

# AN AUDIT OF CAPILLARY BLOOD GLUCOSE (CBG) MONITORING IN ACUTE MEDICAL ADMISSIONS AT THE LEICESTER ROYAL INFIRMARY

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## Aims

To determine if CBG was measured, documented and given due credence in acute medical admissions

## Background

- There are a relatively limited number of common acute medical presentations encountered on a acute medical take
- The association between dysglycaemia and length of stay is well established in patients with diabetes and those without<sup>1</sup>
- This association would suggest that a comprehensive admission would be incomplete without blood sugar measurement
- Anecdotally, within our medical unit, this is something that we found to be frequently overlooked and therefore conducted the following audit

## Methodology

- Acute admissions to the three Acute Medical Units at the Leicester Royal Infirmary
- Data collected between October 2014 and January 2015 (and thus minimised 'operator bias')

Standard audited:

- 'was the patient's glucose or capillary blood glucose (CBG) recorded on the medical clerking proforma and was credence given to it'

## Demographics

- 56 patients on 3 acute medical units
- Factors dictating data collection were
  - Patient having been clerked and senior reviewed
  - Medical and bedside notes being available
- 25 males and 31 females
- Average age 75.1 years (range 19-101)
- Results therefore not dependent on just a few junior doctors and their clinical acumen since we spread the audit over two junior doctor rotations

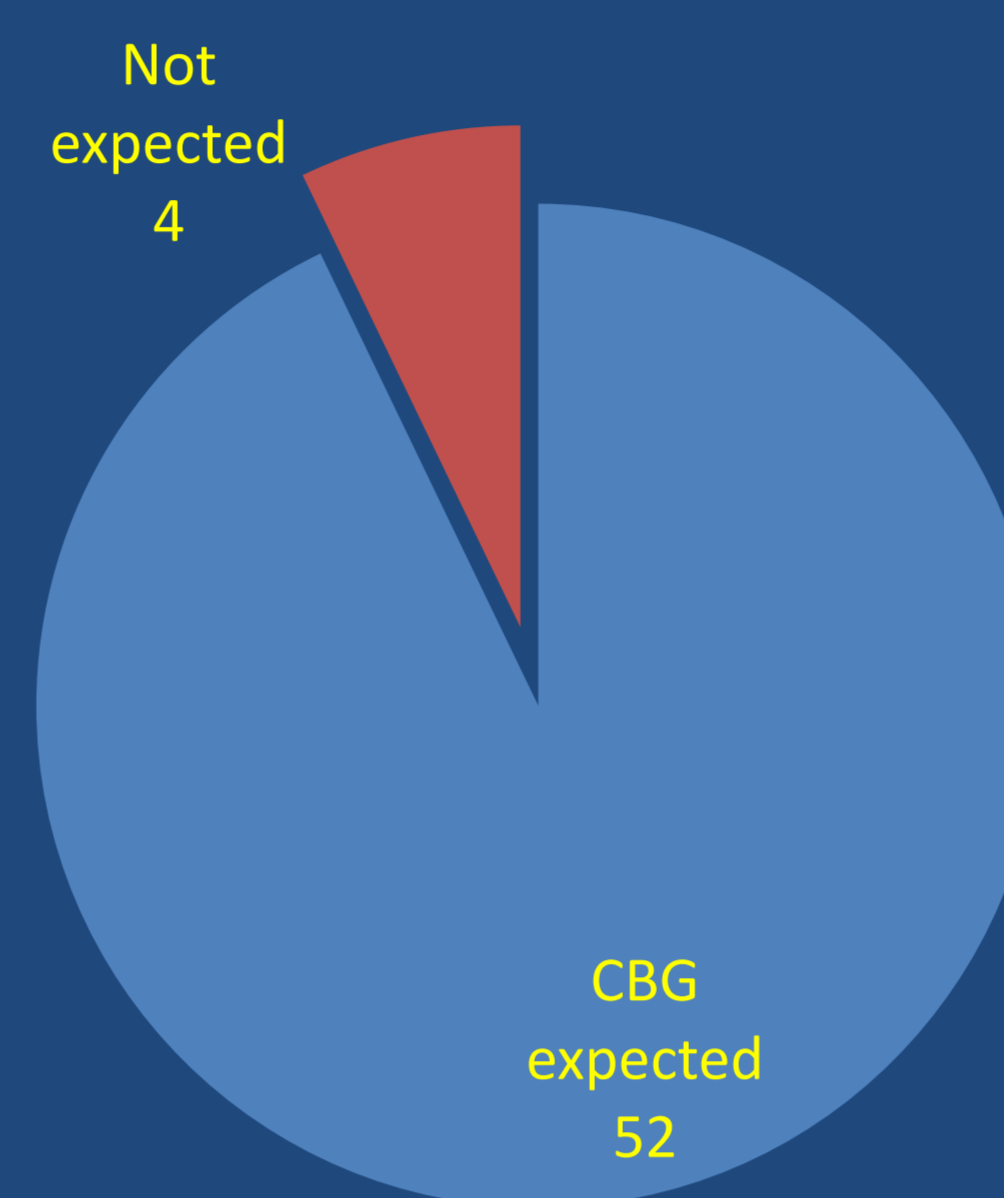
## • Presentation which warranted CBG measurement at least once:

- Falls
- Abdominal pain
- Overdose (intentional or accidental)
- Shortness of breath
- Lethargy/ generally unwell
- Seizure/ unresponsive episodes
- Diarrhoea & vomiting
- Chest pain
- Stroke
- Sepsis/ any infection
- Patient known to have diabetes

## Conclusions

- CBG is poorly documented
- There is a risk of missing potential new diagnoses of diabetes, as well as risk of inadequate management of known cases

## Results



52/56 patients presented with conditions warranting CBG measurement at least once.

The 4 that did not warrant CBG measurement presented with:

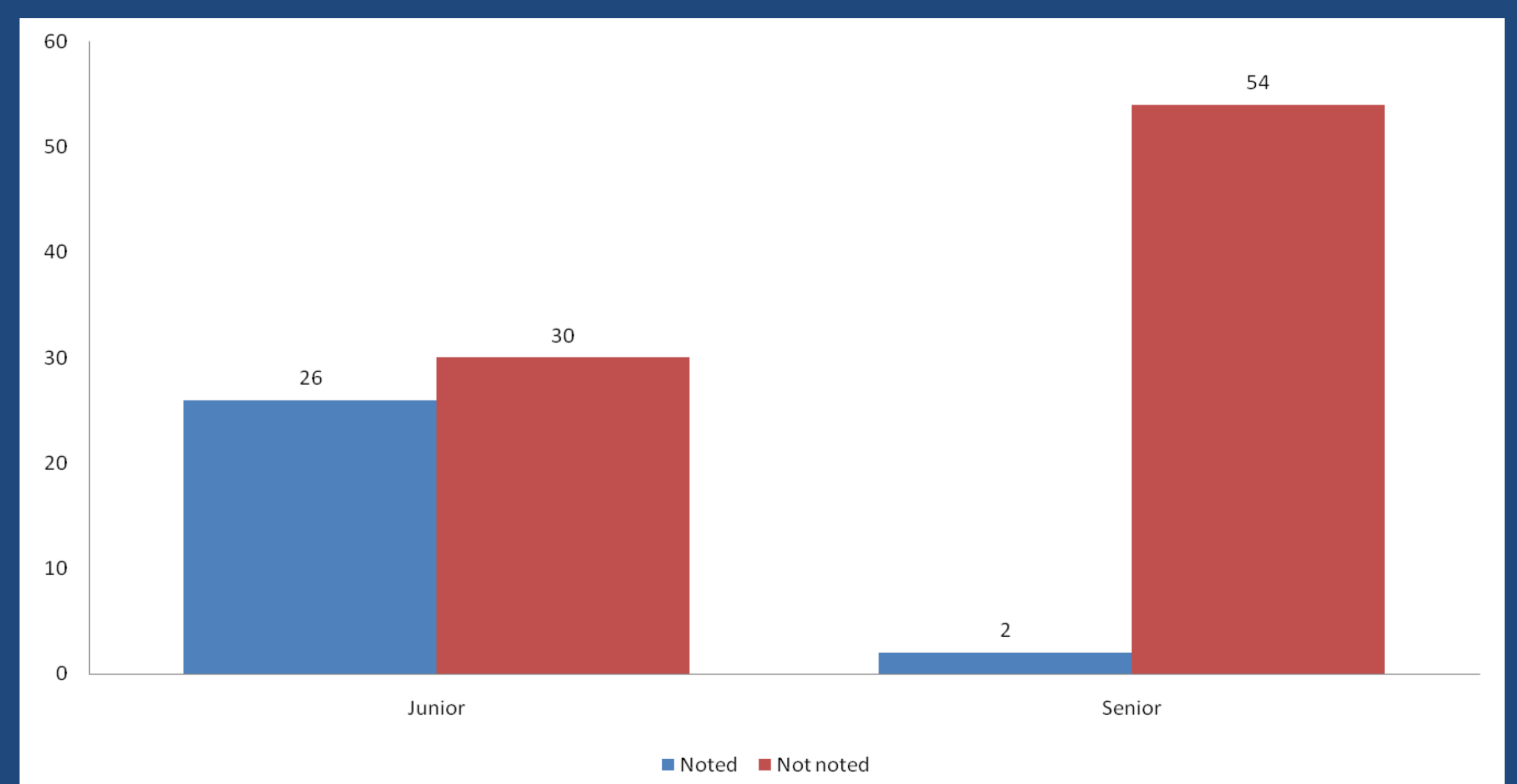
- Knee pain (exacerbation of osteoarthritis)
- Suspected DVT
- Safeguarding admission
- Cancer pain

All 4 had CBG measured at least once

18/52 (36%) of patients were known to have diabetes, with 11 (61%) of these patients having their CBG noted on the clerking proforma.

Of the remaining 34 patients not known to have diabetes, 15 (44%) had their CBG recorded on the clerking proforma

Credence was given to CBG in 26/52 (50%) of eligible patients notes by the junior doctor, but only in 2 of the senior (ST3+ or consultant) reviews.



## Abnormal readings

- 9 CBG readings were >11.1 mmol/l
- 8/9 were in patients known to have diabetes
- 4/9 were documented on the clerking proforma
- A single patient not known to have diabetes was found to have a CBG over 11.1 mmol/l. This was not documented on the clerking proforma, and hence a new diagnosis of diabetes was potentially missed
  - As follow up analysis was not conducted, it is acknowledged that this result may reflect stress hyperglycaemia

## Recommendations

- Completion of roll-out of ThinkGlucose to AMU nursing staff
- Development of a portfolio of educational resources for junior doctors
- Re-audit following implementation of resources
- Patients with a CBG >11.1 should have a HbA1C to aide differentiation between stress hyperglycaemia and newly diagnosed diabetes and to inform on previous control if already known to have diabetes.