

# Don't Let My Brain Bleed!

## Decreasing IVH Rates in the NICU

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### Background/Problem

The Intraventricular Hemorrhage (IVH) rates of <1500 gram infants in the Neonatal Intensive Care Unit (NICU) were higher than the national rates based on the Vermont Oxford Network data (VON) for 2013 and 2014.

There was no consistent protocol for handling the very low birthweight (VLBW <1500 gram) infant.

IVH is categorized as Grade 1-4 and Grades 3 & 4 are classified as a severe IVH.

90% of IVH occurs in the first 72 hours of life and 50% in the first 24 hours. Most IVH's occur in infants born at < 32 weeks gestational age and at a birthweight of <1500 grams. The research has shown that intracranial pressure (ICP) is maintained at lowest pressures when the head is maintained in midline position and the head of bed at 30 degrees. In addition, the research has shown that not weighing these infants for the first 72 hours is highly correlated with decreasing both the number and severity of IVH in VLBW infants. Managing positioning of an infant is a nursing intervention.

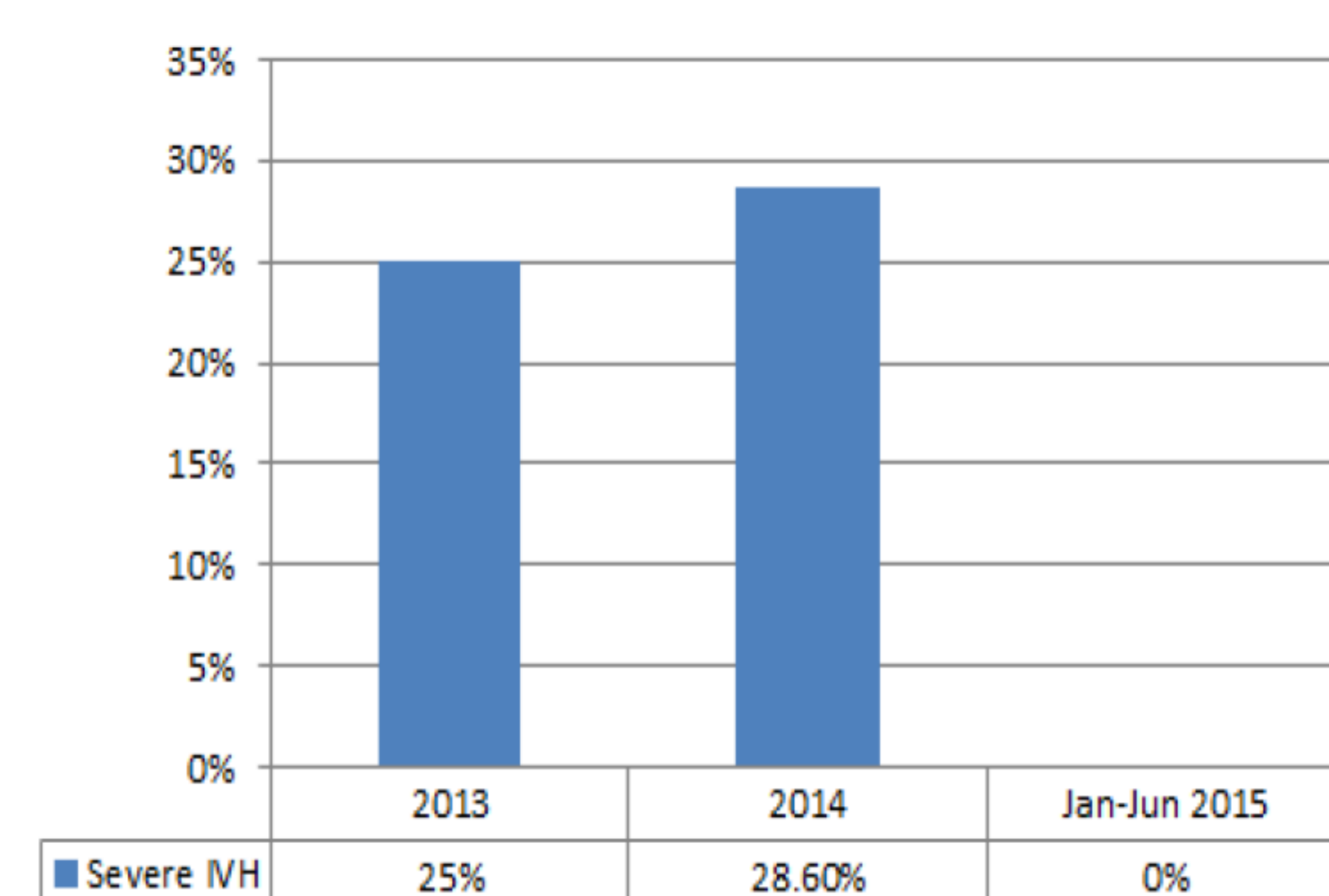
### PICO Question

Will maintaining a neutral head position and not doing daily weights for the first 72 hours decrease IVH rates in Very Low Birthweight (VLBW <1500 grams) infants compared to the previous year's Vermont Oxford data?

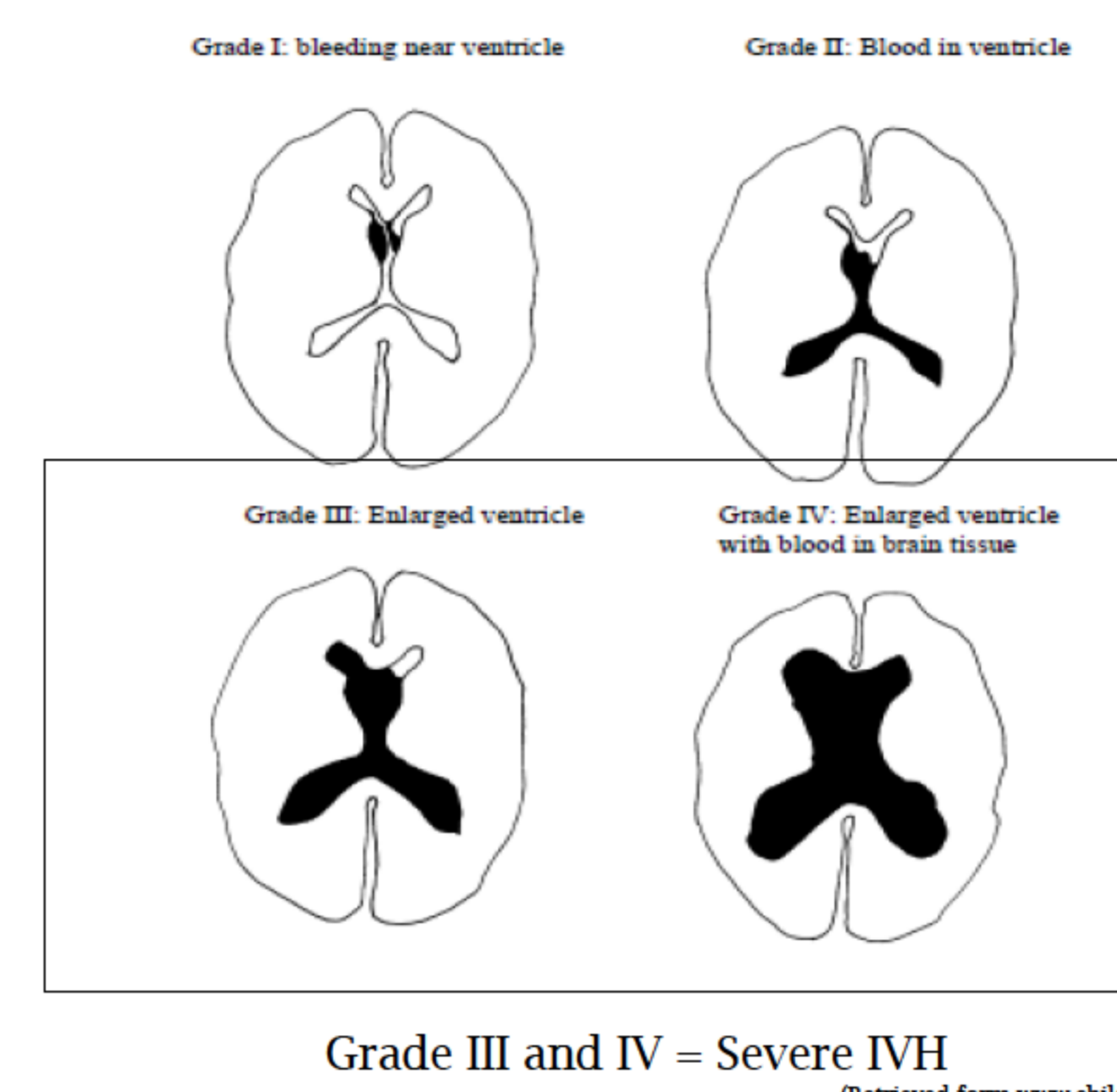
### Evidence/Research

Detailed review of the research with a date range from 1998 to 2014 located multiple evidence sources on this topic. Analysis of the evidence showed that keeping infants midline, elevating the HOB 30 degrees and not weighing daily for the first 72 hours is best practice for reducing IVH.

Percent of Severe IVH in <1500 Gram Infants



Grades of intraventricular hemorrhage (cross-section view of the brain)



### Methods/Interventions

The Iowa Model of Evidence Practice was utilized to conduct the project. Retrospective and prospective data analysis of IVH rates and severity of bleed was done using data submitted to the VON national database.

A multi-pronged educational intervention, which included a bulletin board (VLBW protocol), power-points, in-services, care cards at baby's bedside, e-mails/updates regarding project/progress, an optional CEU activity and "potty training" (educational information posted in the bathroom) was implemented between November 2014 and April 2015.

### Results

IVH rates have decreased since project implementation.

The severity of IVH in the <1500 gram population has gone from 28.6% in 2014 to 0% YTD 2015(Jan-June).

In 2015 YTD there have been 18 infants < 1500 grams

- 0 Grade 3-4 IVH
- 5 Grade 1 IVH
- 11 with no IVH
- 2 Excluded -unable to scan

Q1 2015

- All grades IVH rate was 40% (4/10)
- Grade 3-4 IVH rate was 0%

Q2 2015

- All grades IVH Rate was 17% (1/6)
- Grade 3-4 IVH rate was 0%

**NICU VLBW <1500 grams Protocol**  
**\*Initial 72 hours\***

- Midline Positioning
- No Daily Weights

Start Date & Time: \_\_\_\_\_  
End Date & Time: \_\_\_\_\_

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### Recommendations/Lessons Learned

- Continue to monitor the IVH rates and severity of bleeds in all weight categories of infants.
- Keep the current VLBW care guidelines in effect including the practice of maintaining the infant's head in neutral position and not turning or weighing infants for the first 72 hours.
- CEU activity should have been mandatory for all staff vs. optional to help support practice change and improve dialog between team members
- Reaching 100% compliance with protocol has taken longer than expected with this new practice change still in the adopting phase
- Physician/Nurse Practitioner buy-in proved challenging
- Transition in nursing leadership created challenges

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