

# Reducing the Rate of Hypoglycaemia Hospital-Acquired Complications in a Regional Hospital

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## Background

A medium-sized regional hospital was experiencing an increase in the rate of hypoglycaemia Hospital-Acquired Complications (HACs). From July 2019 to June 2020, the rate was reported to be 1.5 events per 1000 separations, which was still lower than the state's rate of 2.2 events per 1000 separations during the same time period. In June 2020, the hospital's executive team requested that the Pharmacy Department address this increase, as hypoglycaemia fell under the banner of medication-related HACs at the time.

## Objective

To reduce the rate of hypoglycaemia HACs within the hospital via education for health professionals.

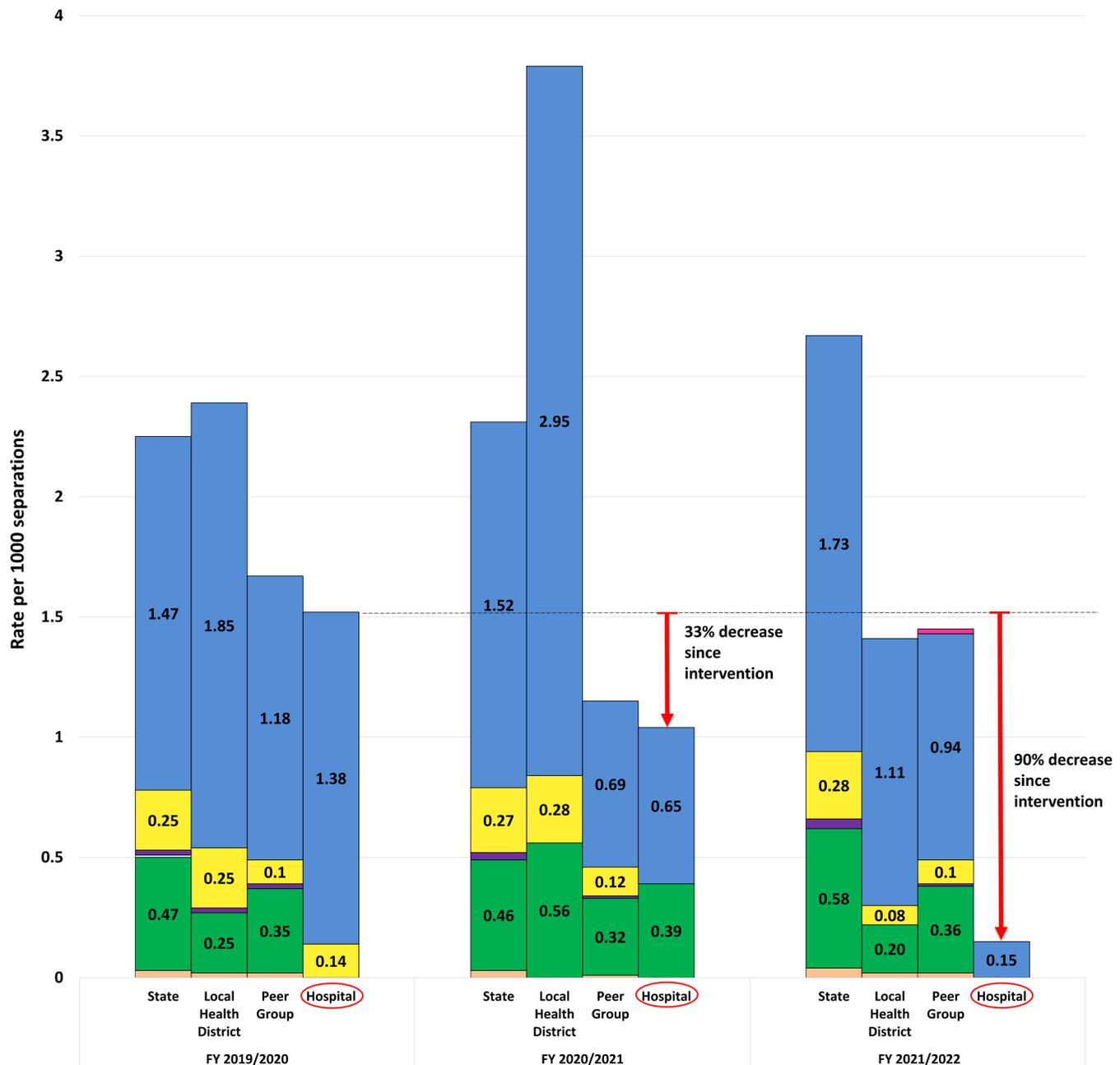
## Action

An action plan was developed by the Chief Pharmacist to outline tasks required to reduce Hypoglycaemia rates. Initially, pharmacists delivered education to nurses and medical officers on hypoglycaemia and ways to prevent it. Nursing and medical staff were encouraged to download the decision support mobile phone application "Thinksulin". It was also recommended that all clinical staff complete the My Health Learning Pathway "Inpatient Management of Diabetes Mellitus". Ongoing monitoring of the frequency of Hypoglycaemia HACs was conducted via the Quality Improvement Data System (QIDS).

Action	Evidence	Reported To	Responsibility	Due
Pharmacists to deliver education to nurses and doctors on hypoglycaemia and ways to prevent it during admission. Topics for education will include: a. Medications which may cause hypoglycaemia i. Insulin 1. Tips on prescribing and obtaining an accurate medication history 2. Why it is a high-risk medication and what this means 3. Information on different formulations 4. Information on sliding-scale insulin b. How to determine whether a patient is at risk of hypoglycaemia c. Management of diabetes during the peri-operative period and at other times when patients are nil by mouth or have a reduced dietary intake i. When to withhold oral antihyperglycaemic agents ii. When and by how much to reduce insulin intake d. Appropriate timing of oral and subcutaneous antihyperglycaemic agents with regards to food intake e. Disease states which may predispose a patient to hypoglycaemia	Attendance sheets	DTC	Pharmacists and CNEs	31/8/20
Work with NUMS to ensure nursing and medical staff download the decision support mobile phone application "Thinksulin" which was developed by the Agency for Clinical Innovation's NSW Diabetes Taskforce. Send flyer to staff. This app provides information on the following: a. Common calls JMOs may receive, e.g. hypoglycaemia review b. Blood glucose monitoring frequency c. Nil by mouth guidelines, including: i. General principles of perioperative diabetes management ii. Information for the patient for the day prior to any surgery iii. Insulin modification guide iv. Suggestions for perioperative glycaemic management d. Various insulin calculators e. Reasons to consult endocrinology f. Medication changes during admission	Completion sheet	DTC	NUMs, CNEs, Helena, Susan and David	31/8/20
Work with NUMS to ensure nursing and medical staff complete the My Health Learning Path - Inpatient management of Diabetes Mellitus, which includes modules: g. Basics of blood glucose levels and insulin h. Preventing and managing hypoglycaemia i. Safely prescribing and administering insulin j. Non-insulin agents in a hospital setting k. Managing blood glucose levels in the perioperative period l. Preventing and managing glucocorticoid induced hypoglycaemia	My Health Learning Report	DTC	NUMs, CNEs, Helena, Susan and David	31/10/20

**Figure 1.** An example of part of the Action Plan to reduce the rate of hypoglycemia hospital acquired complications within the hospital.

Rate of Hypoglycaemia Hospital-Acquired Complications (per 1000 separations) over 3 years



## Evaluation

Data pulled from QIDS, identified that during the 2020/21 Financial Year (FY), there was a 33% decrease in the rate of hypoglycaemic HACs reported, compared to the previous FY. In the 2021/22 FY, there was a 90% decrease in the rate of hypoglycaemic HACs. Overall, since the intervention, a 93% decrease in the rate of hypoglycaemic HACs was demonstrated.

## Discussion

The identification of risk factors for hypoglycaemia, was an important part of this process in order to better target education.

It can be seen, that the only remaining hypoglycaemia events occurred in patients with Type 2 Diabetes, likely due to the fact that it is the most common form of diabetes. There may be a potential variation in the rate of reported hypoglycaemic HACs due change in staff within the coding team and on the wards. Since March 2021, Hypoglycaemia is no longer listed as a medication-related HAC and is now under "Endocrine Complications" which is more appropriate, given hypoglycaemia can be caused by a number of factors, not just medications. Overall, it can be seen that education for Health Professionals is an effective means of reducing hypoglycaemic episodes within a hospital environment.



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