

Improving gestational diabetes care: A clinical audit on the consistency of self-monitoring of blood glucose in the Antenatal Clinic at District General Hospital, Kilinochchi

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Abstract

Background: Gestational diabetes mellitus (GDM) is a common complication of pregnancy associated with adverse maternal and fetal outcomes. Self-monitoring of blood glucose (SMBG) is essential in achieving glycaemic control and guiding timely escalation of treatment. However, the consistency of SMBG and documentation may be suboptimal due to financial constraints, limited access to glucometer strips, and gaps in follow-up practices.

Aim: To assess the consistency of SMBG among pregnant women diagnosed with GDM attending the antenatal clinic at District General Hospital, Kilinochchi.

Methods: A clinical audit was conducted at the antenatal clinic from 10/09/2025 to 10/02/2026. All pregnant women diagnosed with GDM between 20 and 37 weeks of gestation and followed up during the audit period were included. Data were collected from clinic notes, blood sugar surveillance (BSS) registers, and patient-held glucose monitoring records using a structured data collection form. The audit standard was set at $\geq 90\%$ of women with GDM having documented evidence of regular blood glucose monitoring (BSS and/or home SMBG) at each follow-up visit.

Results: A total of 204 women with GDM were reviewed. Monitoring was performed using BSS only in 43 (21%), home SMBG only in 33 (16%), and both methods in 128 (63%). Consistent monitoring with documentation was observed in 94 women (46%), while 75 (37%) demonstrated inconsistent monitoring and 35 (17%) had no documented monitoring. Documentation was available in clinic notes for 133 women (65%), patient-held records only for 57 (28%), and absent in 14 (7%). The audit standard of $\geq 90\%$ was not achieved.

Conclusion: SMBG consistency and documentation among women with GDM attending this clinic were suboptimal. Strengthening patient education, introducing standardized monitoring charts, ensuring review and documentation at every visit, and improving access to testing supplies are recommended. A re-audit is proposed after 6–12 months following implementation of interventions.

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Introduction

Gestational diabetes mellitus (GDM) is defined as carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy. GDM is a major contributor to maternal and fetal morbidity, increasing the risk of complications such as pre-eclampsia, polyhydramnios, macrosomia, birth trauma, neonatal hypoglycaemia, and caesarean delivery. Achieving and maintaining optimal glycaemic control is therefore essential to reduce adverse outcomes.

Self-monitoring of blood glucose (SMBG) plays a central role in the management of GDM. Regular monitoring provides immediate feedback on glucose trends, supports dietary and lifestyle modifications, and helps clinicians determine when escalation to pharmacological therapy such as metformin or insulin is required. In District General Hospital, Kilinochchi, blood glucose monitoring for women with gestational diabetes mellitus is carried out through clinic-based blood sugar surveillance (BSS) at DGH Kilinochchi, with additional support from local hospitals and/or through home-based self-monitoring of blood glucose (SMBG) using glucometers. However, the consistency of monitoring may be affected by several factors, including the cost and availability of glucometer strips, patient awareness and motivation, and variations in documentation practices. Therefore, this audit was undertaken to assess the consistency of SMBG and to identify gaps in monitoring and documentation in order to improve clinical practice.

Methods

A descriptive clinical audit was carried out at the antenatal clinic of District General Hospital, Kilinochchi over the period from 10/09/2025 to 10/02/2026. The study population included all pregnant women diagnosed with GDM attending the antenatal clinic during the audit period between 20 and 37 weeks of gestation. Women with known diabetes mellitus prior to pregnancy, those not followed up during the audit period, and women with incomplete records, particularly those lacking glucose monitoring documentation, were excluded because the primary audit outcomes could not be reliably assessed in the absence of these essential data, and their inclusion could have introduced misclassification and reduced the validity of the findings.

Data were collected using a structured data collection form. Sources included clinic records, BSS registers, and patient-held glucose monitoring records where available. Data variables included the number of GDM patients, mode of glucose monitoring (BSS only, home SMBG only, or both), frequency and consistency of monitoring, availability of documentation at follow-up visits, and escalation of treatment (diet, metformin, or insulin). The audit was assessed against an expected standard of good clinical practice where at least 90% of women diagnosed with GDM should have documented evidence of regular blood glucose monitoring (BSS and/or home SMBG) at each follow-up visit.

Results

A total of 204 women with GDM were reviewed during the audit period. Regarding the mode of monitoring, 43 women (21%) relied on BSS only, 33 women (16%) used home SMBG only, and a total of 128 women (63%) used both BSS and home SMBG, mainly due to the non-availability of equipment such as glucometers or test strips, as well as financial constraints.

Consistent monitoring with documentation was observed in 94 women (46%). Inconsistent monitoring was identified in 75 women (37%), while 35 women (17%) had no documented monitoring. Documentation was recorded in clinic notes for 133 women (65%), while 57 women (28%) had monitoring evidence only in patient-held records. No records were available in 14 women (7%). Overall, the audit standard of $\geq 90\%$ documented regular monitoring was not achieved.

Conclusion

This audit demonstrates that consistency and documentation of SMBG among pregnant women with GDM attending the antenatal clinic at District General Hospital, Kilinochchi were suboptimal. The expected standard of $\geq 90\%$ documented regular monitoring was not met. The findings suggest a need for structured patient education at diagnosis, standardized monitoring charts or booklets, routine review and documentation of glucose values at every clinic visit, improved integration between BSS registers and antenatal clinic documentation, and support mechanisms to improve access to glucometer strips for women facing financial difficulty. A re-audit is recommended after 6–12 months to evaluate the effectiveness of implemented interventions.

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