

Hospital Acquired Infection

**Internship Training
at
Sir Takhtasinhji General Hospital
(February 3rd, 2014 to April 30th, 2014)**

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TO WHOMSOEVER MAY CONCERN

This is to certify that **Roopali Sawhney** student of Postgraduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone internship training at **Sir Takhtasinhji General Hospital, Bhavnagar** at **Government of Gujarat** under **National Rural Health Mission** from February 3rd, 2014 to April 30th, 2014.

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.



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Certificate

The certificate is awarded to Ms Roopali Sawhney in recognition of having successfully completed her dissertation and has successfully completed her Project on Hospital Acquired Infection from February 3rd, 2014 to April 30th, 2014 at Sir Takhtasinhji General Hospital, Bhavnagar (Gujarat).

She comes across as a committed, sincere and diligent person who has a string drive and zeal of learning.

We wish her all the best for her future endeavors.

 Medical Superintendent

Medical Superintendent
Sir Takhtasinhji General Hospital
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INSTITUTE OF HEALTH MANAGEMENT RESEARCH, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled Hospital Acquired Infection, submitted by Ms Roopali Sawhney , enrollment no. 1367 under the supervision of Dr Raghuvanshi Pratap for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from February 3rd, 2014 to April 30th, 2014 embodies my original work and has not formed the basis for the award of my degree, diploma associateship, fellowship, titles in this or any other Institute or other similar Institute of higher learning.



Signature

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ABBREVIATIONS

- **ARDS:** Acute Respiratory Distress Syndrome
- **HAI:** Hospital Acquired Infection
- **IC:** Infection Control
- **IV:** Intravenous
- **SOP:** Standard Operating Procedure
- **SSI:** Surgical Site Infection
- **UTI:** Urinary Tract Infection
- **VAP:** Ventilator Associated Pneumonia

TABLE OF CONTENTS

S. No.	CONTENTS	Page No.
Dissertation Report		
1	Introduction of the study topic	5
	1.1 Introduction	6
	1.2 Indicators of the HAI	11
	1.3 Standard Operating procedures (SOPs)	15
	1.4 Research Question	20
	1.5 Aim of the study	20
	1.6 Objectives	21
2	Review of literature	22
	2.1 Review of Literature	23
3	Methodology	25
4	Implementations, Results, Limitations and Suggestions	27
	4.1 Implementations	28
	4.2 Results	30
	4.3 Limitations	38
	4.4 Suggestions	40
5	Conclusion	43
	5.1 Conclusion	44
6	Annexure	45
7	References	46

Chapter 1

Introduction of the study topic

2.1 INTRODUCTION

Hospital is an institution that provides medical as well as surgical treatment and nursing care for sick or injured people. Preventive and curative care is also provided to patients. It becomes very important to keep the surroundings free of infection. In fact, it is virtually impossible to keep hospitals spotlessly clean, and it does not take much dirt to become a breeding place for billions of deadly infectious microbes. But if standard operating procedures are strictly followed then the chances of acquiring nosocomial infection are less

Prior to the 1800's, "Typhus" was recognized as a "hospital" infection, running rampant in city hospitals caring for the poor and in military hospitals. In 19th century, surgery became more prevalent leading to occurrence of other types of hospital acquired infections. The combination of surgery followed by serious infection was well over 80% for simple surgeries such as limb amputation, in Munich, during the 1870's. At that time it was 2-3 times safer to undergo surgeries at home than to hospitals. The main reason of hospital infection was poor ventilation and stagnant air. In 1830.s, James Simpons introduced the term "Hospital Acquired Infection" and called the problem as "Hospitalism". Even at that time Germ Theory was not in favour and personal hygiene was not considered as the focus to reduce infection.

Semmelweis came up with the idea of hand washing and the use of an antiseptic solution for hands and surgical instruments for the physicians when they moved from the autopsy area to the operating theatre. But uncertainly his idea was not accepted by others and he faced resistance. Within 2 years he died in the asylum for mentally unstable.

After 40 years, Joseph Lister accepted the concept of hand washing that reduces the hospital acquired infection drastically. His acceptance was based on his study on applying

hand washing techniques for limb amputation where he found the infection rate reduced from 47% to 15%. Besides this, Florence Nightingale demonstrated that hygiene makes a difference in reducing hospital acquired infection. {2}

Hospital Acquired Infection (HAI) is an infection which is acquired by a patient during his hospital stay other than its primary diagnosis after 48 hours of its admission whose development is favoured by hospital surroundings. It is also known 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 costs for patients and their family, and unnecessary deaths.

Linen and laundry also has its significance in causing HAI. They become source of transferring pathogens to patients and hospital personnel. Contaminated linen and improper laundering pose a vehicle to transmit microorganisms. Linen includes bed sheets, pillows, blankets, towels, uniforms, gowns, drapes of surgical items contains high number of microorganism from body substances such as blood, urine, stool, vomitus, other body tissue and fluids. As such hospital acquired infection linked to linen is less therefore risk of transmitting of microorganism 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 precautions are 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 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 academic) sub-discipline of epidemiology. It is an essential, though often under recognized and under supported, part of the infrastructure of health care. Infection control addresses factors related to the spread of infections within the health-care setting whether

- patient-to-patient
- patients 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. Ayliffe has pointed out that there is an irreducible minimum rate of HAI due to the inherent risks of underlying disease and medical interventions. Rates will also vary depending on the level of facilities and staffing available in different hospitals of medical systems. In general rates should be compared with peer institutions.

Prevalence surveys show average whole hospital rates of HAI of 7-10%. It is thought that about 30% of these may be preventable, depending on the patient population. Surgical site infection rates in clean surgery should probably be less than 5%, and even less than 1% may be achievable.[11]

Moreover it can not only occur to patients but to anyone who is working or visiting the hospital premises. Any infection that occurs to patient other than its primary diagnosis after 48 hours of its admission is 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 measures 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 problems, in a range of settings. The basic principle of infection prevention and control is to adopt safe practice.

Further, it monitors/investigates the demonstrated or suspected spread of infection within a particular health-care setting (surveillance and outbreak investigation), and management (interruption of outbreaks).

There is an increased risk of HAI to patients which contribute to the following factors:

- Decreased immunity due to existing illness.
- Medical procedures which are invasive.
- Overcrowding which exists in every healthcare setup.
- Poor infection control procedures.

All these risk factors can be minimized but cannot be totally vanished.

The introduction of antisepsis by Joseph Lister in 1960s 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 patients.

Aseptic technique is a key component of all invasive medical procedures. Similarly, infection control measures are most effective when universal Precautions (health care) are applied and practised regularly because undiagnosed infection is common.

Health care associated infection (HCAI) is a global patient safety challenge for every organization.

1.2 INDICATORS OF INFECTION CONTROL

To study the infection control procedures at Sir Takhtsinhji General Hospital, Bhavnagar (Gujarat) four IC indicators has been taken into consideration. The four indicators of IC are as follows:

1. Intravenous line infection (IV line)
2. Urinary Catheter induced infection (UTI)
3. Ventilator Associated Pneumonia (VAP)
4. Surgical Site Infection (SSI)

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

Other adverse effects that may occur:

- Pain and Invasiveness of injection
- Infection

- Infiltration and extravasation
- Embolism
- Fluid Overload
- Hypothermia
- Electrolyte imbalance

To reduce the 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 into the bladder of patients who are unconscious, bed-ridden, during some tests of kidneys, undergoing surgical procedures to drain urine into a bag which is connected with the tube.

During the 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 the lower abdomen
- burning sensation during urination
- Hematuria which may be due to preexisting 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 develops after 48 hours of tracheostomy or who are on ventilator through endotracheal tube. VAP results from invasion of microorganism in the lower respiratory tract and lung parenchyma. It mostly occurs in patients with Acute Respiratory Distress Syndrome (ARDS). Patients on mechanical ventilation are mainly unable to communicate as they are sedated so it's very difficult to know signs and symptoms but usually they present with following signs and symptoms:

- Fever
- Low body temperature
- Hypoxemia
- Purulent sputum

VAP can be prevented by following procedures:

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

Mechanical respiratory support is given to patients with respiratory failure and it is associated with a high mortality.

Surgical Site Infection (SSI)

Surgical Site infections occur at the site where surgery has been performed and ranges from a superficial skin infection to a more serious form of infection which may involve tissues

under the skin, organs and implants. SSIs are caused by microorganism which contaminates the incision site. The microorganisms are from the patients; body itself and hardly there is infection from outside source, It effects the quality of life and increase the length of stay in the hospital. It is associated with considerable morbidity and increases the financial burden on healthcare providers.

Factors that influence the risk of SSI

- Patient
 - Age
 - Nutritional Status
 - Diabetes
 - Smoking
 - Obesity
 - Infection at a remote body site
 - Colonization with micro-organism
 - Altered immune response
 - Length of preoperative stay
- Operation
 - Duration
 - Skin antisepsis
 - Preoperative shaving
 - Preoperative skin preparation
 - Antimicrobial prophylaxis
 - OR ventilation
 - Inadequate sterilization

- Foreign material in surgical site
- Surgical drains
- Surgical techniques
 - Poor haemostasis
 - Failure to obliterate dead space
 - Tissue trauma

SSI can be prevented by applying following measures;

1. Proper hand washing techniques or scrubbing
2. Appropriate antibiotic prophylaxis
3. Wound treatment
4. Postponing the elective surgery in case of any active remote infection.

1.3 STANDAR OPERATING PROCEDURES

Standard operating procedures (SOP) are a detailed explanation of how a policy 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 performance are documented and their actions can be measured against the SOP. Communicating procedures that anyone in the operation can follow with consistent results which will ensure your operation continually provides high quality services.

Purpose of SOP:

Serve as framework for organizational 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 way of cleaning hands and helps to remove microorganism. The hand washing technique is as important as; the solution used which involves 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 right clasped fingers in left palm and vice-versa.

*Hands 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
- Patient Attire
 - Risk Management
 - Antimicrobial cover prior to procedures
 - Normothermia
 - Glucose control
 - Site Preparation
 - Site closure/dressing
- Ventilation
 - Anaesthetic gases
 - Smoke
- Preoperative Issue
 - Preparation of local site
 - Management of infected personnel
 - Antimicrobial prophylaxis
- Postoperative Issues
 - Incision Care
 - Discharge planning

1.4 RESEARCH QUESTION

- Whether the hospital is following the infection control measures?

1.5 AIM

- A Study on Infection control measures in hospital.

1.5 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.

Chapter 2

Review of literature

2.1 REVIEW OF LITERATURE

- Article on “Hospital Hygiene and Infection Control”: Management of health-care waste is an integral 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 direct 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 hospital 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 practised regularly by health care staff to reduce and prevent the chances of infection to both patients and staff/visitors.

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

- Dr. T. V. Rao “Hospital Infection”: Stated an infection acquired in hospital by patients who was admitted for a reason other 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 nosocomial infection becomes the leading cause of death due to hospital acquired infections.
- Healthcare Infection Control – Are we serious? : The study stated that in the developing countries HAI is the most frequent form 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 losses of healthcare industry. Moreover, infection rates are significantly higher in developing countries than in developed countries.

Chapter 3

Methodology

3.1 METHODOLOGY

- Type of study: Prospective and Record based study

- Location of study: Sir Takhtsinhji General Hospital and Government Medical College, Bhavnagar (Gujarat)

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

Chapter 4

Implementations, Results, limitations and

Suggestions

4.1 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 staff to prevent HAI.
 - Hand Washing Techniques
 - Display of posters of hand washing techniques.
 - IV Care
 - Regular flushing
 - Change of IV cannula after every 24-48 hours.
 - In case of appearance of any local signs, 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.

4.2 RESULTS

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

1. IV Infection
2. UTI
3. VAP
4. SSI

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: ,

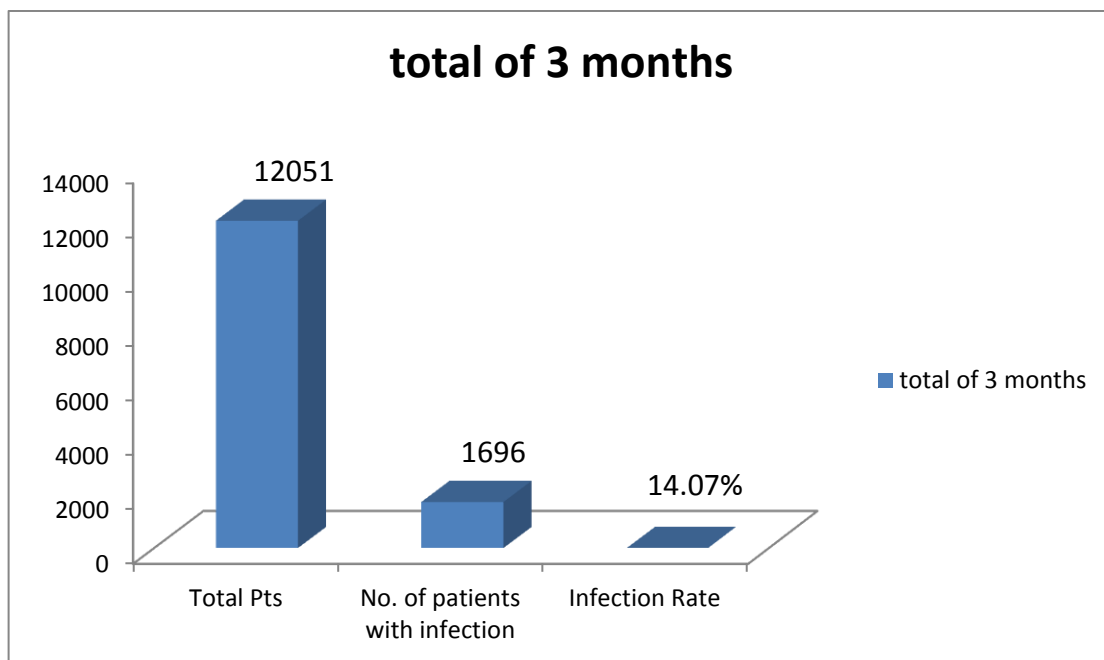
1. Cumulative IR of hospital of the 3 months depending upon indicators
2. IR of respective 3 months i.e February, March and April.
3. IR depending upon indicators (IV infection, UTI, VAP, SSI)
4. IR of major departments (medicine, surgery, orthopedics and gynecology & obstetrics).

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 (Graph I)
2. IR depending upon indicators (Graph II)
3. IR depending on Indicators (Graph III)
4. IR of major departments (Graph IV)
- 5.

GRAPH I

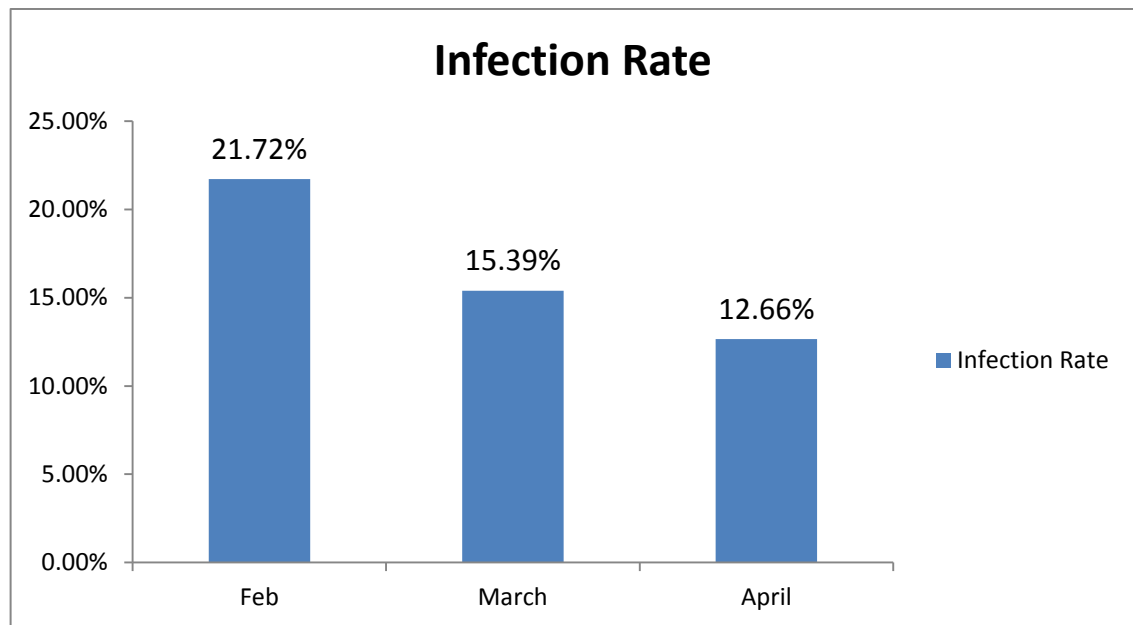
Cumulative IR of 3 Months



This graph represents the total number of patients admitted in 3 months along with number of patients who acquired HAI with the IR of the hospital of 3 months. It shows that only 14.07% of the total admitted patients (12051) acquired HAI.

GRAPH II

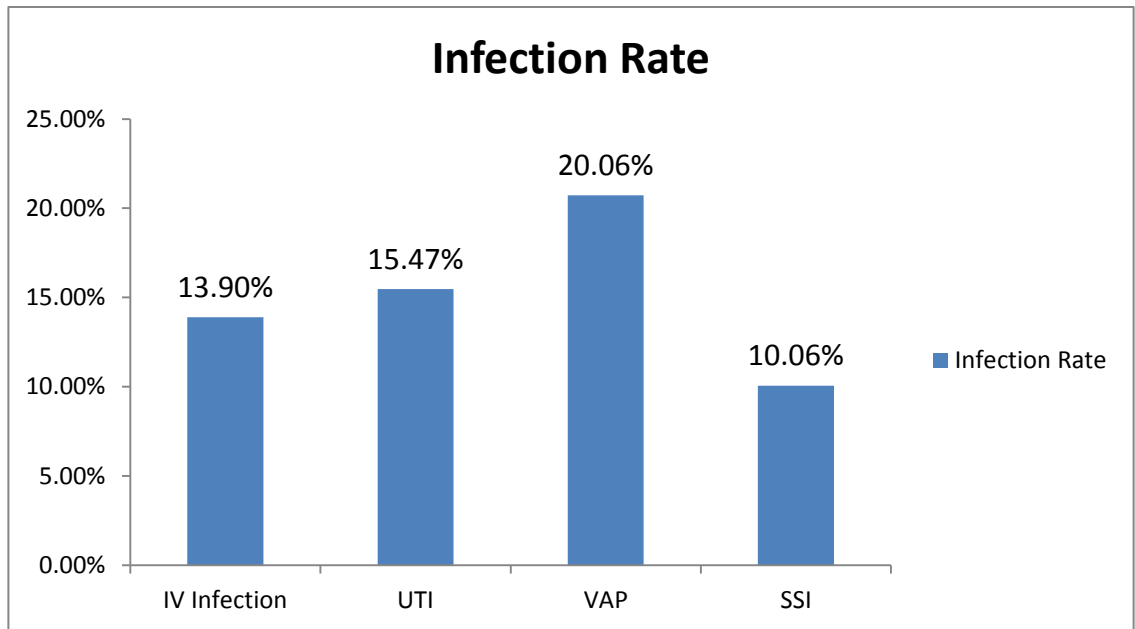
IR of 3 months



This graph represents the month-wise (February 2014 to April 2014) IR of Sir T. General Hospital. It shows that the month of February has reported the highest number of patients who acquired nosocomial infections which then decreases to the month of April. In the month of February the IR was 21.72% which then declines to 15.39% in the month of March to 12.66% in the month of April, which is near to the accepted percentage that lies in between 7-10% (as mentioned above). There is reduction in IR from Feb to March because the staff has strictly followed the standard procedures. It shows 9.06% reduction in IR from February to March because the staff is dedicated towards their work and has put full efforts to reduce HAI after understanding its effects on both patient and hospital.

GRAPH III

Infection Rate depending upon Indicators

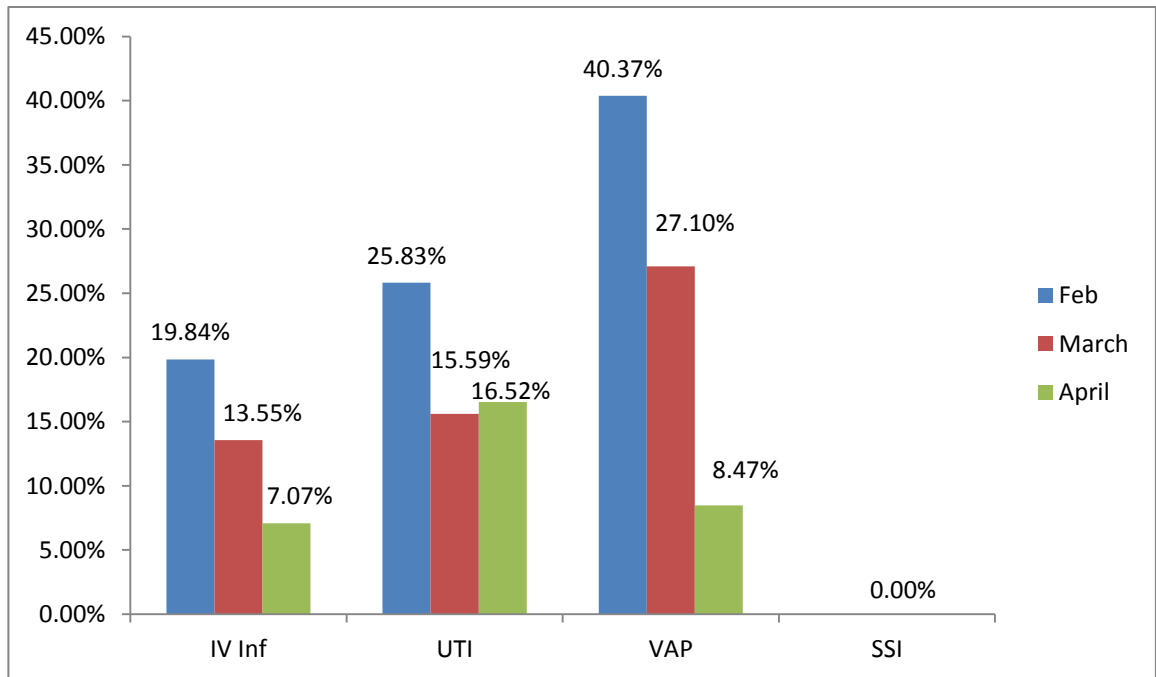


The graph shows that the patients on ventilator have highest percentage of acquiring nosocomial infection (which is known as Ventilator Associated Pneumonia) i.e. 20.06% and SSI shows the least percentage of 10.26%. Patients on ventilator are critically ill so there are chances of acquiring other types of HAI and the above graph indicates that appropriate care should be given.

GRAPH IV

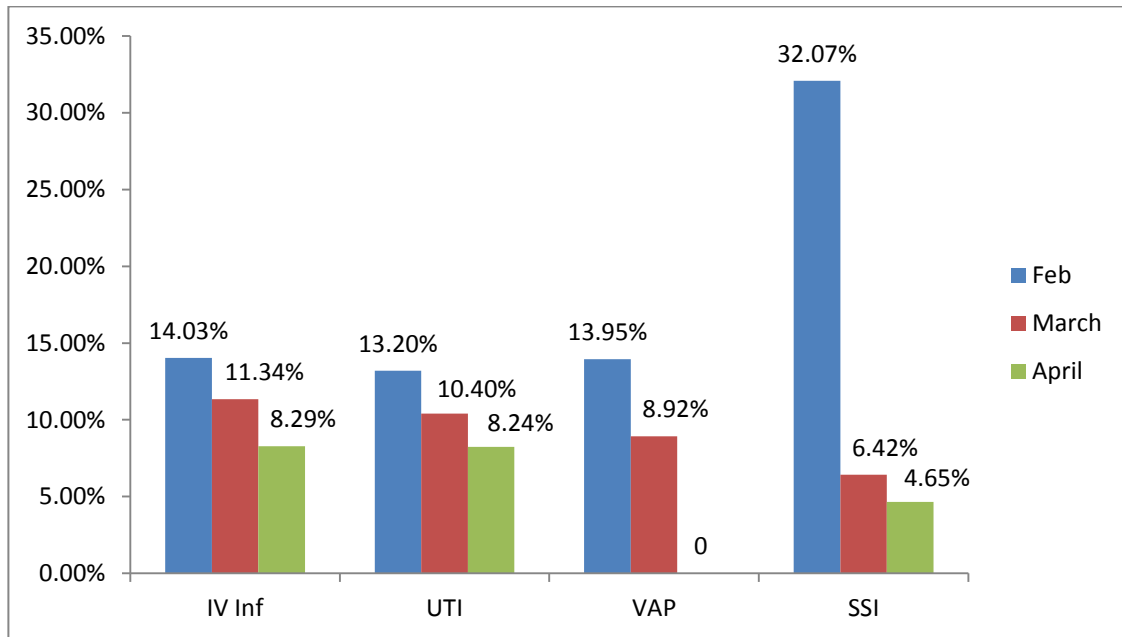
IR of Major Departments

1. Medicine Department



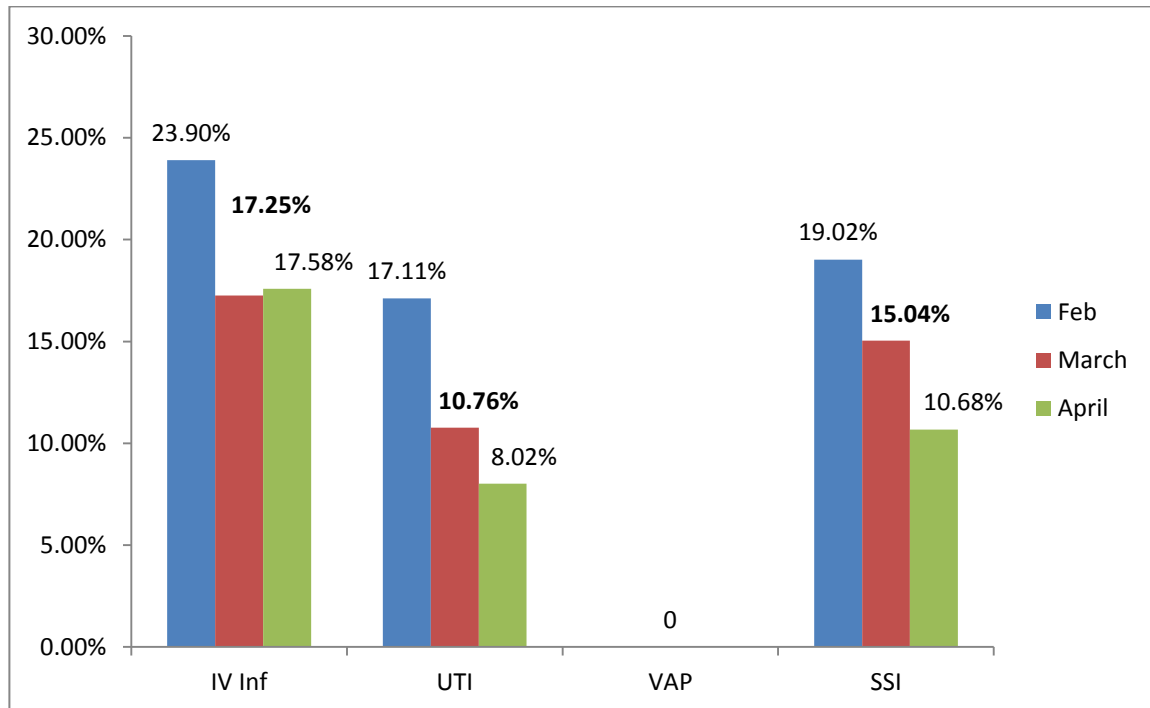
The above graph represents the reduction in IR of all the four indicators after sensitization and training the staff has strictly followed the standard procedures.

2. Surgery Department



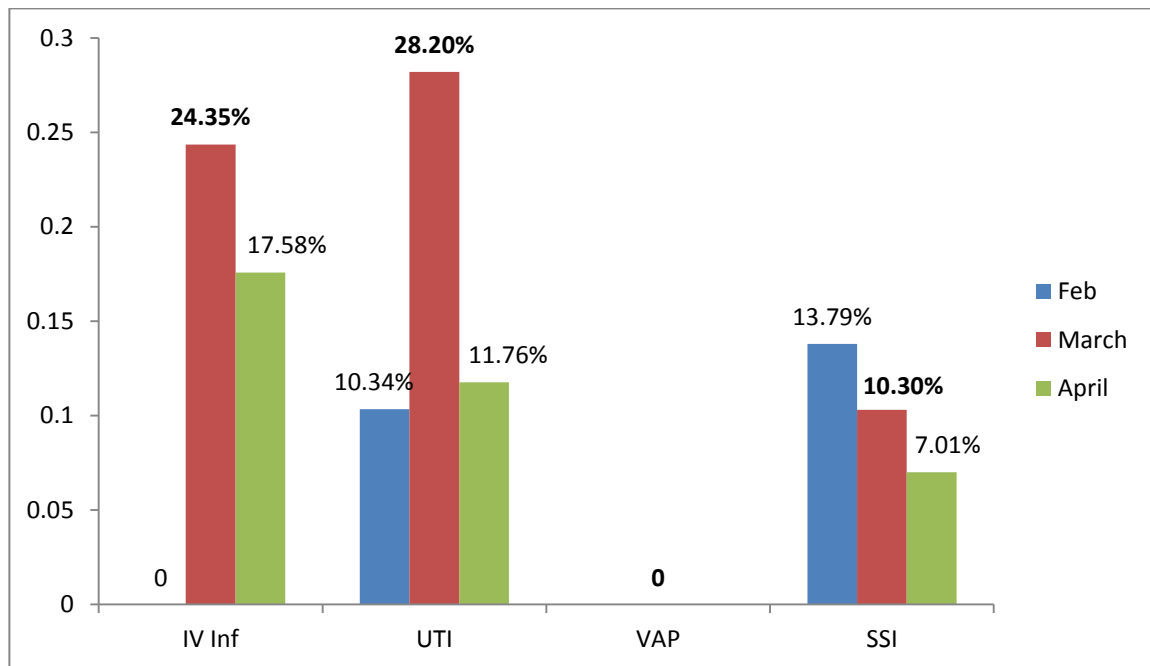
The above graph represents the reduction in IR of all the four indicators after sensitization and training the staff has strictly followed the standard procedures. There is tremendous decrease in SSI which is due to following standard procedures.

3. Orthopedic Department



The above graph represents the reduction in IR of all the four indicators after sensitization and training the staff has strictly followed the standard procedures. It shows 0% of VAP because there are very few patients on ventilator and none of them has got ventilator associated pneumonia.

4. Gyn/Obs Department



The department of gyn.obs has not the IV infection in the month of February but after sensitization and training there is reporting which shows 10.34% got IV infection in the month of March followed by 6.77% reduction in the month of April.

The department also under reported UTI in the month of February and after knowing the importance of HAI there is reporting followed by reduction.

The above graph also represents the reduction in IR of all the four indicators after sensitization and training, the staff has strictly followed the standard procedures which results in reduction of IR of all the four indicators. VAP gives 0% reporting due to very few patients on ventilator and none of them have developed HAI i.e. VAP.

4.3 LIMITATION OF THE STUDY

Every study has its own limitations which affect the end result, conclusion and limit the extensity of study. Moreover limitations are the occurrences which are out of the researcher's control. It provides the platform to overcome take corrective actions to overcome in future. Following are the limitations of this study:

- Lack of supervision of filling of HAI forms.
- There is no scientific evidence of the data generated:
 - One department has reported 50 surgeries performed without any IV cannulation which is not possible. How can a surgery be performed without IV cannulation ?
 - 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 government sector there is over loading of patients so there are more chances of nosocomial infection which makes it difficult to follow universal precautions 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 the restricted areas like ICCU and CCU
- It was difficult to find the IR of critical areas like ICCU, CCU & NICU:
 - Because there is no separate report generated for critical areas.
 - Respective departments include the patients of HAI in their departmental reporting.

- Previous year IR is not available for comparison.
- As study is record based, what actual procedures are followed becomes the limitation of study.
- There is no anti-microbial policy and blood culture of suspected patient cannot be done because of cost factor.
- There is no infection control team for supervision.

4.4 SUGGESTIONS

Following are the suggestions:

- Formation of 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.
 - Assistant Hospital Administrator:
 - For proper implementation, monitoring and evaluation of infection data.
 - Responsible to take timely actions for proper implantation of antimicrobial policy, its monitoring and evaluation.
 - Responsible to implement local interventions along with its supervision.
 - Sanitary Inspector
 - One person form Anaesthesia department
- Training, sensitization and awareness of staff on continuously 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 its 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 should be prepared from the data generated by registers. Thus we got actual data for evaluation and further actions.
- Timely submission of reports.
- 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 day
 - Critical Areas: Alternate days
 - OPDs: Twice in a week
 - Department offices and administrative block: Once in a week
 - New system:
 - Initially, changes are made only in ward area and rest will be done later.
 - From Wards: twice week and later on alternate day.

Reason: The staff is working in this institute from longer period and they have adjusted their selves according to the previous system. It takes time

to change their behaviour towards new systems. So have started with the initial stage of change and later further changes will be implemented.

Chapter 5

Conclusion

5.1 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 departments of the hospital and the cumulative infection rate of all the four indicators. The calculated results can be used to reduce hospital infection rate by applying local interventions 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.

ANNEXURE I

SURVELLENCE FOR HOSPITAL ACQUIRED INFECTION

AT SIR T. GENEAL HOSPITAL, BHAVNAGAR

MONTH:	
YEAR:	
WARD:	
NAME OF THE UNIT IN THE WARD:	
DETAILS	
No. of Patients admitted in the ward	
No. of surgeries performed during the month	
Nio. Of Surgical Site Infection	
CLEAN CATEGORY I	
No. of total patients	
No. of infections	
CLEAN CONTAMINATED CATEGORY II	
No. of total patients	
No. of infections	
CONTAMINATED CATEGORY III	
No. of total patients	
No. of infections	
DIRTY CATEGORY IV	
No. of total patients	
No. of infections	
OVERALL SSI %	
No. of patients with urinary catheter	
No. of urinary infection after catheterization	
No. of patients with interavenous drip	
No. of patients developing I/V line infection	
No. of patients developing bloodstream infection	
No. of patients developing respiratory tract infection	
No. of patients on ventilator	
No. of patients developing pneumonia	

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