Family & Women's Health Group Maternity Screening Pathway For Identification And Management Of Women At Risk Of Developing Gestational Diabetes	
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Distribution:	All Obstetricians within the Family & Women's Health Group Medical Director Head of Midwifery/Divisional Nurse Matrons and Sisters for consultation with midwives and nurses

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CHANGE RECORD			
Date	**Author**	**Nature of Change**	**Reference**
January 2012	Dr Belinda Allan Linda Wilkinson	New guideline	V1
3 May 2012	Dr Belinda Allan Linda Wilkinson	Appendices	V2

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Identification & Management of Women at risk of developing Gestational Diabetes Mellitus (GDM)

INTRODUCTION

Gestational diabetes is defined by the World Health Organization (WHO) as 'carbohydrate intolerance resulting in hyperglycemia of variable severity with onset or first recognition during pregnancy'. The 'gold standard' diagnostic test for gestational diabetes is the 75 g oral glucose tolerance test (OGTT) conducted at 24–28 weeks of gestation.

SCOPE

This guideline applies to Midwives, Obstetric medical staff, Diabetes Specialist Nurse, Consultant Obstetricians, Consultant Physician

STATEMENT

The objectives are to ensure all women accessing maternity services are assessed for risk of developing GDM by identifying the risk factors as defined by NICE (2008) Women identified as a risk will be offered an oral glucose tolerance test (OGTT) between 24-28 weeks of pregnancy. Women identified as having GDM will be managed as described in the pathways within this guideline.

DEFINITIONS

GDM-Gestational Diabetes Mellitus
FPG-Fasting Plasma Glucose
HbA1c- Haemoglobin A1c
OGTT-Oral glucose tolerance test

MIDWIFERY LED CARE - PATHWAY SCREENING

At any point a woman may decline screening. However, the woman needs to be briefed of the possible consequences of not being identified as having GDM including:

- Fetal macrosomia
- Complicated delivery
- Infant respiratory distress
- Neonatal hypoglycaemia
- Perinatal death
- Future opportunities for screening for diabetes post-partum and earlier identification of (T2DM) which would help to lessen future risk of diabetes-related complications if good BG and BP control achieved

If screening declined – please document clearly in records that the woman understands the risks associated with her decision.

Midwife at booking visit to identify pregnant woman at high risk for GDM:

- Previous gestational diabetes.
- Previous macrosomic baby ≥ 4.5 kg.
- BMI > 30kg/m2.
- First-degree relative with diabetes.
- Family origin with a high prevalence of diabetes (South Asian, black Caribbean and Middle Eastern).
- Request for OGTT outside criteria must be by a consultant obstetrician

1. SBGM=self blood glucose monitoring
2. BG= capillary (fingerprick) blood glucose
3. GDM=gestational diabetes mellitus
4. DSN=Diabetes Specialist Nurse (ext. HRI 5391/5375)
5. FPG=fasting plasma glucose (mmol/L)
6. MOT=Medical Obstetric Team
7. OGTT=oral glucose tolerance test
8. T2DM = Type 2 diabetes mellitus

Offer GDM screening to high risk woman: outline options for screening

Patient with known previous GDM

Any risk factor for GDM (excluding prior GDM)

OGTT at 16-18 weeks

Offer OGTT at 24-28 weeks

OGTT at 28 weeks

Test negative

Test positive

Test negative

Routine ANC: Exit pathway

Refer DSN Midwife and Healthy Lifestyles Team (if BMI ≥30kg/m2)

Test positive

Test negative

Routine ANC: exit pathway

If any patient attending the ADU for an OGTT who appears unwell (symptoms of thirst, vomiting, feeling very unwell), please check blood ketones (labour ward). If blood ketones are >1.0mmol/L – seek urgent medical advice.

PROCESS PATHWAY FOR MANAGING WOMEN DIAGNOSED WITH GDM

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WHO criteria (1999) for GDM (mmol/L) one or more of:

	Normal	GDM	Likely T2 DM
FPG	<7.0	≥7.0	≥7.1
2 hour PG	<7.8	≥7.8	≥11.1

Blood ketones >3mmol/L=DKA until proven otherwise – if DKA involve RMO and Endocrinologist on-call

At any point check blood ketones (labour ward) if patient unwell.

MOT midwife actions result

- Exit pathway
- Routine ANC
- GDM
- Refer to MOT clinic same week

Guidance for SBGM

- Test 5x daily
- Test before each meal and at bedtime
- Once per day test 1 hour after any meal
- Target pre-meals & bed: 4-6mmol/L

Midwife refers woman to be reviewed within 1 week by:

- DSN Midwife and
- Healthy Lifestyles Team (if BMI ≥30kgm^2) and
- Consultant-led obstetric ANC in 1- 2 weeks

All women identified as having GDM require 6 week post-natal FPG and A1c 3 months post-natal (Page 3)

For obstetric review weekly/fortnightly initially

Pre-meal BG ≥7mmol/L and/or post meal ≥8mmol/L on ≥3 occasions

Commence Metformin 500mg BD, can be increased to 1 gram BD
Advise patient to take with first mouthful of food at breakfast and evening meal

BG remains in target. Delivery planned by obstetric consultant

Metformin ineffective or not tolerated – refer to MOT for insulin initiation and follow-up

POSTNATAL GDM SCREENING PATHWAY

Midwife identifies woman with GDM post birth

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Woman informed of need for postnatal screening by midwife

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- **Give patient information leaflet and letter to woman on postnatal FPG and HbA1c testing prior to discharge**
  - **Ask woman to book appointment with GP for the FPG for 5-6 weeks after birth and HbA1c test at 3 months**
  - **GP to review results and action if needed**

Ensure woman has:
- **Post-natal screening information sheet**
- **Been instructed to stop SBGM and treatment for diabetes.**
- **Contact number for DSN midwife in case diabetes symptoms develop**

↓

IDL states need for:
- **Post-natal FPG to be arranged via practice with woman at 6 weeks and HbA1c test at 3 months**
- **Advice re need for annual FPG via practice re-call.**
- **Copy letter to Practice Nurse and Community Midwife.**

→ **Screening results actioned by woman's GP.**

Inform woman that:
- **Annual FPG should be performed by GP**
- **Emphasise importance of lifestyle change to reduce future T2DM risk esp. if BMI >30kgm^2**
- **Signpost to weight management services in Hull**
  - **Why weight - 01482 344046**
  - **Active Lifestyles - 01482 335209**
  - **Ready to lose weight website http://www.readytoloseweight.co.uk/**

Health Central can refer into any of these

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5. **FPG=fasting plasma glucose (mmol/L)**
6. **MOT=Medical Obstetric Team**
7. **OGTT=oral glucose tolerance test**
8. **T2DM = Type 2 diabetes mellitus**
9. **IDL = Immediate discharge Letter**

DUTIES and RESPONSIBILITIES

Antenatal

Women found to meet the WHO criteria for Gestational Diabetes Mellitus (GDM) will be referred to the Diabetes Specialist Midwife/Dietician for dietary advice and how to self monitor blood glucose.
A letter will be sent to the GP by the Specialist Diabetes Midwife to inform and include the requirement for postnatal screening **(Appendix 1).**
Women with gestational diabetes will be referred back to their Consultant identified at their booking appointment.
Women with a fasting BG 7.1mmol/litre or over and/or at 2 hours BG 11.1mmol/litre or over will continue their care with the Medical Obstetric Team.

(Ref guidelines for antenatal assessment and choice of place of birth http://intranet/guidelines/guidelines/216.pdf /guidelines for consultant referral http://intranet/guidelines/guidelines/58.pdf)

Postnatal:
Women diagnosed with GDM should have a Fasting Plasma Glucose (FPG) 5-6 weeks post birth and an HbA1c test at 3 months post birth.
A letter communicating the required tests will be sent with the postnatal GP letter **(Appendix 2).**

A letter will be given to the woman on her discharge from the postnatal ward with her postnatal records to inform her of the requirement to have postnatal screening with a FPG and HBA1c test **(Appendix 3).**

Lifestyle advice should be offered (including weight management, healthy eating and activity). Women who were diagnosed with gestational diabetes should be informed about the risks of gestational diabetes in future pregnancies and they should be offered screening (OGTT) for diabetes when planning future pregnancies.

Discussions of the above with the woman should be documented in the woman's Maternal Postnatal Records.

Future Pregnancies

Women who were diagnosed with gestational diabetes should be offered early self-monitoring of blood glucose or an OGTT in future pregnancies.

REFERENCES

NICE (2008) (Clinical guideline 63) Diabetes in pregnancy; management of diabetes and its complications from pre-conception to the postnatal period. Available at;- http://www.nice.org.uk/nicemedia/live/11946/41342/41342.pdf

Appendix 1

Date

Dear Doctor,

Re:

Affix ID sticker

Your patient has been diagnosed with **Gestational Diabetes Mellitus**. This will be managed within the hospital obstetric service but post-natal screening for diabetes will be required.

We would be grateful if this can be arranged within your practice. Whilst NICE recommend a FPG alone for postnatal screening, it is our experience locally that using this test alone will miss a small number of women with either impaired glucose tolerance or type 2 diabetes (approximately 1 in 20 cases).

The medical obstetric team recommend an OGTT for post-natal screening but appreciate that in primary care it may be more practicable to perform a FPG. An HbA1c test is increasingly being used to highlight individuals who may have type 2 diabetes, and by adding this test in at 3 months (the timing is arbitrarily chosen but makes the assumption that any post-partum anaemia will have resolved), those women who may have normal FPG but abnormal post-prandial glucose rises, may be captured.

Any woman identified as having gestational diabetes mellitus is at future increased risk of type 2 diabetes and requires annual screening for diabetes. Please follow local guidance for the diagnosis of type 2 diabetes.

If the post-partum tests are abnormal then please follow your usual practice and refer to the Diabetes Team if necessary for further advice.

Can you please supply:-

The target range for blood glucose reading in pregnancy is 4-6mmol/l prior to meals and 4-8mmol/l at 1 hour post meal

Yours sincerely,

Diabetes Specialist Midwife/Nurse
01482 675391

Diabetes Specialist Dietician
01482 675373

Appendix 2

Date

Dear Doctor,

Re:

Affix ID sticker

Date of delivery: _____

Your patient has been diagnosed with **Gestational Diabetes Mellitus and has now delivered**. This lady now requires **post-natal screening for diabetes and I would be grateful if you would arrange this within the practice**. The patient has been informed that this test is required.
Post-natal screening should include the following two investigations:

1) **Fasting Plasma Glucose (FPG) test at 6 weeks post-natal and**
2) **Haemoglobin A1c test at 3 months post-natal**

Whilst NICE recommend a FPG alone for post-natal screening, it is our experience locally that using this test alone will miss a small number of women with either impaired glucose tolerance or type 2 diabetes (approximately 1 in 20 cases). The medical obstetric team recommend an OGTT for post-natal screening but appreciate that in primary care it may be more practicable to perform a FPG. An A1c test is increasingly being used to highlight individuals who may have type 2 diabetes, and by adding this test in at 3 months (the timing is arbitrarily chosen but makes the assumption that any post-partum anaemia will have resolved), those women who may have normal FPG but abnormal post-prandial glucose rises, may be captured.

Any woman identified as having gestational diabetes mellitus is at future increased risk of type 2 diabetes and requires annual screening for diabetes. Please follow local guidance for the diagnosis of type 2 diabetes.

If the post-partum tests are abnormal then please follow your usual practice and refer to the Diabetes Team if necessary for further advice.

Yours sincerely,

Obstetric Department

Appendix 3

Date

Dear

Affix ID sticker

Following your diagnosis with Gestational Diabetes Mellitus you will require a further screening for diabetes. This test can be performed at your GPs surgery at approximately 5-6 weeks after the birth of your baby and you will need to arrange this with your GP/Practice Nurse.

Your GP will follow up your result and contact the Diabetes Team if you require any further management.

Yours sincerely,

Linda Wilkinson

Diabetes Specialist Midwife