

# Assessment of Level of Implementation of Infection Control Guidelines in Sub District Hospitals in Gadag District by Using Kayakalp Assessment Tool

Manjegowda H. P<sup>1</sup>, Dr. Gulappa Devagappanavar<sup>2</sup>

<sup>1</sup>Master of Public Health Scholar, School of Environmental Science Public Health and Sanitation Management, Karnataka State Rural Development and Panchayat Raj University Gadag.

<sup>2</sup>Assistant Professor School of Environmental Science Public Health and Sanitation Management, Department of Public Health Karnataka State Rural Development and Panchayat Raj University Gadag.

## ABSTRACT

**Background:** Infection control is one of the main tenets of the "Kayakalp" movement. Well-kept and sanitary surroundings improve the hospital's image in the eyes of both patients and visitors. They also help the healthcare facility (HCF) create an atmosphere that reduces the number of hospital-acquired infections (HAI).

Patients within hospitals and other healthcare establishments are vulnerable to healthcare-associated infections, commonly referred to as "nosocomial" or "hospital" infections, which are neither present nor in an incubating stage at the moment of admission. This category also encompasses occupational ailments among healthcare personnel and diseases contracted by patients during their hospitalization, which manifest after their discharge.

Globally, nosocomial (hospital-acquired) infections constitute a significant and escalating concern. In the absence of adequate preventive strategies, individuals receiving medical treatment in any healthcare establishment face the risk of acquiring an infection. Healthcare-associated infections not only result in additional suffering but also impose substantial financial burdens on patients and their families, akin to numerous other issues related to patient safety. Antibiotic resistance is a result of infections, which also lengthen hospital stays, cause chronic disability, greatly increase the financial burden on healthcare systems, raise costs for patients and their families, and result in avoidable deaths. The research project's results are intended to clarify the current state of infection control practices in the Gadag district's sub-district hospitals and identify possible areas for improvement.

**Objectives:** To assess the level of implementation of hygiene promotion guidelines in sub-district hospitals in Gadag District.

**Methods:** A cross-sectional study was conducted in sub-district hospitals in Gadag district, and a universal sampling technique was used to choose the health centers. A kayakalp checklist 2021 was used to obtain the data from December 2023 to January 2024. Data were entered into Microsoft Excel, and results were expressed in frequency and percentages.

**Results:** Total 4 sub-district hospitals were visited; the total score was 100 in that Mundaragi Sub-district hospital has 62/100 (62%), Shirahatti Sub-district hospital has 50/100 (50%), Rona 84/100 (84%)

and Naragund 65/100 (65%).

**Conclusion:** Average outcomes were found in the subdistrict hospital's in the assessment. To provide the public with quality treatment, the facilities infection control division urgently needs to raise the bar.

**Keywords:** Kayakalp, Infection control, Hygiene, Hygiene Promotion, Environment

## 1. Introduction:

Promoting cleanliness in public areas is the main goal of the Prime Minister's Swachh Bharat Abhiyaan, which was introduced on October 2, 2014. Facilities for public health are a key social safety net that helps a sizable portion of the population get the medical treatment they need. Hospital cleanliness and hygiene are essential for preventing diseases, giving patients and visitors a nice experience, and modelling clean environment behavior (1).

Together with the quickly advancing technology, health care is expanding quickly. We have witnessed an increase in invasive medical treatments for both diagnostic and therapeutic objectives along with this increasing pace. Both the healthcare system and patients have benefited and been negatively impacted by this progress on a global scale. Biomedical waste overloads healthcare facilities, and patients who attend are at a heightened risk of contracting illnesses linked to healthcare (2).

Prolonged hospital stays, higher rates of morbidity and death, and higher health care expenses are all linked to HAIs. To assess the burden of endemic HAIs, pinpoint high-risk groups and practices, and direct initiatives to lower HAI incidence, surveillance for endemic HAIs is crucial. A vital part of infection prevention and control initiatives around the globe is HAI surveillance. The application of standardized terminology is necessary for the dependability of HAI surveillance (3).

The frequency of evaluation may be lowered to once a month once the Officer I/C Sanitation and Infection Control Team are satisfied that consistently high standards are being maintained. Patient care areas and other facilities classified as high-risk categories should be evaluated at least once a week. Furthermore, it is necessary for patients and visitors to have information and awareness of the health institution's clean activities and to cooperate with them (4).

Preventive measures are often used at various phases of infection transmission pathways to lessen the progression of any infectious illness. Preventive measures against airborne transmission can be broadly classified into four categories: managerial (e.g., establishing an infection control (IC) committee, training healthcare workers on AIC measures), administrative (e.g., measures to identify respiratory infectious patients early, isolate them from other patients, and expedite their treatment, offering advice on cough etiquette), environmental (keeping the facilities adequately cross-ventilated), and personal protective control (5).

Improved hand hygiene compliance has been linked to a decrease in infection rates, making it the most effective method for preventing hospital-associated infections. Despite being the most effective preventative practice of all, hand hygiene compliance is still low. Excessive workloads, engaging in cross-transmission activities, wearing gloves, and having a technical specialty are all linked to low compliance (6).

Healthcare professionals need to be aware of the different safety precautions. To avoid occupational exposure, they should appropriately dispose of biological waste, apply standard measures, and enhance work organization. Infection control procedures are crucial for healthcare personnel to follow because of cross-infection. safeguard both the patient and oneself. Adhering to conventional precautions and

implementing infection control protocols effectively can be difficult, particularly in environments with limited resources (7).

## 2. MATERIALS AND METHODS

- A. Study setting:** The study was conducted in sub-district hospitals of Gadag district (Mundaragi, Naragund, Ron, Shirahatti).
- B. Study design:** A hospital-based cross-sectional study was conducted in sub-district hospitals by using Kayakalp checklist 2021.
- C. Sampling design and sampling size:** Universal sampling was used to choose the health centers and 4 sub-district hospitals of Gadag.
- D. Data source:** Primary data were obtained by introducing the questionnaire on study participants who visited the sub-district hospitals to obtain the data related to hygiene promotion.
- E. Statistical method:** Data were entered into an Excel sheet, analyzed, and expressed in frequency and percentages.
- F. Ethical approval obtained from:** Institutional Ethics Committee of Karnataka State Rural Development and Panchayat Raj University Gadag.

## 3. RESULTS:

**Table 1: Distribution of Socio demographic details of the study participants**  
**Table:1 Distribution of Socio demographic details of the study participants (n=8)**

Characteristics	Frequency (%)
<b>Gender</b>	
Male	3(37.5%)
Female	5 (62.5%)
<b>Age group</b>	
25-30	2 (25%)
31-35	4 (25%)
46-50	2 (25%)
<b>Education level</b>	
Under graduate	3(37.5%)
Diploma	2(25%)
Post graduate	2(25%)
Doctorate Degree	1(12.5%)
<b>Religion</b>	
Hindu	5(50%)
Muslims	2 (25%)
Christian	1(12.5%)
<b>Socio Economic Status</b>	
APL	6(75%)
BPL	2(25%)
<b>Marital Status</b>	

Married	8(100%)
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Current study conducted on 8 participants, in that 5 participants are female and 3 participants are male, and more than one-fourth of the respondents are undergraduates, and very few of them are postgraduates and doctorate degree holders, and all the participants are married; almost all are above-poverty line participants.

**Table 2: Distribution of Infection control implementation level in Mundaragi Sub district hospital**

Sl. No	Criteria	Score obtained	Total Score
D1	Hand Hygiene	6	10
D2	Personal Protective Equipment (PPE)	7	10
D3	Personal Protective Practices	6	10
D4	Decontamination and Cleaning of Instruments	6	10
D5	Disinfection & Sterilization of Instruments	7	10
D6	Spill Management	6	10
D7	Isolation and Barrier Nursing	6	10
D8	Infection Control Program	6	10
D9	Hospital Acquired Infection Surveillance	6	10
D10	Environment Control	6	10
	Total	<b>62</b>	<b>100</b>

The healthcare institution demonstrated a satisfactory level of performance in domains such as Personal Protective Equipment (PPE) and the Disinfection & Sterilization of Instruments, each achieving a score of 7 out of 10. Nevertheless, it exhibited deficiencies in Hand Hygiene, Personal Protective Practices, Decontamination & Cleaning of Instruments, as well as other facets including Spill Management, all of which merited a score of 6 out of 10.

**Table3: Distribution of Infection control implementation level in Shirahatti Sub district hospital**

Sl. No	Criteria	Score obtained	Total Score
D1	Hand Hygiene	5	10
D2	Personal Protective Equipment (PPE)	7	10
D3	Personal Protective Practices	5	10
D4	Decontamination and Cleaning of Instruments	6	10
D5	Disinfection & Sterilization of Instruments	5	10
D6	Spill Management	5	10
D7	Isolation and Barrier Nursing	4	10
D8	Infection Control Program	5	10
D9	Hospital Acquired Infection Surveillance	4	10
D10	Environment Control	4	10
	Total	<b>50</b>	<b>100</b>

In the current study this medical facility received the most unfavourable evaluation among the four institutions, exhibiting particularly deficient ratings in the domains of Isolation and Barrier Nursing (4/10), Hospital-Acquired Infection Surveillance (4/10), and Environmental Control (4/10). The Personal Protective Equipment (PPE) assessment yielded a score of 7/10, denoting an acceptable

standard of protective gear utilization. The substandard rating in Hand Hygiene (5/10), when considered alongside insufficient evaluations in the management of hospital-acquired infections, indicates significant deficiencies in infection control measures.

**Table4: Distribution of Infection control implementation level in Ron Sub district hospital**

Sl. No	Criteria	Score obtained	Total Score
D1	Hand Hygiene	8	10
D2	Personal Protective Equipment (PPE)	9	10
D3	Personal Protective Practices	8	10
D4	Decontamination and Cleaning of Instruments	9	10
D5	Disinfection & Sterilization of Instruments	8	10
D6	Spill Management	8	10
D7	Isolation and Barrier Nursing	9	10
D8	Infection Control Program	9	10
D9	Hospital Acquired Infection Surveillance	9	10
D10	Environment Control	7	10
	Total	<b>84</b>	<b>100</b>

In the current study Ron Sub-District Hospital demonstrated superior performance relative to the other three healthcare facilities, attaining scores of 8 or 9 out of 10 across nearly all evaluative categories, such as Hand Hygiene, Personal Protective Equipment (PPE), Decontamination and Cleaning of Instruments, and Surveillance of Hospital Acquired Infections. The elevated scores across various infection control metrics indicate that Ron Hospital has implemented effective and comprehensive infection control protocols. Furthermore, the management of Isolation and Barrier Nursing, as well as Spill Management, is executed with particular diligence.

**Table4: Distribution of Infection control implementation level in Nargund Sub district hospital**

Sl. No	Criteria	Score obtained	Total Score
D1	Hand Hygiene	7	10
D2	Personal Protective Equipment (PPE)	6	10
D3	Personal Protective Practices	7	10
D4	Decontamination and Cleaning of Instruments	6	10
D5	Disinfection & Sterilization of Instruments	8	10
D6	Spill Management	6	10
D7	Isolation and Barrier Nursing	7	10
D8	Infection Control Program	6	10
D9	Hospital Acquired Infection Surveillance	6	10
10	Environment Control	6	10
	Total	<b>65</b>	<b>100</b>

Nargund exhibited a moderate level of performance, attaining a score of 7/10 in Hand Hygiene, while demonstrating comparatively reduced scores in the domains of Disinfection & Sterilization of Instruments (6/10) and Hospital Acquired Infection Surveillance (6/10). The satisfactory performance in Hand Hygiene and the utilization of Personal Protective Equipment (PPE) reflects a notable awareness

and compliance with established infection control protocols in these specific areas. The hospital's suboptimal performance in infection control initiatives and environmental management highlights critical areas where managerial strategies could be enhanced, particularly in the realms of surveillance and disinfection.

#### 4. sDISCUSSION

##### **Infection control in Mundaragi Subdistrict Hospital**

In the current study, Mundaragi sub-district hospital obtained 62/100 (62%) in infection control. A similar study on Assessment of Swacchta Guidelines Implementation Government District Teaching Hospital by Shivaraj B Mallappa and Parvathy T Somaiah reports that 50/100 (50%) in the district hospital (8).

##### **Shirahatti Sub-district hospital waste management score:**

In the current study, Shirahatti sub-district hospital has 50/100 (50%) infection control. As per the previous study to assess the clean hospital initiative done in Khordha district of Odisha, India, by Mayadhar Panda, Sikata Nanda reports that 69/100 (69%) in the waste management section (9).

##### **Ron Sub district hospital waste management score:**

In the current study, infection control in Ron Subdistrict Hospital scores 84/100 (84%). As per the previous study to assess public health care facilities in Himachal Pradesh by Ganju et al., a study conducted in 3 different community health centers in Himachal Pradesh reports that 81/100 (81%), 86/100 (86%), and 75/100 (75%) in the Hygiene Promotion section (10).

##### **Naragund Sub-district hospital waste management score:**

In the current study, infection control in Naragund subdistrict hospital scores 65/100 (65%). As per the previous study on impact on Kayakalp scores after undertaking a primary health centre by Gupta et al., study revealed that 49 (81.67%) in infection control section (11).

#### 5. CONCLUSION:

It is essential to address the promotion of infection control guidelines at the Shirahatti and Nargund sub-district hospitals in order to provide a secure medical setting. When put into practice with commitment and cooperation, the suggested changes might turn the hospital into a community leader in infection control, cleanliness, and health. To provide the public with quality treatment, the facilities infection control division urgently needs to raise the bar.

#### 6. Recommendations

1. Strengthen hand hygiene practices.
2. Enhance Personal Protective Equipment (PPE) Utilization
3. Improve Personal Protective Practices
4. Upgrade decontamination and sterilization procedures
5. Strengthen Hospital-Acquired Infection (HAI) Surveillance
6. Improve Environmental Control

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