

# An audit of BM and blood glucose monitoring in the older adult wards at the Glasgow Royal Infirmary

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## Background

It has previously been demonstrated that the prevalence of elevated haemoglobin A1C (HbA1c) among patients admitted to hospital without a diagnosis of diabetes is high.

Despite this however, the follow up of unexpected hyperglycaemia in individuals without an existing diagnosis of diabetes remains poor.

Studies have demonstrated that a capillary blood glucose (CBG) or laboratory glucose >6.5mmol/l on admission is associated with a significantly longer stay in hospital, an increased 28-day mortality, worsening clinical outcomes, and an increased number of readmissions, regardless of the presence of diabetes

As something that is frequently overlooked in hospital settings, we decided to conduct the following audit in the older adult wards at the Glasgow Royal Infirmary (GRI)

## Methods

- All patients aged over 65 years who were admitted to any of the ten older adult wards (including two older adult stroke wards) at the GRI, who had not previously been diagnosed with diabetes, were included
- Sample size = 129, with 42 patients excluded due to already having a diagnosis of diabetes – data was thus collected from 87 patients in total
- Patients with an admission CBG of laboratory glucose >6.5mmol/l, were checked to see whether they had a follow up HbA1c
- Data was collected from AAU triage and laboratory results from TrakCare/Clinical Portal
- Data was put into and analysed with Microsoft excel
- One ward was excluded from the study due to a Covid-19 outbreak on the ward

## Conclusion

- Admission BM is not always documented
- Patients with a CBG >6.5 mmol/l are not getting follow up glucose monitoring
- Considering the natural variation and changes in BM/lab glucose depending on a patient's clinical course, glucose monitoring should be done diachronically or HbA1c should be taken
- At least two patients: one with a CBG >11.1 mmol/l and the other with a laboratory blood glucose >11.1 mmol/l have not had a follow up HbA1c – indicating that there is a risk of missing potential new diagnoses of diabetes

## Results

### Results - BM

- 53 out of the 87 patients (60.9%) had a recorded BM
- 27 patients out of the 53 patients (50.9%) with a recorded BM, had a BM >6.5 mmol/l (see figure 1)
- One patient had a CBG (BM) of 12.7mmol/l and had no follow up laboratory glucose or HbA1c

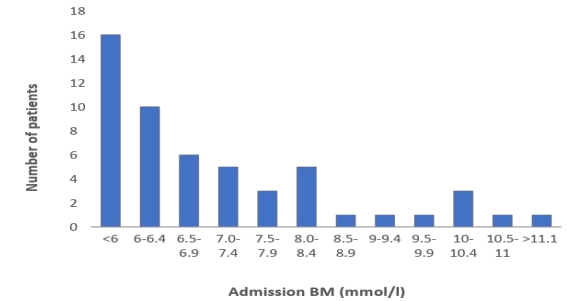
### Results - laboratory glucose

- 73 out of the 87 patients (83.9%) had a recorded laboratory glucose
- 29 patients out of the 73 patients (39.7%) with a documented lab glucose, had a lab glucose result >6.5 mmol/l (see figure 2)
- One patient had a laboratory glucose of 14.8 mmol/l but had no follow up glucose testing or HbA1c

### Abnormal Results

- Only 2 of the total 87 patients had follow up HbA1c's – one of these patients had an HbA1c of 48 mmol/mol indicating a potential new diagnosis of diabetes
- One patient had a CBG of 12.7 mmol/l and had no follow up laboratory glucose or HbA1c
- One patient had a laboratory glucose of 14.8 mmol/l but had no follow up glucose testing or HbA1c

Graph showing the number of patients per BM measurement range (Fig. 1)



Graph showing the number of patients per lab glucose measurement range (Fig. 2)

