

**Royal Hospital for Women (RHW)**  
**NEONATAL BUSINESS RULE**  
**COVER SHEET**



**Health**  
 South Eastern Sydney  
 Local Health District

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<b>SUMMARY</b>	To guide clinicians in the management of neonate born to hepatitis C positive mother
<b>Key Words</b>	Hepatitis C virus (HCV), HCV antibody (HCV Ab), HCV RNA

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*Within this document we will use the term woman, this is not to exclude those who give birth and do not identify as female. It is crucial to use the preferred language and terminology as described and guided by each individual person when providing care.*

## **1 BACKGROUND**

The aim is to detect hepatitis C virus (HCV) in neonate(s) born to HCV positive woman.

## **2 RESPONSIBILITIES**

### **2.1 Staff (medical, midwifery, Nursing, Allied health)**

- Midwifery/nursing – Identifying HCV positive woman at the time of admission and notifying the neonatal intensive care unit (NICU) team as soon after delivery of neonate.
- Medical – Review maternal medical records for HCV, hepatitis B, and human immunodeficiency virus (HIV) results and follow up arrangements for neonate.

## **3 PROCEDURE**

### **3.1 Clinical Practice**

- Notify paediatric Resident Medical Officer (RMO) about maternal HCV status when woman in attendance for birth (labour or elective caesarean section).
- Clean the neonate's eyes and non-intact skin with water at birth
- Review woman's medical records for HCV, hepatitis B, syphilis, and HIV results by paediatric RMO after birth.
- Document maternal HCV antibody (HCV Ab) and HCV ribonucleic acid (RNA) status.

#### Scenario 1: Maternal HCV Ab positive, but HCV RNA negative:

- Advise parent(s) the risk to neonate is negligible.
- Recommend standard follow up for the neonate as this suggests either false positive antibody, past cleared infection, past successful treatment or low-level viremia.

#### Scenario 2: Maternal HCV Ab positive and HCV RNA positive:

- Advise parent(s) risk of transmission to neonate is about 5% or more (refer to educational notes)
- Advise to continue breastfeeding. If nipples are cracked and bleeding, may consider expressing and discarding, but this should be discussed with paediatric infectious disease (PID) team on call prior to avoiding breastmilk.
- Organise a follow up visit in the newborn outpatient clinic along with a blood HCV RNA test around 3 months of age to review results:

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- If HCV RNA positive – Refer to PID clinic at Sydney Children’s Hospital (SCH), Randwick for further management and follow up.
  - If HCV RNA negative – Organise a follow up visit to either SCH PID clinic (consultmed referral) or RHW newborn outpatient clinic at 12 months. If 12-month HCV Ab is negative – discharge the infant from the clinic. If 12-month HCV Ab is positive – organise a consultmed referral to SCH PID clinic for 18 month follow up visit with a plan of testing HCV Ab test. HCV Ab test is to demonstrate clearance of passive maternal antibody.
- Inform New South Wales Public Health Unit – this is the responsibility of the coordinator.

**3.2 Documentation**

- eRIC
- PowerChart/electronic medical record
- Personal Health Record (Baby’s blue book)
- Blood and Blood Products Administration (SEI130060)
- Authority to Issue Blood Products (S1289)
- Neonatal Hepatitis B vaccination Record (SMR060481)

**3.3 Education Notes**

- In industrialized nations, HCV has become the primary cause of chronic viral hepatitis in children<sup>1</sup> with mother-to-child transmission (MTCT) in-utero, intrapartum or first 28 days of life becoming the leading source of infection.<sup>1-3</sup>
- The MTCT rate is approximately 5% (2-8%) among HCV only infected women and approximately 10 percent among HCV/HIV-coinfected women.<sup>3,9</sup> Among those infected, 75% will develop chronic hepatitis C and late complications.<sup>10</sup>
- The mechanisms underlying vertical transmission of HCV are poorly understood. Intrauterine transmission during pregnancy and infection at the time of delivery are both possible, although it appears that the majority of HCV-infected infants are infected perinatally (either late intrauterine or intrapartum).<sup>3</sup>
- HCV RNA PCR (Polymerase chain reaction) may not be positive for several weeks following infection, and in most perinatally acquired infections, HCV RNA only become detectable several weeks after birth. It is therefore suggested to perform HCV RNA PCR at 3 months of age (local consensus). However, detection of HCV RNA within a few days of delivery has also been described, suggesting that in utero infection earlier in pregnancy can also occur.<sup>3</sup>
- HIV coinfection, high HCV viral load, a history of intravenous drug use, and HCV infection of peripheral blood mononuclear cells are associated with increased risk of transmission. The higher the maternal viral load, greater the chance of perinatal transmission. The perinatal transmission rate among mothers with a viral level  $\geq 1 \times 10^6$  copies/mL is about 10%, compared with 2% among mothers with a viral level  $< 1 \times 10^6$  copies/mL.<sup>3,4</sup>
- Prolonged rupture of membranes, and the performance of obstetric procedures such as fetal scalp monitoring may also be associated with vertical transmission, but evidence is not robust.<sup>3</sup>
- Mode of delivery: HCV infection does not impact delivery route, and caesarean delivery is not warranted for HCV infection in the absence of other indication.<sup>3,5</sup>

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- Breastfeeding: The available evidence suggests that breastfeeding does not appreciably increase the risk of HCV transmission to the infant.<sup>3</sup> Clinicians may advise abstaining from breastfeeding when nipples are cracked or bleeding.<sup>3</sup>
- Risk in infant: HCV infection during pregnancy has been associated with a higher risk of neonatal intensive care unit admission, higher risk of birth weight below the 10<sup>th</sup> percentile, even with adjusting for other factors (e.g., injection drug use, comorbidities).<sup>3,6,7</sup>
- Most of perinatally acquired HCV positive infants are clinically asymptomatic, but often associated with mildly elevated alanine aminotransferase (ALT) levels in the first 6-24 months of age.<sup>3</sup> ALT levels may increase at 4-6 months of age, may remain elevated for 2 years with subsequent decline in most infants.<sup>3</sup> Approximately 20% of perinatally acquired HCV positive infants clear the infection at a median age of 15 months, whereas 80% develop chronic infection. Most children with chronic infection are asymptomatic.<sup>3,6</sup>
- Diagnostic and clinical algorithms recommended in this CBR are in line with the recommendations of the Australasian society for infectious Diseases.<sup>8</sup>

**3.5 Abbreviations**

HCV	Hepatitis C Virus
HCV Ab	Hepatitis C virus antibody
HCV RNA	Hepatitis C virus RNA
HIV	Human Immunodeficiency Virus
ALT	Alanine aminotransferase

**3.6 CBR Implementation Plan**

The revised CBR will be distributed to all medical, nursing and midwifery staff via @health email. The CBR will be discussed at ward meetings, education and patient quality and safety meetings. Education will occur through in-services, open forum, and local ward implementation strategies to address changes to practice. The staff are asked to respond to an email or sign an audit sheet in their clinical area to acknowledge they have read and understood the revised CBR. The CBR will be uploaded to the CBR tab on the intranet and staff are informed how to access.

**3.7 Related Policies/procedures**

**3.8 References**

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**4 ABORIGINAL HEALTH IMPACT STATEMENT DOCUMENTATION**

- Considerations for culturally safe and appropriate care provision have been made in the development of this Business Rule and will be accounted for in its implementation.
- When clinical risks are identified for an Aboriginal and/or Torres Strait Islander woman or family, they may require additional supports. This may include Aboriginal health professionals such as Aboriginal liaison officers, health workers or other culturally specific services.

**5 CULTURAL SUPPORT**

- For a Culturally and Linguistically Diverse CALD woman, notify the nominated cross-cultural health worker during Monday to Friday business hours
- If the woman is from a non-English speaking background, call the interpreter service: NSW Ministry of Health Policy Directive PD2017 044-Interpreters Standard Procedures for Working with Health Care Interpreters.

**6 NATIONAL STANDARDS**

- Standard 1 Clinical Governance
- Standard 2 Partnering with Consumers
- Standard 4 Medication Safety
- Standard 5 Comprehensive Care
- Standard 6 Communicating for Safety
- Standard 8 Recognising and Responding to Acute Deterioration

**7 REVISION AND APPROVAL HISTORY**

Date	Revision No.	Author and Approval
1.12.2012	1	Endorsed Maternity Services Division LOPs Group
23.3.21	2	Reviewed and endorsed Maternity Services LOPs
30.9.25	3	S Bolisetty (Medical Co-Director, Neonatal Services)
12.01.26	3	RHW BRGC

Appendix 1. Hepatitis C positive mother –Infant management – Clinical Algorithm. Rationale of follow-up algorithm is to ensure infant has not acquired HCV (as evidenced by HCV RNA PCR) and maternal HCV Abs passively cleared.

