

USING STRUCTURED OBSERVATION TO EXPLORE COMPONENTS AFFECTING MEALTIME INSULIN ADMINISTRATION IN HOSPITAL

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Background: Insulin is a high-risk and time-critical treatment, complex to manage in the hospital environment. Appropriate timing of insulin administration requires time-critical coordination of several tasks including glucose monitoring, meal delivery and insulin administration. These tasks, often undertaken by different members of staff, are not always seen as connected. Whilst timing errors related to mealtime insulin administration occur frequently, these are often underreported and difficult to capture using retrospective data collection methods.

Aim: To explore the coordination of three related tasks, blood glucose monitoring, meal delivery and insulin administration in the ward environment. To identify potential interacting components affecting mealtime insulin administration in practice.

Method: This project was registered as a quality improvement project at an NHS hospital. Inpatients with diabetes prescribed a mealtime insulin (bolus or biphasic) were eligible for inclusion and identified by the inpatient diabetes specialist team. Student nurses and student dietitians observed insulin administration practices using a structured observation tool incorporating quantitative and qualitative data developed based on a previous scoping review undertaken. Data was entered into an Excel spreadsheet and analysed thematically using a previously developed RESILIENT Framework.

Result: Eight observations undertaken between October-December 2025 across 4 medical wards; two at breakfast, six at lunch. Four involved patients with Type 1 Diabetes, four with Type 2 Diabetes. Median age was 74 years, n=1 involved self-administration of insulin; n=7 administrations by registered nurse. Glucose was always checked prior to meal intake (range 25 to 87 minutes), n=7 insulin was administered after the meal (range 9 to 60 minutes after starting eating); n=1 was administered 44 minutes prior to meal. Potential interacting components implicated were lack of relevant information about insulin treatment at transitions of care/handover; lack of equipment at point of care, busy ward environment; competing demands; poor prioritisation of tasks; mealtime insulin not seen as time-critical treatment requiring coordination with meal, multiple related tasks not seen as connected.

Conclusion: This project highlights misalignments in practice which can be targeted in complex interventions to address timely and safe insulin administration in a ward environment.