

BACKGROUND

Extremely Low Birth Weight infants (ELBW) are infants who weighed less than 1,000 grams at birth. Upon admission to the **Neonatal Intensive Care Unit (NICU)**, they face numerous challenges before they can be discharged home. Among these are higher risks for developing neonatal **intraventricular hemorrhage (IVH)** and a longer **hospital length of stay (LOS)**.

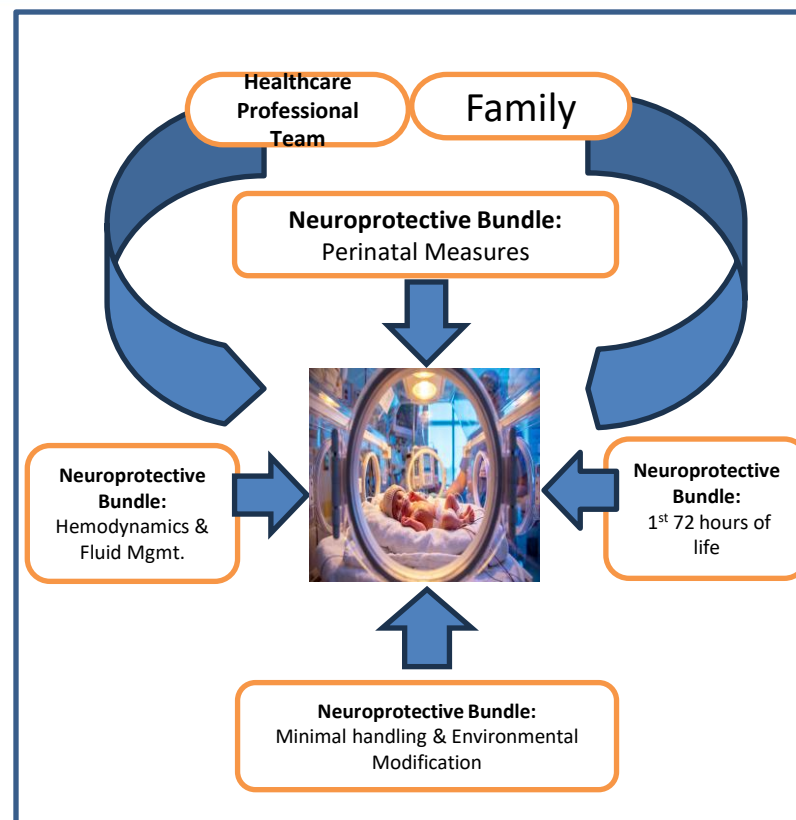
Brain First in the NICU refers to a neonatal protective care philosophy that prioritizes the developing brain in every touch, procedure, and caregiving episode. It focuses on preventing brain injury, supporting optimal brain development, and creating a healing environment. This care bundle is designed to safeguard the fragile developing brains of the ELBW.

PURPOSE

The purpose of this **knowledge-enhancement poster** is to investigate the advantages of implementing a neuroprotective and developmentally supportive bundle in the NICU to reduce neonatal IVH and hospital LOS for ELBW. It will also look at specific components of the bundle and inherent challenges in the implementation of said bundle.

METHODS

Review of related literature from scholarly, peer-reviewed, and academically curated sources.



Some terms to clarify:

1. **Healthcare Professional Team (HPT):** includes the Neonatologists, Neonatal Nurses, Respiratory Therapists, Registered Dietitians, Pharmacists, Physical/Occupational/Speech Therapists, Lactation Consultants, Social Workers and Nurse Case Managers.
2. **Family:** an integral part of the team as they participate in the planning and implementing of the infant's care plan while in the NICU.

RESULTS

Neuroprotective Bundle includes a multi-disciplinary effort focused on maintaining a stable cerebral blood flow to the ELBW's brain through the following:

1. **Perinatal Measures:** corticosteroids and Magnesium sulfate to Mother before birth.
2. **First 72 hours of life:** a) **Delivery/Operating Room stabilization** includes delayed cord clamping, avoiding hypothermia & gentle ventilation. b) **Neuroprotective infant positioning** with midline head alignment, 10-20 degrees head of bed elevation, no prone position during 1st week of life.
3. **Hemodynamics & Fluid Mgmt:** slow infusions and flushes for at least 30 mins.; blood draw guard rails & targeted blood gas monitoring.
4. **Minimal Handling and Environmental Modification:** clustered care, 2-person care technique, experienced care givers, stop non-essential assessments, noise control around infant.

CONCLUSIONS

Based on scholarly, peer-reviewed and academically curated sources, a highly collaborative, standardized neuroprotective care bundle which involves the infant's family and a multi-disciplinary team of healthcare professionals can reduce incidence of IVH and shorten hospital length of stay for ELBW. Clinical, environmental and organizational challenges can be expected as in any shift in culture.

REFERENCES

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