Patient safety culture plays an essential role to ensure safe patient care and quality in healthcare services

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ABSTRACT

Abstract

Patient Safety is a global health priority. Every year, millions of patients suffer or die because of unsafe and poor- health care service. There are several factors which compromise patient safety and cause potential harm in health care settings. In developed countries, it is estimated that one in every 10 patients is harmed while receiving care in hospital. In developing countries, there is inadequate information on adverse event due to poor quality of health care service. Despite recent developments in Bangladesh, there is still great concern about the quality of care in healthcare sector. Evercare Hospital Dhaka is one of the leading private health care organizations in the country and committed towards patient safety from the very beginning. The purpose of this article is to discuss the importance of patient safety culture at healthcare service and how it is nurtured at Evercare hospital Dhaka by following the joint commission international standards.

Key words: *Patient safety culture, patient harm, quality of care, healthcare services, error, Evercare hospital Dhaka (EHD), Joint commission international (JCI), International patient safety goals (IPSGs),*

INTRODUCTION

The practice of patient safety is an essential part of any health care services. Patient Safety is a health care discipline that emerged with the evolving complexity in health care systems and the resulting rise of patient harm in health care facilities. It aims to prevent and reduce risks, errors and harm that occur to patients in health care settings[1]. Teamwork, effective communications, implementing patient safety protocols, continuous training, monitoring, supervision are necessary to prevent adverse patient outcome during hospital stay. The purpose of this article is to discuss the importance of patient safety culture at healthcare service and how it is nurtured at Evercare hospital Dhaka by following the joint commission international standards.

BACKGROUND

Before 1990 the importance of patient safety was overlooked. In 1999, when Institution of Medicine published "**To Err is Human; Building a Safer Healthcare System"** it broke the silence and patient safety started to receive some attention worldwide. According to this report ~ 44,000–98,000 patients die from preventable errors in American hospitals each year[2]. These numbers stimulated patient safety in medical society. Healthcare stakeholders started to take initiatives in both national and institutional levels. In 2015, National Patient Safety Foundation (NPSF) published **"Free From Harm: Accelerating Patient Safety Improvement"**– in this report it was observed that improvements have occurred at a much slower rate than initially expected[3].

DISCUSSION

Every year, millions of patients suffer because of unsafe and poor healthcare services. Patient safety can be compromised in different domains of healthcare settings such as medication errors, health care-associated infections, unsafe injections practices, unsafe surgical care, diagnostic errors, radiation errors, sepsis, unsafe transfusion practices, missed warning signs, major equipment failure. The occurrence of adverse events due to unsafe care is one of the 10 leading causes of death and disability in the world [4]. In high-income countries, it is estimated that one in every 10 patients is harmed while receiving hospital care [5].

Figure 1: Gap analysis of patient safety

Each year, 134 million adverse events occur in hospitals in low- and middle-income countries (LMICs), due to unsafe care, resulting in 2.6 million deaths [6]. Globally, as many as 4 in 10 patients are harmed in primary and outpatient health care [7]. Up to 80% of harm is preventable. 15% of total hospital activity and expenditure is a direct result of adverse events [5]. Every year billions of USD cost due to unsafe medication practice. Various patient safety gaps must be analyzed to understand the extent of problem and find the main contributory factors of patient safety related issues.

Global perspectives on patient safety issue

Joint Commission International perspective

The Joint Commission is an independent, nonprofitable organization created in 1951 that accredits health care programs and organizations across the world. It's goal to ensure quality healthcare for patients, prevent harm, and improve patient advocacy. Joint commission aims to avoid medical errors and non-compliance in health-care organizations by evaluating other factors that could affect patient safety and care [8].A sentinel event is a patient safety event (not primarily related to the natural course of the patient's illness or underlying condition) that reaches a patient and results in: Death, Permanent harm, Severe harm[9]. The Joint Commission reviewed 1,197 sentinel events in 2021. 89% (1,068) events were self- reported to the Joint Commission by an accredited or certified entity and the remaining 129 sentinel events were reported either by patients or their families or employees of the organization.

The 10 most frequently reported causes for sentinel events for 2021[10]

1. Patient Fall - 485
2. Delay in treatment-97
3. Unintended retention of a foreign object -97
4. Wrong surgical site – 85
5. Patient suicide -79
6. Assault/rape/sexual assault of a patient -55
7. Patient self-harm -45
8. Fire incident -38
9. Medication management -35
10. Clinical alarm response -22

The summary data of sentinel event statistics covers 18,018 incidents reported from 1995 through Dec. 31, 2021. These events affected a total of 14,731 patients (as multiple patients may be affected by a single event) [10]:

- 46% of sentinel events led to a patient's death.
- 24% led to unexpected additional care.
- 12% led to severe temporary harm.
- 6% led to permanent loss of function.
- 2% led to permanent harm.
- 2% led to a psychological impact.

It is estimated fewer than 2% of all sentinel events are reported to the Joint Commission. Therefore, these data are not an epidemiologic data set. Joint Commission standards helps hospitals to build their integrated patient safety system in which staff and leaders work together to eliminate complacency, promote collective mindfulness, treat each other with respect and compassion, and learn from patient safety events.

Glimpse of joint commission international requirements to ensure safe environment both for patients and staffs in hospital

- Implementing international patient safety goals in the organization.
- Maintaining strict credentialing, privileging and primary source verification for healthcare workers during recruitment.
- Removing barriers in patient care such as language, culture, physical disability.
- Introducing specialized assessment, reassessment, and treatment plan for special population such as children, senior citizens, suspected abuse or neglect, communicable diseases, compassionate "end of life care" for dying patients
- Practicing proactive risk management program to identify potential hazards in clinical care, fire safety, facility safety, epidemics, security, hazardous material safety, equipment safety.
- Monitoring of clinical and nonclinical parameters to make improvements in the organization as well as to benchmark with the best practices in the world.
- Creating a 'just' culture environment free from "fear of blame and punishment" to ensure transparent and acceptable correction process.

World health organization perspective

World health organization (WHO) aims to enhance patient experience, reduce risks and harm, achieve better health outcomes and lower costs.

WHO initiatives on patient safety issue [11]:

- Gap analysis in patient safety
- Global ministerial summits on patient safety
- Adopted resolution (WHA72.6) on global action on patient safety
- Established an annual world patient safety day on 17 September
- Global advocacy, partnerships, and networks in patient safety
- Patient safety guidelines, tools, studies, and checklist
- Patient and family engagement for patient safety
- 1st Global Patient Safety Challenge-Clean Care is Safer Care (2005); with the goal of reducing health care-associated infection, by focusing on improved hand hygiene.
- 2nd Global Patient Safety Challenge-Safe Surgery Saves Lives (2008); dedicated to reducing risks associated with surgery.
- WHO Flagship Initiative "A Decade of Patient Safety 2020-2030"

Bangladesh perspective on patient safety

Despite recent developments in Bangladesh healthcare sector, there is still great concern about the quality of healthcare services in the country. In Bangladesh, there is no structured guideline for patent safety. At present Bangladesh ranks 88th in the latest rankings released by the WHO on the quality of healthcare around the world[13]. Among the SAARC countries, Sri Lanka, India, and Pakistan rank 76th, 112th and 122nd respectively[13]. In Bangladesh, there are only 0.6 doctor and 0.87 bed for every 1000 patients, whereas WHO recommends at least 1 doctor & 3 beds for every 1,000 patients[13]. The proportion of doctors and nurses in Bangladesh is also very less. Acute limitation of resources, lack of training and supervision, inadequate reporting of healthcare incidences and blame game culture are observed in healthcare sectors across the country. In Bangladesh, there is no national accreditation program for hospital other than laboratory services.

Patient safety culture at Evercare Hospital Dhaka

Evercare Hospitals is one of the leading private health care organizations in Bangladesh. Evercare Hospital Dhaka is the only Joint Commission International Accredited Hospital in the country. This hospital follows the JCI standards and adopted international patient safety goals from the very beginning and achieved prestigious JCI certificates for five times in a row since 2008.

The data for the compliance of international patient safety goals of Evercare hospital Dhaka is shown in Fig-2.

Practices of patient safety culture implemented at Evercare Hospital Dhaka:

Patient Care Centered Standards

1. International Patient Safety Goals (IPSGs)

The International Patient Safety Goals (IPSG) were developed in 2006 by the Joint Commission International (JCI) [14]. The goals were adapted from the JCAHO's National Patient Safety Goals [15]. The purpose of this standard is to promote specific improvements in patient safety. The IPSG goals highlight the problematic areas in health care and provide evidence and expert-based solutions to the problems.

IPSG-I (Identify Patients Correctly)

Safe care begins with proper identification of the patient. At least two patient identifiers are required to identify the patient and to label the elements associated with the patient's care and treatment plan.

- ID bands containing Full Name and UHID (unique hospital identification number) are used in EHD as a patient identifier
- Patients are identified before performing diagnostic procedures, providing treatments, and performing other procedures.
- Identifying patients in special circumstances such as the comatose patient or newborn who is not immediately named.
- Using name alert tag in case of patients in similar name admitted in same unit.

IPSG- II (Improve Effective Communication)

Patient care critically affected by poor communication process. Adverse events may occur due to breakdowns in communication during any handover of patient care. Effective communication between the patient, family, caregiver, and health care practitioners can significantly improve the quality of care.Standardized forms, tools, or methods can be used for consistent and complete handover process.

- No verbal orders are allowed at Evercare hospital Dhaka other than life- threatening condition from doctors to nurses
- Using ISBAR which is a standardized handover tool for taking handover between health care practitioners.
- Implementing a process for effective verbal communication (Read back and verify process)
- Policy for reporting of critical value from laboratory to treating teams

IPSG-III (Improve the Safety of High Alert Medication)-

The Institute for Safe Medication Practices (ISMP) defines, High-alert medications are medications that bear a heightened risk of causing significant patient harm when they are used in error. Although mistakes may or may not be more common with these drugs, the consequences of an error are clearly more devastating to patients [16]. High-alert medications include insulin, opioids, chemotherapeutic agents, antithrombotic agents, anticoagulants, thrombolytics, medications with a narrow therapeutic range (for example, digoxin), neuromuscular blocking agents, and epidural or intrathecal medications.

- In EHD prepare a list of high alert medications including concentrated electrolytes, LASA medications, Narcotics, Cytotoxic drugs as per international guideline (ISMP, WHO) etc. which is revised & updated annually.
- Use red high alert stickers for labelling of high alert medications

- Double lock policy for Narcotics
- Maintaining complete narcotics log to prevent misuse
- Uses Tallman method for storage of Look Alike and Sound Alike (LASA) medicine
  Stick policy for storage, dispensing and administration of high alert medicine.

IPSG -IV (Ensure Safe Surgery)

Significant patient injury and sentinel events resulting from wrong-site, wrong-procedure, and wrong-patient surgery are ongoing concerns for healthcare organizations. Such events can result from ineffective communication between team members lack of a processes and lack of patient involvement in the site marking. Multiple strategies are taken in EHD as per guidance of Joint commission & WHO to prevent wrong site, wrong procedure, and wrong surgery and established safe surgical practice in the organization.

- Policy for pre-operative verification process which includes patient preparation and informed surgical consent.
- Unique mark is used for marking the site and side. This marking is done by the person performing surgical and invasive procedure.
- Involving the patient in the site marking process.
- Implementing WHO safe surgery checklist (sign in, time out and sign out) for all invasive procedure and surgery in operating theatre and also outside the theatre.

IPSG -V (Reduce the Risk of Health Care Associated Infections)

Infection prevention and control are major concern for patients and health care practitioners. Hospital-associated infections can severely impact a patient's emotional and financial well-being. Health Care Associated Infections include catheter-associated urinary tract infections, bloodstream infections, and pneumonia (associated with mechanical ventilation), surgical site infection.

- EHD has adopted current evidence-based hand-hygiene guidelines and implemented hand-hygiene program throughout the hospital (WHO August 2009).
- Maintaining and monitoring invasive device bundles which includes central line–associated bloodstream infection (CLABSI), ventilator-associated pneumonia (VAP), catheter-associated urinary tract infection (CAUTI), surgical site infection (SSI), and severe sepsis bundle.

IPSG-VI (Reduce the Risk of Patient Harm Resulting from falls)

Patient who have repeated history of falls at home, medications use, alcohol consumption, gait or balance disturbances, visual impairments, altered mental status are prone to fall risk. The hospital has the responsibility to identify these types of patients within its patient population who may be at high risk for falls. Health care organization need to established fall risk reduction program based on appropriate plan and policies. Following Measures and interventions are taken by EHD to reduce fall risk of patient such as

- Screening & assessment of all inpatients and outpatients for risk of fall
- Uses standardized fall risk assessment tool
- Uses yellow colour Id band for the inpatient who are diagnosed as a high risk for fall.

- Reassessment of inpatients who may become at risk for falls due to a change in condition
- Use of education brochure for patient and family education

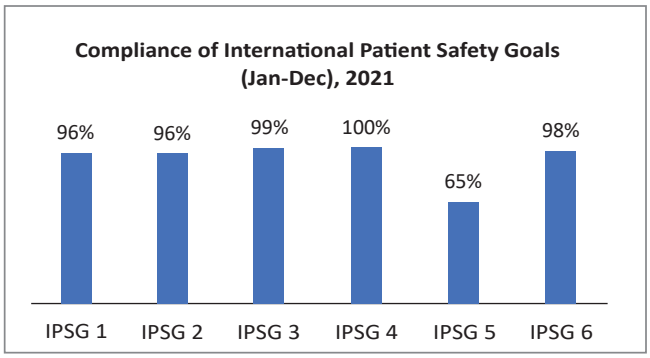

Figure-2: Compliance of IPSGs,2021

2. Access to Care & Continuity of Care (ACC)

The purpose of this standards to correctly match the patient's health care needs with the services available, to coordinate timely and high-quality services provided to the patient in the organization, and then to plan for discharge, transfer, and follow-up. The result is improved patient care outcomes and more efficient use of available resources. Following initiatives are taken by EHD to maintain the compliance of this standard.

- OPD and emergency screening process for admission
- Follow triage criteria in emergency unit (Canadian 5 tier triage)
- Use of admission and discharge criteria from different levels of care
- Use of scope of services for each unit
  Ensuring coordination of care among different departments
- Ensuring safe transportation and transfer of patient

3. Patient-Centered Care (PCC)

Each patient and his or her family have their own unique needs, strengths, values, and beliefs. Patient care outcomes can be improved when patients and their families are well informed and involved in care processes. As per joint commission, each patient's educational needs and ability and willingness to learn should assessed and recorded in his or her medical record. Evercare hospital has developed and implemented a process to ensure that all staff members are aware of and respond to patient and family rights issues when they interact with patient care throughout the hospital.

- Display patient & family rights poster in patient care units
- Use of educational brochure to ensure patient & family education
- Encourage staff to promote patient and family participation in care process

4. Assessment of Patient (AOP)

Effective assessment process helps to identify health care need of a patient. Patient assessment is an ongoing, dynamic process that takes place in inpatient and outpatient units of a hospital. It consists of three primary processes: such as a. Collecting information and data on the patient's physical, psychological, and social status, and health history b. Analyzing the data and information, including the results of laboratory testing, diagnostic imaging, and c. Developing a plan of care to meet the patient's identified needs

- Standardized assessment and re-assessment for patient both in inpatient & outpatient unit.
- The initial assessment is performed by all categories of health care practitioner and documented within the first 24 hours of admission.
- Specialized assessment for vulnerable groups of patients such as geriatric, paediatric, patients in life support, infectious patient, immunocompromised patient etc.
- Interdisciplinary team round by the floor physician, nurse in charge, dietician, physiotherapist, and customer care staff to ensure comprehensive assessment.

5. Care of Patient (COP)

Care of patient is a dynamic process and involve multidisciplinary approach. The hospital needs to develop and implement a standardized process, planning, coordination to provide safe and effective care and services to all patients

- Individualized plan of care with specific measurable goal for each patient based on the patient's initial assessment.
- Implementation & monitoring evidence based clinical pathway & practice guideline
- Identifying and ensuring specialized care for high -risk patients
- Developing & implementing early warning sign to recognize and respond to a patient whose condition appears to be worsening
- Developing & implementing a guidelines and procedures for the handling, use, and administration of blood and blood products
- Resuscitation services are available throughout the hospital.

6. Anesthesia & Surgical Care (ASC)

Surgical anesthesia, procedural sedation, and surgical interventions are complex processes in a health care organization. Sedation and anesthesia require a complete and comprehensive patient assessment, continued patient monitoring, and recovery criteria.

- Policy for pre-operative verification process
- Pre-anesthesia assessment for all surgical patients.
- Pre-induction assessment to reevaluate patients immediately before the induction of anesthesia
- Standardized process for administering procedural sedation by anesthetist throughout the hospital such as moderate sedation use in endoscopy unit, IVF center, radiology.
- Recovery criteria for anesthesia and moderate sedation
- Postoperative pain management
- Ensure post-surgical plan of care
- Surgical prophylactic antibiotic (Fig-3)
- Monitoring of post-surgical & post anesthesia adverse events (Fig-4)

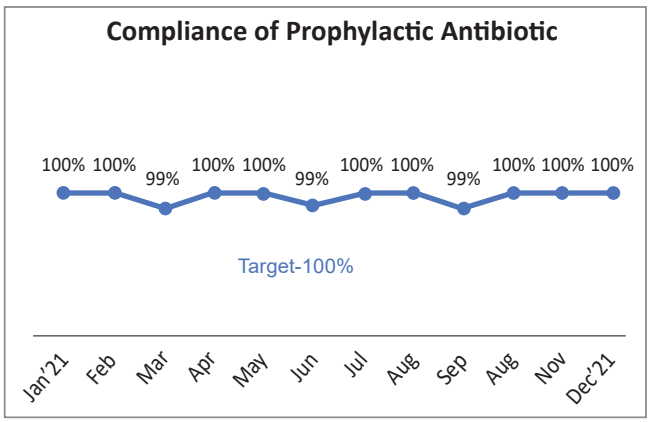

Figure 3: Compliance of Prophylactic Antibiotic

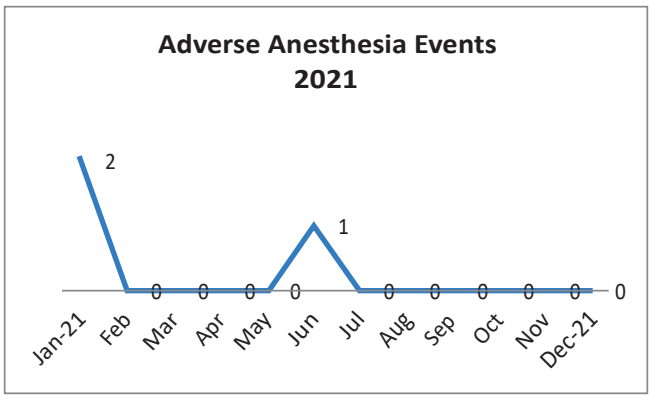

Figure 4: Adverse Anesthesia Events

7. Medication Management and Use (MMU)

Medication is an integral part of medical care in hospitals.

Unsafe medication practices and medication errors are a leading cause of injury and avoidable harm in health care systems across the world. Medication errors can occur throughout the medication-use system such as, when prescribing a drug, when drug is transcribing into a computer system, when the drug is being prepared or dispensed, or when the drug is given to or taken by a patient.

- Annual plan for medication management for addressing selection, procurement, storage, dispensing, administration, monitoring and reporting of medication errors.
- Pharmaceuticals and therapeutic committee comprising of clinicians and management representatives of Evercare hospital Dhaka to guide the medication management program.
- Medications are properly and safely stored in appropriate temperature and humidity.
- EHD has develop and implemented a program for use of antibiotic on the principle of antibiotic stewardship. (use of restricted, prophylactic and empirical antibiotic)
- Use standardized chart for medication prescription
- Medication prescriptions are reviewed for appropriateness by the pharmacist following established criteria such as interactions, llergies, duplication, physiological status
- Medications are prepared and dispensed in a safe and clean environment.
- Monitoring of new medication effects on patients.
- Medicines are administered only by trained healthcare practitioners following 6 rights
- Monitoring of adverse drug reaction
- Monitoring of medication error (administration error) & near miss events of medications (prescribing, transcribing, dispensing error) (Fig-5, 6)

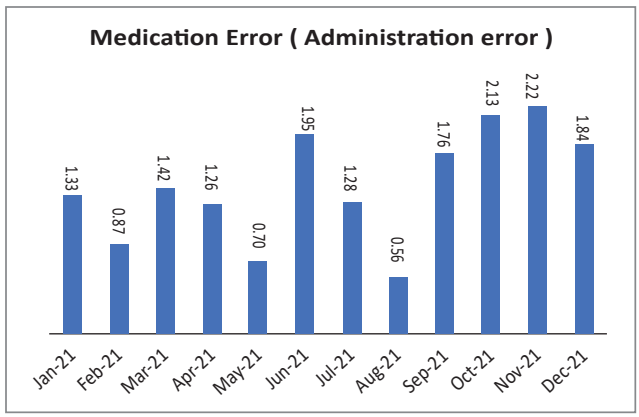

Figure 5: Medication Errors (Administration Error)

*Formula- Administration Error/ In-Patient days * 1000*
**Benchmark- 2/1000 patient days (Source: Evercare Group)*
**Sources-Evercare Hospital Dhaka- Inpatient unit*

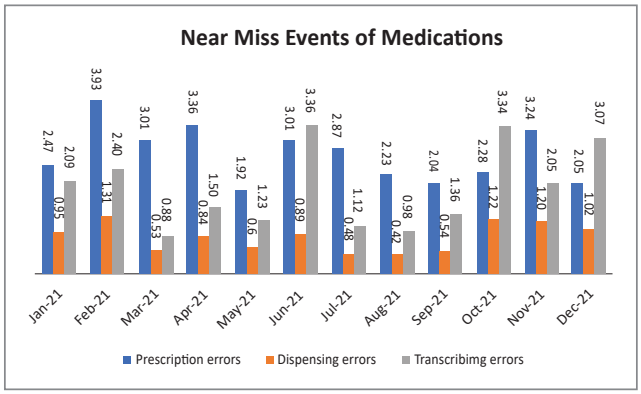

Figure 6: Near Miss Events

**Formula- Near miss events of medication / In-Patient days * 1000*

** Near miss events- Prescribing error, Transcribing error & Dispensing Error*

**Sources-Evercare hospital Dhaka- Inpatient unit*

Organization Management Standards

1. Quality and Patient Safety (QPS)

Well-implemented and structured program is required for continuous improvement of quality and patient safety in a hospital. It plays a central role in all quality and patient safety initiatives in the hospital. Quality & patient safety program supports the data collection, data analysis, and hospital wide quality improvement project and it also response to all the sentinel events, adverse events, and near miss events of the organization.

Below mentioned key quality activities are followed in Evercare hospital Dhaka.

- EHD has developed annual quality plan for quality improvement and patient safety within the hospital.
- Selection and monitoring of quality and patient safety measures throughout the hospital.
- Proactive risk management program includes risk identification; risk prioritization; risk reporting; risk management.
- Incident management program for Identifying and managing sentinel events, adverse, no-harm, and near miss events
- Comprehensive root cause analysis process and corrective and preventive action are taken for reported incident.
- Create a 'just' culture free from "fear of blame and punishment".
- Hospital wide quality improvement projects using six sigma method.
- Periodically arrange staff engagement & awareness program
- Analysis of feedbacks and improving patient experience on regular basis

2. Prevention and Control of Infection (PCI)

Infection prevention and control program help to identify and to reduce the risks of acquiring and transmitting infections among patients, staff, health care practitioners in hospital. There is a designated mechanism to coordinate the overall program. The infection prevention and control program must be comprehensive and crosses all levels of the hospital, to reduce the risk of health care–associated infections in patients and hospital staff.

- EHD has developed infection control program based on internationally accepted guidelines (WHO, CDC) to control and prevent of infection within the hospital.
- Infection control risk assessment to identify patient risk of infection
- Correct and appropriate use of personal protective equipment
- Policy for standard precautions, contact & airborne precautions
- Standardized process for sterilization and disinfection
- Policy for re-using of single use device
- Policy for segregation, transportation, storage, and proper disposal of biomedical waste
- Safe handling and disposal of sharps and needles.
- Monitoring of infection control related indicators such as Health care associated infection (Fig- 7,8), Needle stick injury, hand hygiene compliance etc.

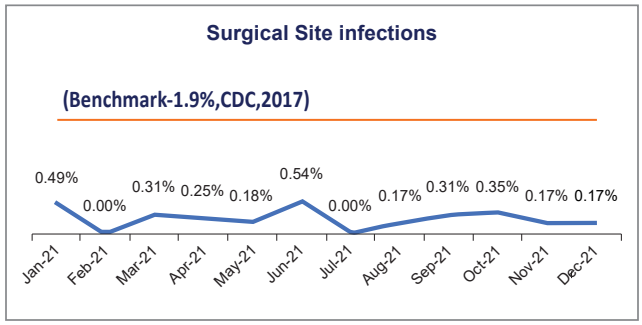

Figure-7: Surgical Site infections

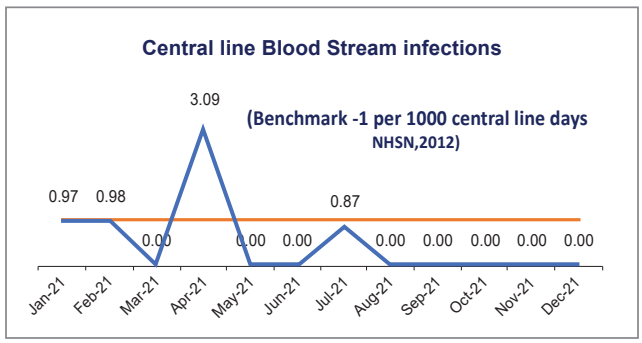

Figure-8: Central line Blood Stream infections

3. Governance, Leadership, and Direction (GLD)

Excellent patient care requires effective leadership. It helps to overcome barriers and communication problems between departments and services in the organization and makes the organization more efficient and effective.

- Collaborative governance and communication
- Ensures implementation of policies and strategic plans for the organization.
- Ensures compliance with laws and regulations of the country
- Encourage hospital wide quality improvement and patient safety program.
- Resource allocation and financial management

4. Facility Management & Safety (FMS)

Facility management and safety program provide safe and secure environment for patients, families, staff, and visitors.

- Comprehensive risk assessment for facility safety risks -Hazard Vulnerability Risk assessment, Pre-Construction Risk Assessment
- Developed and implemented disaster management plan
- The fire safety program includes equipment/systems for the early detection and alarm notification of fire and smoke-
- Using smoke detector, water sprinklers, fire extinguisher, fire alarms.
- Biomedical equipment safety
- Periodic Preventive Maintenance
- Calibration of Equipment
- Radiation including laser safety program-
- Management of hazardous materials and waste
- Regular practice drills to evaluate the various safety program.

5. Staff Qualifications & Education (SQE)

A health care organization needs skilled, qualified people to fulfill its mission and to meet the patient needs. Recruiting, evaluating, and appointing staff are best accomplished through a coordinated, efficient, and uniform process. It is important to review the credentials of medical and nursing staff carefully because they are involved in clinical care processes and work directly with patients. The organization must have a staff health and safety program to ensure staff physical and mental health, productivity, staff satisfaction, and safe working conditions. To maintain the compliance of this standard, below mentioned key practices are followed in Evercare Hospital Dhaka.

- Credentialing process to verify the eligibility requirement of health care practitioners
- Privileging process to authorize doctors to admit and treat the patient, consistent with their qualifications.
- Primary Source verification to verify the credentials (documents related to qualifications) of the health care practitioners
- Competency assessments for nurses and technicians
- Periodic appraisal with objective criteria
- Annual staff engagement survey to understand staff needs
- Mandatory and need based training for the staffs
- Providing annual health checks for staff at risk
- Vaccination for staff

6. Management of Information (MOI)

Information management standards in health care maintains the confidentiality, security, privacy, and integrity of data and information. Failures in communication are one of the most common root causes of patient safety incidents. Often, these communication failures result from illegible handwriting, and the nonuniform or no standardized use of abbreviations, symbols, and codes across an organization. An integral part of information management in health care is monitoring and protecting the use of patients' information

- Maintaining the privacy and confidentiality of data and information
- Use of ICD Coding for diagnosis
- Closed and Open Medical record Review to monitor accuracy, completeness, and timeliness.
- Retention time of patient medical records, data, and other information.

CONCLUSION

Now a days patient safety is a global health priority and it considered as a fundamental principle of health care. A strong emphasis on patient safety helps to create a safer and secure environment in the healthcare settings both for patients and staffs. Internationally accepted patient safety protocols and guidelines helps to improve healthcare standards and quality of care. Clear plan, policies, skilled health care professionals, strong leadership engagement are required for implementation of patient safety strategies successfully. Participating patients & families in their care are process plays significant role to improve patient safety culture as well.

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