

Original Article**Hand Washing Facilities and Adherence To Hand Hygiene Practices In a Tertiary Care Centre in Southern Rajasthan**

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ABSTRACT

Background: Infection prevention and control is an integral component of health care delivery in any setting to reduce risks for morbidity and mortality in patients. Adherence to hand hygiene recommendations is the single most important practice for preventing the transmission of microorganisms in health care, and directly contributes to patient safety.

Aim: To assess the hand washing facilities and adherence to hand hygiene practices among different health personnel.

Materials and Methods: A cross-sectional study has been conducted at tertiary level institution i.e. RNT Medical College, Udaipur and Associated Hospitals from 25th of July 2013 to 25th of October 2013. Data was collected by personal interview and observations of Healthcare personnel and Hand washing stations.

Results: 70% hand washing stations were in good condition. Running tap water was available at 78.33% stations. 44.28% doctors performed hand hygiene practices before patient contact and 58.57% were found to perform hand hygiene practices after patient contact. In case of nurses, 28.41% hand hygiene practices observed before and 36.36% practices after patient contact. Highest practices related to hand hygiene in general ward were observed to be 56.67% in neurology unit followed by 53.33% in ENT and Obstetric unit.

Conclusion: Guidelines related to hand hygiene practices need to be widely circulated. Hospital should develop their own training module for developing the skills of all health care personnel to address issues related to hand hygiene practices and infection control practices.

Key words: Hand Washing, Hand Hygiene Practices, Tertiary Care Centre, Southern Rajasthan

INTRODUCTION

Infection prevention and control is an integral component of health care delivery in any setting to reduce risks for morbidity and mortality in patients and care givers at all levels. Basic principles of infection prevention are simple and include personal hygiene and standard universal safety precaution [1]. Hand hygiene is a comprehensive term that refers to hand washing, hand antisepsis and actions taken to maintain healthy hands and fingernails. Hand washing is a process for the removal of soil and transient microorganisms from the hands using soap and water. Hand antisepsis is a process for the removal or destruction of resident and transient microorganisms on the hands using an antiseptic agent, either by rubbing hands with alcohol-based hand rub or hand washing with an antiseptic soap. Hand antisepsis has also been referred to as antiseptic hand wash, antiseptic hand-rubbing, hand decontamination and hand disinfection. Adherence

to hand hygiene recommendations is the single most important practice for preventing the transmission of microorganisms in health care, and directly contributes to patient safety. A report suggested that the incidence of hospital-acquired infection in the United Kingdom could potentially be reduced by 15% if hand hygiene recommendations were followed [2]. Against this background, present study was conducted to assess the hand washing facilities and adherence to hand hygiene practices among different health personnel in a tertiary care centre in southern Rajasthan.

MATERIAL AND METHODS

A cross-sectional study has been conducted at tertiary level institution i.e. RNT Medical College, Udaipur and Associated Hospitals (Maharana Bhopal Hospital and Pannadhay Mahila Chikitsalaya) from 25th of July 2013 to 25th of October 2013. Permission for the study was taken

from both hospital superintendent and college principal. Data was collected by personal interview and observations of healthcare personnel including one Doctor, one Nursing staff and one ward boy/ attendant using systematic random sampling. Purpose of the study was fully explained in detail to healthcare personnel before the interview and oral informed consent was taken. Standardized structured Infection control assessment tool modules and checklist prepared by USAID (Acknowledged by WHO) were used for data collection. All Hand washing stations were observed in different facilities in both hospitals. Hand hygiene module to be completed by the Chief Physician or Head Nurse of each clinical or service area was used to assess hand hygiene practices in Medical/Surgical wards, Labour and Delivery and Surgical Areas. This module contain following practices-

1. Hand Hygiene Equipment and Supplies
2. Hand Hygiene Practices

A comparison of hand hygiene practices by questionnaire and observation checklist in different departments of both the hospitals was made. Collected data was analyzed by using MS Excel.

RESULTS

Total 60 hand washing stations were observed in different facilities of both hospitals out of which only 42 (70%) were in good condition. Running tap water was available at 47 (78.33%) hand washing station and 40 (66.67%) had soap. Paper towel, a hot air dryer and individual cloth towel were not available even at a single hand washing station for drying hands. Cloth towel was present at only 37(61.67%) hand washing station (Table 1).

Table 1: Hand washing facilities

Type of observation at hand washing stations	Number of observed hand washing station (n=60)
In good condition	42 (70%)
Availability of 24 hr running tap water	47 (78.33%)
Availability of soap	Soap with rack 30 (50%)
	Soap without rack 10 (10.66%)
Facility of hand drying	Hot air dryer 0 (0)
	Single use paper towel 0 (0)
	Individual cloth towel 0 (0)
	Multiple use cloth towel 37 (61.67%)

Table 2: Adherence to hand hygiene practices among different health personnel

Type of health worker	Type of patient Contacts	hand hygiene practice observed before contact	hand hygiene practice observed after contact
Doctor (N=70)	Invasive 28 (40.00)	20 (71.43)	25 (89.29)
	Non-invasive 42 (60.00)	11 (26.19)	16 (38.10)
Nurse (N=88)	Invasive 31 (35.23)	15 (48.39)	18 (58.06)
	Non-invasive 57 (64.77)	10 (17.54)	14 (24.56)
Others (N=22)	Invasive 0 (00.00)	0 (00.00)	0 (00.00)
	Non-invasive 22 (100.0)	4 (18.18)	5 (22.72)
Total	180(100)	60 (33.33)	78 (43.33)

(Figures in parentheses showing percentage)

Table 3: Comparison of hand hygiene practices by questionnaire and observation checklist

Unit	Score by Questionnaire		Score by observation	
	General Ward	ICU	Before patient contact	After patient contact
General surgery Unit	50	56.67	20	40
General medicine Unit	43.33	63.33	26.67	33.33
Trauma Unit	50	46.67	40	40
Pediatric Unit	40	46.67	40	40
Nursery (NICU)	-	83.33	66.67	80
Neurology Unit	56.67	53.33	33.33	40
Neurosurgery Unit	50	-	40	46.67
CTVS-ICU	-	75.67	46.67	46.67
Gastroenterology	48.27	-	33.33	40
ENT Unit	53.33	-	13.33	46.67
Obstetrics & Gynecology	43.33	50	26.67	40

(All Figures in percentage)

Total 180 observations of hand washing were made, in these 70(38.89%) doctors, 88(48.86%) nurses and 22(12.22%) other health workers like ward boy were observed. 31(44.28%) out of 70 doctors perform hand hygiene practices (either soap and water or alcohol hand rub) before patient contact and 41(58.57%) were found to perform hand hygiene practices (either soap and water or alcohol hand rub) after patient contact. In case of nurses, 28.41% hand hygiene practices observed before and 36.36% practices after patient contact. Others (22) performed only 18.18% hand hygiene practices before and 22.72% practices after patient contact. Overall before and after contact hand hygiene practices were 33.33% and 43.33% respectively (Table 2). Highest practices related to

hand hygiene in general ward were observed to be 56.67% in neurology unit followed by 53.33% in ENT and Obstetric unit. Least practices were observed in Pediatric unit (40%), followed by 43.33% in General Medicine and Gynecology unit. In ICU best practices were observed to be 83.33% in NICU, followed by 75.69% in CTVS-ICU. Least practices (46.67%) were observed to in Trauma and Pediatric unit (Table 3).

DISCUSSION

It is an established fact that proper hand washing before and after any medical /surgical procedure could bring down the incidence of hospital acquired infection by 20%. The result of the present study carried out using checklist revealed that 70%-80% hand washing station were in good condition with availability of 24hoursrunning tap water, however of the total 60 hand washing station observed, only 50% had the availability of soap with rack and none of the station had the facility of hand drying using hot air dryer, use of paper towel and single use towel. Approximately 62% of the station had the availability of multiple use towels. A study conducted by Devnanai M. et al[3]also reveal the pathetic condition of the hand washing facility where 27% sinks had no or broken soap rack (stand) and at 7% sinks soap bar were not available and at 11% sinks multiple use cloth towel were dirty. Another study conducted by Anargh V. et al [4] also reveal that no paper towel were available at 87% sinks whereas 91% sinks had availability of multiple use towels. Further in an attempt to assess adherence to hand hygiene practices among different healthcare personnel, in a study conducted by Anargh V. et al [4] heavy workload (38%), non-availability (52%) and inaccessibility (9%) of hand hygiene facility were the common reason for non-compliance. In another study conducted by Sharma R. et al [5] compliance to hand hygiene practices was 72.5% and 95% after patient contact. In contrast to this the present study observed the compliance 33.33% before and 43.33% only after patient contact. On breakup it was seen that adherence to hand hygiene practices specially during invasive procedure was better among doctors (71.43%) in comparison to nurses (48.39%) before contact great variation was observed while trying to retrieve the information by questionnaire method and observation regarding compliance to hand hygiene practices in different units of facility as is clearly evident and the medical personnel trying to show good response while filling questionnaire but not actually following the norms

as observed no such comparison is available in any studies conducted so far.

Conclusion

Being a tertiary level of government hospital there is a lot of scope in improvement of the services to minimize the risk to the health care personnel. Guidelines related to hand hygiene practices need to be widely circulated and displayed at prominent locations. Hospital should develop their own training module on the basis of WHO guideline for developing the skills of all health care personnel to address issues related to hand hygiene practices and infection control practices. Hospital administration should ensure the execution of quality of practices by regular surveillance and monitoring by some designated officer.

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