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Impact of the Diabetes Inpatient Care and Education (DICE) programme and a dedicated inpatient diabetes team on inpatient glucometrics, length of stay and in-hospital mortality

The aims of this study were to determine whether implementation of the Diabetes Inpatient Care and Education (DICE) programme and a dedicated inpatient diabetes team improved inpatient glucometrics, length of stay (LOS) and in-hospital mortality.

This was a single centre study in a 550-bedded secondary care hospital. The study included adult (≥ 18 years) inpatients with diabetes across all medical and surgical wards with LOS ≥ 1 day. The DICE programme that included a dedicated inpatient diabetes team was implemented from August 2013. Glucometrics, LOS and in-hospital mortality rate were analysed for six months before (01.01.2013 to 30.06.2013- BEFORE) and six identical calendar months after (01.01.2014 to 30.06.2014- AFTER) start of the programme.

The number of hospitalisation episodes BEFORE and AFTER were 1988 (1723 inpatients) and 1860 (1730 inpatients) respectively. The number of capillary blood glucose (CBG) readings analysed BEFORE and AFTER were 46,976 and 37,698 respectively. The number (%) of CBG ≤ 2.2 , ≤ 2.9 , ≤ 3.9 , 4-12 and ≥ 12.1 mmol/L, BEFORE and AFTER were 348(0.74%) versus 151(0.4%, $p < 0.01$, Relative Risk Reduction (RRR) 0.46), 933(1.99%) versus 491(1.3%, $p < 0.01$, RRR 0.34), 2529(5.38%) versus 1543(4.09%, $p < 0.01$, RRR 0.24), 31293(66.62%) versus 25143(66.7%, $p = 0.81$, RRR 0.0) and 13154(28%) versus 11012(29.21% $p < 0.01$, RRR -0.04) respectively. The average CBG increased from 10.02 (BEFORE) to 10.25 (AFTER), $p < 0.01$. Average LOS BEFORE and AFTER were 8.6 and 7.6 days respectively, $p = 0.01$. In-hospital mortality rate BEFORE and AFTER were 6.7% and 4.8% respectively, $p = 0.01$.

The DICE programme was associated with a significant reduction in the proportion of hypoglycaemic readings with a minor increase in the proportion of hyperglycaemic readings. Average LOS and in-hospital mortality rate also reduced significantly.