GUIDELINE

Skin care of extremely preterm infants ≤ 25 weeks gestation clinical pathway

Scope (Staff):	Nursing and Medical Staff
Scope (Area):	NICU KEMH, NICU PCH

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this disclaimer

Aim

Skin care is crucial in the management of extremely preterm infants and requires timely assessment and implementation of interventions which promote optimal skin function, integrity and protection. This clinical pathway serves as a guide for initial therapies that may be used by the clinical team at the earliest signs of skin irritation or compromise and a clear escalation pathway for specialist input.

Risk

If not followed there is a potential for delay in the assessment, recognition and management of skin at high risk of compromise with associated adverse outcomes.

Background

The skin of an extremely preterm infant is fragile and immature. Due to incomplete stratum corneum protection, it has a high permeability for trans-epidermal water loss (TEWL), enhanced absorption of topical agents, ineffective thermoregulation and greater risk of epidermal stripping with chemical or mechanical trauma. The use of alcohol based cleaning products may be highly irritant and caustic. Breach in skin integrity leads to an increased risk of infection, delayed healing and maturation.

Provision of a high humidity environment from the moment of admission (85%) helps to limit trans-epidermal water loss, improves thermoregulation and reduces the risk of fluid and electrolyte imbalance. Step-wise daily reduction of 5% in humidity from day 7 to14, promotes the rate of epidermal maturation and skin barrier formation. Avoidance of excess residual moisture following cares and procedures is particularly important as preterm skin macerates readily, which in turn adversely affects barrier function.

Clinical Assessment

Nursing staff must complete a Neonatal Skin Condition Score (NSCS) and Glamorgan Score (GS) within 4 hours of admission and repeated assessments with each shift cycle. Refer to the Neonatal Skin Care Guideline.

Process following admission

Steps	Additional Information
Upon admission, commence humidity at 85% for preterm babies 28 weeks gestation or less, or less than 1000 grams.	Supports thermoregulation and to minimise trans-epidermal losses.
For aseptic techniques (e.g. umbilical catheter insertion) apply Povidone-Iodine 10% solution *sparingly* to the region using sterile cotton wool. Do not use friction when applying solution, apply to the smallest area possible to achieve an adequate sterile field and do not allow solution to pool under the infant. Allow to dry for 1 minute then gently wash off ALL solution with sterile water and sterile cotton wool before the procedure.	Although sterile gauze is provided within procedure packs this has been found to be too abrasive. Removal of the cleaning agent aims to minimise chemical irritation and transdermal absorption, which can impact thyroid function.
Neonatal Skin Condition Score (NSCS) and Glamorgan Score (GS)	Captures skin condition as a baseline and identifies areas of concern at the earliest opportunity.
Apply anti-staph topical treatment Chlorhexidine 1% Topical Lotion using sterile cotton wool to trunk, head, limbs and extremities, paying particular attention to the cord stump and skin creases, as soon as feasible following admission, (i.e. after clinical procedures are complete). Do not apply to face. Recommend gentle removal with WaterWipes or Soft Cloth from all regions including the hands after 10 mins. Apply on alternate days if there are no concerns regarding skin integrity or irritation.	Balance of risk of continuous chemical irritation and burns if left in situ vs. potential mechanical trauma of re-wiping delicate skin. **Never apply to excoriated or ulcerated skin.**
Apply Coconut Oil QID following the application and removal of Chlorhexidine 1% Topical Lotion.	Coconut oil has a moisturising effect and improves skin integrity in preterm infants.

Process if signs of skin irritation or breach in skin integrity

- Notify the Clinical Nurse Coordinator or Nurse Coordinator (if unavailable).
- Complete a Wound Assessment and Management Plan MR492 and initiate topical treatments. Consider clinical photographs for sharing with specialists and for documentation in the patient's medical record.
- Medical team are responsible for requesting further input from the PCH Wound Care/Stoma Therapist or Dermatology CNS, Dermatology Registrar or Consultant to arrange further specialist review.

Products Available	Additional Information
Dermeze® The application of Dermeze® alternating with Coconut Oil may be preferable in patients with excessively dry skin.	The skin barrier is more impaired in the presence of excessive dryness, ichthyoses or collodion skin). Dermeze is highly bland, avoiding the risk of sensitization, contains white soft and liquid paraffin (Mineral Oil) & safety data does not support concerns regarding systemic absorption. The preparation may be more occlusive to the skin, specifically associated with an increased risk of systemic candidiasis and coagulase negative staph infections.
Mepitel® Apply Mepitel® soft silicone wound dressing where skin integrity has been breached.	This may be left in-situ without the need for change for up to 14 days. The dressing does not adhere to the wound surface and has low potential for skin allergy and irritation.
Prontosan® Apply Prontosan® Wound Gel X directly to the region using sterile cotton wool.	This product is specifically recommend for direct application to skin following chemical, traumatic or thermal injury acting as a non-irritant gentle cleanser and moisturizer removing and preventing the formation of biofilm. It does not need to be removed following application.

Related CAHS internal policies, procedures and guidelines

Neonatology Guidelines

- Aseptic Technique in the NICU
- Chlorhexidine Wash Procedure
- Neonatal Skin Care Guideline
- Umbilical Arterial and Venous Catheters (UAC/UVC) Insertion, Management and Removal

Neonatology Medication Protocols

- Chlorhexidine 1% Topical Lotion.
- Coconut Oil

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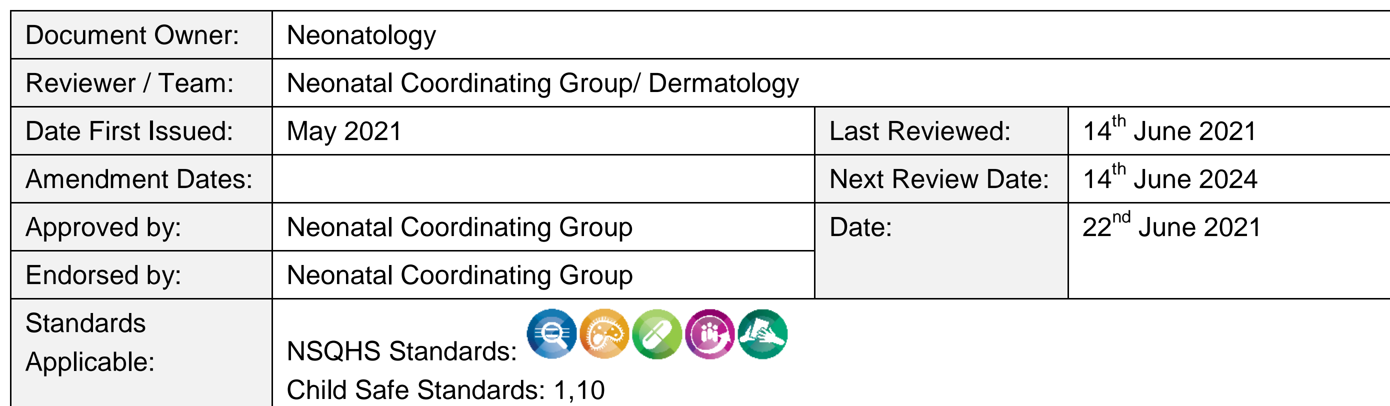

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