SHPA submission to Inquiry into Diabetes, August 2023

The Society of Hospital Pharmacists of Australia (SHPA) is the national, professional organisation for the 6,100+ Hospital Pharmacists, and their Hospital Pharmacist Intern and Hospital Pharmacy Technician colleagues working across Australia's health system, advocating for their pivotal role improving the safety and quality of medicines use. Embedded in multidisciplinary medical teams and equipped with exceptional medicines management expertise, SHPA members are progressive advocates for clinical excellence, committed to evidence-based practice and passionate about patient care.

Between 2020-2021, there were almost 1.3 million hospitalisations associated with diabetes. This represents 11% of all hospitalisations in Australia.[1] During this period, over 16.5 million prescriptions were dispensed for diabetes medicines through the Pharmaceutical Benefits Scheme (PBS) and Repatriation Pharmaceutical Benefits Scheme (RPBS), representing 5.3% of total prescriptions.[1] This indicates that medicines are a key intervention for the management of diabetes in Australia.

SHPA convenes a Nephrology Specialty Practice Group comprising of a network of SHPA members who work in nephrology units, kidney transplant units, critical care, dialysis units and any other inpatient, outpatient, ambulatory or primary care settings where patients of any age with renal impairment receive pharmacy services. These pharmacists are involved in the medication management of patients with Chronic Kidney Disease (CKD) which can develop as a result of diabetes.

SHPA also convenes a Cardiology Specialty Practice Group, comprising of a network of SHPA members who work in coronary care, cardiac units, emergency medicine, critical care, cardiac rehabilitation, cardiac surgery and other inpatient, outpatient, ambulatory or primary care settings where patients with cardiac conditions receive pharmacy services. Pharmacists working in this area will often be involved in the management and treatment of patients who are at increased risk of diabetes or obesity due to pre-existing cardiovascular disease or where diabetes or obesity has predisposed them to cardiovascular complications.

Hospital pharmacists also have key preventative roles by advising on the safe and effective use of medicines in diabetes, as well as factors that may contribute to increased risk of disease progression and complications. Hospital mental health pharmacists manage the treatment of patients who, due to mental illness, are already predisposed to diabetes and obesity, with some of the medicines used for treatment of mental health conditions also contributing to an increased risk of diabetes or obesity progression. It is vital that these pharmacists are involved in every aspect of treatment selections and providing patients and carers with the necessary information to make informed decisions about their care.

Hospital pharmacists advocate for the use of evidenced based medicine and preventing inappropriate use of medicines. Lack of this approach and widespread misinformation by various media outlets was recently demonstrated, resulting in the misuse of semaglutide (Ozempic) and ultimately a global medicine shortage, impacting supply of this key medicine to patients. Historically, shortages of key medicines for the management of diabetes such as gliclazide, metformin and insulin have also occurred due to manufacturing issues or increased global demand. This puts patients at risk of mismanagement of their diabetes, leading to further complications. The role of pharmacists is therefore vital in providing this evidenced-based approach to medicines in preventing and managing diabetes and obesity in Australia.

If you have any queries or would like to discuss our submission further, please do not hesitate to contact Jerry Yik, Head of Policy and Advocacy on jyik@shpa.org.au.

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List of Recommendations for Inquiry into Diabetes

Recommendation 1: In hospital settings, clinical pharmacists must be involved in treatment selections and assess risk factors to prevent development of diabetes through the adoption of pharmacist-to-patient ratios as outlined in SHPA's Standards of Practice for Clinical Pharmacy Services.

Recommendation 2: Enable regular review of medication regime for consumers with pre-existing diabetes or associated risk factors, by embedding clinical pharmacists into GP practice settings.

Recommendation 3: Investment into hospital pharmacy diabetes outpatient services, through funding Tier 2 Non-Admitted Services.

Recommendation 4: Enable hospital pharmacists to supply all medicines, including those listed under Section 100 programs, to Indigenous Australians under the Closing the Gap (CTG) PBS Co-Payment Measure, to reduce cost-shifting and improve equity of access to medicines and support medication adherence.

Recommendation 5: Implement Pharmaceutical Reform Agreements (PRAs) in New South Wales (NSW) and Australian Capital Territory (ACT) to achieve equitable access to Pharmaceutical Benefits Scheme (PBS) medicines, support safer discharges and transitions of care and ease reliance on primary healthcare systems.

Terms of Reference (TOR)

TOR 1: The causes of diabetes (type 1, type 2 and gestational) in Australia, including risk factors such as genetics, family history, age, physical inactivity, other medical conditions and medications used

TOR 4: Any interrelated health issues between diabetes and obesity in Australia, including the relationship between type 2 and gestational diabetes and obesity, the causes of obesity and the evidence-base in the prevention, diagnosis and management of obesity;

Recommendation 1: In hospital settings, clinical pharmacists must be involved in treatment selections and assess risk factors to prevent development of diabetes through the adoption of pharmacist-to-patient ratios as outlined in SHPA's Standards of Practice for Clinical Pharmacy Services.

Management of comorbidities

Cardiovascular disease

In 2020-21 there were 341,000 hospitalisations in Australia where cardiovascular disease (CVD) was present with diabetes and/or CKD.[2] In 2021, at least two of CVD, diabetes and CKD accounted for 16% of all adult deaths.[2]

In addition, patients with a mental health diagnosis have a 2-3 times increased risk of type 2 diabetes compared to the general population[3,4], further compounded by the symptoms associated with their mental health diagnosis such as a sedentary lifestyle and lack of motivation. Hospital presentations for associated comorbidities provide a key opportunity for intervention.

Systematic reviews have shown that involving hospital pharmacists in the prevention and treatment of CVD, including hypertension, dyslipidaemia, diabetes mellitus and facilitation of smoking cessation, likely improves the overall outcomes for patients.[5]

Kidney disease

This may include risk screening or medication management to prevent further risk of disease progression. Hospital pharmacists are ideally placed to facilitate conversations around treatment, especially when patients are attending hospital for dialysis. As outlined in SHPA's Standard of practice in nephrology for pharmacy services[6], nephrology pharmacists routinely manage complications of CKD such as diabetes mellitus.

Childhood obesity

Based on data from the most recent Australian Bureau of Statistics (ABS) National Health Survey in Australia, 24% of children were overweight or obese. Children who are overweight or obese are also more likely to become obese adults, and to develop chronic conditions such as type 2 diabetes and cardiovascular disease at younger ages.[7].Childhood obesity is also associated with an increased incidence of diabetes and coronary heart disease in adulthood.[8] To prevent this current trajectory, pharmacist intervention is vital.

Hospital pharmacist interventions

Hospital pharmacists are therefore best placed in acute settings to provide advice regarding treatment and prevention of Diabetic Ketoacidosis (DKA) through adequate diabetes control.

Modifiable risk factors where pharmacist-led health care interventions can reduce the likelihood of developing type 2 diabetes, include support for smoking cessation as well as advice for maintaining a healthy lifestyle. Reproductive health pharmacists may also be able to have targeted conversations with those at risk of gestational diabetes and prevent disease progression through advice on diet modifications.

However, it is important to note the non-modifiable risk factors such as family history as is the case with type 1 diabetes. In this case, disease management and adequate glucose control is essential in preventing micro and macrovascular complications.

Patients at risk of diabetes or with pre-existing poorly controlled diabetes, may be admitted in any specialist area within a hospital health service. To provide all patients with access to high quality, safe medicines management, SHPA recommends adoption of pharmacist-to-patient ratios as outlined in SHPA's Standards of Practice for Clinical Pharmacy Services, of one clinical hospital pharmacist to every 30 patients (1:30).[9] This includes providing inpatients pharmacy services such as:

- taking a medication history and ensuring medications are charted correctly and available at admission to be administered in a timely manner
- regular review of the safety, quality, storage and supply of medications during hospital stay
- review of discharge prescriptions, dispensing a sufficient supply of medications to take
- counselling patients on their medications and communicating changes to primary healthcare providers ensuring appropriate follow-up and monitoring of medications post-discharge including in specialised clinics and outpatient services and checking for adverse reactions to medications

Pharmacists in hospital settings also manage a life-threatening complication of poor diabetes control called Diabetic Ketoacidosis (DKA). DKA is caused by inadequate insulin in a patient with diabetes, from a first presentation of type 1 diabetes or precipitated by an illness. This leads to the production of ketones, electrolyte imbalances and severe dehydration as well as other complications such as cerebral oedema.[10] In paediatric settings, DKA and its management through electrolyte replacement presents a further risk. Namely, the high-risk medicine potassium via infusions must be safely prescribed and administered. In addition, the relatively small doses of insulin used for paediatric patients present further risk of medication error. Forty percent of DKA hospitalisations are precipitated by a history of non-compliance with diabetes treatment regimes.[11]

Access to diabetes treatment

Access to key medicines for the treatment of diabetes must be initiated promptly. As discussed below, without access to early screening, prevention of the development of diabetes and any necessary treatment cannot be initiated promptly. When patients do present to hospital with complications of diabetes, diabetes treatment and management must be initiated or reviewed promptly. Hospital pharmacists are integral to the evidence-based treatment selection and management of diabetes.

Many treatment options exist that may or may not be suitable for consumers based on their pre-existing comorbidities, interactions with other medicines or practicalities of administration (e.g., injectable formulation, timing of doses).

Screening for diabetes

As outlined in the Royal Australian College of General Practitioners' Health of the Nation 2020 report[12], in 75% of cases patients were able to see a GP (General Practitioner) within 24 hours of need. However, this reduced to 64% for patients in outer-regional, remote and very remote areas. This is reflected in the distribution of the GP workforce, with 121 GPs per 100,000 people working in metro areas compared to just 69 GPs per 100,000 people in very remote areas. This is problematic as many consumers may not present to their healthcare provider until symptoms present. Access and regular contact with a GP is vital, with community pharmacists also playing a role in identifying risk factors that may warrant screening. If patients cannot secure an appointment with their GP, many are forced to present to emergency departments, by which time the disease may have progressed.

For Aboriginal and Torres Strait Islander people, the standard Australian Type 2 Diabetes Risk Assessment Tool (AUSDRISK), may not be an accurate screening tool due to the existing high prevalence of type 2 diabetes in this cohort, leading to a preference in practice for blood glucose testing instead.[13] This would require access to testing facilities and physically attending an appointment which could be challenging in rural and remote areas, with some patients may also be cautious about attending health services due to lack of cultural safety. Instead of accessing mainstream health services, 64% of Aboriginal Australians aged over 60 only access health and aged care from Aboriginal Community Controlled Organisations (ACCOs).[14] Aboriginal and Torres Strait Islander patients could be experiencing intergenerational trauma[15], preventing them from accessing mainstream health services, which can affect identification of obesity and diabetes risk factors and therefore lead to disease progression.

Medications contributing to obesity and increased diabetes risk

The use of medication is the most common healthcare intervention, with more than nine million Australians taking a prescribed medication every day.[16] Without regular medication review by a consumer's GP or pharmacist, medicines associated with increased risk of type 2 diabetes may not be identified promptly.

In addition, risk factors need to be considered prior to initiating treatment with any medicines that could increase risk of developing diabetes.

Medicines of particular concern contributing to the cause of type 2 diabetes include:

Atypical antipsychotics

Atypical antipsychotics such as clozapine and olanzapine for the treatment of mental health diagnoses such as schizophrenia and bipolar disorder can increase risk of developing diabetes and weight gain. However, PBS criteria restrictions apply if clinicians wish to switch to an antipsychotic with a lower propensity of weight gain. For example, aripiprazole and lurasidone are antipsychotics that have a lower risk for causing weight gain, however, PBS criteria only allows them to be claimed for a schizophrenia diagnosis, not bipolar disorder or other conditions. This creates an inequity in access to medicines for consumers and can contribute to their risk of developing diabetes and obesity. Lack on ongoing metabolic monitoring results in consumers risk of diabetes not identified promptly, leading to disease progression.

Glucocorticoids

Glucocorticoids are used to treat a range of inflammatory diseases such as arthritis, inflammatory bowel disease and respiratory disorders. Glucocorticoid-induced diabetes mellitus (GIDM) is a well-recognised complication of glucocorticoid use. Glucocorticoids can exacerbate hyperglycaemia (high blood glucose levels) in patients with diabetes mellitus and can unmask undiagnosed diabetes mellitus.[17]

Hospital pharmacists can be involved in decision making at point of prescribing to ensure the most appropriate medication is selected based on diabetes risk factors and in regard to patient preference. However, hospital pharmacists also see patients at their most unwell when diabetes and its complications are increasingly complex.

TOR 2: New evidence-based advances in the prevention, diagnosis and management of diabetes, in Australia and internationally

Given that Goal 7 of the Australian National Diabetes Strategy 2021-2030[18] is to 'strengthen prevention and care through research, evidence and data', SHPA believes that it is vital to recognise the contribution pharmacists make to the evidenced-based use of medicines and their participation in research in the prevention and treatment of diabetes.

Recommendation 2: Enable regular review of medication regime for consumers with pre-existing diabetes or associated risk factors, by embedding clinical pharmacists into GP practice settings.

There should be a key focus on primary care interventions for diabetes and obesity such as embedding clinical pharmacists into GP workflows, allowing pharmacists to manage medication histories, optimise prescribing and treatment decisions based on evidence-based practice, educate and counsel patients and monitor response to medicines.

A prime example of where this is successfully optimising medicines use is the activating pharmacists to reduce medication related problems (ACTMed) stepped wedge trial, which is currently being rolled out across Queensland-based primary care practices following a successful pilot.[19] A dashboard alerts pharmacists embedded in GP practices of at-risk patients with chronic conditions, including type 2 diabetes. The pharmacist then conducts a thorough medication review, looking at optimal use of medicines to manage the at-risk patients' chronic condition, making any necessary recommendations to the GP to consider. This model of care can also be used to identify ACCHO patients who may be at increased risk of diabetes and may benefit from screening or conversations around diet and lifestyle.

Recommendation 3: Investment into hospital pharmacy diabetes outpatient services, through funding Tier 2 Non-Admitted Services.

There are a wide variety of pharmacist-led outpatient services that can be conducted by hospital pharmacists to ensure safe and effective use of medicines in patients, ultimately reducing the cost of medication-related problems for Australians. These can include diabetes medication management outpatient clinics as well as cardiology outpatient clinics.

One such pharmacist-managed diabetes program was associated with a significant reduction in HbA_{1c}, blood pressure readings and reduction in risk of diabetes-related hospitalisations in an underserved cohort of patients with diabetes over a 12-month period.[20] In addition, some pre-surgery diabetes clinics utilise pharmacists to improve perioperative glycaemic control for elective surgery, with one showing a 17% reduction in hyperglycaemic episodes and improved time taken to administer insulin.[21]

Queensland hospital health services have implemented many pharmacist-led outpatient clinics and are responsible for approximately 90% of the national Clinical Pharmacy 40.04 outpatient clinics, a Tier 2 Non-admitted service under Activity Based Funding.

The limitation of the national funding cap in the Commonwealth's contribution of 6.5% each year leads to all hospitals in Australia having to decide between resourcing inpatient services or outpatient clinics rather than taking a person-centred approach and supporting both. SHPA recommends that similar, evidenced based pharmacist-led clinics are also adequately funded to allow safe and effective management of diabetes.

SHPA believes that the current singular Tier 2 Clinic 40.04 Clinical Pharmacy should be complemented by other Tier 2 Non-Admitted Services with varying levels of funding, so that the breadth of hospital pharmacy outpatient services can be implemented. Incorporating a tiered level consultation structure for hospital pharmacy diabetes outpatient services would support broader utilisation in Australian hospitals, and ultimately provide higher quality and safer care that reduces diabetes related admissions and disease progression.

TOR 3: The broader impacts of diabetes on Australia's health system and economy;

TOR 5: The effectiveness of current Australian Government policies and programs to prevent, diagnose and manage diabetes.

Uncontrolled diabetes can lead to pressures on the healthcare system. Early stages of diabetes are largely asymptomatic, resulting a diabetes diagnosis only after a hospital presentation.

Recommendation 4: Enable hospital pharmacists to supply all medicines, including those listed under Section 100 programs, to Indigenous Australians under the Closing the Gap (CTG) PBS Co-Payment Measure, to reduce cost-shifting and improve equity of access to medicines and support medication adherence.

Diabetes is one of the leading causes of preventable hospital admissions for Indigenous Australians. The rate of hospitalisation associated with diabetes among Indigenous Australians was 4.3 times as high as for non-Indigenous Australians.[22] However, when Aboriginal and Torres Strait Islander patients are discharged from hospital, the CTG PBS Co-Payment Program excludes public hospital pharmacies from participating in this program. Indigenous patients would otherwise be able to access reduced co-payments in community pharmacies and private hospitals, however, patients are charged their regular applicable co-payment when receiving medicines from public hospitals after discharge from hospital or after an outpatient appointment.

To facilitate timely and equitable access to PBS medicines and medication adherence services for Aboriginal and Torres Strait Islander people transitioning from hospital back to the community after a significant health event resulting in a hospital admission, SHPA recommends that public hospital pharmacists should be able to register eligible Aboriginal and Torres Strait Islander people for the Closing the Gap (CTG) PBS Co-payment Program on Services Australia's Health Professional Online Services (HPOS) as well as being able to supply PBS medicines to Aboriginal and Torres Strait Islander people under the CTG PBS Co-payment Program.

These issues have resulted in ongoing inequity in the provision of medicines to Indigenous people in public hospitals, reduced their medicines adherence and ability to meet treatment goals and improve their overall health. Patients who are unable or unwilling to pay the co-payment must self-present to a community pharmacy to receive discharge medicines that will prevent a readmission to hospital, with research showing that over a quarter of patients fail to make it to a local pharmacy until days later to have their discharge prescription dispensed.[23] This poor access to medicines, especially after a significant health event that may pre-exist with diabetes, such as acute renal impairment, heart attack or stroke, can compromise a patient's health outcomes further and cause preventable medication-related readmissions.

Aboriginal and Torres Strait Islander people living in rural and remote areas often face delays in varying lengths when returning to their homes following a hospital admission, due to transportation issues, the inability to travel long distances after significant health events, the need for immediate post-discharge care and ongoing outpatient appointments.

If PBS quantities are not supplied by the hospital, a substantial gap remains in timely access to medicines, as patients are unable to receive larger quantities of medicines under the Section 100 Remote Area Aboriginal Health Service (RAAHS) program during the interim period between their hospital discharge and the time when additional supplies can be accessed in their home communities.

This inequity and lack of continued diabetes therapy often results in poor health outcomes and readmissions to hospital. Section 100 RAAHS program rules should be amended to enable a RAAHS's approved pharmacist or hospital authority to supply Dose Administration Aids (DAA) and provide relevant counselling directly if patients they are travelling outside of their remote locations and require access to their DAAs from the RAAHS's packing and supplying pharmacy.

Recommendation 5: Implement Pharmaceutical Reform Agreements (PRAs) in New South Wales (NSW) and Australian Capital Territory (ACT) to achieve equitable access to Pharmaceutical Benefits Scheme (PBS) medicines, support safer discharges and transitions of care and ease reliance on primary healthcare systems.

Since the adoption of the Public Hospital Pharmaceutical Reforms in the signatory states and territories, the access of Pharmaceutical Benefits Scheme (PBS) medicines in public hospitals has been supported and enables approved public hospitals to prescribe and dispense PBS-subsidised medicines to day-admitted patients and outpatients. For non-signatories such as ACT and NSW this presents a significant risk at the transition of care between hospital and primary care.

Patients being discharged from public hospitals in NSW are currently supplied 3-7 days' worth of discharge medicines, which contrasts with the other jurisdictions who are able to supply a months' worth of discharge medicines. Patients are then forced to see a GP within days of leaving hospital which as mentioned above, can be challenging depending on where patients are geographically located.

For patients with diabetes, an interruption in treatment could have serious consequences on their health, leading to a representation to hospital. Pharmacists' intervention at point of discharge is also required to ensure transition of care processes run smoothly with any medication dose adjustments followed up by the patient's primary care services, including GPs, pharmacies and residential aged care facilities. Due to the comorbidities seen with diabetes, patients may also be under the care of multiple specialists and prescribers, requiring the need for strengthened communication around medication regimes and monitoring.

The expansion of PBS into public hospitals has allowed more hospital pharmacists to be employed and provide clinical pharmacy activities to patients, as well as allow investment into specialised pharmacy services, such as pharmacists specialising in oncology, paediatrics, emergency medicine and geriatric medicine provided both to inpatients and outpatients also support this claim. These services are necessary to safeguard and maximise the federal government's investment into new PBS medicines that treat complex conditions.

The PRAs are required in NSW and ACT to ensure that patients with diabetes discharged from any public hospital in Australia receive the same access to medicines. SHPA believes that the Commonwealth should make the PRAs a uniform policy in Australia and enter into a PRA with NSW and the ACT. This would ensure a consistent standard of care for vulnerable patients who have just had a major health event requiring hospitalisation and reduces the need for individuals to immediately seek an appointment with their GP on discharge from hospital to continue receiving vital medicines.

Actions from the Australian National Diabetes Strategy 2021-2030

As outlined in the Australian National Diabetes Strategy 2021-2030, the following action points are yet to be developed fully across Australia:

- Improve workforce capability: Review and develop clear competencies, training pathways and scope of practice for the specialist diabetes workforce and other health professionals involved in diabetes care including pharmacists.
- Provide high-quality hospital care, with the measure of progress being *'people who have had their medication plan reviewed by a doctor or pharmacist.'*
- People being treated for mental health disorders such as depression, anxiety and schizophrenia may be at higher risk of diabetes due to the impact of therapies such as psychotropic medications and resulting weight gain. GPs and allied health professionals can facilitate mental health assessment and monitoring

as a component of holistic, ongoing patient care. *'Mental health professionals can provide support and education, including about adverse effects of medication'.*

- Health professionals' understanding of the capacity of the National Disability Insurance Scheme (NDIS) to support clients with diabetes to achieve improved health outcomes is an important focus, as is the role of disability support workers in enabling people with disability to access injectable diabetes medications and avoid treatment delays. This includes training on medications.

Recommendation 1: In hospital settings, clinical pharmacists must be involved in treatment selections and assess risk factors to prevent development of diabetes through the adoption of pharmacist-to-bed ratios as outlined in SHPA's Standards of Practice for Clinical Pharmacy Services.

SHPA recommends that in order to achieve the actions set out in the National Diabetes Strategy and to improve Australia's pharmacist workforce capability and to ensure patients have their medication reviewed by a pharmacist, SHPA pharmacist-to-bed ratios must be adopted across all Australian hospitals. A hospital pharmacist's role extends to providing training and education to carers and support workers of the safe and effective use of diabetes medications in inpatient and outpatient settings.

The National Skills Commission's 2022 Skills Priority List[24] identified pharmacy workforce shortages in all states and territories across both major pharmacist occupation categories. The refreshed National Medicines Policy (NMP)[25] identifies workforce and education as a key enabler critical to its success. SHPA recommends waiving of HECS-HELP fees for pharmacists to support and incentivise more students to study pharmacy degrees as a means to boost the pharmacy workforce and ensure its sustainability into the future.

This is critical especially in regional, rural and remote areas where the largest workforce shortages and inequities are experienced – as well as increased rates of diabetes. In 2021, the prevalence of type 2 diabetes generally increased with increasing remoteness area. Rates among people living in remote and very remote areas were 1.4 and 1.5 times as high as those living in major cities and inner regional areas, respectively.[1] In recent times, the current government has implemented a policy for doctors and nurse practitioners under *HELP Debt Reduction for Rural Doctors and Nurse Practitioners*, which should at a minimum be extended to pharmacists practising in rural areas.

According to the Future focused primary health care: Australia's Primary Health Care 10 Year Plan 2022-2032[26] , addressing inequities of access to health services and poorer health outcomes among people in rural and remote Australia has been a strong focus for the Australian government. However, investments thus far by government have only been made to support doctors and nurse practitioners to practice in rural and remote locations. The health system, however, cannot function optimally nor can equality in the treatment and management of diabetes be achieved, without equally building the capability of the pharmacy workforce to support the provision of clinical pharmacy services and facilitate safe and quality use of medications in these areas.

Regional SHPA members report extreme difficulty in recruiting pharmacist positions in rural and regionals hospitals, with recruitment often needing to go beyond three rounds of recruitment regardless of the role, and often being unsuccessful altogether.

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