

HOSPITAL ACQUIRED INFECTION

**Internship Training
at
Aster Adhar Hospital, Kolhapur**

**By
Anjum N. Mahabari**

**Under the guidance of
Dr. Goutam Sadhu**

**MBA Hospital & Health Management
2013–15**



**Institute of Health Management Research
Jaipur
2015**

Dissertation report

On

HOSPITAL ACQUIRED INFECTION

BY

DR. ANJUM N. MAHABARI

UNDER GUIDANCE OF

**Dr. Goutam Sadhu
(Associate professor)**

**MBA (HOSPITAL & HEALTHCARE MANAGEMENT)
2013-2015**



TO WHOMSOEVER IT MAY CONCERN

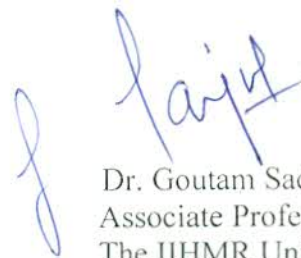
This is to certify that **Dr. Anjum N. Mahabari**, student of MBA Hospital & Health Management from The IIHMR University, Jaipur has undergone Internship training at **Aster Adhar Hospital, Kolhapur**, from 15th February, 2015 to 8th May, 2015.

The candidate has successfully carried out the study designated to him during internship training and his approach to the study has been sincere, scientific and analytical. The Internship is in fulfillment of the course requirements.

I wish him success in all his future endeavours.



Col. (Dr.) Ashok Kaushik
Dean, Academics and Student Affairs
The IIHMR University, Jaipur



Dr. Goutam Sadhu
Associate Professor,
The IIHMR University, Jaipur

Date: 8 may 2015

To

Whom so ever it may concern

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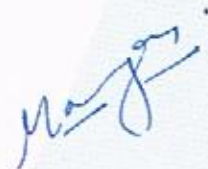
Dr. Anjum N. Mahabari student of IIHMR, Jaipur has worked in our organization
from 15 feb 2015 to 8 may 2015.

He has successfully completed his project on " Hospital Acquired Infection "

He comes across as committed, sincere & diligent person who has strong drive & zeal for
learning.

We wish you all success in future endeavour.

During this tenure with us we found his work and conduct good .



Aster Aadhar Hospital
(Prerana Hospital Ltd)
R. S. No. 628, Near K.M.T. Work Shop
Shastri Nagar, Kolhapur.

Prerana Hospital Ltd.

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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled Hospital Acquired Infection, submitted by Anjum N. Mahabari Enrollment No 1413 under the supervision of Dr. Goutam Sadhu (Associate Professor, The IIHMR University) for award of MBA Hospital Management of the university carried out during the period from 15th February, 2015 to 8th May, 2015 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.


Signature

AKNOWLEDGMENT

Every successful story is a result of an effective team work, a team which comprises of a good coach and good team players. Likewise this thesis report is no exception. This has been a meticulous effort of a group of people along with me. I want to take this opportunity to thank each and every one who has been a part of this report.

To start with, I wish to thank my mentor and guide Prof. Dr.Gautam Sadhu. He has been a constant source of encouragement with her valuable inputs about the dissertation. His timely advice helped me realize what was required to conduct the research and collect the data and helped me complete it in an effective baby.

Secondly, I wish to thank Mr. Prakash kulkarni (Head- Operations). He was instrumental in providing me this opportunity and helping me in getting the relevant information.

Also, I wish to take this opportunity to thank all the staff, doctor working at hospital for helping me in compiling all the collected data in this report.

Date: 8 may 2015

To

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ABSTRACT:

Objectives:

- 1) To check the measures being followed for infection control
- 2) To find infection rate of indicators.
- 3) To check & evaluate the training given to staff for hospital infection control.

Background:

(HAI) is an infection which is acquired by patient during hospital stay other than its primary diagnosis after 48 hours of its admission whose development is favoured by hospital surroundings. It is also called as nosocomial infection. HAI can affect patient in any type of healthcare setting and may appear after discharge. It result in increased length of hospital atay, long term disability, increased resistance of microorganisms to antimicrobials, massive additional costs for health systems, high cost for patient and there family and unnecessary death.

Methodology:

Types of study:

Prospective and record based study

Location of study:

DM Healthcare Aster Adhar Hospital, Kolhapur

Data sources:

IC record forms filled by all departments.

Primary sources: record forms filled by all department

Secondary sources: literature review

Finding:

The data were collected on four indicators which are as follows :

1. IV infection/ BSI
2. UTI

3. VAP

The three month data collected and IR as calculated by the formula:

Number of infected patient / total number of patient admitted *100

Suggestions:

Formation of new IC team that includes

One person from microbiology department

- Act as infection prevention and control doctor and directs the activities of the infection prevention and control nursing personnel
- Responsible for culture reporting'

One person from nursing

- She will supervise all the nurses and instruct them to follow the SOPs strictly

Head administrator

- For proper implementation, monitoring and evaluation of infection dat
- Responsible to take timely actions for proper implementation of antimicrobial policy, its monitoring and evaluation
- Responsible to implement local interventions along with its supervision

Sanitary inspector

One person from anaesthesia department

- Training,sensitization and awareness of staff and continuous basis
- Proper reporting format to be implemented
- Formation of antimicrobial policy
- Separate report must be generated for critical areas to know their IR and depending on that specific actions to be taken to reduce the IR if it is high and if in limits then evaluating the procedures whether the same procedures can be implemented in other areas or not

Maintenance of registers in wards

- Registers must be filled accurately and regularly
- Report must be generated from the data generated by registers

Timely submission of report

2

Evaluation of reports and necessary actions to be taken for the same

laundry process to be changed

Existing system

- Wards: once in a week
- OT; alternate days
- Critical areas: alternate days
- OPDs: twice a week
- Administrative block: once a week

New system

- Initially, changes are made only in ward areas and rest will be done later
- From wards: twice a week and latter on alternate days

Reason: the staff is working in this institute from longer period and they have adjusted themselves according to previous system. It takes time to change their behaviour towards a new system. So have started with initial stage of change and further changes will be implemented.

**ABOUT HOSPITAL
HISTORY
VISION
MISSION
FACILITIES**

History

Aadhar Hospital's seeds were sown in 1996 by a group of seven doctors from different specialties. They had a vision to set up a multi-specialty medical centre in Kolhapur. The dream metamorphosed into Prerana Hospital Limited's erstwhile Aadhar Nursing Home,

This medical centre has steadily progressed & established itself as one of the premier medical setup serving the community in and around Kolhapur district including adjoining cities of South Maharashtra and North Karnataka. Aspiration to propel higher led to Aadhar Hospital becoming the most trusted multi specialty health care facility. The Aadhar founders were waiting for the right time, venture partner and opportunity to spread wings and in 2008, DM Healthcare, a renowned name in modern and state-of-the-art medical and infrastructural facilities agreed to be Aadhar's strategic partner in a mega project.

Aadhar Hospital & DM Healthcare Pvt. Ltd.

Keeping with its vision of constantly improving, transforming and upgrading quality of healthcare delivered, Aadhar Hospital has taken a strategic direction and formed Joint Venture (JV) with like-minded globally renowned "DM Healthcare Private Limited (DMH)

Quality Healthcare is the need of an increasingly discerning population the world over. In its quest for excellence, DM Healthcare provides comprehensive healthcare of the highest quality.

The seeds of the future were planted by Dr. Azad Moopen, a doctor turned entrepreneur, in 1987 in Dubai. DM Healthcare has since blossomed to become one of the leading healthcare conglomerates of the Middle East and India in a quarter century.

"Aster Aadhar" is the novel as a by-product of DMH & Aadhar blending. Apparition is to work together to bring in the much needed upliftment in healthcare standards & quality of medical care in south-west Maharashtra & North Karnataka. A special emphasis is being given on developing processes to deliver reliable patient care by having "Advanced medical technology, well qualified & expertise medical, paramedical & admin staff.

vision & Mission

Vision:

"To become the leader in the delivery of quality health care at an affordable cost in the localities we serve, by establishing the largest network of medical facilities, with a dedicated team of healthcare professionals who excel in care and compassion. "

Mission:

- Become the preferred provider of comprehensive healthcare at an affordable cost to the people we serve.
- Nurture a committed and passionate team of healthcare professionals to carry forward the mission.
- Achieve exponential growth harnessing human, technological and financial resources.
- Hold firmly onto the quality and ethical values of the noble profession.
- Contribute in the field of Medical Education and Research with a quest for acquiring and imparting knowledge.
- Provide assistance to the underprivileged, as part of the corporate social responsibility in accomplishing a compassionate mission.

Facilities

Facilities at Aster Aadhar Hospital...

Aster Aadhar Hospital caters to the special needs of patients and their families. The hospital has been designed and developed to deliver patient care with maximum ease warmth and effectiveness. At the same time we place a lot of importance on the traditional values of hospitality and compassionate patient care. Our primary concern is to ensure that your health and comfort receives special attention and that you are given the best possible care once you enter the portals of our hospital. The hospital centers around the highest delivery of patient care and has integrated its processes for smooth functioning of the hospital, as per international standards. We give you here a few details about our hospital so that your experience at our hospital is comfortable and pleasant.

Aster Aadhar strives to give the best of treatment, cure and comfort. Its symbol of quality is its state-of-the-art infrastructure, which consists of around 500 employees with full time doctors and technical staff, a fully functional hospital that can efficiently cater to the healthcare requirements of Southern and Western Maharashtra.

Specialties at Aster Aadhar Hospital, Kolhapur		Super Specialties	
1.	Anesthesiology	1.	Cardio Thoracic & Vascular Surgery
2.	Dentistry	2.	Cardiology
3.	ENT	3.	Chest Medicine
4.	General Medicine	4.	Diabetology
5.	General Surgery	5.	Gastroenterology
6.	Obstetrics & Gynecology	6.	Hematology
7.	Ophthalmology	7.	Medical oncology
8.	Orthopedics	8.	Nephrology
9.	Pediatrics	9.	Neurology
		10.	Neurosurgery
Patient & Visitor's Facilities :		11.	Onco – Pathology
1.	Baby Feeding Lounge	12.	Orthodontics
2.	Home Specimen collection	13.	Pediatrics Ophthalmology
3.	ICU Information desk	14.	Pediatric Surgery
4.	Medical expense counseling	15.	Pathology
5.	Meditation Space	16.	Pulmonology
6.	Meditation Space	17.	Radiology
7.	OPD waiting area	18.	Surgical Oncology
8.	OT Conference and Video Conference Unit.	19.	Trauma care
9.	Patient and visitors cafe	20.	Urology
10.	Patient counseling	21.	Vitreo - Retinal Surgery
11.	Patient Counseling Lounge		
12.	Reception , May I help You , Registration Desk	Diagnostic Services:	
13.	Relatives waiting area for 15 persons.	1.	Vision testing
14.	Relatives Waiting Lounge - 20 Relaxing chairs.	2.	Perimetry
15.	Terrace Garden.	3.	Gastroscopy Unit
16.	VIP Lounge with Dining facility.	4.	Endoscopy Procedure Complex
17.	Visitor's Cafe	5.	Stress Test Unit
			7.

18.	Visitor's Room & VIP waiting area.	6.	Treatment Room
19.	Waiting area	7.	EEG Unit
20.	Waiting area for 40 visitor's and patients.	8.	Audiometry Unit
		9.	Pulmonary Function Test Unit
	Pharmacy Services	10.	Physiotherapy Multi Gym unit with wax bath facility.
1.	24 hrsOut Patient Pharmacy		
2.	Home Care Medicine Services		Radiology Department
		1.	X ray Unit
	Pharmacy Services	2.	2D ECHO & Ultra-Sonography Unit
1.	24 Hrs Casualty Triage - 3 bedded	3.	Mammography Unit
2.	Casualty Minor OT.	4.	C.T. Scan
3.	Emergency ICU - 5 bedded		
4.	Cardiac Ambulance services		
5.	Patient transport services		
6.	Blood Bank -24 Hrs.		

A Synopsis of Aster Aadhar Hospital

Aster Aadhar hospital is designed keeping in mind four pillars of a healthcare provider to facilitate quality healthcare delivery. These pillars are its clinical excellence, supportive care, patient centre and administrative departments. The hospital centres around the highest delivery of patient care and has integrated its processes for smooth functioning of the hospital, as per international standards.

Clinical Excellence:

- 24 Hrs Emergency& Accident Department (Trauma Unit)facility with Bed Capacity of 6 & 3 triage beds along with a Minor O.T.
- 30 Multispecialty clinical disciplines all under one roof .
- Inpatient areas for overall patient treatment and management, in different classes.
- Day care for short stay procedures.
- 5 Fully equipped Ultra-Modern- Modular Zero-infection Operation Theatres including separate theatres for Cardiac, Neuro, Laparoscopy, Onco and Joint Replacement and 1 labour OT & labour complex inclusive of Pre & Post Labour unit and with Post-operative / Recovery Room
- Digital Cath Lab 1 State of art Cath Lab for complete Cardiac and Vascular work including Angiography, Angioplasty, and Stenting for blood vessels.

- Diagnostic Services for modalities in further assessment of patient well equipped with **Radiology** :Multi-slice CT Scan, Digital X-Ray, Ultrasound, and 2 D Color Doppler **Laboratory** : Biochemistry, Microbiology and Virology, Histopathology, Clinical Pathology, Hematology, Cytology, Serology and Immunology
- Critical Care Units having a top-notch technology and equipment which includes cardiac monitors and & other saving gadgets ventilators. 30 bedded ICU and 10 bedded ICU

Supportive Care:

- Central Sterile Supply Department
- Laundry
- Biomedical Department
- Blood Bank
- House Keeping
- Food & Beverages
- Pharmacy
- Engineering & Maintenance

Key Administrative Areas:

- Finance & Accounts Department
- IT Department
- HR Department
- Marketing
- Administrative Wing
- Typing Pool

Patient Assistance focus:

- May I Help You
- Telecommunication
- Casualty Reception
- OP Reception :
 - OPD Consultation
 - Investigation
- IP Reception :
 - Admission
 - Billing
 - Cashier
- TPA Counter
- Customer Service Department
- Report Dispatch Counter
- Medical Records Department
- Store
- Medical & Pharmacy Store :
 - Engineering Store
 - General Store
 -
 -

INTRODUCTION OF STUDY TOPIC

HOSPITAL ACQUIRED INFECTION:

(HAI) is an infection which is acquired by patient during hospital stay other than its primary diagnosis after 48 hours of its admission whose development is favoured by hospital surroundings. It is also called as nosocomial infection. HAI can affect patient in any type of healthcare setting and may appear after discharge. It results in increased length of hospital stay, long term disability, increased resistance of microorganisms to antimicrobials, massive additional costs for health systems, high cost for patient and their family and unnecessary death.

Linen and laundry also have its significance in causing HAI. They become sources of transferring pathogens to patients and hospital personnel. Contaminated linen and improper laundering pose vehicles to transmit microorganisms. Linen includes bed sheets, pillows, blanket towels, uniform, gowns, drapes of surgical items contains high number of microorganism from body substances such as blood, urine, stool, vomitus, other body tissues and fluids. As such hospital acquired infection linked to linen is less therefore risk of transmitting of microorganisms is low. Laundry personnel are responsible for processing hundreds of thousands of pounds of contaminated reusable linens annually and can be at risk for injury if precaution not taken.

Considering all the above mentioned points and many more it becomes extremely important to make hospital clean and free of microbes as much as possible extremely important to make hospital clean and free of microbes as much as possible so that the patients and the hospital personnel remain infection free.

Infection control is the discipline concerned with preventing nosocomial or healthcare associated infection, a practical rather than sub discipline of epidemiology it is essential, though often under recognized and under supported, part of infrastructure of health care. Infection control addresses factors related to spread of infection within healthcare setting whether

- Patient to patient
- Patient to staff
- Staff to patients
- Among staff

There are no published standards of HAI rates. The rate of HAI will vary with patient risk and therefore, there will be different rates in different units. Rates will vary depending upon the level of facilities and staff available in different hospitals of medical systems. 10.

Prevalence surveys show average whole hospital rates of HAI of 7-10%. It is thought that 30% of these may be preventable. Surgical site infection rates in clean surgery should probably be less than 5% and even less than 1% may be achievable.

Moreover it can not only occur to patients but to anyone who is working or visiting the hospital premises. Any infection to the patient after primary diagnosis after 48 hrs of admission in hospital acquired infection to that patient.

It includes prevention through

- Hand hygiene / hand washing
- Cleaning
- Disinfection
- Sterilization
- Vaccination
- Surveillance
- Personal protective equipment
- Antimicrobial policy

Infection prevention and control measure aim to ensure the protection of those who might be vulnerable to acquiring an infection both in the general community and while receiving care due to health problem, in range of settings. The basic principle of infection prevention and control is to adopt safe practice.

Further, it monitors/ investigates the demonstration or suspected spread of infection within a particular healthcare setting (surveillance and outbreak investigation) and management (interruption of outbreaks)

There is an increased risk of HAI to patient which contributes to following factors:

- Decreased immunity due to exiting illness
- Medical procedure which are invasive
- Overcrowding which exist in every healthcare setup
- Poor infection control procedure

All these risk factor can be minimised but cannot be totally vanished.

The introduction of antisepsis by joseph lister in 1960 changed the science of surgery from an activity of infection and death to one that relieved suffering and prolonged life. Advances in aseptic practices, however failed to have substantial impact on the rates of infection worldwide, and they remain a serious cause of morbidity and mortality among hospitalized patient

Aseptic technique is key component of all invasive medical procedure similarly infection control measure are most effective when universal precaution are applied and practised regularly because undiagnosed infection is common.

Healthcare associated infection (HCAI) is global patient safety challenge for every organization.

INDICATOR OF INFECTION
CONTROL

INDICATORS OF INFECTION CONRTOL

To study infection control procedure at aster adhar hospital, Kolhapur four IC indicator has been taken in to consideration. The four indicators of IC are as follows

- Intravenous line infection (IV LINE)
- Urinary Catheter induced infection (UTI)
- Ventilator associated Pneumonia
- Central associated BSI

- **Intravenous line infection:**

Intravenous means within vein. IV catheter is used to administer medication and blood transfusion through a channel which is known as drip. It punctures the skin and creates an open pathway for organism to enter the blood stream and cause infection During the procedure needle and catheter comes in contact with the organism tha causes infection.

Most common complication of IV catheterization is phlebitis which means inflammation of veins and presents with symptoms of warmth, swelling, pain and redness around the area of catheterization.

Other adverse effects that occur:

- Pain and invasiveness of injection
- Infection
- Infiltration
- Extravasation
- Embolism
- Fluid overload
- Hypothermia
- Electrolyte imbalance

To reduce chances of infection due to IV catheterization, it has to be removed / changed in between 24-48 hours of insertion.

- **Urinary catheter Infection:**

Urinary catheter is a thin tube which is inserted in to bladder of patients who are unconscious, bed –ridden, during some test of kidneys, undergoing surgical procedure to drain into bag which is connected with tube.

During procedure of catheterization microbes can enter the bladder and cause infection, which is known as UTI, the patient mainly presents with the following signs and symptoms:

Pain in lower abdomen

Burning sensation during urination

Hematuria which may be due to pre-existing disease

To reduce the chances of infection due to UC catheterization, it has to be removed / changed in between 24- 48 hours of insertion.

- **Ventilator Associated pneumonia:**

VAP occurs to patients who are on mechanical respiratory support and develop after 48 hours of tracheotomy or who are on ventilator through end tracheal tube. VAP result from invasion of microorganism in the lower respiratory tract and lung parenchyma. It mostly occurs in patients with acute respiratory distress syndrome. (ARDS). Patient on mechanical ventilation are mainly unable to communicate as they are sedated so its very difficult to know signs and symptoms but usually they are sedated so its very difficult to know signs and symptoms but usually they present with following sign and symptoms.

- Fever
- Low body temperature
- Hypoxemia
- Purulent sputum

VAP can be prevented by following procedure:

- Proper hand washing
- Strict aseptic precaution during procedures
- Isolation of patient with known resistant microorganism

Mechanical respiratory support is given to patients with respiratory Failure and its associated with high mortality.

STANDARD OPERATING

PROCEDURE

STANDARD OPERATING PROCEDURES

Standard operating procedures (SOP) are a detailed explanation of how is to be implemented. The SOP may appear on the same form as a policy or it may appear in a separate document. The main difference between a SOP and a policy are details. An effective SOP communicates who will perform the task, what materials are necessary, where the task will take place, when the task, shall be performed, and how the person will execute the task.

The details in an SOP standardize the process and provide step-by-step instructions that enable anyone to perform the task in a consistent manner. The SOP document serves as an instructional resource that allows employees to act without asking for directions, reassurance, or guidance. The step-by-step written procedure can also help employees to be accountable because employee performances are documented and their actions can be measured against the SOP. Communicating procedures that anyone in the operations can follow with consistent results which will ensure your operation continually provides high quality services.

Purpose of SOP:

Serve as framework for organizations policy-

- Provide direction and structure
- Written documentation of best practice
- Tells what, how, when, why, and who
- Provide foundation for:
 - Job descriptions,
 - Employee training
 - Corrective action and discipline, and
 - Performance review.

Hand Washing Techniques

Good hand hygiene has been described as the single most important intervention in reducing the risk of cross infection. Soap and warm water is the most effective 16.

Way of cleaning hands and helps to remove microorganism. The hand washing technique is as important as; the solution used which invokes the following steps:

1. Preparation
2. Washing
3. Rinsing and Drying

Preparation

- Remove jewellery
- Initially pour water on hands then liquid soap/solution should be applied

Washing

- Palm-to-palm
- Back of both hands interlacing the fingers
- Palms of hand interlacing the fingers
- Back of fingers with finger locking while opposing palms
- Rotational rubbing of right thumb with left hand and vice versa
- Rotational rubbing of tight clasped fingers in left palm and vice-versa.

*Hand should be washed before and after every procedure.

Rinsing and Drying

- Hands should be thoroughly rinsed and dried with paper towels/dry towels which are unused.

Surgical SOPs

Key Points

- Theatre dress code
- Discipline
- Masks/caps
- Wearing theatre clothes outside theatre is prohibited
- Perform a risk management
- Recover patient in theatre
- Cleaning afterwards

Characteristics

- Theatre Attire
 - Scrubbing
 - Caps/Masks
 - Jewellery
 - Scrub/Additional/Over gown

- Shoes
- Sterile gloves
- Trained staff & other personnel

18.

- Patient Attire

- Risk Management
- Antimicrobial cover prior to procedures
- Normothermia
- Glucose control
- Site preparation
- Site closure/dressing

- Ventilation

- Anaesthetic gases
- Smoke

- Preoperative Issues

- Preparation of local site
- Management of infected personnel
- Antimicrobial prophylaxis

- Postoperative issues

- Incision Care
- Discharge Planning

RESEARCH QUESTION

AIM

OBJECTIVES

RESEARCH QUESTION

- Whether the hospital is following the infection control measures?

AIM

- A Study on Infection control measures in hospital.

OBJECTIVES

- To check the measures being followed for infection control
- To find infection rate of indicators.
- To check and evaluate the training given to staff for hospital infection control.

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Article on "Hospital Hygiene and infection Control" : Management of the health –care waste is an part of hospital hygiene and infection control. Hospital waste should be considered as a reservoir of pathogenic microorganisms, which can cause contamination and give rise to infection. If waste is inadequately managed, these microorganisms can be transmitted by directed contact, in the air, or by a variety of vectors. Infectious waste contributes to the risk of nosocomial infection, putting the health of hospital personnel and patients at risk.

Article on infection control on website Medline Plus: states that hand washing is the most effective way to reduce infection in hospitals. Other than hand washing there are many ways by which hospitals acquired infection can be prevented which are as follows:

- Staying up-to date with immunization
- Covering coughs and sneezes.
- Using masks, gloves and protective clothing.
- To follow the universal precautions while dealing with blood and contaminated items.

These precautions should be practiced regularly by health care staff to reduce and prevent the chances of infection to both patients and staff/visitors.

Comprehensive evidence-based clinical practices guideline for ventilator-associated pneumonia: Prevention: This study concluded that there are numbers of evidence based strategies which if applied to practices then VAP can be prevented.

- Dr. T. V. Rao "Hospital Infection": Started an infection acquired in hospital by patients who was admitted for a reason than that. This includes infections acquired in the hospital but appearing after discharge.
- The Prevention of Ventilator Based Pneumonia: VAP occurs after 48 to 72 hours of tracheal intubation and nosomial infections becomes the leading cause of death due to hospital acquired infections.
- Healthcare Infection Control – Are we serious? : The study stated that in the development countries HAI is the most frequent from of adverse events in the healthcare industry. It also stated that millions of patients get infected with HAI that leads to higher mortality and financial loses of healthcare industry. Moreover, infection rates are significantly higher in developing countries then in developed countries.

METHODOLOGY

METHODOLOGY

- Type of study: Prospective and Record based study

- Location of study: Aster Adhar Hospital, Kolhapur.

- Data Source : IC Record From approved by HIC (Annexure I)
 - Primary Source Record forms filled by all departments.
 - Secondary Source: Literature Review.

IMPLEMENTATION

RESULTS

LIMITATION

&

SUGGESTION

IMPLEMENTATIONS

After calculating the IR of the month of February which is more than accepted and during rounds it came into notice that the staff is not following the standard procedures which reduces risk of developing HAI. So there is an urgent need of the following:

- Sensitization and training of the staff to prevent HAI.
 - Hand Washing Techniques
 - Regular flushing
 - Change of IV cannula after every 24-48 hours.
 - In case of appearance of any local sings, immediate change of IV cannula to other site
 - Catheter Care
 - Aseptic procedure
 - Appropriate drainage with support
 - Proper positioning of the bag
 - Advice to patients/relatives e.g. emptying, fluid intake and hygiene
 - Plan of removal and change
 - In case patient develop any sign of UTI, catheter to be removed and changed immediately.
 - Wound care
 - Regular dressing

- Antibiotic Administration
- VAP Care
 - Nursing care on patients on ventilator
 - Aseptic Procedure
 - Proper suctioning and decontamination
 - Prevention of Aspiration
- Use of gloves before every procedure.
- Use of sterile/sealed IV catheter and urinary catheter to every patient. As earlier they were using unsealed IV and urinary catheters which is one the reason higher rates of IV infection and UTI because as it is kept unsealed the microorganism develop on it and when introduced leads to infection.
- Labeling of adhesive over IV cannulation which tells the time to change the Iv catheter and urinary catheter.
- Functioning of HIC committee.

RESULTS

The data were collected on found indicators which are as follows:

1. IV infection
2. UTI
3. VAP
4. BSI

The 3 months data was collected and IR was calculated by the formula:

Number of Infected Patients/Total number of patients admitted*100

IR was calculated as;

1. Cumulative IR of hospital of the 3 months depending upon indicators
2. IR of respective 3 months i.e. February, March and April.
3. IR depending upon indicators (IV infection UTI, VAP, SSI

Results were presented in the form of graphs along with their analysis in the above mentioned categories i.e.

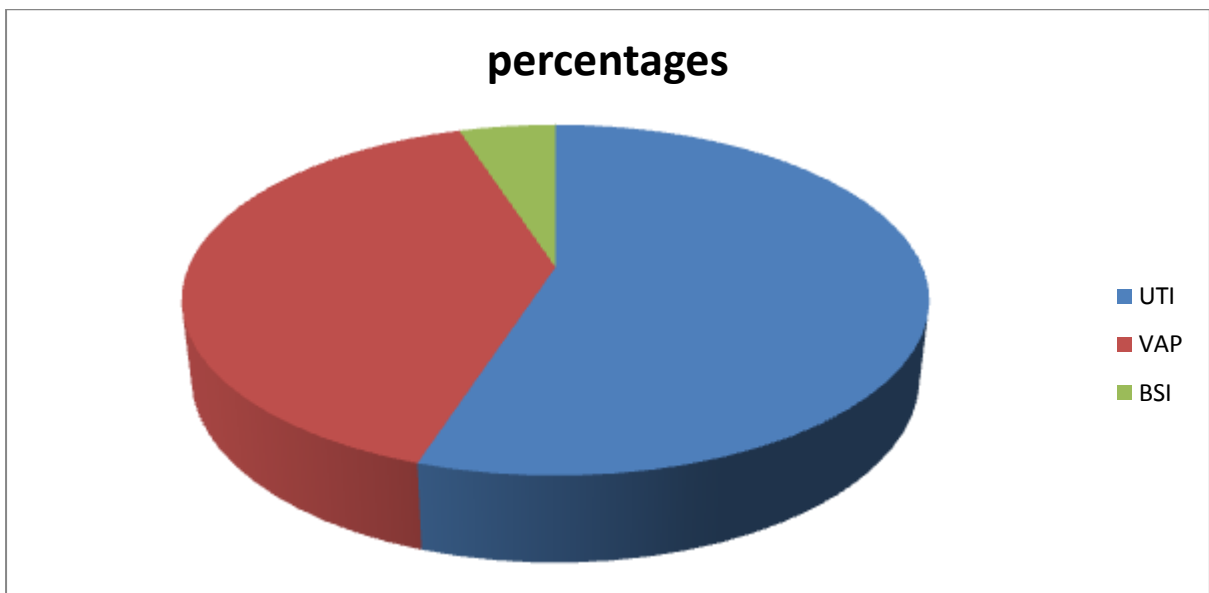
1. Cumulative IR of 3 months (Box no.1)
2. IR depending upon indicators (box no.2)
3. IR depending on Indicators (box no.3)
4. IR of major departments (Box no.4)

PERFORMANCE EVALUATION

OUTBREAKS

FEB' 14 – FEB15'

- Breakup of HAIs
 - UTI – 55%
 - VAP – 40%
 - BSI – 5%



Urinary catheter associated UTI (ICU) (Box -1)

Month	Admissions in ICU	No. of patients on catheter	Urinary catheter days	UTI cases among patients
Jan	125	43	248	3
Feb	153	58	226	2
march	185	45	329	6
Total	463	146	803	11

Rate of UTI

- Catheter associated UTI rate = no. of UTI cases/no. of catheter days x 1000
- Catheter associated UTI rate = $11/803 \times 1000 = 13.69$

Ventilator associated pneumonia (Box-2)

Month	Admissions in ICU	No. of patients on ventilator	Ventilator days	No. of VAP cases
May	125	18	91	1
June	153	28	102	0
July	185	38	157	1
Total	463	84	350	2

Rate of VAP

- VAP rate = no. of VAP cases/no. of ventilator days x 1000
 - VAP rate = $2/350 \times 1000 = 5.71$ 28.

Central associated BSI (Box-3)

Month	Admissions in ICU	No. of patients on central line	Central line days	No. BSI cases
Jan	125	39	266	1
Fab	153	33	215	1
march	185	49	329	2
Total	463	121	810	4

BSI rate

- Central line associated infection rate = $\frac{\text{no. of BSI cases}}{\text{no. of central line days}} \times 1000$
- Central line associated infection rate = $\frac{4}{810} \times 1000 = 4.9$

HAI Comparison data

Time period	VAP rate	IVD – BSI rate	UTI rate
Jan’ 10 – feb’10	4.47	6.6	10.7
feb’10 – march’10	5.71	4.9	13.69
march’10 – april’10	4.18	10	9.06
INICC	13.6	7.6	6.3

LIMITATION OF STUDY.

Every study has its own limitation which affects the end result, conclusion and limit the extensivity of study. Moreover limitation is the occurrences which are out of the researchers control. It provides the platform to overcome take corrective actions to overcome in future. Following are the limitation of the study.

- Lack of supervision of filling of HAI forms.
- There is no scientific evidence of the data generated
There is no microbial culture done before mentioning any HAI e.g. if there are sign and symptoms of UTI, the tip of catheter should be sent for microbial culture and on the basis of culture report the diagnosis is made.
- Because of Multispecialty hospital over loading of patient so there are more chances of nosocomial infection which makes it difficult to follow universal precaution to prevent HAI
- There is no restriction of visitors because the visiting time for visitors has not been allotted for their visit which leads to movement even in restricted areas like ICU.
- It was difficult to find the IR of critical areas like ICU, NICU. Because there is no separate report generated for critical areas. Respective department include the patients of HAI in there department reporting.
- Previous year IR is not available for comparison.
- As the study is record based what actual procedures are followed becomes the limitation of study.

SUGGESTION

Formation of new IC team that includes

One person from microbiology department

- Act as infection prevention and control doctor and directs the activities of the infection prevention and control nursing personnel
- Responsible for culture reporting'

One person from nursing

- She will supervise all the nurses and instruct them to follow the SOPs strictly

Head administrator

- For proper implementation, monitoring and evaluation of infection dat
- Responsible to take timely actions for proper implementation of antimicrobial policy, its monitoring and evaluation
- Responsible to implement local interventions along with its supervision

Sanitary inspector

One person from anaesthesia department

- Training,sensitization and awareness of staff and continuous basis
- Proper reporting format to be implemented
- Formation of antimicrobial policy
- Separate report must be generated for critical areas to know their IR and depending on that specific actions to be taken to reduce the IR if it is high and if in limits then evaluating the procedures whether the same procedures can be implemented in other areas or not

Maintenance of registers in wards

- Registers must be filled accurately and regularly
- Report must be generated from the data generated by registers

Timely submission of report

Evaluation of reports and necessary actions to be taken for the same

laundry process to be changed

Existing system

- Wards: once in a week
- OT; alternate days
- Critical areas: alternate days
- OPDs: twice a week
- Administrative block: once a week

New system

- Initially, changes are made only in ward areas and rest will be done later
- From wards: twice a week and latter on alternate days

Reason: the staff is working in this institute from longer period and they have adjusted themselves according to previous system. It takes time to change their behaviour towards a new system. So have started with initial stage of change and further changes will be implemented.

CONCLUSION

CONCLUSION

The data collected and its graphical representation provided a valuable method of presenting hospital IR which clearly identifies the high and low infection rates of different department of the hospital and the cumulative infection rate of all the four indicators. The calculated result can be used to reduce hospital infection rate by applying local intervention and new techniques.

Moreover, it provided figures of that indicator which has the highest number of infection rate. Depending upon that the local intervention can be used to reduce the number of infections and that indicator had become the matter of concern for the organization.

THANK YOU