

Setting

The NICU at Sunnybrook Health Sciences Centre (SHSC) is a 48 bed level III NICU perinatal, non-surgical care centre. 74 micropremature infants admitted to the NICU in 2023 and approx. 20% were outborn.

- Family-centred care: with two paid parent advisor positions with different role profiles, and a team of parent volunteers who help with teaching, QI work and project design and measurement.
- Sunnybrook's NICU has over 300 interdisciplinary staff.

Background

Infants born at less than 24 weeks gestation have a unique set of challenges and risks requiring an equally unique approach to care. One major difference for this age group, is their fragile and immature skin. This places these infants of increased risk of insensible water loss (IWL), electrolyte imbalance, hypothermia, bacterial invasion, and pain. In order to reduce these risks, this working group aims to develop guidelines to support the maturation of the skin. We use the Neonatal Skin Condition Score (Lund, 2004) to assess and monitor the overall appearance of newborn skin. Several skin injuries prompted a re-evaluation of our skin care policy for this age group.



Aim

To improve skin integrity scores of newborn <24wks by 33% by December 2024.

Change ideas:

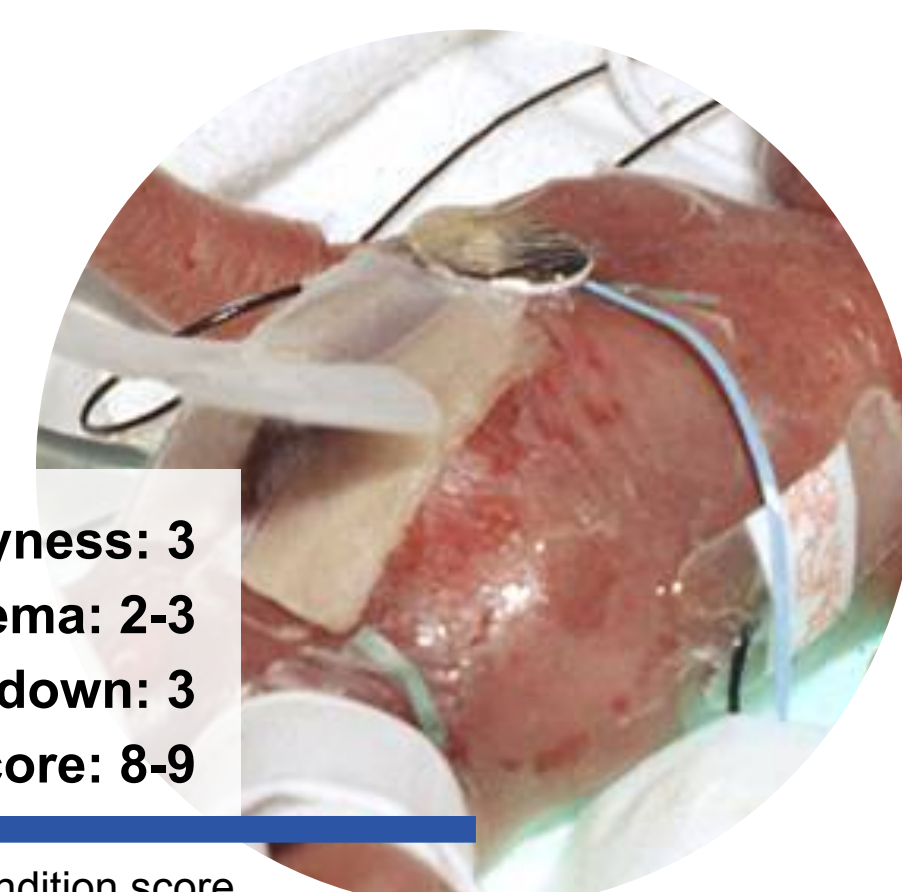
- Implementing a new skin care bundle
- Testing new products
- Positioning aids
- Humidity targets

Measures

Outcome Measures	Process Measures	Balancing Measures
Average Skin Scores	% use of skin emollient (Sween® 24)	Sodium Levels
Max Skin Scores	% use of Silicone Contact Layer (Mepitel® One)	Skin Scores

Dryness		
1 = normal, no sign of dry skin	2 = dry skin, visible scaling	3 = very dry skin, cracking, fissures
Erythema		
1 = no evidence of erythema	2 = visible erythema < 50% of body surface	3 = visible erythema > 50% of body surface
Breakdown and excoriation		
1 = none evident	2 = small localized areas	

Dryness: 3
Erythema: 2-3
Breakdown: 3
Score: 8-9



* Lund CH, Osborne J. Validity and reliability of the neonatal skin condition score.

Processes

- Evaluate current practices and skin integrity scores
- Review practices from other NICUs with successes caring for this population
- Selection of products
- Development of guidelines

PDSA #1

Plan: Apply Sween® 24 same as our current practice with Aquaphor® (apply 1ml q12h for first 7 days)

Do: Use Sween® 24 on next 2 babies born at less than 25 weeks, review Skin Scores and feedback from staff

Study: Discovered applying too much Sween® 24 leaves a residue on the skin. Skin Scores improved. In and Outs need to be monitored more closely to reduce risk of dehydration. ECG leads not staying on skin. More staff education needed.

Act: Reduce amount of Sween® 24 to pea-sized amount for the entire body. Increase initial TFI, increase more liberally in the first week.

PDSA #2

Plan: Apply pea-sized amount of Sween® 24 q12h for first 7 days. Try the 'lead-sandwich' with Mepitel® One. Monitor Na levels during first 7 days. Use new foam mattress, plastic drape for cares. Create bedside Infographic for increased staff awareness of new product use and application.

Do: Apply plan for next 2 babies born less than 25 weeks

Study: Sween® 24 use improved. Skin scores improved. Memory foam mattress deemed unsafe as babies less than 500 grams do not depress the foam. TFIs higher, Na levels appropriate.

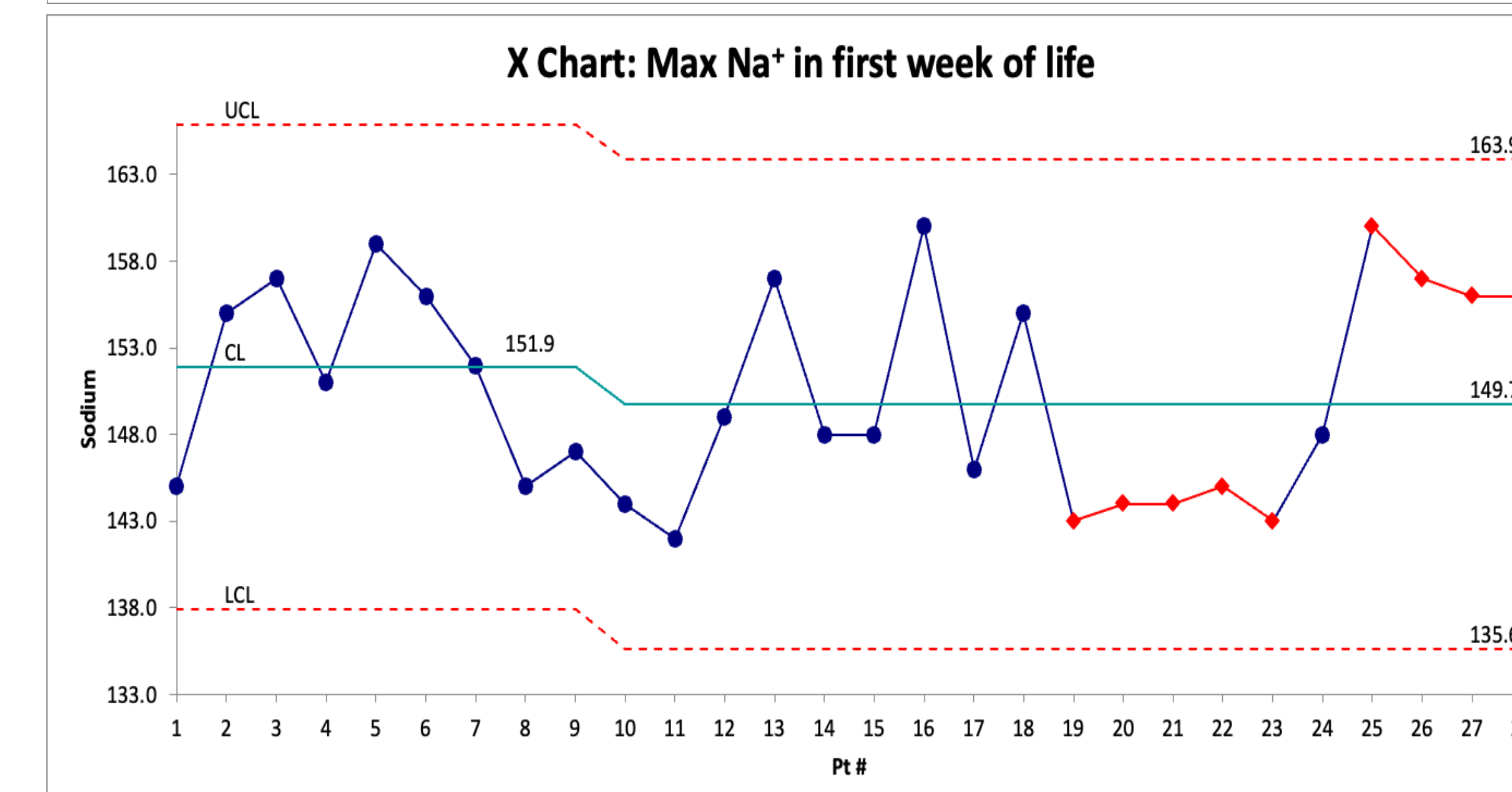
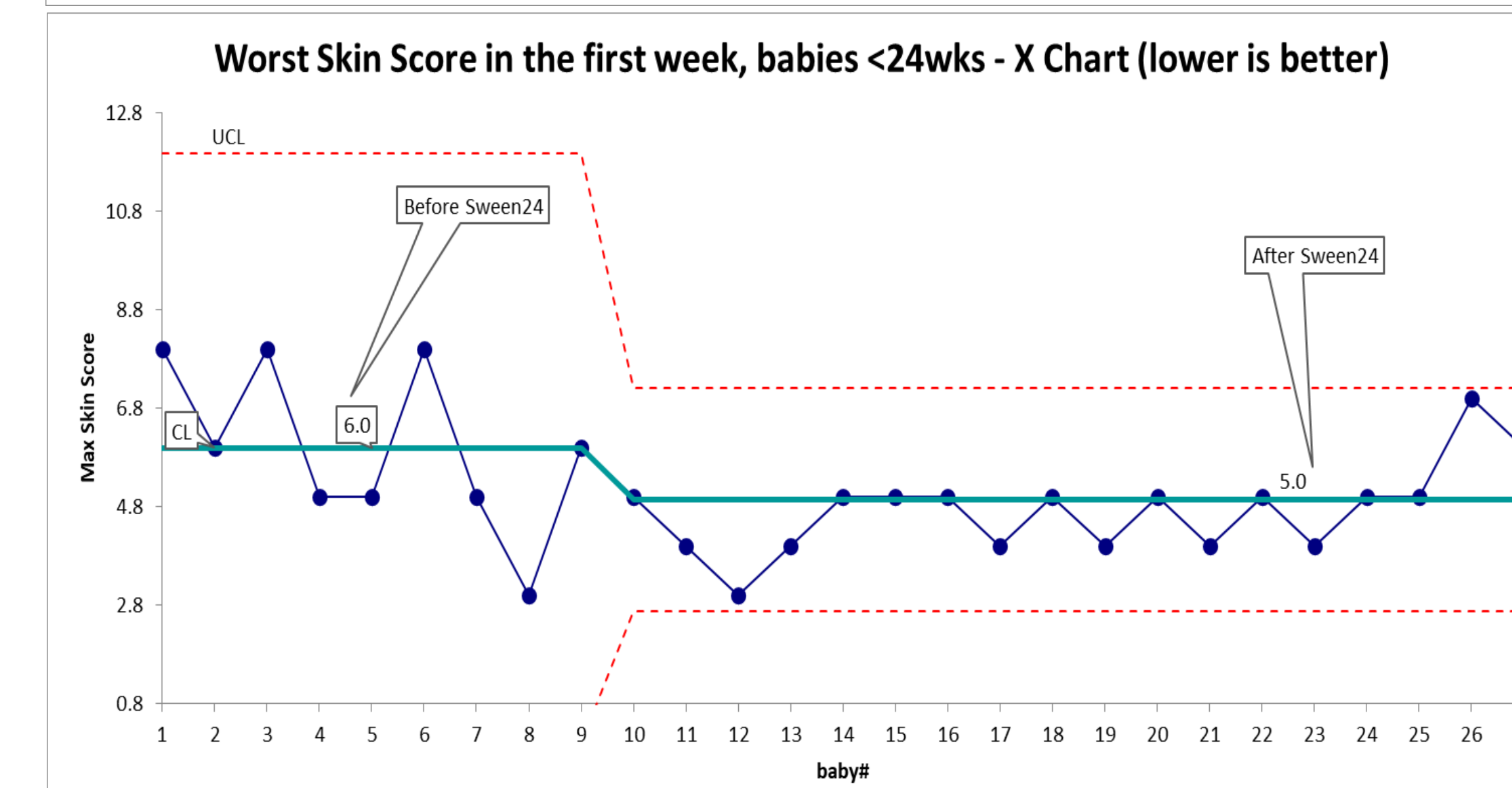
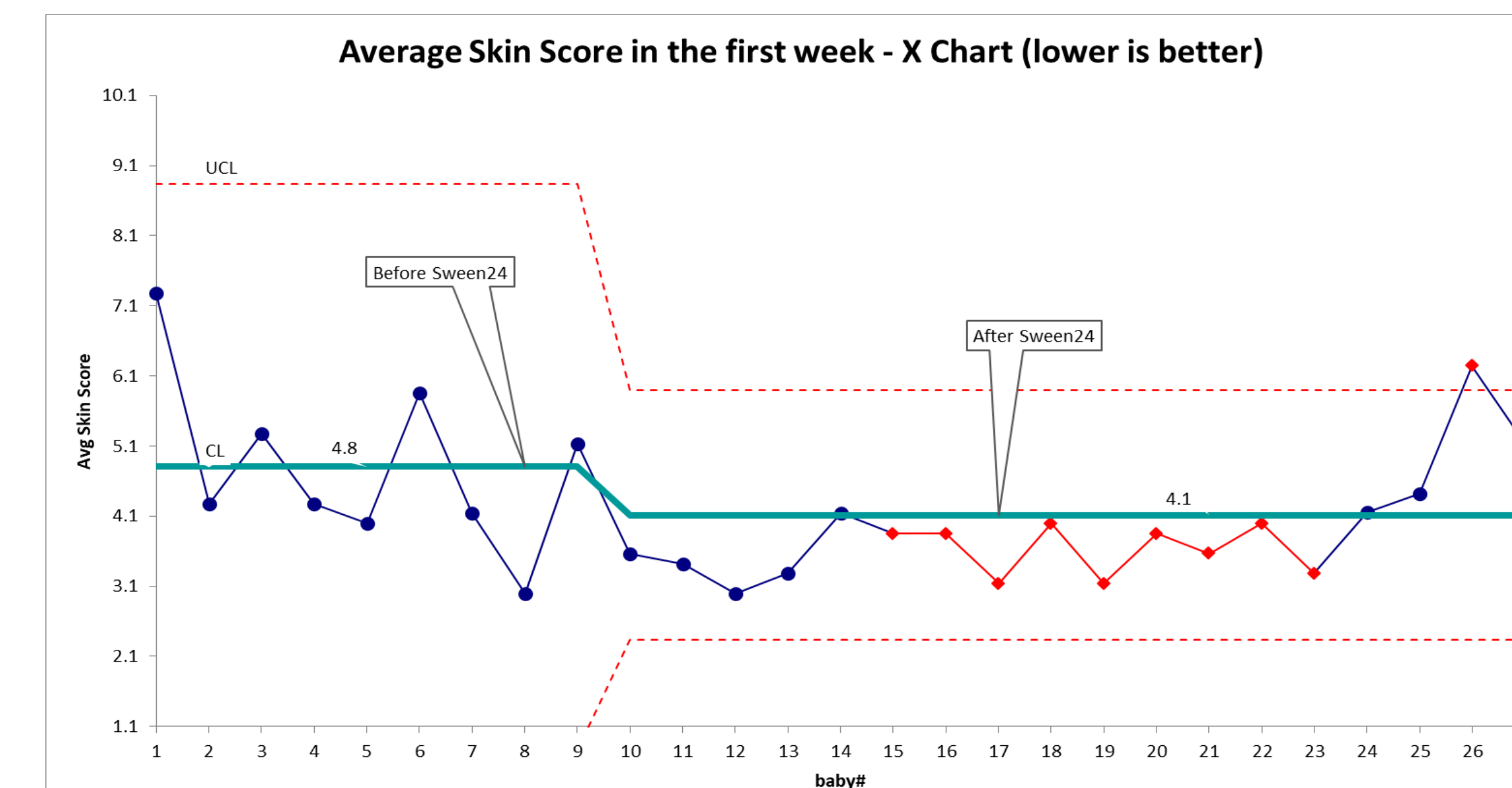
Act: Continue with Sween® 24. Gel Pillow use for next PDSA and Band leads.

Next steps

- Skin care algorithm
- Skin care education bundle
- More product testing

Please share your excellent tips with us!

Results



Practice Changes

Fragile Skin Care New Products

Sween24 and Mepitel One

Sween24
Sween24 is a dimethicone based emollient that moisturizes the skin and allows it to breathe and mature more quickly. Sween24 comes in single-use packets that are to be discarded.

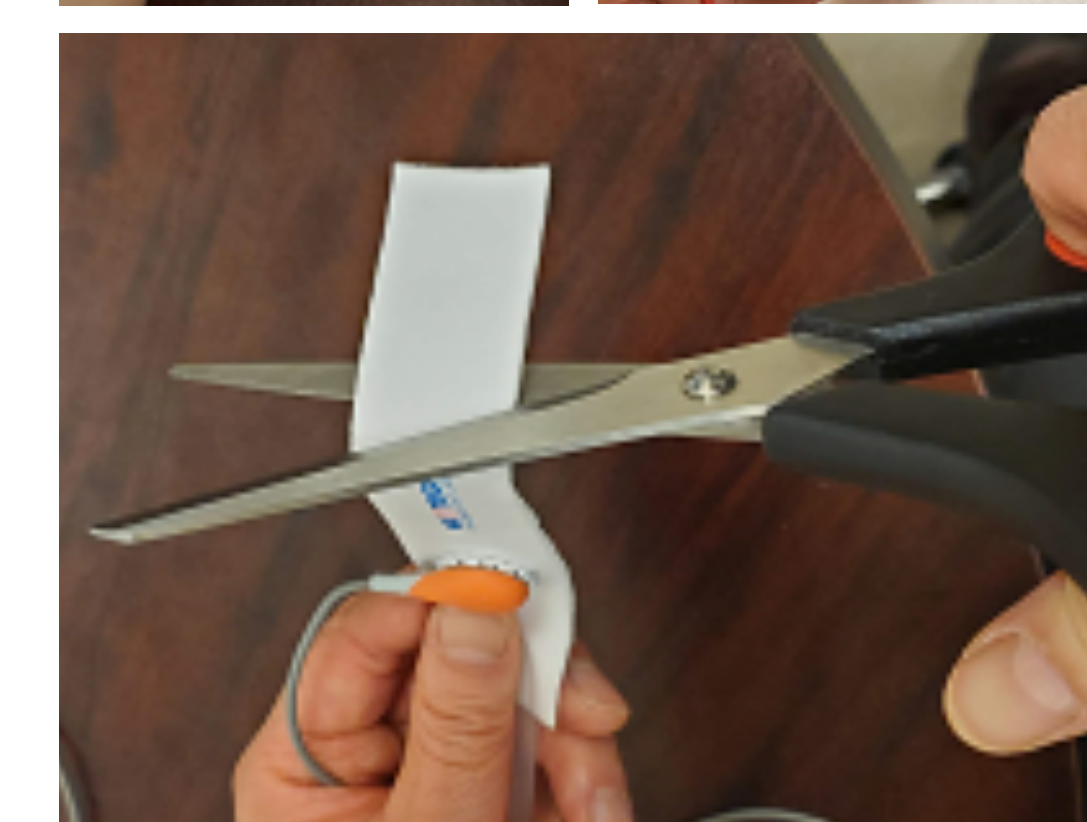
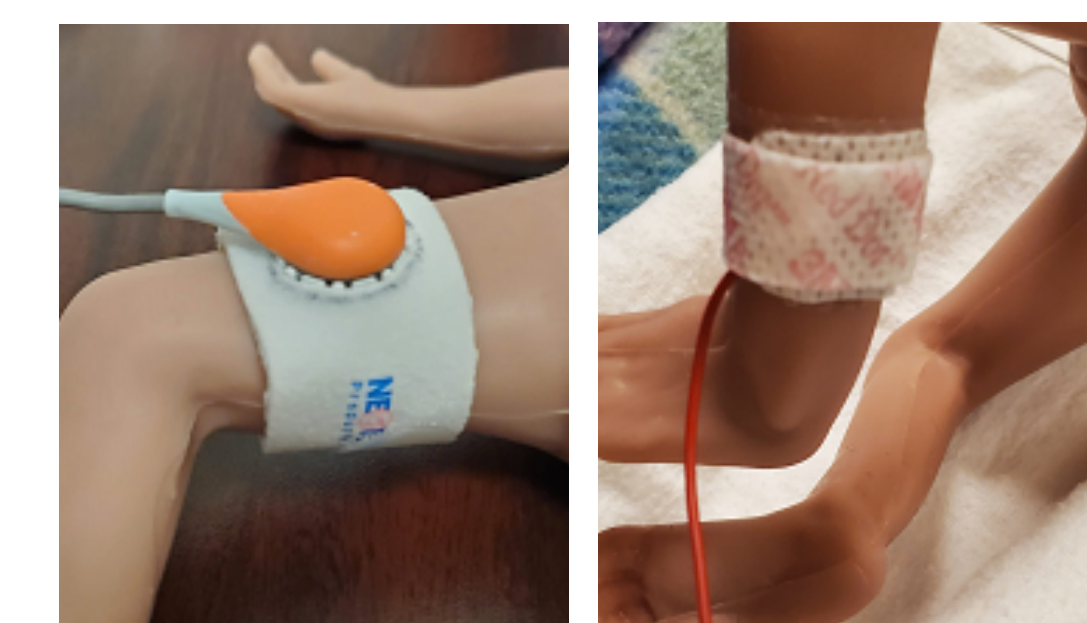
Sween24
Gently spread a pea-sized amount over the limbs and back, avoiding line and ETT securement devices. Apply sparingly as too much will leave behind a thick, white, clumpy residue.

Mepitel One
Mepitel One is a soft silicone contact layer used in other products for wounds. This product gently stays on the skin, and stays off easily in conjunction with the emollient.

Mepitel One
Apply the Mepitel One as barrier between the skin and leads. Apply another piece of Mepitel One on top of the lead. The Mepitel will stick to itself, sandwiching the lead, to keep it in place.

Please complete the Sween24 evaluation form and submit to Lisa Sampson

Any questions? Please see/ email Lisa Sampson, Carla Findlater, Wendy Mouldsdale, Jen Harvey, Maya Dahan.



Preliminary Conclusions

The implementation of a new emollient and barrier/protector was established and in process of sustained use. Skin Scores improved with practice changes. No adverse events were recorded. Next steps include creating an algorithm to guide prevention and management of skin injuries in micropremature infants. Increased education for all staff is required. Evaluation of new products is ongoing.

Team Acknowledgements

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References

Lund CH, Osborne J. Validity and reliability of the neonatal skin condition score. J Obstet Gynecol Neonatal Nurs. 2004; 33(3):320-327

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