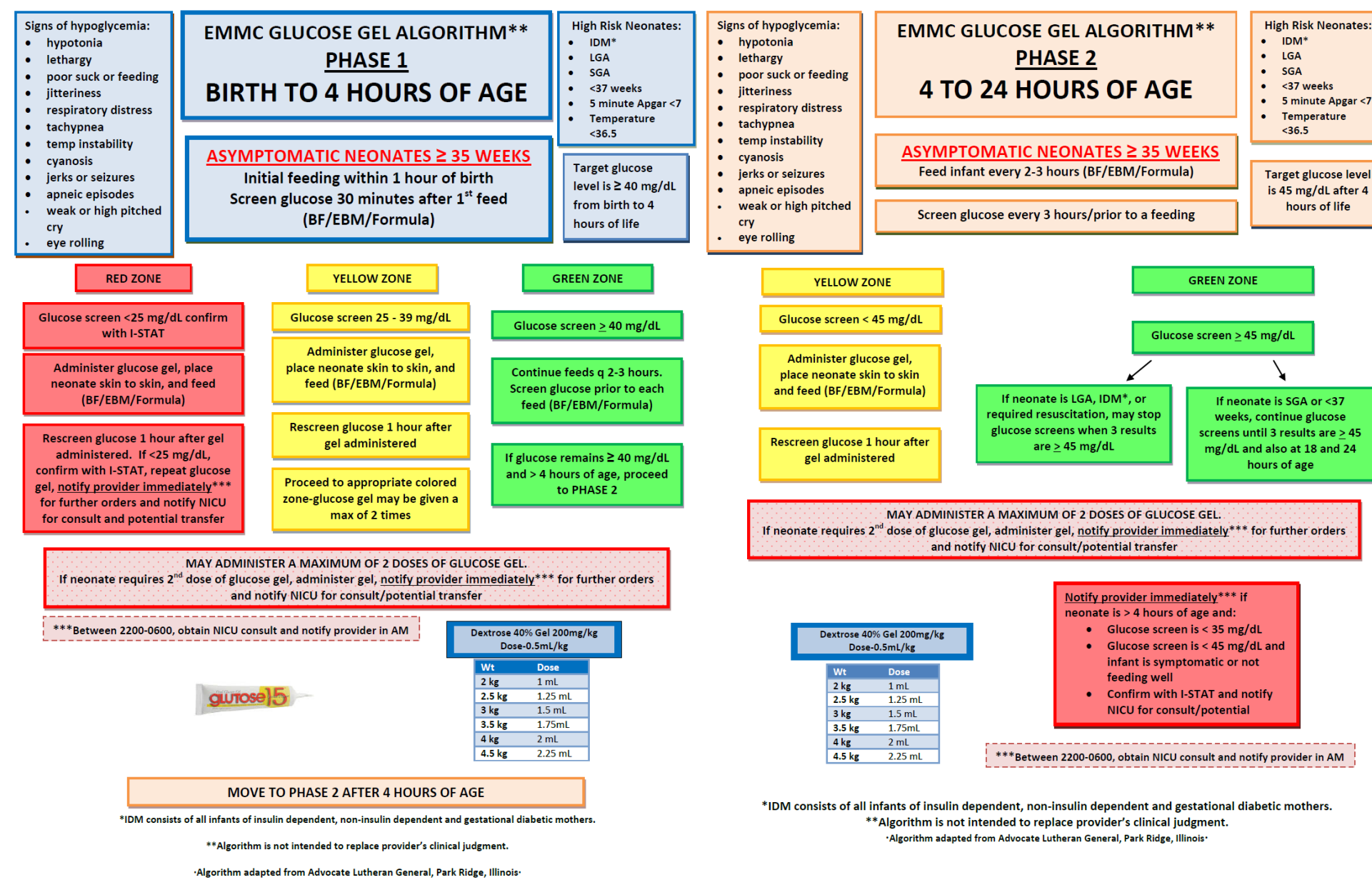


# Neonatal Hypoglycemia: a Multi-Disciplinary Approach to Transformation of Care

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## History

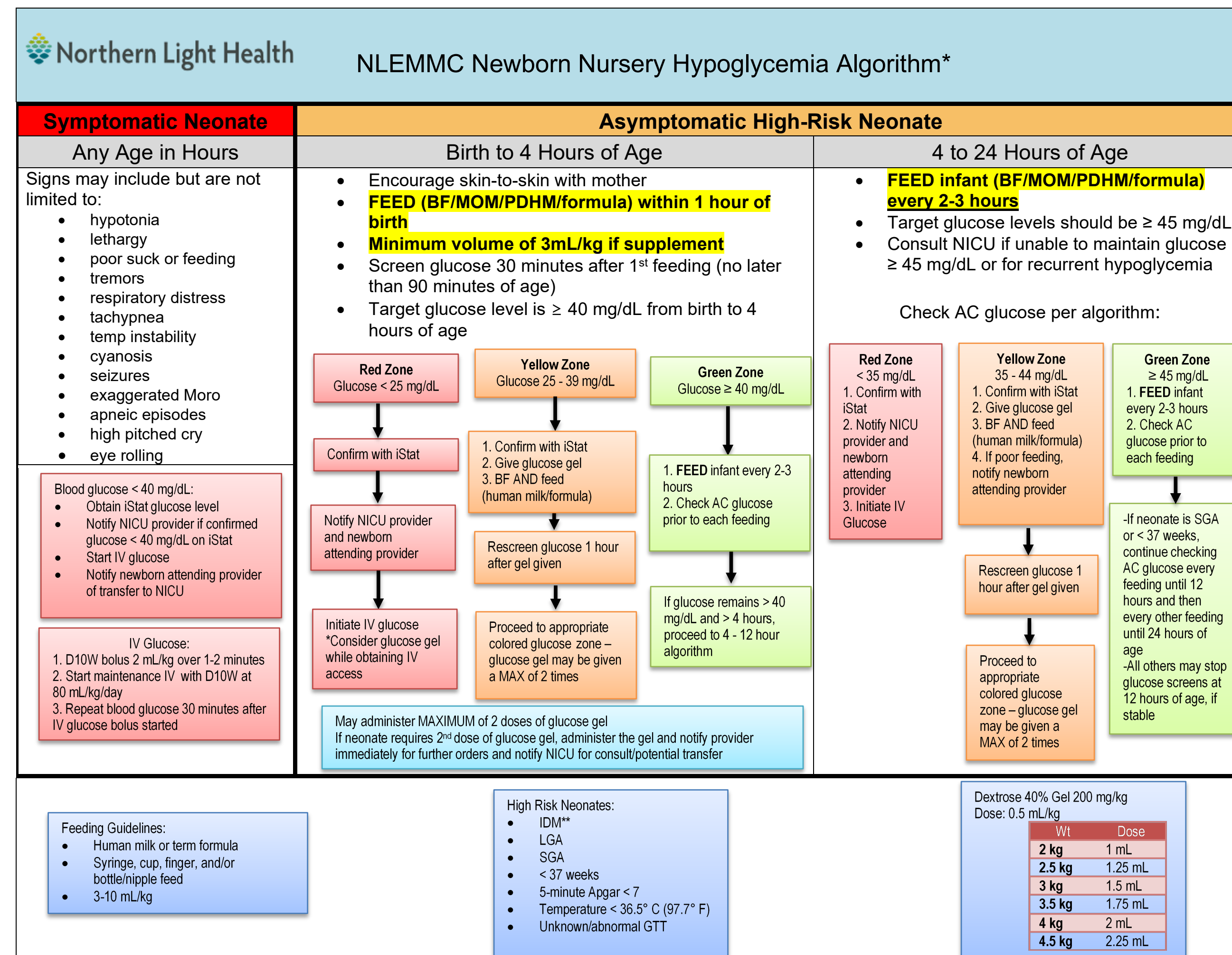
- 2006: Original algorithm created
- 2011: Revision based on AAP clinical report  
*Screening and management of postnatal glucose homeostasis in late-preterm and term SGA, IDM/LGA infants*
- 2016: Glucose Gel studies completed. Cochrane review concludes that use of glucose gel is a simple and safe treatment for initial care of infants with low blood glucose levels.
- 2017: Revision including use of glucose gel



## Issues Identified After Utilizing 2017 Algorithm

- Addressed ONLY high-risk, asymptomatic newborns in the birth to 4-hour age group
- Did not support exclusive breastfeeding/human milk
  - *PDHM became option for use in newborn for mom's wishing to exclusively breastfeed high-risk newborns*
- 2-page algorithm cumbersome/confusing

## Current Algorithm



## Key Algorithm Changes 2019

- New column for treatment of **symptomatic** newborns  
Any age in hours, glucose less than 40 → NICU for IV glucose
- Birth to 4 hours of age-**asymptomatic** newborns (Target glucose level  $\geq 40$ )  
FEED within 1 hour with breastfeeding, mother's own milk (MOM),  
pasteurized donor human milk (PDHM), or formula → minimum volume 3  
mL/kg  
Red zone: glucose less than 25 → NICU for IV glucose  
Yellow zone: BF AND feed MOM/PDHM/formula
- 4 to 24 hours of age-**asymptomatic** newborns (Target glucose levels  $\geq 45$ )  
Red zone: glucose less than 35 → NICU for IV glucose  
Green zone: if SGA or  $< 37$  weeks → AC glucose checks until 12 hours of  
age, then every other feeding until 24 hours; all other asymptomatic high-  
risk may stop screens at 12 hours of age, if stable

## Staff Education

## September 2020:

- Mandatory education for all staff in L&D, OB/GYN, and NICU included Health Stream module as well as one hour in-person session on the physiology and detrimental effects of hypoglycemia, reviewed the new algorithm, and the process for accessing pasteurized donor human milk (PDHM)
- Zoom presentations for OB, Pediatrics, and Family Practice Service meetings highlighted major changes and emphasized overall goal of exclusive human milk feeding in the high-risk population with the use of PDHM supplementation

## October 2020:

- Algorithm/changes go Live

## Barriers/Limitations

Needed a better way to identify high-risk babies in L&D

- January 2021 created color coded magnets for the L&D patient board

Newborn nursery did not have a dedicated iSTAT

machine to verify results

- February 2021 staff education and dedicated iSTAT machine

## Ongoing issues...

- Improve rate of exclusive breastfeeding/utilization of PDHM
- Continue to improve collaborative management of symptomatic infants-**WARM, SWEET, & PINK!!**

REFERENCES:

- Adamkin DH, Committee on Fetus and Newborn. Clinical report: postnatal glucose homeostasis in late-preterm and term infants, *Pediatrics* 2011;127:575-579
- Weston PJ, Harris DL, Battin M, Brown J, Hegarty JE, Harding JE. Oral dextrose gel for the treatment of hypoglycemia in newborn infants. *Cochrane Database Syst Rev.* 2016; 5: 1-42