

Continuous  
improvement is  
better than  
delayed  
perfection.

*Mark Twain*

**IMPROVING DOCUMENTATION**  
**OF PARENTERAL FLUID**  
**PRESCRIPTION IN**  
**DEPARTMENT OF PEDIATRIC**  
**SURGERY OF RAWALPINDI**  
**MEDICAL UNIVERSITY**

# AUDIT TEAM

- Dr. Mudassir Gondal, Head of Department
- Muhammad Hamza, Final Year M.B.B.S
- Mishal Fatima, Final Year M.B.B.S
- Kaiynat Maqsood, Final Year M.B.B.S
- Dr. Hamza Waqar Bhatti, M.B.B.S
- Jawad Zaidi, Final Year M.B.B.S
- Hassaan Ahmed, Final Year M.B.B.S

# *CURRENT PRACTICES*

# INTRODUCTION

- The development of fluid-induced hyponatraemia is extremely problematic in children and young patients
- Dramatic reduction in the use of hypotonic solutions and increase in the frequency of monitoring can help prevent this
- Optimize fluid prescription by:
  - **Adopting National/ International guidelines**
  - **And frequent auditing against these guidelines**
- The pediatric surgical department of RMU has an extensive case load of elective and emergency procedures. Hence, this audit is extremely useful to improve fluid prescription and outcomes.

# AIM

- This audit is designed to examine whether the documentation of IV Fluids prescription to children and young people (aged over 4 weeks and under 12 years) meets quality standards

# OBJECTIVES

1. To audit the prescription of IV Fluids
2. To audit the administration of IV Fluids
3. To audit the recording of IV Fluids
4. To audit the monitoring of IV Fluids

# METHODOLOGY

- Data collected from clinical records of patients who were identified as receiving Intravenous fluids.
- Patients with ages from 1 month to 12 years
- Audit Period: 17<sup>th</sup> to 21<sup>st</sup> February 2020



# EXCLUSION CRITERIA

- Neonates (age <4weeks)
- Details of I/V Fluid prescription by staff other than pediatric surgery ( e.g. Anesthesia)
- Patients who did not receive I/V fluids for more than 4 hours.

# AUDIT TOOL

- A documentation Performa designed on the basis of NICE guidelines<sup>1</sup>, GAIN (Guidelines and Audit Implementation Network)<sup>2</sup> that assessed documentation regarding prescription, administration, recording and monitoring.

# RESULTS

# SUMMARY

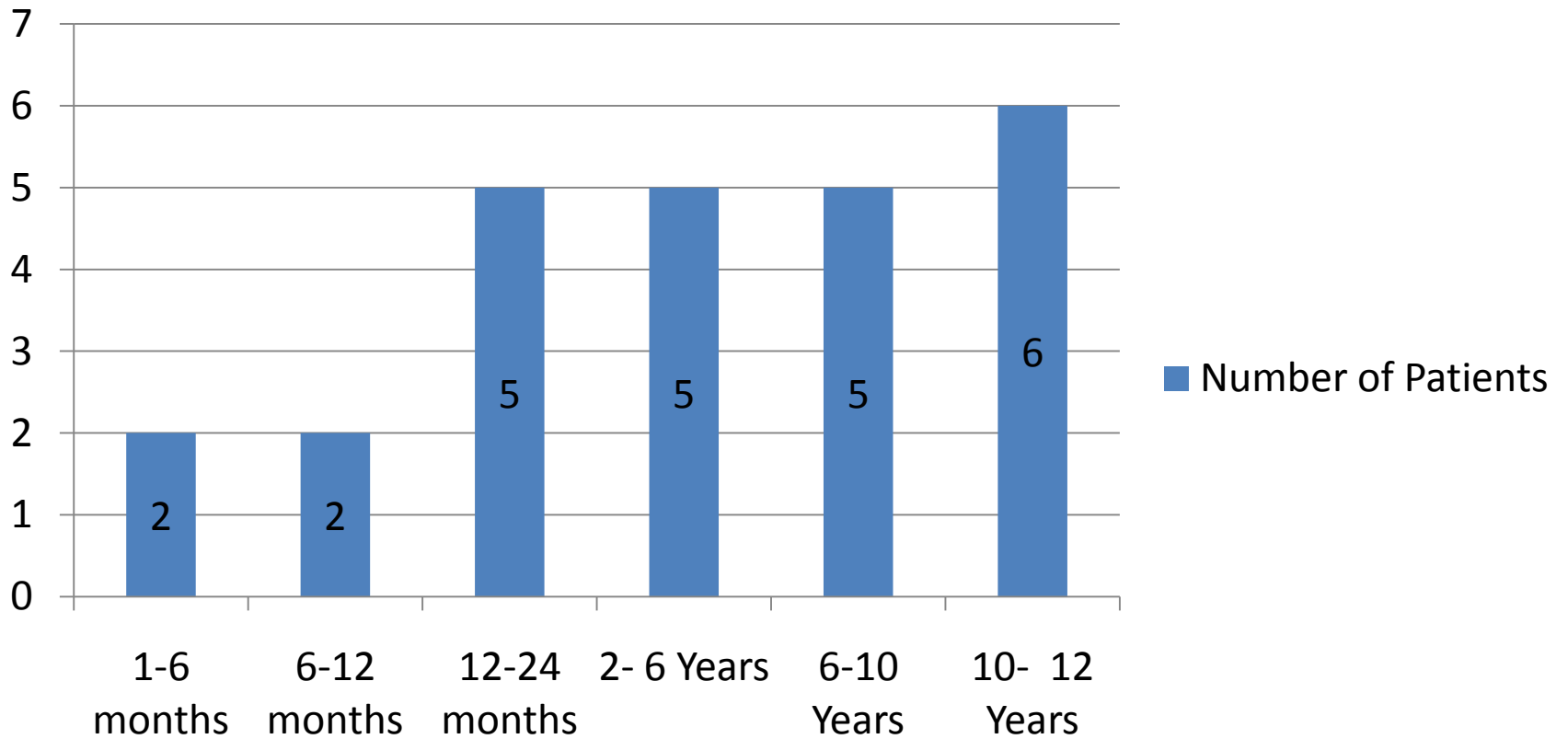
FIELD	YES	NO
<b>PRESCRIPTION OF FLUIDS</b>		
Age appropriate chart used		26 (100%)
D.O.B mentioned	1 (3.8%)	25 (96.2%)
Weight Recorded	6 (23.1%)	20 (76.9%)
Prescription Charts Completed	26 ( 100%)	
<b>ADMINISTRATION OF FLUIDS</b>		
Indication Mentioned	13 (50%)	13 (50%)
Risk of Hyponatremia mentioned		26 (100%)
Type of Fluid Prescribed	5 (19%)	21 (81%)

# SUMMARY

FIELD	YES	NO
<b>RECORDING</b>		
Daily Fluid Input 24 hr		26( 100%)
Daily Fluid Output 24 hr	2 (7.7%)	24 (92.3%)
<b>MONITORING</b>		
Electrolytes and Urea	17 (65.4%)	9 (34.6%)
Glucose	1 (3.8%)	25 (96.2%)
Regular Clinical Assessment	26 (100%)	
<b>DETAILS OF PRESCRIBING PRACTITIONER</b>		
Name mentioned	25 (96.2%)	1 (3.8%)
Grade mentioned	2 (7.7%)	24 (92.3%)

# AGE DISTRIBUTION

Number of Patients

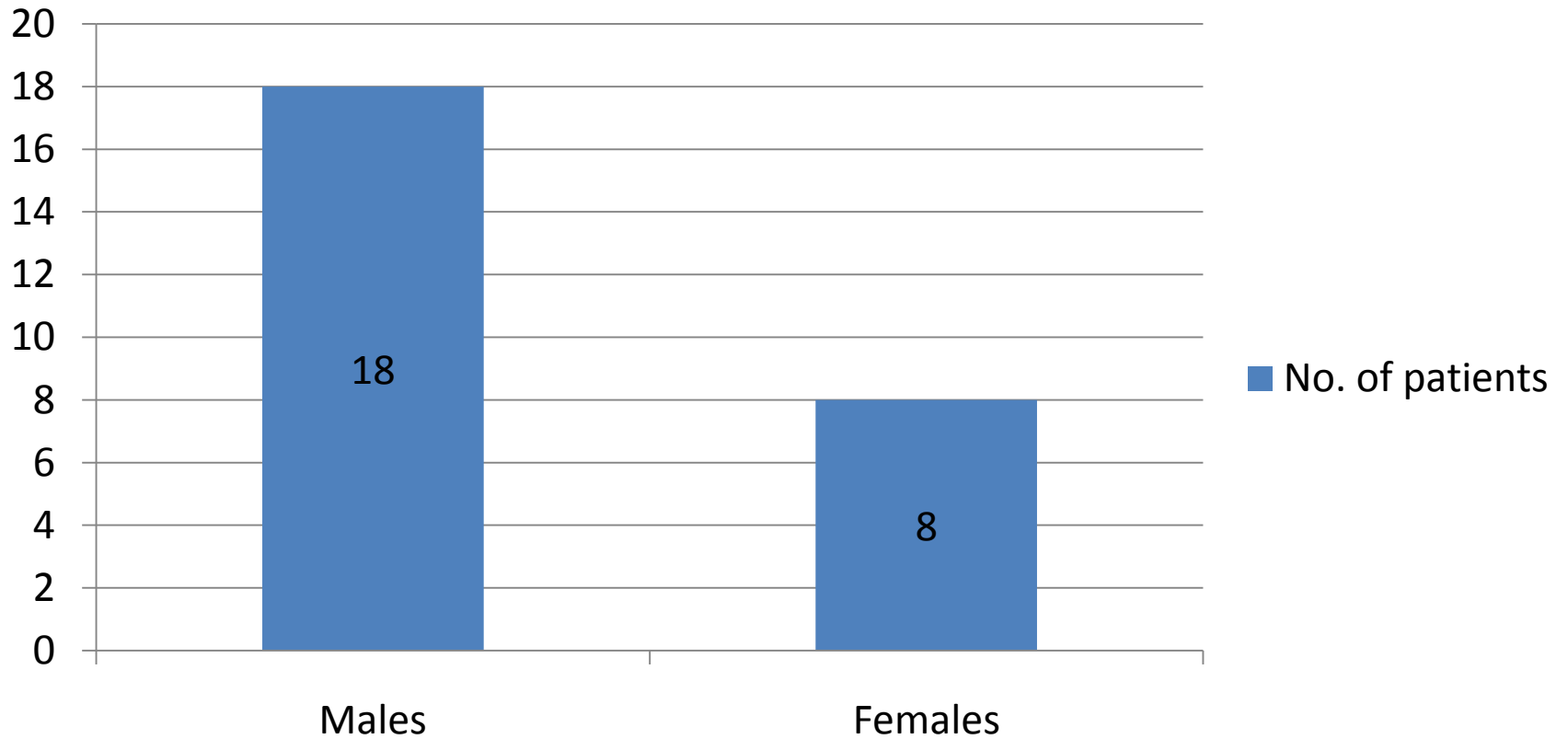


# AGE DISTRIBUTION

- Age was recorded for 25 out of 26 patients (96.1 %)

# GENDER DISTRIBUTION

No. of patients





# GENDER DISTRIBUTION

- Gender was recorded for all patients (26/26)

# DIAGNOSIS

Diagnosis	Number of Patients
Appendicitis, appendectomy	9
Surgical Abdomen, post-op	2
Trauma	2
Ileostomy, colostomy reversal	2
Ano rectal deformities, Hirschsprung's	4
Hernial repair	2
Others	7

# DIAGNOSIS

- Diagnosis was mentioned in all of the cases

# ADMISSION SETTING

- 18 out of 26 patients had their admission settings mentioned on their file (69.2%). 13 Patients were admitted from ER(50%) while 5 were admitted through OPD (19.2%)

# DURATION OF IV FLUID TREATMENT

- 22 out of 26 patients (84%) had Intravenous fluids for less than 24 hours while the rest had it for more than 24 hours

# AGE APPROPRIATE CHART USED

- Age appropriate chart for IV fluids prescription was not used.

# DATE OF BIRTH RECORDED

- 1 out of 25 patients had their Birth date recorder.

# WEIGHT RECORDED

- 6 out of 20 patients (23.1%) had their weight recorded prior to start of parenteral fluid therapy



# METHOD OF RECORDING WEIGHT

- Recorded weight was not mentioned to be actually measured or estimated

# PRESCRIPTION CHARTS

- 26/26 Patients had their prescription charts filled with the fluid type, amount of fluid and time of administration along with infusion rate

# INDICATION OF IV FLUIDS

- 13 out of 26 (50%) patients had their indication for fluids written on their charts.
- Indications written were
- Maintenance fluid
- Fluid Deficit Replacement

# RISK OF HYPONATREMIA MENTIONED

- Any particular risk of developing Hyponatremia during IV fluid therapy was not mentioned in any of the patient's file

# TYPE OF FLUID PRESCRIBED

- Paeds Saline ( 0.18 percent NACL + 5%Dextrose) was the most commonly prescribed fluid ( 73.1%)
- Ringer lactate was prescribed in 5 out of 26 patients (19 percent)

# DAILY TOTAL FLUID INPUT

- Daily total fluid input was not calculated in any of patient.

# DAILY TOTAL FLUID OUTPUT

- Daily total fluid output was calculated for only 2 out of 26 patients ( 7.7%)

# ELECTROLYTE AND UREA MONITORING

- Only baseline measurements of Electrolytes and Urea were done in 17 out of 26 patients (65.4%). No serial measurements were done for any of the patients



# GLUCOSE MONITORIN

- 1 out of 26 patients had their glucose monitored.

# REGULAR CLINICAL REASSESSMENT

- 26 out of 26 patients had their regular clinical reassessments for the signs of recovery and/or development of hyponatremia

# GRADE OF PRACTITIONER

- Only in 2 out of 26 cases, grade of practitioner was mentioned.

# NAME OF PRACTITIONER

- Name or initials of the practitioner was written on 25 out of 26 patient prescription.

# SUMMARY

CATEGORIES	COMPLIANT PRACTICE	NON-COMLIANT PRACTICE
<b>Prescription of Fluids</b>	Prescription Charts	Age appropriate charts, weight recording, Date of births
<b>Administration of Fluids</b>	Indication of Fluid Prescription	Type of Fluids prescribed, Risk of Hyponatremia mentioned
<b>Recording of Fluids</b>		Total Fluid Input 24 hrly and Total Fluid Output 24 hrly
<b>Monitoring</b>	Regular Clinical Reassessments, Baseline Electrolyte and Urea monitoring	Serial Electrolyte and Urea Monitoring, Glucose Monitoring

# INTERPRETATION

# AREAS OF GOOD PRACTICE

- Diagnosis and age was uniformly recorded
- Regular Clinical Assessments was performed in all the cases
- Prescription charts were duly filled according to guidelines

# AREAS OF CONCERN

- Choice of Fluids was according to guidelines in only 5 out of 26 cases ( 19%). Almost all the guidelines suggest the use of 0.9% NaCl containing solutions or at least 0.45%
- Paediatric Saline 0.18% is not recommended anymore
- Age appropriate charts need to be used.



# AREAS OF SIGNIFICANT IMPROVEMENT

- Total fluid input and output needs to be routinely monitored
- Weight recording practice and documentation should be uniform in the department
- Risk of hyponatremia like perioperative patients, head injury patients, gastric losses should be mentioned separately
- Indication of Fluid therapy whether maintenance or Replacement or bolus

# RECOMMENDED INTERVENTIONS

- Focused Sessions on NICE guidelines regarding choice of fluids and their advantages over hypotonic solutions
- Wall charts regarding minimum standards for documentation
- Regular audits of fluid prescription practices



The biggest room in the  
world is the room for  
improvement.

Helmut Schmidt

# REFERENCES

1. Carson D, Hsct N. Audit of Parenteral Fluid Therapy for Children and Young Persons ( aged over 4 weeks & under 16 years ) AUDIT REPORT VOLUME 1 Audit Report Volume 1. Vol. 1. 2014.
2. Date R. Guideline for the perioperative fluid management in children. Vol. 3. 2019.
3. N.I.C.E. Intra venous fluid therapy in children and young people in hospital. 2019.