

## **MATERNITY UNIT**

### **GUIDELINE: Anti D Administration – Antenatal and Postnatal**

**SCOPE:** All midwives and Registered Nurses working in the maternity unit

**AUTHOR:** Director of Midwifery & Clinical Midwife Manager

**PURPOSE:** To provide timely Rh D immunoglobulin prophylaxis to Rhesus Negative women where appropriate.

#### **DEFINITIONS:**

Rhesus (Rh) factor – an antigen which may be present or absent on the red cells causing the blood group to be termed rhesus negative or rhesus positive.

Rhesus incompatibility – the mismatch between two groups of blood cells – mother and fetus or donor to recipient’s blood. The Rh factor is present in the blood of one but not the other so agglutination (sticking together of the cells) can occur if fetal blood escapes into the maternal circulation.

Anti-D gamma globulin – Anti Rh antibody offered to rhesus negative women where there has been the probability of entry of fetal rhesus positive blood into the maternal circulation to prevent her forming her own antibodies. Fetal cells are coated with the globulin so that the mother’s body does not recognise them as a foreign protein.

Maternity Clinical Information System - MCIS

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#### **1. Indications for Anti D administration:**

If the mother is Rh (D) negative and no Anti-D antibodies are detected in her serum and she has sustained a sensitizing incident that has the potential to damage the placenta, a prophylactic dose of Anti-D is appropriate.

**Note:** There is no benefit in administration of Rh (D) immunoglobulin to a woman who is already sensitised to the Rh factor.

Sensitising events include, but are not limited to:

- Amniocentesis
- Ante partum haemorrhage

- External version
- Abdominal trauma
- Chorionic villous sampling (CVS)
- Ectopic pregnancy
- Termination of pregnancy
- Surgical management of fetal demise
- Birth of a Rhesus positive baby
- [Miscarriage in progress](#)
- Threatened miscarriage where bleeding is heavy/recurrent/painful or > 12 weeks

## 2. Administration of Anti-D:

Anti-D prophylaxis should be given within 72 hours of an event, but if this is not done a dose given within 10 days may provide some protection.

### **Antenatally < 20/40**

If the gestational age is less than 12 weeks then a dose of **250iu** should be administered.

- In twin or multiple pregnancies under 12 weeks gestation a standard dose of **625iu** should be administered.

### **Procedure**

- All documentation completed and procedure explained to woman
- Verbal consent obtained and consent for use of blood products form is signed
- Anti-D is requested from the laboratory by completing and faxing the woman's medication chart
- Baseline observations are performed and recorded in the woman's MCIs records - blood pressure, temperature, pulse, respirations
- Checking identification – Verbal verification by the woman with correct spelling of full name and date of birth
- Complete the Blood product checklist prior to Anti-D administration (all protocols and processes adhered to)
- The recommended procedure is to give Anti-D in the right or left deltoid (upper arm) by IM injection.
- Record that Anti D has been administered in the woman's MCIS records

- Woman is advised to remain for 20 minutes post administration (most anaphylactic reactions will occur within the time frame)
- Check administration site and how woman is feeling prior to discharge
- Any change in the patient's condition - should be noted and a doctor asked to assess the woman before discharge
- It is generally accepted that 100iu of Rh (D) immunoglobulin will protect against immunisation by up to 1ml of D positive red cells.
- **All pregnant women** whose Rhesus status is negative, and are **over 12 weeks** gestation and have had an event which may require prophylactic Anti-D immunoglobulin, should have a routine **Kleihauer** test performed to assess the amount of fetomaternal haemorrhage. This test then allows the clinician to prescribe the correct dose for the event.

#### **Antenatally > 20 weeks:**

Antenatally repeat doses are required when the woman has a further risk event (as listed in point 2).

In such cases the following is recommended.

- After 20 weeks gestation a Kleihauer test should be carried out and the appropriate Anti-D dose given.
- Anti-D should be given if a previous dose was given more than 2 weeks previously.

Some Rh (D) negative women decline to accept Anti-D where a test on the father of the fetus/infant has shown an Rh (D) negative result. Where this situation arises a clinician should take responsible steps to ensure that:

- The possibility for the father of the fetus/infant to have weak expression of Rh (D) has been excluded. Routine laboratory testing of specimens from patients will not normally exclude the presence of weak D. This should be specifically requested.
- The test for Rh (D) type should normally be performed on two separate samples before it is regarded as confirmed.
- Confidential steps need to be taken to ensure the correct identity of the baby's father.

#### **Routine Antenatal Anti D Prophylaxis (RAADP)**

Sensitisation can happen at any time during pregnancy - however most common in the third trimester and during childbirth. RAADP can be given as two doses of anti-D immunoglobulin of 625 IU (one at 28 weeks and one at 34 weeks gestation). A routine antibody screen is taken prior to administering the RAADP at 28 weeks but is not

required prior to the administration of RAADP at 34 weeks (routine 26-28 weeks full blood count can be collected at the same time but is not required for anti-D administration).

There may be situations where only a single dose of RAADP can be given. In these situations, (2) vials of Anti-D625IU are given at 30 weeks after a red cell antibody screen blood sample has been taken. [RAADP reduces the chance of the woman developing her own Anti-D. See the RAADP flowchart Appendix 1.](#)

**Postpartum:**

Cord and maternal bloods are taken if the mother is Rh (D) negative; the blood group must be checked against a laboratory result and NOT taken from the obstetric history front sheet. However, cord and maternal bloods should also be taken if there is no record of antenatal bloods available.

**Cord blood**

Using a vacutainer (preferably not a syringe as putting a syringe into a vacutainer blood bottle can alter the results) blood should be drawn as soon as convenient from the umbilical cord; i.e. prior to the delivery of the placenta, as soon as possible after the placenta has birthed, or if in theatre this should be done by the running nurse (inform them of the mother's blood group) or the midwife. One purple topped tube is sufficient for this, and the tube should be gently inverted 6-8 times.

The blood tube MUST NOT be labelled with the mother's details – it should have baby's details written legibly by hand on the blood bottle label or handwritten on a blank label, and identified as 'cord blood'. The NHI of the baby must be written. The following information should be given (extension 8215 or 0 at night) to register the baby and obtain an NHI for the blood request form and sample:

- Surname
- Mothers NHI
- Date of birth
- Time of birth
- LMC
- Babies GP
- Sex
- Weight
- Ethnicity
- Number of labels required.

If left too late to collect the cord blood from the placenta (i.e. 1 hour following birth and clotting has occurred) false low haemoglobin & low platelet results may occur necessitating a further blood test to the baby.

Staff will need to request on the laboratory electronic e-lab ordering system, or document on the laboratory form, that the test required is for a coombs test, the mother's blood group is to be documented on the laboratory form.

If cord blood is **not** and/or could not be obtained, a heel prick blood collection will be required.

#### Maternal blood

The sample can be taken from 10 minutes after the birth but ideally before two hours has elapsed and handover to core staff from the Lead Maternity Carer (LMC).

- One purple topped tube of blood is required which should be gently inverted 6-8 times following collection
- The specimen bottle must be HAND written as it may need to be checked for blood group, and identified as 'maternal blood'.

The baby and maternal blood needs to be requested on separate electronic laboratory e-ordering or laboratory forms. Each specimen bottle should be hand written and placed in a bag with the correct form. One bag may be placed inside the other bag so that they are kept together.

Bloods can be left in the fridge overnight in the laboratory for testing the next day, by calling an orderly to take to the laboratory. They must not be kept in the maternity unit fridge.

Results will be available the following working day or within 72 hours at weekends and bank holidays and must be acknowledged. The laboratory will inform the delivery unit, via the electronic reporting system, of the recommended number of vials of anti-D, if any, to be administered. If there has been <20mls of fetal/maternal blood mixing then only one vial is required, but if there has been >20mls estimated bleed then more may be required as one vial only covers 6mls of bleed.

### **3. Procedure for Obtaining Rh (D) Immunoglobulin from T-Lab laboratory:**

Once the need for Anti-D immunoglobulin has been identified and consent obtained (Appendix 2):

- A written prescription is made for Anti-D in either the woman's clinical notes, on a medication chart or on a drug prescription pad by a doctor or midwife.
- Once Anti-D is prescribed, a doctor, midwife or registered nurse needs to complete and sign a *Request for Blood Components or Products* form.

Complete as follows:

Ensure the identification sticky label is correct with the correct name and NHI

The product is Anti-D immunoglobulin

The units or amount required

Time and date when required

Complete indications box with Rh negative mother, Rh positive baby or event

- Anti-D can be obtained by calling an orderly to take the request form to blood bank and collect the immunoglobulin during blood bank working hours; outside of blood bank working hours the anti-D has to be collected by a registered practitioner (registered midwife or registered nurse).
- A doctor, midwife or registered nurse can administer Anti-D.

**Please note: Immunoglobulin must always be picked up from blood bank and administered immediately. If there is to be any delay please place and store in the vaccination fridge in maternity e.g. RAADP prior to the woman arriving for her appointment.**

Before Anti-D can be administered, the woman must receive a full explanation and written information pamphlets about Anti-D thus ensuring she is giving informed consent.

For women who are not an in-patient and require Anti-D then the LMC is responsible for collecting and administering the Anti-D.

#### **4. Procedure for checking Rh (D) Immunoglobulin:**

Check from the hospital laboratory reporting system the mother's rhesus status and maternal Kleihauer result. If postpartum, check and confirm the baby's blood group and rhesus status, record these in the baby's clinical notes. If the results are not available electronically, then phone the blood bank for a verbal verification of results and document in the woman's MCIS record.

When the Anti-D immunoglobulin arrives on the ward area, the check is the same as for any blood product (see Medicine Management Policy). Remember to check the consent form is completed.

With an approved checker the following must be confirmed:

- a) The maternal Rh negative status and Kleihauer, if postpartum, then check baby's Rh status is positive.
- b) The prescription: - Anti-D dose should be legibly charted and signed by the appropriate practitioner. Anti-D is checked, and then signed for by 2 practitioners at the bedside after the woman's ID label is checked against the prescription chart and the Anti-D sticky label.

- c) The Anti-D has a batch number and expiry date to be checked and recorded in the woman's MCIS records. It also has a large sticky label with the woman's NHI printed along with other relevant information. This is placed on the blood product administration checklist and filed in the woman's manilla folder.

#### 5. Contraindications:

- Rh (D) Immunoglobulin should not be given to:-
  - An Rh (D) positive or D<sup>u</sup> (weak) positive individual
  - An Rh (D) negative and D<sup>u</sup> negative individual previously sensitised to the Rh (D) antigen. Discuss with Blood Bank
- Individuals with isolated immunoglobulin A (IgA) deficiency, unless they have been tested and shown not to have circulating anti-IgA antibodies. (Very rare incidence.)
- Individuals who have severe thrombocytopenia or any coagulation disorder that would contraindicate intramuscular injections, in this case WinRho product can be injected IV. Discuss with Blood Bank

#### 6. Precautions:

If the product appears to be turbid by transmitted light or contains any sediment it must not be used. **The vial must be used immediately after opening, as it does not contain any antimicrobial agent.** Any unused solution must be discarded appropriately.

It should be given with caution to patients with a history of prior systemic allergic reactions following the administration of human immunoglobulin preparations. In this case, treatment should follow the anaphylactic shock therapy guidelines as per Medicine Management Policy.

#### **Circumstances where a woman decides not to accept Anti-D prophylaxis – Accurate information and Issues for informed consent**

*The following comments are offered as a guide to appropriate procedures and relevant information that should be available where a woman declines to accept anti-D.*

#### **Father is believed to be Rh(D) negative:**

Some Rh(D) negative women decline to accept Anti-D where a test on the father of the fetus/infant has shown an Rh(D) negative result. Where this situation arises a clinician should take reasonable steps to ensure that:

1. The possibility for the father of the fetus/infant to have weak expression of Rh(D) has been excluded. Routine laboratory testing of specimens from patients will not normally exclude the presence of weak D.

2. The test for Rh(D) type should normally be performed on two separate samples before it is regarded as confirmed.
3. Confidential steps are taken to check that the man named as father is the father.

**The woman indicates that she will not have any more children:**

Some Rh(D) negative women who do not wish to have any more children make a decision not to receive Anti-D. Where this situation arises it is recommended that the woman should understand that:

1. Unplanned pregnancies occur occasionally and could be affected if she forms anti-D. The chance for making anti-D after each Rh(D) positive normal pregnancy is about 8%.
2. If the woman is immunised and makes anti-D following the pregnancy and later travels to, or lives in, parts of Asia or Africa, there will be considerable difficulty in providing a blood transfusion for her in most countries of these continents. Rh(D) negative blood is much rarer in these geographic areas than in those with a high proportion of Europeans in the population.

**Concern is expressed over the safety of Anti-D**

Information on the safety of Anti-D products should be provided. The following is a short summary of key issues.

1. There is no evidence that the Anti-D injection used in NZ has ever spread any important infections, including HIV/AIDS or hepatitis.
2. As the Anti-D injection is a blood product it could possibly pass on some infections.
3. Blood donors in NZ and North America are always checked for health and lifestyle whenever they give blood. A blood donation is only collected if a donor is in good health and does not have any condition detectable by the standard donor screening process that could be passed on by Anti-D.
4. Blood donations are always tested for the infections: HIV/AIDS, hepatitis B and hepatitis C. Blood donations are only used if there is no evidence of these infections.
5. The manufacturing process for making the Anti-D injection is able to destroy these and many other viruses.
6. There is no evidence that either classical or the variant form of CJD (Creutzfeldt Jakob Disease) has ever been transmitted by blood products.

**REFERENCES**

Medsafe, *Rh(D) Immunoglobulin New Zealand Data Sheet. 29.11.2018*. Retrieved 30.11.2020 from

<https://www.medsafe.govt.nz/Profs/Datasheet/r/RhDimmunoglobulinVFinj.pdf>

New Zealand Blood Service. Transfusion Medicine Handbook Third Edition, 2016.

New Zealand Blood Service. [USE OF RH D IMMUNOGLOBULIN \(Anti-D Immunoglobulin\) DURING PREGNANCY AND THE POSTPARTUM PERIOD.](#) NATIONAL ID 111G13005

New Zealand Blood Service. [Guidelines for Routine RhD Immunoglobulin Prophylaxis.](#) NATIONAL ID 111I211

**Appendix 1** – RAADP for women in Gisborne pathway

**Appendix 2** - Consent for use of blood products. NZBS National108F008a01

#### **ASSOCIATED DOCUMENTS**

- New Zealand Blood Service Request form for blood components or products
- Request for blood or blood components form
- Blood Products Checklist
- Consent form for administration of blood products
- T-Laboratory manual

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**Authorised by (HOD Obstetrics)**

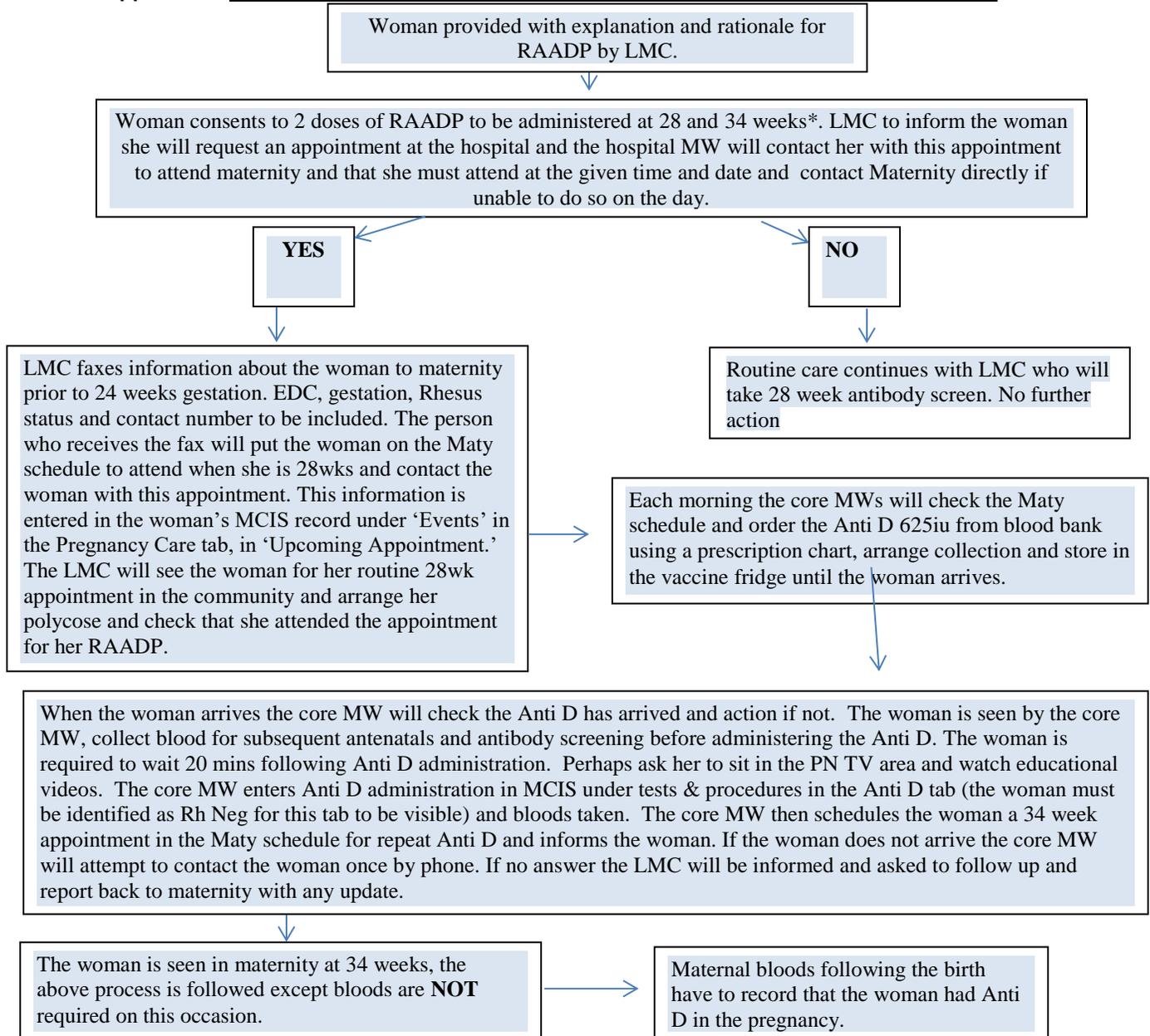
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**Authorised by (Director of Midwifery/Clinical Midwife Manager)**

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**Next Review Date: June 2024**

**Appendix 1 Routine Antenatal Anti D Prophylaxis (RAADP) for women in Gisborne**



Please note that if the woman experiences a sensitising event at any point during the pregnancy, a kleihauer screening test is required immediately. A further dose of Anti D may be required, even if within the week following RAADP, as the 625iu may be insufficient to protect the mother from making anti-D red cell antibodies (sensitisation) as there may be more than 6mls of a fetomaternal haemorrhage.

\*In some situations a single dose of RAADP can be given. In these situations, (2) vials of Anti-D625IU are given at 30 weeks after a red cell antibody screen blood sample has been taken.

**Appendix 2**

NATIONAL  
108F008a01  
CONSENT FOR USE OF BLOOD PRODUCTS

I \_\_\_\_\_ (Medical Officer/Midwife giving information to patient) have given and explained information in relation to the administration of blood components/blood products to \_\_\_\_\_ (Person receiving the information).

This information included:

- The purpose of giving blood and blood products to this patient;
- The type of blood or blood or blood products to be used;
- The risks associated with their use;
- Available alternatives to the use of blood and blood products

I have also offered the consumer the opportunity to ask questions and where questions have been asked I have answered them appropriately and to the best of my ability.

Signature (Medical Officer) Designation Date

PATIENT CONSENT

If there is anything that you don't understand about the explanation or if you want more information, please ask before signing this form.

I \_\_\_\_\_ (name of person giving consent) have received and understood the information sheets provided in relation to the administration of blood components/blood products as part of the management of the condition. I have been given the opportunity to ask questions and my questions have been satisfactorily answered.

I consent to the administration of \_\_\_\_\_ (type of blood/blood product to be used). I also consent to any further alternative measures or treatments as may be found necessary during the use of these products.

I give this consent for myself/for \_\_\_\_\_ who is my \_\_\_\_\_

\_\_\_\_\_  
Signature (Person giving consent) .....Date.....

NOTE: This consent is for the total number of administration of blood products required for the ongoing management of a particular disease or disorder.

This consent is valid for six months.