Reference Number: UHBOBS010 **Version Number: 6**	**Date of Next Review: 15/01/2021** **Previous Trust/LHB Reference Number:**

Anti D Prophylaxis for Women who are Rhesus D (RhD) Negative

Introduction and Aim

Human red blood cells carry many antigens on their surfaces. The most important of these antigens belong to the ABO system and the rhesus (Rh) system. The D antigen is the most important antigen of the rhesus system.

People with the rhesus D (RhD) antigen are referred to as RhD positive, and those without it as RhD negative. During pregnancy small amounts of Fetal blood can enter the maternal circulation (an event called feto–maternal Haemorrhage (FMH)). The presence of Fetal RhD-positive cells in her circulation can cause a mother who is RhD negative to mount an immune response, producing a template for the production of antibodies as well as small amounts of antibodies against the RhD antigen (anti-D antibodies). This process is called sensitisation or alloimmunisation (NICE 2008).

Objectives

To ensure all staff working with pregnant women the Health Board give appropriate care and advice to women who are RhD Negative.

Scope

All staff working in maternity services, or areas where pregnant women may be assessed, e.g. Emergency Department

Equality Health Impact Assessment	*An Equality Health Impact Assessment (EHIA) has not been completed.*
Documents to read alongside this Procedure	*Antenatal Care, Postnatal Care*
Approved by	*Maternity Professional Forum, O&G Quality and Safety Forum*

Accountable Executive or Clinical Board Director	*Ruth Walker, Executive Nurse Director*
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Summary of reviews/amendments

Version Number	Date of Review Approved	Date Published	Summary of Amendments
1	July 2006		
2	June 2009	July 2012	L Stephenson
3	Jan 2011	Jan 2011	S Jose
4	Dec 2013	Feb 2014	S Macrury, S Jose, P Amin
5	June 2017	15/01/2018	Rhiannon Lewis, Annie Burrin
6	September 2019	September 2019	Amended by Rachel Crooks, Midwife Louise Protheroe-Davies, Clinical Supervisor for Midwives Annie Burrin, Clinical Supervisor for Midwives

Antenatal screening for blood group and antibodies should be offered to all pregnant women before 13 weeks gestation of pregnancy, irrespective of previous screening results as an integrated part of their antenatal care.

All women who are RhD-negative should receive verbal and written information about antenatal and postnatal anti-D prophylaxis and have the opportunity to discuss this treatment with a midwife in the antenatal period. (ASW 2010).

The risk of sensitisation can be reduced by administering anti-D Immunoglobulin to women in situations in which FMH is likely. Routine antenatal anti-D prophylaxis (RAADP) is recommended as a treatment option for all pregnant women who are rhesus D (RhD) negative and who are not known to be sensitised to the RhD antigen (NICE 2008). In the postnatal period Anti-D immunoglobulin should be offered to every non-sensitised RhD negative woman within 72 hours following the delivery of an RhD positive baby (NICE 2006). Anti-D can be administered up to 10 days post-delivery.

Intramuscular anti D Ig should be given into the deltoid muscle as injections into the gluteal region often only reach the subcutaneous tissues and absorption may be delayed (RCOG 2002).

Prophylaxis following sensitising events in the antenatal period

Anti D should be offered to all non-sensitised RhD negative women after the following potentially sensitising events during pregnancy:

- Invasive prenatal procedures (amniocentesis, chorion villus sampling, Fetal blood sampling, insertion of shunts, embryo reduction).
- Antepartum haemorrhage
- Abdominal trauma
- Miscarriage or medical termination of pregnancy greater than 12 weeks gestation
- External cephalic version of the fetus.
- Intrauterine death.
- Cell salvage used during operative procedure

Management of sensitising events

Following a potential sensitising event, anti-D prophylaxis should be offered as follows:

- 250 IU if less than 20 weeks gestation and
- 500 IU if greater than 20 weeks gestation

If Anti D is accepted it should be administered and given as soon as possible after the event occurs and certainly within 72 hours (ASW 2010, RCOG 2002b). The Anti D traceability label should be returned to Blood Bank (as soon as possible but within 48 hours) within 48 hours and should be documented in the patients' medical notes and on Euroking.

All women who contact a health professional to report a potential sensitising event should be directed to the Obstetric Unit for assessment and management of care.

User guidelines for the management of potential sensitising events

- Assess the wellbeing of woman and fetus.
- Confirm woman is RhD Negative from hard copy of result in maternity record. If result not available access the WBS web site or take blood test for Kliehauer and send to blood bank
- The Kleihauer screening blood test should be offered and taken after 20 weeks gestation. Additional doses of anti-D prophylaxis may be required, as advised by the laboratory, following Kleihauer screening (ASW 2010).
- Midwife to ensure that adrenaline 1:1000 and hydrocortisone 200mg are available in the room where the Anti D is administered for treatment of anaphylactic reaction (Appendix 2).
- The management and administration of Anti D following a sensitising event should be documented in the "Anti-D Prophylaxis for Women who are Rhesus D (RhD) Negative" integrated care pathway.
- The Anti D traceability label should be returned to Blood Bank as soon as possible, but within 48 hours and documented in the patient's notes and Euroking.

Routine antenatal anti-D prophylaxis (RAADP)

Routine antenatal anti-D prophylaxis (RAADP) is recommended as a treatment option for all pregnant women who are rhesus D (RhD) negative and who are not known to be sensitised to the RhD antigen (NICE 2008).

Without any prophylactic treatment, alloimmunisation happens in 10% and 15% of rhesus negative women due to pregnancy. The current risk of alloimmunisation in the UK is about 1:21,000 births. In England and Wales about 500 fetuses develop HDN each year; 20-30 die from HDN each year

Once sensitisation has occurred, this is irreversible and can have a detrimental effect on current or any future pregnancies (and can create problems if a blood transfusion is ever required (ASW 2007)

Verbal information to inform the woman of the implications of being rhesus negative should be provided at the 16 week appointment with the community midwife. The Community midwife should document the woman's blood group in the All Wales Maternity Record and ensure the woman is aware and has been offered an appointment for Prophylactic Anti D

User guidelines for the management of the prophylactic Anti D clinic

Following identification of woman who has rhesus negative blood group

- Appointment made for anti D clinic between 28 and 32 weeks gestation.
- Written information ("You, your Baby & the RhD Factor" (BPL)) should be sent by post with the appointment letter.

One week prior to Anti D clinic

- PMS list for following week Anti D clinic to be reviewed to identify women who have any other appointment in the antenatal clinic the week prior to Anti D appointment to arrange to offer the Anti D at that appointment. This will avoid unnecessary hospital appointments
- Print attendance clinic list from Patient Management System (PMS).
- Complete the Anti D issue and return list (appendix 1) for all women with appointment.
- Print out blood group and rhesus antibody result from Welsh Blood Service (WBS) website for all women with appointment.

All of the above need to be checked by a midwife and taken to blood bank.

On the day of the clinic

- A member of staff to telephone the Blood Transfusion Laboratory from 0845 to ensure Anti D is ready for collection.

- Collect required anti D at 0900hrs for a morning clinic 1300hrs for afternoon clinic from blood bank. The staff collecting Anti D should take the clinic cards with them so that an addressograph is available to sign out the Anti D.

- Prepare room for the clinic ensuring that trays are prepared with the following items:- sterile wipes, cotton wool and micropore. A sharps box should be placed in the room.

- Midwife to ensure that anaphylaxis treatment box is available in the room, and checked daily by a registrant.

- It should be checked with the woman and in the maternity record if the 28 week blood group and antibody and Full Blood Count screening has been taken. If not these samples should be taken **before** the administration of Anti D prophylaxis.

- Administer 1500iu Anti D Intra-muscularly into the Deltoid muscle

- The management and administration of Anti D for routine prophylaxis should be documented in the “All Wales maternity record” and entered onto the E3 electronic maternity system.

- The Anti D traceability label should be returned to Blood Bank as soon as possible but within 48 hours.

Postnatal prophylaxis

Anti-D immunoglobulin should be offered to every non-sensitised RhD negative woman within 72 hours following the delivery of a RhD positive baby NICE (2006).

User guidelines for the management of postnatal prophylactic Anti D (See Appendix 2)

- Complete blood bank form for the cord / baby blood (including baby details and hospital number) requesting Group and stating mother post-delivery and Rh D negative. Collect 5mls cord blood in a pink top bottle. *Hand write label and ensure baby's details and hospital number are on bottle. Use Euroking Fast Track Registration if necessary to get the hospital number in a timely manner.*

- Complete blood bank form for maternal samples. Collect 2 x 5mls maternal blood in two pink top bottles. *Hand write blood bottle labels*

- Send samples to blood bank immediately. Where woman has antibodies (Rhesus, D, c or KELL) send cord blood for Coombs, ABO & Rh, Hb and serum bilirubin. Inform Paediatrician of delivery.

- Document that the blood has been taken in the Postnatal Care Pathway.

- Inform ward midwife on transfer that woman is Rh D negative.

- Postnatal midwife to check baby's blood group on reporting system or by calling blood bank. If baby Rh D Positive, 500 iu Anti D will be issued by blood bank for administration to the woman. The Anti D traceability label should be returned to Blood Bank within 48 hours.

- This must be clearly documented in the postnatal pathway, together with instructions for the community midwife to follow up the Kleihauer result to ensure that any further doses of Anti D are not missed.

- If baby is Rh D Negative, no Anti D will be required.

- If Kleihauer result is not available prior to discharge home, check to see if the baby group is available. It is the responsibility of the discharging midwife to ensure that the community electronic diary is updated with this information.

- The management and administration of Anti D following delivery should be documented in the Postnatal Care Pathway.

Studies have shown that 99.2% or 99.3% of women have a FMH <4 ml at delivery. Up to 50% of larger FMH's occur after normal deliveries. However the following clinical circumstances are more likely to be associated with large FMH and therefore additional anti-D may be required

- Traumatic deliveries including caesarean section.
- Manual removal of the placenta.
- Stillbirths and intrauterine deaths.
- Abdominal trauma during the third trimester
- Twin pregnancies at delivery.
- Unexplained hydrops fetalis.
- Women receiving cell salvaged blood

References:

National Institute for Health and Clinical Excellence (NICE) 2008 Routine antenatal Routine antenatal anti-D prophylaxis (RAADP) for women who are rhesus D negative

National Institute for Health and Clinical Excellence (NICE) 2006 Routine postnatal care of women and their babies

RCOG (2002). Use of Anti D Immunoglobulin for Rhesus Prophylaxis. RCOG Publishing.

British Committee for standards in Haematology, Transfusion taskforce 2009 Guidelines for the Estimation of Fetomaternal Haemorrhage

Antenatal Screening Wales (2010) Revised Policy, Standards and Protocols. to support the provision of Antenatal Screening in Wales

APPENDIX 1

ANTI-D ISSUE AND RETURN LIST Date:			
ADDRESSOGRAPH	**EDD**	**Lab use**	**Reason for Non-Administration**
Signature of Midwife	**Print Name**		**Consultant**

ANTI-D ISSUE AND RETURN LIST Date:			
ADDRESSOGRAPH	**EDD**	**Lab use**	**Reason for Non-Administration**
Signature of Midwife	**Print Name**		**Consultant**

THIS SHEET <u>MUST</u> BE RETURNED TO BLOOD BANK FOLLOWING ADMINISTRATION / NON ADMINISTRATION

Appendix 2: Taking blood for Kleihauer **f**rom Rh D Negative patients

Complete the top section of the Blood Transfusion Request form BEFORE going to the patient's bedside
An Addressograph is acceptable on the request form.
The completed Pre Transfusion form is used as part of your positive patient ID.

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At the bedside -Ask patient to state their full name, first line of address and date of birth.
Check all patient details on form against patient wristband.

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Obtain consent from patient; using ANNT techniques take 2 x 5ml maternal blood samples (pink bottles).
Hand write the sample label legibly immediately after the sample is taken, BESIDE the patient.
The sample must contain:-
First name, Last name, First line of address, Hospital number, Date of birth, Signature of sample taker, Ward, Gender, Date and time bled.
Addressograph labels are NOT acceptable on sample labels.
The person taking the sample must complete the declaration section on the request form, completing the date and time the sample was taken, and by printing, signing and adding their contact details to the form.
The signature on the sample tube and the request form must match for the sample to be accepted.
Ensure Kleihauer is requested on form and that it states Rh Negative mother

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Once completed send maternal sample and cord blood sample to laboratory.

Appendix 3: Cord Blood from Infants of Rh D Negative Women

Baby is born to mother who is Rh D Negative. As soon as possible (within 2 hours) Midwife obtains 1 x 5ml cord blood sample (pink bottle), sends to lab with one blood form for baby requesting Group
Note on form: Infant of Rh Negative mother - neonatal cord blood
(For women who have any antibodies also request Coombs, ABO & Rh, Hb and Bilirubin).

Postnatal care pathway and notes must show clearly that Kleihauer bloods have been sent and need following up. If transferred to postnatal ward, midwife handing over care must inform postnatal ward midwife

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Midwife can check results reporting system within a couple of hours to ascertain baby's blood group or phone lab x 42157

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If baby is Rh D Positive, blood bank will issue 500 unit Anti D for the mother

If baby is Rh D Negative, woman does not need Anti D. Woman can be discharged

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Ward staff collect Anti D from Blood Bank and administer to woman

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Midwife clearly documents on maternity IT system and in postnatal pathway and medication administration chart that Anti D has been given. The traceability label from the Anti D must be completed and returned to Blood Bank.

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Woman can be discharged home prior to Kleihauer result becoming available, it is the responsibility of the discharging midwife to ensure community electronic diary is updated warning community midwife to check result of Kleihauer. She also needs to document details in the Results Tracker so that Kliehauer result can be followed up

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Community midwife ensures that Kleihauer result is checked and actioned by 72 hours. Lab Tel No: 42157