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Diabetes care for hospital patients in Australia needs repair

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Diabetes care for hospital patients in Australia needs repair

Annual audits of practice, national guidelines, specialist diabetes care teams, and increased patient participation are all needed

Diabetes inpatient care is broken and, given, the disease burden, it requires urgent attention. The Queensland Inpatient Diabetes Survey reported by Donovan and colleagues in this issue of the Journal¹ found that care for hospital patients with diabetes is suboptimal. The authors report that rates of medication error and hospital-acquired diabetic ketoacidosis are high and that peri-operative planning is inadequate. This is a major problem, as many hospital inpatients have diabetes.

In March 2021, the National Diabetes Services Scheme reported that more than 1.45 million people in Australia are living with diabetes, a prevalence rate of 5.7%;² the Australian Institute of Health and Welfare reported that diabetes contributed to 11% of all hospitalisations and 10.5% of all deaths in 2018.³ The most frequently reported comorbid condition in people admitted to intensive care with coronavirus disease 2019 (COVID-19) during 2020 was diabetes.⁴ A prospective cohort study of inpatients aged 54 years or more at a major tertiary hospital in Melbourne found that the prevalence of diabetes (glycated haemoglobin [HbA_{1c}] ≥ 48 mmol/mol) was 34%.⁵ Further, diabetes in surgical inpatients at the Austin Hospital in Melbourne was associated with higher six-month mortality, major complications, intensive care admission, mechanical ventilation, and longer length of hospital stay.⁶

It is clear that managing diabetes in hospital appropriately is critical to avoiding adverse outcomes, including death. Indeed, an early intervention model of care in a major Australian hospital — with a specialist diabetes team that managed all inpatients with diabetes or hyperglycaemia, including electronic glycaemic surveillance — reduced the incidence of severe hyperglycaemia by 55% and that of hospital-acquired infections by 62%.⁷ The Australian Diabetes Society guideline on glycaemic targets for specific inpatient groups and interventions for achieving these targets (while avoiding hypoglycaemia) recommends engaging a specialist diabetes management team.⁸

It is therefore alarming that Donovan and his co-authors¹ found that inpatient diabetes care in Queensland hospitals is inadequate. Blood glucose monitoring clearly needs to be improved, and the high incidence of prescription errors, particularly insulin-related errors (despite a statewide insulin management chart) and of hospital-acquired harms, especially

ketoacidosis, must be reduced or, ideally, eliminated. While similar audits have not recently been conducted in other states, the Queensland findings probably apply to hospitals across Australia. As in an earlier Australian study,⁵ 25% of inpatients in the study by Donovan and colleagues had known diabetes, which naturally did not include those with undiagnosed diabetes; other Australian studies have found that 40% of inpatients may have diabetes.⁹

What are the solutions to the problems identified by the Queensland Inpatient Diabetes Survey? We need adequate glycaemic monitoring of patients, an electronic system (diabetes dashboard) to support dedicated diabetes specialist teams in every hospital, national guidelines and protocols for inpatient diabetes management, appropriate workforce training and support, and an annual national audit to inform quality improvement processes. The 2019 American Diabetes Association diabetes care in hospital standards recommendations included glycaemic monitoring of all inpatients with diabetes, insulin administration using validated written or computerised protocols, consultation with diabetes specialist management teams, setting appropriate and individualised glycaemic targets according to a hypoglycaemia management protocol, and tailored, structured discharge planning.¹⁰

We also need to better identify patients with diabetes. This can be achieved by measuring HbA_{1c} in selected patients admitted to hospital, including older patients. The next step is to develop protocols to triage those most in need,¹¹ especially people with type 1 diabetes and peri-operative patients. We need to provide structured education about diabetes for non-endocrine clinicians and technical solutions that are accessible, financially viable, and easy to use for monitoring inpatient blood glucose and avoiding hypoglycaemia and hyperglycaemia. More research in these areas is required.

One suggestion by Donovan and his co-authors¹ (and by the Australian and American guidelines) is to establish diabetes management teams. This would be helpful, but it is unlikely that resources will be available to care for all inpatients with diabetes in this manner. Staff in all treating units should therefore be trained to identify patients with diabetes who need more intensive management.

Clearly, there is a lot of work to do. The good news is that it has started, as reflected by the study of Donovan and colleagues.¹ Annual audits with associated quality improvement plans, increased numbers of clinically trained staff, national guidelines and protocols, appropriate medical technology (including electronic medical records), specialist diabetes management teams, and increased patient participation is required. Finally, as Indigenous Australians are four times as likely to be hospitalised and die with type 2 diabetes than other Australians,³ their acute care must be a health priority. The obvious limitation for all of this is funding.

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