

SESLHD POLICY COVER SHEET



Health
South Eastern Sydney
Local Health District

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KEY TERMS	Diabetes in Pregnancy; Gestational Diabetes; Pre-gestational diabetes
SUMMARY	A policy to guide the screening, management and follow-up of a woman with Gestational Diabetes Mellitus (GDM).

COMPLIANCE WITH THIS DOCUMENT IS MANDATORY
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1. POLICY STATEMENT

- This policy is to provide information on a district wide approach to managing **Gestational Diabetes Mellitus (GDM)**
- This policy contains principles that are mandatory for all relevant SESLHD employees
- This policy will replace all other hospital or sector-based policies currently in place
- For management of a woman with pre-existing Type 1 or Type 2 Diabetes refer to [SESLHDPD/283 Management of Pre-Gestational Diabetes in Pregnancy Policy](#).

2. AIMS

- To provide consistent appropriate services to a woman and her neonate(s) at risk of the maternal and fetal/neonatal complications of GDM in pregnancy
- To provide a structured pathway for education which includes diet, exercise, medication, self-care and blood glucose level (BGL) monitoring to a woman with GDM in pregnancy
- To optimise glycaemic control for a woman with GDM in pregnancy
- To detect and treat appropriately any maternal or fetal complication of GDM manifesting during pregnancy
- To prevent or shorten hospitalisation by providing stabilisation through appropriate services
- To liaise with Obstetricians, Endocrinologists/Obstetric Physicians, Midwives, Diabetes Educators, Dietitians, Lactation Consultants, Neonatologists, Allied Health and General Practitioners to help them provide an appropriate level of care to a woman with GDM in pregnancy
- To identify a woman with persistent diabetes or carbohydrate intolerance following pregnancy and to ensure appropriate follow up
- To ensure equal and appropriate access to all women within SESLHD.

3. PATIENT GROUP/S

- Pregnant woman with known pre-existing Impaired Glucose Tolerance (IGT)
- Pregnant woman with GDM diagnosed in pregnancy.

4. TARGET AUDIENCE

All healthcare providers involved in the treatment and management of GDM during pregnancy, postpartum and neonatal period including, but not limited to:

- Obstetricians
- Endocrinologists/Obstetric physicians/Physicians with an interest in diabetes
- Neonatologists
- General Practitioners
- Midwives and Nurses
- Diabetes Educators
- Dietitians
- Lactation Consultants
- Pharmacists

5. RESPONSIBILITIES

That the multidisciplinary team (MDT) of healthcare providers involved in managing a woman with GDM within SESLHD adhere to this policy to guide in periconceptual, antenatal, intrapartum and postpartum management.

6. DEFINITIONS/ABBREVIATIONS

ADIPS	Australasian Diabetes in Pregnancy Society
ANC	Antenatal Clinic
BGL	Blood Glucose Level
BMI	Body Mass Index
BS	Birthing Suite
cEFM	Continuous Electronic Fetal Monitoring
CS	Caesarean Section
DE	Diabetes Educator
DM	Diabetes Mellitus
ECS	Elective Caesarean Section
GDM	Gestational Diabetes Mellitus
GP	General Practitioner
GPSCP	General Practitioners Shared Care Program
IGT	Impaired Glucose Tolerance
LARC	Long Acting Reversible Contraceptive
LSCS	Lower Segment Caesarean Section
MDT	Multidisciplinary team
MGP	Midwifery Group Practice
NDSS	National Diabetes Services Scheme
OGTT	75g 2-hour Oral Glucose Tolerance Test
PCOS	Polycystic Ovarian Syndrome

7. POLICY

7.1 PRECONCEPTION

It is recommended that a woman deemed at high risk for GDM seek preconception advice from a health professional to cover:

- Testing prior to pregnancy to diagnose any pre-gestational diabetes or IGT
- Modification of any lifestyle factors, such as obesity, to reduce risk of GDM once pregnant
- Advice regarding preconception supplements, including folate and iodine.

7.2 SCREENING

Pre-Gestational Diabetes

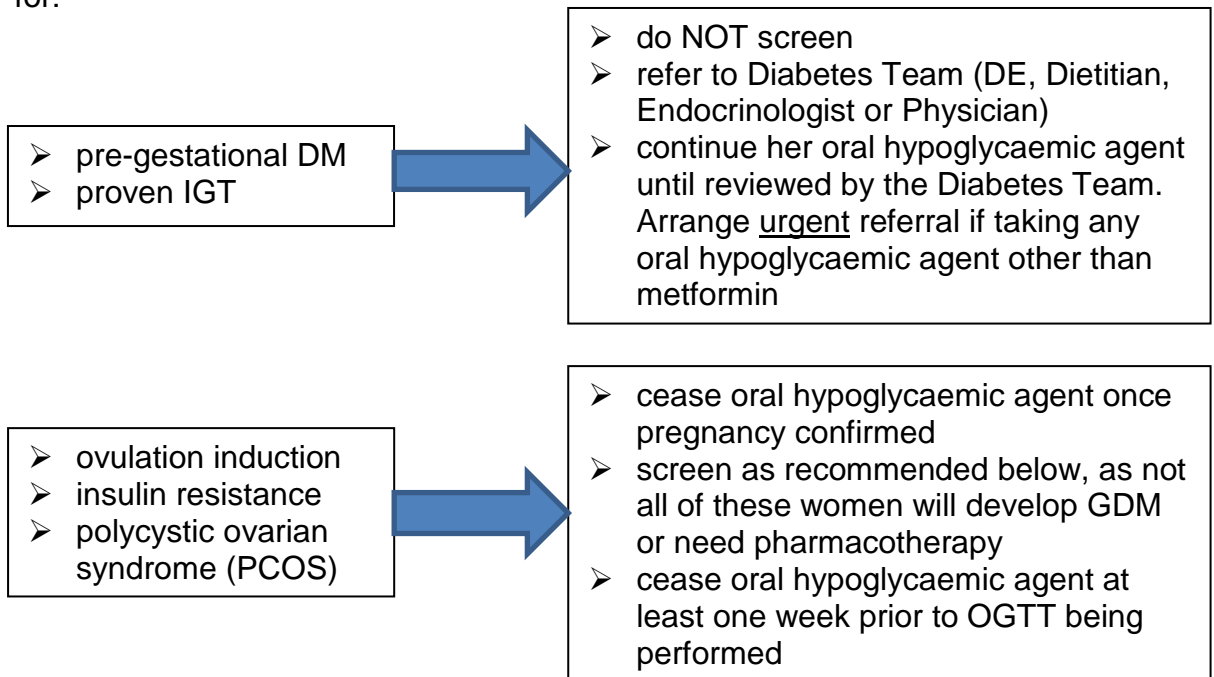
- A woman with pre-gestational Type 1 or Type 2 diabetes does NOT need screening as she is managed as having Diabetes in Pregnancy (refer to Management of Pre-Gestational Diabetes in Pregnancy Policy).

Impaired Glucose Tolerance (IGT)

- IGT is diagnosed when an OGTT prior to pregnancy has a 2-hour result 7.8-11.0 mmol/L
- A woman with a current diagnosis of IGT i.e. a recent OGTT, does NOT need further screening and should be treated as GDM and referred to DE/Diabetes Team
- A woman with suspected but unproven IGT who has NOT had an OGTT PRIOR to pregnancy, requires an early OGTT once pregnancy is confirmed.

Oral Hypoglycaemic (e.g. metformin) Use

- If a woman is taking an oral hypoglycaemic agent (e.g. metformin) prior to pregnancy for:



- Oral hypoglycaemic use for first trimester miscarriage prevention is still not conclusive and should not routinely be continued on these grounds. ^{8,9}

Woman who has undergone BARIATRIC surgery

- OGTT should be avoided
- Screen as per ‘High Risk Factors’ or ‘Routine’ criteria below, but instead of OGTT, refer to DE to monitor BGL for one week with glucometer
- HbA1c as an early screen:
 - If a woman is not able to perform BGL testing for one week as an early screen, an HbA1c may be performed, recognising that it is NOT as accurate as OGTT or BGL testing for one week
 - If result > 6.5% (48 mmol/mol) refer to DE as this may be consistent with pre-gestational diabetes
- HbA1c as a routine screen at 24-28 weeks gestation is NOT recommended and one week of BGL monitoring with glucometer should be performed. ^{10,11}

High Risk Factors for GDM

An OGTT should be performed in early pregnancy (ideally ≥ 13 weeks gestation) in a woman with any of the following risk factors:

- Ethnicity: Aboriginal/Torres Strait Islander, Asian, South Asian, Pacific Islander, Maori, Middle Eastern, non-white African
- Insulin resistance (e.g. associated with PCOS)
- Maternal age ≥ 40 years
- Medications e.g. corticosteroids, antipsychotics
- Periconceptual or initial booking BMI ≥ 30
- Previous adverse pregnancy outcome suggestive of undiagnosed GDM e.g. shoulder dystocia, unexplained stillbirth
- Previous baby with birth weight $> 4.5\text{kg}$
- Previous GDM
- Strong Family History Diabetes (e.g. first degree relative with diabetes; or sister with GDM).

If the test is negative, a 75g 2-hour OGTT should be repeated at 24-28 weeks gestation.

Routine GDM Screening

ALL other women should have 75g 2-hour OGTT at 24-28 weeks gestation.

Oral glucose tolerance test (OGTT)

- There is no need for a 3-day high carbohydrate diet before the OGTT
- Advise the woman that:
 - The 75g OGTT will take over 2 hours and that she must stay at the laboratory during that time
 - The OGTT is performed in the morning and requires blood to be drawn three times. A fasting BGL is performed and then an oral glucose load of 75g is given in the form of a drink. A further BGL is performed at both 1 hour and 2 hours post glucose load.
- Vomiting at time of OGTT:
 - If a woman vomits at time of 75g OGTT, look at other risk factors
 - If in ‘high risk’ category, refer woman to DE to monitor BGL for one week
 - If low risk – give woman option of repeat OGTT or refer to DE to monitor BGL for one week.
- False Negatives:
 - False negatives may be identified by examining risk level of woman
 - If clinical features are suspicious of GDM despite negative screening test, refer to DE for BGL monitoring

7.3 DIAGNOSTIC CRITERIA FOR GDM

GDM is diagnosed if the following criteria are met:

- OGTT results:
 - Fasting BGL $\geq 5.1 \text{ mmol/L}^*$
 - 1-hour BGL $\geq 10.0 \text{ mmol/L}$
 - 2-hour BGL $\geq 8.5 \text{ mmol/L}$

If the following tests are incidentally performed at any stage in pregnancy PRIOR to OGTT and show the following results, do NOT perform OGTT, but refer as diagnostic of GDM or DM.

- Fasting BGL: (< 13 weeks gestation) $\geq 6.1\text{mmol/L}^*$
 (≥ 13 weeks gestation) $\geq 5.1\text{mmol/L}$
- Random BGL $\geq 11.1\text{mmol/L}$ (i.e. beyond 2 hours postprandial)

** if OGTT or fasting BGL is performed < 13 weeks gestation and fasting BGL 5.1-6.0 mmol/L, this may be physiological and may require further evaluation. Discuss with, or refer to, DE/Diabetes Team for further advice.*

7.4 ANTENATAL MANAGEMENT

a) Referral

A woman with a positive result must be referred promptly (preferably within a week) to the Diabetes Educator (DE) and Dietitian. Once GDM is diagnosed the woman requires review as indicated in Table 1.

It is recommended that diabetes and antenatal care are delivered through multidisciplinary clinics where possible to minimise the number of separate appointments that the woman must attend, hereby improving patient attendance and compliance and improving coordination of care and management.

Individualised clinic appointments may be necessary due to language or other needs.

A woman newly diagnosed with GDM should have access to resources for patient information (e.g. **Appendix B**) in a format that is culturally and health literacy level appropriate.

Table 1: Antenatal Management of a Woman with GDM

This is a guideline only and all other obstetric and medical risk factors must be taken into account for each woman.

GDM Management			
Activity	Oral hypoglycaemic medication or insulin	Diet Not well controlled	Diet Well controlled
1. Review by DE	At diagnosis, then 1-4 weekly		
2. Review by Dietitian	At diagnosis, then as required		
3. Review by Endocrinologist or Obstetric Physician	<ul style="list-style-type: none"> 1-2 weeks post DE/Dietitian initial consultation Commencement of pharmacotherapy and then 1-4 weekly 	<ul style="list-style-type: none"> 1-2 weeks post DE/Dietitian initial consultation At recognition of poor control and then 1-4 weekly 	1-2 weeks post DE/Dietitian initial consultation
4. Review by Obstetric ANC	When commences pharmacotherapy	At recognition of poor control	nil
5. Obstetric Model of Care	Obstetric ANC	Obstetric ANC	Remain with usual low risk model of care (e.g. MGP, GPSC, other)
6. Morphology Ultrasound	Usual care		
7. Fetal Echocardiogram	Not required		
8. Ultrasound Surveillance	Once on pharmacotherapy, every 4-6 weeks in 3 rd trimester	Consider 4-6 weekly in 3 rd trimester, with advice from ANC/Diabetes Team	Not required
9. HbA1c /Fructosamine	Consider in 3 rd trimester with advice from ANC/Diabetes Team		Not required
10. Administration of Corticosteroids	<u>On Insulin:</u> <ul style="list-style-type: none"> Consult endocrinologist/obstetric physician for plan Continue QID BGL Increase insulin dose at time of first dose of corticosteroids if required and review dose after 24 hours Continue for 48 hours after first dose of corticosteroids and then return to usual insulin dose No change to mealtime insulin 	<ul style="list-style-type: none"> Consult endocrinologist/obstetric physician for plan Continue QID BGL Consider temporary treatment with insulin for 48 hours, especially if woman demonstrates hyperglycaemia after the first dose of corticosteroids 	

GDM Management			
Activity	Oral hypoglycaemic medication or insulin	Diet <u>Not well controlled</u>	Diet <u>Well controlled</u>
	<p><u>On Oral Hypoglycaemic Medication:</u></p> <ul style="list-style-type: none"> Consult endocrinologist/obstetric physician for plan Continue QID BGL Consider temporary treatment with insulin for 48 hours, especially if woman demonstrates hyperglycaemia after the first dose of corticosteroids 		
11. Antenatal Colostrum Expression	Refer to Lactation Consultant, or appropriately trained midwife by 30 weeks gestation to ensure antenatal expression of colostrum is commenced from 36 weeks gestation ^{12 13 14, 15}		
12. Timing of delivery	<p>This will require an individualised plan for each woman regarding gestation and mode of delivery, in discussion with the obstetric ANC consultant involved with MDT</p>		<ul style="list-style-type: none"> Consult with low risk model of care obstetric ANC at 40 weeks e.g. MGP, GPSC, other Usual postdates if no other obstetric risk factors
	<p><u>40-41 weeks:</u> Well controlled with <u>no other</u> obstetric risk factors on:</p> <ul style="list-style-type: none"> low dose insulin (<0.5 Units/kg current weight) oral hypoglycaemic medication <p><u>By 40 weeks:</u> High dose insulin (>0.5 Units/kg current weight) Suboptimal control e.g.</p> <ul style="list-style-type: none"> variable BGL macrosomia/polyhydramnios <p>Any other obstetric/medical risk factors e.g. AMA, raised BMI, south Asian ethnicity</p>	By 40 weeks	
13. Follow up Baby	<p>Provide additional breastfeeding support to enable exclusive breastfeeding Ensure any expressed colostrum accompanies the woman and is readily available for use if required Encourage rooming-in on postnatal ward to limit separation of woman and her neonate, unless medically indicated as per SESLHD Policy (SESLHDPD/158)¹⁶ Arrange monitoring and management for neonatal hypoglycaemia as per the Hypoglycaemia in a neonate - monitoring and management local operating procedure (RHW)¹⁷ (TSH & STG - SSGSHHS)¹⁸</p>		

b) Roles in the Multidisciplinary Team (MDT)

Diabetes Educator

- Provide general education about the nature of diabetes in pregnancy - see multilingual link to [NSW Health Infant of a Diabetic Mother below \(Appendix B\)](#)
- Free App - Pregnant with Diabetes - What is Diabetes? (**Appendix C**)
- Enrol woman in NDSS
- Instruct woman in the techniques of blood glucose monitoring four times a day (QID) i.e. fasting and 1 or 2 hours postprandial
- Educate woman on the importance of exercise to assist with the management of her diabetes. This will require regular review, guidance and individual planning to meet the woman's needs
- Conduct regular review of woman's BGLs in person, by telephone, or electronically
- Educate woman who has been prescribed insulin by the physician on self-administration technique
- Educate woman treated with insulin about hypoglycaemia
- Educate woman about the benefits of breastfeeding with diabetes. Encourage exclusive breastfeeding for at least 6 months and continue to breastfeed while solids are introduced.

Dietitian

- Educate woman about the appropriate diet for managing her diabetes
- Provide information on appropriate weight gain during pregnancy
- Ensure adequate and balanced diet during pregnancy
- Outline basis of long-term healthy eating for reducing risk of diabetes in the future.

Endocrinologist/Obstetric Physician*

- Initial consultation with woman with GDM within 1-2 weeks of seeing the Diabetes Educator and Dietitian
- Explain results of diabetes testing and plan target BGL
- Explain potential maternal and fetal/neonatal complications
- Advise about the potential short- and long-term implications of diabetes
- Describe the management regimen during pregnancy and birth
- Educate woman on the importance of exercise to assist with the management of her diabetes. This will require regular review, guidance and individual planning to meet the woman's needs
- Perform an appropriate history and examination
- Identify and manage any maternal complications (e.g. hypertension, renal impairment, eye disease)
- Ensure review at least every 4 weeks. These reviews can be done by DE or GPs in diet controlled or low risk women
- Ensure liaison with obstetrician/midwife/GP performing antenatal care
- Refer to obstetric ANC if insulin or oral hypoglycaemic medication are commenced or diabetic control is considered sub-optimal.

**with appropriate education and resourcing this could be the role of the Antenatal Shared Care GP for low risk diet controlled GDM.*

Midwife

- A woman should have access to midwifery education and support throughout her pregnancy
- A woman who has diet controlled GDM (with no other obstetric risk factors) and has good control, is at no greater risk obstetrically; therefore, this woman does not need to be managed in a medical model of care and can remain in midwifery/GP model⁷
- Ensure a woman is referred to Endocrinologist/Obstetric Physician **and** Obstetric ANC:
 - when commences pharmacotherapy i.e. insulin or metformin
 - is non-compliant
 - does not have good control
 - has additional obstetric risk factors
- Educate woman about the benefits of breastfeeding with diabetes and encourage breastfeeding
- Educate woman on the importance of exclusive breastfeeding for around six months and to continue to breastfeed while solid foods are introduced.

Obstetrician

- Initial consultation with woman with GDM who requires insulin/oral hypoglycaemic pharmacotherapy, is non-compliant or who does not have good diet control
- Follow up consultations regularly as per antenatal care schedule, involving midwifery consultations on a case-by-case basis
- Explain the potential maternal and fetal/neonatal complications of GDM requiring pharmacotherapy or poorly controlled GDM
- Organise any additional obstetric investigations as needed
- Assess timing of delivery for woman on insulin/oral hypoglycaemic pharmacotherapy, or suboptimal control evidenced by elevated BGL, fetal complications or other obstetric indications.

c) Treatment Targets

A woman’s range of acceptable BGL may vary according to other risk factors. The individualised range for each woman should be communicated to the woman and the rest of the MDT via the woman’s BGL diary or recording sheet as per the local clinical procedure.

The following self-monitoring treatment ranges are suggested, although advice should be sought from the Endocrinologist/Obstetric Physician/Diabetes Educator:

- Fasting BGL: ≤ 5.0-5.5 mmol/L
- 1-hour BGL after commencing meal: ≤ 7.4-8.0 mmol/L
- 2-hour BGL after commencing meal: ≤ 6.7-7.0 mmol/L

d) Administration of corticosteroids to woman with diabetes

- Administration of corticosteroids for fetal lung maturation to woman with diabetes is associated with an increase in BGLs
- For management details see **Table 1; Section 10: Administration of Corticosteroids**

7.5 INTRAPARTUM MANAGEMENT OR PRE-CAESAREAN REGIMEN FOR WOMAN WITH GDM

- If planned (elective) CS, ideally book on a morning operating list. There is no need to admit the night before.
- A woman with diabetes in pregnancy requires a detailed diabetes care plan (**Appendix A**) for the time of delivery, taking into account the mode and timing of delivery is unpredictable (Table 2). This should include details about management in the immediate postpartum period and follow up arrangements.

Table 2: Intrapartum or Pre-Caesarean Regimen for Woman with GDM

<p>Diet Controlled GDM</p>	<ul style="list-style-type: none"> • Continue with normal BGL regime until fasting or in established labour • Perform one BGL on admission - no intervention if BGL 4.0-8.0 mmol/L • Continue 6-hourly BGL testing and a diabetic diet in established labour • Insulin will rarely be required at this stage of pregnancy • If BGL <4.0 or >8.0 mmol/L, treat as per sliding scale in section 7.6 • No 5% dextrose is required.
<p>Oral Hypoglycaemic Medication</p>	<ul style="list-style-type: none"> • Continue with normal BGL regime until fasting or in established labour • Cease oral hypoglycaemic medication at commencement of established labour or when fasting commences • Perform BGL on admission to BS, and 2-hourly throughout established labour • When in established labour, initiate cEFM • Perform BGL hourly from time of admission (assuming admitted on same day) for planned (elective) CS • If BGL <4.0 or > 8.0 mmol/L, treat as per sliding scale in section 7.6.
<p>Insulin Therapy (+/- Oral Hypoglycaemic Medication)</p>	<ul style="list-style-type: none"> • Continue with normal BGL regime until fasting or in established labour • Continue usual dose of insulin until fasting or in established labour • Perform BGL on admission to BS, and 2-hourly throughout established labour • When in established labour, initiate cEFM • Perform BGL hourly from time of admission (assuming admitted on same day) for planned (elective) CS • If BGL <4.0 or > 8.0 mmol/L, treat as per Sliding Scale in section 7.6 • Notify Paediatric Team/Special Care Nursery if neonatal admission is anticipated • Maintain accurate fluid intake and output chart.

7.6 INSULIN THERAPY IN LABOUR OR DURING CAESAREAN SECTION

This can be given by:

- 1) Sliding scale subcutaneous route - see below
- 2) Intravenous infusion +/- concurrent dextrose infusion. See RHW Local Operating Procedure [Insulin Dextrose Infusion Protocol for Labour](#) ¹⁹

Sliding Scale²⁰

BGL mmol/L	Action
0 - 3.9	No insulin. Give carbohydrate meal or commence 5% dextrose 84mL/hour and continue until the woman is eating
4.0 - 8.0	No insulin No 5% dextrose
8.1 - 10.0	6 units rapid acting insulin analogues subcut or as directed by endocrine team/obstetric physician
> 10	Consultation with endocrine team/obstetric physician and either continue with subcut insulin OR consider an insulin infusion and concurrent dextrose infusion as required

7.7 POSTPARTUM AND LONGER-TERM FOLLOW-UP

- Consult individualised Diabetes Care Plan (**Appendix A**) for individualised advice on:
 - BGL monitoring in the immediate postpartum period
 - Any required pharmacotherapy in the immediate postpartum period
 - Recommendations and timing for further testing after pregnancy
 - Recommendations and timing for postnatal follow up appointments with diabetes team.
- Ensure contraception plan in place for woman with suspicion of ongoing diabetes OUTSIDE pregnancy (e.g. LARC). To be reviewed by obstetric JMO prior to discharge
- NDSS advises all women with GDM should have a 75g OGTT, preferably 6-12 weeks postpartum. However, this advice may be individualised according to Diabetes Care Plan (**Appendix A**) as stated above
- Advise woman to have regular surveillance for the development of Type 2 DM with an annual check with GP (annual cycle of care). This should be included in hospital discharge information to GP
- Advise woman to have a check with GP if planning another pregnancy BEFORE pregnancy occurs – as per section 7.1 PRE-CONCEPTION.

7.8 FUTURE DIRECTION

- GP Antenatal shared care
 - For diet controlled uncomplicated GDM
- Referral pathways
- mHealth and eHealth opportunities (e.g. GDM app for mobile phones)
- Audit maternal and neonatal outcomes annually.

8. DOCUMENTATION

- Electronic Medical Records
- Obstetric database e.g. eMaternity
- Antenatal card
- Partogram
- Postnatal Clinical Pathway
- Neonatal Care Plan
- Documentation back to GP/Primary care

9. REFERENCES

1. [Nankervis A, et al. Australian Diabetes in Pregnancy Society \(ADIPS\) Consensus Guidelines for the Testing and Diagnosis of Gestational Diabetes Mellitus in Australia 2014](#)
2. [Agency for Clinical Innovation \(ACI\) Endocrine Network NSW Model of Care for People with Diabetes Mellitus March 2014](#)
3. [National Institute for Health and Clinical Excellence \(NHS\) Diabetes in Pregnancy: Management from preconception to the postnatal period August 2015](#)
4. International Diabetes Foundation (IDF) Global Guideline; Pregnancy and Diabetes 2009
5. [Intermountain Healthcare, Care Process Model: Management of Gestational Diabetes; \(2017\)](#)
6. Pathways for Pre-diabetes, Type 1, Type 2 and Gestational Diabetes. Victorian Dept of Health 2013. Loddon Mallee Regional Diabetes Pathways Version 2-1.pdf
7. Gestational diabetes mellitus. Practice Bulletin No. 137. American College of Obstetricians and Gynaecologists. Obstet Gynecol 2013; 122:406–16
8. Vanky E et al. Journal of Clinical Endocrinology and Metabolism. 2010 Dec; 95(12): E448-55. Metformin versus placebo from first trimester to delivery in polycystic ovary syndrome: a randomized, controlled multicenter study
9. Ghazeeri GS, Nassar AH, Younes Z, Awwad JT. Acta Obstetrica et gynecologica Scandinavica. 2012 Jun;91(6):658-78. Pregnancy outcomes and the effect of metformin treatment in women with polycystic ovary syndrome: an overview
10. Soumya S, Rohilla M, Chopra S, Dutta S, Bhansali A, Parthan G, Dutta P. Diabetes Technol Ther. 2015 Dec;17(12):899-904. HbA1c: A Useful Screening Test for Gestational Diabetes Mellitus.
11. Hughes RC, Rowan J, Florkowski CM. Is There a Role for HbA1c in Pregnancy? Curr Diab Rep. 2016, Jan;16(1):5
12. Forster DA, Moorhead AM, Jacobs SE, Davis PG, Walker SP, McEgan KM, Opie GF, Donath SM, Gold L, McNamara C, Aylward A, East C, Ford R, Amir LH. Lancet 2017 June (389) 2204-2213. Advising women with diabetes in pregnancy to express breastmilk in late pregnancy (Diabetes and Antenatal Milk Expressing [DAME]): a multicentre, unblinded, randomised controlled trial
13. [St George/Sutherland Hospitals and Health Services. Antenatal Expression & Storage of Colostrum Clinical Business Rule](#)
14. Cox SG. Expressing and storing colostrum antenatally for use in the newborn period. *Breastfeeding Review*. 2006; 14(3): 11-16
15. Singh G et al Effect of antenatal expression of breast milk at term in reducing breast feeding failures. *MJAFI* 2009; 65: 131-133
16. [SESLHPD/158 - Rooming in for Healthy Babies](#)
17. [RHW Local Operating Procedure. Hypoglycaemia in a Neonate – Monitoring & Management of at Risk Neonates](#)
18. [St George & Sutherland hospitals can access the Hypoglycaemia Business Rule, listed under the Neonatal Observation Guidelines \(Workplace Instructions\) Hypoglycaemia is the 3rd box down on this site OR via below cross reference hyperlink](#)
19. [RHW Local Operating Procedure Insulin Dextrose Infusion Protocol for Labour](#)
20. Ryan EA, Al Agha R. Glucose control during labour and delivery. Current Diabetes Reports; 2014; 14:451-450
21. Olesen CR et al. Associations Between Follow-up Screening After Gestational Diabetes and Early Detection of Diabetes. BMC Public Health.2014;14(841).


10. REVISION & APPROVAL HISTORY

Date	Revision No.	Author and Approval
October 2014	0	Draft policy developed
December 2014	0	Endorsed by SESLHD Clinical and Quality Council
October 2019	1	Minor Review. Revised Diabetes Care Plan. Included references to Infant of Diabetic Mother and Diabetes Education App. Updates in screening and antenatal care. SESLHD Working Party for Gestational Diabetes Mellitus Management Policy. Approved by Executive Sponsor. Formatted by Executive Services prior to tabling at November 2019 Quality Use of Medicines Committee (QUMC) and Clinical and Quality Council Meeting (CQC).
November 2019	1	Not approved at QUMC as minor changes required.
November 2019	2	QUMC Secretariat advised of minor changes. Submitted to author for Executive Sponsor approval.
January 2020	3	Minor changes made and approved by Executive Sponsor. Processed by Executive Services prior to tabling at February 2020 QUMC.
February 2020	3	Approved at February 2020 QUMC. To be tabled at the March 2020 CQC for approval to publish.
March 2020	3	Approved at March 2020 Clinical and Quality Council. Published by Executive Services.

Appendix A: Diabetes Care Plan



POSIX Patched by pd/AS2125 5 1012
BINDING MARGIN - NO WRITING

 Health South Eastern Sydney Local Health District	FAMILY NAME		URN
	GIVEN NAME		<input type="checkbox"/> MALE <input type="checkbox"/> FEMALE
Facility:	D.O.B. ____/____/____		M.D.
	ADDRESS		
DIABETES CARE PLAN: <input type="checkbox"/> In labour <input type="checkbox"/> Prior to CS <input type="checkbox"/> Postpartum			
LOCATION / WARD			
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE			
This woman has: <input type="checkbox"/> Gestational diabetes <input type="checkbox"/> Pre-gestational type 1 diabetes <input type="checkbox"/> Pre-gestational type 2 diabetes			
She is being treated with: <input type="checkbox"/> Diet alone <input type="checkbox"/> Insulin alone <input type="checkbox"/> Oral hypoglycaemics alone <input type="checkbox"/> Oral hypoglycaemics and insulin			
Prior to a planned CS she should receive the following: <input type="checkbox"/> Usual dose of insulin or oral hypoglycaemics until fasting Or <input type="checkbox"/> The following:			
During labour or pre-CS, refer to Table 2 for BSL testing regimen in either: • SESLHDPD282 SESLHD Management of Gestational Diabetes Mellitus (GDM) • SESLHDPD283 SESLHD Management of Pre-gestational Diabetes in Pregnancy			
If the BGL is <4.0 mmol/L or >8.0 mmol/L, refer to section titled INSULIN THERAPY IN LABOUR OR DURING CAESAREAN SECTION for management options in either: • SESLHDPD282 SESLHD Management of Gestational Diabetes Mellitus (GDM) • SESLHDPD283 SESLHD Management of Pre-gestational Diabetes in Pregnancy			
Contact if advice is needed			
For woman with GDM, postpartum: <input type="checkbox"/> Continue BGL testing QID for 2 days with NORMAL diet <input type="checkbox"/> This woman will/will not require a repeat 2 hour OGTT at weeks postpartum <input type="checkbox"/> This woman will/will not require a repeat 2 hour OGTT at 12 months postpartum with GP			
For woman with pre-gestational DM, postpartum: <input type="checkbox"/> Continue BSL testing hourly on a DIABETIC diet <input type="checkbox"/> Commence the following insulin/oral hypoglycaemic when able to eat: Medication/Dose <input type="checkbox"/> Please notify the endocrinology registrar/obstetric physician for review during her postpartum hospital stay			
This woman will/will not require an appointment for the Diabetes Clinic in weeks.			
Print Name:		Signature:	
Designation:		Date:	
Original – Medical Record		Copy – Patient	

DIABETES CARE PLAN:
 In labour Prior to CS Postpartum

SES060407

Appendix B: Infant of a Diabetic Mother

Multilingual Link: <http://www.mhcs.health.nsw.gov.au/publicationsandresources/pdf/publication-pdfs/ahs-9855>

English
2015



Infant of a Diabetic Mother

What is diabetes?

Diabetes is a condition where there is too much sugar in the blood. Blood sugar is normally controlled by insulin. When blood sugar rises after meals, the body responds by putting insulin into the blood stream. The insulin helps the sugar get into the body's cells to use for energy and growth. If you have diabetes there is not enough insulin released by the body causing blood sugar to be abnormally high.

How does diabetes in the mother affect the baby before birth?

When a mother's blood sugar is high, sugar travels across the placenta to the baby and leads to high blood sugar in the baby. The baby makes extra insulin in response to this extra sugar. This extra insulin in the baby's blood and changes that occur in the placenta of a diabetic mother can lead to the following problems:

1. Large babies
The high sugar and high insulin together may make the baby grow larger than normal.
2. Small babies
This is rare and occurs when the mother has had diabetes for several years and has changes in her blood vessels and the placenta.

Could there be complications at birth?

Normally the head is the largest part of the baby and comes out first. If the head gets through the rest of the body slips through easily. In infants of diabetic mothers the shoulders may be larger which may result in complications at birth.

Infant of a Diabetic Mother

What problems do these babies have after birth?

1. Low blood sugar
When babies are born they don't get sugar from their mothers. These babies can have too much insulin for the amount of sugar they intake. This will cause the blood sugar level to fall.
2. Breathing problems
3. Polycythemia
This means too many red blood cells. If there are only a little more than normal, it will not need to be treated. If the number of red blood cells is very high, it will cause the blood to become very thick and decrease the flow in the blood vessels. Very thick blood also clots easily and can sometimes produce unwanted clots. This problem can be treated easily if needed.
4. Premature infants
Sometimes infants of diabetic mothers are born early and those babies may have other common problems of premature infants.

Will my baby develop diabetes later on?

Being an infant of a diabetic mother does not mean the baby will have diabetes later on or in adult life. Diabetes does run in families meaning these babies are at the same risk as other family members. This may make them at a slightly higher risk than the general population of developing diabetes.

Please talk to the staff if you want more information about diabetes.

Interpreter Services

Professional interpreters are available if you need help understanding or speaking in English. You may have a family member or friend present, but all communication about your baby's treatment should be through a professional interpreter. Interpreter services are free and confidential.

It is your right to ask for an interpreter if one is not offered to you. The staff will book the interpreter for you.

If you need to use an interpreter to contact us, please call the telephone Translating and Interpreter Service on 131 450.

If you wish to discuss any aspect of this information, please send an email:
SESLHD-RHWfeedback@health.nsw.gov.au

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Appendix C: Pregnant with Diabetes – free app

