

	Document Scope: Departmental	
	Document Type: Clinical Practice Guideline Approved on 2022-03-21 Next Review Date: 2025-03-20	
	<b>Clinical pathway for early detection and management of post-hemorrhagic ventricular dilatation (PHVD) in preterm infants</b>	Version: 1

## 1.0 Introduction

Preterm infants (gestational age  $\leq 32$  weeks) with intraventricular hemorrhage (IVH) grade III or IV are at risk of developing post-hemorrhagic ventricular dilatation (PHVD). Early PHVD intervention in preterm infants may improve neurodevelopmental outcome.

The goal of this pathway is the early detection and neurosurgical assessment of PHVD and, if needed, early intervention.

## 2.0 Clinical Practice Recommendations

The flow diagram applies to preterm infants at PHVD risk admitted to NICU's that refer to The Hospital for Sick Children ('SickKids') for tertiary care and management. Infants should be followed from birth to term equivalent age (TEA) or discharge from the NICU.

Click [Clinical pathway for early detection and management of post-hemorrhagic ventricular dilatation \(PHVD\) in preterm infants](#) to access the guideline.

## 3.0 References

1. Davies MW, Swaminathan M, Chuang SL, et al. Reference ranges for the linear dimensions of the intracranial ventricles in preterm neonates. Arch Dis Child Fetal Neonatal Ed 2000;82:F218-223
2. de Vries LS, Benders MJ, Groenendaal F. Imaging the premature brain: ultrasound or MRI? Neuroradiology 2013;55:13-22
3. El-Dib M, Limbrick DD, Inder, T et al. Management of post-hemorrhagic ventricular dilatation in the infant born preterm. J Pediatr 2020; 226.
4. Ingram MC, Huguenard AL, Miller BA, Chern JJ. Poor correlation between head circumference and cranial ultrasound findings in premature infants with intraventricular hemorrhage. J Neurosurg Pediatr 2014;14:184-189
5. Levene MI. Measurement of the growth of the lateral ventricles in preterm infants with real-time ultrasound. Arch Dis Child 1981;56:900-904
6. Meijler G. Neonatal Cranial Ultrasonography. 2<sup>nd</sup> edition. Springer-Verlag, Berlin Heidelberg, 2012

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7. Mohammad K, Scott J, Leijser LM, Zein H et al. Concensus approach for standardizing the screening and classification of preterm brain injury diagnosed with cranial ultrasound: A Canadian perspective. *Front. Pediatr*, 08 March 2021. <https://doi.org/10.3389/fped.2021.618236>
8. Muller WD, Urlesberger B. Correlation of ventricular size and head circumference after severe intra-periventricular haemorrhage in preterm infants. *Childs Nerv Syst* 1992;8:33-35
9. Papile LA, Burstein J, Burstein R, et al. Incidence and evolution of subependymal and intraventricular hemorrhage: A study of infants with birth weight less than 1500 grams. *J Pediatr* 1978;92:529-534
10. Volpe JJ. Intracranial hemorrhage: germinal matrix-intraventricular hemorrhage of the premature infant. *Neurology of the newborn*. 5th ed. Philadelphia: Saunders Elsevier, 2008
11. van Wezel-Meijler G, de Vries LS. Cranial Ultrasound - Optimizing Utility in the NICU. *Curr Pediatr Rev* 2014;10:16-27
12. van Wezel-Meijler G, Steggerda SJ, Leijser LM. Cranial ultrasonography in neonates: role and limitations. *Semin Perinatol* 2010;34:28-38

**Attachments:**

[Clinical pathway for early detection and management of PHVD 2021 Final.docx](#)