

## Background

Physical inspection of the neonate immediately after birth is second nature to Neonatologists and Neonatal Nurses who attend deliveries. In addition to assessing the infant for Apgar scores, breathing and heart rate, and providing a stable thermal environment, we also inspect the infant physically to assure that there are no obvious congenital anomalies present that may necessitate urgent interventions. Today, many organizations have transitioned to a more family friendly approach and the healthy mother-infant dyad is cared for by Labor and Delivery staff after normal deliveries. Uninterrupted skin-to-skin contact between the mother and newborn is the standard of care for these hospitals. Supporting and safely caring for the dyad during the critical time of transition is vital. Three cases of undiscovered congenital anomalies that were missed when the infant was skin to skin with the mother in the first hour after birth was the impetus for this project.

## Purpose of the Project

- The development of a tool that may be used while the infant is skin to skin with the mother during the first hour after birth. The purpose of the tool is twofold: 1) to allow for early detection of any congenital malformations that may require urgent intervention, and 2) to determine the safety of allowing the infant to spend the first hour after birth in skin-to-skin contact with the mother.
- This tool is not meant to replace the Apgar Scoring, the use of Newborn Resuscitation Program (NRP), or a complete physical assessment after the first breastfeeding.

VISUAL VITALS TOOL				
	Green Remain in skin-to-skin and continue to observe	Yellow Call L&D RN to assess baby	Red Call RN Rapid Response Team to Assess Baby	
Head	1 Fontanels - soft/flat Scalp - Symmetrical	2 Sutures - Overriding Scalp - Molding - No swelling	3 Fontanels - Full/firm Caput - Soft scalp swelling - Crosses midline - Crosses sutures - With head molding	4 Head - Any mass Subgaleal Hematoma - No filling - Crosses midline - Fluctuating mass - Crosses sutures - Crosses fontanels
Face	Chin/Ears - Both normal Lip/Palate - Both intact	Ear - Tags - Pits Ankyloglossis - Tongue tied	Chin - Micrognathia - No respiratory distress Lip/Palate - Cleft	Chin - Micrognathia with respiratory distress
Back	Spinal Column - Closed - Straight	Skin - Mongolian spots - Café au lait spots - Ash leaf spots	Spinal Column - Asymmetric - Sacral - Dimple/hair of hair - Agnathia	Spinal Column - Open lesion - Any mass
Anus	Anus - Patent (open) - Normal position	Testicles - Undescended	Anus - Imperforate (no opening) - Wrong position	Testicles - Undescended
Genitals	Testicles - Descended	Vagina - Imperforate - Skin Tag	Penis - Epispadias/Hypospadias Genitalia - Ambiguous	Testicles - Undescended

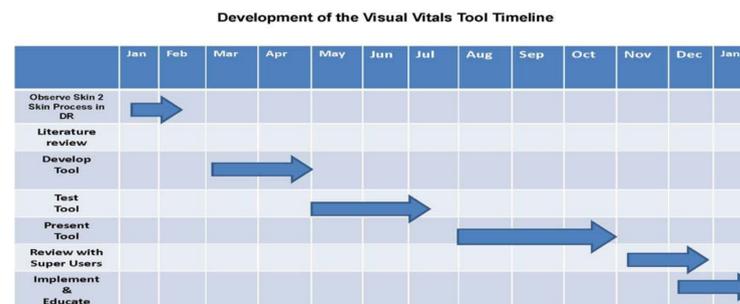
Note any abnormalities on the delivery record

## Design and Methods

- A tool was designed utilizing the Pediatric Early Warning System tool format, and includes specific physical features in five areas including: 1) head, 2) face, 3) back, 4) anus, and 5) genitals.
- Each topic area includes physical features that are given a score of 1-4 with scores of 1 for normal, 2 for minor abnormalities that do not require urgent intervention, 3 for abnormalities that have the potential to require urgent intervention and need further evaluation, and 4 for abnormalities that require urgent intervention immediately upon discovery.
- If all physical features receive a score of 1-2, the baby may continue to be observed in uninterrupted skin-to-skin contact with the mother.
- If any physical feature receives a score of 3, a nurse with specialized training in newborn assessment should be called to evaluate the degree of risk.
- If any physical feature receives a score of 4, the physician and Rapid Response Neonatal Team should be called immediately to evaluate the baby.

## Results and Outcomes

- A reduction in risk reports of missed congenital malformations was achieved with the introduction and use of the Visual Vitals tool at Winnie Palmer Hospital for Women and Babies in Orlando, Florida, where 13,400 babies were born in 2015.
- No congenital anomalies went undetected after introduction of the Visual Vitals tool.



## Implications and Conclusions

The intent of this project was the development of a safe and effective tool for the initial physical inspection of the newborn. The Visual Vitals tool allows an early systematic noninvasive physical inspection to be performed while a newborn is in skin-to-skin contact with the mother to allow for bonding and the initiation of breastfeeding in the first hour after birth while, at the same time, providing ongoing assessment for safety and assuring early detection and appropriate evaluation of any congenital anomalies that could necessitate urgent intervention.

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## Lessons Learned

- Don't assume the Labor and Delivery staff member knows to inspect the infant for obvious (to the Neonatal staff member) congenital anomalies
- Developing a tool is hard.
- Getting staff to accept and use the tool is even harder!
- Babies and Moms belong together!

## References

- Phillips, R. (2013). The Sacred Hour: Uninterrupted Skin-to-Skin Contact Immediately After Birth. *Newborn and Infant Nursing Reviews*, 13(2), 67-72. doi:10.1053/j.nainr.2013.04.001
- Ludington-Hoe, S. M., & Morgan, K. (2014). Infant Assessment and Reduction of Sudden Unexpected Postnatal Collapse Risk During Skin-to-Skin Contact. *Newborn and Infant Nursing Reviews*, 14(1), 28-33. doi:10.1053/j.nainr.2013.12.009
- Akre, M., Finkelstein, M., Erickson, M., Liu, M., Vanderbilt, L., & Billman, G. (2010). Sensitivity of the Pediatric Early Warning Score to Identify Patient Deterioration. *Pediatrics*, 125(4). doi:10.1542/peds.2009-0338