

IMMUNO-SUPPORTIVE ORAL CARE (ISOC)

This LOP is developed to guide safe clinical practice in Newborn Care Centre (NCC) at The Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this Local Operations Procedure (LOP).

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INTRODUCTION

Immuno-Supportive Oral Care (ISOC) is a practice for systemic absorption of cytokines and pancreatic secretory trypsin inhibitor through the buccal cavity, which provides protection against infection as well as protection of the gastrointestinal tract. Human milk is a rich source of oligosaccharides, which are able to destroy bacteria, viruses and fungi. Early implementation of ISOC allows the benefits of colostrum and the immune properties of breast milk to be given orally to the neonate, even if nil by mouth.

1. AIM

- To introduce early colostrum / fresh breast milk into the buccal mucosa.
- To promote parental involvement and to perform / assist in this procedure following education.

2. PATIENT

- All neonates in NCC.

3. STAFF

- All medical and nursing staff in NCC.

4. EQUIPMENT

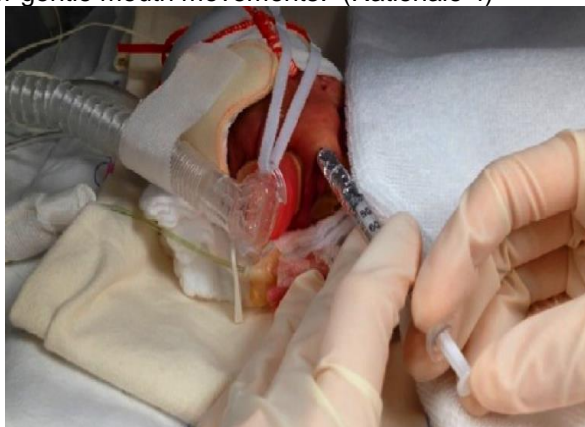
- Mother's own fresh (never frozen) colostrum and expressed breast milk (EBM)
- Appropriate EBM labels
- Disposable gloves
- 1 x small clean container for decanted milk
- Clean cotton swab buds
- 1 mL feeding syringe and cap

5. CLINICAL PRACTICE

This can be achieved by two methods. In both situations mothers provide their own fresh (never frozen) colostrum and EBM.

Method 1

1. Nurse performs hand hygiene and use personal protective equipment (PPE) as per unit policy. (Rationale 1)
2. Decant Colostrum or EBM into smaller labelled containers. (Rationale 2)
3. Ensure that milk is checked against neonate's identification with second person. (Rationale 3)
4. If only tiny drops of colostrum are available, the milk can be placed directly into the mouth with a syringe, waiting for gentle mouth movements. (Rationale 4)



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Method 2

1. Dip clean cotton swab in fresh colostrum or EBM. (Rationale 5)
2. Mother can alternatively express drops of milk at bedside directly onto swab for administration. (Rationale 6)
3. Ensure the swab absorbs all drops of colostrum or is saturated. (Rationale 7)
4. Ideally ensure the neonate is arousing or in an awake state. (Rationale 8)
5. Apply the milk in a developmentally sensitive manner, see examples below. (Rationale 8)
 - Rest cotton bud on the middle of the bottom lip. Wait until neonate moves lips or tongue towards the bud. (Rationale 8)



- Allow neonate to recognise the stimulus on the lip & allow opening of the mouth. (Rationale 8)



- Move the cotton bud slowly towards the cheek in a "Press & Scoop" motion. (Rationale 8)



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- If the neonate is comfortable continue the action on the upper lip. (Rationale 8)



- **If neonate becomes unstable stop the procedure and observe closely. (Rationale 8)**

6. Discard oral swab and gloves into appropriate receptacle. (Rationale 9)
7. Record procedure on neonate's flow chart in comments section. (Rationale 10)
8. ISOC to be attended to at care times.
9. Continue ISOC until neonate is established on sucking feeds. (Rationale 8)

Contraindications

- A neonate whose mother:
 - Is infected with human immunodeficiency virus (HIV)
 - Is taking antiretroviral medications
 - Is using or taking any medication/drug contraindicated in breastfeeding
- A neonate diagnosed with galactosaemia

6. DOCUMENTATION

- Integrated Clinical Notes
- Observation Chart
- NICUS Database

7. EDUCATIONAL NOTES

- Breast milk contains defence factors that include antimicrobial agents, anti-inflammatory factors, immunomodulators and leukocytes. These protective immune factors coat the gastrointestinal and upper respiratory tracts, preventing invasion of mucous membranes by respiratory and enteric pathogens¹. A randomised controlled trial suggested that oropharyngeal administration of colostrum may decrease clinical sepsis, inhibit secretion of pro-inflammatory cytokines, and increase levels of circulating immune-protective factors in extremely premature infants². Colostrum interacts with lymphoid tissue in the oropharynx and the gut, therefore when the oral mucosa is stimulated a more systemic immune response is developed³. More recently, the pancreatic secretory trypsin inhibitor (PSTI) has been discovered in both colostrum and mature milk⁴. PSTI was shown to have protective effects on gastric mucosa and facilitate gastric repair if the mucosal lining was damaged.
- Initiating oropharyngeal colostrum in extremely low birth weight (ELBW) infants in the first few postnatal days appears to be feasible, safe and may be nutritionally beneficial^{5,6}. It is easy, inexpensive and well tolerated by even the smallest and sickest ELBW infants. The oropharyngeal administration of mothers' milk to ELBW infants may serve to expose the infant's oropharynx to protective immune and trophic biofactors also present in amniotic fluid and may protect the infant against necrotising enterocolitis (NEC)⁷.
- The mouth of a newborn that is breastfeeding is colonised with its mother's bacteria and protective bacteriostatic factors while feeding. By performing ISOC using EBM before oral feeding is commenced, the infant receives the same benefit as breastfeeding newborns.

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8. RELATED POLICIES/PROCEDURES/CLINICAL PRACTICE LOP

- NSW Health PD2010_19 Breast Milk: Safe Management
- NSW Health PD2011_042 Breastfeeding in NSW: Promotion, Protection and Support
- Breastfeeding – Risks of delayed onset of Lactogenesis II, Early Intervention and Management
- NSW Health PD2010_058 Hand Hygiene Policy
- Breastfeeding – Protection, Promotion and Support

9. RISK RATING

- Low

10. NATIONAL STANDARD

11. REFERENCES

1. Mount Sinai Hospital NICU/Level II Policy/Procedure. Oral Immune Therapy for Neonates. 2013.
2. Lee J, Kim HS, Jung YH, Choi KY, Shin SH1, et al. Oropharyngeal colostrum administration in extremely premature infants: an RCT. *Pediatrics* 2015;135:357-66.
3. Gephart SM, Weller M. Colostrum as Oral Immune Therapy to Promote Neonatal Health. *Advances in Neonatal Care* 2014;14:44-51.
4. Marchbank T, Weaver G, Nilsen-Hamilton M, Playford RJ. Pancreatic secretory trypsin inhibitor is a major motogenic and protective factor in human breastmilk. *AJPGI* 2009;296:G697-703.
5. Seigel JK, Smith PB, Ashley PL, Cotten CM, Herbert CC, et al. Early administration of oropharyngeal colostrum to extremely low birth weight infants. *Breastfeed Med* 2013;8:491-5.
6. Rodriguez NA, Meier PP, Groer MW, Zeller JM, Engstrom JL, et al. A pilot study to determine the safety and feasibility of oropharyngeal administration of own mother's colostrum to extremely low-birth-weight infants. *Adv Neonatal Care* 2010;10:206-12.
7. Rodriguez NA1, Caplan MS. Oropharyngeal administration of mother's milk to prevent necrotizing enterocolitis in extremely low-birth-weight infants: theoretical perspectives. *J Perinat Neonatal Nurs* 2015;29:81-90.

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12. ABBREVIATIONS AND DEFINITIONS OF TERMS

EBM	Expressed Breast Milk	NEC	Necrotising Enterocolitis
ELBW	Extremely Low Birth Weight	NCC	Newborn Care Centre
HIV	Human Immunodeficiency Virus	PPE	Personal Protective Equipment
ISOC	Immuno-Supportive Oral Care	PSTI	Pancreatic Secretory Trypsin Inhibitor

ROYAL HOSPITAL FOR WOMEN
 LOCAL OPERATING PROCEDURES
NEONATAL SERVICES DIVISION

Approved by
 Quality & Patient Care Committee
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RATIONALES	
Rationale 1	To adhere to the 5-moments of hygiene
Rationale 2	To reduce wastage of milk and labelled as per ward protocol
Rationale 3	To ensure correct milk to correct baby as per NCC checking EBM policy
Rationale 4	To maximise the use of all EBM
Rationale 5	To ensure bud is coated with EBM
Rationale 6	To encourage expressing and promote the mother's feeling of involvement
Rationale 7	To adequately coat the buccal mucosa
Rationale 8	To be aware and maximise the oral stimulation
Rationale 9	To maintain safe disposal of a body fluid
Rationale 10	Documentation allows referencing of procedure and record keeping

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