



Evaluation of Immunization in the Neonatal Intensive Care Unit at British Columbia Children's Hospital

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Background

- Term and preterm infants in the neonatal intensive care unit (NICU) should be immunized at the same chronological age and on the same schedule as healthy term infants
- However, infants in the NICU are often under-immunized.
- The reasons for under-immunization in this population have not been well-defined.

Aim

- To assess the immunization rates of hospitalized term and preterm infants in the NICU at the British Columbia Women's Hospital and to examine the reasons for under-immunization.

Methods

- Pharmacy and NICU databases were interrogated to determine the immunization rates of eligible babies admitted to the NICU at BCWH between 2011 and 2015.
- A retrospective review of the hospital medical records of unimmunized infants was undertaken to identify barriers to timely immunization.
- Patient demographics and transfers to other hospitals were recorded.
- Reasons for the delay in immunization were evaluated by detailed review of the hospital medical record.

Conclusion

- Significant comorbidity appeared to be the major reason behind vaccination delays, resulting in 27% of vaccine-eligible infants going unimmunized.
- Significant improvements are required to ensure these babies receive vaccines upon recovery from their illness, and to ensure absence of immunization is clearly documented upon hospital discharge.

Results

- Of the 3,261 babies admitted to the NICU during the study period, 534 (16%) were still hospitalized at ≥8 weeks of age, when first immunizations are due.
- Of these, 144 (27%) received no immunizations in hospital. Sixty two of these cases were reviewed in detail.

Demographics	
Females	42 %
Males	58 %
Birth Weight	
Mean Birth Weight	1553 ± 104.6 g
AGA	80 %
SGA	12 %
LGA	8 %
Age	
Mean gestational age at birth	30.6 ± 0.5 weeks
Percentage of preterm babies (<37 weeks)	87.10%
Mean gestation age of preterm babies	29.6 ± 0.5 weeks
Hospital Stay	
Mean duration of stay	93.8 ± 8.4 days
Percentage of infants who died prior to discharge	17.74%

Table 1: Demographics of 62 cases included in detailed review.

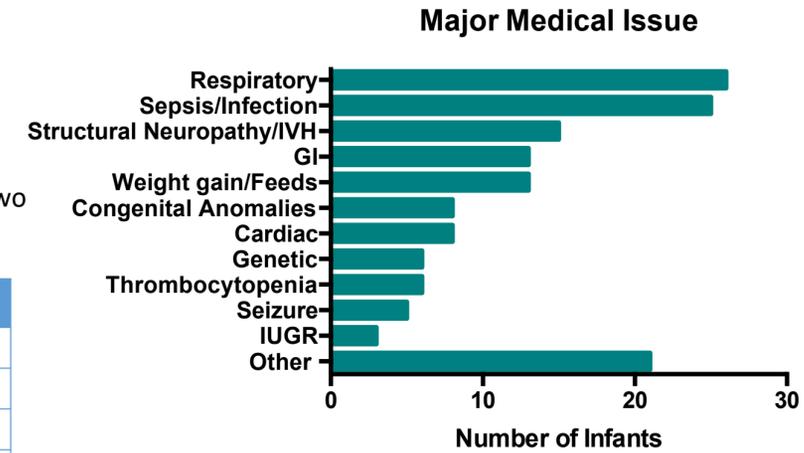


Figure 1. Respiratory issues and sepsis/severe infection were the most common medical issues seen in NICU infants

*Note that infants had one or more of the above medical issues during their stay in hospital

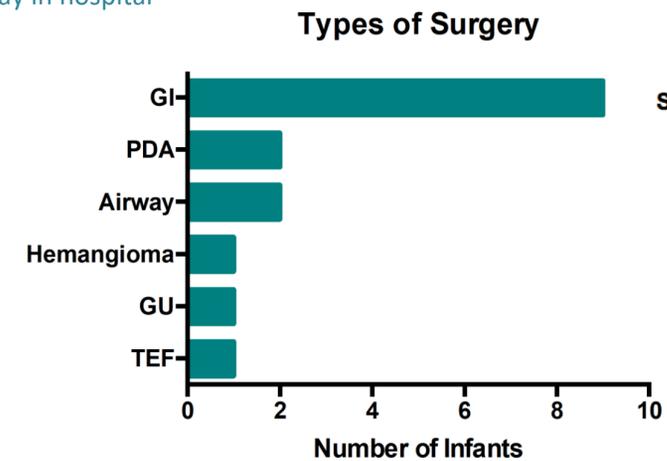


Figure 2. There were a total of 11 cases where the infant had undergone one or more surgeries during their stay in the NICU. GI surgeries were the most common in the infants who were lacking immunization.

Airway: Bronchoscopy and laser supraglottoplasty

Reasons for Lack of Immunization percentages

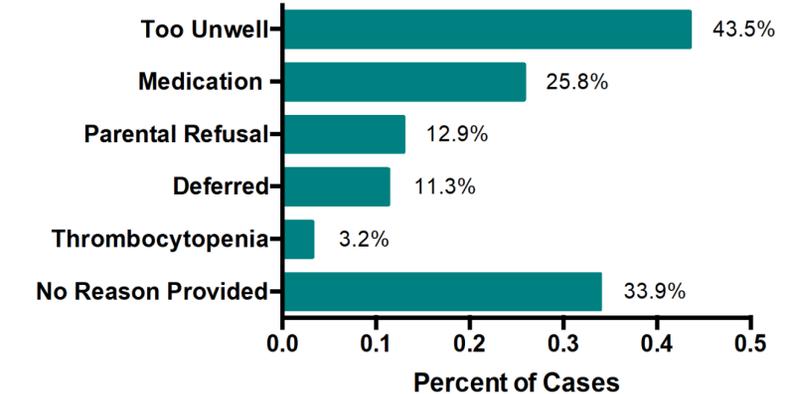


Figure 3. Most common reason for lack of immunization was being too unwell (43.5%), followed by medications (25.8%). In 33.9% of cases, no reason was provided.

Unwell infants who died prior to discharge

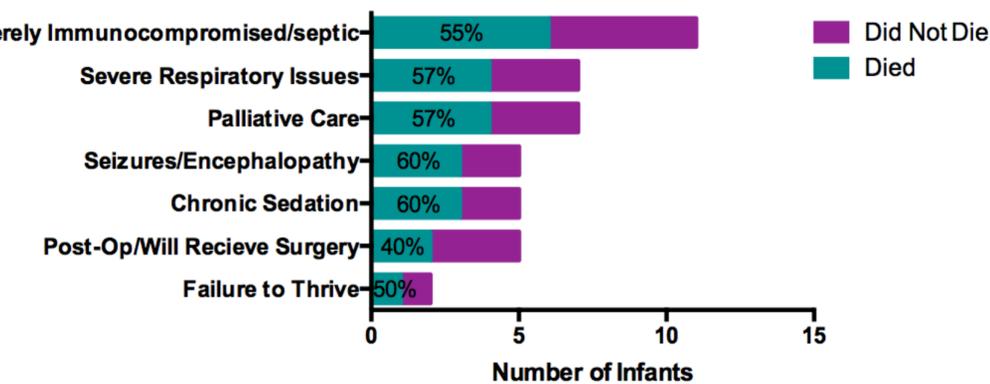


Figure 4. Of the 27 infants who were deemed too unwell for vaccination, 11 died prior to discharge and weren't vaccinated for one or more of the reasons stated above