

**Gestational Diabetes Mellitus:  
Current practices, screening and diagnosis in the South  
Eastern Sydney Illawarra Area Health Service**

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## CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Candidate

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## **Prologue**

This study examines the current practices within South Eastern Sydney Illawarra Area Health Service (SESIAHS) in relation to the screening of pregnant women for gestational diabetes mellitus (GDM). It is hoped that by examining the current practices and determining what would be considered best practice for screening for GDM, the research will form the platform for the development of Area wide practice guidelines.

Why study GDM? In 2004 in my workplace, which is a rural maternity unit in New South Wales (NSW), two near term stillbirths occurred in quick succession. Both were babies born to women who had poorly controlled GDM. A period of reflection ensued which prompted me to undertake this research. The starting point of this quest was a review of local practices relating to the screening, diagnosis and management of GDM. Following this, a review of the literature revealed a lack of consensus, not just on a local level, but on a global scale.

The questions generated by the clinical events and initial investigations required refinement to a focussed researchable question, which could impact on clinical practice to improve outcomes for mothers and babies. These questions led to this Master of Midwifery project.

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## **Abstract**

Aim: The aim was to examine the current practices related to the screening and diagnosis of Gestational Diabetes Mellitus (GDM) in the South Eastern Sydney Illawarra Area Health Service (SESIAHS), and to provide evidence to form the basis for the development of appropriate evidence-based guidelines for screening for GDM in this Area Health Service.

The objectives of the study were to:

- 1) Identify the range of practices employed for the screening and diagnosis for GDM across the SESIAHS;
- 2) Assess the level of screening by oral glucose challenge test (OGCT) and adherence to site policies regarding this test; and,
- 3) Establish the incidence of GDM in women giving birth at the three sites within the SESIAHS.

Study Design: A retrospective, quantitative, descriptive study, with comparative analysis of data between sites was undertaken. The aims and objectives of the study were addressed through examination of the policies and guidelines at the three sites and an assessment of the level of screening by oral glucose challenge test (OGCT). This was achieved through a medical record audit which also identified adherence to site policies regarding screening. The incidence of GDM in women giving birth at the three locations was ascertained via the Midwives Data Collection. Comparison of site and population characteristics was undertaken to explore any differences between the facilities.

Sample: Three components formed the sample for the study. These included the policies and guidelines from the three sites to identify the



range of practices employed to screen for GDM. The second sample component was 90 to 100 medical records per site for audit purposes to assess the level of screening by OGCT and adherence to site policies. The final component of the sample consisted of all women who gave birth at three sites in the SESIAHS from 2001 to 2005.

Results: There was a lack of consensus surrounding GDM apparent within the South Eastern Sydney Illawarra Area Health Service. Three differing approaches to screening for GDM were identified on examination of site policies and guidelines. Screening of women for GDM by OGCT or the one step diagnostic OGTT ranged from 76 – 88% at the three sites. Non-adherence to site policies was present in 11 – 14% of records examined. Risk factors for GDM were readily identified in 61 – 91% of the women whose medical records were reviewed. Over the five year study period, the incidence of GDM at Site 1 was 3.0 – 5.1%; at Site 2 it was 4.1 – 5.9%, and at Site 3 it was 5.5 – 7.1%. The incidence of GDM in the entire SESIAHS was 3.7 – 4.3% and in NSW 3.8 – 4.7% during the study period.

Conclusions: A universal screening strategy which offers the OGCT to all women is recommended. This conclusion has been reached after consideration of the findings of the literature review, the upward trend of GDM, and the high rate of GDM risk factors identified in the women at the three sites within the SESIAHS. Added to these features, the omission of screening for GDM in 11 – 14% of women with risk factors further supports a universal screening strategy. This strategy would serve to remove confusion around whether or not to offer a screening test to pregnant women. A uniform approach, based on the best available evidence, should be developed to guide screening, diagnosis and treatment practices for GDM within the SESIAHS.

## **Abbreviations**

ACHOIS	Australian Carbohydrate Intolerance Study
ACOG	American College of Obstetricians and Gynecologists
ADA	American Diabetes Association
ADIPS	Australian Diabetes in Pregnancy Society
AIHW	Australian Institute of Health and Welfare
BMI	Body Mass Index
CDA	Canadian Diabetes Association
CINAHL	Cumulative Index to Nursing and Allied Health Literature
EASD	European Association for the Study of Diabetes
GDM	Gestational Diabetes Mellitus
GP	General Practitioner
HAPO	Hyperglycaemia and Adverse Pregnancy Outcomes
HREC	Human Research Ethics Committee
IFG	Impaired Fasting Glucose
IGT	Impaired Glucose Tolerance
MDC	Midwives Data Collection
NDDG	National Diabetes Data Group
NICE	National Institute for Health and Clinical Excellence
NZSSD	New Zealand Society for the Study of Diabetes
OGCT	Oral Glucose Challenge Test
OGTT	Oral Glucose Tolerance Test
RANZCOG	Royal Australian and New Zealand College of Obstetricians and Gynaecologists
SESAHS	South Eastern Sydney Illawarra Area Health Service
WHO	World Health Organisation