Introduction:
Glycaemic control continues to be a challenge in critically ill patients. Stress induced hyperglycaemia has been associated with increased morbidity and mortality [1]. Conversely, patients receiving intensive glucose control have a higher risk of death [2]. A quality improvement project was designed to develop a comprehensive insulin protocol that recognised pre-existing diabetes and reduced hypoglycaemia.

Methods:
Data was collected prospectively in all adult patients admitted to the RAH intensive care unit (ICU) between October 2018 and August 2019 from the national ICU audit database and electronic patient records. Daily figures were collected for numbers of hypoglycaemic episodes (<4mmol/l), “in range” (4-10mmol/l) blood sugar measurements and patients with a pre-existing diagnosis of diabetes. Data was collected and analysed using Microsoft Excel.

Results:
307 patients were identified; 56 patients (18.2%) had pre-existing diabetes. A total of 6908 blood sugar measurements were reviewed; 5268 (76.3%) were “in range” and 126 hypoglycaemic episodes (1.8%) occurred. There was no significant correlation between number of diabetic patients and measurements within range. Of note, there was an increase in number of measurements per patient in the second half of the time period (11 vs 32).

Conclusion:
The development of this protocol has improved glycaemic control in our ICU. There are considerably fewer episodes of hypoglycaemia and a large proportion of blood sugar measurements are in range. We hope to continue data collection and interrogate the prevalence of pre-existing diabetes further to reduce glycaemic variability.

References: