Royal Berkshire NHS
NHS Foundation Trust

Gestational Diabetes Screening and Diagnosis (GL823)

Approval

Approval Group	Job Title, Chair of Committee	Date
Maternity & Children's Services Clinical Governance Committee	Mr Mark Selinger, Consultant Obstetrician	10th January 2014

Change History

Version	Date	Author, job title	Reason
1.0	July 2008	Deidre Graham (Diabetes Specialist Midwife), Pat Street (Consultant Obstetrician)	Trust requirement
2.0	April 2009	Deidre Graham (Diabetes Specialist Midwife), Pat Street (Consultant Obstetrician)	Reviewed
3.0	Aug 2009	Deidre Graham (Diabetes Specialist Midwife)	Amended
4.0	April 2010	Deidre Graham (Diabetes Specialist Midwife)	Reviewed
5.0	May 2011	Deidre Graham (Diabetes Specialist Midwife)	Reviewed
5.1	Sept 2011	Avril Mansfield (Maternity Info Officer)	Auditable standards added
6.0	Nov 2013	Deidre Graham (Diabetes Specialist Midwife)	Reviewed and amended to reflect current practice

Definition: Gestational diabetes is carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy. It does not exclude the possibility that the glucose intolerance may antedate pregnancy but has been previously unrecognised. The definition applies irrespective of whether or not insulin is used for treatment or the condition persists after pregnancy. (WHO 1999)

In most cases, screening for gestational diabetes will be based on risk-factors alone (see Appendix 1)

Women who are offered screening for gestational diabetes should be informed that:

There is an increased risk of gestational diabetes in certain groups (see appendix 1). It should be explained to the woman which group she comes under.

The diagnostic test result will be given by the GP or community midwife if the test has been arranged by them. ANTENATAL CLINIC WILL NOT BE INFORMED ABOUT AN ABNORMAL RESULT ARRANGED IN THE COMMUNITY. PLEASE DO NOT REPEAT THE TEST FOLLOWING AN ABNORMAL RESULT. REFER THE WOMAN TO THE DIABETES SPECIALIST MIDWIFE 0118 322 7245.

If the test has been arranged by the antenatal clinic the result will be given by them.

Women screening positive to risk-factors

A diagnostic test should be arranged as follows and the appropriate forms for the test(s) should be given at booking:

At 24-27 weeks (+ 15 weeks for those with prior gestational diabetes), women screening positive should have a 2-hour post-prandial glucose arranged.

The timing is important. These results must be given at the 16 and 28 week routine antenatal appointments and referral made immediately, if abnormal.

2 hour post-prandial glucose (PGL)

This is a blood glucose sample (grey bottle) taken 2 hours after a 75 gm carbohydrate test breakfast. **To ensure the correct reference range on the result write the code 'PGL' on the 'ANY OTHER TESTS' section of the pathology request form. This code stands for pregnancy glucose.**

A PGL result above 6.9 mmol/L is abnormal.

A list of suitable foods or, alternatively, sample menus and instructions are available in the stationery section of the Maternity Guidelines, available in the Policies & Protocols section of the intranet.

If attending the GP surgery, a mid-morning appointment should be made to have blood taken and the breakfast taken 2 hours previously.

Women can attend the Royal Berkshire Hospital or West Berkshire Community Hospital pathology laboratories where they do not need an appointment. They should be advised to arrive a little early in case of a queue.

Women living outside of our area sometimes have difficulty arranging the 2-hour post prandial glucose test. If the surgery prefers to arrange a formal Oral Glucose Tolerance Test (OGTT), then this is acceptable. Alternatively, the woman should be asked to come to the Royal Berkshire Hospital pathology laboratory for the test to be done.

The diagnostic thresholds for an OGTT are (WHO 1999):

Fasting blood venous glucose concentration ≥ 7.0 mmol/L

OR

2-hour blood venous glucose concentration ≥ 7.8 mmol/L.

Symptomatic women screening negative to risk-factors

Women with signs or symptoms indicative of gestational diabetes (See appendix 1) and who have not been tested due to risk-factors, should have diagnostic testing as above.

IF THIS TEST IS ARRANGED IN THE COMMUNITY, THE DIABETES MIDWIVES WILL NOT BE INFORMED OF THE RESULT AND RELY ON A COMMUNITY MIDWIFE OR GP REFERRAL.

Management of women with positive 2 hour post-prandial glucose

Refer to the Diabetes Specialist Midwives (DSM) on ext. 7245 (leave message).

This voice mail is confidential and you should leave the woman's name and telephone number plus other identifying data.

Raised HbA1c at booking

HbA1c is a test that shows the average plasma glucose for the previous 3 months. It measures the amount of glucose attached to haemoglobin.

The sickle cell and Thalassaemia testing done at booking gives an HbA1c result, even though it is not requested. If the result is raised, the report will state: 'HbA1c raised. Is this woman a known diabetic?' The laboratory will inform the DSM but on receiving this result

in the community the DSM should be contacted by the community midwife or GP to ensure that the DSM is aware of the result.

The woman will be contacted by the DSM, diagnosed with gestational diabetes and given a blood glucose meter.

A **Diabetes Care Record** will be commenced by the DSM and the patient's notes labelled appropriately to signify the diabetes status.

A midwifery record will also be started for the recording of telephone conversations between appointments, which will be kept in the DSMs' office.

In antenatal clinic, the woman will see one of the diabetes specialist midwives, who will issue a blood glucose meter. This consultation usually takes around 1 hour and is best arranged at a mutually agreeable time, outside normal clinic hours. The consultation should include discussion of:

- The meaning of gestational diabetes, including a basic Pathophysiology (in language the woman can understand). Give gestational diabetes leaflet.
- The small increased risk of adverse pregnancy outcome, including macrosomia resulting in shoulder dystocia, which can lead to birth trauma to mother and baby.
- An increased risk of induction of labour, Caesarean section, neonatal hypoglycaemia.
- A possible increased risk of Perinatal death.
- The current diet and ways this can be modified to benefit the blood glucose readings. Give verbal and written advice on healthy eating and low glycaemic index carbohydrates. The NHS leaflet 'Eat Well Be Healthy' should be given. Suitable websites on healthy eating will be given
- Current daily exercise level and ways this can be increased, if required/possible, to 30 minutes per day of moderate exercise, e.g. walking. The RCOG 'Recreational exercise in pregnancy booklet' (RCOG Sept 2006 available on www.rcog.org.uk) should be given
- Medical treatment, i.e., oral hypoglycaemics, insulin by self–injection
- Use of the chosen blood glucose meter with detailed instructions
- Target blood glucose levels of between 3.5-5.9 mmol/L fasting & pre-meals and 7.8 mmol/L 1 hour post-prandial

The Meter Start section of the Diabetes Care Record should be completed, including the make and serial number of the meter

Following issue of the blood glucose meter, the diabetes midwives will review the blood glucose readings within a week. Based on these readings, an antenatal clinic appointment

will be given. The timing of this appointment will depend on the degree of derangement of the glucose levels. Some women will remain under the care of their existing consultant but most will be referred to Miss Street's Tuesday antenatal clinic and this will be decided on the woman's individual needs. Women 27 weeks or more at diagnosis will have an ultrasound scan for growth & liquor arranged as soon as possible after diagnosis. Normally, diet and exercise adequately controls the blood glucose.

For further management of the pregnancy, labour and the postnatal period, please refer to the guideline Pregnancy Management for Type 1, Type 2 and Gestational Diabetics

Auditable standards:

1. All diabetic women admitted to the maternity will have a blood glucose done within one hour of admission
2. All diabetic women admitted to the maternity will have a "think glucose" referral completed and sent to the diabetes specialist midwife within 1 hour of admission
3. All diabetic women admitted to the maternity will be commenced on a Maternity Blood Glucose Monitoring chart and be given a small sharps container for their bedside table

References:

1. National Institute of Clinical Excellence Diabetes in Pregnancy: management of diabetes and its complications from pre-conception to the postnatal period NICE clinical guideline no. 63 March 2008
2. Available from URL <http://www.nice.org.uk/CG63 >
3. National Institute of Clinical Excellence Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children NICE clinical guideline no. 43 Dec 2006
4. Available from URL <http://www.nice.org.uk/CG43>
5. The Renal Association The UK CKD Guidelines (2005) Available from URL
6. <http://www.renal.org/CKDguide/ckd>
7. Catherine Nelson-Piercy, Handbook of Obstetric Medicine 2002; 82-99
8. National Institute of Clinical Excellence Diabetes in Pregnancy: Management of diabetes and its complications from pre-conception to the postnatal period NICE clinical guideline no. 63 March 2008

9. Available from URL: <http://nice.org.uk>
10. World Health Organization Definition, diagnosis and classification of diabetes mellitus and its complications WHO 1999 Available from URL: ,http://www.WHO.int

Author: *Miss Pat Street (Consultant in Feto-Maternal Medicine), Deirdre Graham (Diabetes Specialist Midwife)*

Written: *July 2008, reviewed April 2009 (Deirdre Graham, Diabetes Specialist Midwife); revised August 2009, reviewed April 2010, May 2011, November 2013 (D Graham, Diabetes Specialist Midwife)*

Monitoring:

The audit team that will audit the above auditable standards will be formed by:

- A midwife and/or a doctor and/or a maternity support worker
- Audit and quality midwife
- A clinical audit facilitator

The audit will compare results with previous audits, if applicable. The audit will review documentation stated in the maternal health records as evidence of compliance with standards.

The audit will be completed prospectively or retrospectively:

- For first-time audits: within the first 9 months of each financial year
- For repeat audits: within the timeframe stated by previous audit's *risk priority*.

Plan following audit results **for all standards** audited, this would subject to earlier re-audit if concerns are raised from risk management about this particular area.

Results	Plan	Risk Priority
If < 75% compliance	Implement action plan and re-audit within 3 months from completion of report	1
If ≥ 75% compliance and results ≤ than previous audit (when applicable)	Implement action plan and re-audit within 6 months from completion of report	2
If ≥ 75% compliance and results ≥ than previous audit (when applicable)	Implement action plan and re-audit next financial year from completion of report	3

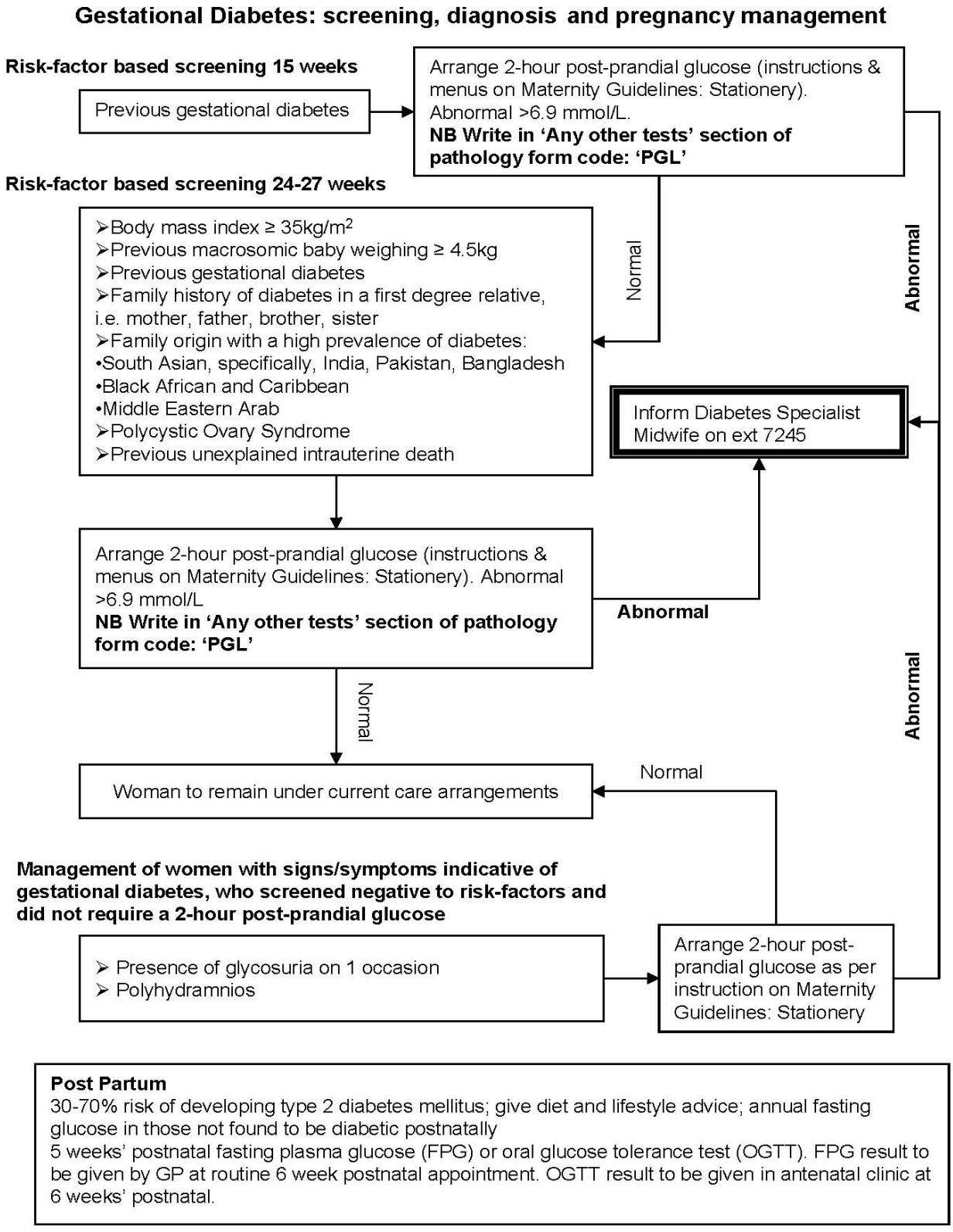
The results will be disseminated depending on the *risk priority.*

Author:	Deidre Graham, Pat Street	Date:	November 2013
Title:	Diabetes Specialist Midwife, Consultant Obstetrician	Review Date:	January 2016
Policy Lead:	Group Director Urgent Care	Version:	6.0 ratified January 2014 CG mtg
Location:	Maternity CG Shared drive/ Obstetrics & Midwifery/ Medical complications & conditions/ GL823		

Risk Priority	Dissemination
1	Presented in at least one of the following meetings: Maternity Audit Forum, Maternity Clinical Governance, Morbidity & Mortality, Combined anaesthetic team, midwifery services meeting or local ward forums. Uploaded in Datix for staff and patients access RBHFT Maternity Newsletter Special measures identified in action plan
2	Presented in one of the above meetings Uploaded in Datix for staff and patients access RBHFT Maternity Newsletter
3	Uploaded in Datix for staff and patients access RBHFT Maternity Newsletter

The dissemination on results and implementation of action plans and timely re-audit will be coordinated by the Audit and Quality Midwife and reported to the Maternity Clinical Audit Committee on a monthly basis. This committee reports to Maternity Clinical Governance monthly

Appendix 1 - Gestational Diabetes: Screening and diagnosis algorithm



Post Partum
30-70% risk of developing type 2 diabetes mellitus; give diet and lifestyle advice; annual fasting glucose in those not found to be diabetic postnatally
5 weeks' postnatal fasting plasma glucose (FPG) or oral glucose tolerance test (OGTT). FPG result to be given by GP at routine 6 week postnatal appointment. OGTT result to be given in antenatal clinic at 6 weeks' postnatal.