MATERNITY AND NEONATAL UNIT GUIDELINE:

HEPATITIS B – REDUCING THE RISK OF MOTHER-BABY TRANSMISSION

SCOPE:
This guideline applies to all obstetricians, midwives, nurses and paediatricians working in the maternity and neonatal unit.

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PURPOSE:
- To provide pregnant women with a positive HBsAG screening result with the appropriate investigations, care and information to reduce transmission to her baby
- To identify babies at risk of Hepatitis B transmission at birth
- To prevent transmission of Hepatitis B

DEFINITIONS:
Hepatitis B virus (HBV) is transmitted through contact with infected blood or body fluids during childbirth, through broken skin, sexual intercourse or IV drug use.

Hepatitis B virus (HBV) infection is a global public health problem. It is estimated that there are more than 400 million HBV carriers in the world with almost half of the world’s population exposed to the virus at some stage. More than 99% are infected either from their infected mother at birth or in childhood. More than 90% of those with chronic HBV reside in the Asia-Pacific region.

Mother-baby transmission risk is as high as 95% in Hepatitis B surface Antigen (HBsAg) positive mothers but this is reduced to <5% with appropriate neonatal intervention. Mother-baby transmission may occur in utero, at the time of birth, or after birth.

The MOH referral guidelines recommend that women with acute or chronically active Hep B require a consultation with an obstetrician, however, if the Hep B status is active chronic on immunosuppressants then a transfer of care is recommended.

HBIG = Hepatitis B specific immunoglobulin
GUIDELINE

Antenatal
All women should be screened for HBsAg in early pregnancy wherever possible. See Appendix One, management of hepatitis B and pregnancy.

If HBsAG negative – no further action is needed. If HBsAG negative and antibody positive, once again no further action is required as the woman is immune. If antigen and antibody negative no action is required but advise woman to consider HBV vaccination postnatally as she is not immune. However, discussion of the importance of the routine immunisation schedule for the baby should take place.

If HBsAG positive the Lead Maternity Carer (LMC) should:
1. Find out the relevance of the result – is this acute Hepatitis B? Is it post-acute? Is it carrier status? If HBsAG positive the woman will require LFTs and HBeAg status (Hepatitis envelope Antigen). If in doubt contact the Medical Officer of Health or the woman’s GP for advice.
2. Advise the woman and discuss the result with the woman (and her partner) at the next antenatal visit and explain that a consultation with an obstetrician is recommended.
3. Record the results in the woman’s antenatal records and maternity clinical information system pregnancy care records.
4. Check the immunisation status of family members and/or sexual partners and advise them to contact their GP to be tested or, if necessary, be immunised.
5. Provide the woman with the current MoH information (Fact Sheet HE1402). Discuss this information and the consent process (HE 1446) with her and her whanau.
6. Inform the woman that you are required to notify the Medical Officer of Health of the positive result and also that they will be notified following the birth (Hepatitis B is a notifiable disease)
7. Notify the woman’s GP

If the woman is un-booked and her HBsAg status is unknown at the time of delivery
- Routine first antenatal bloods should be sent (this includes testing for HBsAg).
- Contact must be made with the laboratory to check when the HBsAg status will be ready.
- If it will be ready within 12 hours of the infant’s birth, wait for the results.
- If it will not be available within 12 hours, then the infant should be given Hepatitis B vaccine (with informed and signed maternal consent) while waiting for the result of an urgent HBsAg test on the mother.
If the woman is subsequently found to be HBsAg positive, the HBIG should be given as soon as possible and subsequent vaccination as per immunisation schedule.

If the mother is found to be HBsAG negative then vaccination is continued as per schedule.

Intrapartum and postnatal

- Follow Haoura Tairawhiti standard precautions and isolations precautions policy as for all women using recommended universal precautions. If the woman is known to have a high viral load and there is adequate room in the unit to provide the woman with a single room with private toilet facilities then please do so but universal precautions are all that are required.

- Do not artificially rupture membranes or apply fetal scalp electrode as this will increase the risk of transmission to the baby.

- Further discussion about vaccination and obtain written consent using the MoH Hepatitis B consent form HE1446.

- With the importance of Immunisation education and the serology testing now completed at 9 months of age it would be helpful if you could enter the baby’s Well Child Provider on the HE1446 form so to provide continuity of care out in the community.

- Ensure that the Hepatitis B vaccine and HBIG are prescribed on a medication chart with the baby’s NHI number and details.

- The baby should be bathed prior to the vaccination, and the person bathing the baby is advised to wear gloves due to potential contamination with the mother’s bodily fluids on the baby (universal precautions).

- Vaccination and administration of HBIG should be within 12 hours of birth.

- It is the responsibility of the LMC to prescribe and ensure the baby is given the Hepatitis B vaccine (5mcg) and HBIG (100IU) as soon as possible after birth.

- If the administration is inadvertently delayed it should be commenced as soon as the delay has been identified as such delays are associated with an increased risk of infection. HBIG can still be administered to the infant up to 10 days after birth.

Procedure

- The vaccine is kept in the maternity vaccine fridge and is available 24 hours a day.

- The immunoglobulin is dispensed by the laboratory. This must be charted and the medication chart which is faxed to the lab. This is classed as an anytime callout and must be obtained and given as soon as possible after birth. Laboratory staff must be called in if they are not on site. The medication chart must be taken to the laboratory when collecting the HBIG.
The HBIG should be allowed to reach room temperature before administration. This is not necessary for the vaccine.

The injections should be given IM in different lateral thighs. If to be given into the same thigh, separate the injection sites by at least 2cm.

The injection site should be swabbed with alcohol/chlorhexidine pad and allowed to dry.

Vitamin K may be given to the baby at the same time, in the same limb as the HBIG, but not at the same site.

Preterm babies of HBsAg positive mothers need early protection and the vaccine and HBIG must be given within 12 hours of birth, with subsequent vaccine doses at the recommended chronological age.

In the absence of the LMC, core midwives who feel competent to do so, or nurses who have attended a vaccinator training course, may administer the prescribed vaccine and HBIG.

**Administration of the HB vaccine and HBIG must be recorded and signed:**

- On the medication chart
- On a blood product sheet
- On the consent/notification form HE1446. This notification form must be completed by the LMC and sent to the Medical Officer of Health, a copy to the nominated GP, and fax/post a copy to the DHB NIR administrator (procedure and addresses on form HE1446).
- In the Well Child book on page 21 – Immunisation record
- The Hepatitis B status of the mother and the vaccination of the baby MUST be communicated clearly at any handover, transfer of care or referral to other health professional
- The National Immunisation Register (NIR) component of the baby discharge screen will be completed by the core midwife/nurse following discharge and must include all batch numbers.

Remind the mother of the immunisation schedule and the importance of follow up:

- **Birth**  HB Vax II (5mcg/0.5ml) + HBIG (100IU)
- **6 weeks**  Usual schedule: DTaP-IPV - Hepatitis B/ Hib and PCV13 and RotaTeq
- **3 months**  Usual schedule: DTaP-IPV - Hepatitis B/ Hib and PCV13 and RotaTeq
- **5 months**  Usual schedule: DTaP-IPV – Hepatitis B/Hib and PCV13 and RotaTeq
- A blood test to check for antibody levels at 9 months of age– see Immunisation Handbook 2014 pg.218

This regimen has a protection efficacy of 95%. However, the blood test will identify the 2-3% of children who fail to respond to prophylaxis.
Breast-feeding does not appear to increase the risk of transmission. Although HBV DNA has been detected in the colostrum of HBsAg positive mothers, a study on 147 infants born to carrier mothers revealed no evidence of a relationship between breast-feeding and the subsequent development of chronic HBV infection in the babies.

The high protective efficacy of neonatal vaccination suggests that infection occurs predominantly at or after birth. There is no evidence that caesarean section prevents mother-baby transmission.

ASSOCIATED DOCUMENTS
TDH Organisational Policy – Isolation-Preventing Transmission of Infectious Organisms in a Healthcare setting
TDH Organisational Policy – Management of Needlestick/Body Fluid Occupational Exposure (sharps/splashes)
TDH guideline – The management of pregnant and labouring women with HIV infection, and the care of the neonate

REFERENCES
Hepatitis B: Information for Health Professionals (2011) HE1401
The Hepatitis Foundation of New Zealand – www.hepatitisfoundation.org.nz

Appendix 1: Information available to Health Professionals, women and their whanau
Appendix 2: Management of hepatitis B and pregnancy
Appendix 3: Hepatitis B serological markers – common patterns. Guidelines for Lead Maternity Carers

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Appendix 1

Information available to Health Professionals, women and their whanau:

- Ministry of Health, November 2007, Code 1401, Hepatitis B Information for Health Professionals
- Ministry of Health, April 2007, Code 1403 Hepatitis B Personal Record
- Ministry of Health, June 2011, Code 1446, Hepatitis B consent for hepatitis B vaccine and hepatitis B immunoglobulin and notification to the Medical Officer of Health
- Ministry of Health, June 2011, Code 1402, Hepatitis B information for pregnant women
- Ministry of Health, April 2008, Code 4182, Hepatitis (is there protection against hepatitis? How is hepatitis spread? What are the symptoms of hepatitis? What help is there for people with hepatitis?)
- Ministry of Health, December 2002, Code 9061, Hepatitis B mate Ate Kaka
- Ministry of Health, June 2011, code 1323, Childhood immunisation more information for parents

All of the leaflets/information may be obtained via Te Puna Wairoa – Resource Co-ordinator. Phone 06 869 0500 ext 8106 or direct dial 06 869 0570. Phone 06 869-1311 extn 8714 or Te Puna Waiora 06 869-2095
Appendix Two

Management of hepatitis B and pregnancy

Antenatal screening confirms HBsAg positive status

- Request liver function tests with ALT and HBeAg status

  - ALT elevated
    - Check HBV DNA
      - > 4 log_{10} IU/mL
        - Active chronic hepatitis B (high risk of progression to cirrhosis)
          - Start Tenofovir 300mg/day immediately. Continue postpartum.
          - Switch to Entecavir when finished breastfeeding
          - Follow-up in Liver Unit / Gastro / ID
  
  - ALT normal AND HBeAg positive
    - Check HBV DNA
      - > 7 log_{10} IU/mL
        - Immunotolerant (high risk of transmission)
          - Start Tenofovir 300mg/day after 28 weeks. Continue postpartum.
          - Stop 8 weeks postpartum
        - Monitor ALT level weekly for 4 weeks, then monthly for 3 months
  
  - ALT normal AND HBeAg negative
    - Regular liver function monitoring

ALT normal - follow-up by GP / Hepatitis Foundation

ALT elevated - refer to Liver Unit / Gastro / ID for Entecavir

The Hepatitis Foundation of New Zealand
www.hepatitisfoundation.org.nz 0800 33 20 10
## Appendix 2  Guidelines for Lead Maternity Carers

### HEPATITIS B SEROLOGICAL MARKERS – COMMON PATTERNS*

<table>
<thead>
<tr>
<th>Maternal Status (Interpretation)</th>
<th>Hepatitis B surface Antigen (HBsAg)</th>
<th>Hepatitis B core Antibody (anti HBC or HBcAb)</th>
<th>Hepatitis B surface Antibody (anti HBs or HBsAb)</th>
<th>Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute/Chronic Infection (Infectious)</td>
<td>positive</td>
<td>positive</td>
<td>negative</td>
<td>Baby requires HBIG(^{(1)}) and Hepatitis B Vaccine(^{(2)}) at birth. If previously unknown to be positive refer household contacts to GP and ensure mother is followed up by GP</td>
</tr>
<tr>
<td>Resolved Infection (Immune)</td>
<td>negative</td>
<td>positive</td>
<td>positive</td>
<td>Routine vaccination of baby as per schedule starting at six weeks of age</td>
</tr>
<tr>
<td>No Previous Exposure or Immunisation (Not Immune)</td>
<td>negative</td>
<td>negative</td>
<td>negative</td>
<td>Routine vaccination of baby as per schedule starting at six weeks of age</td>
</tr>
<tr>
<td>Post Vaccination (Immune)</td>
<td>negative</td>
<td>negative</td>
<td>positive</td>
<td>Routine vaccination of baby as per schedule starting at six weeks of age</td>
</tr>
<tr>
<td>Possible Acute Infection</td>
<td>negative</td>
<td>positive</td>
<td>negative</td>
<td>Advice on further testing should be sought from Medlab Pathologist, a Doctor with Hepatitis B expertise or the Medical Officer of Health</td>
</tr>
</tbody>
</table>

- In Acute and Chronic infection Hepatitis B e Antigen or Hepatitis B e Antibody may also be present. The results of these do not change the management of babies born to Hepatitis B surface Antigen positive mothers.
- If the antenatal screen is the first time a woman is noted to be Hepatitis B positive (i.e. not diagnosed prior to pregnancy), follow up serology should be done on the mother six months post partum for confirmation.

\*Other combinations of markers may occur rarely

\(^{(1)}\) HBIG = Hepatitis B Immunoglobulin 100 I.U.

\(^{(2)}\) Hepatitis B vaccine = 5mcg thiomersal free