

## How often do doctors look at blood sugars?

### A study on inpatients with diabetes in a tertiary hospital

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#### Introduction

Diabetes mellitus is increasingly prevalent nationally, posing a strain on acute care. In hospitals, it is estimated that as many as 1 in 6 patients are diabetic<sup>1</sup>.

The National Diabetes Inpatient Audit (NaDIA) highlighted profound concerns regarding failings in inpatient diabetes care, including medication errors, severe hypoglycaemic episodes and lack of specialist input<sup>2</sup>.

Despite these, there is a paucity of literature on how often doctors review capillary blood sugar level (BM)<sup>3</sup>. This study sought to evaluate the frequency of BM documentation during ward rounds and any associated hypo- and hyperglycaemia.

#### Method

NaDIA defines 'good diabetes day' as a day with 'no more than one blood glucose measurement greater than 11mmol/L and no blood glucose measurements less than 4mmol/L). This study therefore defines 'Bad BM day' as blood capillary glucose measurement that falls beyond the criteria of 'good diabetes day'.

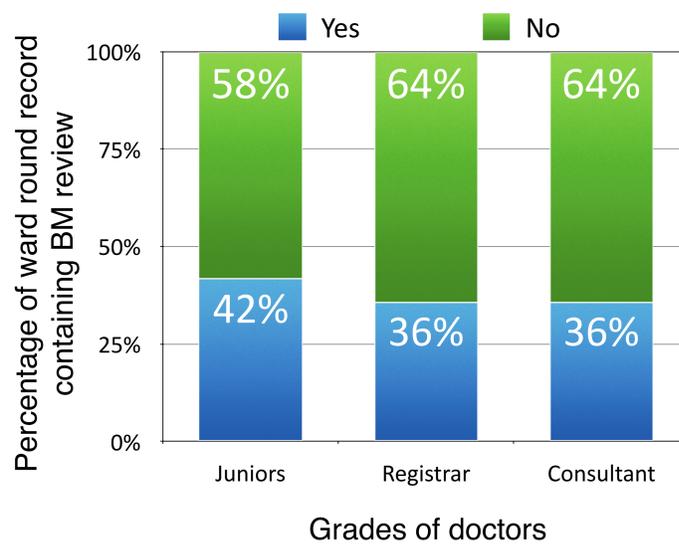
Ward round entries and BM charts were reviewed over 2 weeks for insulin-treated patients on 2 diabetes/endocrine wards. Comments on BM in the ward round entries were noted and these were evaluated against the readings in BM charts for hypo- and hyperglycaemia.

A second round of data was collected after interventions, including oral presentation and written reminders. Ward round entries and BM charts were reviewed over 2 weeks in January 2017 to evaluate the impact of implementation.

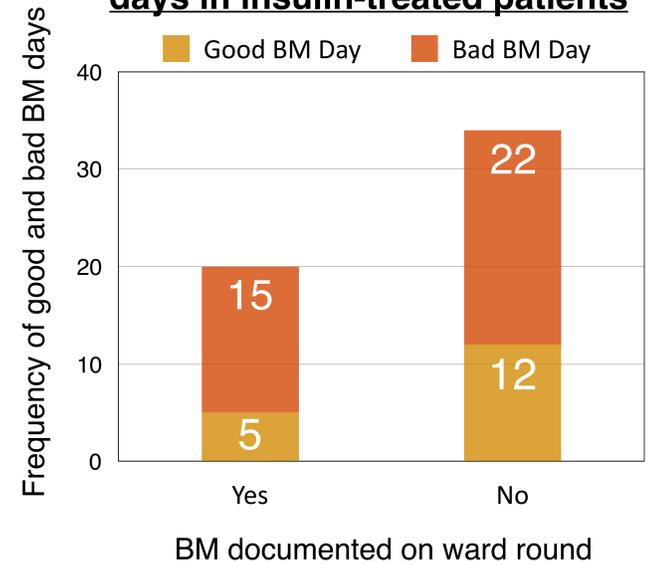
#### First Round Results

54 ward round entries and BM charts of insulin-treated patients were reviewed. Only 37% of all reviews had their BMs documented, with a similar recording trend across all doctor grades. 'Bad BM day' constituted 68.5% of all inpatient days. 22 ward round entries without BM documentation were of 'bad BM days'.

##### Frequency of doctors looking at blood sugars on ward review



##### Episodes of good and bad BM days in insulin-treated patients



#### Interventions

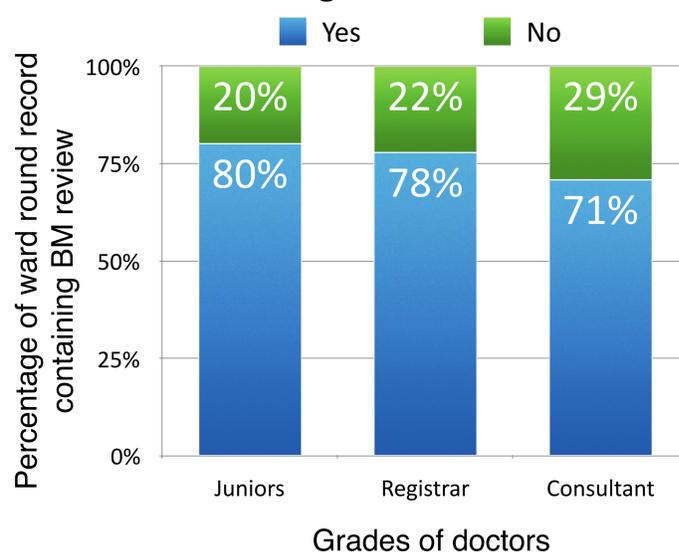
Results from the first study were highlighted to junior doctors in an oral presentation with an emphasis on glycaemic control. Written reminders (as illustrated on the right) were placed in front of insulin charts.

**KEEP CALM AND REVIEW BM (THEN DOCUMENT IT)**

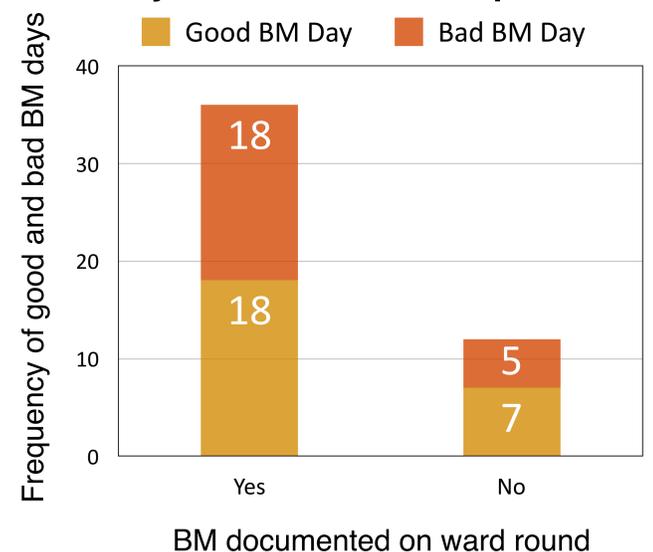
#### Second Round Results

48 ward round entries and BM charts of insulin-treated patients were reviewed. A drastic improvement is achieved with a 2-fold increase in BM recording rate. 75% of all reviews had BM documented. 'Bad BM day' constituted 48% of all inpatient days. Only 5 'bad BM days' were not recorded in ward round entries. 10 episodes of 'bad BM days' were responded with immediate interventions.

##### Frequency of doctors looking at blood sugars on ward review



##### Episodes of good and bad BM days in insulin-treated patients



#### Conclusion

Poor BM documentation may reflect inadequate emphasis placed on glycaemic control, a lack of experience and confidence in interpreting BM and individualising insulin therapy, which is supported collectively by published study<sup>4</sup> and our departmental evaluation. With education and reminders, doctors of all grades are willing to change for better practice and patients have benefited from closer monitoring.

#### REFERENCES

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