Fulfilling the Gaps in the Hospital Infection Control Chapter of NABH and Enhancing the Preparedness for NABH Accreditation.

Internship Training
at
J.B.M.M Civil Hospital, Amritsar [Punjab]
(February 3 to April 30, 2014)

By
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Under the guidance of
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Post Graduate Diploma in Hospital & Health Management
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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr.Varun Joshi student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur has undergone dissertation at J.B.M.M Civil Hospital, Amritsar, Punjab from 3rd February 2014 to 30th April 2014.

The candidate has successfully carried out the study designated to him during dissertation and his approach to the study has been sincere, scientific and analytical.

The internship is in fulfilment of the course requirements.

I wish him all success in all his future endeavours.

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Certificate of Dissertation Completion

This is to certify that Dr. Varun Joshi, student of Postgraduate Diploma in Hospital and Health Management of IIHMR Jaipur, has successfully completed three months dissertation under Punjab Health Systems Corporation, Punjab, from 03.02.2014 to 30.04.2014

During the dissertation the student's performance was found to be satisfactory.

We wish him/her success in all his/her future endeavors.

Hussan Lal I.A.S.
Managing Director
Punjab Health Systems Corporation
-Cum-Secretary Health and Family Welfare, Pb.

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **'Fulfilling the gaps in the Hospital Infection Control chapter of NABH and enhancing the preparedness for NABH accreditation at J.B.M.M Civil Hospital, Amritsar, Punjab'** submitted by Dr. Varun Joshi Enrolment No. IIHMR/PGDHM/2012-14/17-1396 under the guidance of Prof. Vijay Pratap Raghuvanshi for award of Postgraduate Diploma in Hospital and Health Management of the Institute carried out during the period from 3rd February 2014 to 30th May 2014 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: Varun Joshi

Abstract

Title - Fulfilling the gaps in the Hospital Infection Control chapter of NABH and enhancing the preparedness for NABH accreditation.

Author – Dr. Varun Joshi

Advisor – Prof. Vijay Pratap Raghuvanshi

Keywords – Nosocomial Infection, Hospital Associated Infection, Gap Analysis

Introduction

A clean hospital environment is essential for the health and well being of patients, staff and visitors. More than 10% of patients admitted to hospital acquire infections. Nosocomial Infection is that which develops in the patients after more than 48 hours of hospitalization. To reduce the risk of HAI, hospital Infection control program is there. The main aim of the infection control program is to lower the risk of an infection during the period of hospitalization. The hospitals undergoing Quality Control with the help of Accreditation such as NABH are doing this program to reduce the rate of infection.

Background

J.B.M.M Civil Hospital, Amritsar is 150 bedded hospital and has applied for Pre assessment of NABH . The score in the self assessment of NABH shows that score for the HIC chapter is quiet less than required. Work in this respect was required so Gap Analysis for the HIC chapter of NABH according to the standards was done. Aim of the study was to firstly bring out the present situation and gap areas, then on the basis of the findings make an action plan to fulfill those gaps.

Objective

1. To compare the standards given for HIC chapter of NABH and bring out present the situation of the hospital.
2. To make Action plan to fulfil the gap areas.
3. To see the impact of the intervention through the Action plan.

Methodology

Study Design – Experimental Study (Intervention non clinical)

Location of Study – Civil Hospital, Amritsar, Punjab.

Data Collection

Primary Data :-

NABH Checklist for HIC Chapter.

Scoring pattern :-

Scoring of each objective element will be based upon following criteria :

10 = Compliance

5 = Partial Compliance

0 = Non compliance

NA = Not applicable

Secondary Data :

The records in reference to the Hospital Infection Conrol in the hospital were checked and monitored as per NABH requirement of data.

Tools Used

Checklist will be prepared according to the 9 standards of Hospital Infection Control chapter, based on that checklist NABH gap analysis will be done. All observations were made in 2 parts:

1. Bring out the current situation of the hospital related to Hospital Infection Control.
2. Comparison in respect to the NABH standards.

Assessment will be done by following ways :

- Direct Observation
- Document Review
- Discussion with the hospital staff
- Discussion with the patients

Results

Initially present situation and gap areas were identified based on NABH checklist for HIC chapter and average score was calculated. On the basis of these findings an Action Plan was developed for 3 months in order to fulfill those gaps. Then at the end of 3 months again self assessment was done to see the impact of intervention in terms of average score. Results of the above analysis suggested that initially the average score for HIC chapter came out to be 1 and then after implementation of the Action Plan it was observed that the score raised to 6.5 at the end of 3 months.

Conclusion

Improvement in score is there but still work needs to be done to achieve full compliance. Suggestions have been given so that implementation can be done to achieve full compliance for this chapter before Pre assessment.

ACKNOWLEDGEMENT

It is indeed a privilege to have got the opportunity to work in a prestigious organization such as Civil Hospital, Amritsar (Punjab). My three months on the job training has been nothing short of extensive learning. The exposure I have got on the functioning of various clinical and non clinical departments has been tremendous and has left me with an urge to learn more.

I convey my deep and sincere thanks to Mr. Hussan Lal, Mission Director, NHM, Punjab for firstly givingme the opportunity to do my dissertation from J.B.M.M Civil Hospital, Amritsar, Punjab.

I am thankful to Dr. Hardeep Singh Ghai, Senior Medical Officer (In Charge), J.B.M.M Civil Hospital, Amritsar, for giving me permission to do the project in the Hospital and for showing keen interest, encouraging appreciation and solemn advice throughout the project.

A special thanks to all the staff of J.B.M.M Civil Hospital, Amritsar, Punjab, for always being so co-operative and trusting me. Without their co-operation and warm attitude this project would have been a distant dream.

I am highly obliged to my guide Mr. Vijay Pratap Raghuvanshi (Assistant Professor, IIHMR), for providing necessary suggestions and guiding me to complete this report.

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Last but not least, I offer my regards and blessings to all those who supported me in any way during my training.

Dr. Varun Joshi

IIHMR,Jaipur

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ABBREVIATIONS

HAI : Hospital Acquired Infection.

HIC : Hospital Infection Control.

WHO : World Health Organization.

ALOS : Average Length of Stay.

NABH : National Accreditation Board for Hospitals and Health care Organizations.

ISO : Indian Standards Organization.

OPD : Out Patient Department.

OT : Operation Theatre.

BMW : Bio Medical Waste.

ICU : Intensive Care Unit.

ICTC : Integrated Counseling and Testing Centre.

TB : Tuberculosis.

NSV : No-Scalpel Vasectomy.

STD : Sexually Transmitted Disease.

STI : Sexually Transmitted Infection.

RTI : Respiratory Transmitted Infection.

BLS : Basic Life Support.

ALS : Advanced Life Support.

SMO : Senior Medical Officer.

TLC : Total Leukocyte Count.

DLC : Differential Leukocyte Count.

ESR : Erythrocyte Sedimentation Rate.

FNAC : Fine Needle Aspiration Cytology.

MLC : Medico Legal Case.

ECG : Echocardiography.

CT : Computed Tomography.

PNDT : Pre Natal Diagnostic Technique.

AMC : Annual Maintenance Contract.

AERB : Atomic Energy Regulatory Board.

TERMS and DEFINITIONS

- **Accreditation :** A process of external review of the quality of the health care being provided by a healthcare organisation. This is generally carried out by a non-governmental organisation.
- **Standards :** A statement of expectation that defines the structures and process that must be substantially in place in an organisation to enhance the quality of care.
- **Surveillance :** The continuous scrutiny of factors that determines the occurrence and distribution of diseases and other conditions of ill health. It implies watching over with great attention, authority and often with suspicion. It requires professional analysis and sophisticated interpretation of data leading to recommendations for control activities.
- **Standard Precautions :** A method of infection control in which all human blood and other bodily fluids are considered infectious for HIV, HBV and other blood-borne pathogens, regardless of patient history. It encompasses a variety of practices to prevent occupational exposure, such as the use of personal protective equipment (PPE), disposal of sharps and safe housekeeping.
- **Nosocomial Infection :** Nosocomial infections can be defined as those occurring within 48 hours of hospital admission, 3 days of discharge or 30 days of an operation.

PART 1: INTERNSHIP REPORT

1.1: HOSPITAL PROFILE

Name of the Hospital: Jallian Wala Bagh Martyr's Memorial (JBMM) Civil Hospital, Amritsar **JBMM** Hospital was started in 1992. With 50 bedded and shift to the new building (in Rambagh area) in 2001 with 150 beds (Sanctioned). Presently 105 beds are functional. Civil Hospital having the facilities of Medicine, ENT, Surgery, Eye, Dental, Gynaecology, Skin, ICTC centre, Leprosy centre, T.B unit, JSY, RSBY, Telemedicine, Blood Bank and Nephrology.

Vision: Hospital shall strive to be the leader in the area of quality healthcare.

Mission: Hospital shall continuously engage itself in upgrading its comprehensive multispeciality healthcare delivery system through quality intervention, involvement of all functionaries and excellent leadership.

Bed Strength: 150 Beds (sanctioned)

105 Working Beds

Address: JBMM Civil Hospital, Ram Bagh, Amritsar

Phone: 0183-2552464

Emergency Contact No.: 0183-2552465

Email ID: nrhmchasr@yahoo.com

Civil Hospital is situated in Ram Bagh area near Bus Stand. Civil hospital has 4 entry gates. Civil hospital has adequate parking area for both staff and patients. Civil hospital has three story building and good architecture. Civil Hospital is surrounded by two roads side by side (L Shape).

1.2: SERVICES AVAILABLE AT HOSPITAL

Services

- Medicine
- ICU
- General Surgery and minimal access surgery
- ENT
- Pediatrics
- Obstetrics & Gynecology
- Dermatology
- General orthopedics and hand surgery
- Dentistry
- Ophthalmology
- Dialysis
- ICTC
- Chest & TB

24 hr Services

- 24 hrs Emergency
- Blood Bank
- Laboratory
- Radiology
- Pharmacy
- Ambulance

Service Not Available in the Hospital

- Heart Transplant
- Stem Cell
- Liver transplant

1.3: FACILITY LAYOUT

FLOOR	SERVICES / DERPARTMENTS
Ground floor	Registration
	OPD Chambers
	X-ray & Ultrasound, ECG
	Dispensary
	Laboratory
	User's Charges
	Dialysis
	Emergency & Trauma
	Medical Store
	Jan Aushadi
First floor	Administrative Block
	Dental Wing
	Blood Bank
	OPD Chambers
	NSV
	ICTC
	Chest & TB Clinic
	STI & RTI Clinic
Second floor	Gynaecology OT
	General Ward Male & Female
	Gynaecology & Paediatric Ward
Third floor	Main OT
	Private Wards

Table 1

1.4: DEPARTMENTS, OBSERVATIONS AND ISSUES

OUT PATIENT DEPARTMENT

Location: It is located at ground floor of the main building of hospital. There are **11 numbers of OPD** chamber. Every OPD has adequate number of Patients examination table , Stool, Doctors chairs, and hand washing facilities. There is non availability of equipments like BP meter, weighing machine, in every OPD chamber. Only few of OPD chamber have these instruments like medicine OPD, Gynaecology OPD.

X-Ray and USG, ECG, Lab department is present at same floor nears OPD. There is drinking water and toilets facilities are also present in the OPD. **Dialysis unit** is on the same floor.

Room Number and Type of OPD

Room Number	Type Of OPD
Room Num. 14,15 & 16	OBS & Gynaecology OPD
Room Num. 17 & 18	Eye OPD
Room Num. 19	Ortho OPD
Room Num. 20	ENT OPD
Room Num. 21 & 22	ENT OPD & Paediatric OPD
Room Num. 23	Surgical OPD
Room Num. 24	Medicine OPD
Room Num. 26 & 31 (1^{st} Floor)	Skin & STD OPD

Table 2

Adjacent Department: X-Ray, Laboratory, USG, ECG

Workload:

Average OPD Patients = 500-550 Patients/Day

Average Indoor Patients = 15-20 Patients/Day

Government employees = 25-30 Patients/Day

OPD Charges: **5 Rs** (It is valid for one week)

50 Rs (for Indoor Patients)

OPD Timing: 9am to 3pm (Mon-Sat) in Winters.

8am to 2pm(Mon-Sat) in Summers.

Register Maintain in OPD: OPD Register

Indoor Register

Government Employee Register

ISSUES

1. Adequate no. of wheel chairs and trolley are not available in the OPD area.
2. The fire exit plan is not displayed.
3. Doctor's schedule is not displayed in the OPD area.
4. There is no one to guide the patient to go to the particular OPD.

AMBULANCE SERVICES

Location: There is no specific area for ambulances. It parks near the emergency department. Conditions of the ambulance is good and well maintained

There are **3 ambulances (B.L.S)** in the civil hospital. Only two ambulances are in use. One is given by the BSNL. (Maruti Van)
Adjacent Department: Emergency Department

Workload: 7 to 8 Calls in 24 Hours

Staffing (In Shifts): Total 3 Drivers (1 Driver in One Shift)

Registers: Ambulance Log Book

ISSUES

1. Condemned ambulances are also present in hospital premises.
2. No ambulance control room.
3. No emergency crash cart is present in the ambulance.
4. No wheelchair present in the ambulance.
5. Staffs are not trained in BLS and ALS.
6. Response time of ambulance is not monitored.

EMERGENCY DEPARTMENT

Location: Next to OPD building.

The emergency department has two **trauma wards (6 + 8 Bedded)** and one **emergency ward (8 Bedded** Facility). Emergency department has reception (not using), lab (not using), Examination room, Casualty medical officer room, nurse room, one store room and one OT.

ICU is present in front of Emergency OT in emergency department. There is a minor OT is being constructed near emergency ward. There is **22 bed** strength of the emergency department.

Emergency medicine is kept in the almirah which is present in the Doctor room.

Adjacent Department: Out Patient Department

Workload: 40-50 Patients/day

Staffing (In Shifts):

1 Doctor
1 Pharmacist
1 Staff Nurse + (2 Nurses in Morning)
1 Class IV

} in One Shift * (Three Shifts)

Register Maintain in Emergency: Daily Emergency Register, Daily Report Register for Staff.

ISSUES

1. There is no fire exits plan displayed. Fire fighting equipments were improper.
2. There is no toilet facility for patient's attendant.
3. In trauma ward bricks are being used to raise height of the bed. It can cause sentinel event.
4. Soiled and infected linen are not segregated, all type of used linen is collected and send to the laundry.
5. Staffs are not trained for ALS/BLS.

LABORATORY

Location: At ground floor

There is another Malaria laboratory is also present near main laboratory. Microbiology and Histopathology services are not available in the laboratory. There is charge list of each lab test present in the laboratory. And also displayed in the OPD area. Laboratory having adequate space for working

Adjacent Department: Dispensary, SMO office and Malaria Lab.

Work Load: 100-120 Investigations/day.

Staffing (In Shifts): In Malaria Lab – 3 Lab Technicians and 1 Senior Lab Technician.

In Main Lab – 4 Lab Technicians, 1 Senior Lab Tech And 1 Pathologist.

Registers: Malaria film register & Receiving and examination register in Malaria Lab.

Daily entry register, Hb and blood group register, Urine microscopic register, TLC, DLC and ESR register, Biochemistry and Serology register, FNAC register, Daily register (Total test), Haemogram register, MLC register in Main Lab.

ISSUES

1. Loose electrical wiring was also found in the lab. Due to this any accident can occur it should be cover.
2. Equipments were not calibrated.
3. No fire fighting equipment was installed.

IMAGING DEPARTMENT

Location: At ground floor.

There are 3 X-Ray machines. Portable X-Ray machine is not in use. CT scan is not done in the civil hospital. X-Ray department having three room as processing room, registration room, dark room.

ECG room is adjacent to the registration room of X-Ray. ECG technician comes only for three days in a week.

There is one room is for **USG** near the X-Ray processing room. and having the one USG machine. The patient privacy is maintained. USG department have the **PNDT certificate but not displayed**. There is one Doctor and one Attendant and timing is 9 to 3 pm.

Adjacent Department: USG and ECG

Workload:

70-80 X-Ray/Day. Charges: 100 Rs. (For X-Ray)

50-60 Ultrasound/Day. Charges: 150 Rs. (For USG)

Staffing (In Shifts): 4 Radiographer (2 in morning +1 evening + 1 in night), 1 Radiologist

Registers: Daily OPD X-Ray register, Register (about types of X-Ray done in a day), AMC Register, MLC Register.

ISSUES

1. Layout plan of the imaging department is not approved from AERB.
2. Glass and door of the X-Ray process area was not led coated for the safety from the harmful X-Rays.
3. Turnaround time for investigations not measured.

OPERTION THEATRE

Location:

2nd Floor (Gynaecology OT) having 2 OT Table

3rd Floor (Main OT) having 2 OT Table

Ground Floor (Emergency OT) having 1 OT Table

There are three OT Complex in the Civil Hospital one is the main OT, second one is the Gynaecology OT and third is Emergency OT. In main OT the Ortho, Eye, Surgeries, ENT surgeries is done.

OT complex having the enough space and good layout for smooth functioning. There are total 5 OT table in all OT complex. The OT works 24*7.

Adjacent Department: Swine Flu ward, Gynaecology & Pediatric ward

Workload:

In Gynaecology OT 7 – 8 Pt/Day.

In Main OT 3 – 4 Pt/Day.

Staffing:

In Gynaecology OT + Gynaecology Ward = 6 in Morning, 3 in evening, 3 in night

In Main OT = 4 Staff Nurse (in 24 Hrs), 2 Anesthetist.

ISSUES

1. There is no zoning concept inside the OT.
2. There is same direction for the patients and biomedical waste transportation.
3. No ultrasonic washer present in the department for effective sterilization.
4. OT utilization rates not monitored.

IN PATIENT WARD

Location:

2nd Floor and 3rd Floor.

There are two types of wards present in Civil Hospital (Male and female wards). Nursing station present in the wards but not in use due to the lack of manpower and equipments. The nurses look after the patients from Nurses room. Gynaecology ward is present in front of Gynaecology OT. There are 8 private and 4 deluxe wards present on the 3rd floor. Each ward has four cubicles and every cubicle has around 6-8 beds.

Gynaecology Ward: 18 Beds & 9 Beds for Pediatrics = **27 beds**

General Ward: **24 Beds** (Male ward) & **24 Beds** (Female ward)

Private and Deluxe Ward: 8 + 4 Beds = **12 beds**

Staffing:

Gynaecology Ward: - 5 Nurses (Total), 3 Class IV, 3 Gynecologist & 1 Pediatrician

General Ward: - 7 Nurses (Total)

ISSUES

1. Inadequate number of bed sheets per bed (nearly 2 per bed).
2. Inadequate number of nurses in the wards.
3. No fire fighting equipments were present.
4. Housekeeping checklist, cleaning schedule not evident.

BLOOD BANK

Location: 1st Floor

The blood bank started in July 2010 at Civil Hospital. Blood bank has the aphaeresis facility. Blood bank maintain all type of register like Patients registration register, Donor register, Cross match register, Deferred register, Test register etc.

Workload: 200 Units/Month.

This unit work 24*7.

Staffing: 4-Lab Technician, 1 Medical Officer, 1 Class IV

TELEMEDICINE

There is a telemedicine centre in the Civil hospital. It is located in OPD area. From telemedicine centre the daily reporting of Medical Officer go to the PHSC regarding OPD,IPD & Surgeries. And daily equipment monitoring reports also send to the PHSC.

In telemedicine centre the Medical Officer send their queries regarding treatment/cases to the higher medical institute.

The Sanjivni software use in this process.Video conferencing is also available but not in use.

MEDICAL STORE

Location: Ground Floor

There are two medical stores, one is hospital pharmacy (free of cost) and second one is Jan Aushadi (Under Central Government) which is not free of cost.
Hospital pharmacy works 9AM – 3PM(Winters) & 8AM – 2PM(Summers) and Jan Aushadi is 24*7.
Adjacent Department: Dialysis Unit.
Workload: 500-550 prescriptions/day.
Staffing: 4 Pharmacist.

1.5: MANAGERIAL TASKS UNDERTAKEN

I. Housekeeping and Sanitation

- Bio-hazard sign on BMW collection bins.
- Use of Personal protective equipments by housekeeping staff made mandatory.
- Regular training of housekeeping staff on bio medical waste management.
- Male housekeeping staff was seen without uniform, HK contractor was strictly advised to provide them uniform.
- Implementation of HK checklist to ensure regular supervision.
- Overall status of cleanliness improved.

II. Documentation

- Contributed in making of manuals and policies for various departments.
- Implementation of swab culture and fumigation record register for all 3 OTs and it is regularly monitored.
- Documentation and regular monitoring for sterilization in Emergency Department.
- Regular training of para-medical and housekeeping staff and separate register maintained.
- Two copies of Discharge Summary.

III. Employee ID Cards

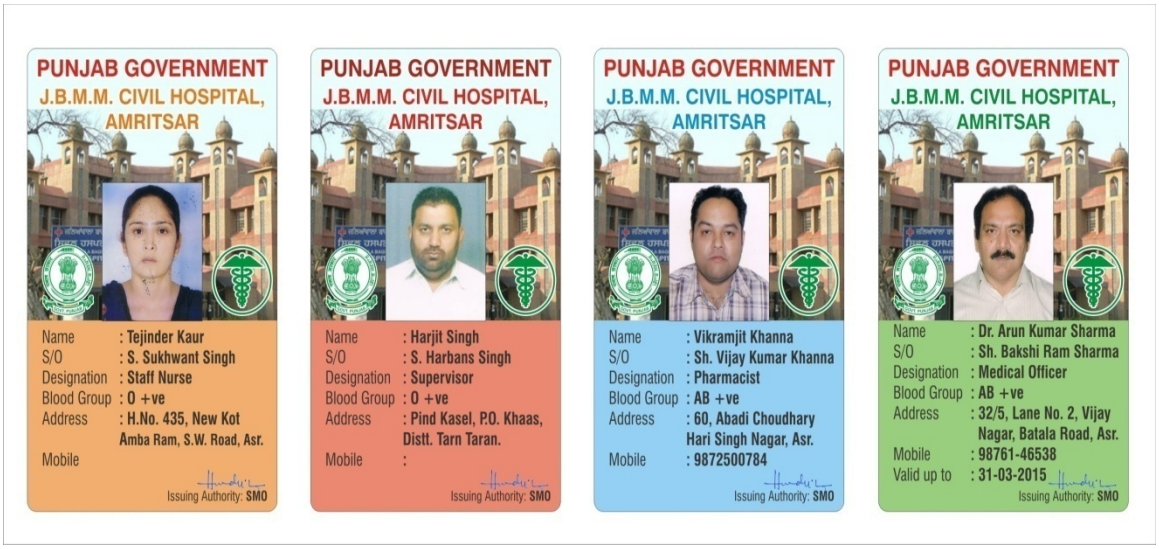
- Facilitated the process of making of colour coded employee ID cards for all staff.

  Green – Doctors / All class – 1 officers.

  Orange – Nursing Cadre.

  Blue – Pharmacist / all technical / non medical.

  Red – All class-IV / Safai karamchari.



IV. Formation of committees

6 committees were formulated and committee meetings were organized.

- Infection Control Committee.
- Medical Record and Audit Committee.
- Condemnation Committee.
- Hospital Safety committee.
- OT Committee.
- Core Committee NABH.

V. Conducted Employee Job Satisfaction Survey and collected data was analysed.

PART 2 : DISSERTATION

Fulfilling the gaps in the Hospital Infection Control chapter of NABH and enhancing the preparedness for NABH accreditation.

2.1: EXECUTIVE SUMMARY

A clean hospital environment is essential for the health and well being of patients, staff and visitors. More than 10% of patients admitted to hospital acquire infections. Nosocomial Infection is that which develops in the patients after more than 48 hours of hospitalization[3].

To reduce the risk of HAI, hospital Infection control program is there. The main aim of the infection control program is to lower the risk of an infection during the period of hospitalization. The hospitals undergoing Quality Control with the help of Accreditation such as NABH are doing this program to reduce the rate of infection.

J.B.M.M Civil Hospital, Amritsar is 150 bedded hospital and has applied for Pre assessment of NABH . The score in the self assessment of NABH shows that score for the HIC chapter is quiet less than required. Work in this respect was required so Gap Analysis for the HIC chapter of NABH according to the standards was done. Aim of the study was to firstly bring out the present situation and gap areas, then on the basis of the findings make an action plan to fulfill those gaps.
Initially present situation and gap areas were identified based on NABH checklist for HIC chapter and average score was calculated. On the basis of these findings an Action Plan was developed for 3 months in order to fulfill those gaps. Then at the end of 3 months again self assessment was done to see the impact of intervention in terms of average score.

Results of the above analysis suggested that initially the average score for HIC chapter came out to be 1 and then after implementation of the Action Plan it was observed that the score raised to 6.5 at the end of 3 months. Although improvement in score is there but still work needs to be done to achieve full compliance. Suggestions have been given so that implementation can be done to achieve full compliance for this chapter before Pre assessment.

2.2: BACKGROUND OF THE STUDY

Hospital is an institution that provides medical, surgical, or psychiatric care and treatment for the sick or the injured. A clean hospital environment is essential for the health and well being of patients, staff and visitors. Hospital infection is also called Nosocomial Infection[3]. According to a WHO report, HAI affect millions of people worldwide and contributes to patient deaths and disability[5]. Hospital-acquired infections, are infections acquired during hospital cares which are not present or incubating at admission. It creates resistance to antibiotics and generates additional expenses to those already incurred by the patients' underlying disease, HAI effects the hospital by –

Delayed patient discharge/blocked beds, Increased ALOS, Patient mortality and morbidity, Increased treatment cost, Increased Infection cost subject to litigation and socio economic costs.

In India, Hospital infection estimates vary from 10 to 30 percent, the least being about 3 percent in the best of hospitals[1]. Hospital infection occurs in every hospital; the difference is in the degree of severity only. It adversely affects the image of the hospital[1].

Effective monitoring of cleaning standards is vital in maintaining a healthy and safe hospital environment, and contributes significantly to the quality of patient care.

Studies show that nearly nearly one third of Infections can be controlled by well defined Infection control program[6]. HIC greatly influences quality and act as a driving force for continous improvement.

NABH standards (HIC) guide the provision of an effective Infection control program in the organization. The program is documented and aims at reducing /eliminating infection risks to patients, visitors and providers of care. Application of standards across the organization helps in smoother and more efficient management of the hospital.

J.B.M.M Civil Hospital, Amritsar is 150 bedded hospital and has applied for Pre assessment of NABH . The score in the self assessment of NABH shows that score for the HIC chapter is quiet less than required. Work in this respect was required. Through Hospital Infection Control program we aim at disseminating information, surveillance activities, investigation, prevention and control of Nosocomial Infection.

2.3: LITERATURE REVIEW

K. Francis Sudhakar, M. Kameshwar Rao, T.Rahul (1Jan 2012) in a study on **"Gaps in quality of expected and perceived health services in public hospitals"** was found that as regards tangibles in public hospitals services, there was a wide gap by 3 counts which was statistically significant. With regard to reliability, by 3 counts there is the gap. Such gap or difference in the quality scores was statistically significant. As regards responsiveness it was found that the gap found between them was by 3.0 units. Such gap was statistically significant. With regard to assurance, it was found that the gap was 3.0 units. Such gap was statistically significant. Lastly, with regard to empathy, it was found that the gap was found to be 3.0 units. Such gap was statistically significant.

Di Mclntyre and Laura Anselmi, Health Economics Unit, School of Public Health and Family,

Medicine, University of Cape Town Paper provides an overview of the methods used to promote an equitable distribution of healthcare resources. It highlights that resource allocations is extremely valuable in efficient budgeting. It also highlights the successful implementation of resource distribution can be facilitated by undertaking a detailed gap analysis. Gap analysis will provide basis for developing service development plans. There is also need to strengthen capacity for planning, budgeting and implementation plans to ensure use of limited healthcare resources. Monitoring and evaluation of these entire can enhance effective redistribution of resources to promote healthcare services.

Dr. Santosh Kumar, Brig. (Dr.) Swadesh Puri, Dr. S.D. Gupta in a study of Gap Analysis Report for Ishtakal Hospital has found 2 types of Gaps.

1. Infrastructure related gaps.
2. Process related gaps.

Infrastructure related gaps are insufficient space, make shift buildings, improper signage, poor fire safety measure and disaster plan, piped medical gases not available, shortage of equipments and instruments, lack of bio-medical equipment engineering cell. Most of the

gaps related to infrastructure related need, external support from the ministry and bilateral donor agencies.

Most of the process related gaps can be worked out at the hospital level with proper training and hand holding. Process gaps related gaps were lack of mission/vision and patient charters,lack of training in hospital operations, lack of control over resources (such as funds, drugs and consumables, equipments, ordnance/general stores). Only few hospitals have quality control department however medical and nursing audits are not done. Equipments did not have AMC/CMC, utilization audit of equipment is not done, proper BMW Management system did not exist, security was not organized in three tier manner (outer ring, middle ring and inner ring).

Dr. Santosh Kumar, Brig. (Dr.) Swadesh Puri, Dr. S.D. Gupta in a study of Gap Analysis Report for Rehabilitation Centre has found that it is mainly a destitute centre having 20 beds for disable patients. Even though it is housed in poly clinic various sub specialities (such as medicine, Surgery, ENT, Ophthalmology, and Dental) are available here which seems to be duplicity of resources. The centre does not have proper diagnostic, inpatient or utility services (kitchen, laundry). There is no effective signage to guide the patient in the centre. The radiology department is virtually open from three sides causing radiation hazards to staff and patients. Even though it is the rehabilitation centre it does not have even the basic physiotherapy equipments. The general housekeeping is very bad, all toilets are broken and sinking, almost all working areas are dirty and unhygienic to work or live. Wards are crowded and lack proper ventilation. Most of the bed linen are dirty. There is shortage of drugs. ICD classification is not used. CSSD has one autoclave which is not sufficient for entire hospital. It lacks quality control measures. There is no disaster plan for the hospital.

2.4: Problem Statement

To prepare for NABH accreditation and identify the areas and fulfilling the gaps and make improvement to enhance the compliance of Standards for Hospital Infection Control chapter of NABH in the Hospital.

2.5: Objectives of the Study

4. To compare the standards given for HIC chapter of NABH and bring out present the situation of the hospital.
5. To make Action plan to fulfil the gap areas.
6. To see the impact of the intervention through the Action plan.

2.6: RESEARCH METHODOLOGY

Study Design – Experimental Study (Intervention non clinical)

Location of Study – Civil Hospital, Amritsar, Punjab.

Data Collection

Primary Data :-

NABH Checklist for HIC Chapter.

Scoring pattern :-

Scoring of each objective element will be based upon following criteria :

10 = Compliance

5 = Partial Compliance

0 = Non compliance

NA = Not applicable

Secondary Data :

The records in reference to the Hospital Infection Conrol in the hospital were checked and monitored as per NABH requirement of data.

Tools Used

Checklist will be prepared according to the 9 standards of Hospital Infection Control chapter, based on that checklist NABH gap analysis will be done. All observations were made in 2 parts:

3. Bring out the current situation of the hospital related to Hospital Infection Control.
4. Comparison in respect to the NABH standards.

Assessment will be done by following ways :

- Direct Observation
- Document Review
- Discussion with the hospital staff
- Discussion with the patients

DATA ANALYSIS METHODOLOGY

Based on assessment of each objective element of Hospital Infection Control Chapter score (0,5,10) will be given accordingly.

Chapter wise compliance/partial compliance/non compliance on NABH Standards will be raised while during assessment of departments to assess present situation.

Action Plan is drawn to conclusively remove the non-compliances. Following are the parameters of Action Plan –

1. Clearly state the action required to remove a particular non-compliance.
2. Identify the person who will be responsible for removing that non-compliance.
3. He/she will be given a target date to remove that non-compliance.
4. Evidence (cross reference to documents/manuals) to prove that the non-compliance has been removed.

In order to evaluate the Action plan NABH checklist on Hospital Infection Control chapter will be evaluated on 29th April.

2.7 : DATA ANALYSIS AND INTERPRETATION

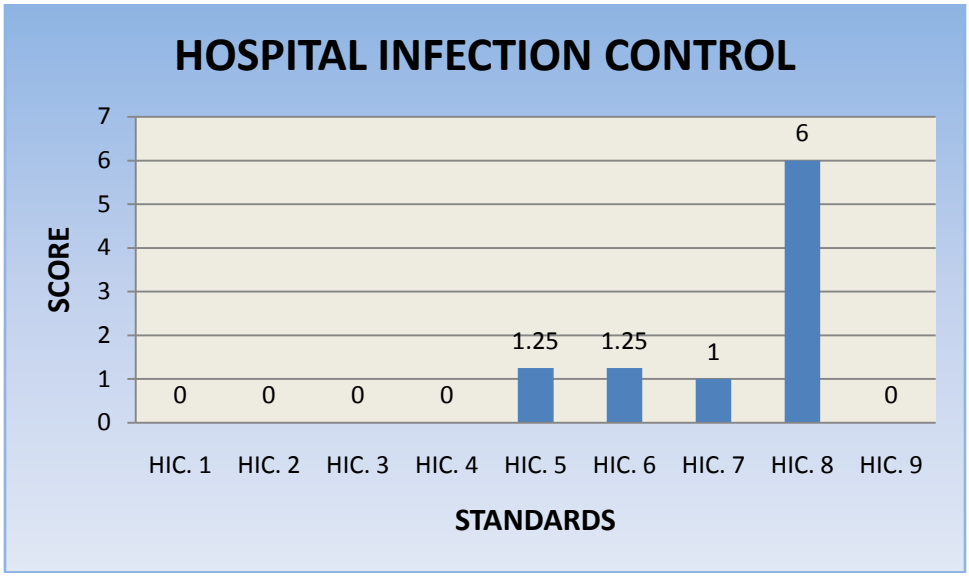


Figure 1: Assessment of HIC Chapter as per NABH Checklist on 10/2/2014.

Interpretation from Figure1

1. The hospital does not have infection control programme.
2. The hospital does not have Hospital infection control manual.
3. The low score from the above graph is due to lack of surveillance activity in the hospital, the collection of surveillance data and hence verification of data is not an ongoing process.
4. The organization does not monitor the risks for hospital associated infection in staff.
5. The figure indicates that the hospital does not emphasize in concept of barrier nursing also the hand washing techniques are not monitored regularly.
6. No action is taken by the hospital to control the outbreaks for infection to the staff as well as patient.
7. The score from graph indicates that though there is no adequate space available for sterilization activities and the validation and calibration of sterilization equipments is not carried out on regular basis.

8. The organization does not have proper segregation and collection policy for the BMW. The transportation of BMW is not carried out in stipulated time, the staff handling the BMW is not provided with personnel protective equipment.

9. No training Programme is conducted in hospital to sensitize the hospital infection control Programme.

2.8 : DEPARTMENT WISE GAP ANALYSIS

IN –PATIENT WARDS

Identified Gaps in In Patient Wards

Structural	1. Non availability of soap and soap dispenser. 2. No towel rail. 3. Number of patient bed sheets inadequate (2 per bed).
Process	1. Practice of hand washing not performed. 2. Patient bed sheets not changed frequently. 3. Soiled linen is mixed with dirty linen before sending to wash. 4. Improper segregation of biomedical waste by housekeeping staff. 5. Personal protective equipments were not used by housekeeping staff.
Outcome	1. No monitoring of Infection rates.

Table 3

Recommendations

1. Soap dispenser and towel rails to be procured and fitted at required places.
2. Availability of soap to be made.
3. Procurement of adequate number of patient bed sheets (at least 4 per bed).
4. Training of nurses and doctors stressing the importance of hand hygiene.
5. Hand hygiene posters to be displayed at points of hand washing.
6. Soiled linen to be carried separately and it has to be treated with 1% sodium hypochlorite for 20 minutes.
7. Training of housekeeping staff on biomedical waste management and importance of using personal protective equipments.
8. Monitoring of Infection rate to be carried out.

EMERGENCY DEPARTMENT

Identified Gaps in Emergency Department.

Structural	1. Wash basin not in examination room/nursing station. 2. Non availability of soap and soap dispenser. 3. No towel rail. 4. Number of patient bed sheets inadequate (2 per bed).
Process	1. Practice of hand washing not performed. 2. Patient bed sheets not changed frequently. 3. Irregularity in sterilization of gauge pieces. 4. Soiled linen is mixed with dirty linen before sending to wash. 5. Improper segregation of biomedical waste by housekeeping staff. 6. Personal protective equipments were not used by housekeeping staff.
Outcome	1. No monitoring of Infection rates. 2. No documentation of sterilization.

Table 4

Recommendations

1. Soap dispenser and towel rails to be procured and fitted at required places.
2. Provision of Wash basin to be made available at Examination room.
3. Availability of soap to be made.
4. Procurement of adequate number of patient bed sheets (at least 4 per bed).
5. Training of nurses and doctors stressing the importance of hand hygiene.
6. Hand hygiene posters to be displayed at points of hand washing.
7. Soiled linen to be carried separately and it has to be treated with 1% sodium hypochlorite for 20 minutes.
8. Training of housekeeping staff on biomedical waste management and importance of using personal protective equipments.
9. Monitoring of Infection rate to be carried out.
10. Documentation of sterilization records.

OUT PATIENT DEPARTMENT

Identified Gaps in Out Patient Department.

Structural	1. Wash basin not in doctor's chamber. 2. Non availability of soap and soap dispenser. 3. No towel rail.
Process	1. Practice of hand washing not performed. 2. Improper segregation of biomedical waste by housekeeping staff. 3. Personal protective equipments were not used by housekeeping staff.
Outcome	1. No monitoring of Infection rates.

Table 5

Recommendations

1. Soap dispenser and towel rails to be procured and fitted at required places.
2. Provision of Wash basin to be made available in doctors chamber.
3. Availability of soap to be made.
4. Training of doctors stressing the importance of hand hygiene.
5. Hand hygiene posters to be displayed at points of hand washing.
6. Training of housekeeping staff on biomedical waste management and importance of using personal protective equipments.
7. Monitoring of Infection rate to be carried out.

OPERATION THEATRE

There are 3 major OTs and 2 minor OTs.

3 major OTs have separate autoclaves for sterilization. There is no provision of CSSD.

Identified Gaps in OT

Structural	1. OTs are not centrally AC thus air changes are not possible. 2. No provision of hand washing in one of the dressing room.
Process	1. It was observed mostly doors of OT were opened during surgery. 2. Improper segregation of biomedical waste by housekeeping staff. 3. For disposal of bio medical waste, same route as for entrance to OTs is used even though separate route for disposal is there. 4. It was observed patient attendants and some hospital staff also used to enter OT corridor with their shoes. 5. Personal protective equipments were not used by housekeeping staff.
Outcome	1. No monitoring of Infection rates. 2. No documentation of sterilization records.

Table 6

Recommendations

1. Provision of Wash basin to be made available in doctors chamber.
2. Availability of soap to be made.
3. Training of doctors stressing the importance of hand hygiene.
4. Hand hygiene posters to be displayed at points of hand washing.
5. Training of housekeeping staff on biomedical waste management and importance of using personal protective equipments.
6. Use of separate route for disposal of biomedical waste.
7. Monitoring of Infection rate to be carried out.
8. Documentation of sterilization records.

2.9 : ACTION PLAN

To remove the non-conformities Action Plan is made.

Following are the parameters –

1. Clearly state the action required to remove a particular non-compliance.
2. Identify the person who will be responsible for removing that non-compliance.
3. He/she will be given a target date to remove that non-compliance.
4. Evidence to prove that the non-compliance has been removed.

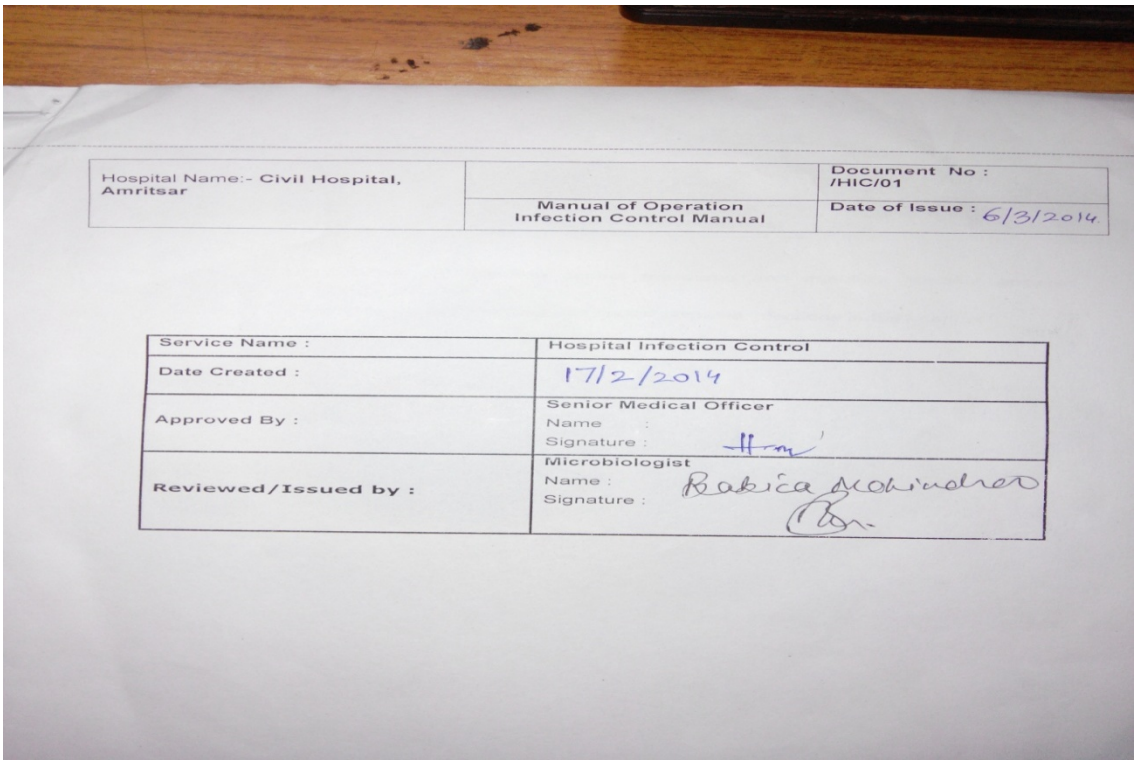
There are 9 standards in Hospital Infection Control chapter of NABH and these 9 standards are taken up separately in Management Implementation Plan.

Action Plan for **HIC.1**: The organization has a well-designed, comprehensive and coordinated Hospital Infection Prevention and Control (HIC) programme aimed at reducing/eliminating risks to patients, visitors and providers of care.

S.No.	**Action required to remove a particular non-compliance.**	**Identifying a person who will be responsible for removing non-compliance.**	**Target date to remove non-compliance.**	**Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.**
1.	Hospital Infection Prevention and control programme manual to be made.	Hospital Administrator along with Microbiologist.	21/2/2014	Document No. HIC/01
2.	Formation of multi-disciplinary Infection Control Committee.	Hospital Administrator along with Senior Medical Officer.	21/2/2014	Infection Control Committee document duly signed by S.M.O.

3.	Formation of Infection Control Team	Hospital Administrator along with Senior Medical Officer.	21/2/2014	Document No. HIC/01
4.	Infection Control Officer to be made.	Microbiologist	21/2/2014	Infection Control Committee document duly signed by S.M.O.
5.	Infection Control Nurse to be made.	Nursing Sister	21/2/2014	Infection Control Committee document duly signed by S.M.O.

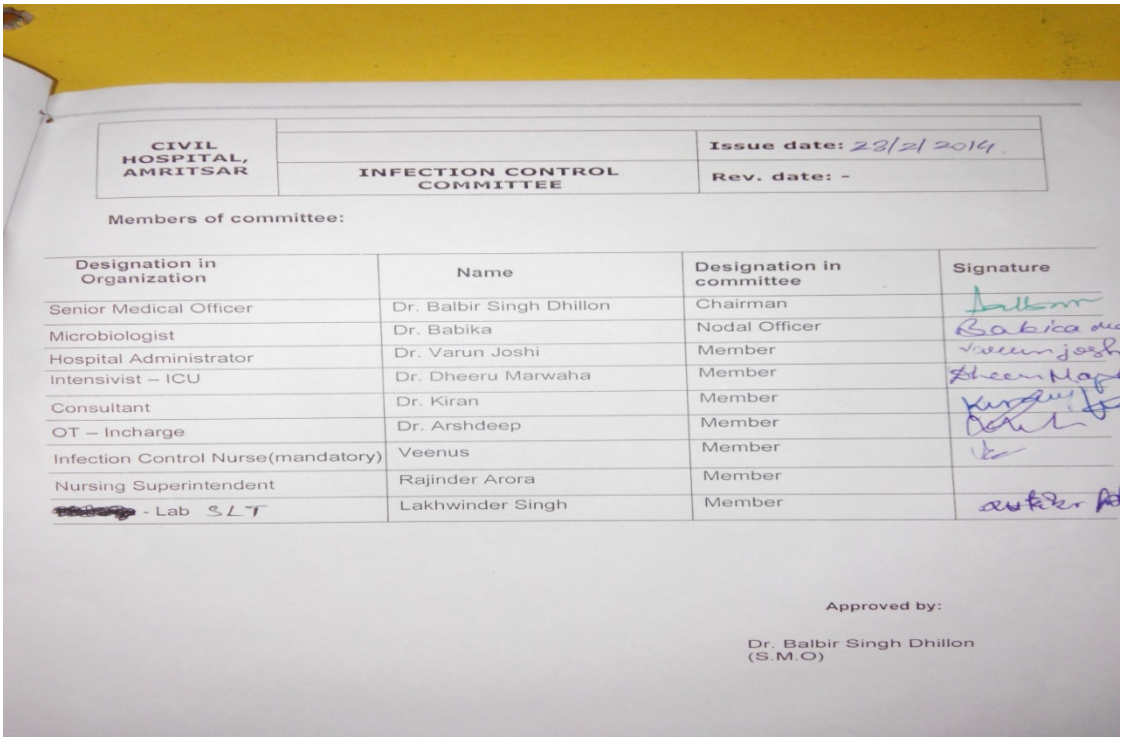
Table 7



Hospital Name:- Civil Hospital, Amritsar		Document No : /HIC/01
	Manual of Operation Infection Control Manual	Date of Issue : 6/3/2014

Service Name :	Hospital Infection Control
Date Created :	17/2/2014
Approved By :	Senior Medical Officer Name : Signature :
Reviewed/Issued by :	Microbiologist Name : Babica Mohindroo Signature :

Infection Control Manual for Civil Hospital, Amritsar.



CIVIL HOSPITAL, AMRITSAR		Issue date: 23/2/2014
	INFECTION CONTROL COMMITTEE	Rev. date: -

Members of committee:

Designation in Organization	Name	Designation in committee	Signature
Senior Medical Officer	Dr. Balbir Singh Dhillon	Chairman	
Microbiologist	Dr. Babika	Nodal Officer	
Hospital Administrator	Dr. Varun Joshi	Member	
Intensivist – ICU	Dr. Dheeru Marwaha	Member	
Consultant	Dr. Kiran	Member	
OT – Incharge	Dr. Arshdeep	Member	
Infection Control Nurse(mandatory)	Veenus	Member	
Nursing Superintendent	Rajinder Arora	Member	
[redacted] - Lab SLT	Lakhwinder Singh	Member	

Approved by:

Dr. Balbir Singh Dhillon
(S.M.O)

Infection Control Committee members

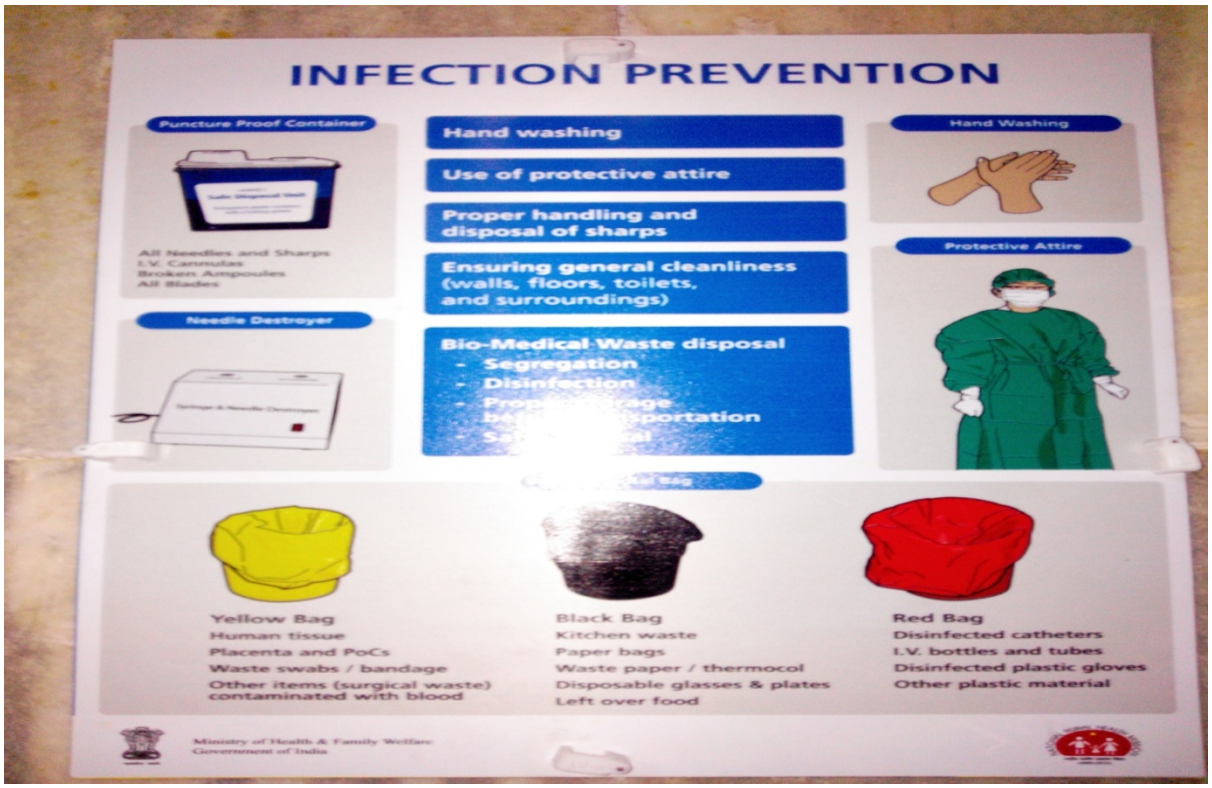
Action Plan for **HIC.2** :The organisation implements the policies and procedures laid down in the Infection Control Manual.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Identification of various high-risk areas and implementation of policies and/or procedures to prevent infection in these areas.	Hospital Administrator along with Microbiologist.	21/2/2014	Document No. HIC/01 -OT -NICU -ICU
2.	Adherence to standard precautions at all times.	Hospital Administrator.	07/3/2014	Document No. HIC/01
3.	Adherence to Hand Hygiene guidelines.	Hospital Administrator.	07/3/2014	Document No. HIC/01 -Availability of soap. -Training of medical and paramedical staff stressing technique and importance of hand hygiene. -Hand hygiene posters.
4.	Adherence to safe injection and infusion practices.	Nursing Sister.	07/3/2014	Document No. HIC/01.
5.	Adherence to cleaning, disinfection and sterilization practices.	Nursing Sister.	07/3/2014	Document No. HIC/01.

6.	Establishing appropriate Antibiotic policy.	Microbiologist.	21/2/2014	Document No. HIC/01.
7.	Adherence to laundry and linen management process.	Matron.	07/3/2014	Document No. HIC/01. -Separate register being maintained for all departments and is regularly monitored by Matron.
8.	Appropriate engineering controls to prevent infections.	Hospital Administrator.	14/3/2014	Document No. HIC/01.
9.	Adherence to Housekeeping Procedures.	Housekeeping Supervisor	01/3/2014	Document No. HIC/01. -Periodic training to housekeeping staff regarding general housekeeping and BMW management.

Table 8

Hand washing posters at source of Hand wash.



Posters indicating various means of Infection Prevention.

Action Plan for **HIC.3**: The organization performs surveillance activities to capture and monitor infection prevention and control data.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Surveillance activities to be directed towards the identified high-risk areas and procedures.	Microbiologist.	15/3/2014	Separate Registers are being maintained for swab culture and fumigation reports in high risk areas like OT,NICU. Swab culture done monthly and fumigation weekly.
2.	Surveillance activities to include monitoring the compliance with hand-hygiene guidelines.	Matron.	15/3/2014	WHO's observational form is used. Done monthly
3.	Surveillance activities to include monitoring the effectiveness of housekeeping services.	Housekeeping supervisor.	01/3/2014	Checklist for housekeeping staff has been hanged outside toilets.

4.	Appropriate feedback regarding Hospital Acquired Infection provided on regular basis to appropriate personnel.	Hospital Administrator.	01/4/2014	Feedback on HAI to be given to S.M.O., Infection Control Officer and members of Infection Control Committee.
5.	In cases of notifiable diseases information to be sent to appropriate authorities.	Nursing Sister.	05/3/2014	Information to be sent to Civil Surgeon on relevant format.

Table 9

Action Plan for **HIC.4:** The organization takes actions to prevent and control Healthcare Associated Infections (HAI) in patients.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Action to prevent urinary tract infection.	Microbiologist.	15/3/2014	Measures mentioned in Document No.HIC/01. Monitoring of UTI also done as per standard format.
2.	Action to prevent surgical site infection.	Microbiologist.	15/3/2014	Measures mentioned in Document No.HIC/01. Monitoring of SSI also done as per standard format.

Table 10

Separate register to monitor Infection Rate.

Action Plan for **HIC.5:** The organization provides adequate and appropriate resources for prevention and control of Healthcare Associated Infections (HAI).

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Adequate and appropriate personal protective equipment, soaps and disinfectants are available and used correctly.	1.Store Incharge to ensure availability. 2.Hospital Administrator to ensure they are used correctly.	21/3/2014	Availability of Soap, scrubs, sanitizers
2.	Adequate and appropriate facilities for hand washing in all patient care areas are accessible to healthcare providers.	Store Incharge	21/3/2014	Earlier washbasins were not available in all OPDs but now Wash basins, soap dispenser, towel rails are available in all OPDs and nursing stations.
3.	Appropriate pre and post exposure prophylaxis is provided to all staff members concerned.	Infection Control Nurse	01/4/2014	Document No.HIC/01 Separate register to document occupational injuries Separate record for prophylaxis of staff members.

Table 11

Wash basin along with towel rail and dispenser in OPD rooms.

Action Plan for **HIC.6:** The organisation identifies and takes appropriate action to control outbreaks of infections.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Documented procedure to identify an outbreak.	Hospital Administrator along with Microbiologist.	21/2/2014	Document No.HIC/01.
2.	Documented procedure for handling such outbreak.	Hospital Administrator along with Microbiologist.	21/2/2014	Document No.HIC/01.

Table 12

Action Plan for **HIC.7:** There are documented policies and procedures for sterilisation activities in the organisation.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Documented procedure guiding the cleaning, packing, disinfection and/or sterilization, storing and issue of items.	Hospital Administrator along with Microbiologist.	21/2/2014	Document No.HIC/01
2.	Reprocessing of instruments and equipment are covered.	Hospital Administrator along with Microbiologist.	21/2/2014	Document No.HIC/01
3.	Regular validation tests are carried out and documented.	OT assistant	01/4/2014	
4.	Established recall procedure when breakdown in the sterilization system is identified.	OT assistant	01/4/2014	

Table 13

Action Plan for **HIC.8:** Bio-medical Waste (BMW) is handled in an appropriate and safe manner.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	Adherence to statutory provisions with regard to biomedical waste.	Microbiologist. (BMW nodal officer)	21/2/2014	Document No.HIC/01
2.	Proper segregation and collection of Biomedical waste from all patient care areas of the hospital is implemented and monitored.	Housekeeping Supervisor	21/2/2014	Document No.HIC/01 -Regular monitoring for segregation. - Periodic training of housekeeping and para medical staff on regular basis on bio medical waste management - Posters indicating segregation pasted at waste collection points.
3.	Appropriate personal protective measures are used by all categories of staff handling Bio medical waste.	Housekeeping Supervisor	01/3/2014	Gum shoes, heavy duty rubber gloves, mask are provided and it is ensured that they wear.

Table 14

Use of personal protective equipments and separate trolley for carrying bio-medical waste by housekeeping staff.

Poster indicating segregation

Action Plan for **HIC.9:** The infection control programme is supported by the management and includes training of staff.

S.No.	Action required to remove a particular non-compliance.	Identifying a person who will be responsible for removing non-compliance.	Target date to remove non-compliance.	Evidence (cross reference to documents/manuals) to prove that non-compliance has been removed.
1.	The management makes available resources required for the infection control programme	Senior Medical Officer	21/2/2014	Document No.HIC/01
2.	The organization earmarks adequate funds from its annual budget in this regard.	Senior Medical Officer	21/2/2014	Document No.HIC/01
3.	The organization conducts induction training for all staff.	Senior Medical Officer	01/3/2014	
4.	The organization conducts appropriate “in-service” training sessions for all staff at least once in a year.	Senior Medical Officer		

Table 15

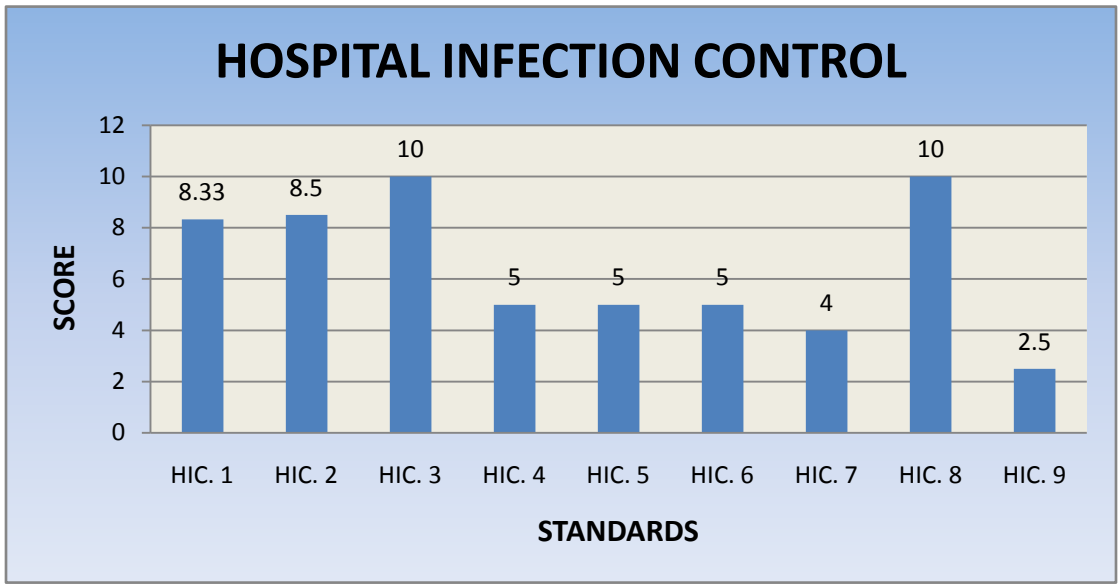


Figure 2: Assessment of HIC Chapter as per NABH Checklist on 10/2/2014.

Interpretation from Figure2

1. The hospital have infection control programme.

2. The hospital have Hospital infection control manual.

3. The surveillance activity in the hospital, the collection of surveillance data and verification of data is an ongoing process.

4. The monitoring and prevention of the hospital associated infection among patients and staff is only partially compliant.

5. The figure indicates that adequate resources not provided to prevent HAI.

6. Although organization has a documented procedure for identifying and handling an outbreak, still implementation needs to be worked upon.

7. There is adequate space available for sterilization activities, however validation and calibration of sterilization equipments is not carried out on regular basis.

8. The organization does have proper segregation and collection policy for the BMW. The transportation of BMW is carried out in stipulated time, the staff handling the BMW wears personnel protective equipment.

9. The organization has not earmarked adequate funds from its annual budget in regard to hospital infection control and no decision has been taken for induction training of staff as yet.

2.10 : RESULTS

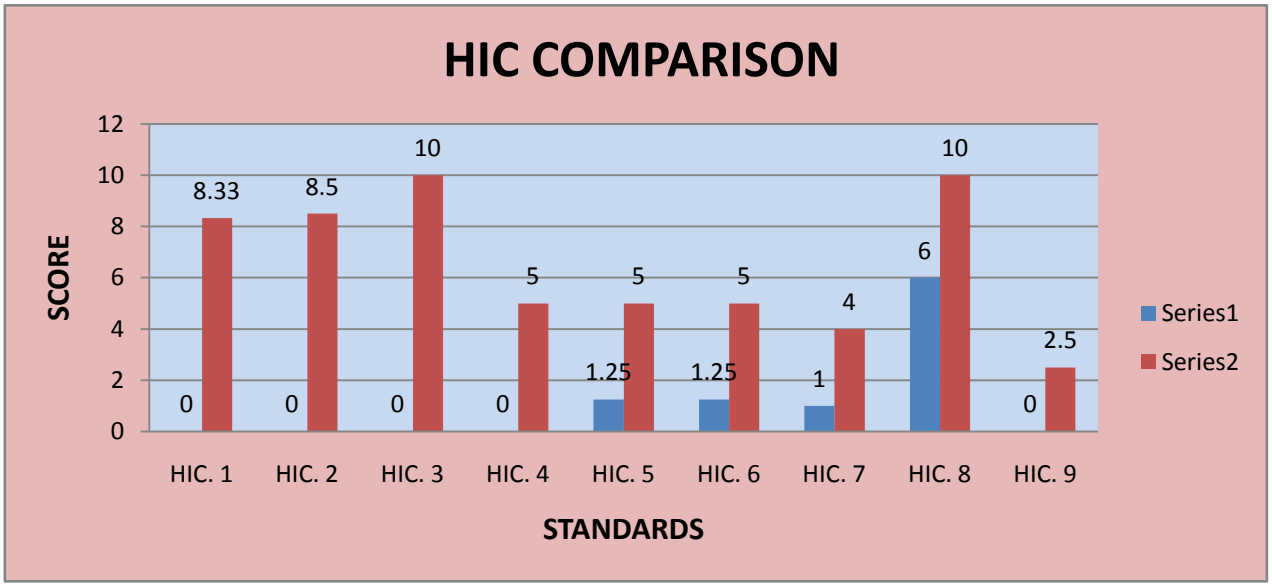


Figure 3: Before and After Comparison of HIC Chapter as per NABH

Interpretations from Figure 3.

HIC. 1 – Score has raised from 0 to 8.33 as

- Before implementation of action plan there was no Infection Control Programme but now Hospital Infection Control programme manual has been established.
- Hospital Infection Control committee has been made.
- Infection Control Officer and Infection Control nurse has been designated.

HIC. 2 – Score has raised from 0 to 8.5 as

- Before implementation of action plan there was no documented policy to prevent Infection but now documented policy is there.
- Standard precautions, hand hygiene, safe injection and infusion practices are followed.
- Cleaning, disinfection and sterilization practices are adhered.
- Antibiotic policy has been established now and implemented.
- Linen, laundry management and housekeeping procedures are adhered.

HIC. 3 – Score has raised from 0 to 10 as

- Before implementation of action plan there was no surveillance activity and data collection but now Surveillance activities are directed towards high risk areas and continuously monitored.
- Collection of data is going on.
- Verification of data is done.
- Appropriate feedback regarding HIC is given to appropriate personnel.

HIC. 4 – Score has raised from 0 to 5 (only partial compliance is reached) as

- Before implementation of action plan there was no monitoring of Infection rate but now UTI and SSI rate are being monitored and actions taken to prevent them.
- Respiratory tract Infections are not being monitored
- No procedure for intra vascular devices are carried out so this element is not feasible for this hospital.

HIC. 5 - Score has raised from 1.25 to 5 (only partial compliance is reached) as

- Adequate and appropriate personal protective equipment, soaps and disinfectants are available and used correctly.
- Adequate and appropriate facilities for hand hygiene in all patient-care areas are accessible to healthcare providers.
- Isolation/ barrier nursing facilities are not available.
- Appropriate pre- and post-exposure prophylaxis is not provided to all staff members concerned.

HIC. 6 - Score has raised from 1.25 to 5 (only partial compliance is reached) as

- Before implementation of action plan there was no documented procedure to identify outbreaks but now Organization has a documented procedure for identifying an outbreak.
- The organization has a documented procedure for handling such outbreaks.
- There was no noted case of outbreak so above procedure has not been implemented.

HIC. 7 – Score has raised from 1 to 4 as

- The organization provides adequate space and appropriate zoning for sterilization activities.
- Before implementation of action plan there was no documentation but now documented procedure guides the cleaning, packing, disinfection and/or sterilization, storing and issue of items.
- Reprocessing of instruments is not done.
- There is no process as yet to check the status of sterilization. However, the process to procure chemical indicator to check the status of sterilization is under process.
- Validation tests for sterilization are not carried out.
- There is no established recall procedure as yet when breakdown in the sterilization system is identified.

HIC. 8 – Score has raised from 6 to 10 as

- Before implementation of action plan there was was problem in proper segregation but now this non conformity has been removed by training of housekeeping and para medical staff on regular basis on bio medical waste management and coloured posters depicting segregation has been placed at waste collection points.
- Use of Personal protective equipments has been made mandatory which was not followed earlier.

HIC. 9 – Score has raised from 0 to 2.5 as

- The management makes available resources required for the infection control programme.
- The organization has not yet earmarked adequate funds from its annual budget in this regard.
- The organization has not yet taken decision to conduct induction training and in service training in this regard for all staff.

2.15: CONCLUSION

In this project, initially present situation and gap areas were identified based on NABH checklist for HIC chapter and average score was calculated. On the basis of these findings an Action Plan was developed for 3 months in order to fulfill those gaps. Then at the end of 3 months again self assessment was done to see the impact of intervention in terms of average score.

Results of the above analysis suggested that initially the average score for HIC chapter came out to be 1 and then after implementation of the Action Plan it was observed that the score raised to 6.5 at the end of 3 months. Although improvement in score is there but still work needs to be done to achieve full compliance.

It was found that 3 Standards in this chapter had score of 5 (partial compliance) and 2 Standards had score less than 5. Suggestions have been given so that implementation can be done to achieve full compliance for this chapter before Pre assessment.

2.16: LIMITATIONS OF STUDY

1. Time Constraint – 3 months period of dissertation was limited and implementation for all elements was not being done.
2. Attitude of staff – some of the staff was non-co-operative.

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ANNEXURE 1

CHECKLIST ON HOSPITAL INFECTION CONTROL

(Evaluated on 10/2/2014)

Chapter 5: HOSPITAL INFECTION CONTROL (HIC)	**Scores (0/ 5/ 10)**
HIC.1: The organization has a well-designed, comprehensive and coordinated infection control programme aimed at reducing/ eliminating risks to patients, visitors and providers of care.	

	a	The hospital infection prevention and control programme is documented which aims at preventing and reducing risk of healthcare associated infections.	0
	b	The infection prevention and control programme is a continuous process and updated at least once in a year.	0
	c	The hospital has a multi-disciplinary infection control committee, which coordinates all infection prevention and control activities.	0
	d	The hospital has an infection control team, which coordinates implementation of all infection prevention and control activities.	0
	e	The hospital has designated infection control officer as part of the infection control team.	0
	f	The hospital has designated infection control nurse(s) as part of the infection control team.	0
			0

HIC.2: The organisation implements the policies and procedures laid down in the Infection Control Manual.			
	a	The organization identifies the various high-risk areas and procedures and implements policies and/or procedures to prevent infection in these areas.	0
	b	The organization adheres to standard precautions at all times.	0
	c	The organization adheres to hand-hygiene guidelines.	0
	d	The organization adhere to safe injection and infusion practices	0
	e	The organization adheres to transmission-based precautions at all times.	0
	f	The organization adheres to cleaning, disinfection and sterilisation practices.	0

	g	An appropriate antibiotic policy is established and implemented.	0
	h	The organization adheres to laundry and linen management processes.	0
	i	The organization adheres to kitchen sanitation and food handling issues	NA
	j	The organization has appropriate engineering controls to prevent infections.	0
	k	The organization adheres to housekeeping procedures.	0
			0
HIC.3: The infection control team is responsible for surveillance activities in identified areas of the hospital.			
	a	Surveillance activities are appropriately directed towards the identified high-risk areas.	0
	b	Collection of surveillance data is an ongoing process.	0
	c	Verification of data is done on regular basis by the infection control team.	0
	d	Scope of surveillance activities incorporates tracking and analyzing of infection risks, rates and trends.	0
	e	Surveillance activities include monitoring the compliance with hand-hygiene guidelines.	0
	f	Surveillance activities include monitoring the effectiveness of housekeeping services.	0
	g	Appropriate feedback regarding HAI rates are provided on a regular basis to appropriate personnel.	0
	h	In cases of notifiable diseases, information (in relevant format) is sent to appropriate authorities.	0
			0
HIC.4: The organization takes actions to prevent or reduce the risk of Hospital Associated Infections (HAI) in patients and employees.			
	a	The organization takes action to prevent urinary tract infections.	0
	b	The organization takes action to prevent respiratory tract infections.	0
	c	The organization takes action to prevent intra-vascular device infections.	0
	d	The organization takes action to prevent surgical site infections.	0
			0

HIC.5: The organization provides adequate and appropriate resources for prevention and control of Healthcare Associated Infections (HAI).			
	a	Adequate and appropriate personal protective equipment, soaps and disinfectants are available and used correctly.	5
	b	Adequate and appropriate facilities for hand hygiene in all patient-care areas are accessible to healthcare providers.	0
	c	Isolation/ barrier nursing facilities are available.	0
	d	Appropriate pre- and post-exposure prophylaxis is provided to all staff members concerned.	0
			1.25
HIC.6: The organization identifies and takes appropriate action to control outbreaks of infections.			
	a	Organization has a documented procedure for identifying an outbreak.	0
	b	The organization has a documented procedure for handling such outbreaks.	5
	c	This procedure is implemented during outbreaks.	0
	d	After the outbreak is over appropriate corrective actions are taken to prevent recurrence.	0
			1.25
HIC.7: There are documented policies and procedures for sterilization activities in the organisation.			
	a	The organization provides adequate space and appropriate zoning for sterilization activities.	5
	b	Documented procedure guides the cleaning, packing, disinfection and/or sterilization, storing and issue of items.	0
	c	Reprocessing of instruments and equipment are covered.	0
	d	Regular validation tests for sterilization are carried out and documented.	0
	e	There is an established recall procedure when breakdown in the	0
			1
HIC.8: Bio-medical Waste (BMW) is handled in an appropriate and safe manner.			
	a	The organization adheres to statutory provisions with regard to biomedical	5

	b	Proper segregation and collection of Bio-medical Waste from all patient care areas of the hospital is implemented and monitored.	5
	c	The organization ensures that Bio-medical Waste is stored and transported to the site of treatment and disposal in proper covered vehicles within	10
	d	Bio-medical Waste treatment facility is managed as per statutory provisions (if in-house) or outsourced to authorised contractor(s).	10
	e	Appropriate personal protective measures are used by all categories of staff handling Bio-medical Waste.	0
			6
HIC.9: The infection control programme is supported by the management and includes training of staff.			
	a	The management makes available resources required for the infection control programme.	0
	b	The organization earmarks adequate funds from its annual budget in this regard.	0
	c	The organization conducts induction training for all staff.	0
	d	The organization conducts appropriate “in-service” training sessions for all staff at least once in a year.	0
			0
Average Score of Chapter 5 – HIC			**1**

ANNEXURE 2

CHECKLIST ON HOSPITAL INFECTION CONTROL

(Evaluated on 29/4/2014)

Chapter 5: HOSPITAL INFECTION CONTROL (HIC)					**Scores (0/ 5/ 10)**
HIC.1: The organization has a well-designed, comprehensive and coordinated infection control programme aimed at reducing/ eliminating risks					
	a	The hospital infection prevention and control programme is documented which aims at preventing and reducing risk of healthcare associated			10
	b	The infection prevention and control programme is a continuous process and updated at least once in a year			0
	c	The hospital has a multi-disciplinary infection control committee, which coordinates all infection prevention and control activities			10
	d	The hospital has an infection control team, which coordinates implementation of all infection prevention and control activities			10
	e	The hospital has designated infection control officer as part of the infection control team			10
	f	The hospital has designated infection control nurse(s) as part of the infection control team.			10
					8.33

HIC.2: The organisation implements the policies and procedures laid down in the Infection Control Manual.			
	a	The organization identifies the various high-risk areas and procedures and implements policies and/or procedures to prevent infection in these areas.	10
	b	The organization adheres to standard precautions at all times.	10
	c	The organization adheres to hand-hygiene guidelines.	10
	d	The organization adhere to safe injection and infusion practices.	10
	e	The organization adheres to transmission-based precautions at all times.	0
	f	The organization adheres to cleaning, disinfection and sterilization.	10
	g	An appropriate antibiotic policy is established and implemented.	10
	h	The organization adheres to laundry and linen management processes.	10
	i	The organization adheres to kitchen sanitation and food handling issues.	NA
	j	The organization has appropriate engineering controls to prevent infections.	5
	k	The organization adheres to housekeeping procedures.	10

					8.5
HIC.3: The infection control team is responsible for surveillance activities in identified areas of the hospital.					
	a	Surveillance activities are appropriately directed towards the identified high-risk areas.			10
	b	Collection of surveillance data is an ongoing process.			10
	c	Verification of data is done on regular basis by the infection control team.			10
	d	Scope of surveillance activities incorporates tracking and analyzing of infection risks, rates and trends.			10
	e	Surveillance activities include monitoring the compliance with hand-hygiene guidelines.			10
	f	Surveillance activities include monitoring the effectiveness of housekeeping services.			10
	g	Appropriate feedback regarding HAI rates are provided on a regular basis to appropriate personnel.			10
	h	In cases of notifiable diseases, information (in relevant format) is sent to appropriate authorities.			10
					10
HIC.4: The organization takes actions to prevent or reduce the risk of Hospital Associated Infections (HAI) in patients and employees.					
	a	The organization takes action to prevent urinary tract infections.			10
	b	The organization takes action to prevent respiratory tract infections.			0
	c	The organization takes action to prevent intra-vascular device infections.			0
	d	The organization takes action to prevent surgical site infections.			10
					5

HIC.5: The organization provides adequate and appropriate resources for prevention and control of Healthcare Associated Infections (HAI).			
	a	Adequate and appropriate personal protective equipment, soaps and disinfectants are available and used correctly.	10
	b	Adequate and appropriate facilities for hand hygiene in all patient-care areas are accessible to healthcare providers.	10
	c	Isolation/ barrier nursing facilities are available.	0

	d	Appropriate pre- and post-exposure prophylaxis is provided to all staff members concerned.	0
			5
HIC.6: The organization identifies and takes appropriate action to control outbreaks of infections.			
	a	Organization has a documented procedure for identifying an outbreak.	10
	b	The organization has a documented procedure for handling such outbreaks.	10
	c	This procedure is implemented during outbreaks.	0
	d	After the outbreak is over appropriate corrective actions are taken to prevent recurrence.	0
			5
HIC.7: There are documented policies and procedures for sterilization activities in the organisation.			
	a	The organization provides adequate space and appropriate zoning for sterilization activities.	10
	b	Documented procedure guides the cleaning, packing, disinfection and/or sterilization, storing and issue of items.	10
	c	Reprocessing of instruments and equipment are covered.	0
	d	Regular validation tests for sterilization are carried out and documented.	0
	e	There is an established recall procedure when breakdown in the sterilization system is identified.	0
			4
HIC.8: Bio-medical Waste (BMW) is handled in an appropriate and safe manner.			
	a	The organization adheres to statutory provisions with regard to biomedical waste.	10
	b	Proper segregation and collection of Bio-medical Waste from all patient care areas of the hospital is implemented and monitored.	10
	c	The organization ensures that Bio-medical Waste is stored and transported to the site of treatment and disposal in proper covered vehicles within stipulated time limits in a secure manner.	10
	d	Bio-medical Waste treatment facility is managed as per statutory provisions (if in-house) or outsourced to authorised contractor(s).	1

	e	Appropriate personal protective measures are used by all categories of staff handling Bio-medical Waste.	10
			10
HIC.9: The infection control programme is supported by the management and includes training of staff.			
	a	The management makes available resources required for the infection control programme.	10
	b	The organization earmarks adequate funds from its annual budget in this regard.	0
	c	The organization conducts induction training for all staff.	0
	d	The organization conducts appropriate “in-service” training sessions for all staff at least once in a year.	0
			2.5
Average Score of Chapter 5 – HIC			**6.5**