ANTI - D IMMUNOGLOBULIN – Guideline for Administration

University Hospitals of Leicester NHS
NHS Trust

1. Introduction and who the guideline applies to:

Anti-D immunoglobulin is offered during pregnancy and immediately post-delivery to Rh D negative, previously non-sensitised, women, to prevent production of anti-D antibodies in response to Rh D positive fetal cells. This may lead to Haemolytic disease of the newborn (HDN) in the current or future pregnancies.
Anti-D Immunoglobulin may also be used to prevent sensitisation and anti-D Antibody formation in Rh D negative women of child bearing potential, patients who have been deliberately or inadvertently transfused with Rh D Positive components.

The objective of this guideline is to provide healthcare professionals with practical guidance on the use of anti-D immunoglobulin (Anti-D Ig) as immunoprophylaxis to prevent sensitisation to the Rh D antigen during pregnancy or at delivery for the prevention of HDN due to a transplacental haemorrhage of fetal blood into the maternal circulation.

This guideline applies to all health care staff involved in the care of women who may require Anti-D prophylaxis.

NB. Currently stocks of 250 IU anti D are unavailable and so 500 IU should be given. It is anticipated that stocks of 250 IU may become available in the future

2. Responsibilities associated with the administration of Anti-D :

2.1 Consent

- All pregnant women should receive appropriate written and verbal information about anti-D immunoglobulin to inform their choice and be given time to consider their options. As a human derived blood product the administration of anti-D Immunoglobulin needs to be consented.
- Maternal verbal consent should be obtained prior to the administration of anti-D immunoglobulin. The communication with the woman and her decision to either accept or decline anti-D Ig must be recorded in the woman's handheld and hospital case notes by the health professional responsible for the administration of anti-D Ig. (RCOG 2011). If anti-D is declined by the woman, her reason for declining should be documented.
- The difference between RAADP (i.e. routine prophylaxis at 28 weeks) and prophylactic anti-D Ig given following potentially sensitising events should be clearly explained to the woman (NICE, 2008).

Note
In view of the theoretical risk of new variant CJD posed by UK plasma all anti-D Ig produced is now manufactured from non-UK sourced plasma which is screened for HIV and Hepatitis B and C (risk<I in a million. Because of the potential risks posed by blood products, it is essential to maintain traceability of all blood products.

2.2 Prescribing responsibilities

- Anti-D Ig has been added to the exempt list of drugs for midwives, therefore midwives can administer it to their patients without a prescription or PGD.
- For all other groups of staff who are not approved for prescribing anti-D, they will need to get it prescribed by a doctor. Currently there is no one to authorise a PGD for nurses.

2.3 Individual responsibilities

Anti-D prophylaxis should be discussed with the patient in advance and consent must be documented in the woman's hand held records and /or in the medical notes.

It is the responsibility of:

- The midwife/nurse who initially sees the woman or who delivers the baby is responsible for identifying that the patient will require Anti D and for initiating a yellow Ward Anti-D Immunoglobulin Pathway". The exception to this is if the patient is known to be RhD Positive.
- The midwife/nurse who initially sees the woman or who delivers the baby will collect and send the correct samples correctly labelled to the Blood Bank laboratory and to document this in the notes. The laboratory staff should be informed if a two-hour turnaround is needed.
- Blood Bank will provide a blood group within 2 hours of receipt of the sample if it is marked as urgent.
- The laboratory staff will inform the clinical area staff of the anti-D Ig requirements, including appropriate dose.
- The person taking the results from the lab must ensure these are passed on to the relevant healthcare practitioner for action.
- The relevant healthcare practioner will be responsible for ensuring that the anti-D is given and documented appropriately.
- The healthcare professional administering the anti-D must ensure it is checked by two qualified professionals. For each drug the practitioners must check not only the name of the product but also the expiry date
- Where appropriate the healthcare practioner at discharge will ensure the administration of anti-D is recorded in the discharge summary.
- The laboratory will perform a Kleihauer blood film on all women of more than 20 weeks gestation to look for large transplacental bleeds on the next working day. They will inform the ward where the sample originated from if the woman needs further doses of anti-D immunoglobulin.
- It is the responsibility of the woman's clinical team to make the appropriate arrangements so that all non-sensitised Rh D negative women receive their anti-D immunoglobulin as soon as possible and always no later than 72 hours after the initiating event.
- The wards will be responsible for the correct storage of any locally held stocks of anti-D immunoglobulin.

2.4 Documentation responsibilities

- All request forms need to be fully completed.
- Full details of any anti-D immunoglobulin administered should be fully recorded on the ward blood transfusion pathway. This must include
    - Woman's identity including surname, forename, date of birth and a unique ID number.

➢ Details of the injection including the product description and batch number, the dosage and route (IM or IV), site, date and time of administration (RCOG 2011) Hospital / antenatal clinic administering the injection. (Good Practice Point).

- Following the administration of Anti-D the yellow top copy of the Ward Anti-D Pathway Immunoglobulin returned to Blood Bank to maintain product traceability. The white bottom copy must be filed in the woman's notes.
- The Blood Transfusion laboratory will retrospectively document all anti-D doses administered to comply with recall and regulatory requirements.
- Adverse incidents should be documented in women's' clinical records, reported to the Blood Bank laboratory and entered in DATIX as per UHL incident reporting procedure.

3. Eligibility and ward processes for the administration of Anti D Immunoglobulin

3.1 Introduction

There are many occasions during a pregnancy where a woman is a risk of RhD sensitisation and so is eligible for anti-D Immunoglobulin administration. The main categories are:

- Pregnant women who are non-sensitised Rh D negative and they should be offered anti-D Ig for potentially sensitising events as listed in table A and B.
- After delivery where a sample of blood form the cord usually sent to the laboratory to test the baby's blood group status

All non-sensitised RhD negative women are offered a routine antenatal anti-D immunoglobulin prophylactically around 28 weeks. Eligibility for further doses of anti-D is not affected by any routine antenatal Anti-D prophylaxis given in the 3rd trimester.

The appropriate dose of anti-D immune globulin (Ig) should be administered as soon as possible but no more than 72 hours following a potentially sensitising event.

There are a number of different clinical and organisational scenarios where eligible women will present. These are processes are listed separately below.

3.2. Management of Rh D negative women following potentially sensitising event under 16 weeks gestation during pregnancy (Appendix 1)

See table A for eligibility and Appendix 1 for a description of the process except as described in 3.2.4.

If the woman is known to be RhD negative then Anti-D is given from locally held stocks. If the blood group is unknown samples are sent urgently to blood transfusion who will test for the blood group the woman and then phone the result back to the ward staff who will then administer anti-D from local stocks (if appropriate).

3.2.1 Bleeding before 12 +0 weeks gestation (Appendix 1)

- Anti-D Ig is not required for women presenting with painless vaginal bleeding before 12 weeks gestation.
- In all other cases check maternal blood group and antibody screen to confirm Rh D status and check for presence of immune anti-D.
- Anti-D Ig should be given in non-sensitised RhD-negative women if there is heavy or repeated bleeding or associated abdominal pain especially if gestation approaches 12+0 weeks (RCOG 2011).

*3.2.2 Spontaneous complete miscarriage before 12 +0 weeks (***Appendix 1***)*

- Confirm by scan to verify complete miscarriage and that no surgical or medical procedure is required.
- Anti-D is not required.

*3.2.3 Missed miscarriage and incomplete miscarriage before 16 weeks gestation (***Appendix 1)**

- Diagnosis should be verified by scan.
- Non-sensitised RhD negative women with missed miscarriage, blighted ovum, incomplete miscarriage, or intra-uterine fetal death should receive a minimum of 250 iu of Anti-D intra-muscular (IM).

*3.2.4 Ectopic pregnancy and pregnancy of unknown location (***Appendix 1***):*

- Non-sensitised RhD negative women should receive a minimum dose of 250 IU of Anti-D Ig, no matter whether they are managed conservatively, medically or surgically.
- Where Pregnancy of Unknown Location (PUL) is the working diagnosis, Anti D should be given to non-sensitised RhD-negative women as there is a potential for this to be an ectopic pregnancy.

*3.2.5 Molar pregnancy (***Appendix 1***):*

- Non-sensitised RhD negative women with a confirmed or suspected diagnosis of molar pregnancy should receive a minimum dose of 250 IU of Anti-D intramuscular.

3.2.6 Bleeding after 12 +0 weeks gestation (Appendix 1)

- Non-sensitised RhD negative women presenting with vaginal bleeding ≥ 12 weeks gestation should receive a minimum dose of 250 IU of Anti-D intramuscular.

3.3 Management of RhD negative women following potentially sensitising events after 16 weeks gestation during pregnancy (Appendix 2):

See Table B for eligibility and Appendix 2 for a description of the process.

- Non-sensitised Rh-D negative woman should receive Anti-D Ig from locally held stocks. This includes women who have an IUD
- If the blood group is unknown samples are sent urgently to Blood Bank.
- Laboratory staff will test the woman's blood group then telephone the ward with the result who will then administer anti-D from local stocks. (if appropriate)
- Give Anti-D Ig to all non-sensitised RhD negative women (RCOG 2011). The dose of Anti-D immunoglobulin is dependent on gestational age and it should be given within 72 hours of the potentially sensitising event
  - 16-19^{+5} w-----→ 250 IU intramuscular as a minimum dose
  - >20w ---------→ 500 IU intramuscular as a minimum dose.
- *For **all sensitising events at or after 20 weeks during pregnancy**, women should be informed that occasionally an additional dose of Anti-D is required after Kleihauer film for feto-maternal haemorrhage (FMH) and if so, they will need to return to hospital for this. They will also require a follow-up blood sample 48-72 hours after administration of anti-D Ig to ensure adequate dose has been administered.* Laboratory staff will advise regarding further management (RCOG, 2011).

3.4 Social or therapeutic termination of pregnancy under 20 weeks (Appendix 3):

- Women are seen in specialised clinics.
- Ensure that blood sample is taken and a Kleihauer request is made for all cases. The date of procedure should be documented on the Kleihauer form.
- Whether by surgical or medical methods, and regardless of gestational age, previously non-sensitised Rh-D negative women with gestational age <20 weeks gestation should receive a minimum dose of 250 IU of Anti-D Ig within 72 hours of the event (RCOG, 2011).
- In the rare occasions where a woman has a termination of pregnancy ≥ 20 weeks gestation they should receive Anti-D Ig 500 IU IM.

3.5 Routine Administration of Anti-D Prophylactically at 28 weeks gestation. (RAADP, Appendix 4):

See *Appendix 4* for a description of the process.

- A copy of the booking antenatal serology report is sent to the community midwife and the hospital where the woman is booked to have her baby. .
- Woman's Rh-D group should be confirmed by reference to a hard copy report in notes or check blood group results in BAPEX.
- Non-sensitised Rh-D negative women are invited to attend specialised anti-D clinics..
- It is important that the 28-week sample for blood group and antibody screen is taken prior to the first routine prophylactic anti-D Ig injection being given. This forms the second screen required in pregnancy as stated in the BCSH Guidelines for Blood Grouping and Red Cell Antibody Testing during pregnancy (BCSH 2007; NICE CG62, 2008).
- A single dose of anti-D Ig, 1500 IU, IM is to be offered to all non-sensitised Rh-D negative women at no less than at 28 weeks. However, if this is missed for any reason it can be administered at any gestation after 28 weeks.
- **This prophylactic dose of Anti-D should be administered regardless of whether the woman has already had Anti-D for any other reason.**

*3.6 Prevention of anti-D formation following hospital birth (***Appendix 5)**

- See Appendix 5 for a description of the process.
- Confirm woman's Rh-D group by reference to a hard copy report in notes or check blood group results in BAPEX.
- Obtain cord blood samples and maternal post-delivery blood samples (at least 30 minutes post 3rd stage). Staff should take extra care that the label the baby's cord sample with the baby's hospital number and date of birth is completed correctly.
- Send Kleihauer request to Laboratory urgently. Expect blood group result within 2 hours of sample arriving in the laboratory.
- Laboratory staff will ring ward with the results. Ward staff receiving the results should document Rh-D group results for mother and baby on Pathway.
- ***If the baby is Rh-D negative,*** Anti-D is not indicated and that should be documented in the notes and Pathway.
- ***If the baby is Rh-D positive***, 500 IU anti-D Ig should be administered IM to previously non-sensitised Rh-D negative women, within 72 hours of the delivery after obtaining informed consent from her.
- If a cord blood sample is not collected for any reason, a heel prick sample from the baby should be obtained as soon as possible to check Rh status (BCSH c, 2006).
- If a sample cannot be obtained, the baby should be assumed to be Rh-D positive for the purpose of administration of anti-D Ig.

- Fetal maternal haemorrhage (FMH) screening will be undertaken on all D negative women delivering D positive infants to determine if additional doses of anti-D immunoglobulin are required. If the confirmed FMH volume exceeds the standard dose of anti-D Ig already given, an additional dose should be given, within 72 hours of the delivery. The dose will be calculated by laboratory staff and ward staff will be informed. It is the responsibility of the womans' clinical team to make arrangements to ensure this extra dose is given in a timely manner.

3.7 Prevention of anti-D formation following birth at St Mary's Birth Centre (Appendix 6)

See Appendix 6 for a description of the process.

- Confirm woman's Rh-D group by reference to a hard copy report in notes or via Northampton or BAPEX.
- Obtain cord blood samples and maternal post-delivery blood samples (at least 30 minutes post 3rd stage). **Ensure that "St Mary's Birth Centre" and "booking hospital" are documented on the Kleihauer request form**.
- Samples taken should be taken to Delivery Suite on the next available routine pathology transport or by taxi at weekends/bank holidays. Send Kleihauer request to Lab urgently. Expect blood group result within 2 hours of sample arriving in the laboratory.
- Laboratory staff will inform Birth Centre staff with the results.
- Staff member receiving call from lab should document Rh-D group results for mother and baby on Anti D Pathway.
- ***If the baby is Rh-D negative,*** Anti-D is not indicated and that should be documented in the notes and Pathway.
- ***If the baby is Rh-D positive***, 500 IU anti-D Ig should be administered IM to previously non-sensitised D negative women, within 72 hours of the delivery after obtaining informed consent from her. Document administration and dose in the postnatal diary.
- If a cord blood sample is not collected for any reason, a heel prick sample from the baby should be obtained as soon as possible to check Rh status (BCSH 2007).
- If a sample cannot be obtained, the baby should be assumed to be D positive for the purpose of administration of anti-D Ig.
- FMH screening will be undertaken on all D negative women delivering D positive infants to determine if additional doses of anti-D immunoglobulin are required. If the confirmed FMH volume exceeds the standard dose of anti-D Ig already given, an additional dose should be given, within 72 hours of the delivery. The dose will be calculated by laboratory staff and ward staff will be informed. It is the responsibility of the woman's clinical team to make arrangements to ensure this extra dose is given in a timely manner.

3.8 Prevention of anti-D formation following birth in the community (Appendix 7)

See Appendix 7 for a description of the process.

- ***Women should be informed at antenatal assessment that if Anti-D is required following home birth; they will need to go to Leicester General Hospital to receive it.***
- Confirm woman's Rh-D group by reference to a hard copy report in notes or check blood group results in BAPEX.
- Obtain cord blood samples and maternal post-delivery blood samples (at least 30 minutes post 3rd stage). Ensure that "Home Birth" and "booking hospital" are documented on the Kleihauer request form.

- Samples should be taken to Delivery Suite when completing intrapartum records. Send Kleihauer request to Lab urgently. Expect blood group result within 2 hours of sample arriving in the laboratory.
- Laboratory staff must inform Community Office of the results and the woman's anti-D requirements at the next available opportunity.
- Staff member receiving call should document the RhD group results for mother and baby.
- **If the baby is Rh-D negative**, Anti-D is not indicated and that should be documented in the notes and Pathway.
- **If the baby is Rh-D positive**, 500 IU anti-D Ig should be administered IM to previously non-sensitised Rh-D negative women, within 72 hours of the delivery after obtaining informed consent from her. Document administration and dose in the postnatal notes.
- If a cord blood sample is not collected for any reason, a heel prick sample from the baby should be obtained as soon as possible to check Rh status (BCSH c, 2006).
- If a sample cannot be obtained, the baby should be assumed to be Rh-D positive for the purpose of administration of anti-D Ig.
- ***In exceptional circumstances a relative or community midwives will pick it up from UHL hospital to give to the woman in her home.***

3.9 Prevention of anti-D formation in the event of recurrent uterine bleeding in RhD - negative women during pregnancy

3.9.1 Recurrent uterine bleeding before 12+0 weeks gestation (Appendix 1)

- Non-sensitised Rh-D negative women presenting with recurrent PV bleeding under 12 weeks gestation and particularly if associated with abdominal pain should be given a minimum dose of Anti-D Ig of 250 IU IM within 72 hours of the event (RCOG 2011).
- Management should be discussed with the consultant on call or consultant responsible for the care of the woman.

3.9.2 Recurrent uterine bleeding between 12^{+0} and less than 20 weeks gestation

- Non-sensitised Rh-D negative women presenting with recurrent PV bleeding between 12 and 20 weeks gestation should be given a minimum dose of Anti-D Ig of 250 IU IM.
- At least 250 IU anti-D immunoglobulin at a minimum of 6 weekly intervals.

- In the event of further intermittent uterine bleeding, estimation of FMH should be carried out at **2 weekly intervals**. If the 2 weekly FMH test, fetal cells are detected; an additional dose of anti-D Ig should be administered to cover the volume of FMH. The additional dose should be offered regardless of the presence or absence of passive anti-D in maternal plasma, and the FMH should be retested after 48-72 hours.

- If a woman is experiencing recurrent episodes of vaginal bleeding and Anti D has been required on two separate occasions by 32 weeks gestation (not counting the administration of Rhophylac (prophylaxis) there may be some benefit from identifying the fetus' Rhesus status which can influence future management decisions, specifically if the fetus is Rh negative as anti D is not required.

    - Anti D must be given as above or at the time of each sensitising event until the fetus' Rhesus status is determined.

    - The woman should be seen in the Haematology / Obstetric clinic but only after discussion of the case with the Consultants within that clinic. This can be via e mail or telephone.

3.10 Assessment *of the volume of feto-maternal haemorrhage (Kleihauer Blood Film)*

- This is required when a woman who is Rh-D negative experiences a potentially sensitising event **after 20 weeks gestation** and after the birth of a Rh-D positive baby. (RCOG, 2002).
- Blood Bank will carry out FMH test to establish the volume of FMH and will advise if an additional dose of anti-D is necessary.
- Blood Bank staff will clearly communicate this to the relevant health care professional responsible for the administration of the additional dose.
- A follow-up maternal sample 48-72 hours after the intramuscular administration of anti-D (48 hours if anti-D is given intravenously) should be tested to ascertain removal of fetal cells from maternal circulation.

3.11 *Intra Operative Cell Salvage during Caesarean Section*

- Intra-operative cell salvage during Caesarean section may contain fetal red cells. If cell salvage is used in Rh-D negative, previously non-sensitised women, a minimum anti-D dose of 1500 IU should be administered immediately after reinfusion of salvaged red cells. Maternal samples should be taken for estimation of FMH 30 - 45 minutes after re-infusion of salvaged red cells, and additional doses of anti-D administered if necessary.

- In cases of large FMH, and particularly if FMH is in excess of 100 mls, a suitable preparation of intravenous anti-D should be considered. Laboratory staff will advise on the best preparation and dose for use.

3.12 Management Of Transfusion Of D-Positive Blood Components To D Negative Recipients

3.12.1 Rh-D positive platelet transfusions

Whenever possible, Rh D negative platelets should be transfused to Rh D negative pre-menopausal women who need a platelet transfusion. Occasionally, if the appropriate product is not available or would cause unacceptable delay, it may be necessary to transfuse Rh D positive platelets. In these circumstances, prophylaxis against possible Rh D alloimmunisation by red cells contaminating the platelet product should be given (Menitove, 2002).

A dose of 500 IU anti-D immunoglobulin should be sufficient to cover up to five adult therapeutic doses of D positive platelets given within a 6 week period (BCSH, 2003).

In severely thrombocytopenic patients with platelet counts of less than 30 x 109/L, anti-D should be given subcutaneously to avoid the risk of haematoma following IM injection.
It is not normally necessary to administer anti-D immunoglobulin to Rh D-negative females without childbearing potential, or males who receive Rh D positive platelets. However patients on a chronic transfusion regime should be considered for prophylactic anti-D injection.

3.12.2 Intentional or Inadvertent transfusion of Rh D positive blood to Rh D negative pre-menopausal females.

The dose of Anti-D Ig should be calculated on the basis that 500 IU IM of anti-D will suppress sensitisation by 4 mL of D positive red cells. When less than 15 mL have been transfused, the appropriate dose of anti-D immunoglobulin should be given. When more than 15mL have been transfused, it is preferable to use the larger anti-D immunoglobulin.

When one unit or more of D-positive red cells have been transfused, a red cell exchange transfusion should be considered to reduce the load of D positive red cells in circulation and the dose of anti-D immunoglobulin required to suppress immunisation. In this situation, the patient should be counselled regarding the implications of both non-intervention (for future pregnancies) and of treatment, including any hazards from receiving donated blood, the exchange procedure itself and of larger doses of anti-D including intravenous anti-D. The patient will need to be referred to a specialist unit for the procedure to be performed (RCOG 2002).

For larger transfusions Intravenous anti-D Immunoglobulin is the preparation of choice, achieving adequate plasma levels immediately and being more effective microgram for microgram at clearing red cells. The dose to be administered should assume that 600 IU of anti-D IV will suppress immunisation by 10mL red cells. Intramuscular preparations of anti-D immunoglobulin must not be given intravenously. An appropriate combined dose of IV and IM anti-D should be determined in discussion with a specialist in Transfusion Medicine. Follow-up tests for D positive red cells should be undertaken every 48 hours and further anti-D given until there are no detectable D positive red cells in circulation.
Free anti-D in the serum does not necessarily reflect adequate prophylaxis and anti-D immunoglobulin treatment should be continued until D positive red cells are no longer detectable.
Passive anti-D given in large doses may be detectable for up to 6 months or longer, and tests for immune anti-D may not be conclusive for several months.

DEVELOPMENT AND APPROVAL RECORD FOR THIS DOCUMENT		
Author / Lead Officer:	Task Group	**Job Title:** Obstetricians, Haematologist, Gynaecologists Midwives and Nurses
Reviewed by:	D Wilson, H Maybury, L Matthews and H Qureshi	
Approved by:	**Maternity Service Governance Group**	**Date Approved:** 19.12.18

REVIEW RECORD			
Date	**Issue Number**	**Reviewed By**	**Description Of Changes (If Any)**
June 2018	V2	H Maybury and L Matthews	Currently no 250 IU Dr Qureshi says we will revert back to 250 IU when back in stock. Guideline says a minimum of 250 so that 500 may be given in the interim. Recurrent bleeding section amended
December 2018	V3	H Maybury and L Matthews	New guidance for women with recurrent bleeding as identifying fetal rhesus status may be appropriate. These women should be discussed with the Haem / Obs team.

DISTRIBUTION RECORD:			
Date	**Name**	**Dept**	**Received**
.04.13	All Midwives and Medical staff		
8.07	All Midwives and Medical staff		
March 2018	All Midwives and Medical staff	Maternity	
January 2019	All Midwives and Medical staff	Maternity	

4. Further information / References

Royal College of Obstetrics and Gynaecologists (RCOG Green Top Guideline 22, revised March 2011). The Use of Anti-D Immunoglobulin for Rhesus D Prophylaxis. http://www.rcog.org.uk/files/rcog-corp/GTG22AntiD.pdf .

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British Committee for Standards in Haematology (BCSH) guideline for the use of anti-D immunoglobulin for the prevention of haemolytic disease of the fetus and newborn. 2014.
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Menitove, J.E. Immunoprophylaxis for D negative patients receiving platelet transfusion from D negative donors Transfusion. 2002; **42**:136-138.

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Table A Sensitising events among Rh-D negative pregnant women

≤ 16 weeks gestation:

TABLE 1. A
Vaginal bleeding with pain at any gestation
Recurrent or heavy vaginal
Amniocentesis and chorionic villus biopsy.
Evacuation of molar pregnancy.
Ectopic pregnancy medical, surgical or conservative management.
Missed miscarriage or incomplete miscarriage at any gestation
Medical or Surgical evacuation of retained products at gestation

PS: A Kleihauer request is not indicated for pregnant women who are less than 12 weeks and have a complete miscarriage (i.e. without clinical intervention) or present with first episode of painless vaginal bleeding. However we do need a blood sample to confirm the Woman's blood group and D type and hence a Kleihauer from is also used for this purpose.

Table B Sensitising events among Rh-D negative pregnant women ≥16 weeks gestation:

TABLE B
Vaginal bleeding during pregnancy if gestational age ≥12 weeks.
Complete and incomplete miscarriage.
Evacuation of molar pregnancy.
Ectopic pregnancy.
Amniocentesis, chorionic villus biopsy and cordocentesis.
Intrauterine death.
Antepartum haemorrhage.
Fall or abdominal trauma (sharp/blunt, open/closed).
External cephalic version.
In-utero therapeutic interventions (transfusion surgery, insertion of shunts, laser, feticide).
Intra-operative cell salvage at delivery

Appendix 1 -Administration of Anti D Immunoglobulin to RhD Neg women after potentially sensitising event at less than 16 weeks

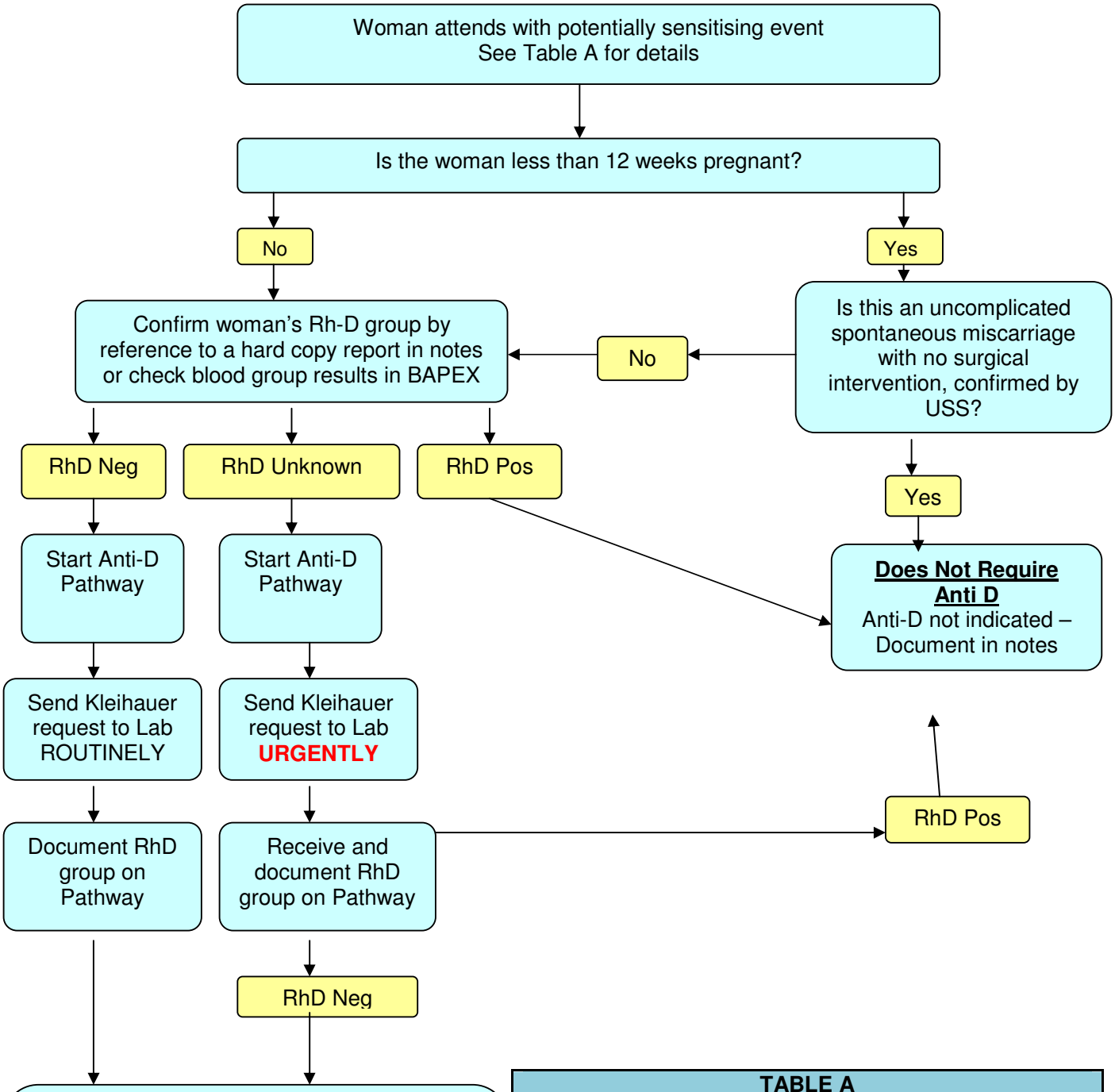


TABLE A
Vaginal bleeding with pain at anygestation
Recurrent or heavy vaginal bleeding at any gestation
Amniocentesis and chorionic villus biopsy.
Evacuation of molar pregnancy.
Ectopic pregnancy medical, surgical or conservative management.
Missed miscarriage or incomplete miscarriage
Medical or Surgical evacuation of retained products at gestation

Appendix 2 - Administration of Anti D Immunoglobulin to RhD Neg women after potentially sensitising event at more than 16 weeks

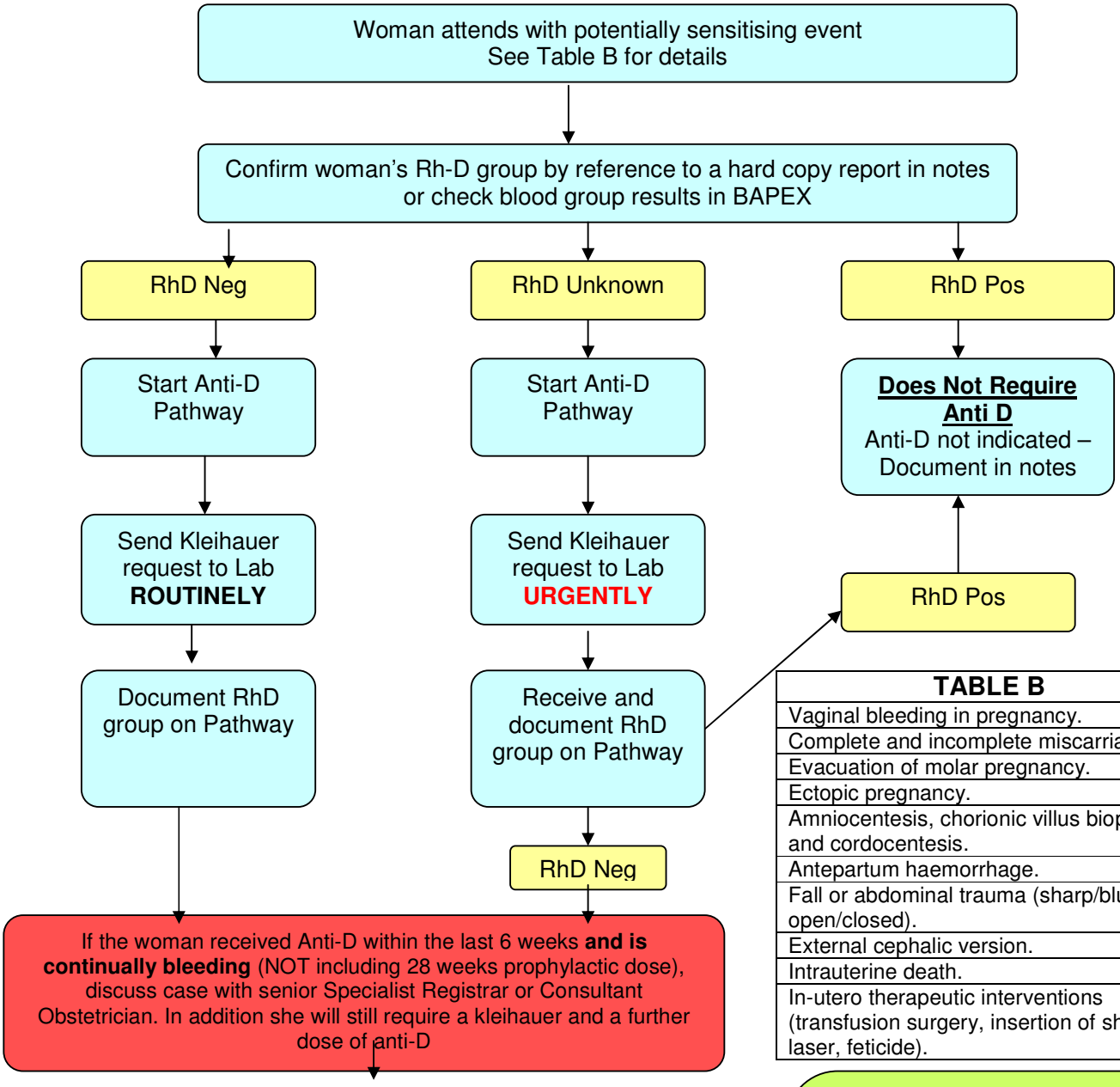


TABLE B
Vaginal bleeding in pregnancy.
Complete and incomplete miscarriage.
Evacuation of molar pregnancy.
Ectopic pregnancy.
Amniocentesis, chorionic villus biopsy and cordocentesis.
Antepartum haemorrhage.
Fall or abdominal trauma (sharp/blunt, open/closed).
External cephalic version.
Intrauterine death.
In-utero therapeutic interventions (transfusion surgery, insertion of shunts, laser, feticide).

- Gain verbal informed consent from woman and document in pathway.
- Administer Anti-D for non-sensitised Rh D negative women
  16-19^{+6} w-----→ minimum 250 international units IM
  >20w ---------→ 500 international units IM
- Document injection on Anti-D pathway
- Document injection on Anti-D pathway and place bottom copy in hospital notes.
- Document administration and dose in hand held notes.
- Return top copy to lab for replacement.
- *Women should be informed that occasionally an additional dose of Anti-D is required after FMH test and if so, they will need to return to hospital for this. They will also require a follow-up blood sample 48-72 hours after administration of Anti-D to ensure adequate dose has been administered.*

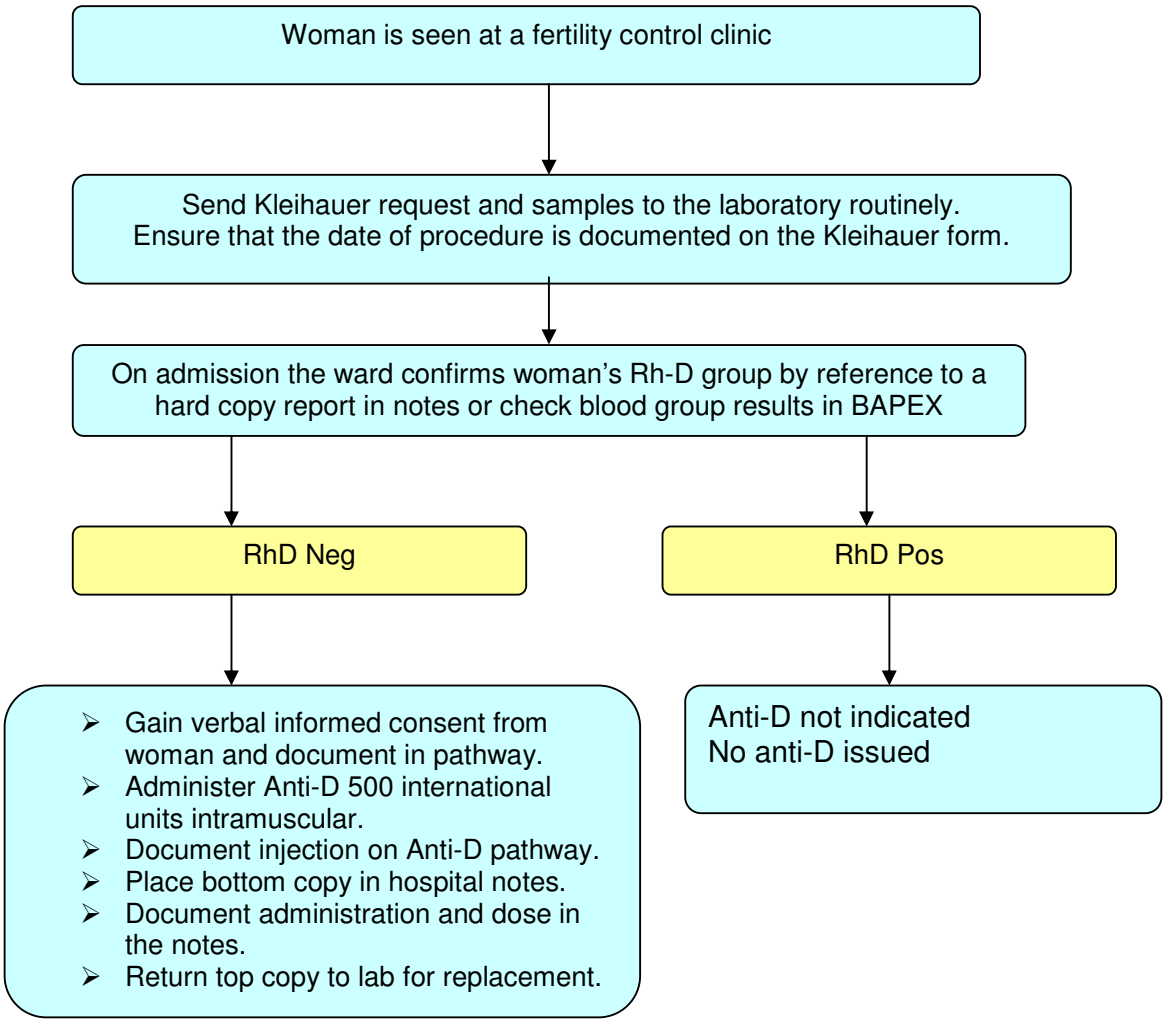
- Any non-sensitised Rh D negative women with ***recurrent intermittent PV bleed ≥ 20^{+0}*** should have Kleihauer samples taken ***at 2 weekly*** intervals. If the 2 weekly Kleihauer test is positive, additional dose of Anti-D should be offered and Kleihauer test should be repeated after 48 -72 hours to assess adequate cover.
- Consider identifying fetal rhesus status. Discuss with the Haem Obs team first. (see main guideline)
- Consultant Obstetrician responsible for the care of the

on is in

Appendix 3 - Administration of Anti D Immunoglobulin to RhD Negative women after termination of pregnancy at less than 20 weeks

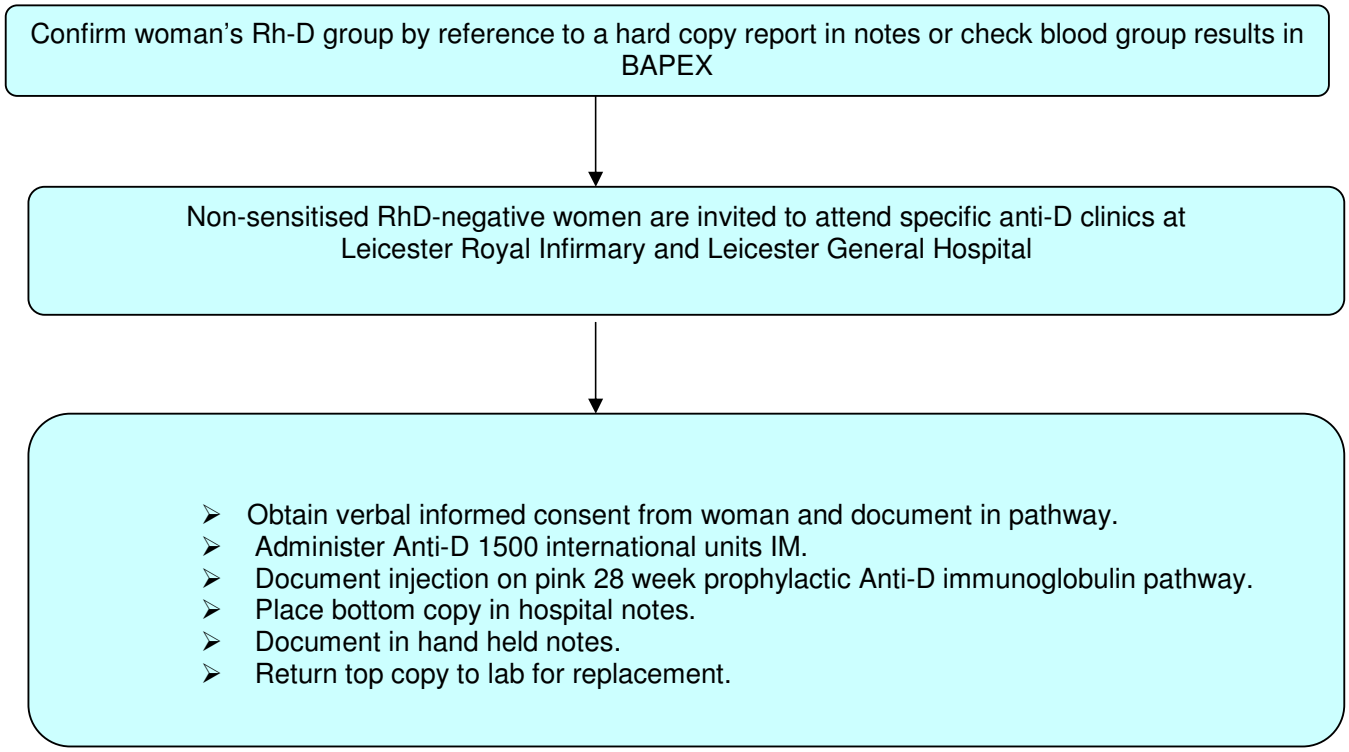
This pathway is applicable to both surgical and medical terminations.

It should be followed for all procedures less than 20 weeks
In the rare occasions where a woman has a termination at more than 20 weeks follow the pathway in appendix 2

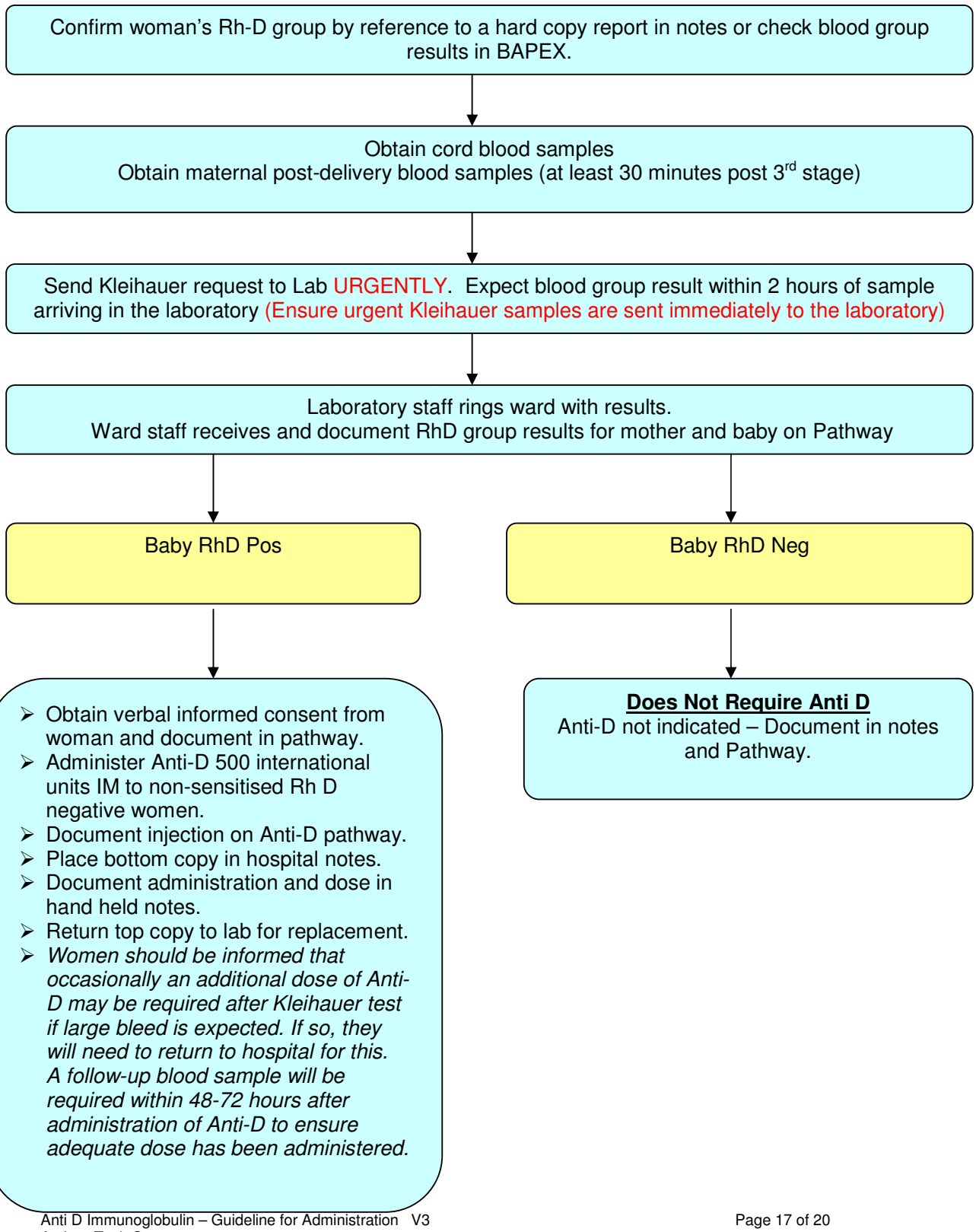


Appendix 4 - Routine Antenatal Prophylaxis at 28 weeks

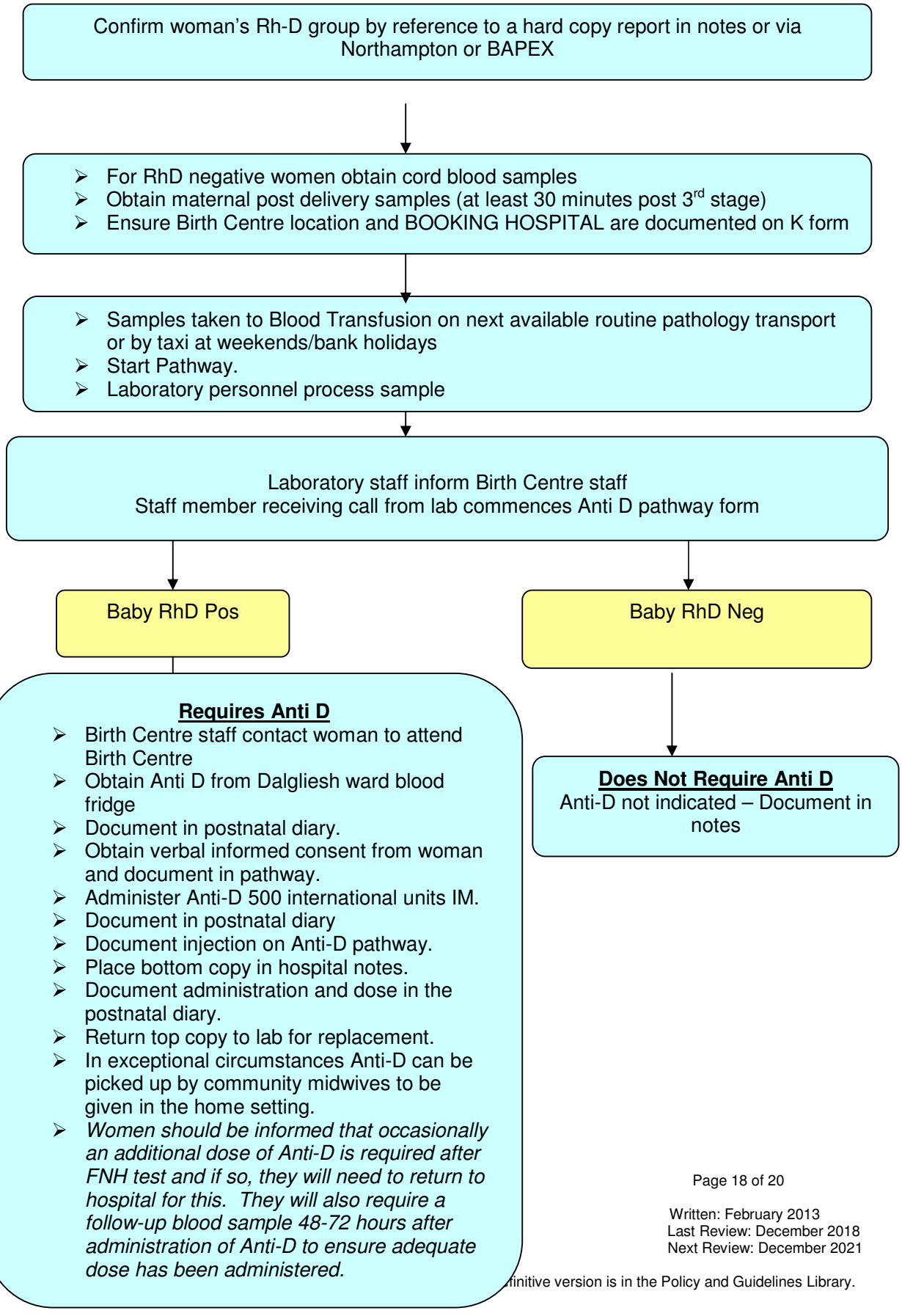
This prophylactic dose of Anti-D should be administered regardless of whether the woman has already had Anti-D for any other reason



Appendix 5 - Administration of Anti D Immunoglobulin to RhD-Negative women following birth in hospital



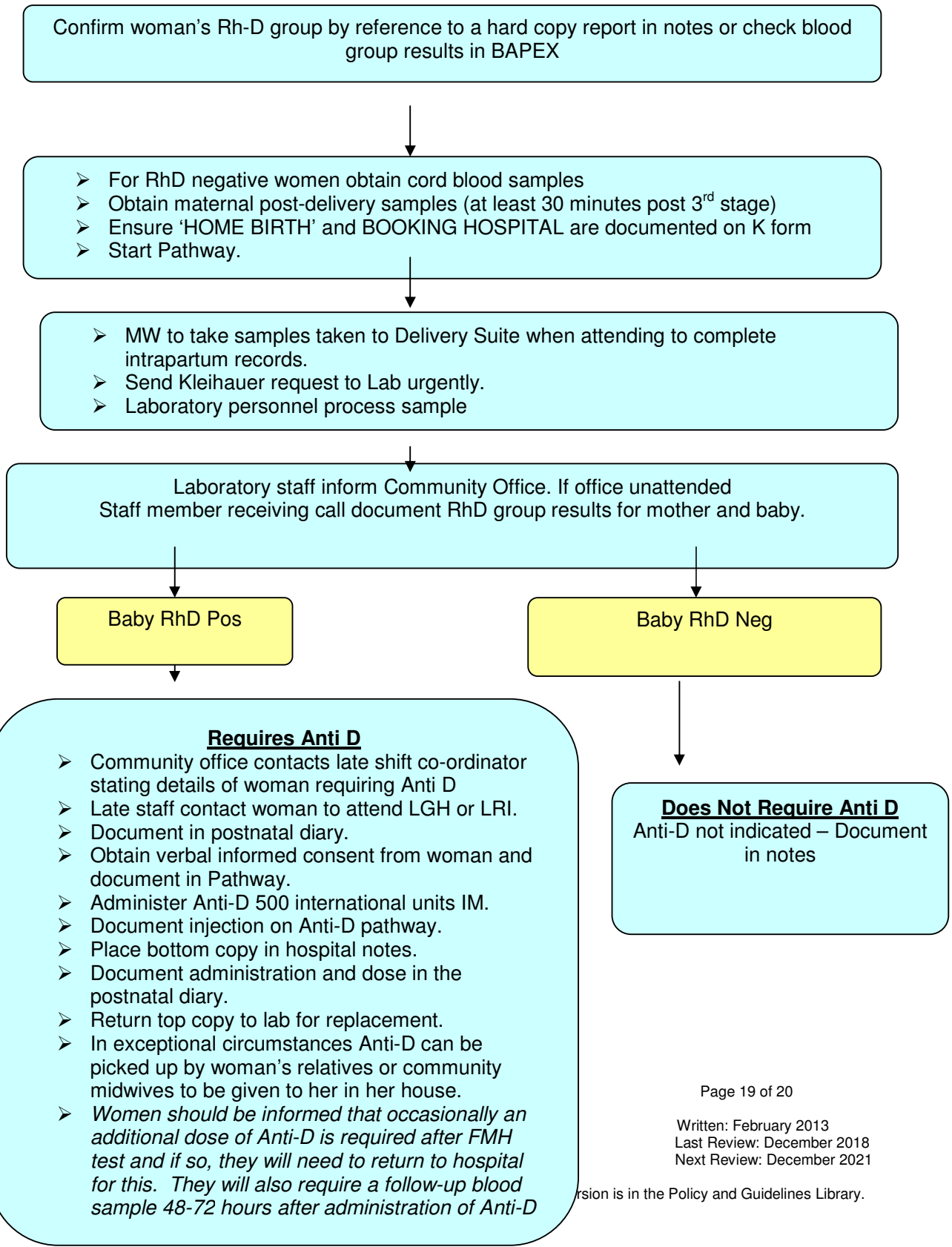
Appendix 6 - Process for the administration of Anti D following birth at St Mary's Birth Centre



Written: February 2013
Last Review: December 2018
Next Review: December 2021

Appendix 7 - Process for the administration of Anti D following birth in a community setting

Women should be informed at antenatal assessment that if Anti-D is required following home birth, they will need to go to Leicester General Hospital to receive it.



Written: February 2013
Last Review: December 2018
Next Review: December 2021

Checklist for Completion Prior to Administration of Prophylactic Anti D.

Patient details:
(Addressograph)

Is there documented evidence of Rhesus negative status Either hard copy or on BAPEX	
Has the patient received and read either of the patient information leaflets? "Antenatal Prophylaxis with Anti D" **or** "Your Blood Group and Rhesus D (RhD) Incompatibility"	
Is the patient aware that without the use of prophylactic Anti D there is approximately a 1 in 800 chance that they will become sensitised?	
Is the patient aware of the following information? • Anti D is a human derived blood product • In view of the theoretical risk of new variant CJD posed by UK plasma all anti-D Ig produced is now manufactured from non-UK sourced plasma which is screened for HIV and Hepatitis B and C (risk<I in a million).(Anti D guideline 2013)	
Has the patient been advised of the possible adverse effects	
Has the patient been advised to look out for early signs of hypersensitivity reactions including hives, generalised urticaria, tightness of the chest, wheezing, hypotension and anaphylaxis?	

Name of Midwife / Nurse (print) ……

Signature ……..

Date ……..