospital Administration.*

4. *Bidder shall ensure cleaning of every area of the hospital. Cleaning shall be inclusive of all the areas which will include the following but not limited to these:*

Floor, walls and tiles, glass partitions, windows with glass, corners, ceilings including cobwebs, doors with handles, chairs & office furniture, telephone, computer, Overhead projectors, Counters & Nurses' station, notice boards, staircases including rear ones and all railings Signage, Door Mats, Drinking water area & equipment cleaning, Garbage/Waste collection, Dust Bins, Terrace cleaning, lightings, all fans, O.T. floors & walls, Patient/ Examination beds &

side table, Gas pipelines dusting, Disinfection of O.T. floor & walls Dressing Rooms, treatment rooms, Toilets/Rest room cleaning, Paved corridors, Lifts cleaning all aspects, switch, exhaust cleaning, Dust cleaning from linen/book/files/curtains and all upholstery, Spill Management as per HIC protocol, Soiled bed /Vomitus cleaning, Dirty Utility/Sluice Room, Disinfection of Mattress, Cleaning of urine pots, bed pans, sputum pots or other patient care items as and when required, Removing soiled linen, Fixed glass panes/structural glazing/external mosaic, Basements, Parking Area, Roads, Green areas, Grills, Water floods/overflow outer areas, Rubble, debris or any other heaps in outer areas, Plastic mugs, OT chappals/slippers, critical equipment, Cleaning during construction works, choked manholes, cleaning services during natural calamity / disaster, Colour coded refuse trolleys to transport bio-medical waste and Pest control, CCTV, Public address system etc.

5. Minor repairs

For hospitals of 200 beds or more where specialized departments like the Engg. & Fire Safety exist, permanent repairs & those needing structural changes/breaking of walls etc., shall be done by the concerned dept., while repairs needing immediate attention shall be dealt with by the Housekeeping like leaking taps, pipes, waste pipes, jets, seal traps, bottle traps, Jalis etc. For this purpose a plumber with adequate stores will be deployed round the clock.

They should report any major sanitation and plumbing repairs not covered under above clause to the Engineering department and get the same rectified from them.

- 6.** *While dusting of the fire extinguishers, gas pipelines, etc., shall be done by the housekeeping, routine maintenance & shafts cleaning shall be done by the concerned depts. In smaller hospitals where there no specialized departments, such works can be outsourced to the housekeeping.*

7. Pest Control:

(For hospitals of 200 beds or more, separate tender can be floated for work by specializing agencies. In smaller hospitals, the same housekeeping tender shall include pest control services.)

- **Chemicals details**

- *Only those chemicals should be used in hospital setting, which are fit for usage in healthcare setting. Details of chemicals should contain - Name of chemical, Name of company, Concentration, Chemical composition, Quantity consumed, Size of packing, Batch no, Manufacturing & expiry date*
- *All Chemicals shall be provided by the bidder. The chemicals shall be of Quality Certification WHOPES, CIB or BIS.*

- **Small stock of antidote shall be maintained by the bidder onsite.**
 - *There shall be no open baiting. Periodicity of spraying chemicals shall be done to ensure quality.*
 - **Manpower requirements shall be as**
 - Supervisor
 - Workers
 - *The outsource agency shall have license from regional statutory bodies.*
 - **Quality control:** *Records of application, Emergency calls attended and Monthly feedback shall be maintained by the bidder.*
 - **Pest Evaluation:** *Rat, cockroaches, mosquito, flies, bed bugs, termite control as good, average, poor.*
 - **Penalty:** *Rupees 1000/- per adverse event (Unsatisfactory report from user areas).*
8. *Cleaning of difficult stains and rust: Removal procedure to be well defined including use of specific chemicals. The cleaning of Upholstery to be included in the same. **Please refer to the Guideline clause 6.11 SOP on stain removal.***
9. *Spills of blood and other body substances, such as urine, faeces and emesis, must be contained, cleaned and the area disinfected immediately. **Please refer to the Guideline clause 6.10 on SOP for blood spill.***
10. **Bio-Medical Waste (BMW) Management:** *Separate passages and/or timings as per the Bio-Medical Waste (Management and Handling) Rules, 1998. Where Common BMW Treatment Facility exists, same can be outsourced & where not, the BMW can be treated/disposed in house as per the BMW management rules. **Please refer to the Bio-Medical Waste (Management and Handling) Rules, 1998 for details.***
11. **Chemicals:** *At least three brand names to be proposed for all the chemicals to be used for cleaning. All cleaning agents and disinfectants should be appropriately labeled and stored in a manner that eliminates risk of contamination, inhalation, skin contact or personal injury. Chemicals must be clearly labeled and an MSDS must be readily available for each item in case of accidents. If a refillable bottle is used for storing disinfectant solution, it should never be topped up with fresh disinfectant. Always use a clean, dry, appropriately-sized bottle, label the product and date it. The product should be discarded when past the expiry date for stability.*

12. Cleaning Schedules:

The hospital areas shall be categorized in the following:

High Risk areas	Moderate risk areas	Low risk areas
Operation theatre units including recovery area – Major & minor	Medical and allied wards	Departmental areas/office areas
Intensive care units/ Cardiac care units/Neonatal ICU etc.	Laboratory areas	Outpatient department
High dependency units	Blood bank	Non sterile supply areas
Emergency department/casualty	Pharmacies	Libraries
Labour room	Dietary services	Meeting Rooms
Post-operative units	Laundry services	Medical records section
Surgical wards	Mortuary	Stores section
Central sterile supply department/Theatre sterile supply unit	Nurses/ Doctors rest rooms	Manifold services/room
Radiation Treatment Areas	Rehabilitation Areas	Telephone rooms, electrical, mechanical, External surroundings
Chemotherapy	Psychiatric wards	Staff areas
Renal Dialysis		
Burn Units		
Isolation wards/ rooms & attached internal areas like bathrooms / toilets		

The cleaning frequency, level of cleaning/disinfection and evaluation/auditing frequency will vary according to the type of functional area risk category as follows:

Functional Area Risk Category	Frequency of cleaning	Level of cleaning/disinfection	Method cleaning/Disinfection
High risk areas	Once in two hours and spot cleaning as	Cleaning and Intermediate level	Cleaning with soap & detergent plus

	<i>required</i>	<i>disinfection</i>	<i>disinfection with alcoholic compound, hydrogen peroxide and phenolics (not feasible in the nurseries)</i>
Moderate risk areas	<i>Once in four hours and spot cleaning as required</i>	<i>Cleaning and low level disinfection</i>	<i>Cleaning with soap & detergent plus disinfection with phenolics</i>
Low risk areas	<i>For areas working round the clock at least once in a shift or in areas having general shift at least twice in the shift and spot cleaning as required</i>	<i>Only cleaning</i>	<i>Physical removal of soil, dust or foreign material followed by cleaning with water and detergent</i>

13. Equipment:

Requirement of different type of mechanized equipment for cleaning has to be calculated and provided in the tender by the respective healthcare organisation wherever required. Following given list of equipments is merely indicative in nature and healthcare organisation are required to select from the below given list:

- r) Heavy duty scrubber dryer
- s) Ride on scrubbers
- t) Walk behind scrubbers
- u) Vacuum Cleaner wet & dry
- v) High Pressure Jet Cleaners/Washer
- w) Road Sweeper (Manual and ride on Machine/vehicle)
- x) Scrubbing & Vacuuming (Combined)
- y) Small battery operated scrubber Machine
- z) Polishing & Cleaning Machine
- aa) Double bucket wringer trolleys/Multi use trolleys/ Bucket carrying trolleys
- bb) Spray pump for pest control as per(Indian Pest Control Association) IPCA recommendations
- cc) Rubber squeezers

- dd) Ladder (24ft and 12ft)
- ee) Scissor Ladders
- ff) Dust Control mop
- gg) Caddy Baskets
- hh) Any other Cleaning Equipment as per the need / requirement of the hospital

Equipment used to clean toilets (e.g., toilet brushes, toilet swabs) should not be carried from room-to-room. In common toilet, a system should be developed for replacement of toilet brushes on a regular basis or as required. Tool for cleaning toilets shall be ones that will minimize splashing.

14. Training: Mandatory training requirements for the Sanitary Attendants & sanitary supervisors. The bidder shall engage in periodic and continual training of specified hours as given below to maintain quality and standard of services. The documentary evidence of conducting trainings should be submitted every 3 months. Video recording of the trainings conducted to be provided by the agency.

Functional Risk category	Induction Training	Refresher Training/ on the job training frequency
High risk area	24 hours of intensive training on general cleaning and infection control followed by 7 days of supervised duties	Training of four hours every month
Moderate risk area	16 hours of training on general cleaning and infection control followed by 5 days of supervised duties	Once in every months for 2 hours
Low risk area	8 hours of training on cleaning practices followed by three days of supervised duties	Every six months for 2 hours

Induction Training Topics for Sanitary Attendant

1. Orientation.
2. Organization.
3. Job Description—duties & responsibility

4. *Grooming*
5. *Uniform and protective gear*
6. *Leave Procedures*
7. *Cleaning chemical—Use & dilution rate*
8. *Handling equipment – with demonstration*
9. *Step by step cleaning procedures for different areas and surfaces (for example)*
 - *Cleaning of furniture*
 - *Light fixtures*
 - *Maintaining upholstery*
 - *Floor care*
 - *Glass cleaning*
 - *Metal polishing*
 - *Tiles cleaning*
 - *Elevator cleaning*
 - *Stair case cleaning*
 - *Dado & skirting cleaning*
 - *Corridor cleaning*
 - *Dusting*
 - *Mopping*
 - *Stain removal*
 - *Any other areas or surface*
10. *Reporting repair and maintenance*
11. *Safety & security*
12. *Garbage removal*
13. *Fire safety*
14. *Penalties for misconduct/ not working*

Induction Training Topics for Sanitation Supervisor

1. *Orientation.*

2. *Organization.*
 3. *Job Description—duties & responsibility*
 4. *Grooming*
 5. *Uniform and protective gear*
 6. *Leave Procedures*
 7. *Cleaning Chemicals*
 8. *Equipment handling*
 9. *Inspection and filling up checklist*
 10. *Reporting repair and maintenance*
 11. *Step by step cleaning procedures (as mentioned for attendants)*
 12. *Safety and security*
 13. *Fire training*
 14. *Documentation of records (work done, attendance, leave etc.) and knowledge of computers*
 15. *Garbage removal*
- 15.** *Wet mopping and vacuum cleaning would be done for cleaning within hospital premises. Use of Broom and dry dusting is not permissible.*
- 16. Reuse of Mops:** *All dusters & mops being reused shall be laundered every day. (Separate machine and adequate number of sets for the next day when current lot is being laundered). Where facility of laundering mops is not available, mops should be changed at following defined intervals:*
- *High risk areas - In each shift*
 - *Moderate risk areas - Each day*
 - *Low risk areas - Every week*
- 17.** *Bidder would ensure that healthcare organisation is neat and clean by 8:00 am in the morning daily; and would ensure cleanliness throughout the day. While doing cleaning at night/early morning hours bidder would ensure that patients and attendants are not disturbed.*

- 18.** *The contractor shall perform the cleaning as per the standard operating procedures provided by the healthcare organisation. For detailed S.O.Ps please refer to guidelines clause no. 6.*
- 19.** *The contractor shall procure the consumables (soap, toilet roll, paper towels, plastic mugs, hockey brush, wipers, etc.)/ chemicals/ detergents/ disposables/disinfectants and other stores related to sanitation & housekeeping. The contractor shall use eco-friendly and ISI marked detergents, chemicals, consumables. These chemicals should not damage/cause harm to the hospital property or of the users. The approval of the authorized representative of the hospital shall be obtained before placing the purchase order. The hospital shall have the discretion regarding the quality and quantity of the stores. The proper record of such stores shall be maintained by the store keeper of the contractor. A hospital representative can carry out surprise checks of the stores without any prior intimation. The contractor is bound to change any chemical, consumable, detergent to the satisfaction of the hospital authorities.*
- 20.** *No cleaning material and consumables shall be manually transported. Janitor's trolleys shall be used during cleaning activities.*
- 21.** *Bidder shall be deemed to have full knowledge of the site and no extra charges consequent on any misunderstanding or otherwise shall be allowed. The bidder shall visit the hospital in coordination with the hospital authorities to inspect and examine the site and assess the manpower required in a professional manner and also collect all information that he/she considers necessary for proper assessment of the prospective assignment. The bidder shall be responsible for arranging and maintaining facilities for workers and other services required for executing the work. Submission of tender bid implies that the bidder has read this notice and has made himself fully aware of the scope and specifications of the work to be done, local conditions and other factors having a bearing on the execution of the work.*
- 22.** *Low risk areas will have one/two shifts; outpatient departments will have two shifts and rest all patient care areas will have three shifts i.e.24x7 coverage*
- 23.** *It will be the responsibility of the contractor to provide the uniform of distinct colour and design as approved by the hospital authority and ensure compliance.*

24. *The contractor shall issue identity cards to its employees in consultation with Security officer of the Hospital to ensure safety of premises. Staff engaged by the firm will carry the card which can be checked randomly and non-adherence will invite a penalty.*

25. *The contractor shall be responsible for taking all measures to safeguard (all the staff employed by the firm) from all the likely health hazards including Personal Protective Equipment (PPE) and immunization.*

26. Contingency services

- *The service provider shall also provide cleaning services in the entire premises as and when the contingency arises, on any day of the week.*
- *The service provider shall be responsible to maintain quality and work efficiency by deploying extra staff, if so required.*
- *No extra payment shall be charged for this contingency work.*

III. KEY PERFORMANCE PARAMETERS

Key performance parameters have been grouped under four major headings, i.e., building elements, fixture elements, equipment elements and environmental elements as given below:

Building elements

<i>Building elements</i>	<i>Required cleaning standard</i>
1. <i>External features, fire exits and stairwells Handrails are clean and free of stains</i>	<i>Landings, ramps, stairwells, fire exists, steps, entrances, porches, balconies, eaves and external light fittings are free of dust, grit, dirt, leaves, cobwebs, rubbish, cigarette butts and bird excreta. Handrails are clean and free of stains. Garden furniture is clean and operational.</i>
2. <i>Walls, skirtings and ceilings</i>	<i>Internal and external walls and ceilings are free of dust, grit, dirt, lint, soil, film and cobwebs. Walls and ceilings are free of marks caused by furniture, equipment or staff. Light switches are free of fingerprints, scuffs and any other</i>

marks. Light covers and diffusers are free of dust, grit, dirt, lint and cobwebs. Polished surfaces are of a uniform lustre.

- 3. Windows (internal)** Surfaces of glass are clear of all streaks, spots and marks, including fingerprints and smudges.
Window frames, tracks and ledges are clear and free of dust, dirt, grit, marks, spots and cobwebs.
- 4. Doors** Internal and external doors and doorframes are free of dust, grit, dirt, lint, soil, film, fingerprints and cobwebs.
Doors and door frames are free of marks caused by furniture, equipment or staff.
Air vents, relief grilles and other ventilation outlets are kept unblocked and free of dust, grit, dirt, soil, film, cobwebs, scuffs and any other marks.
Door tracks and door jambs are free of grit, dirt and other debris. Polished surfaces are of a uniform lustre.
- 5. Hard Floors** The floor is free of dust, grit, dirt, litter, marks and spots, water or other liquids.
The floor is free of polish or other build-up at the edges and corners or in traffic lanes.
The floor is free of spots, scuffs or scratches on traffic lanes, around furniture and at pivot points.
Inaccessible areas (edges, corners and around furniture) are free of dust, grit, dirt, lint and spots.
Polished or buffed floors are of a uniform lustre.
Appropriate signage and precautions are taken regarding pedestrian safety near newly cleaned or wet floors.
- 6. Ducts, grills and vents** All ventilation outlets are kept unblocked and free of dust, grit, dirt, soil, film, cobwebs, scuffs and any other marks.
All ventilation outlets are kept clean and uncluttered following cleaning.

Fixture elements

Fixture element	Required cleaning standard
------------------------	-----------------------------------

- | | |
|---|---|
| <p>1. Electrical fixtures and appliances</p> | <p><i>Electrical fixtures and appliances are free of grease, dirt, dust, encrustations, marks, stains and cob webs.</i></p> <p><i>Electrical fixtures and appliances are kept free from signs of use or non-use.</i></p> <p><i>Hygiene standards are satisfied where the fixture or appliance is used in food preparation.</i></p> <p><i>Range hoods (interior and exterior) and exhaust filters are free of grease and dirt on inner and outer surfaces.</i></p> <p><i>Motor vents etc. are clean and free of dust, dirt and lint.</i></p> <p><i>Drinking fountains are clean and free of stains and mineral build-up.</i></p> <p><i>Insect killing devices are free of dead insects, and are clean and functional.</i></p> |
| <p>2. Furnishings and fixtures</p> | <p><i>Hard surface furniture is free of spots, soil, film, dust, dirt, fingerprints and spillages.</i></p> <p><i>Soft surface furniture is free from stains, soil, dirt, film and dust.</i></p> <p><i>Furniture legs, wheels and castors are free from mop strings, soil, dirt, film, dust and cobwebs.</i></p> <p><i>Inaccessible areas (edges, corners, folds and crevices) are free of dust, grit, dirt, lint and spots. All high surfaces are free from dust, dirt and cobwebs.</i></p> <p><i>Curtains, blinds and drapes are free from stains, dust, dirt, cobwebs, lint and signs of use or non-use. Equipment is free of tapes/plastic etc that may compromise cleaning. Furniture has no odour that is distasteful or unpleasant.</i></p> <p><i>Shelves, bench tops, cupboards and wardrobes/lockers are clean inside and out and free of dust, dirt and litter or stains. Internal plants are free of dust, dirt and litter.</i></p> <p><i>Waste/rubbish bins or containers are clean inside and out, free of stains and mechanically intact.</i></p> <p><i>Fire extinguishers and fire alarms are free of dust, grit, dirt and cobwebs.</i></p> |
| <p>3. Pantry</p> | <p><i>Fixtures, surfaces and appliances are free of grease, dirt, dust,</i></p> |

<i>fixtures and appliances</i>	<p><i>encrustations, marks, stains and cobwebs.</i></p> <p><i>Electrical and cooking fixtures and appliances are kept free from signs of use or non-use.</i></p> <p><i>Motor vents etc are clean and free of dust, dirt and lint. Refrigerators/freezers are clean and free of ice build-up.</i></p>
4. Toilets and bathroom fixtures	<p><i>Porcelain and plastic surfaces are free from smudges, smears, body fats, soap build-up and mineral deposits.</i></p> <p><i>Metal surfaces, shower screens and mirrors are free from streaks, soil, dirt, smudges, soap build-up and oxide deposits.</i></p> <p><i>Wall tiles and wall fixtures (including soap and cream dispensers and towel holders) are free of dust, grit, dirt, smudges/streaks, mould, soap build-up and mineral deposits.</i></p> <p><i>Shower curtains and bath mats are free from stains, smudges, smears, odours, mould and body fats.</i></p> <p><i>Plumbing fixtures are free of smudges, dust, dirt, soap build-up and mineral deposits.</i></p> <p><i>Bathroom fixtures are free from odours that are distasteful or unpleasant.</i></p> <p><i>Polished surfaces are of a uniform lustre. Sanitary disposal units are clean and functional. Consumable items are in sufficient supply.</i></p>

Equipment elements

Equipment element	Required cleaning standard
1. Patient equipment	<p><i>Equipment is free from soil including blood or body fluids, smudge, dust, dirt, fingerprints, grease and spillages.</i></p> <p><i>Equipment is free of tapes/plastics etc that may compromise cleaning.</i></p> <p><i>Equipment legs, wheels and castors are free from mop strings, soil, film, dust, dirt and cobwebs.</i></p> <p><i>Equipment has no odour that is distasteful or unpleasant. Equipment is free from signs of non-use.</i></p>

- 2. Cleaning equipment** *Electrical appliances (and filters), web and dry vacuum cleaners and burnishes/buffing machines are stored free of grease, dirt, dust, encrustations, marks, stains and cobwebs.*
- Electrical and battery operated appliances have visible, current tags displaying safety check, service and inspection information.*
- Battery-operated equipment (auto scrubber) is stored free of dirt, dust, marks, stains and cobwebs.*
- Legs, handles, wheels and castors on cleaning equipment are free from stains, soil, dirt, film, cotton, fluff, cobwebs and dust.*
- Cleaning equipment using water is stored clean and dry.*
- Vacuum head and hose are free from dust and blockages and vacuum bags are in good condition and not over full.*
- Annual review and risk assessment of cleaning equipment is documented and current. Cleaning trolleys are free from spillages, dirt and dust.*
- Use of cleaning chemicals complies with chemical safety data sheets, dilution and storage instructions.*

Environmental elements

Environmental element	Required cleaning standard
1. General tidiness	<i>The area appears tidy and uncluttered</i> <i>Floor space is clear, only occupied by furniture and fittings designed to sit on the floor. Furniture is maintained in a way that allows for cleaning. Fire access and exit doors are left clean and unhindered.</i>
2. Odour control	<i>The area smells fresh.</i> <i>There is no odour that is distasteful or unpleasant.</i> <i>Room deodorisers are clean and functional.</i>

IV. ELIGIBILITY CRITERIA FOR QUALIFICATION

The bidders who meet the following criteria only shall be considered for price bid opening:

1. **Requisite Bid Security (EMD) submission.** *Please refer to page no.1 of tender document.*
2. **At least 3 years experience in sanitation & housekeeping:** *The Bidder should have executed sanitation & housekeeping services in Govt./Private Hospital/commercial establishments (hotels, malls, airports, railway stations) etc. Details of the experience in last three years should be submitted as per **Annexure I**. Proof of successful execution along with certified copies of the award of work/Agreement of the above mentioned works should be submitted.*
3. **Turnover in the last 3 financial years:** *The bidder should have had an average annual turnover of amount equal to or greater than the annual estimated contract value of the sanitation & housekeeping services in the last 3 FYs. A certificate to this effect from Chartered Accountant should be provided.*
4. **The bidder should not have incurred any loss** *in the last three years in the relevant field of housekeeping & sanitation. This should be duly certified by a Chartered Accountant. The bidder should have a solvency of one fifth of the estimated annual contract value of the services and should be duly certified by bidder's Bank.*
5. *The bidder should have office in the city of the hospital. The details of the office with address, telephone number and fax number should be provided.*
6. *Registration Certificate/License from statutory bodies. The bidder should adhere to all the contractual obligations & labour laws like ESI, EPF, Minimum wages etc.*
7. *The bidder will also have to make a presentation on detailed work plan as part of technical evaluation regarding the execution of work, with emphasis on the manpower to be deployed, their distribution, consumables and chemicals to be used and reporting mechanisms to assess quality of work.*
8. **Organizational Information:** *Bidder is required to submit the organization information as per Annexure II*

V. BID EVALUATION

(Adapted from Office of the Comptroller and Auditor General of India, New Delhi tender for “Hiring of manpower services (Unskilled, Semi Skilled, Skilled and Clerical and Non Technical Supervisory staff) to work as Peon / Safaiwala / Data Entry Operator / Cooks /Receptionists- for the year 2011-12)

1. *The bidder should fulfill all the eligible criteria for qualification. Only such bidders who fulfill these criteria will be technically shortlisted for opening of the price bids.*
2. *The bidder will further be liable for disqualification if it has:*
 - i. *Made misleading or false representation or deliberately suppressed the information in the forms, statements and enclosures required in the tender document,*
 - ii. *Record of poor performance such as abandoning work, not properly completing the contract, or financial failures/ weaknesses, unsatisfactory performance etc.*
 - iii. *If the bidder, or any constituent partner in case of partnership firm, has been debarred/black listed or terminated for poor performance by any organization at any time or ever been convicted by a court of law , their application will be summarily rejected.*
3. *All bidders who qualify based on Technical Bid shall be informed and to attend the price bid opening on prescribed date and time.*
4. ***The tendering evaluation shall be done on weightage with 70% to Technical Evaluation and 30% to financial evaluation.***

Technical Bid Evaluation Criteria

The technical bid evaluation committee should be constituted by the hospital to evaluate the Technical Proposals on the basis of their responsiveness to the tender terms, applying the evaluation criteria, sub-criteria and point system specified.

During the technical evaluation stage, each bidder shall be assigned different marks out of a total of 100 marks, as per the criteria specified below:

The following is the evaluation criteria illustrative for a 1000 bedded hospital. The values can be determined by respective hospitals depending on their requirements:

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

S.No.	Criteria					
1.	Total years of experience in the field of Housekeeping services (Determined from years of incorporation) Firms less than 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
		5 marks	10 marks	15 marks	20 marks	25 marks
2.	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
		5 marks	10 marks	15 marks	20 marks	25 marks
3.	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
		5 marks	10 marks	15 marks	20 marks	25 marks
4.	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 organisation 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 organisation where the bidder is providing sanitation services			
		10 marks	15 marks			

Minimum score for the technical bid shall be 60 marks for qualification.

Illustration 1 (for Technical Weightage)

If a Bidder has secured 80 marks out of the total 100 marks in technical evaluation, the technical evaluation value shall be: 56 i.e. {80 x 70%}

Financial/ Price Bid evaluation Criteria:

The financial evaluation shall be carried out and financial bids of all the bidders shall be given 30% of weightage. The Bidder with the lowest bid Prices (L1) shall be assigned full 30 marks (i.e. 30% x 100).

The total marks obtained by a Bidder in the technical bid shall be allocated 70% of technical weightage and the financial bids shall be allocated 30% of the financial weightage, and thereby making a total of 100% weightage for the complete bidding

Illustration 2

If the Bidder at Illustration 1 is L1 and quoted Rs.100/-, then his total score shall be **86** i.e. (56 Technical Score + 30 Financial Score)

The financial scores of the other bidders (i.e. L2, L3... and so on) shall be computed as under and as explained at illustration 3 below:

$$30 \times \text{Lowest Price (L1 Price)} / \text{Quoted Price (L2 OR L3..)}$$

Illustration 3

If the Bidder at Illustration 1 is L2 Bidder and he quoted Rs.125, therefore 30% being the weighted value, the financial scores for L2 shall be computed as under

$$30 \times 100 (\text{lowest prices L1}) / 125 (\text{quoted prices – L2}) = 24 (\text{financial score})$$

Therefore L2 Bidder shall have total score of **80** (56 Technical Score + 24 Financial Score)

FINANCIAL BID EVALUATION AND DETERMINATION OF THE SUCCESSFUL BIDDER

The Bidder meeting the minimum eligibility criteria and with the **highest marks/ rank** (i.e. the **total** of technical evaluation marks and financial evaluation marks) shall be deemed as the **successful Bidder** and shall be considered eligible L1 Bidder for further process.

1. Format for submitting financial bid and mechanism for payment:-

- (i) *Bidders will quote the rates taking into account the scope of work mentioned and rates should be quoted for the whole year of the 1st and 2nd year as per format mentioned in Annexure IV. For the purpose of comparison of financial bid, the total amount for two years (inclusive of taxes, levies etc.) will be added and technically shortlisted bidder whose quote rates (inclusive of all taxes and levies etc.) for total period of validity of contract i.e. 2 years are lowest, will be selected.*
- (ii) *Fall Clause: The rates charged for the outsourced services by the bidder shall in no event exceed the lowest price of identical services being provided by the bidder to any persons/organizations including any Department of the Central Govt. or any Dept. Of a State Govt. or any statutory undertaking of the Central or State Govt., as the case may be during the currency of the contract except when the increase is due to statutory dues & levies.*
- (iii) *Tolerance Clause: The organization reserves the right to increase the quantum of work by 25% on pro-rata basis.*
- (iv) *Payment will be made every month subject to production of production of satisfactory performance report along with the bill.*
- (v) *No escalation of rates quoted will be allowed during the period of the contract except due to revision of minimum wages or revised statutory provision. Although the minimum wages have to be adhered to, an additional hospital risk allowance of 10% of the minimum wage must be given.*
- (vi) *In case of any attempt for cartelization by bidder with a view to hike up the prices, all bids will be rejected and such bidders will be blacklisted and bid security will be forfeited.*

VI. PERFORMANCE SECURITY

1. *The successful bidder will submit performance guarantee equivalent to 5% to 10% of the total contract value of two years. In the form of bank guarantee/FDR from any scheduled bank. The performance security shall be furnished within twenty-one (21) days or earlier from the date of receipt of communication from the Hospital informing "Acceptance of bids".*
2. *The performance security shall remain valid for a period of 3 months beyond the date of completion of all contractual obligations of the contract.*
3. *Failure of the firm to submit the above-mentioned Performance Security shall constitute sufficient ground for the annulment of the contract and forfeiture of the Bid Security.*

VII. REPORTING & PENALTIES FOR QUALITY ASSURANCE

1. Reports to be submitted by the vendor

- (i) A daily report of staff on duty in all the shifts
- (ii) A daily report of the status of the equipment and its utilization
- (iii) A daily report of the washing undertaken
- (iv) A daily report of the chemicals and the consumables used
- (v) A daily report of the general sanitation from the Sanitation Officer or any other officer deputed for the purpose based on the designated Performa
- (vi) A monthly feedback report from the user areas as based on Key Performance Indicators (KPI).
- (vii) A centralized complaint reporting and redressal mechanism to be manned by the bidder. The redressal has to be certified by the complainant.
- (viii) Any other reporting mechanism as desired by the Hospital.

2. Penalty Clauses

In case the contractor fails to commence/execute the work as stipulated in the agreement or there is a breach of any terms and conditions of the contract the hospital reserves the right to impose the penalty as detailed below:

Offences	Penalties (In Rupees)
Not found displaying photo ID	100/- per instance.
Worker not in proper Uniform	500/- per instance.
Indulging in smoking/drinking/sleeping or any other misconduct during duty hours	1000/- with removal of the offender
Duty performed by a worker for more than one shift in 24 hours	With Due permission from the Sanitary Officer, linked to Biometric attendance system, Not more than 5% of the total attendance. Penalty of 200/- per instance in case of non-compliance
Unsatisfactory performance	Individual Complaint: 1000/- per instance Adverse report by ad hoc Committee for

	<i>inspection: 5000/- per instance</i> <i>Adverse Monthly report: 10,000/- per report</i>
<i>Machine out of order/deploying lesser no. of machines</i>	<i>2000/- per machine per day</i>
<i>Wrong/Improper chemical</i>	<i>5000/- per instance</i>
<i>Absenteeism/Under deployed</i>	<i>1000/- per instance</i>
<i>Complaints are not registered or not redressed</i>	<i>500/- per instance</i>
<i>Absence of personal protective gears</i>	<i>200/- per instance</i>
<i>For any other breach, violation or contravention of any terms and conditions</i>	<i>Rupees 5000/- will be imposed per day</i>
<i>In case the services remain consistently unsatisfactory for a period of more than 2 weeks</i>	<i>penalty of 5% of the annual contract value will be imposed</i>

- a) *2% of cost of order/agreement (Annual cost to Hospital as quoted in tender) per week, up to 2 weeks delays for non-execution of contract after award of work.*
- b) *After 2 weeks delay, the hospital reserves the right to cancel the contract and withhold the agreement and get this job to be carried out from L-2 bidder. The defaulting L-1 bidder may be debarred/blacklisted for a period of 4 years (i.e. 2 terms). The security deposited by the contractor shall also be forfeited.*
- c) *During the interim period of award of work and taking over of contracted work by the successful bidder, the on-going system by earlier service provider will continue.*
- d) *In case of default / cessation of work by the Service Provider during the currency of contract, the organization reserves the right to make interim alternate arrangements from the market / L2 / L3 bidders and any excess amount payable arising thereof will be the liability of the defaulting Service Provider.*
- e) *Equipment uptime should be 100%. The bidder should keep adequate spare equipment in stock to maintain the 100% uptime.*
- f) *The amount payable for the preceding month will only be released after certification of satisfactory performance. Penalty will be recovered from the preceding month bill or*

from the performance security. In case it is recovered from the performance security than the bidder will have to deposit the corresponding amount before release of further payments.

- g) In case of any damage/loss/theft of property attributed to the personnel deployed by the Service Provider the cost of the same will be recovered from the service provider.

VIII. OTHER TERMS & CONDITIONS

1. The contractor shall obtain a license under Contract Labour (R&A) Act, 1970 (if applicable) and also submit a copy of such license duly attested to the hospital. No payments would be released till the contract license is submitted to the hospital. Moreover, he shall abide by all the necessary provisions of various other Labour Laws/Acts viz. ESI/Bonus, Workmen's Compensation, EPF and any other laws and rules applicable, in this regard. It shall be the duty of the service provider to get EPF code number allotted by Regional Provident Fund Commissioner (RPFC) against which the EPF subscription, deducted from the payment of the personnel engaged and employer's amount of contribution should be deposited with the respective EPF authorities within 7 days of close of every month. In the eventuality of the contractor failing to remit employee/employer's contribution towards EPF subscription etc. within the stipulated time, the administrative head of the hospital is entitled to recover equal sum of money from any payment due or accrue to the contractor under this agreement or any other contract with RPFC, with an advice to RPFC, duly furnishing particulars of personnel engaged. The contractor shall issue EPF Pass Book/ESI card to every worker and shall supply the Code Number allotted by the local ESI/EPF authorities. The Service Provider shall ensure compliance within 90 days of the award of work. If any change is required on part of hospital a fresh list of personnel shall be made available by the contractor after each and every change.
2. It shall be the sole responsibility of the contractor to abide by all statutory rules & regulations (eg. ESI, EPF, etc.) as applicable from time to time and no separate claims for the same shall be entertained by the organization.
3. The contractor shall mandatorily furnish proof of payment of all the legal entitlements to the workers besides wages on a monthly basis in the formats as prescribed in Annexure III & Annexure IV

4. *If on account of non-compliance with the provisions of any laws, hospital is called upon to make any payment to or in respect of his employees, the service provider shall fully reimburse to Hospital all such payment and Hospital shall be free to make deductions on this account from the amount of Security Deposit, in which case, the contractor shall immediately pay to the Hospital such amount as may be necessary to make up the required security Deposit, or from the dues which may be payable by the Hospital to the contractor. The contractor will sign an **Indemnity Bond** in favor of hospital to this effect. No liability whatsoever shall attach to the hospital on account of or any failure on the part of the service provider to observe these regulations.*
5. *In case any person engaged by the contractor is found to be inefficient, quarrelsome, infirm, and invalid or found indulging in unlawful or union activities, the contractor will have to replace such person with a suitable substitute at the direction of the competent authority.*
6. *The hospital shall not provide any sort of accommodation to the personnel deployed by the contractor and no cooking/lodging will be allowed in the premises of the hospital at any time.*
7. *If any complaint of misbehavior and misconduct by personnel of the contractor comes into the knowledge of the hospital authorities then responsibility for all such activities shall be of the contractor and any loss owing to negligence or mishandling by the personnel employed by the contractor, the contractor shall be responsible to make good for the losses so suffered by the Hospital.*
8. *The contractor shall not, at any stage, cause or permit any sort of nuisance in the premises of hospital or do anything which may cause unnecessary disturbance or inconvenience to other working there as well as to the general public in the hospital premises and near to it.*
9. *The Hospital will deduct Tax at Source (TDS) under section 194-c of the Income Tax Act, 1961 from the contractor.*
10. *The contract can be terminated by the first party (Head of Hospital) by giving three months notice. The second party (the contractor) if so desire to terminate the contract will be required to give six months notice or till hospital is able to make alternative arrangements, whichever is earlier.*

11. *The contractor shall not engage the personnel below the age of 18 years. All the personnel deployed by the contractor shall be medically fit and their antecedent be verified prior to the deployment in the Hospital. Persons at higher risk should be vaccinated against Hepatitis 'B'.*
12. *Any liability arising out of any litigation (including those in consumer courts) due to any act of contractor's personnel shall be directly borne by the contractor including all compensation/damage/expenses/fines. The concerned contractor personnel shall attend the court as and when required.*
13. *If as a result of 'post payment audit' any overpayment is detected in respect of any work done by the agency or alleged to have been done by the agency under the tender, it shall be recovered by the Hospital from the contractor.*
14. *The contract will be valid for a period of two years from the date of commencement which can be further extended on yearly basis subject to satisfactory performance.*
15. *The contractor shall not engage any sub contractor or transfer the contract to any other service provider.*
16. *The contractor has to maintain all the appropriate records at his own cost as required by various Government departments. In case of any violation of any statutory provisions under any applicable law related to the work, the liability of the same shall devolve on the contractor and not on Hospital administration.*
17. *The contractor shall be responsible for all acts of omission/commission in the hospital by their employees during the course of discharge of their duties at the hospital. Hospital will not be responsible for any mishap while dealing with the sanitation and housekeeping work during the described scope of work because of such acts of omission/commission.*
18. *Persons suffering from contagious or infectious disease shall not be employed or permitted to work in hospital & it reserves its rights to examine any of the employees for medical fitness without prior notice. Expenses, if any incurred by the hospitals on medical examination of such employees, shall be borne and paid by the contractor.*
19. *The contractor will be required to remove or replace any of its personnel whose duty has not been found satisfactory or whose presence in the Hospital premises is considered undesirable by the authorities.*

20. *The service provider's work shall be executed under the Sanitation Officers/Sanitation Inspector of the hospital. The contractor shall make arrangements to appoint Supervisor(s) at his own cost & provide them with a mobile connection. The complaints regarding the sanitation & housekeeping services made at the centralized control room/desk and shall be directed to the supervisor and he must ensure speedy redressal.*
21. *The payment against bills shall be made every month by hospital. The bill has to be accompanied by the exact data on personnel employed plus other charges as per Annexure IV which has to be certified by authorized representative of hospital on a daily basis. The service provider shall disburse the wages to its personnel deployed in the hospital every month through ECS. The service provider shall ensure that all personnel deployed have valid bank account and payment is made to their accounts every month and certified copy of payment has to be submitted along with the bills by 15th of every month.*
22. *The contractor will have to deposit the proof of depositing employee's contribution towards EPF/ESI etc. of each employee in every month.*
23. *The contractor shall **submit a certificate along with each bill** to the effect that the payment has been made to the personnel as per acquaintance roll and all labour laws obligations have been complied with including payment of overtime allowance in order to confirm the correctness of payment accounts to right party. The contractor has to submit adequate documentary proof of depositing of ESI and EPF contributions in concerned authorities and has to obtain an affidavit on non-judicial stamp paper of Rs 10/- that they have deposited the ESI/EPF contribution of actual numbers of personnel mentioned in the bill.*
24. *As per agreement contract for outsourcing agencies etc the following documents, certificates, affidavits and verification etc are required to be endorsed/sent with the bills submitted for payment.*

A. *The bill has to be accompanied with*

- (i) *The bills have to be accompanied by exact data on personnel employed and the deployments have to be certified by authorized official of hospital on a daily basis.*
- (ii) *Contractor shall provide IP numbers allotted by ESI authorities for each and every personnel deployed by them at hospital against this contract.*

- (iii) *Particulars of the personnel engaged for the work are required to be submitted to hospital.*
- (iv) *The contractor has to ensure that all personnel deployed have valid bank account and payment to their account every month and certified copy of payment has to be made submitted along with bills.*
- (v) *Bills in detail may be drawn as per column given below:*
- Basic*
 - VDA*
 - ESI*
 - EPF*
 - Bonus*
 - Gratuity*
 - Uniform Outfit*
 - Washing Allowance*
 - Weekly Off*
 - Service Charges*
 - Service Tax*
 - Overtime (if any)*
 - Any other head under which payment sought*

(vi) For individual SA/ supervisor etc due and net payable/paid monthly wages etc may be furnished as per enclosed Performa as per Annexure VII

B. Certificate/affidavit by service provider:

i The service provider has to submit adequate documentary proof of depositing of ESI, EPF and Service Tax in concerned authorities and has to submit an affidavit on non-judicial stamp paper of Rs. 10/- that they have deposited the ESI/EPF contribution of actual numbers of personnel mentioned in the bill.

Force majeure

Any failure of omission or commission to carry out the provision of this Agreement by the contractor shall not give rise to any claim by one party, one against the other, if such failure of omission or commission arises from an act of God; which shall include acts of natural calamities such as flood, earthquake, from civil strikes, riots, curfew, embargoes or from any political or other reason beyond the parties control including war(whether declared or not) civil war or stage of insurrection, provided that notice of the occurrence of any event by either party to the other shall be given within two weeks from the date of occurrence of such an event which could be attributed to Force majeure conditions.

Waiver

At any time any indulgence or concession granted by hospital shall not alter or invalidate the terms of the contract nor constitute the waiver of any of the provision hereof after such time, indulgence or concession shall have been granted. Further the failure of hospital to enforce at any time any of the provisions of the contract or to exercise any option which is herein provided, shall in no way be construed to be waiver of such provisions nor in any way affect the validity of the contract or any part thereof or the right of hospital to enforce the same in part or in entirety of it. Waiver, if any, has to be in writing.

Annexure I

UNDERTAKING – YEARS OF EXPERIENCE

Tender No. _____ Due for opening on: _____

Name of the Service _____

I/ We M/s _____ hereby declare that:

1. Our agency has been in business for a period of at least last 3 years in Sanitation & Housekeeping services for which the relevant supporting documents are submitted.
2. The list of Hospital/commercial establishments served by our agency in the last 3 years is given below.

S. No.	Govt./Private Hospital/commercial establishments used by public	No. of beds/ Area	No. of employees provided	Duration of contract	Contact details of the Govt./Private Hospital/commercial establishments (Contact person, address and telephone number)

3. We provide the undertaking that we have provided sanitation & housekeeping services in **Govt./Private Hospital/commercial establishments** of similar size. (Please provide details of last three years experience):

S. No.	Govt./Private Hospital/commercial establishments used by public	No. of beds/Area	No. of employees provided	Duration of contract	Contact details of the Govt./Private Hospital/commercial establishments (Contact person, address and telephone number)

4. *We will be able to arrange for the required manpower, material, machine and other resources for the establishment of service as per the tender term within 15 days of award of tender (A/T)/Letter of intent (LOI).*
5. *We declare that we have necessary infrastructure/tie up for the maintenance of the equipment being used and enough manpower to cater to any additional need of Hospital at short notice (any increase in required manpower), if any such need arises during the tenure of the contract.*
6. **We fulfill all the statutory requirements of the relevant labour laws in India.**

Signature of the Tenderer

Name & Address with stamp

Annexure II

STRUCTURE & ORGANIZATION

1. *Name & Address of the bidder*
2. *Telephone No./Fax No.*
3. *Legal status of the bidder (attach copies of original document the legal status).*
 - a. *A Society registered under the Societies Registration Act, 1860.*
 - b. *A proprietary firm*
 - c. *A partnership firm*
 - d. *A limited company or Corporation*
4. *Particulars of registration with various Government bodies (attach attested photocopy).*

<i>Organization/ Place of registration/license</i>	<i>Registration/license No.</i>
1.	
2.	
3.	
5. *Names and Titles of Directors & Officers with designation to be concerned with this work.*
6. *Designation of individuals authorized to act on behalf of the organization.*
7. *Was the bidder ever required to suspend operation for a period of more than one month continuously after you commenced the operation? If so, give the name of the project and reasons of suspension of work.*
8. *Has the bidder or any constituent partner in case of partnership firm, ever abandoned the awarded work before its completion? If so, give name of the project and reasons for abandonment.*
9. *Has the bidder or any constituent partner in case of partnership firm, even been debarred/black listed for tendering in any organization at any time? If so, give details.*
10. *Has the bidder or any constituent partner in case of partnership firm, ever been convicted by a court of law? If so, give details.*
11. *Has the bidder any valid VAT/Works Contract Tax registration with the Sales Tax Department?*
12. *Total number of employees along with their designations engaged by the bidder for the sanitation and housekeeping services.*
13. *Any other information considered necessary but not included above.*

Signature of Applicant

Annexure III
Format for Financial Bid

<i>S.No.</i>	<i>Component of the rate</i>	<i>Sanitary Attendant</i>	<i>Sanitary Supervisor</i>	<i>Facility Manager</i>	<i>Sr. Facility Manager</i>
1.	<i>Monthly rate per person</i>				
2.	<i>Employees Provident Fund @ 21.61% of R. 15000</i>				
3.	<i>ESI contribution 6.5% of S.No.1 above</i>				
4.	<i>Administrative/service charges</i>				
5.	<i>Service Tax</i>				
6.	<i>Any Other charges (with split up)</i>				
	<i>Grand Total</i>				

Annexure IV

For Individual SA/ Supervisor etc. due and net payable/paid monthly wages etc. may be furnished in the following format:-

1. *S.No.*
2. *Name/ EPF Code & IP No.*
3. *Basic*
4. *Weekly Off*
5. *Gratuity @ 4.81% of Basic+ VDA*
6. *Bonus*
7. *Uniform Outfit*
8. *Washing Allowance*
9. *Net Due*
10. *Total Days (Duties)*
11. *Total No. of Days (Duties)*
12. *P.F Employer Share*
13. *P.F Employee Share*
14. *ESI Employer Share*
15. *ESI Employee Share*
16. *Total Net Payable/Paid with Bank Account No.*

