Quality Assurance of PICU in a 150 Bedded Tertiary Care Hospital in Hyderabad

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INTRODUCTION

Quality indicators provide insight in the structure and process aspects of care that are related to outcome that serve as instruments to improve health care. Thus, it is important to identify ways of more efficiently managing Pediatric Intensive Care Unit and reducing the variation in patient outcomes.

AIM:

Quality Assurance of PICU in a 150 Bedded Tertiary Care Hospital in Hyderabad.

OBJECTIVE:

- To identify level of care provided on a time scale. Trend analysis of such data helps in quantifying the standard of care offered in the same setup and compare the same with selected benchmarks.
- To analyze the incidents reported.

METHODOLOGY

STUDY DESIGN: Analytical Study

STUDY SETTING: Rainbow Hospital for Women and Children, Banjara Hills, Hyderabad

SAMPLE SIZE: 180

SAMPLING METHOD: Convenient sampling

METHOD OF DATA COLLECTION: Primary data collection from Pediatric Intensive Care Unit.

Tools: Daily Rounds Checklist

Secondary data were collected by studying relevant records in the Hospital.

Tools: Incidence Reports Form and Quality Indicator Register in PICU

DATA ANALYSIS: Data analysis was done with the help of Graphs.

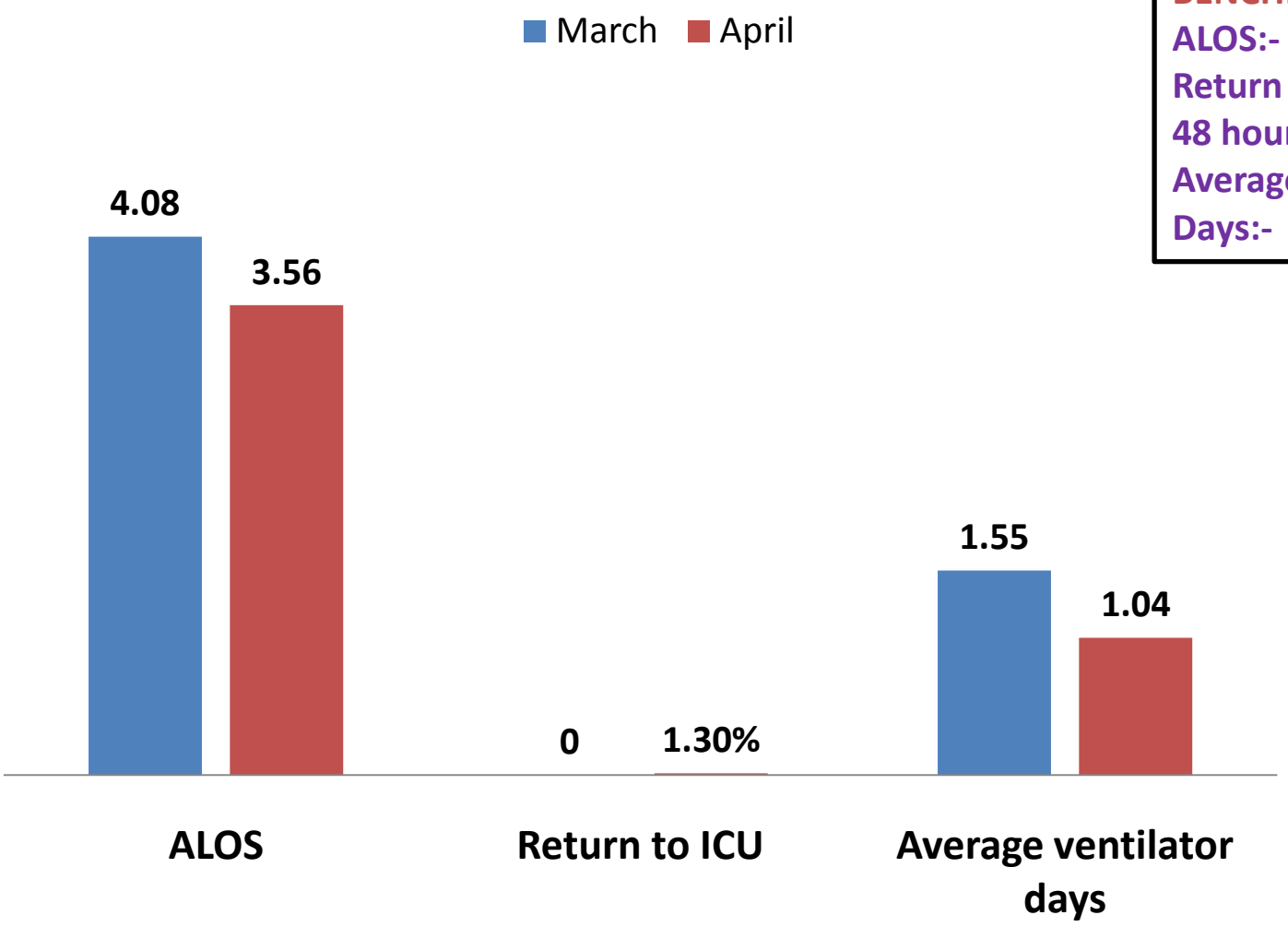
Root Cause Analysis was done in case of incidence reports

ANALYSIS

PICU Statistics

PICU Statistics	**March**	**April**
Total Cases	**90**	**90**
MEDICAL	**83 (92.22 %)**	**85 (94.35 %)**
SURGICAL	**7 (7.77 %)**	**5 (5.55%)**
TRANSPORT (OUTSIDE)	**L-0/S-8**	**L-2/S-9**
MORTALITY	**3 (3.48 %)**	**5 (5.55 %)**
DAMA	**10 (11.11 %)**	**6 (6.66 %)**

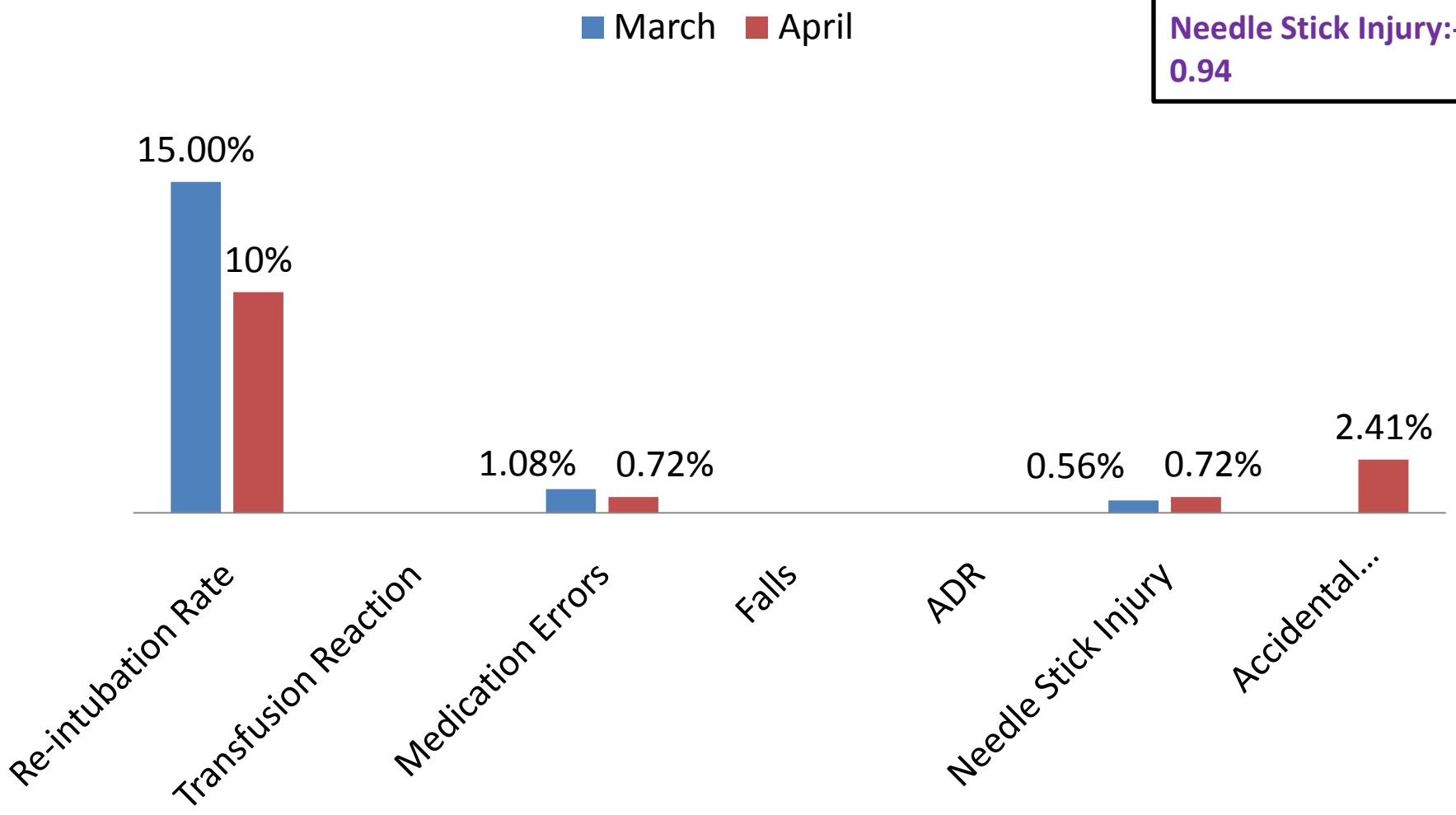
Process Parameters



BENCHMARK
ALOS:- 4.36
Return to ICU within 48 hours:- (4%)
Average Ventilator Days:-

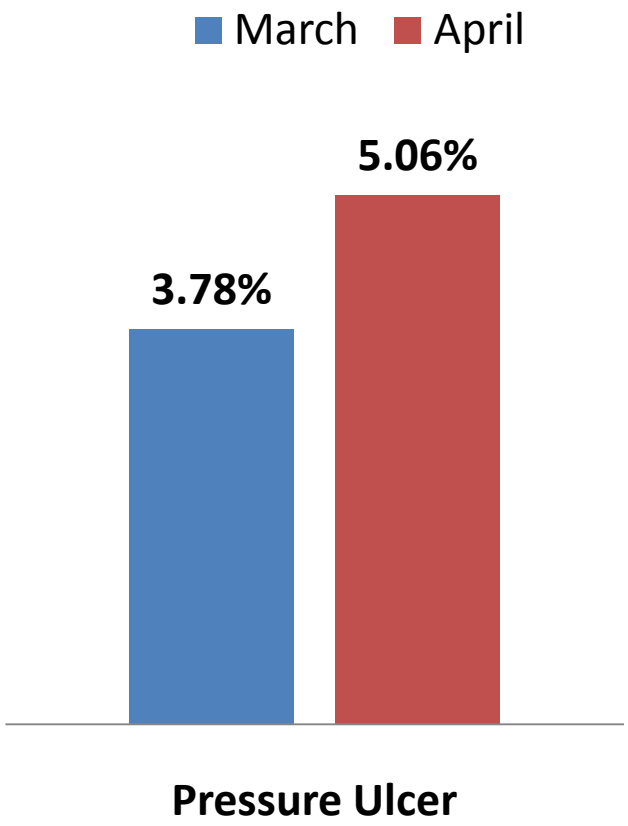
Errors and Patient Safety

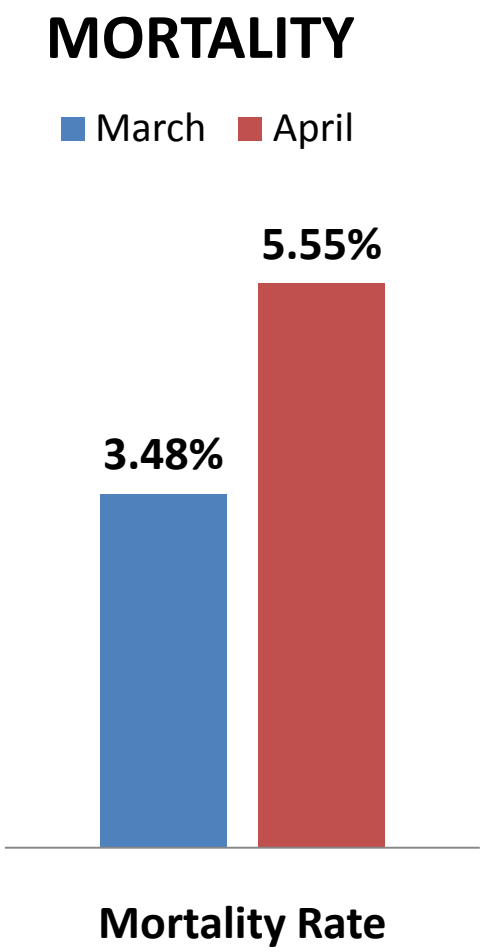
BENCHMARK
Re-intubation:-12%
Medication Errors:-2%
Falls:- 2.10%
ADR:- 11%
Needle Stick Injury:- 0.94



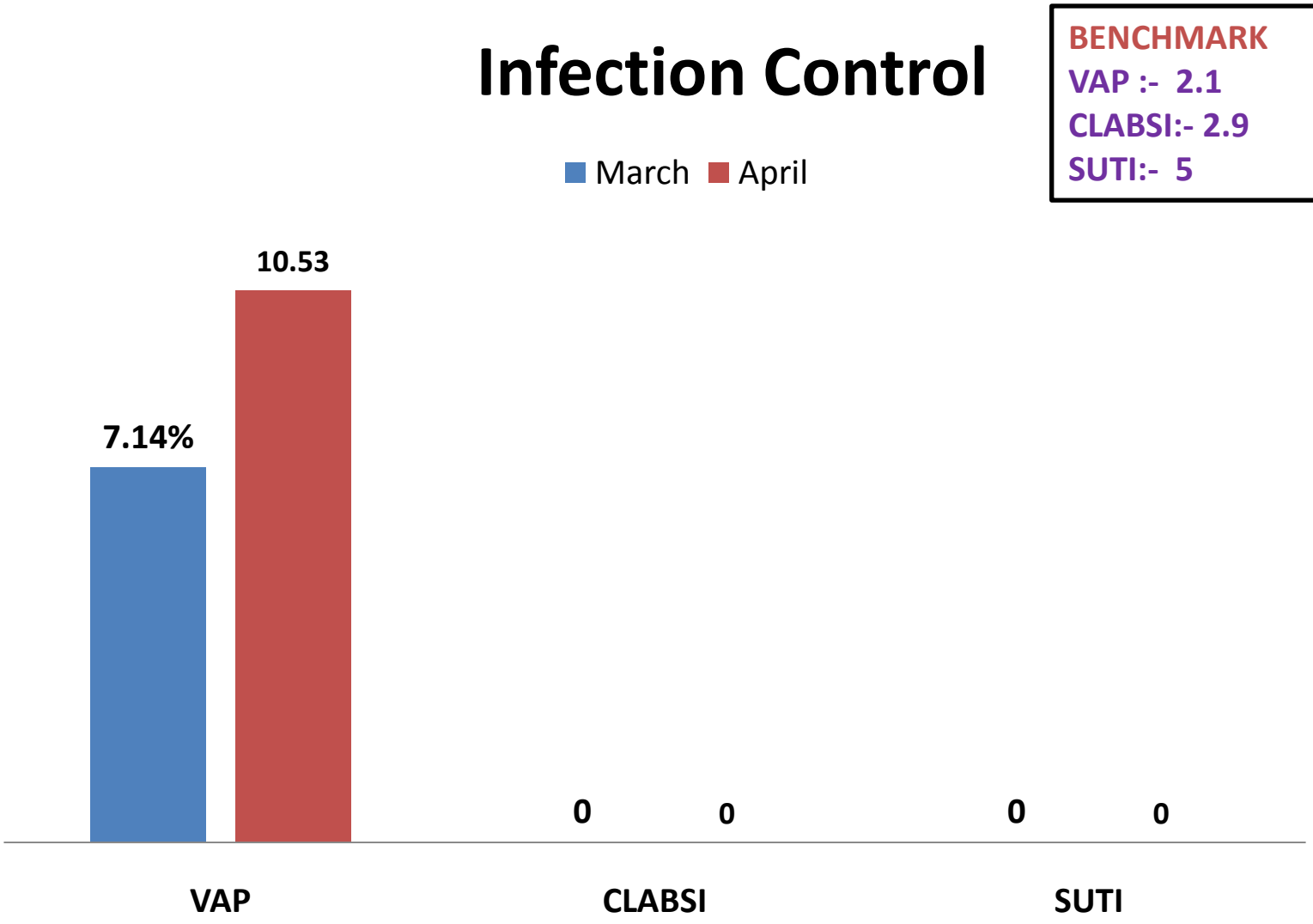
Outcome Parameters

BENCHMARK
Pressure Ulcer :-3-11%




MORTALITY
March
April
5.55%
3.48%
Mortality Rate

Infection Control



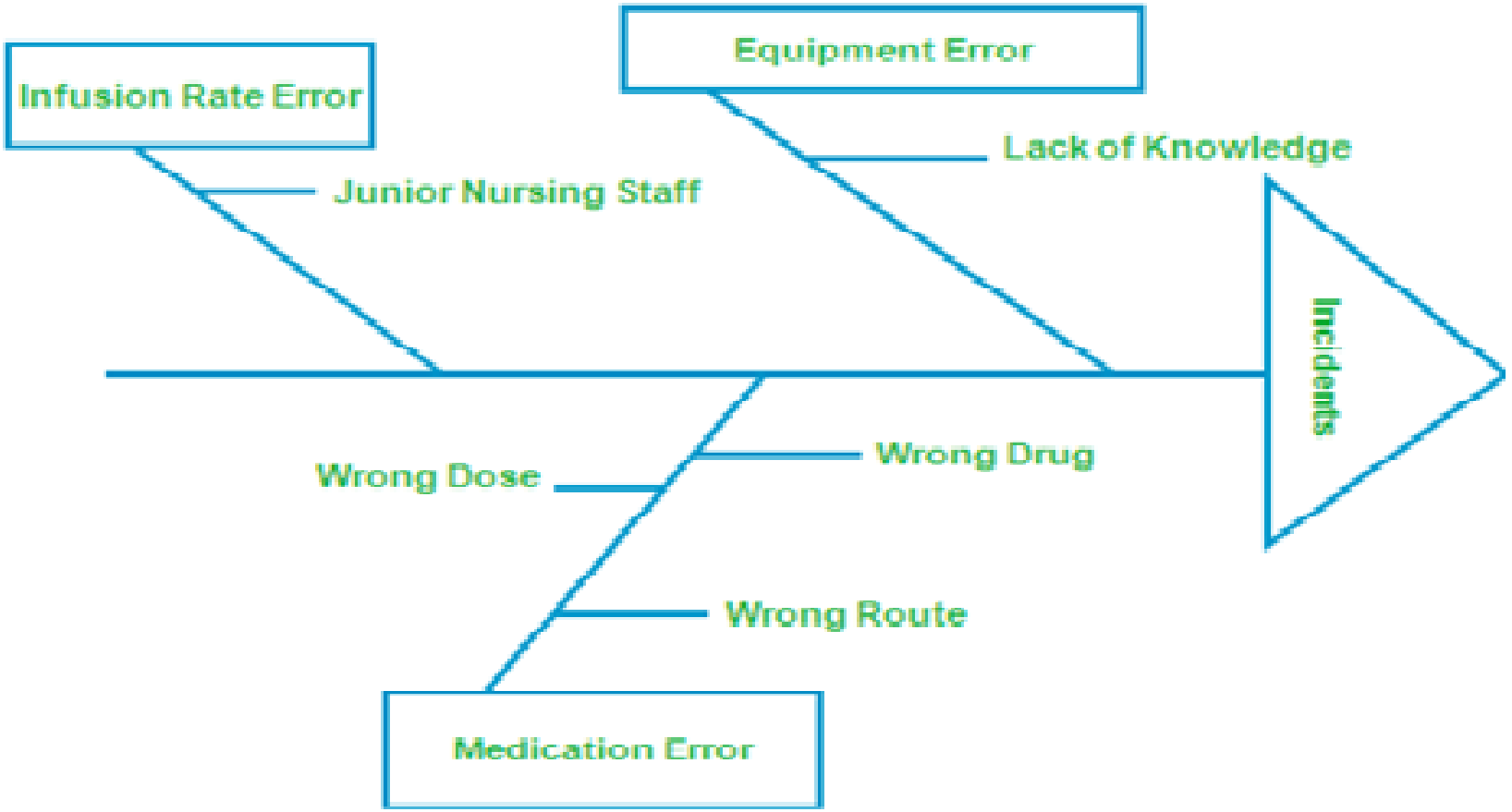
BENCHMARK
VAP :- 2.1
CLABSI:- 2.9
SUTI:- 5

Incidents Reported

S.no	Type of incident	Details of Incident	Corrective action taken
1	**Pressure sore**	Because of C-PAP Baby is having pressure sore on the nose.	Wound cleaned and T-BAT applied. Sister told about C-PAP care and proper handover
2	**Medication Error**	Doctor advised to give Inj. Medazolam infusion slowly but Midazolam 5 mg given to repeated as infusion over half an hour. Wrong medication administration.	Child monitored hemodynamically and nurologically.
3	**Medication Error**	Instead of Ns bolus mistakenly administered NaCl.	Adviced to stop 3% NaCl bolus and after 1 hour to send serum electrolytes.
4	**Fall on floor**	Floor was wet while entering slipped and fell down.	Changed the department of concerned Housekeeping staff.
6	**Accidental removal of tube**	Accidental removal of Freka tube	Reinsertion of NG tube and restarin improved.
7	**Accidental removal of tube**	Accidental removal of NG tube	Reinsertion of NG tube and restarin improved.
8	**Pressure sore**	Pressure sore on the back i.e., above the buttocks due to immobilization of child	Air bed to be arranged.
10	**Pressure sore**	Pressure sore on the back side of the head	Dressing was done, pressure sore care and position changed within every 2 hours.
11	**Medication Error**	Meropenem dose was given double the dose required	Medication started at regular dose.

12	**Pressure Sore**	Pressure sore in the neck region (Back side)	T Bact ointment applied and position changed
13	**Pressure sore**	Pressure sore on ear because of NRM mask	Prevention of bed sore and education of nurse
14	**Medication Error**	When Inj. Acyclorin was given a vascular eruption on left aspect of forearm	Stop the drug and change of site of cannula
15	**Accidental Extubation**	Accidental extubation due to excessive movement of child	Re-intubated and connected to ventilator

ROOT CAUSE ANALYSIS



RESULT AND CONCLUSION

The study shows that the errors and the patient safety when assessed showed results lesser than the international benchmarks but re-intubation rate was found to be higher than the benchmark i.e., 15%.

Process indicators such as length of ICU stay was found to be 4.08 days, duration of mechanical ventilation 1.55 days for the month of April.

The outcome indicators showed good results, i.e., mortality rate was 3.48% for March. Number of unplanned extubation was 0%.

After Root Cause Analysis it was found that errors that took place were due to lack of knowledge or lack of qualification of nursing staff.

INVESTIGATOR'S SUGGESTIONS

- Non-invasive positive pressure ventilation (NPPV), weaning trials, avoiding re-intubation, and early tracheostomy to decrease the risk of VAP,
- Improve the management of weaning and extubation,
- Provider Order Management (POM) to eliminate medication errors,
- Pressure relief, moisture management, and nutrition support to prevent pressure ulcer.
- Not more than 20% of junior nursing staff should be recruited.

Limitations

- Very common parameters have been selected in this report.
- Stress has been given on mortality, morbidity, infection and safety of patients.

F	PICU	10 pts.		
1	Doctors notes	√		
2	Initial assessment done by the Doctor	√		
3	Countersigned by the Consultant		√	IP-5 01
4	Drug Chart Legible	√		
5	Signed by the consultant	√		
6	Signed by two nursing staff	√		
7	Nursing Care plan	√		
8	Multi dose vail policy		√	No date and time of opening.
9	Narcotic policy	√		
10	Emergency Drugs	√		
11	Medication policy	√		
12	Consents(General Consent, Surgery consent,High risk consent, Special Procedure consent	√		
13	Financial Estimation sheet given to patient			
14	No of Intubations	3		
15	No of Re intubated	x		
16	Change of plan if any, if Yes financial counselling	x		
17	PD			
18	HD			
19	Ventilator to HFO			
20	Biopsy consent			
21	Re counselled for finacial estimation and documented in doctors notes	√		
22	Interview attendenders regarding re counseling of financial estimation			
23	Blood Transfusion consent		√	
24	Blood Transfusion Reactions if any	x		
25	Medication Errors	x		
26	ADR	x		
27	Accidental removal of tubes	x		
28	Haematoma	x		
29	Bed Sore	x		
30	Falls	x		
31	Restraint patients and consent		x	
32	Infection control bundles	√		
33	Sedation consent			
34	Reintubations			
35	Fire Extinguisher	√		

Thank you