GASTRIC ASPIRATE REPLACEMENT				
ROYAL HOSPITAL FOR WOMEN GUIDELINE				
DATE DEVELOPED 23/10/2014	**DATE EFFECTIVE** 05/03/2015	**DATE FOR REVIEW** 05/03/2018	**RISK RATING** Medium	**WRITTEN BY** Dr S Bolisetty
DATE REVISED	**REVISED BY**			
APPLICABLE TO	Newborn Care Centre Staff – Nursing & Medical			
IMPLICATIONS	15 staff to be randomly audited on the procedure for evidence of knowledge of the procedure.			
DATE POSTED ON NCC WEBSITE	**XXXX**			
APPROVED BY Newborn Care Centre Quality Committee on 2/03/2015				
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ABBREVIATIONS & DEFINITIONS OF TERMS				

INTRODUCTION

Gastrointestinal aspirates can be significant in some high risk infants, especially post-op surgical infants or infants with intestinal obstruction. Inadequate replacement can lead to electrolyte and nutrient deficiencies. Some aspirates are expected and the aim of replacement is to decide on when and what volume needs replacement. Aim is not only to replace the losses but to avoid fluid overload as vast majority of these neonates will be on full maintenance fluids.

AIM

Appropriate replacement of fluids, electrolytes and other nutrients resulting from gastro-intestinal aspirates.

EQUIPMENT

N/A

PROCEDURE

CLINICAL PRACTICE

- Identify at-risk neonates for increased gastrointestinal aspirates: These may include: (a) neonates requiring abdominal surgery, (b) neonates with primary gastrointestinal disorders, (c) neonates with secondary gastrointestinal illnesses, e.g ileus from sepsis.
- Measure the volumes every 4 hours or at an interval prescribed by the NICU or surgical team.
- Document the amount/type of **aspirates** (non-bile stained/light bile stained/heavy bile stained/blood stained).
- Maintain a strict Input/Output balance and document every 12- 24 hours or more often if losses significant.
- IV Replacement:
    - Initiate IV replacement after observing the aspirates for 12 hours (R1). If the amount of aspirates equate to ≥10 ml/kg/day, replace the losses as below.

Note: Not necessary to commence the replacement for a single large aspirate

- IV replacement Regime (Refer to Educational notes for Rationale):
  - (a) Calculate the amount of aspirates in the previous 4 hours, and
  - (b) replace the **entire** losses mL for mL over the next 4 hours using 0.45% saline +5% Dextrose + KCL 10 mmol per 500 mL.
  - Aspirates are discarded while on replacement unless advised otherwise.

DOCUMENTATION

- Integrated Clinical Notes
- Neonatal Medication chart
- Standard Neonatal Observation Chart.

EDUCATIONAL NOTES

- Gastrointestinal losses are of common occurrence in neonates requiring abdominal surgeries.
- GI secretions contain water, electrolytes, protein and other nutrients and replacement of these losses is important to maintain the fluid homeostasis, nutrition and weight gain in these neonates. Inadequate replacement therapy can lead to electrolyte imbalance, protein and other nutrient deficiency, poor weight gain and susceptibility to infections.
- Fluid replacement in these cases needs to be balanced against fluid overload as more often these infants are already on maintenance IV nutrition and other illnesses such as chronic lung disease or other illnesses where fluid restriction may benefit their overall recovery.
- Bile stained aspirates do not necessarily mean only bile but also contains gastric and other intestinal secretions
- The type of replacement fluid depends on (a) nature of GI losses (see below), (b) type of standard bags available in the NICU, and (c) type of maintenance fluids infant receiving.
  - For example, 0.9% Saline with KCL 10 mmol per 500 mL and 0.45% saline + 5% Dextrose + KCL 10 mmol per 500 mL are available as standard bags in the NICU.
  - While Ringer Lactate solution is an appropriate fluid replacement in some cases, it is not compatible with TPN solutions via Y site and in practice majority of these infants are on TPN.

Table. Electrolyte composition of GI fluids and the IV fluids for replacement

Fluid	Na	K	Cl	HCO3-
Gastric	70	5-15	120	0
Pancreas	140	5	50-100	100
Bile	130	5	100	40
Ileostomy	130	15-20	120	25-30
RL solution	130	4	109	28
0.9% NaCl	154	0	154	0
N/2 saline with 20 mmol KCl/L	77	20	77	0

Note: Bile stained aspirate is not pure bile but a mixture of GI juices.

RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Parenteral Nutrition of the neonate
- Potassium chloride Medication protocol

RATIONALES	
R 1	Initial observation for 12 hours is to monitor the trend of the aspirates, not just a “one-off” episode.

References
Puri P. Newborn Surgery 3rd Ed 2011 by CRC Press.