SESLHD POLICY COVER SHEET

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EXECUTIVE SPONSOR	Dr Danny Challis Director of Women's and Children's Clinical Stream
AUTHOR/S	Gestational Diabetes Mellitus Policy Working Party
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KEY TERMS	Diabetes in Pregnancy; Gestational Diabetes; Pregnancy Induced Diabetes; Pre-gestational diabetes
SUMMARY	A policy to guide the management of a woman with pre-gestational diabetes mellitus (Type 1 or 2, insulin or non-insulin dependent) covering: • preconception advice • management of diabetes during the gestational period • management during delivery • postpartum requirements

1. POLICY STATEMENT

- This policy is to provide information on a district wide approach to managing a woman with **pre-existing/pre-gestational diabetes** throughout her pregnancy
- 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 Gestational Diabetes, refer to SESLHDPD/282 Management of Gestational Diabetes Mellitus (GDM) 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 PRE-GESTATIONAL diabetes 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 PRE-GESTATIONAL diabetes in pregnancy
- To optimise glycaemic control for a woman with PRE-GESTATIONAL diabetes in pregnancy
- To detect and treat appropriately any maternal or fetal complication of PRE-GESTATIONAL diabetes 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 PRE-GESTATIONAL diabetes in pregnancy
- To ensure equal and appropriate access to all women within SESLHD.

3. PATIENT GROUP/S

- Pregnant woman with known pre-existing/pre-gestational diabetes mellitus
  - Type 1 Diabetes Mellitus (T1DM)
  - Type 2 Diabetes Mellitus (T2DM)
  - Insulin Dependent Diabetes Mellitus (IDDM)
  - Non-Insulin Dependent Diabetes Mellitus (NIDDM).

4. TARGET AUDIENCE

All healthcare providers involved in the treatment and management of pre-gestational diabetes 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

5. RESPONSIBILITIES

That the multidisciplinary team (MDT) of healthcare providers involved in managing a pregnant woman with pre-gestational/pre-existing diabetes within SESLHD adhere to this policy to guide them in periconceptual, antenatal, intrapartum and postpartum management.

6. DEFINITIONS

ADIPS	Australasian Diabetes in Pregnancy Society
ANC	Antenatal Clinic
BGL	Blood Glucose Level
BS	Birthing Suite
cEFM	Continuous Electronic Fetal Monitoring
CGM	Continuous Glucose Monitoring
CS	Caesarean Section
DE	Diabetes Educator
DM	Diabetes Mellitus
ECS	Elective Caesarean Section
GDM	Gestational Diabetes Mellitus
GP	General Practitioner
IDDM	Insulin Dependent Diabetes Mellitus
IGT	Impaired Glucose Tolerance
LARC	Long Acting Reversible Contraceptive
LSCS	Lower Segment Caesarean Section
MDT	Multidisciplinary Team
MSU UA	Midstream Urine Urinalysis
NDSS	National Diabetes Services Scheme
NIDDM	Non-Insulin Dependent Diabetes Mellitus
OGTT	75g 2-hour Oral Glucose Tolerance Test
T1DM	Type 1 Diabetes Mellitus
T2DM	Type 2 Diabetes Mellitus

7. POLICY

7.1 PRECONCEPTION

It is recommended that a woman with pre-gestational diabetes seek advice from a health professional to cover:

- Use of reliable and effective contraception (e.g. LARC) until diabetes is optimal for conception
- Use of reliable method of documenting menstrual/conceptual record when attempting to conceive e.g. diary, APP
- Maintaining HbA1c < 7% (53mmol/mol) to minimise risk of miscarriage and congenital malformation
- Review of all medications appropriateness in periconception and pregnancy
- Consider suitability for commencing continuous glucose monitoring (CGM), and if deemed eligible/appropriate, then to initiate process with endocrinologist/obstetric physician[5]
- Advice regarding preconception supplements, including:
  - o high dose folate (5mg Folic Acid) from preconception until 13 weeks gestation
  - o iodine
- Advice regarding the use of low dose aspirin once pregnancy confirmed
- Health professional review as indicated
- Modification of any lifestyle factors, such as obesity (if applicable).

7.2 ANTENATAL MANAGEMENT

a) Referral

Arrange review with Diabetes and Obstetric teams as indicated in Table 1 (below). An initial booking appointment should ideally occur at 8-10 weeks gestation.

Diabetes team consists of:

- Diabetes Educator
- Dietitian
- Endocrinologist/Obstetric Physician
- Endocrine Registrar

Obstetric team consists of:

- Obstetrician
- Obstetric Registrar/Resident Medical Officer (RMO)
- Midwife

It is recommended that diabetes and antenatal care is 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 with pre-gestational diabetes should have access to resources for patient information (e.g. **Appendix C**) in a format that are culturally and health literacy level appropriate.

Table 1: Antenatal Management of a Woman with Pre-Gestational Diabetes
This is a guideline only and all other obstetric and medical risk factors must be considered for each woman.

Activity	Pre-Gestational Diabetes (Type 1 or 2)
1. Review by DE	Referred at first booking (8-10 weeks gestation), then as required.
2. Review by Dietitian	Referred at first booking (8-10 weeks gestation), then as required.
3. Review by Endocrinologist or Obstetric Physician	Referred at first booking (8-10 weeks gestation), then review 1-4 weekly.
4. Review by Obstetric ANC	Referred at first booking (8-10 weeks gestation), then review as per antenatal care schedule.
5. Obstetric Model of Care	<u>Obstetric Antenatal Care with Midwifery input</u> Each hospital will determine the best way to share antenatal visits between doctors and midwives, however it is suggested that obstetric ANC visits occur at a minimum at: - booking - 20 weeks gestation (after morphology ultrasound) - 30 weeks gestation (after 28-30 week ultrasound) - 36 weeks gestation (after 34-36 week ultrasound) And midwives' antenatal visits occur at a minimum at: - 24 weeks gestation - 32 weeks gestation - 37 weeks gestation At each visit, in addition to a standard antenatal assessment, each woman should have: - a midstream urine urinalysis (MSU UA) performed - weight measured and recorded.
6. Morphology Ultrasound	At Specialised Obstetric Ultrasound Centre.
7. Fetal Echocardiogram	Consider if poor control after discussion with obstetric ANC/diabetes team.
8. Ultrasound Surveillance	Every 4 weeks from 28 weeks, or more often as determined by obstetric ANC.
9. HbA1c/Fructosamine	Every 4-6 weeks after discussion with obstetric ANC/diabetes team.

Activity	Pre-Gestational Diabetes (Type 1 or 2)
10. Administration of Corticosteroids	On Insulin: • 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 On Oral Hypoglycaemic Medication: • 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[6, 7, 8, 9]
12. Timing of delivery	Review at 36 weeks for fetal and maternal stability (BGLs, HbA1c, insulin requirement, fetal growth) to determine appropriate time and mode of delivery. Well controlled pre-gestational DM, deliver at 38-39 weeks gestation. Poorly controlled pre-gestational DM may require delivery prior to 38 weeks gestation and will require an individualised multidisciplinary plan.
13.Follow up Baby	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 neonate, unless medically indicated as per SESLHD Policy (SESLHDPD/158).[10] Arrange monitoring and management for neonatal hypoglycaemia as per the Hypoglycaemia in a Neonate - Monitoring and Management of at-Risk Neonates local operating procedure /workplace instruction (RHW) [11] & (SGH/TSH - SGSHHS).[12]

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**)
- Check if woman is enrolled in NDSS, and enrol if not already

- Consider suitability for commencing continuous glucose monitoring (CGM) for woman with type 1 DM, if woman has not already commenced preconception.[5] If deemed eligible/appropriate, then initiate process in consultation with endocrinologist/obstetric physician
- Check BGL monitoring technique and any modifications required for pregnancy
- 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
- In most cases, the woman will require insulin therapy which will be prescribed by the endocrinologist/obstetric physician. Educate woman on self-administration technique, if not already familiar
- Educate insulin treated woman about hypoglycaemia
- Educate woman about the benefits of breastfeeding with diabetes. Encourage exclusive breastfeeding for at least 6 months and continue to breastfeed while solid foods 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.

Endocrinologist/Obstetric Physician

- Explain and plan target BGLs
- Consider suitability for commencing continuous glucose monitoring (CGM) for woman with type 1 DM, if woman has not already commenced preconception.[5] If deemed eligible/appropriate, then initiate process in consultation with diabetes educator
- Explain potential maternal and fetal/neonatal complications
- Reiterate the potential 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 individualised 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 liaison with obstetric ANC.

Midwife

- A woman should have access to midwifery education and support throughout her pregnancy. Ideally this would be 2-3 visits antenatally at the discretion of the obstetric ANC
- 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

- Ensure accurate dating of pregnancy
- Explain the potential maternal and fetal/neonatal complications
- Organise any additional obstetric investigations as needed
- Review regularly as per antenatal care schedule
- Assess mode and timing of delivery evidenced by BGL control, fetal complications or other obstetric indications
- Discuss postpartum plans for contraception, and planning for future pregnancies.

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 record as per the local clinical procedure.
The following self-monitoring treatment ranges are suggested, though 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 a woman with diabetes is associated with an increase in BGL's
- For management details see **Table 1; Section 10: Administration of Corticosteroids.**

7.3 INTRAPARTUM MANAGEMENT OR PRE-CAESAREAN REGIMEN FOR WOMAN WITH PRE-GESTATIONAL DIABETES

- 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, considering the mode and timing of delivery is often 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 Pre-Gestational Diabetes**

Oral Hypoglycaemic Medication	• Continue with normal BGL regime until fasting or in established labour • Cease oral hypoglycaemic 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 **7.4.**
Insulin Therapy (+/- Oral Hypoglycaemic Medication)	• Continue with normal BGL regime until fasting or in established labour • Continue usual dose of insulin until fasting or in established labour • Inform Endocrine team/Obstetric Physician team of admission • Perform BGL on admission to BS, and 2-hourly throughout established labour • Perform urinalysis (UA) for ketones with each void or 4-hourly, in woman with Type I pre-gestational DM • 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 7.4 • Notify Paediatric Team/Special Care Nursery if neonatal admission is anticipated • Maintain accurate fluid intake and output chart.
Woman with subcutaneous insulin pump	• Type 1 pre-gestational diabetic woman receiving insulin by continuous subcutaneous pump requires a detailed management plan. If this woman presents unexpectedly in labour or for delivery; please contact the physician/endocrinologist on call • Reduce basal insulin by 30% and perform hourly capillary BGL monitoring in the interim.

7.4 INSULIN THERAPY IN LABOUR OR DURING CAESAREAN SECTION

- This can usually be managed with a sliding scale and subcutaneous route insulin as outlined below
- However, an intravenous insulin infusion +/- concurrent dextrose infusion may also be used at the discretion of the obstetric physician/endocrinologist in a woman with type 1 pre-gestational DM. See RHW Local Operating Procedure - Insulin Dextrose Infusion Protocol for Labour. [13]

Sliding Scale [14]

BGL mmol/L	Action
0 - 3.9	No insulin Give carbohydrate meal or commence 5% dextrose 84mL/hr 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

7.5 POSTPARTUM AND LONGER-TERM FOLLOW-UP

- Consult individualised Diabetes Care Plan (**Appendix A**) for individual advice on:
    - BGL monitoring in the immediate postpartum period
    - Insulin/oral hypoglycaemic doses in the immediate postpartum period
    - Recommendations and timing for postnatal follow up appointment with diabetes team
- Continue diabetic diet
- The Endocrine Registrar should be notified by the obstetric JMO to review the woman prior to discharge
- Inform woman about the importance of pre-conceptual folate (5mg) and the importance of good peri-conceptual diabetic control in a future pregnancy
- Ensure contraception has been addressed and a plan has been made to have low failure rate contraception in place by 6 weeks postpartum. (e.g. LARC)
- Woman should be encouraged to always have a planned pregnancy, with contraception remaining in place until optimal diabetes control
- Re-engagement with the usual diabetes care team
- Advise woman to have a check with usual diabetes care team if planning another pregnancy before pregnancy occurs - as per Section 1 PRECONCEPTION.

7.6 FUTURE DIRECTION

Standardised referral pathways between sectors

- Improvement of pathology results availability
- mHealth and eHealth opportunities
- Audit maternal and neonatal outcomes annually

8. DOCUMENTATION

- Electronic Medical Record
- Obstetric database – e.g. eMaternity
- Antenatal card

- Partogram
- Postnatal Clinical Pathway
- Neonatal Care Plan
- Documentation back to GP/Primary care
- Documentation back to usual diabetes care team

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. Aug 2015 http://www.nice.org.uk/guidance/ng3
4) International Diabetes Foundation (IDF) Global Guideline; Pregnancy and Diabetes 2009
5) Feig DS, Donovan LE, Corcoy R, Murphy KE, Amiel SA, Hunt KF et al. Continuous glucose monitoring in pregnant women with type 1 diabetes (CONCEPTT): a multicentre international randomised controlled trial. Lancet November 2017 Volume 390, ISSUE 10110, P2347-2359. https://doi.org/10.1016/S0140-6736(17)32400-5
6) Singh G et al. Effect of Antenatal Expression of Breast Milk at Term in Reducing Breast Feeding Failures. MJAFI 2009; 65: 131-133.
7) Cox SC. Expressing and storing colostrum antenatally for use in the newborn period. Breastfeeding Review: 2006; 14(3): 11-16
8) St George/Sutherland Hospitals and Health Services. Clinical Business Rule. ANTENATAL EXPRESSION OF COLOSTRUM
9) 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).
10) SESLHDPD/158 - Rooming in for Healthy Babies
11) RHW Local Operating Procedure: Hypoglycaemia in a Neonate - Monitoring & Management of at Risk Neonates
12) St George & Sutherland hospitals can access the **Hypoglycaemia Business Rule**, listed under
    a. the **Neonatal Observation Guidelines** (Workplace Instructions)
    b. **Hypoglycaemia** is the 3rd box down on this site OR via below cross reference hyperlink
13) RHW Local Operation Procedure. Insulin Dextrose Infusion Protocol for Labour
14) Ryan EA, Al Agha R. Glucose control during labour and delivery. Current Diabetes Reports; 2014; 14:451-450.

10. REVISION AND APPROVAL HISTORY

Date	Revision No.	Author and Approval
November 2014	0	Draft policy developed
December 2014	0	Endorsed by the 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. SESLHD Working Party for Management of Pre-Gestational Diabetes Mellitus in Pregnancy 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.
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; for diabetes management in Labour, or prior to Caesarean Section and Postpartum.

Health South Eastern Sydney Local Health District

Facility:

DIABETES CARE PLAN:
☐ In labour ☐ Prior to CS
☐ Postpartum

FAMILY NAME	MRN
GIVEN NAME	☐ MALE ☐ FEMALE
D.O.B. ___/___/___	M.O.
ADDRESS	
LOCATION / WARD	
COMPLETE ALL DETAILS OR AFFIX PATIENT LABEL HERE	

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BINDING MARGIN - NO WRITING

This woman has:
☐ Gestational diabetes ☐ Pre-gestational type 1 diabetes ☐ Pre-gestational type 2 diabetes

She is being treated with:
☐ Diet alone ☐ Insulin alone ☐ Oral hypoglycaemics alone ☐ Oral hypoglycaemics and insulin

Prior to a planned CS she should receive the following:
☐ Usual dose of insulin or oral hypoglycaemics until fasting
Or
☐ The following: ....

During labour or pre-CS, refer to Table 2 for BSL testing regimen in either:
- SESLHD/PD282 SESLHD Management of Gestational Diabetes Mellitus (GDM)
- SESLHD/PD283 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:
- SESLHD/PD282 SESLHD Management of Gestational Diabetes Mellitus (GDM)
- SESLHD/PD283 SESLHD Management of Pre-gestational Diabetes in Pregnancy

Contact .... if advice is needed

For woman with GDM, postpartum:
☐ Continue BGL testing QID for 2 days with NORMAL diet
☐ This woman will/will not require a repeat 2 hour OGTT at .... weeks postpartum
☐ This woman will/will not require a repeat 2 hour OGTT at 12 months postpartum with GP

For woman with pre-gestational DM, postpartum:
☐ Continue BSL testing .... hourly on a DIABETIC diet
☐ Commence the following insulin/oral hypoglycaemic when able to eat: Medication/Dose ....
☐ 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

NO WRITING

Page 1 of 1

DIABETES CARE PLAN: ☐ In labour ☐ Prior to CS ☐ Postpartum

SES060.407

Appendix B: Infant of Diabetic Mother

Multicultural 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.

The Royal Hospital for Women
Barker St, Randwick NSW 2031 • 02 9382 6111

If you need an interpreter, please call TIS National on 131 450

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

This resource was produced by the Newborn Care Centre, The Royal Hospital for Women.

Funding for translations provided by the Multicultural Health Service, South Eastern Sydney Local Health District.

Appendix C:

Pregnant with Diabetes - free software application 'App'.