



A STUDY ON NEEDS ASSESSMENT OF INFECTION CONTROL PRACTICES AT A DISTRICT HOSPITAL IN SOUTHERN INDIA, USING KAYAKALP TOOL

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ABSTRACT

Background: Mortalities and morbidities due to hospital acquired infections are rising in alarming numbers. As a part of Swachh Bharat Abhiyaan campaign, the Ministry of Health and Family welfare launched "Kayakalp", an initiative to promote cleanliness and enhance the quality of public health facilities. The study was done to assess of Infection control practices in Government District hospital at Madikeri using Kayakalp tool.

Material and methods: A cross sectional study was conducted by using the Kayakalp assessment tool at District hospital Madikeri during September 2015.

Results: The assessment using the tool showed the infection control practices in the hospital are poor and not adequate. The assessment showed the following results: hand hygiene practices (30%), use of personal protective equipments(40%) and personal protective practices(70%), decontamination and cleaning of instruments(50%), disinfection and sterilization of instruments (80%), Spill management(30 %), isolation and barrier nursing(90%), hospital infection control program(50%), hospital acquired infection surveillance(0%) and environmental control(60%). Overall, the hospital scores 50% in infection control practices.

Conclusion: Hospital acquired infection is commonest complication seen in any hospitalized patient. Simple basic preventive measures like hand hygiene and use of personal protective equipments among healthcare personnel can reduce the incidence and prevalence of these infections.

Keywords: Public Healthcare setting, Infection control, KAYAKALP.

INTRODUCTION

Health care is rapidly growing with rapidly developing technologies. With this pacing growth, we have seen more rises in medical procedures that are invasive for both diagnostic and therapeutic purposes. Globally, this development has been a boon as well as a bane to the patients and the healthcare system. Health care settings are overburdened with the amount of biomedical waste and patient visiting the setting are highly vulnerable to acquire healthcare associated infections. The Centers for Disease Control and Prevention (CDC) further extends the definition of Hospital

acquired infections (HAIs) to those infections acquired during the stay in the hospital, with a no evidence of infection manifesting at the time of admission into the health care setting¹. The HAIs also include occupational infections among the healthcare professionals^{2, 3}. HAIs are often caused by multi-resistant pathogens, with highest prevalence of cases seen in acute intensive care units, acute surgical and orthopedic wards in most health settings. The most common infections seen are infections of surgical wounds, UTIs and LRTIs. The risk factors among patients making them more vulnerable to HAIs are infants, old age, poor im-

mune status, and underlying disease, increasing invasive procedures or chemotherapy^{3, 4}. The burden of the disease are psychological, emotional and the economic burden to the patients, family and the society. The consequences of the infections may vary from simple illness, increased duration of stay in the hospitals, disabilities and in adverse cases even death of the patient². The economic burden increases for the health setting as well as the country.

The magnitude of the problem is always underestimated due to improper and inadequate surveillance systems. Globally, of every hundred hospitalized, 7 in developed and 10 in developing countries will acquire at least one health care-associated infection³. The number of HAIs is significantly higher in low- and middle-income countries. New-born babies are at higher risk of acquiring infections in developing countries³. In low- and middle-income countries, the rate of ICU-acquired infections is up to 13 times higher and surgical wound infections are nine times higher, than in the high income countries⁴.

The Indian Scenario: According to the Center for Disease Dynamics, Economics & Policy (CDDEP) - GARP (Global Antibiotic Resistance Partnership) report, 2011: Situational Analysis: Antibiotic Use and Resistance in India states that "hospitals in India have a high burden of infections in their ICUs and general wards, many of which are resistant to antibiotics and are due to poor infection control practices at healthcare settings at all levels⁵. Situations may be still worse in government healthcare settings due to inadequate resources, poor staffing, poor infrastructure and poor infection control practices⁶. Patient factors like gender (more among females), education, occupation and the socio-economic status were significantly associated in HAIs⁷.

Kayakalp Assessment: 'KAYAKALP', an initiative launched by the Ministry of Health and Family Welfare, Government of India, to promote cleanliness and enhance the quality of public health facilities. This initiative was launched as a part of the Swachh Bharat Abhiyaan campaign. The performance assessment is based on parameters like hospital facility upkeep, sanitation and hygiene, waste management, infection control, support services and hygiene promotion⁸.

OBJECTIVES

The objective of the study was to conduct an assessment of infection control practices in the District Hospital using the Kayakalp assessment tool.

MATERIAL & METHODS

Ministry of Health and Family Welfare, Government of India has drafted guidelines- Swachhta Guidelines for Public Health Facilities, to increase the awareness of cleanliness of healthcare facilities⁹. The Kayakalp program is an initiative of the Swachh Bharat Mission. This study is a part of the larger study conducted at the District Hospital, Madikeri, Kodagu district, Karnataka State, India. The Kayakalp Assessment tool is conducted in the hospital annually to assess the standards of healthcare practices in the hospital i.e., Hospital Upkeep, Sanitation and Hygiene, Waste management, Infection control, Support Services and Hygiene Promotion⁹.

The District Hospital provides an outpatient service to almost 600 patients on a daily basis. The hospital has a total number of 410 inpatient beds with inpatient occupancy of 60% at all times. The hospital waste is generated mainly from the OPDs, injection rooms, casualty, OTs and Labor rooms.

As this a part of the National Initiative, it is currently an ongoing program in the hospital. Before this phase of the study, healthcare professionals- Medical Officer and nurses had a sensitization program organized by the Department of Health and Family Welfare, Kodagu District by the District Health Officer. Before the initiation of this phase of the study, prior permission was obtained from the concerned authorities. Consent from the District Surgeon, nursing superintendent and health administrator officer was obtained. The study was conducted in the month of August, 2015.

The cross sectional study was conducted at the District Hospital. The assessment methods used in this study were direct observation (OB), Staff Interview (SI), and Review of records and documents (RR). The scores were applied as Fully Compliant (2), partially compliant (1) and non-compliant (0). The observations and documentation were conducted using a checklist provided under KAYAKALP program.

RESULTS

The Kayakalp Assessment Checklist audit was conducted by the program co-coordinator and the staff nurses. The assessment reports showed the infection control practices in the health setting was deficit with an overall score of 50(maximum score=100). The results of the assessment are described in the tables below

Hand wash resources were at available at work areas and all staff was aware of importance of hand wash practice.

Table.1: Scores of infection control practice at district hospital.

Reference No.	Criteria	Score Box	Maximum score
D1	Hand Hygiene	3	10
D2	Personal Protective Equipments	4	10
D3	Personal protective practices	7	10
D4	Decontamination & cleaning of Instruments	5	10
D5	Disinfection & Sterilization of Instruments	8	10
D6	Spill management	3	10
D7	Isolation & barrier nursing	9	10
D8	Infection control program	5	10
D9	Hospital Acquired infection Surveillance	0	10
D10	Environment Control	6	10
D1+D2+D3+D4+D5+D6+D7+D8+D9+D10		50	100

All clinical staff uses personal protective equipments like gloves, and masks while attending patients. Person protective practices were all followed in the day to day practice at their respective workstations. Every workstation had adequate supply of personal protective equipments and required documents were maintained. Staff in the wards was not aware of cleaning and decontamination of instruments in an appropriate manner. Staff at the CSSD department was aware of the cleaning, decontamination, disinfection and sterilization of instruments as per hospital protocols. Appropriate chemicals and dilutions were used for sterilizing surgical equipments. Staffs in the wards were not fully aware of types of spills and their management. Isolation and barrier nursing were practiced well in the hospital setting. Infection control program was present in the hospital but no adequate monitoring of the same. There were no Hospital Acquired Surveillance activities or programs in the facility. Environment control in work stations were maintained as per protocols.

DISCUSSION

Hospital acquired infections are proving a challenge to the healthcare system globally. Effective infection control is the key to provide high quality patient health care. It's a continuing concern for the public health managers and the hospital administration because it is unable to achieve adequate levels of prevention in our country. Much of the studies and researches conducted in these areas have shown that following basic protocols of infection control can reduce the morbidity and mortality of HAIs⁵.

Cross infections of patients by healthcare professionals with contaminated hands is a major source of infection as well route for transmission of infections. Healthcare professionals fail to adhere to standard protocols of hand washing and hygiene, which is the single most important and universal method for infection control. The compliance level varies in every hospital setting and may range

from 16-80%¹⁰. The score in this setting was 30%. Materials for hand hygiene were provided in all work areas and staff was aware of when hand washing should be done. There were no display charts displaying the instructions as well as the universal 6 step hand washing techniques.

The principle of epidemiology of a disease is to control the infection at the source itself. Health professionals are always in contact with infections, while they are in contact with patients. Despite of the innumerable methods to prevent the source of infection, the universal one is use of personal protective equipments and devices. The score of the facility in using personal protective devices while handling patients is 40%. Most of the staff was partially compliant in using PPEs at all times, especially during procedures and examination of patients. Housekeeping staff were no compliant with use PPEs whilst handling patients as well as infective body fluids and biomedical waste. The facility scored 70% in use personal protective practices as compared to 70.3% in a study conducted during SARS outbreak in Singapore¹¹. The uses of PPEs depend on the knowledge, awareness and practices of health care professionals.

Instruments should be disinfected regularly before cleaning, to reduce contamination to healthcare worker during cleaning procedure. The facility score is only 50% for decontamination and cleaning, which is done in the wards, labor rooms and theatres, and 80% for disinfection and sterilization done in CSSD. The poor scoring is due to staff not aware or non compliant to the standard protocols of decontamination and cleaning of infected instruments. Staff at the CSSD department follows facility as well as standard protocols for disinfection and sterilization of instruments. Poor scoring in Spill management (30%) was attributable to poor knowledge and awareness of management of spills.

Health care-associated infections only usually receive public attention when there are acute episodes like epidemics. Although often hidden from public attention, the ongoing problem is one that

no institution or system can claim to have solved, despite many efforts³. The case is different in most developing countries because of social and health-care system deficiencies that are aggravated by economic problems.¹⁰

CONCLUSION

Swachh Bharat mission aims to bring significant changes in cleanliness across various system by 2019 which coincides with 150th birth anniversary of Mahatma Gandhi. Kayakalp program is an ongoing program which can definitely bring the desired changes through continued supervision and monitoring. All sections of infection control practices needs to be upgraded to achieve the desired levels of highest quality.

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