



**'We seek to collaborate with other healthcare practitioners and organisations to prevent unnecessary harm caused by opioids initiated in the hospital setting, by beginning an important conversation about services in hospitals, innovation and collaboration.'**



# INTRODUCTION

## **More and more Australians are taking opioids, and risking misuse or long-term dependence, than ever before.**

The harm caused by opioids is well-known in Australia and internationally. In Australia opioid prescriptions rose 24% between 2010-2011 and 2014-2015, resulting in 1.1 million opioid prescriptions being dispensed. Today, pharmaceutical opioids account for more drug-related deaths in Australia than any other drug category.

The experience internationally has taught us that the rise in harm has been driven by a range of factors including unrealistic expectations of pain management, over prescribing by doctors and lack of evidence-based educational programs for health professionals. SHPA is one of many organisations currently considering possible interventions, alongside parliamentary reports from Victorian and New South Wales governments as well as consultation from the Therapeutic Goods Administration undertaken in the first quarter of 2018. These significant investigations into prescription drug misuse have primarily focused on the use of opioids in the community, reflecting that the majority of opioid prescribing and dispensing is by General Practitioners and Community Pharmacists respectively.

However, the patient journey towards opioid harm begins earlier than this, with recent research identifying that for a significant number of patients, the provision of opioids post-surgery is a key factor that can lead to harm. This 'iatrogenic dependence' has been recently recognised as a key driver for future dependence.

As demand for surgery in public and private hospitals continues to grow, the importance of pain management, and the prescribing and supply of medicines for surgical patients when discharged from hospital, also increases. In 2016-2017 there were more than a million surgeries in public hospitals and 1.6 million surgeries in private hospitals. Over 2.2 million separations involved elective surgery, 33% in public hospitals and 67% in private hospitals, following which the prescribing, administration and dispensing of opioids is commonplace.

Given that hospital-initiated opioid use is frequent and can induce significant potential harm, SHPA has a unique opportunity to provide member expertise and insights as strategies that inform high-quality care and minimise risk associated with these medications. Considering the lack of evidence regarding current Australian hospital practices associated with opioid prescribing, administration and dispensing, the work presented here is conceived as a landscape snapshot of practice focusing on the provision of clinical pharmacy services to patients who are likely to be prescribed opioids after surgery. It has now evolved into a broader initiative with our members, medical colleagues and government stakeholders as we aim to collectively consider our role in the prevention and mitigation of opioid harm.

The pharmacy workforce represented by SHPA has been at the forefront of the development and expansion of clinical pharmacy services for decades. In addition to undergraduate education and supervised training, our members have embraced structured residencies, postgraduate studies and Advancing Practice credentialing. They are committed to the Australian Charter of Healthcare Rights guiding principles and to providing healthcare that is safe, effective, patient-centred, timely, efficient and equitable. Now we seek to collaborate with other healthcare practitioners and organisations to prevent unnecessary harm caused by opioids initiated in the hospital setting by beginning an important conversation about services in hospitals, innovation and collaboration.



**Professor Michael Dooley**

**President  
The Society of Hospital Pharmacists of Australia**



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# ABOUT SHPA

The **Society of Hospital Pharmacists of Australia** (SHPA) is the national, professional, for-purpose organisation for leading pharmacists, technicians and pharmacy assistants working across Australia's health system. Established in 1941, SHPA provides a range of education, advocacy and policy services including a structured two-year residency program for post-internship pharmacists and 24 specialty practice streams for members. SHPA is also a founding member of Pharmacy Development Australia which facilitates Advancing Practice, the only program in Australia recognising advancing and advanced pharmacy practitioners.

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.

# ACKNOWLEDGMENTS

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# EXECUTIVE SUMMARY

The harm caused by opioids is well-known in Australia and internationally; the misuse of pharmaceuticals is now the greatest cause of drug-related death in Australia<sup>1</sup>. Oxycodone, morphine or codeine continue to be the main contributors to accidental deaths involving opioids. While small when compared to American statistics, the experience internationally has been similar, with the rise in harm driven by a range of factors including unrealistic expectations of pain management, over-prescribing, and lack of evidence-based educational programs for health professionals<sup>2,3</sup>.

The medical use of opioids prescribed in a hospital setting has been identified as a key risk for ongoing use<sup>4</sup>. Opioids are commonly prescribed to treat acute pain<sup>5</sup> which is common post-surgery. With more than 2.2 million elective surgeries in Australia in 2016-2017<sup>6</sup> this has substantial implications for the treatment of pain in a hospital setting.

According to our findings the provision of specialised services for patients with pain is varied, with a considerable range reported in relation to the provision of acute pain services and pain management clinics for post-surgical patients, especially in regional and rural areas. Additionally, before patients are discharged from both public and private hospitals, sizeable gaps exist in the provision by pharmacists of medication reconciliation, clinical review of patients and risk factors, and review of post-surgery analgesic use.

In this report pharmacists report extremely high use of sustained-release opioids in treatment of acute pain for surgical patients. This result potentially contravenes guidance from the Australian and New Zealand College of Anaesthetists' Faculty of Pain Management and the *Therapeutic Guidelines: Analgesics*. This is especially problematic for patients who are not already taking opioids prior to surgery (opioid naïve patients) and therefore were not previously at risk of opioid misuse or dependence.

Current practices relating to the prescribing and dispensing of opioids at discharge, as reported, result in quantities in excess of patient need which has the potential to lead to preventable harm. The significance of carefully managed supply of opioids at discharge is well-supported by international evidence.

Information provided at hospital discharge by hospital pharmacists (including medication lists, discharge summaries and medication plans) is reportedly inconsistent, and many patients and their General Practitioners are not receiving the appropriate information to best manage opioid therapy for patients recovering from surgery.

Clinical pharmacy capacity at hospitals with substantial surgical patient loads can be variable, especially in private hospitals and in regional or rural locations. In some locations it may not meet patient need for medicine management prior to and post-surgery.

Risk factors for opioid harm are not commonly prioritised by contemporary clinical pharmacy tools and screening, which at present prioritise the risk of short-term harm (or re-hospitalisation) related to medical complications, chronic conditions or extremely high-risk medicines, rather than the long-term risk of opioid misuse and dependence.

Among these challenges and discrepancies, many positive signs were also reported. There is evidence of the development of innovative strategies in Australian hospitals to effectively minimise the risk of opioid misuse and dependence in post-surgical patients (such as opioid stewardship) demonstrating the value of hospital pharmacy departments empowered to proactively address public health challenges in an acute setting. These innovative strategies are emerging, predominantly in major metropolitan hospitals, and are not yet at scale to meet need, nor available to patients in every state or territory.



# KEY RECOMMENDATIONS

These recommendations were formulated by SHPA following consultation with members and stakeholders at the 2018 Medicines Leadership Forum.

## Working with prescribers

1. In partnership with medical and nursing stakeholders support the development and dissemination of evidence-based guidelines for the prescribing and dispensing of analgesics post-surgery.
2. Support the education of doctors and non-medical prescribers regarding appropriate opioid prescribing for patients pre-operatively, during admission and at discharge.
3. Support the widespread use of data from real-time prescription monitoring systems to optimise patient safety and inform prescribing and dispensing of opioids in hospitals.
4. Advocate for the widespread adoption of digital solutions which enable reporting of data on prescribing and dispensing for use in the education of medical, nursing and pharmacy staff.
5. Provide feedback on prescribing patterns based on this reporting to inform systematic education of medical officers and multidisciplinary teams and produce education to support hospital pharmacists working in areas of medication safety, stewardship and clinical pharmacy.
6. Support greater recognition of the role of pharmacists to work within multidisciplinary teams to inform decision-making regarding appropriate pain management and establish patient-centred opioid de-escalation management plans.
7. Share existing pharmacy resources proactively to enable greater collaboration and less duplication of clinician effort in reducing opioid harm.
8. Support the development of a case study of the South Australian governance-led model for analgesic prescribing and dispensing for reference and consideration by other healthcare providers.

## Engaging patients

9. Support greater health literacy by replacing language using 'painkillers' with 'medicines for reducing pain' to reduce confusion and manage expectations among patients.
10. Support the development of patient-centred tools for self-assessment and management to reset community

expectations of pain and use of medicines for reducing pain, and advise on the proper disposal of opioids to reduce diversion and inappropriate use.

11. Advocate for national education campaigns which aim to reset community expectations of pain and use of medicines for reducing pain and advise on the proper disposal of opioids to reduce diversion and inappropriate use.
12. Support consumer health organisations to educate patients regarding managing pain expectations with health care providers as appropriate.
13. Disseminate Choosing Wisely Australia principles to prompt conversations with patients regarding opioid-related harm.

## Supporting opioid stewardship

14. Advocate for the implementation of opioid stewardship programs in public and private hospitals nationally.
15. Create a toolkit to support clinicians wanting to implement an opioid stewardship program in their health service.
16. Advocate for the specific inclusion of opioid stewardship in relevant healthcare standards including National Safety and Quality Health Standard 4: Medication Safety, as done for antimicrobial stewardship in the Preventing and Controlling Healthcare Associated-Infection Standard.
17. Consider the specific requirements of opioid stewardship programs for particular patient groups that may not be captured in standard opioid stewardship programs: for example, paediatric and obstetric patients.

## Managing medication supply

18. Encourage pharmaceutical manufacturers to produce greater variety in pack sizes for opioids – i.e. packs of 5, 10 and 20 tablets.
19. Advocate for clinicians to be supported to prescribe the smallest quantity of analgesics including dispensing partial packs of analgesics where this is appropriate for the needs of the patient.
20. Advocate to government/regulatory authorities for increased information on opioid labelling relating to the risk of long-term use and overdose.
21. Advocate for the creation of a National Opioid Utilisation Surveillance Program (similar to National Antimicrobial Utilisation Surveillance Program funded by the Australian Commission on Safety and Quality in Health

Care – ACSQHC) for hospitals to monitor opioid usage rates and enable benchmarking with similarly peered hospitals to identify areas for improvement.

22. Encourage hospitals to review both medication formulary and governance systems to ensure hospital systems minimise the risk of misuse among patients.
23. Encourage hospital pharmacies to review electronic medical record management, dispensing and prescribing software systems to identify any unintended design features which affect incidence, quantity or duration of opioid supply (i.e. order sets which include opioids, auto-populated dosing regimens and automatic quantities including Pharmaceutical Benefits Scheme quantities, use of continue supply tick boxes etc).

## Supporting transitions of care

24. Advocate for investment in hospitals, including private hospitals, to ensure clinical pharmacy services are able to provide appropriate medication reconciliation, counselling and transition of care management, for surgical patients at discharge.
25. Encourage hospitals to implement a key performance indicator ensuring every patient prescribed analgesic medicine at discharge has a multidisciplinary pain management plan.
26. Support the inclusion of pharmacists in the completion of hospital discharge summaries for patients leaving the hospital.

## Empowering pharmacists

27. Support pharmacists to work at their fullest scope of practice as part of multidisciplinary pain management teams.
28. Develop tools for clinical pharmacy services that identify patients at risk of opioid misuse.
29. Support the implementation of appropriate pharmacist to patient ratios in the surgical setting.
30. Prioritise the development of a *Standard of Practice in Surgery and Perioperative Medicine for Pharmacy Services* to provide guidance for hospital pharmacists.
31. Develop a Practice Update on reducing opioid-related harm for surgical patients to provide timely guidance for hospital pharmacists.
32. Create a learning module about optimising analgesic management and reducing opioid-related harm for surgical patients for hospital pharmacists.
33. Develop competency-based assessment tools, and credentialing if appropriate, to ensure pharmacists are supported to review opioids prescribed post-surgery.

# METHODOLOGY

As the peak body for hospital pharmacists, SHPA was keen to understand the role and activities of hospital pharmacists in the care of patients receiving opioids in hospital after undergoing surgery. SHPA is aware that several regulatory responses to reduce opioid-related harms are also being considered.

This paper details the results of an online survey of hospital pharmacists working in public and private hospitals. The results were informed by 135 Australian hospital facilities regarding pharmacy service provision, workload, prescribing practice and dispensing activities. While providing valuable insights, the results cannot be considered to represent all hospitals or hospital pharmacies in Australia.

The survey was conducted in May 2018. The survey questions and methodology were reviewed by the Opioid Advocacy Working Group consisting of SHPA Branch representatives, subject matter experts and the SHPA advocacy team. The survey was targeted at Directors of Pharmacy and their delegates. Directors of Pharmacy are typically responsible for the management of pharmacy policy, procedure and hospital practice, and have a firm understanding of dispensing and discharge practices, and service provision levels in their health service. They were encouraged to answer the survey on behalf of their service or to delegate to a staff member with awareness of the relevant services provided. All information provided represents the informed opinion of the respondent.

The survey was conducted using the online survey tool; 'SurveyMonkey' and was open for two weeks. Emails including the survey link were sent to 250 Directors of Pharmacy on Wednesday 9 May 2018, with a reminder prior to the survey closing. All participation was voluntary. Survey respondents were advised to fill in a separate survey entry for each hospital site within the one hospital network undertaking surgery, given that it is widely accepted that practices and service provision between individual sites within the same network can vary significantly. Information identifying each site was treated confidentially.

A total of 170 responses were received. Respondents who completed less than 55% of the survey were excluded from the study. Of the 170 responses, 135 met the inclusion criteria. To control for bias, survey responses were anonymous so hospitals could not be identified. The responses were grouped into identified themes. The responses were analysed by an independent researcher to avoid reporting bias.

Following the survey, SHPA members working in relevant areas were invited to join other medical and health stakeholders at a Medicines Leadership Forum in July 2018 where the results were presented. Attendees were divided into four streams (Managing Medication Supply, Empowering Patients, Working with Prescribers and Supporting Transitions of Care) to discuss the findings and propose recommendations. These discussions informed the

development of the recommendations included in this final report. A full list of attendees is available in the appendix.

## Demographics

Of the final 135 respondents to the survey, there was proportionate national representation with a slightly higher representation from Victorian hospitals – reflective of the SHPA membership. 40% of the responses were from Victoria, 19% New South Wales, 15% Queensland, 11% Western Australia, 8% South Australia, 3% Australian Capital Territory, 2% Tasmania and 2% from Northern Territory. Geographically, there was good representation from hospital sites in metropolitan and non-metropolitan areas with 59% of hospitals from metropolitan regions, 30% in regional areas and 11% in rural areas.

Majority of the survey responses came from public acute group A/public acute group B hospitals with 39%. Principal referral hospitals equated to 24% of the responses, 16% public acute group C/public acute group D, 11% private acute group A/private acute group B and 3% private acute group C/private acute group D. The remaining hospital sites were either children's/women's/combined women's and children's, same day hospitals, sub-acute and non-acute hospitals (public or private rehabilitation) or other.

### Australian hospital peer groups

Hospitals are complex organisations that are often hard to classify depending on their outputs and services. They are grouped into hospital peer groups to facilitate the description and breadth of their resources provision of hospital services, as they are defined into groups of similar hospitals based on shared characteristics.

Principal referral hospitals are public acute hospitals that provide a very broad range of services, have a range of highly specialised service units, and have very large patient volumes.

Public acute group A hospitals provide a wide range of services typically including a 24-hour emergency department, intensive care unit, coronary care unit and oncology unit, but do not provide the breadth of services provided by Principal referral hospitals. Public acute group B hospitals are similar but do not have the service profile of the Principal referral hospitals and Group A hospitals.

Public acute group C and D hospitals include those public acute hospitals that provide a more limited range of services but do provide surgical services and/or some form of emergency facility.

*Australian Institute of Health and Welfare. Australian hospital peer groups. Health services series no. 66. Cat. no. HSE 170. 2015. Canberra: AIHW.*



# KEY FINDINGS

## Section 1: Service provision

### 1.1 Provision of acute pain services

#### Acute pain service

A team within a hospital dedicated to the management of patients experiencing acute pain. Has responsibility for day-to-day management of patients with acute pain and for providing an appropriate level of care and monitoring<sup>7</sup>.

#### Pharmacists in acute pain services

The role of the pharmacist in an acute pain service is to promote appropriate use of analgesic medicines, evaluate new analgesics for formulary addition, and conduct medication-use evaluations, outcomes research and pharmacoeconomic analyses<sup>8</sup>.

The majority of respondents (61%) indicated that their hospital had an established acute pain service for inpatients, **20% indicated their hospital had no acute pain service**, with the balance (19%) having a limited service. The gap in acute pain services was more concentrated in smaller and private hospitals. Public hospitals were more likely to have an acute pain service than private hospitals (69% vs 42%) while hospitals categorised as public and or private acute A and B hospitals, were more likely to have an acute pain service than public and private acute C and D hospitals (67% vs 19%).

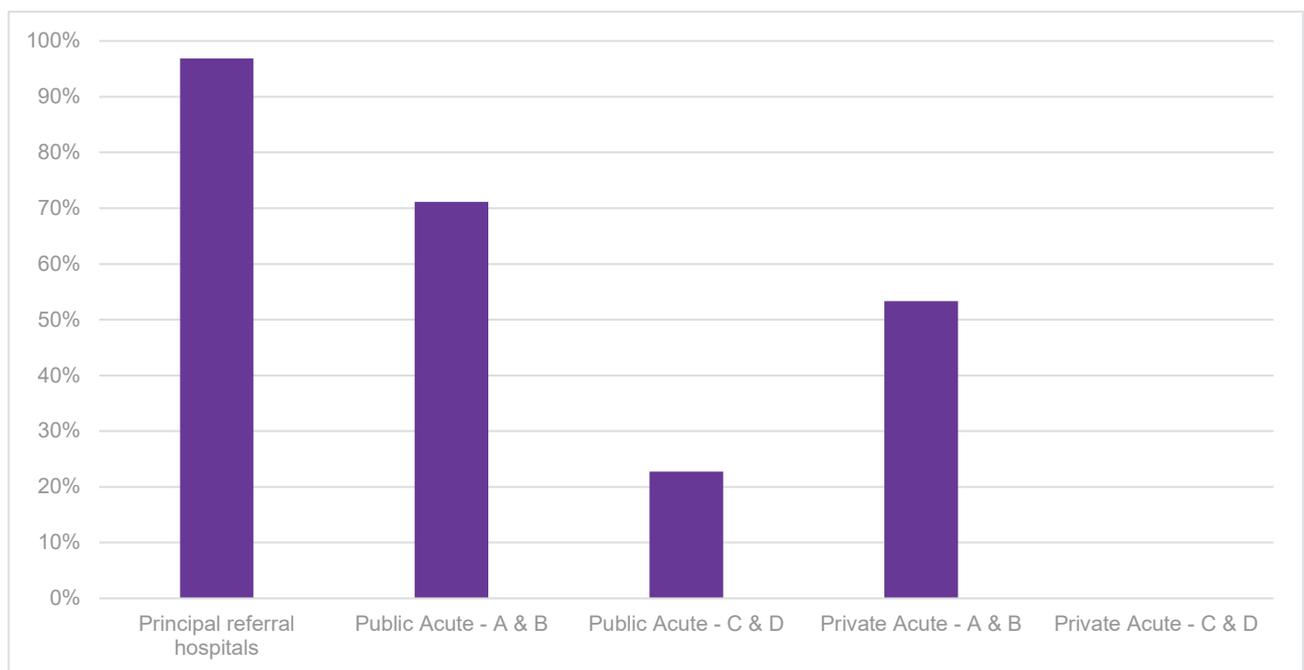


Figure 1. Does your hospital site provide an acute pain service for inpatients? (Answer = Yes)

Most respondents (72%) considered that **acute pain services were not commensurate with demand and should be expanded to meet the needs of patients**. Results were broadly consistent across hospital types, and between metropolitan, regional and rural hospitals. Principal referral hospitals were the best serviced with 44% of respondents believing service levels were commensurate to demand and patient need.

## 1.2 Provision of opioid stewardship programs

### Opioid stewardship

Opioid stewardship (also called analgesic stewardship) is a hospital-wide strategy adopted from antimicrobial stewardship, that provides care for patients using opioids to treat pain. The strategy ensures safe, rational prescribing of opioids to optimise pain management in the care of patients. Opioid stewardship provides an opportunity for pharmacists to take a leadership role in pain management<sup>9</sup>.

### Opioid Stewardship Pharmacist

The focus of an opioid stewardship pharmacist is to actively optimise appropriate use of analgesic medicine, decrease serious adverse effects and improve patient care. The role may provide clinical care in related services such as acute pain services, or pain clinics depending upon service capacity<sup>10</sup>.

**Less than five per cent of respondents indicated that their hospitals had a formal opioid/analgesic stewardship program; while 13% had a limited/informal program,** although no further information was available to detail what these programs entailed. Combined, this indicates less than a fifth of hospitals have some form of – even if limited – hospital-wide stewardship model in place to reduce potential opioid harm.

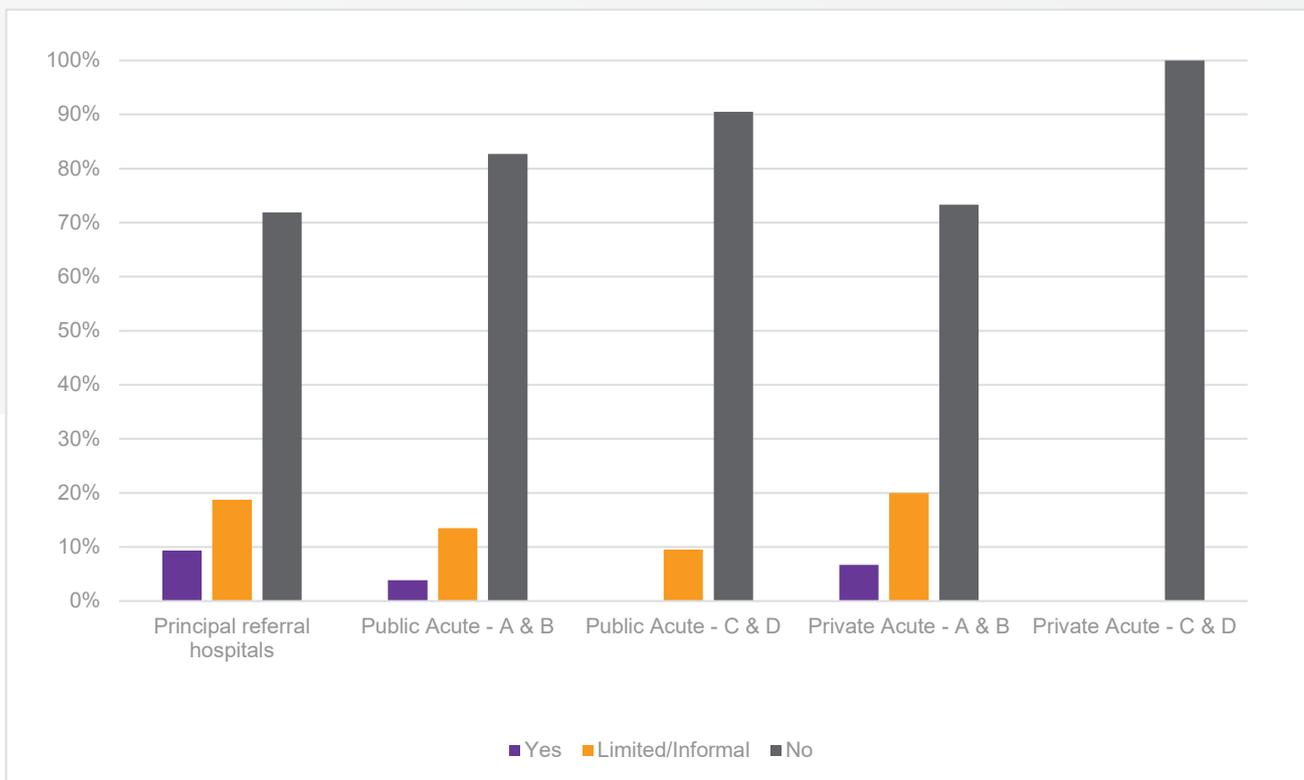


Figure 2. Does your hospital site provide a formal opioid/analgesic stewardship program for inpatients?

Hospitals providing either a formal or informal opioid/analgesic stewardship service were more concentrated in the principal referral and A/B hospital categories, regardless of private or public status. Of the 24 respondents indicating their hospital had at least a limited opioid stewardship program, 96% indicated the hospital also had a limited acute pain service, and 58% also had a limited ambulatory pain management clinic for post-surgical patients. Respondents across all hospital types and settings were overwhelmingly (nearly 95%) supportive of opioid/analgesic stewardship programs being expanded and reported that their existing services were insufficient to meet patient demand.

### 1.3 Pain management clinics

#### Pharmacists in ambulatory pain management clinics

The role of pharmacists in managing patients in an ambulatory pain setting includes providing medicines reconciliation, medication review, therapeutic drug monitoring, interdisciplinary rounds with the medical team to provide optimal inpatient postoperative pain management, clinical assessment of outpatient prescriptions with opioid discharge counselling, and medication evaluation of prescribed pain regimen treatment plans at the post-discharge follow-up appointment<sup>11</sup>.

Provision of formal pain management clinics for post-surgical patients is uncommon in hospitals (15%) with an additional 13% reported to having a limited or informal program, equating to 28% of respondents. Programs were concentrated in principal referral hospitals, with 50% of principal referral hospitals indicating they have a formal or limited/informal service. Acute A and B hospitals were more likely to have clinics (22% vs 16%) than Acute C and D hospitals, with public hospitals also having slightly higher service provision compared to private hospitals. While the question focused on clinics provided for patients with post-surgical pain, some comments indicated that respondents included clinics providing services for chronic pain as well. A large majority of respondents (87%) considered their service in this area not commensurate with demand or meeting the needs of patients and that it needed to be expanded.

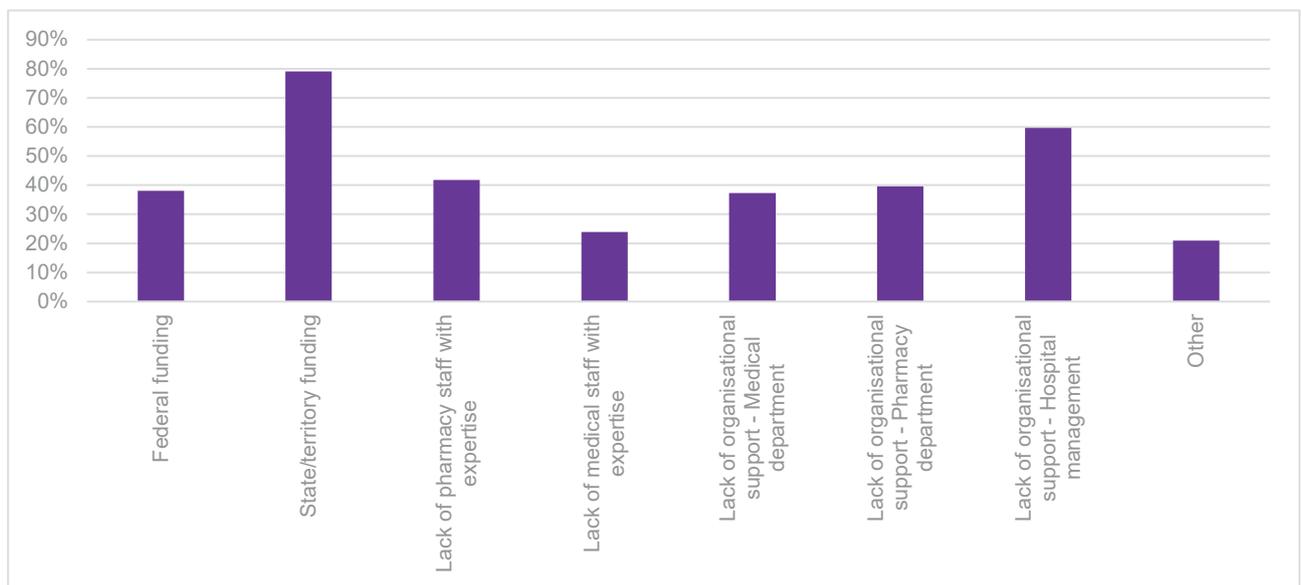


Figure 3. What are the barriers to your hospital site introducing the services that are currently NOT offered?

### 1.4 Barriers to expansion of desired services

Given most respondents felt that existing services were not meeting demand, (acute pain service 72%, opioid/analgesic stewardship 94% and pain management clinic 87%), expansion of acute pain services, opioid stewardship programs and pain management clinics in respondents' hospital sites was well supported. Respondents cited multiple barriers to expansion including a lack of funding, lack of appropriate staff expertise and organisational support.

Funding from state and/or territory governments (presumably a lack thereof) was the most commonly reported barrier by all respondents. In addition, a lack of organisational support from hospital management, as well as support from medical colleagues and the pharmacy department itself were identified by a large number of respondents. Workforce deficits relating to medical and pharmacy expertise were also acknowledged.

Lack of organisational support from hospital management was reported more frequently for larger hospitals, both public and private. For public hospitals, state/territory funding was the biggest perceived barrier (88%), however 39% of these respondents also cited lack of federal funding; and lack of organisational support from internal stakeholders (hospital management 59%; medical department 37%; pharmacy department 42%). In contrast, the key barrier reported by private hospitals was lack of support from hospital management (63%).

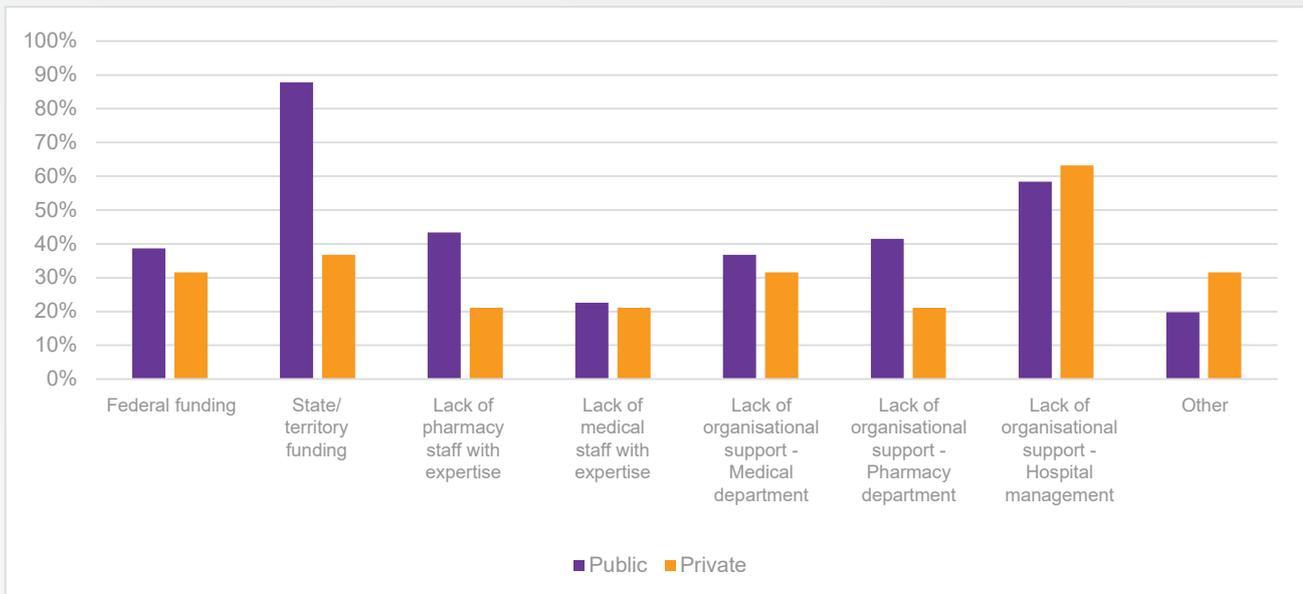


Figure 4. Public vs Private Hospitals: What are the barriers to your hospital site introducing the services that are currently NOT offered?

### 1.5 Pharmacy involvement in hospital pain services

#### Pharmacist

A healthcare professional with tertiary qualifications and registered with the Australian Health Practitioners Regulation Agency, who use their expertise in medicines to optimise health outcomes and minimise medication misadventure. Pharmacists apply their knowledge of medicines to promote their safe and effective use. They also provide clinical care to avoid, detect, monitor and manage medication adverse events and medication-related problems that patients may experience<sup>12</sup>.

#### Pain Pharmacist

An emerging role, this encompasses a multidisciplinary approach to support patients with either acute or chronic pain through pharmacy care including recording and resolving medication-related problems, preventing adverse drug reactions, therapeutic drug monitoring and addressing polypharmacy. In addition, the role supports broader service provision by being a central contact point for pain-related queries, attending ward rounds, providing education and conducting audits and research<sup>13</sup>.

A large proportion of survey respondents providing hospital-wide pain management services reportedly did not have pharmacy involvement in that service. Thirty-four percent of respondents reported that their acute pain services did not have pharmacist involvement. This was also observed at a rate of 33% for respondents with opioid/analgesic stewardship services and 86% for respondents with pain management clinics. Reports of clinical pharmacy activity in these services (advising on patient care, being able to refer, being embedded in a multidisciplinary team) was consistently under 10%. In most cases, involvement of pharmacy relied upon a proactive ward-based pharmacist liaising with the pain service in addition to their standard responsibilities. Reports of rates of clinical pharmacy involvement in opioid/analgesic stewardship was limited by low prevalence at present and its informal implementation. Pharmacist involvement in pain management clinics was also extremely uncommon.

## Section 2: Patient journey

### 2.1 Pharmacy services pre-admission

#### Medicines reconciliation

Process of obtaining, verifying and documenting an accurate list of a patient's current medications prior to admission to hospital and comparing this list to the admission, transfer, and/or discharge medication orders to identify and resolve discrepancies. At the end of the episode of care the verified information is transferred to the next care provider<sup>14</sup>.

#### Ward Pharmacist

A hospital pharmacist embedded in a hospital ward where they may provide care for patients with varying illnesses who are in that ward. Their duties include participating in medical and multidisciplinary rounds, having direct contact with patients and caregivers, and having access to the complete medical record of a patient, including biologic data and results of diagnostic tests to provide clinical pharmacy services<sup>15</sup>. *Terminology used to identify a pharmacist allocated to a patient ward and not based in the hospital dispensary.*

#### Medical Unit Pharmacist

A hospital pharmacist embedded in a medical team, whose duties include making rounds with the medical team as well as monitoring drug dispensing, storage, and administration for an area of specialty practice<sup>16</sup>. *Terminology used to identify a pharmacist allocated to a medical team and not based in the hospital dispensary.*

Twenty-three percent of respondents reported to have dedicated clinical pharmacists or a clinical pharmacist working collaboratively in pre-admission clinics to review patients' prior opioid use, although in some cases this was for high-risk patients only. Pharmacists most often did not attend pre-admission clinics (60%) and therefore the discussion of patients' prior opioid use was undertaken by other health professionals if performed.

### 2.2 Pharmacy service at admission

Forty-five percent of respondents reported that prior opioid use was discussed and reviewed with all patients during medication reconciliation process undertaken by the pharmacist. A further 37% indicated that 'some' patients were provided this service, but not all. Nine percent of medicine reconciliations were undertaken by non-pharmacists, with 4% of respondents indicating there was no medicines reconciliation at the time of admission. Several responses indicated that the medicines reconciliation undertaken focused only on current medicines and may not identify past opioid use.

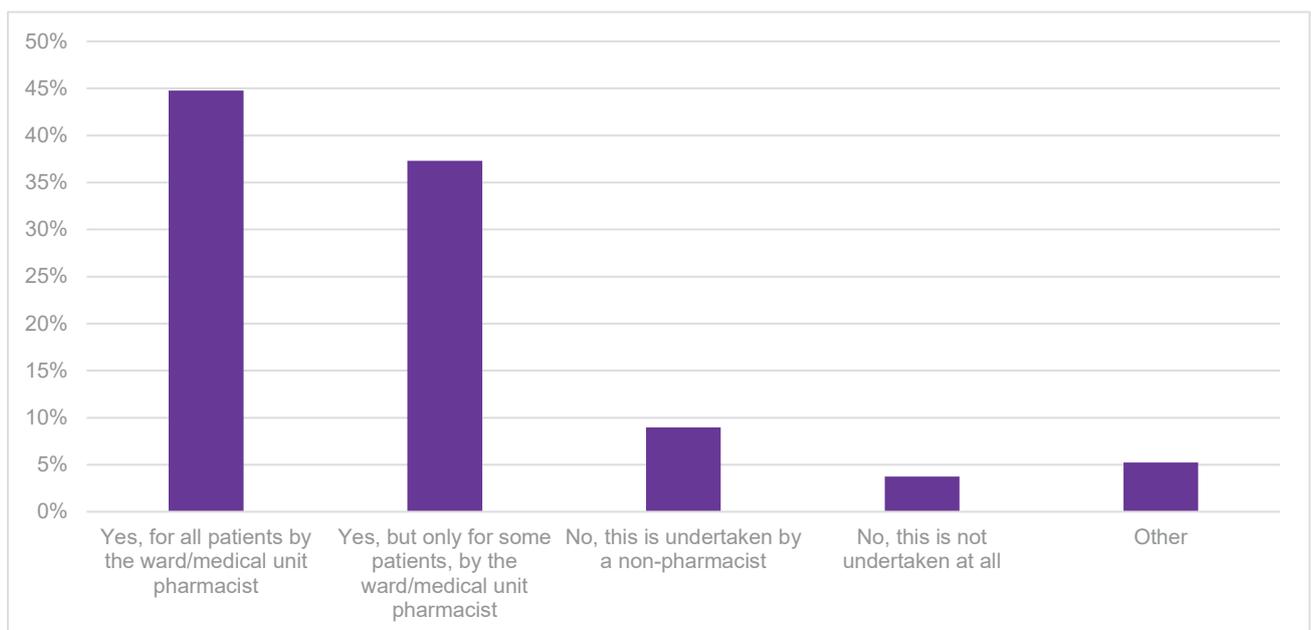


Figure 5. Do pharmacists routinely discuss, review and document patients' prior opioid use upon admission during the medication reconciliation process?

## 2.3 Access to pharmacist advice regarding pain management and analgesic use

Most respondents (93%) indicated there was capacity for pharmacists to provide advice to patients regarding appropriate pain management and analgesic use. This reflects the activities of both those in dedicated roles and with more general responsibilities. **However, such advice was often restricted to patients identified as high-risk (53%).**

In contrast, **93% of respondents were either never able to, or unable to routinely attend ward rounds** to advise on analgesic medicines including opioid use, with only 7% of respondents doing so routinely. In this cohort, 31% of respondents were only able to attend ward rounds 'if they had time'. The 57% of respondents who did not attend ward rounds include both public hospital respondents (49%) who were unable to participate and private hospital respondents (11%).

In most cases, hospitals prioritise the provision of clinical pharmacy services for surgical patients as 78% of responses stated that their surgical wards were staffed by a dedicated pharmacist. In some instances, these were rotating responsibilities shared among the broader pharmacy team day-by-day, rather than a set or fixed position. Sixteen per cent of respondents stated that neither their surgical or perioperative wards had a dedicated pharmacist. Comments indicated that in these circumstances any clinical pharmacy services were provided on an ad-hoc basis by the dispensary.

## 2.4 Access to clinical pharmacy services

### Clinical pharmacy services

Clinical pharmacy services comprise a range of activities, including: medication reconciliation, assessment of current medication management, clinical review, therapeutic drug monitoring and adverse drug reaction management, contributing to the medication management plan, providing medicines information, facilitating the continuity of medication management on discharge or transfer and participating in interdisciplinary ward rounds and meetings<sup>14</sup>.

### Clinical review

Review of patient-specific clinical information and patient parameters to evaluate their response to medication therapies and to detect and manage potential or actual medicines-related problems<sup>14</sup>.

### High-risk medicines

A medicine that is deemed high-risk, can cause serious adverse effects and requires additional monitoring and clinical pharmacy care, such as:

- insulins and/or oral hypoglycaemic agents
- opioid analgesics
- immune suppressant therapy
- anticonvulsants
- aminoglycosides or vancomycin
- anticoagulants and antithrombotics
- intravenous potassium
- chemotherapy<sup>14</sup>.

For pharmacists working in a medical unit or on a ward, providing cognitive clinical pharmacy services to patients is the priority, however, comments indicated that meeting demand is a constant challenge. **The majority of pharmacists were expected to prioritise high-risk patients for clinical pharmacy services (53%) rather than having capacity to providing clinical services for all patients (32%).**

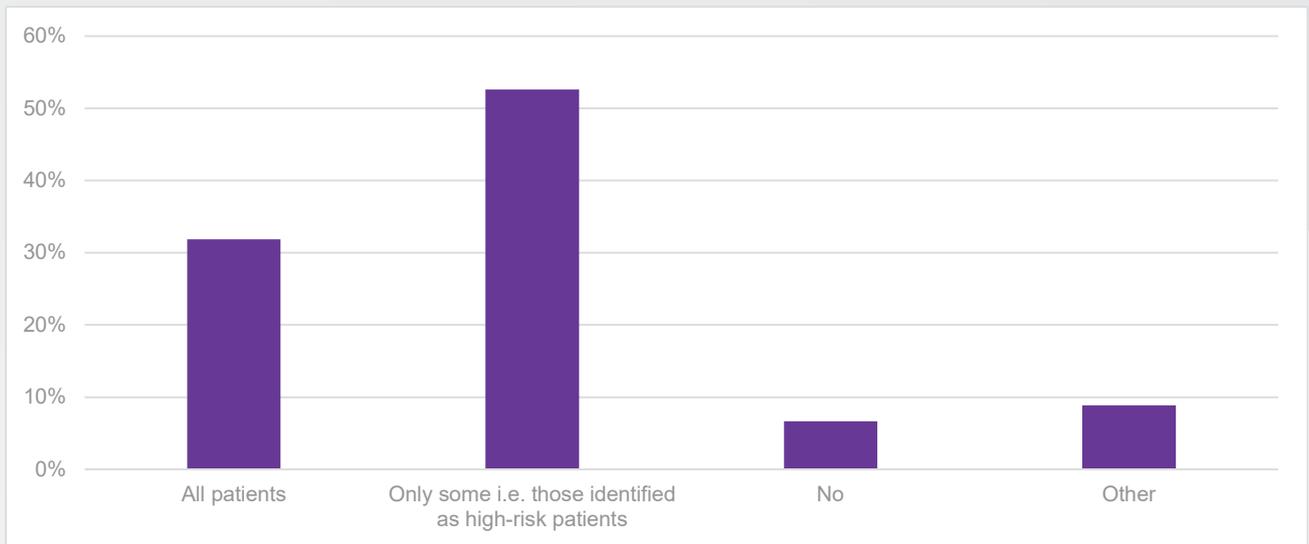


Figure 6. Do ward/medical unit pharmacists routinely give advice to patients about appropriate pain management and analgesic use?

In cases where patients were prioritised, multiple factors were reported with existence of multiple chronic conditions/comorbidities (65%), age (59%), concurrent anticoagulant use (55%), renal or hepatic impairment (47%) most common. Additional comments provided by respondents showed **that the process of prioritisation varies considerably between health services** with some organisations using a high-needs patient screening tool or on referral from nursing staff.

Twenty-four percent of respondents indicated that a patient already on opioids prior to admission would be prioritised for clinical pharmacy services, with 17% of respondents prioritising patients with known opioid tolerance and **only 9% for opioid naïve patients.**

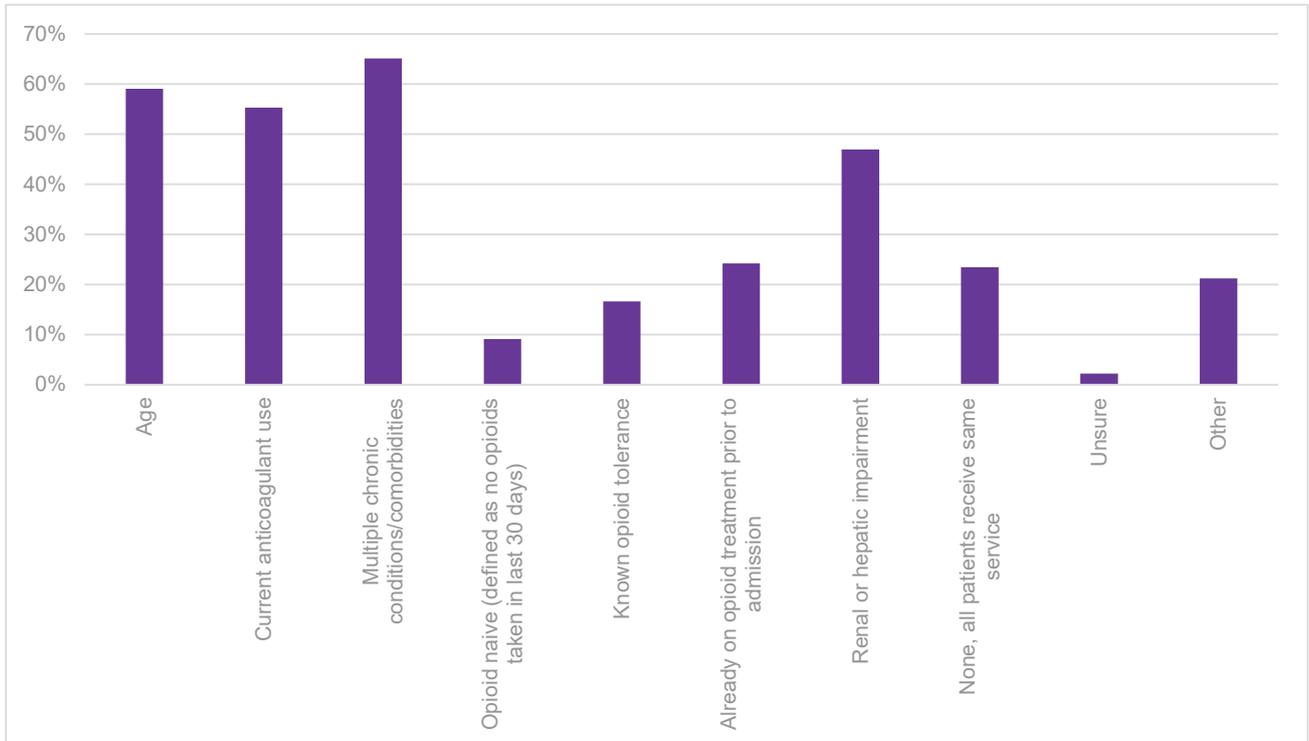


Figure 7. What factors are used to prioritise clinical pharmacy services for patients on these wards?

## Section 3. Use of medicines

### 3.1. Commonly prescribed analgesics for opioid naïve patients – at admission and discharge

#### Sustained-release oral opioids

Sustained-release (SR) opioids are also referred to as slow, controlled and modified release, and typically dosed twice-daily to provide analgesia for 24 hours. As such, they are intended to be used in the setting of chronic pain, and for patients who require repeated dosing with immediate-release opioid analgesics<sup>17</sup>. Presently in Australia there are several opioids available as SR products including hydromorphone, morphine, oxycodone and tapentadol. Each of these medicines is also available as an immediate or conventional release formulation.

#### Immediate-release opioids

Immediate-release opioids are medicines formulated to release the full dose of the opioid medicine immediately after oral administration. Immediate-release opioids result in relatively rapid drug absorption and onset of analgesic effect, and thus are typically used to treat severe acute pain and breakthrough pain<sup>18</sup>.

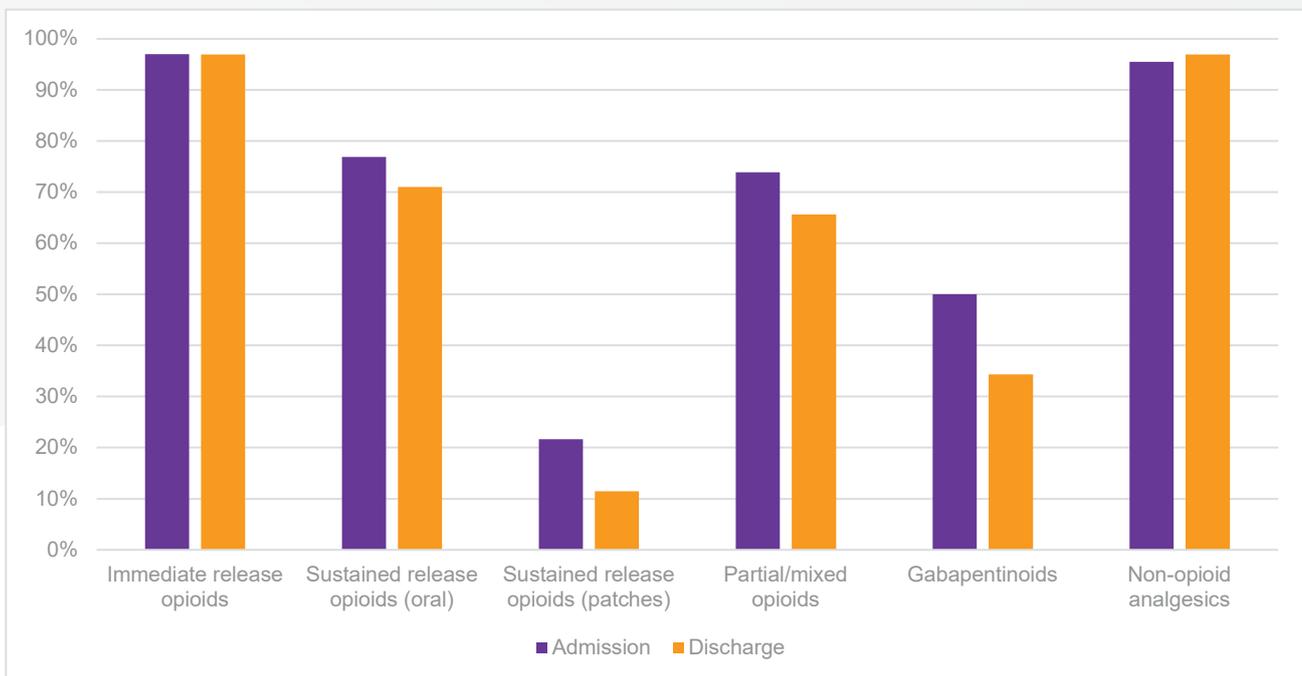


Figure 8. When treating acute pain in opioid naïve patients, what treatments does your hospital site commonly prescribe, administer or utilise?

When treating acute pain in opioid naïve patients, respondents reported that hospitals commonly prescribed (in order of prevalence): immediate-release opioids (97%), non-opioid analgesics (96%), sustained-release opioids (oral formulations) (77%), and partial/mixed opioids (74%).

Similarly, at discharge, for acute pain in opioid naïve patients, commonly prescribed analgesics (in order of prevalence) were: immediate-release opioids (97%), non-opioid analgesics (97%), sustained-released opioids (oral formulations) (71%) and partial/mixed opioids (66%). While prescription of sustained-release opioid patches was lower than other medicines, the prescription of opioid patches was still significant with 11% of respondents reporting provision at discharge.

It is of note that South Australia consistently reported lower use of sustained-release opioids compared to the national average.

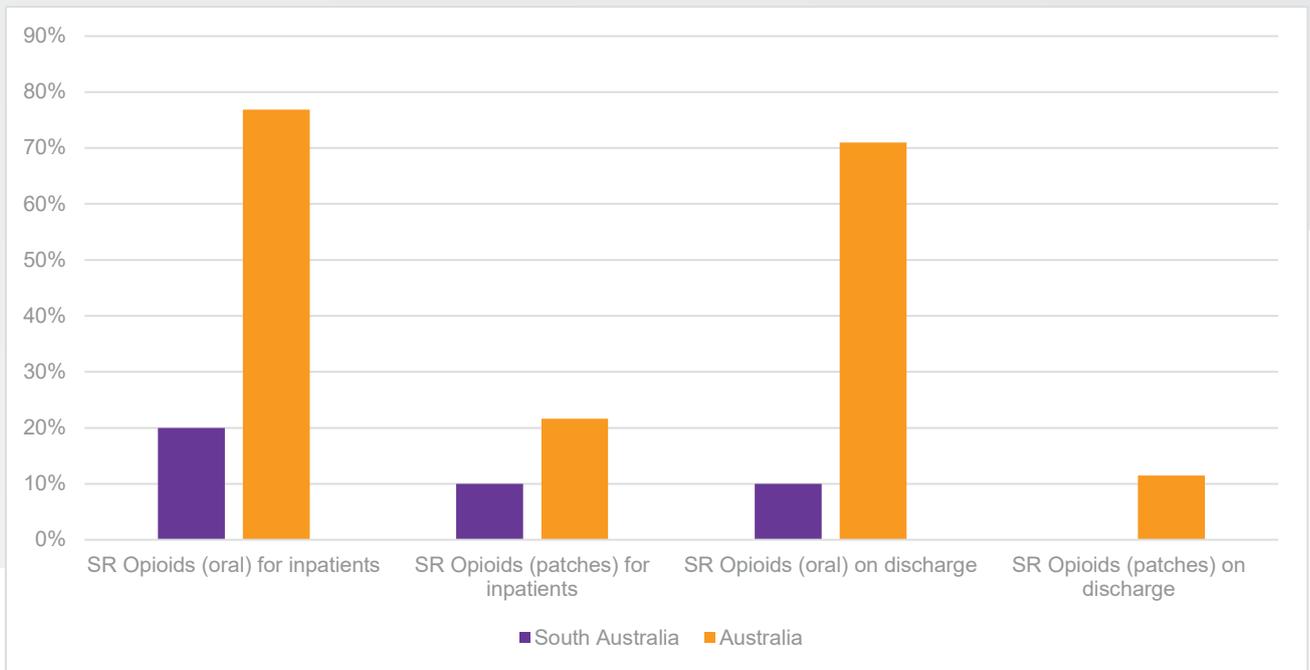


Figure 9. South Australia vs Australia: When treating acute pain in opioid naïve patients, what treatments does your hospital site commonly prescribe, administer or utilise?

### 3.2 Review of medicine use by post-surgery patients

Pharmacist review of analgesic use prior to discharge was not consistently provided across respondents in either public or private hospitals. **Less than a quarter (23%) of respondents always reviewed the last 48 hours of analgesic use to inform appropriate prescribing upon discharge.** Slightly more (31%) completed a review 'often', while 28% sometimes completed. A minority (13%) of respondents indicated that a pharmacist 'rarely' or 'never' reviewed the last 48 hours of analgesic use prior to discharge to determine appropriate prescriptions on discharge, with a few additional comments that reviews took place but did not influence prescribing. In some facilities providing day surgery services, it was noted that patients are not present in the hospital long enough to enable this review.

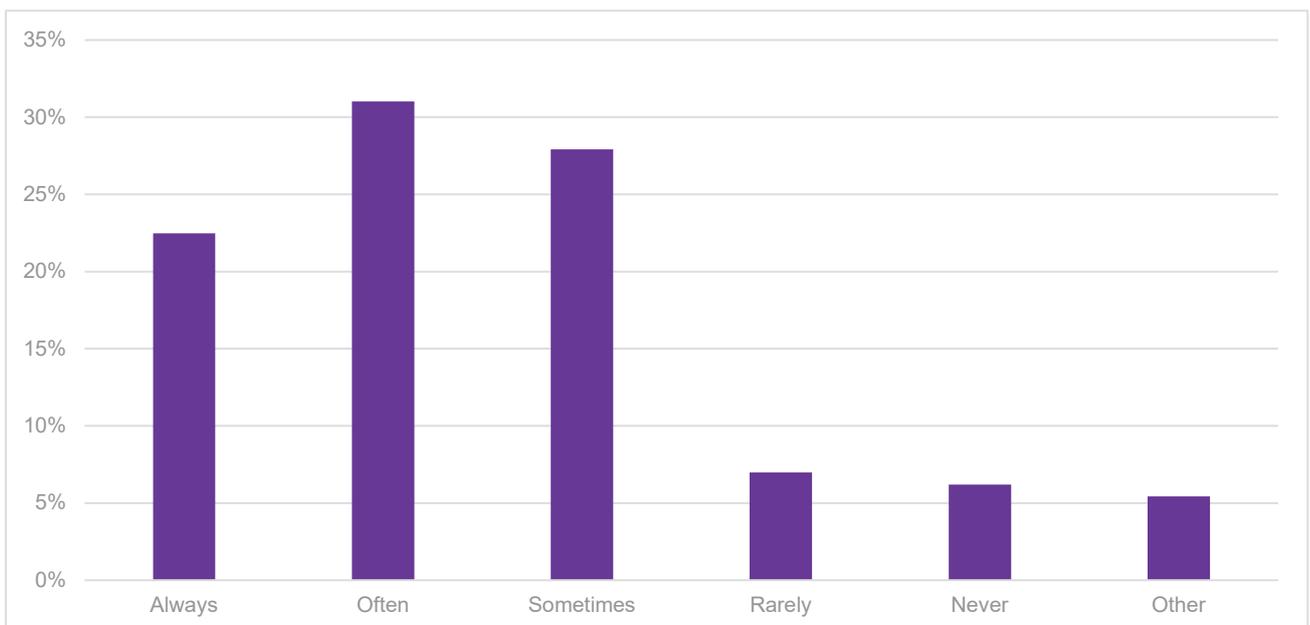


Figure 10. Do ward/medical unit pharmacists review the last 48 hours of analgesic use to determine appropriate prescription of analgesic medicines and quantity upon discharge?

### 3.3 Supply of opioids at discharge for patients post-surgery

Respondents stated that even when patients' pain had not required opioid analgesic in the 48 hours prior to discharge, **more than 70% still supplied opioids more often than not to take home 'just in case'**. Several comments indicate that the amount supplied depended on factors including the patient, the prescriber and on occasion the confidence of the pharmacist.

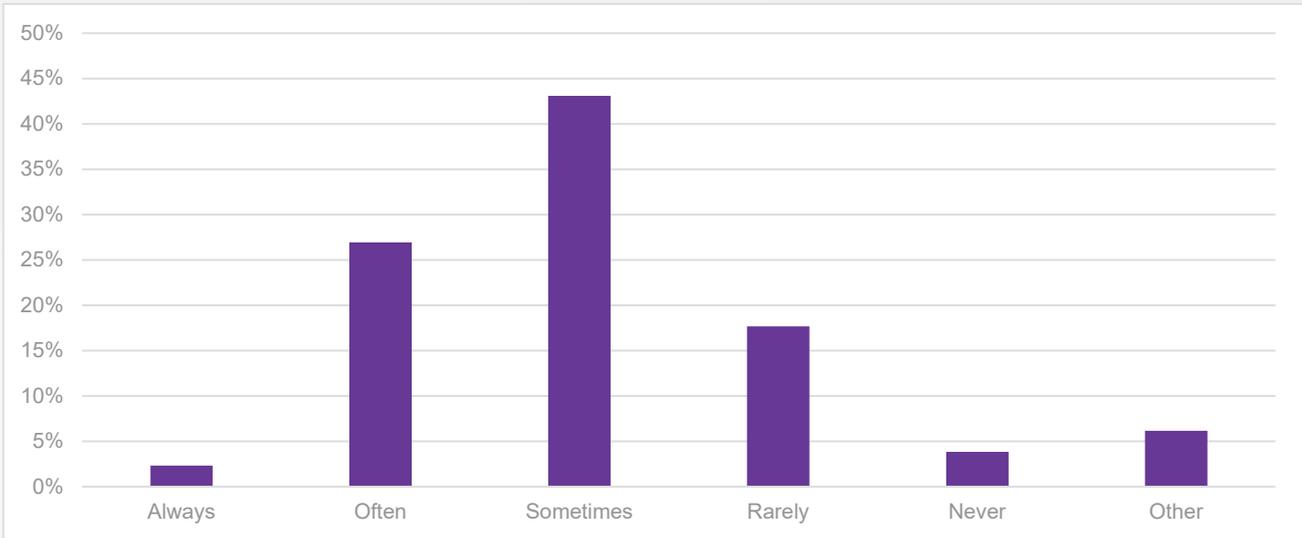


Figure 11. If opioid analgesic were not administered in the 48 hours prior to discharge, are opioid analgesic supplied on discharge just in case patients might require them?

### 3.4 Hospital pharmacy services at discharge

In an effort to improve patient flow and bed availability, some respondents indicated that efforts were made to increase the efficiency of discharge by writing up discharge prescriptions before discharge is confirmed (62%) and prior to surgery (21%) as well as dispensing medicines before discharge is confirmed (38%) and before surgery (10%). Eighteen per cent of respondents indicated their site provided pre-packed analgesic medicines to patients at discharge. Some respondents provided additional information that these activities were often reconciled before finalisation, undertaken only when exceptional circumstances arose, or in specific clinical settings such as emergency departments.

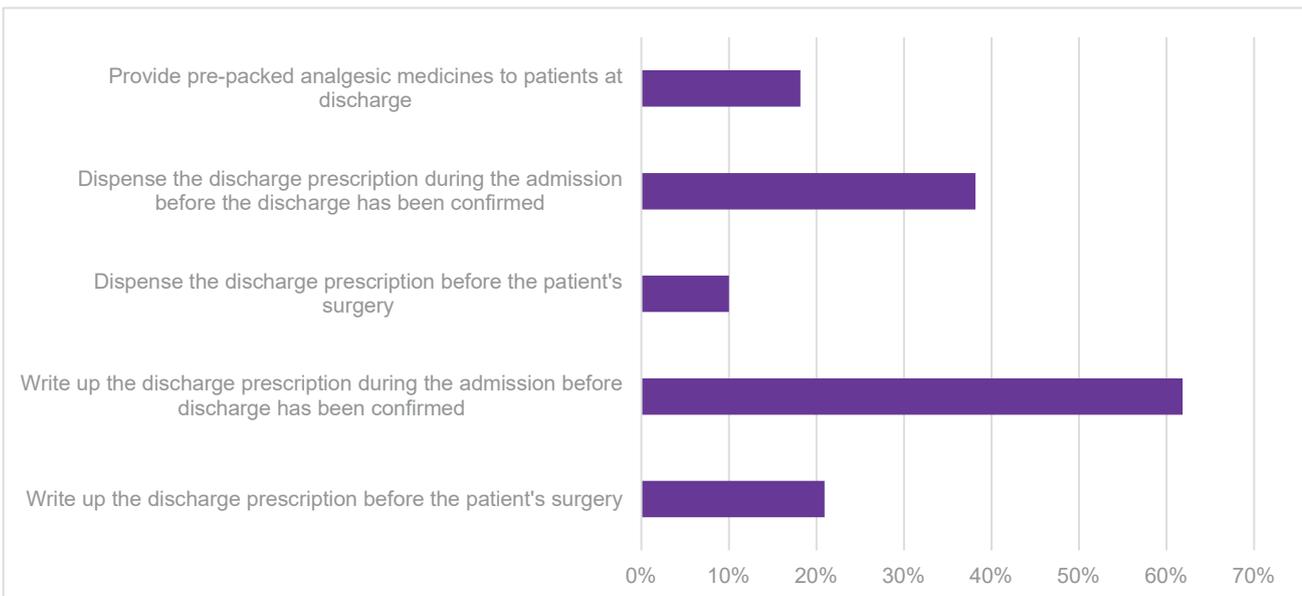


Figure 12. To improve patient flow and bed availability, does your hospital site undertake any of the following?

### 3.5 Patient counseling and information about medicine use

#### Patient medication counselling by a Pharmacist

Involves providing medicines information to patients to improve patient capacity for involvement, engage them in their healthcare and encourage the safe and appropriate use of medicines, enhancing therapeutic outcomes<sup>14</sup>.

Thirty-nine percent of respondents reported counselling was 'always' provided to patients on their medicine during discharge by a pharmacist, with a further 40% of respondents reporting this was undertaken 'often'. Hospital sites also indicated that elements of discharge counselling are undertaken by other multidisciplinary team members including ward-based nurses (79%) or the discharging doctor (72%).

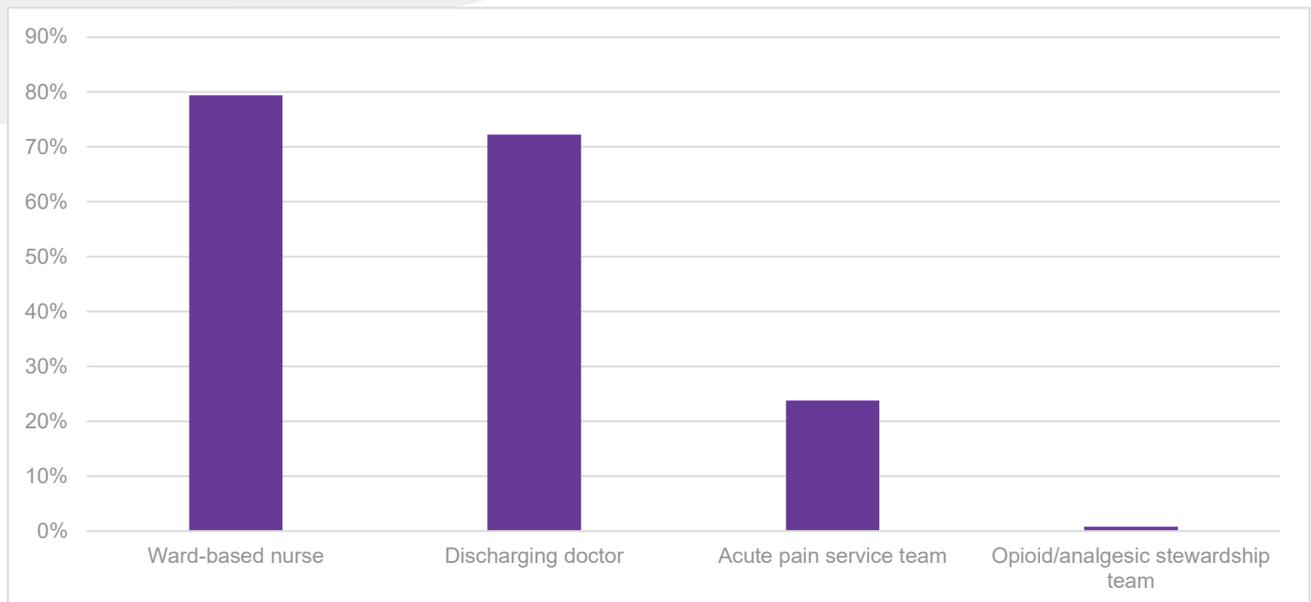


Figure 13. Do patients receive advice from non-pharmacists on analgesic medicines at the point of discharge, excluding day cases?

Day surgery patients are significantly less likely to receive counselling from a hospital pharmacist on how to use their medicines safely with only 14% of respondents reporting counselling was always provided. Additional comments indicated that in many hospitals, day surgery patients are not supported by hospital pharmacies at all, which is reflected in the most common response which was 'No' (23%). These patients were typically referred to community pharmacies, sometimes attached to the hospital, for medicines to be dispensed.

## Section 4. Transition of care

### Transition of care

Hospital-based transitional care interventions aim to smooth the transition from the inpatient to the outpatient setting and prevent unnecessary readmissions and adverse events<sup>19</sup>.

#### 4.1 Information provided to patient's General Practitioner (GP)/ community care provider post discharge

##### Opioid de-escalation plans

Opioid de-escalation plans are individualised treatment plans with the aim of weaning patients off opioids when using these medicines to treat acute pain. Opioid de-escalation plans reduced opioid dosing in a scheduled manner to maintain adequate analgesic relief and complementing pain treatment with non-pharmacologic therapies and non-opioid medications<sup>20</sup>. Also known as tapering or weaning plans.

##### Medicines list

A medicines list records:

- all the medicines a patient uses, including prescription, non-prescription, over-the-counter, minerals, herbal and natural medicines
- the condition that each medicine is treating
- the dosage, quantity and frequency of each medicine to use
- how to use each medicine<sup>14</sup>.

##### Discharge summary

A discharge summary is a collection of information about events during care of a patient by a provider or organisation. The document is produced during a patient's stay in hospital as either an admitted or non-admitted patient and issued when or after the patient leaves the care of the hospital<sup>21</sup>. Discharge summaries typically include the updated medicines list, as well as medicines that have been ceased or require ongoing review in the community.

##### Pain management plan

This is a document agreed by the patient, the GP, and pain management team. A pain management plan should specify the goals of therapy, and a timeframe for reaching each goal. The pain management plan can help GPs, emergency department doctors and locum practitioners to provide consistent care<sup>22</sup>.

Almost all respondents indicated that information was provided to the community care provider, most commonly an updated medicines list (74%), with discharge summaries (46%) being the next most common item. However additional comments from many respondents flagged documents such as an updated medicines list often being provided only for patients identified as high-risk by the pharmacist. **Provision of pain management plans or opioid de-escalation plans were rare with less than 10% of respondents providing either.**

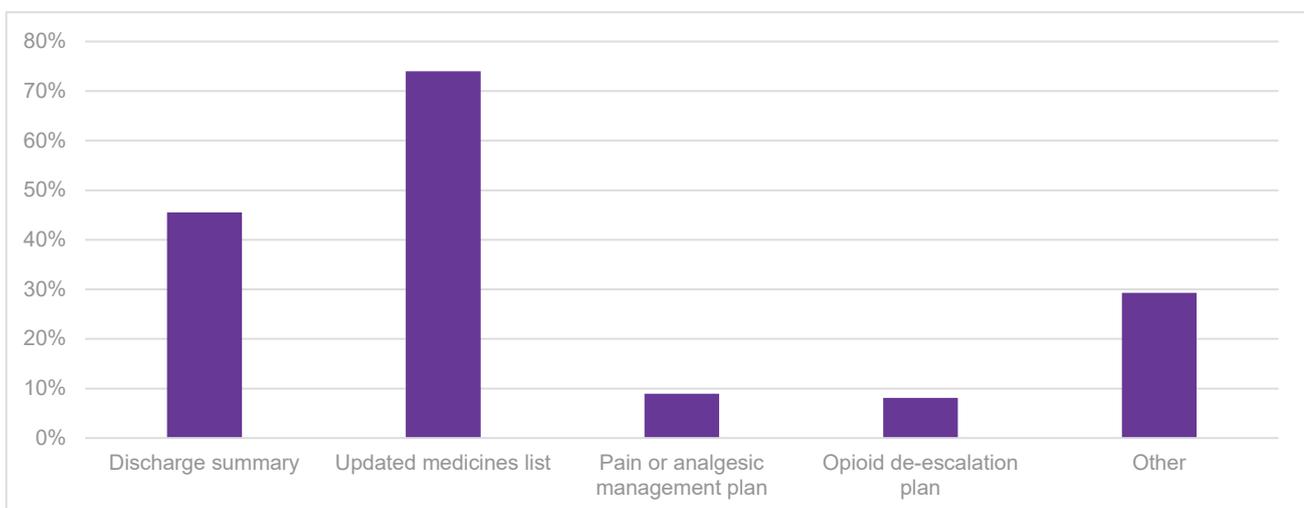


Figure 14. Does the ward/medical unit pharmacist provide any of these documents to the patient's community care providers (i.e. GP, community pharmacy, care facility, carer)?

## Section 5: Reporting by hospital pharmacies

Respondents were asked to identify whether the in-hospital pharmacy department currently provided information collected through dispensing or patient review to key hospital audiences and if so, how often. These audiences included Drug and Therapeutic Committees (DTCs), medical, nursing and within pharmacy departments (i.e. pharmacy management to pharmacy staff), hospital management and local hospital districts.

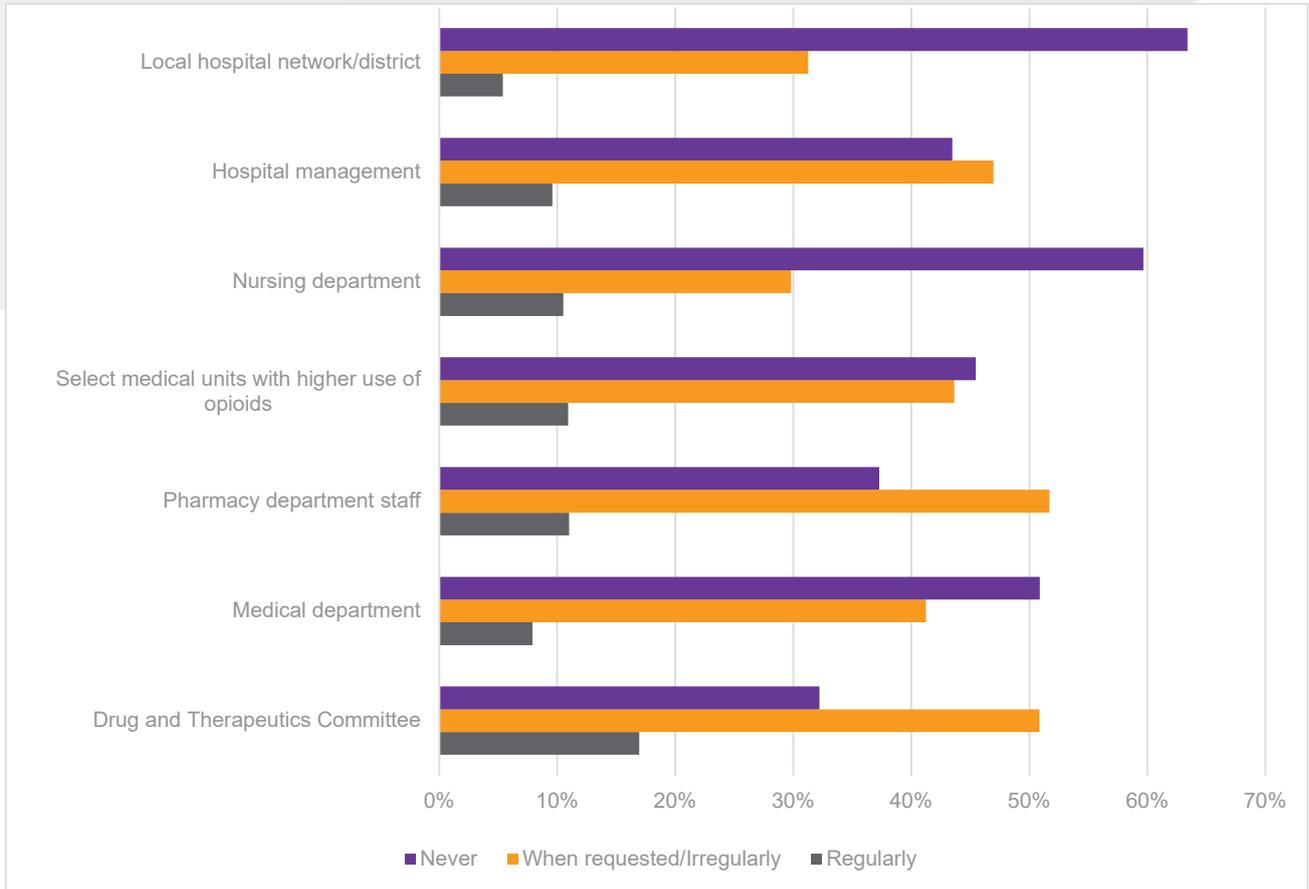


Figure 15. How often and to whom does the pharmacy department provide information/feedback regarding opioid prescribing and supply?

Overall results showed low levels of regular reporting from pharmacy to all groups. The most common response was that feedback was provided 'when requested/irregularly', with reports to medical colleagues, DTC and intra-pharmacy department being the most common. The second highest response overall was 'never'. **Results for any regular reporting to any group were negligible.** Six percent of pharmacy departments were tracking opioid prescribing monthly and only a total of 11% of hospitals were doing this regularly (defined as at least on an annual basis).

These reports typically covered information such as hospital-wide medicines use evaluations, medication error and adverse event reports, prescribing and utilisation trends and dispensing reports. Of the respondents who did collate information regarding opioid use, medication error and adverse event reporting was most common at 53%, while only approximately one fifth of respondents who did provide reports, included information pertaining to prescribing and utilisation trends, and dispensing reports. Results from medicines use evaluations were reported at a rate of 28%.

When respondents were asked how the information above was used, the most common response was discussion of the results among the pharmacy department's medication safety and quality use of medicines team. Only 28% of respondents stated that this information was used to inform educational activities aimed at doctors, and even less for nurse education (21%).

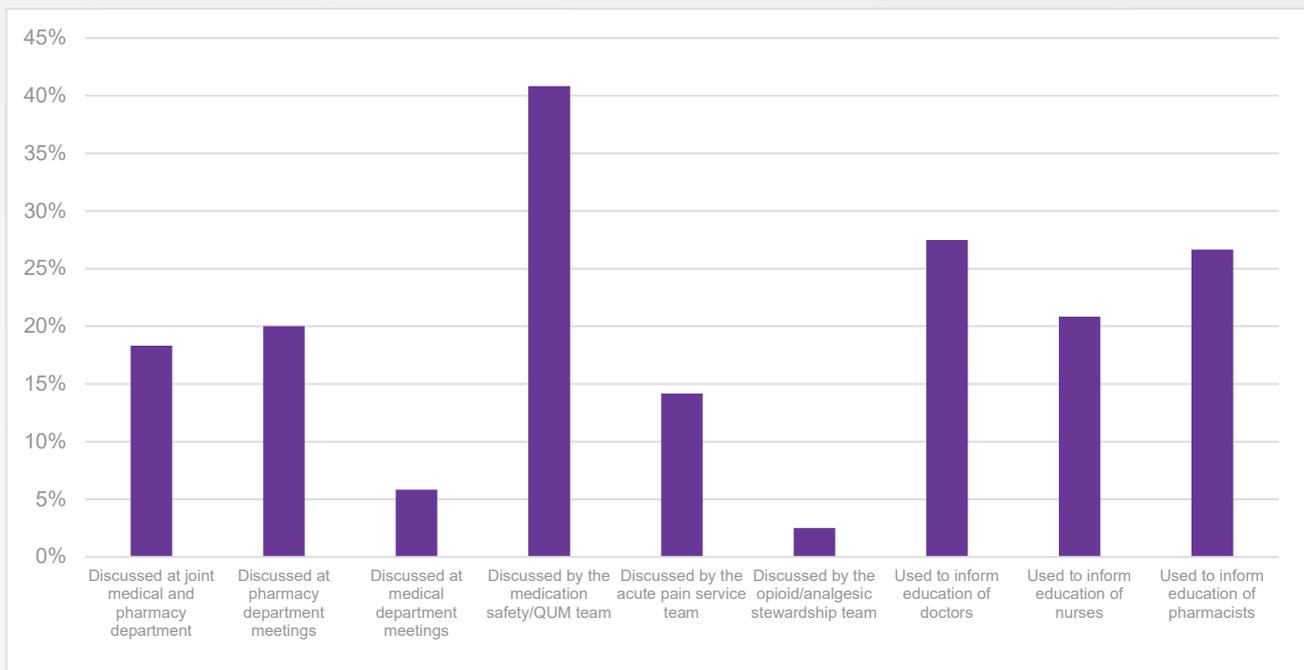


Figure 16. How is information contained in opioid prescribing and supply reports utilised by your hospital?

Eleven percent of hospitals provide feedback to select medical units with higher use of opioids at least annually. Just below half of hospitals provide information to any audience when requested with a similar portion of respondents 'never' been asked for information regarding opioid prescribing or supply. Comments from some respondents indicate that interest exists with informal discussion of opioids occurring in ward rounds and departmental meetings, especially when a formal or informal opioid stewardship service exists. Prescriber-specific utilisation trends (a key element of academic detailing) was extremely uncommon with only 3% reporting on this.

## Section 6. Education and quality improvement activities

### Prescriber education/prescriber feedback

When prescribers are provided with data on their prescribing habits compared with hospital guidelines, or with other prescribers in the same field of practice<sup>23</sup>.

As medicine experts, pharmacists play a key role in educating other members of the multi-disciplinary team regarding medicines and prescribing. Feedback indicates this is highly valued by early career medical practitioners. Discharge prescribing in hospitals is often delegated to junior medical officers, who are therefore particularly important with regard to educating on safe and appropriate prescribing.

However, when respondents were surveyed on the quality improvement and education activities undertaken for junior medical officers, only 60% of respondents noted that either written or verbal feedback was provided by a pharmacist to junior doctors, with a further 9% giving feedback to the junior doctor's supervisor. Other frequent forms of education were doctor-led education on pain and opioid supply (20%) and pharmacy led education on opioids (9%). Fourteen per cent of respondents collaborated with DTCs on the production of learning materials and activities.

Approximately one quarter of respondents indicated that education was not undertaken by their pharmacy department. Many private hospital respondents' comments specifically noted that junior medical officers are not employed by private hospitals.

## Section 7. Innovation

### 7.1 Incidence of innovation by hospital pharmacies to address inappropriate opioid use in opioid naive patients

The results provided by respondents revealed **just under 20% of hospitals had been able to trial an intervention** either in the pharmacy department or in partnership with their multi-disciplinary team. Predominantly, interventions described by respondents focused on auditing opioid prescribing and/or supply.

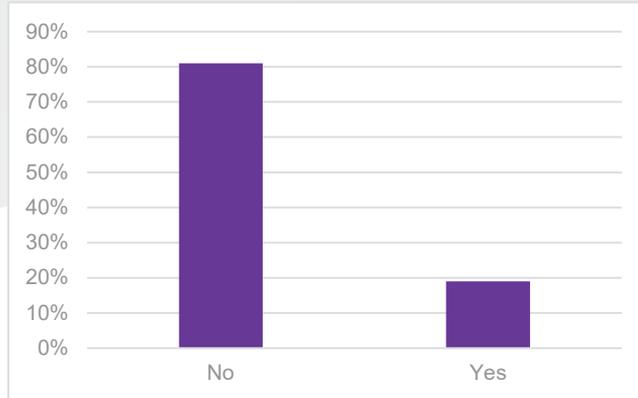


Figure 17. Has your hospital undertaken research or implemented interventions/innovations to address inappropriate opioid use in opioid naive patients in last five years?

## Section 8. Variation in responses between metropolitan and regional hospitals

Service provision was significantly less comprehensive in regional and rural hospitals. A greater proportion of metropolitan hospitals had acute pain services, opioid stewardship programs, ambulatory pain programs, and pre-admission clinics in comparison to regional and rural hospitals. Programs that did exist in regional or rural hospitals were more likely to be 'limited/informal'.

The barriers reported for provision of services in rural/regional hospitals were similar to those cited for metropolitan hospitals, but with some additional issues related to size, such as the need for economies of scale and the challenge of a small workforce. **A lack of medical staff with expertise was a more commonly cited barrier in regional/rural hospitals** than in metropolitan hospitals (35% vs 17%). However, **a lack of organisational support was less of a barrier in regional/rural hospitals** than in metropolitan hospitals, regarding medical department (33% vs 41%), pharmacy department (35% vs 43%) and hospital management (51% vs 66%).

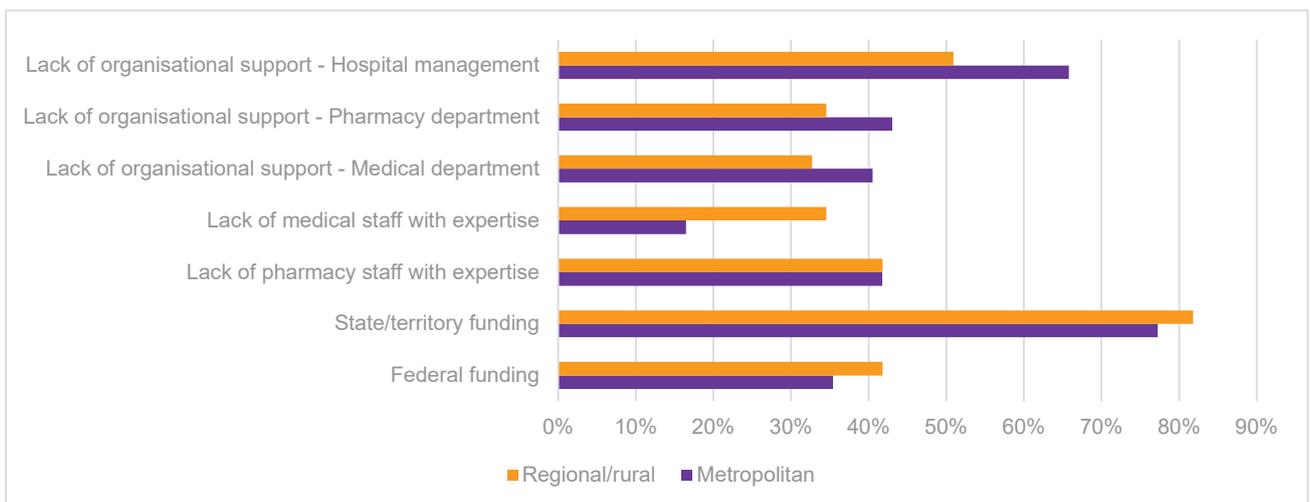


Figure 18. Metropolitan vs regional/rural: What are the barriers to your hospital site introducing the services that are currently NOT offered?

Pharmacists in regional and rural hospitals were less likely to review the last 48 hours of analgesic use to determine appropriate prescription of analgesic medicines upon **discharge in regional/rural hospitals** than metropolitan hospitals (18% rarely or never, compared to 10%).

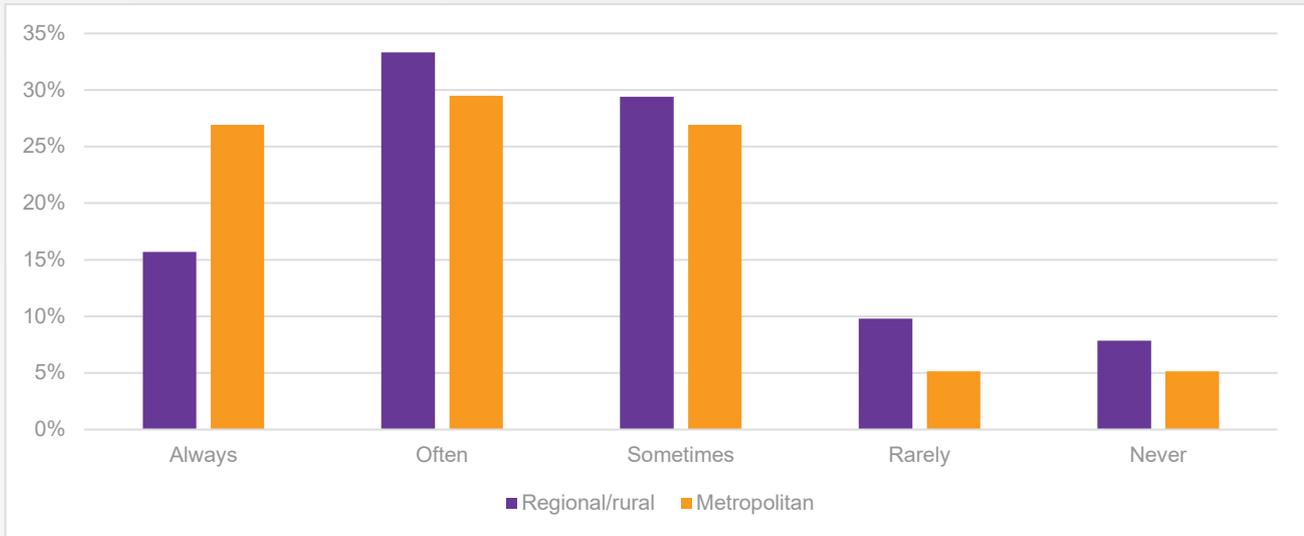


Figure 19. Metropolitan vs regional/rural: Do ward/medical unit pharmacists review the last 48 hours of analgesic use to determine appropriate prescription of analgesic medicines and quantity upon discharge?

Similar levels of provision of discharge summaries and updated medicines lists to patients' community care providers were reported. **However, supply of pain management plans and opioid de-escalation plans were even less common in regional/rural hospitals** (2% and 6% respectively) than in metropolitan hospitals (14% and 10% respectively).

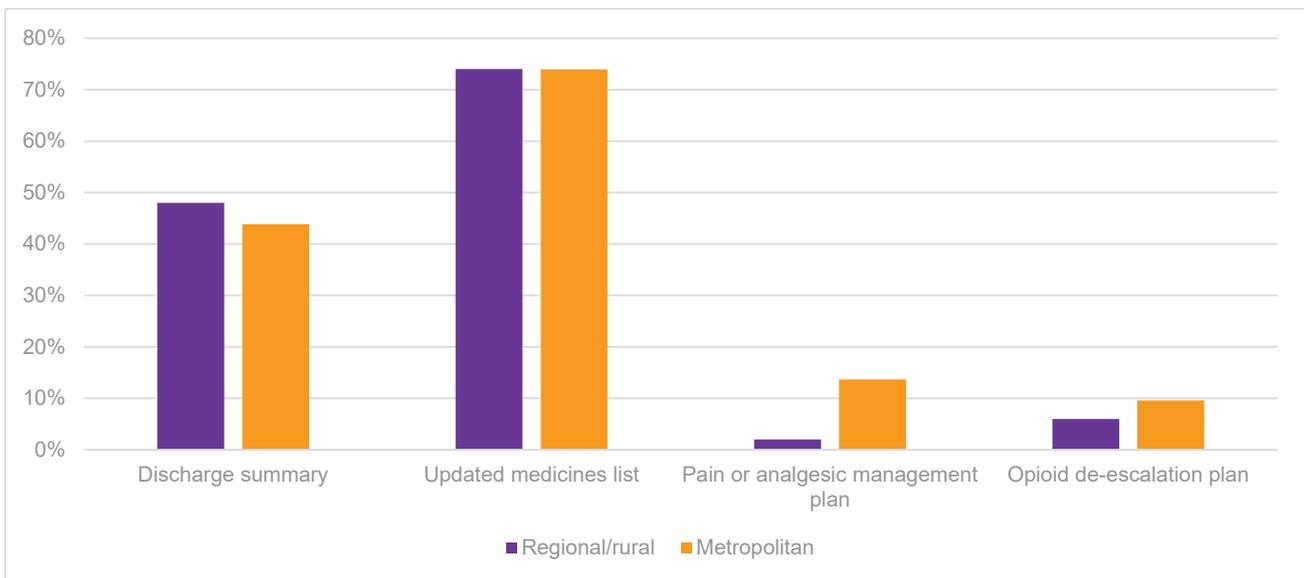


Figure 20. Metropolitan vs regional/rural: Does the ward/medical unit pharmacist provide any of these documents to the patient's community care providers? (Type of document)

Reporting to most audiences is less frequent and formalised in regional or rural hospitals. For example, **37% of respondents indicated there was no reporting to the DTC**, 51% indicated there was ad hoc reporting and 12% indicated there was regular reporting annually at least. Corresponding figures reported for metropolitan hospitals were 28% (no reporting), 51% (irregular) and 21% (regular reporting).

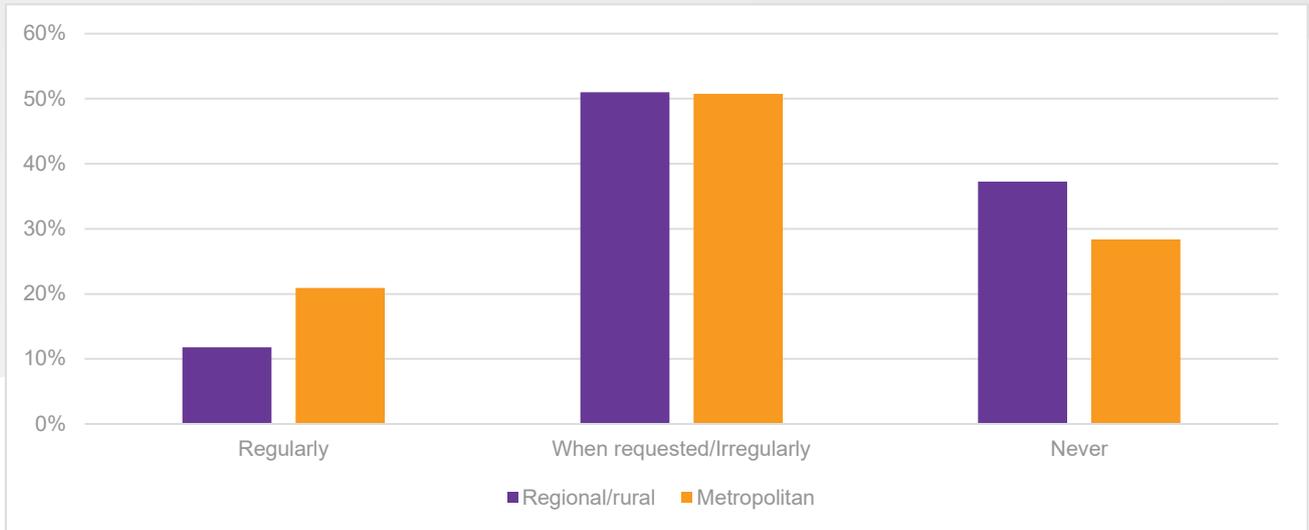


Figure 21. Metropolitan vs regional/rural: Does the ward/medical unit pharmacist provide any of these documents to the patient's community care providers? (Frequency) (Regularly defined as at least annually)



# DISCUSSION OF FINDINGS AND IMPLICATIONS FOR SERVICE PROVISION

It is accepted that whenever and wherever Australians are receiving care through the healthcare system, that the care should be safe and of high quality. This is the fundamental cornerstone of the Australian Charter of Healthcare Rights<sup>24</sup>.

When delivering services and judging the quality within the healthcare system, all aspects of quality including safety, effectiveness, efficiency, timeliness, and equity with a patient-centred focus must be considered. Through the National Medicines Policy there is clear guidance on the delivery of better health outcomes for all Australians, and for this to be achieved, medicines should be used judiciously, appropriately, safely and efficaciously.

It is established that there are significant risks and unnecessary harms associated with the use of opioids in Australia. This snapshot of practice within Australian hospitals highlights that Quality Use of Medicines (QUM) has not yet been achieved, as the judicious, appropriate, safe and efficacious prescribing and dispensing of opioids is not routinely occurring when we examine the current use of opioids within the Australian healthcare system. Data published in the *Australian Atlas of Healthcare Variation*<sup>25</sup> also supports this analysis as significant variation in opioid prescribing is documented nationally, demonstrating that consistent high-quality care is not being provided.

Quality Use of Medicines, including use of opioids, is a priority for Australian healthcare. Individually this refers to the process of selecting patient management options wisely, choosing suitable medicines and using medicines safely and effectively. Systemically this involves the use of evidence-based guidelines by a competent workforce, support for the role of Drug and Therapeutics Committees, appropriate audit and research, and adequate access to practitioners for delivery of care. In hospitals, delivery of QUM involves a wide range of partnerships across medical, nursing and pharmacy teams.

This paper comprises the results of an online survey of hospital pharmacists working in public and private Australian hospitals. Patient-centred, progressive and committed to evidence-based practice, SHPA members are hospital pharmacists, technicians and interns who prioritise patient care every day. The survey was completed by 135 Australian health service facilities and reflects feedback from Directors of Pharmacy and their delegates regarding the provision of pharmacy services, workload, prescribing practice and dispensing activities.

Given the extensive information provided by respondents, this discussion is limited to key findings. A preliminary review of the findings in this paper indicates that variations in access to pharmacy services mean some patients are not provided with adequate medicines reviews, appropriate counselling and tailored supply of high-risk medicines including opioids. In some hospitals, pharmacists may be an under-utilised resource to support judicious prescribing, curb oversupply and educate patients to reduce the impact of opioid harm. Variation in the provision of specialised pain services may also disadvantage patients receiving care in smaller hospitals, or those outside metropolitan centres.



## 1. Service provision

### Provision of acute pain services, pain management clinics and opioid stewardship

Opioids are an important therapy in the treatment of pain. In Australia, acute and persistent pain are common conditions with persistent pain experienced by 15% of people in a variety of settings with a wide range of causes<sup>26</sup>. Pain may be acute and resolve after physical recovery and treatment, or it can be persistent and experienced for more than three months.

For people undergoing surgery, post-surgery pain is common and analgesic medicines are a mainstay of treatment. In Australia, acute pain services and pain management clinics are the most common forms of tailored interventions for pain and are internationally accepted. According to a review of pain management services, undertaken by the New South Wales Government, acute pain services have been introduced throughout major hospitals<sup>27</sup>. The NSW literature review indicated that internationally, acute pain services were primarily focused on post-surgery pain management and patients with complex pain issues, and that the mainstay is pharmacological and non-pharmacological treatments, such as balanced activity and rest, surgery or other procedures. In contrast to acute pain services, it reported that pain management clinics are

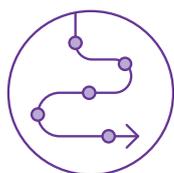
committed to a biopsychosocial view of pain, tend to focus on complex and persistent pain, and are staffed by multidisciplinary teams. While published articles support the provision of these services, little consistent information is available about details of service provision.

SHPA has utilised grey literature where appropriate in our findings regarding adoption of comprehensive models<sup>28</sup> specifically addressing pain management in an acute setting, as information was surprisingly limited and implementation inconsistent. Results show that access to pain services for Australians remains variable, especially for those living in regional and rural areas. Sixty-one per cent of respondents' facilities provide an inpatient acute pain service, while 28% have an ambulatory or outpatient pain management clinic (formal or informal/limited) for post-surgical patients. This leaves a substantial proportion of patients without access to pain services, especially when attending private hospitals, or in regional and rural locations. It is also unclear from respondents how these services compare and what differences exist, with significant reporting of 'informal', piecemeal or temporary services. SHPA's recent work developing a *Standard of Practice for Pain Management in Pharmacy Services* has brought together examples of effective service models to encourage greater consistency.

A component of analgesic stewardship, opioid-focused stewardship addresses the prevention of inappropriate opioid prescribing and supply, among other quality and safety activities. As an emerging model, it is not surprising that the prevalence of opioid stewardship services is extremely low (4.5% of respondents had a formal opioid stewardship program). However, SHPA is aware that preliminary results from the implementation of an opioid stewardship pharmacist at a major Victorian hospital showed promising results of improvement in opioid management<sup>29</sup>. An audit after two years of implementation reflected an increase in the dispensing of smaller quantities of oxycodone and increased analgesic weaning in hospital. The recent Victorian Inquiry into Drug Law Reform has recommended that a sector-wide trial based on an opioid stewardship model be implemented to promote and audit best practice regarding the prescribing and use of medications with potential for misuse<sup>30</sup>. Other states including Queensland have also been trialing this model of opioid intervention with positive results in decreasing the number of oxycodone tablets provided (19.9 to 11)<sup>31</sup> and increased provision of opioid de-escalation plans.

Opioid stewardship is a flexible model which can be staffed in a variety of ways, and a pharmacist-led version is supported by SHPA's *Standard of Practice for Pain Management in Pharmacy Services*. However, barriers identified for establishing or expanding any of the outlined pain services (acute pain services, pain management clinics or opioid stewardship) appear substantial, dominated by a lack of funding and hospital management support. This provides an ongoing challenge for Directors of Pharmacy seeking to innovate and expand services to provide safe and high-quality care to patients.

Of the reported acute pain services and pain management clinics, more than 90% did not fully utilise pharmacists' clinical skills expertise, even though the value and impact of clinical pharmacy skills are core to the effective use of medicines, and many successful models exist which incorporate pharmacist roles<sup>32</sup>. Acute pain management guidelines published by the Australian and New Zealand College of Anaesthetists (ANZCA) stipulate that acute pain services should involve close liaison with pharmacists<sup>33</sup>, however, more than a third of respondents (34%) indicated their health service's acute pain service did not have pharmacist involvement. While innovative pharmacy services have developed a range of pharmacy positions aligned with medical units to address emerging health crises (e.g. antimicrobial resistance, mental health, opioid harm), at present these roles appear to be predominantly limited to a sparse number of principal referral hospitals which may be attributed to the current scarcity of innovation resources available in many hospitals. Of the health services with an acute pain service, 72% believed their services should be expanded.



## 2. Patient journey

### Medication reconciliation

The delivery of pharmacy services to patients during their time in a hospital is defined by a range of government<sup>34</sup> and sector clinical governance standards outlining the provision of medication reconciliation, medication review, medication management, discharge liaison and antimicrobial stewardship. These clinical activities, which collectively support medication safety, are captured under the term Quality Use of Medicines

(QUM) outlined previously. A crucial component of QUM is medication reconciliation at the time of admission to hospital, which includes verification and documentation of all patients' current medications, to ensure an effective transition of care and reduced disruption to their established medicine regimen. Before pharmacist-led medication reconciliation became routine in Australian hospitals, rates of error were reported to be as high as one omitted medicine in every two admissions<sup>34</sup>, with this error rate remaining applicable in some hospitals where pharmacist-led medication reconciliation is not current practice. Undertaking medication reconciliation during a patient's stay is a requirement under the National Safety and Quality Health Service Standards (NSQHS)<sup>35</sup>, with reconciliation by pharmacists prior to surgery accepted practice internationally<sup>36</sup>.

The value of pharmacists in reducing errors in medication reconciliation, more so than other clinicians, is well supported by evidence<sup>37</sup>. In a surgical setting, medication reconciliation is vital to establish potential opioid tolerance, detect potential complications and interactions with other medications and detect influences on their requirements for post-surgery pain management. The findings highlight that gaps exist in the provision of medication reconciliation upon admission for all patients, with 37% of respondents indicating that medication reconciliation was provided for some but not all patients, 9% by non-pharmacists and 4% not at all. These findings present a safety and quality risk for patients where additional review is not provided, or first review is delayed during their hospital stay. Limited access to information from prescription monitoring services was also reported, despite the important role this plays in enabling medication reconciliation.

### Review of patients

A key element of patient care is the review of patients during their hospital stay by pharmacists to ensure appropriate medicine management. The responsibilities of the pharmacist managing hospitalised patients on a surgical ward typically include review of patients who did not receive medication reconciliation at admission, as well as the provision of advice to patients about appropriate pain management including analgesic use. Almost all respondents indicated that pharmacists provide a similar service at their facility, however half of respondents indicated it was provided only to patients identified as 'high-risk'. This indicates that pharmacy review is not provided routinely to all patients, and there is significant variability between hospitals as to who does, and who does not receive a review.

SHPA's *Standards of Practice for Clinical Pharmacy Services* identifies 13 factors to be considered by pharmacists deciding which patients to prioritise for clinical pharmacy care as well as another eight medicine factors<sup>14</sup>, yet there is a lack of evidence in our results showing this is implemented consistently. The major factors considered by most respondents in prioritising clinical pharmacy services are multiple chronic conditions/comorbidities (65%), age (59%), current anticoagulant use (55%) and renal or hepatic impairment (47%). Significant gaps such as consideration of risk factors relating to opioid tolerance or naïvety, or use of multiple opioids, were evident.

According to SHPA standards, all patients admitted to a surgical ward should be prioritised for clinical pharmacy services as this allows identification of patient factors that may influence risk of medicine misadventure and risk of re-hospitalisation. The stratifying of patient risk to determine patient care is common in healthcare and relatively sound, however, results indicate that gaps in pharmacy services exist which exclude patients from appropriate care. The sheer level of demand and complexity of patient needs in an acute setting may contribute to patients with uncomplicated surgical outcomes receiving lower priority. However, it is known that the simplicity of a surgical procedure from a clinician's perspective does not correlate with a lower risk of opioid harm<sup>38</sup>.

Given the long-term risk of opioid misuse and dependence, patient review by a hospital pharmacist is a good opportunity for discussion with the patient about pain and counselling regarding medicines. According to ANZCA's Faculty of Pain Medicine, the primary goal of managing acute pain is not zero pain but achieving a level of tolerable pain that allows patients optimal physical and emotional function<sup>39</sup>. As surgery can be a painful and traumatic experience and patients typically expect pain and its resolution, it is necessary for clinicians to educate patients regarding anticipated pain and approaches to pain management<sup>40</sup>. With this balance in mind, peri and post-operative counseling by a pharmacist provides an opportunity to ensure opioid treatment is aligned with surgery outcomes, and pursues optimal function rather than zero pain, as part of a multidisciplinary team.

During hospital stays, all patients are seen by the treating doctor. In public hospitals this commonly occurs

as part of a multidisciplinary team ward round which provides an opportunity for members of the multi-disciplinary team (consultants, junior doctors, allied health professionals and pharmacists) to jointly engage with patients and discuss progress and treatment. Ward rounds are commonly regarded as a key aspect of best-practice to provide patient-centred care. In the last two decades, pharmacists have been progressively included as key members of multi-disciplinary teams in hospitals and evidence in Australia supports the cost-effective value of clinical pharmacy services with a 23:1 return on investment<sup>41</sup>. Internationally, a recent systematic review of pharmacists working in wards supports this by finding that overall regular input by ward-based pharmacists is cost-effective<sup>42</sup>. Yet our findings demonstrated that consistent involvement in ward rounds remains a challenge for many respondents. Only 7% were able to do so routinely, with 31% doing so 'if they had time' and more than half pharmacists in both public and private settings (57%) not attending ward rounds at all. Typically, private hospitals which are visited by consultant specialists rather than staff specialists, do not facilitate multi-disciplinary ward rounds.



### 3. Use of medicines to treat acute pain in opioid naïve patients

In Australia and internationally, opioids are classified as 'high-risk' medicines due to their extensive adverse effect profile, in particular, their sedative and respiratory depressant effects. More broadly, long-term opioid use can impair cognitive function and precipitate dependency and addiction. Efforts to reduce harm have initially focused on opioid prescribing in the community. In recent years it has become widely accepted that hospital prescribing and initiation of opioids plays an important role<sup>4</sup>. A systematic review has indicated that one-third of adults receiving long-term opioid therapy have received their first opioid prescription from a surgeon, indicating that post-surgical prescribing in hospitals is an important point of intervention<sup>43</sup>. The dose and quantities of opioids prescribed at discharge have been identified as a risk factor for long-term use<sup>44</sup> with each refill or an additional week being associated with a 44% increase in the rate of misuse<sup>45</sup>. In addition, the risk of harm is considerably higher with sustained-release opioids compared to immediate-release opioids (24.5% versus 3.5%)<sup>46</sup>. Hence, it is increasingly accepted that the risk of opioid harm results from a combination of dose, quantity, surgical procedure and patient risk factors<sup>47</sup>.

#### Commonly prescribed analgesics for acute pain

According to respondents, a typical treatment for acute pain in opioid naïve patients at Australian public and private hospitals is likely to include a combination of immediate-release opioids, sustained-release opioids and non-opioid analgesics. During recovery from surgery, patients are generally prescribed maximal doses of paracetamol to provide baseline analgesia, with adjunct opioid analgesic to treat severe pain as necessary – immediate-release oral opioids is a cornerstone of acute pain management. This may be complemented by other non-opioid analgesics such as non-steroidal anti-inflammatory drugs and partial/mixed opioids (e.g. tramadol, tapentadol) if appropriate. As per the recent statements from ANZCA, and *Therapeutic Guidelines: Analgesic*, sustained-release opioids are not recommended for use in the management of patients with acute pain<sup>48</sup>, however they are currently reported to be used by 77% of respondents for treatment of acute pain which may indicate future difficulty in changing prescribing habits and patient expectations.

While reported use of transdermal sustained-release opioid patches was lower overall than other analgesic medicines, 22% of respondents recorded their provision during admission, as well as 11% at discharge. Again, this is concerning as transdermal sustained-release opioid patches are indicated for persistent, but not acute pain management, and have been recently linked to an inpatient death<sup>49</sup>.

As discussed previously, the risk of opioid misuse and dependence exists for all surgical patients, not only those undergoing complex surgeries. While not strongly represented in our survey, participants advise that opioids are also prescribed regularly for acute pain suffered by paediatric patients and women post-obstetric surgery (commonly caesarian delivery). These cohorts are not exempt from the risk of long-term opioid misuse<sup>50</sup>. A recent study found that 85% of women post-caesarian delivery filled an opioid prescription<sup>51</sup>. The researchers found that women were prescribed roughly twice as much as they used. There was no difference reported in pain scores when compared by prescribed quantity; however, women who were prescribed more, used more, creating a higher risk of misuse and future dependence.

## Commonly prescribed analgesic medicines at discharge

It would be reasonable to expect differences in prescribing during discharge as opposed to admission, with recovery from surgery tending to lessen the need for analgesic. However, reported trends of supply during discharge were very similar to admission: immediate-release opioids (97% at discharge vs 97% during admission), non-opioid analgesic (97% vs 96%), sustained-release opioids (oral formulation) (71% vs 77%) and partial/mixed opioids (66% vs 74%). Again, the high rate of sustained-release opioids provided for the treatment of acute pain at discharge is concerning. This indicates that although the reduction of use of opioids post-surgery is generally the intention of surgery, provision at discharge may unintentionally stimulate ongoing use. Again, ANZCA's 2018 statement specifically mentions risk of harm for first-time users, the elderly and people on other medications<sup>48</sup>. The Royal Australian College of General Practitioners has recently supported the introduction of standardised discharge management for people taking opioids to address some of these prescribing practices<sup>52</sup>.

## Regional variation in prescribing of opioids

Across Australia it is recognised that substantial variation exists in prescribing of opioids. The Australian Atlas of Healthcare Variation used PBS data to analyse prescriptions for opioid medicines in 2013-2014 and noted that some areas had prescribing 10-fold higher than other areas<sup>25</sup>. It is thought this is largely to do with socioeconomic factors of the patient population, however significant variation is also reflected in our reported hospital prescribing, despite it being only a small part of the overall prescribing, which predominantly occurs in primary care. In contrast the rate of accidental death due to pharmaceutical opioids (2012-2016) appears largely consistent, with per capita rates of 2.1 (NSW), 2.0 (Vic), 2.7 (Qld), 1.7 (SA), and 1.6 (both ACT and NT)<sup>1</sup>.

In this study, it is worth noting that reported use of sustained-release opioids for treatment of acute pain in inpatients in Victoria, New South Wales, Western Australian and Queensland was nearly three-fold that of South Australia. More than 70% of respondents nationally reported sustained-release opioids as standard treatment for inpatients (77%) compared to 20% in South Australia. Tasmania was the next lowest with 67% reported. At discharge, a similar trend was present with South Australia reporting only 10% use compared to 70% nationally. Tasmania was again the next lowest with 33% use at discharge. In contrast, use of immediate-release opioids for inpatients and at discharge was consistent nationally.

More analysis is required to assess the reason for these results, but anecdotal feedback indicates that South Australia's adoption of a state-wide formulary process and centralised governance function may contribute. Defined after broad consultation, the current South Australian Medicines Formulary does not list sustained-release opioids for acute pain (only for chronic pain not responsive to non-opioid analgesic) meaning they will not typically be supplied by the hospital pharmacy<sup>53</sup>. The formulary also informs the development of all SA Health guidelines which include a well adopted policy for the prescribing of opioids at discharge which advises against use of sustained-release opioids<sup>54</sup>. Given the risk of harm is considerably higher with sustained-release opioids compared to immediate-release opioids (24.5% versus 3.5%) this formulary driven practice is of great interest<sup>55</sup> and demonstrates the value of strong, collaborative governance processes.

## Access to medication review and pharmacy counselling

As medicines experts working in an acute setting, hospital pharmacists have a key role as a safeguard to reduce the risk of inappropriate medicines prescription, supply and use. Pharmacists also have a regulatory obligation to ensure medicines are safe for patients. A recent coroner's report described pharmacists as having a 'a vital failsafe role in preventing inappropriate prescribed medication from reaching patients'<sup>56</sup>. In addition to counselling patients on individual medicines, pharmacists are expected to review medicines prescribed for patients being discharged from hospital, in order to assess appropriateness of the dosage, frequency, adverse effects and efficacy, and if any prescription contains inappropriate medicine therapy. For patients receiving opioids, this intervention is essential given the research showing a link between prescriptions of more than five days and an increased risk of long-term opioid use<sup>44</sup>. These data in discrepancies may be worthy of greater investigation.

According to our results, substantial gaps exist in the likelihood of pharmacists ensuring patients have their medicines reviewed before discharge with less than a quarter of respondents (23%) always reviewing a

patient's analgesic medicine use in the 48 hours prior to discharge to inform appropriate prescribing. The importance of hospital pharmacists reviewing medicines initiated during admission and their suitability for supply upon discharge, has been previously recognised, but little seems to have changed<sup>57</sup>. Only 53% of respondents stated that they always or often review the patient's last 48 hours of analgesic use to determine appropriate supply upon discharge. Only 39% of respondents indicated that patients would 'always' receive counselling on opioids post-surgery upon discharge, and another 40% indicated it was 'often'. This finding implies the majority of patients are at risk of missing out on counselling for high-risk medicines at discharge.

Findings indicated that patients undergoing day surgery were at most risk of missing out on counselling with only 14% of respondents across public and private hospitals always providing counselling for this cohort. There is an assumption that same-day surgeries are less complex and thus requiring less clinical services upon discharge, however as mentioned above, the perceived simplicity of a surgery does not correlate with a lower risk of opioid harm<sup>38</sup>. Nearly seventy per cent (67%) of elective surgery undertaken in Australia occurs in private hospitals<sup>58</sup>. Twenty per cent of respondents at private hospitals reported a pharmacist did not provide counselling on medicines to patients at discharge. Throughout the comments, many respondents from private and public facilities indicated their day surgery units were often not supported by a hospital pharmacist at all. This is concerning as SHPA recommendations for clinical pharmacy services for same-day admissions in both public and private facilities is 1 FTE for every 22 beds<sup>14</sup>.

### Supply of opioids at discharge

Hospital pharmacists facilitate the supply of opioids as prescribed when the patient is being discharged from hospital. Policies establishing how many days' supply of medicine a patient should receive on discharge differ significantly depending on factors including whether the state/territory is a signatory to the Pharmaceutical Benefit Scheme (PBS) in hospitals, whether the hospital is public or private and whether medicines are dispensed by the in-house hospital pharmacy or outsourced. Across Australia, recommended quantities of medicines provided at discharge vary from three to thirty days supply.

As discussed previously, review of a patient's use of analgesic medicines to inform discharge prescribing is best practice. In addition, research has indicated that 19% of patients prescribed oxycodone on discharge from a large Australian teaching hospital had not needed any opioids in the 24 hours prior, raising questions whether supply was necessary<sup>59</sup>. The survey results found more than 70% of respondents reported that even when opioids had not been required in the prior 48 hours, they were still provided to the patient to take home 'just in case'. This is concerning given research finding the provision of a prescription or supply of opioids places the patient at higher-risk of opioid harm, which may be unnecessary in these cases. More information regarding the prevalence of this practice would be beneficial. Feedback from medical colleagues indicate that prescribing at discharge is often delegated to junior doctors who may find it difficult to withstand pressure from patients<sup>60</sup>. Apart from increasing individual risk, this practice can result in unnecessary opioids stored in patients' homes and within the community which are inappropriately shared with family and friends or diverted for illicit/recreational purposes<sup>61</sup>.

In an effort to improve patient flow and bed availability, a minority of respondents, many from private hospitals, indicated that their facility made efforts to increase the efficiency of discharge. These activities included writing up discharge prescriptions before surgery (21%) and before discharge is confirmed (62%), as well as dispensing medicines before surgery (10%) and before discharge is confirmed (38%) often in pre-packed quantities. While the risks presented by these efficient practices may be mitigated in some settings by proactive review and revision, they do represent a departure from patient-centred practice and contravene professional guidelines. In contrast, other facilities, and in particular those operating opioid stewardship programs, are reported to routinely break up medicine packs into smaller quantities, often less than PBS pack sizes, to reduce risk and provide personalised prescribing. Clearly, significant variance exists in practice with hospitals implementing a wide range of activities to pursue goals of patient care.



## 4. Hospital pharmacy and the transition of care

### Information provided at discharge

The transition of patients from hospital to the community, remains a key vulnerability for medicine management with more than 50% of medication errors occurring at transitions of care<sup>62</sup>. Central to complaints from community care providers is the commonly reported inadequate supply of information from hospitals to aid reconciliation with any hospital-initiated medication changes. There are three key components of information relating to medications that are required at discharge: an accurate medication list, a discharge summary detailing changes, and a management plan post discharge. A good transition of care will include all three components, while a less optimal transition may include one, two or none of the listed elements. The limited capacity of pharmacists to provide discharge summaries for all patients with detailed descriptions of any medication changes has implications for safety, given the higher quality of pharmacist discharge summaries are of higher quality and the significant rate of errors of high and extreme risk known to be found in medication summaries for general medical patients<sup>35</sup>.

Our findings reported a strong commitment to providing an updated medicines list (74%). This is a positive step, however not all lists provide the level of detail required for addressing changes in medication. Forty-six percent of respondents reported that they provide a discharge summary either to the patient or to their GP or Community Pharmacist. However additional comments indicated this was often only for 'high-risk' patients which highlights that many patients leaving hospitals (including surgical patients) would not have a discharge summary provided. Whilst it is possible that this task is undertaken by others in the multidisciplinary team, variance in the provision of this information is well-recognised as a key gap in care that requires resolution.

Equally concerning is the absence of management plans, such as pain management plans and opioid de-escalation plans, for more than 90% of patients, which would be of assistance to GPs and Community Pharmacists. Again, limited hospital pharmacy capacity to produce pain management plans potentially disadvantages patients who have undergone routine surgery, delaying de-escalation of therapy and contributing to the risk of opioid harm. As mentioned prior, the opioid stewardship model prioritises the provision of these transition of care materials. Prior to the introduction of an opioid stewardship program in a Brisbane hospital, only 32% of patients has their de-escalation plan communicated with their GP. Post-intervention 85% of patients had their de-escalation plans handed over to their GP by a pharmacist<sup>31</sup>.

It should be noted that transition of care pharmacy services associated with hospitals, which provide additional support for the development of management plans, are available in some areas. These programs vary greatly in their structure, governance and provision of services but can be very effective in improving transitions for patients<sup>63</sup>. It is likely that survey respondents were not responding on behalf of specific transitional services that may be accessible for their patients on discharge.



## 5. Reporting on opioid use

### Opioid reporting

The reported increase in opioid prescribing has prompted increased interest in possible interventions and regulation including recent correspondence to outlier community prescribers from Australia's Chief Medical Officer. However, the role of hospitals as the site of initial opioid prescription appears unrecognised to date. Some hospitals are undertaking audits of opioid prescribing, and looking at provision of review or counselling, yet with only a minority of respondents providing regular report information, the results are challenging for pharmacy leaders driving innovation.

Fifty-one per cent of respondents provided information to the DTC and pharmacy departmental staff when requested and only 47% to hospital management. With respect to reporting for the medical department, nursing department and local hospital networks, more than half of respondents reported they 'never' provided information about opioid prescribing (51%, 60% and 63% respectively). This finding indicates that pharmacy data and reporting capacity is under-utilised by many hospitals which may limit their capacity to undertake innovative and targeted interventions to support judicious prescribing. An example of an intervention requiring

pharmacy reporting is academic detailing, more commonly undertaken in General Practice. Australian and international studies of academic detailing have shown great promise in reducing opioid prescribing in hospitals<sup>64</sup>.

At SHPA's Medicines Leadership Forum in July 2018, pharmacists were interested to hear about a new digital tool for reporting which has been adopted in NSW with positive anecdotal results. EHealth NSW has been responsible for the implementation of the NSW Health Analytics Framework which has involved broad pharmacy use of an analytics platform called PharmaLytix<sup>65</sup>. The analytics solution was built on a centrally managed standardised medication list called the Hospital Pharmacy Product List to provide clinicians with insights into: medication usage – analysis of medication usage trends allows policies to be created and measured, medication purchasing and stock levels – monitoring of cost and stock levels ensures costs are minimised and maintains prompt access to medication for patients, and timely access to information – giving medical professionals rapid access to information helps them make decisions in a timely fashion. While not available or compatible with all pharmacy systems, this digital solution looks promising for future reporting requirements.



## 6. Education

Pharmacists with expertise in opioids and the management of pain are highly valued as a resource. Pharmacists perform this educative role both formally and informally, through ward rounds or in team meetings, in opportunities to collaborate with specialised teams such as acute pain teams, and through the provision of information including reports as discussed above.

Most commonly, pharmacists were able to provide information relating to medication error or adverse events relating to opioids (53%), and these were discussed by the medication safety team (41%) providing broad feedback and education for hospital dissemination. While few hospitals utilised comprehensive reports, of those who did provide information, approximately a quarter of respondents reported it was used to directly inform the education of pharmacists, doctors and nurses. Sixty-nine percent of respondents provided either verbal or written feedback to junior doctors or their supervisors. Junior doctors were identified as a particular focus in the question due to their frequent responsibility for prescribing when discharging patients, and their limited experience in prescribing.

Prescriber education is a valued component of QUM, and 25% of respondents provided pharmacist-led education of opioid prescribing and supply. This is a promising result given the capacity issues evident in opioid and pain services, however, a significant proportion of respondents (25%) reported that their pharmacy department did not undertake education, and these included both public and private hospital facilities. This lack of recognition of the 'check and balance' role pharmacists have in prescribing practice is concerning. International evidence supports a greater role for pharmacists in reducing the harm caused by opioids, even when studies focused exclusively on educating prescribers<sup>66</sup>. A US study recently acknowledged that although pharmacists were not initially considered in the trial model implementing a new standard of practice for opioids (although physicians, nurse practitioners and physician assistants were), 'clinical pharmacists have been an integral part of the process'<sup>67</sup>.



## 7. Innovation in practice

In the current healthcare climate, hospital pharmacies are under significant pressure to provide enhanced clinical services, dispense an increased volume of medicines, provide more complex treatments and absorb additional administration. In addition, there continues to be strong interest in research and innovation to address emerging health issues related to medicines such as reducing opioid-related harm.

This study identified a number of these initiatives including new program models, prescribing toolkits and state-wide governance models that were outlined by respondents from major metropolitan hospitals in Melbourne, Adelaide, Sydney and Brisbane. Most of these are emerging innovations and still await appropriate evaluation to measure their promise. Notable is South Australia's state-wide formulary model and prescribing support which potentially provide a framework for limiting the use of the sustained-release opioids

both during admission and at discharge. Results of an evaluation of the framework being undertaken by SA Health will be of interest. The Royal Brisbane and Women's Hospital's Opioid Prescribing Toolkit has shown promising preliminary evaluation results online<sup>31</sup>. In the developing opioid stewardship space, early results are available in poster publication for two intervention models with differing foci, however a published research paper is imminent for the evaluation of the first two years of the pharmacy department-led opioid stewardship program at Alfred Health. A slightly different model of opioid stewardship, embedded in an Acute Pain Service, is in operation at Redcliffe Hospital in Queensland<sup>68</sup>.

Another innovation of interest mentioned by participants appears simple to implement. This was the revision of default quantities specified in electronic prescribing or dispensing systems utilised in hospitals. These quantities typically default to PBS-funded quantities or pack sizes rather than appearing blank or at 'zero' to prompt judicious and optimal prescribing practice. Australian data on the impact of this intervention is still being gathered but anecdotal feedback from some Australian health services have demonstrated lower quantities of oxycodone being supplied on discharge, while international evidence found that it may be a 'simple, effective, cheap, and potentially scalable intervention to change prescriber behavior and decrease the amount of opioid medication prescribed after procedures'<sup>69</sup>.

These examples primarily reflect the experiences of larger hospitals and remain the exception rather than the rule. Unfortunately, only 20% of respondents were able to list an opioid harm reduction innovation or intervention attempted by their facility. The small pool of capacity for pharmacy innovation potentially limits benefits to vulnerable patients and health services. Additional comments repeatedly focused on the requirement for auditing, and studies, before any intervention could be established. The requirement for each hospital to have the need proven on a local level, and the establishment of a business case for any trial of service change is an impediment to systemic change and innovation. While the need for any service change to be initially proven and tested is reasonable, in practice it can result in a waste of precious health funding resources as each facility repeats the same process to reach the same outcome. SHPA believes that implementation of innovation at a systemic level, such as federal government support for opioid stewardship similar to their support of antimicrobial stewardship, would offer a more effective approach. Further collaborations and profession-wide consensus of evidence-based practice improvements to reduce potential opioid harms need to be progressed and implemented into practice.



# CONCLUSION

SHPA believes that there are justifiable concerns that some people experiencing less serious acute pain are at increasing risk of opioid harm. In order to mitigate this risk there is an urgent need to examine current practice in hospitals, to ensure appropriate use of opioids when needed whilst minimising the potential for harm.

SHPA's key findings indicate that variations in practice in hospitals impact on the care provided to surgical patients at risk of opioid-related harm. To address this, a range of innovative strategies which enable improved patient care alongside prescriber and governance support (including opioid stewardship) should be considered for expansion. State-wide interventions which capitalise on pharmacy expertise through effective governance and engagement across pharmacy, medical and nursing workforces have delivered positive outcomes in areas of prescribing, supply and prescriber education. Results also provided evidence of the value of hospital pharmacies equipped to be innovative and empowered to address public health challenges. A range of promising interventions are underway and ready for expansion.

This work was intended to provide an insight into current practices and to identify areas for improvement and innovation for reducing opioid harms, as outlined in the recommendations section of this report. Following SHPA's inaugural Medicines Leadership Forum in July 2018, our members remain committed to supporting further discussions with stakeholders including other health practitioners and hospital managers regarding service provision, clinical care and governance in an effort to mitigate this risk for Australian patients.

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# APPENDIX 1

## Key recommendations

These recommendations were formulated by SHPA following consultation with members and stakeholders at the 2018 Medicines Leadership Forum.

	Few barriers to progress, fits with organisational priorities and capacity.
	Greater barriers to progress, increased complexity and less organisational capacity.
	Substantial barriers to progress, limited or no organisational capacity.

	Recommendation	Areas of responsibility				
		SHPA	Directors of Pharmacy	Medical and nursing stakeholders	Consumer stakeholders	Federal/state governments and agencies
	1. In partnership with medical and nursing stakeholders support the development and dissemination of evidence-based guidelines for the prescribing and dispensing of analgesics post-surgery.	X		X		
	2. Support the education of doctors and non-medical prescribers regarding appropriate opioid prescribing for patients pre-operatively, during admission and at discharge.	X	X	X		X
	3. Support the widespread use of data from real-time prescription monitoring systems for opioids to optimize patient safety and inform prescribing and dispensing in hospitals.	X	X			X
	4. Advocate for the widespread adoption of digital solutions which enable reporting of data on prescribing and dispensing for use in the education of medical, nursing and pharmacy staff.	X	X			X
	5. Provide feedback on prescribing patterns based on this reporting to inform systematic education of medical officers and multidisciplinary teams and produce education to support hospital pharmacists working in areas of medication safety, stewardship and clinical pharmacy.		X			

	Recommendation	Areas of responsibility				
		SHPA	Directors of Pharmacy	Medical and nursing stakeholders	Consumer stakeholders	Federal/state governments and agencies
	6. Support greater recognition of the role of pharmacists to work within multidisciplinary teams to inform decision-making regarding appropriate pain management and establish patient-centred opioid de-escalation management plans.	X	X			
	7. Share existing pharmacy resources proactively to enable greater collaboration and less duplication of clinician effort in reducing opioid harm.	X				
	8. Support the development of a case study of the South Australian governance-led model for analgesic prescribing and dispensing for reference and consideration by other healthcare providers.	X				X
	9. Support greater health literacy by replacing language using 'painkillers' with 'medicines for reducing pain' to reduce confusion and manage expectations among patients.	X		X	X	
	10. Support the development of patient-centred tools for self-assessment and management of pain.				X	
	11. Advocate for national education campaigns which aim to reset community expectations of pain and use of medicines for reducing pain and advise on the proper disposal of opioids to reduce diversion and inappropriate use.				X	
	12. Support consumer health organisations to educate patients regarding managing pain expectations with health care providers as appropriate.				X	X
	13. Disseminate Choosing Wisely Australia principles to prompt conversations with patients regarding opioid-related harm.	X				X
	14. Advocate for the implementation of opioid stewardship programs in public and private hospitals nationally.	X	X	X		

Recommendation	Areas of responsibility				
	SHPA	Directors of Pharmacy	Medical and nursing stakeholders	Consumer stakeholders	Federal/state governments and agencies
15. Create a toolkit which supports clinicians wanting to implement an opioid stewardship program in their health service.	×				
16. Advocate for the specific inclusion of opioid stewardship in relevant healthcare standards including National Safety and Quality Health Standard 4: Medication Safety, as done for antimicrobial stewardship in the Preventing and Controlling Healthcare Associated-Infection Standard.	×				×
17. Consider the specific requirements of opioid stewardship programs for particular patient groups that may not be captured in standard opioid stewardship programs for example, paediatric and obstetric patients.	×	×			
18. Encourage pharmaceutical manufacturers to produce greater variety in pack sizes for opioids – i.e. packs of 5, 10 and 20 tablets.	×		×		×
19. Advocate for clinicians to be supported to prescribe the smallest quantity of analgesics including dispensing partial packs of analgesics where this is appropriate for the needs of the patient.	×		×		×
20. Advocate to government/regulatory authorities for increased information on opioid labelling relating to the risk of long-term use and overdose.	×				×
21. Advocate for the creation of a National Opioid Utilisation Surveillance Program (similar to National Antimicrobial Utilisation Surveillance Program funded by ACSQHC) for hospitals to monitor opioid usage rates and enable benchmarking with similarly peered hospitals to identify areas for improvement.	×				×

	Recommendation	Areas of responsibility				
		SHPA	Directors of Pharmacy	Medical and nursing stakeholders	Consumer stakeholders	Federal/state governments and agencies
	22. Encourage hospitals to review both medication formulary and governance systems to ensure hospital systems minimize the risk of misuse among patients.		×			×
	23. Encourage hospital pharmacies to review electronic medical record management, dispensing and prescribing software systems to identify any unintended design features which affect incidence, quantity or duration of opioid supply (i.e. order sets which include opioids, auto-populated dosing regimens and automatic quantities including Pharmaceutical Benefits Scheme quantities, use of continue supply tick boxes).	×	×			
	24. Advocate for investment in hospitals, including private hospitals, to ensure clinical pharmacy services are able to provide appropriate medication reconciliation, counselling and transition of care management, for surgical patients at discharge.	×				×
	25. Encourage hospitals to implement a key performance indicator ensuring every patient prescribed analgesia at discharge has a multidisciplinary pain management plan.	×	×	×		×
	26. Support the inclusion of pharmacists in the completion of hospital discharge summaries for patients leaving the hospital.	×	×	×		
	27. Support pharmacists to work at their fullest scope of practice as part of multidisciplinary pain management teams.	×				
	28. Develop tools for clinical pharmacy services which identify patients at risk of opioid misuse.	×				
	29. Support the implementation of appropriate pharmacist to patient ratios in the surgical setting.	×	×			×

	Recommendation	Areas of responsibility				
		SHPA	Directors of Pharmacy	Medical and nursing stakeholders	Consumer stakeholders	Federal/state governments and agencies
	30. Prioritise the development of a Standard of Practice in Surgery and Perioperative Medicine for Pharmacy Services to provide guidance for hospital pharmacists.	X				
	31. Develop a Practice Update on reducing opioid-related harm for surgical patients to provide timely guidance for hospital pharmacists.	X				
	32. Create a learning module about optimizing analgesic management and reducing opioid-related harms for surgical patients for hospital pharmacists.	X				
	33. Develop competency-based assessment tools, and credentialing if appropriate, to ensure pharmacists are supported to review opioids prescribed post-surgery.	X				

## APPENDIX 2

Attendees at Medicines Leadership Forum 2018: Reducing opioid harm, Monday 30 July, Rydges, Canberra.

Title	First Name	Last Name	SHPA affiliation or organisation
Ms	Carol	Bennett	PainAustralia
Ms	Jane	Booth	FSHP
Mr	David	Brennan	SHPA Board Director
Ms	Rosemary	Burke	FSHP
Mr	David	Butt	SHPA Board Director
Mrs	Annabel	Calder	MSHP
Ms	Lindsay	Cane	SHPA Board Director
Mr	Martin	Canning	MSHP
Mrs	Elizabeth	Coombes	MSHP
Dr	Ian	Coombes	FSHP
Ms	Christine	Coorey	MSHP
Professor	Meredith	Craigie	ANZCA/FPM
Ms	Jennifer	Crane	MSHP
Ms	Deirdre	Criddle	SHPA Board Director
Ms	Emily	Diprose	SHPA Board Director
Professor	Michael	Dooley	SHPA President
Mr	Vaughn	Eaton	FSHP
Ms	Lyndal	Emery	MSHP
Mr	John	Evans	MSHP
Mr	Paul	Firman	MSHP
Mrs	Kerry	Fitzsimons	MSHP
Ms	Victoria	Forrester	MSHP
Mr	Robert	Forsythe	MSHP
Mr	Peter	Fowler	SHPA Treasurer
Mr	Chris	Giles	MSHP
Dr	Stephen	Gourley	ACEM
Mr	Geoffrey	Grima	MSHP
Mr	Galahad	Gu	MSHP
Mr	Anthony	Hall	FSHP
Ms	Courtney	Hill	MSHP
Ms	Marisa	Hodgkinson	FSHP
Ms	Beth	Hua	MSHP
Ms	Bee	Ismail	Scriptwise
Ms	Rosemary	James	MSHP
Mr	Alastair	Jamison	MSHP
Dr	Jacinta	Johnson	MSHP
Mr	Nicholas	Jones	MSHP
Ms	Margaret	Jordan	FSHP
Mrs	Jacqueline	Kewley	MSHP
Associate Professor	Sue	Kirsa	FSHP
Ms	Thuy-Van	Lam Bui	MSHP
Ms	Miriam	Lawrence	MSHP
Mr	Russell	Levy	MSHP
Mr	Daniel	Lim	MSHP

Title	First Name	Last Name	SHPA affiliation or organisation
Dr	Martyn	Lloyd-Jones	RACP
Ms	Lynette	Loy	MSHP
Mr	Kent	MacMillan	MSHP
Mr	Stuart	Margison	MSHP
Mrs	Helen	Matthews	MSHP
Ms	Anna	McClure	FSHP
Mr	David	McKnight	MSHP
Ms	Louise	McParland	MSHP
Mr	Steve	Morris	SHPA Board Director
Ms	Veronica	Murdoch	MSHP
Mrs	Anousheh	Page	MSHP
Ms	Bhavini	Patel	FSHP
Mr	Yan Ghee	Peng	MSHP
Mr	Greg	Roberts	FSHP
Mr	Catherine	Rokahr	MSHP
Mr	Peter	Samios	MSHP
Mr	Scott	Savage	MSHP
Mr	Daniel	Scandrett-Smith	MSHP
Mr	Tom	Simpson	MSHP
Adjunct Professor	John	Skerritt	DOH/TGA
Mr	Peter	Smart	MSHP
Dr	Jennifer	Stevens	ANZCA
Ms	Benita	Suckling	MSHP
Mrs	Nikki	Tadros	MSHP
Ms	Julie	Taylor	MSHP
Mrs	Trudy	Teasdale	SHPA Vice-President
Ms	Penelope	Tuffin	MSHP
Mr	Alan	Tuxford	MSHP
Ms	Kristin	Tynan	MSHP
Dr	Milana	Votrubec	RACGP
Mr	Jason	Waddell	MSHP
Mr	Steve	Waller	ACSQHC
Dr	Gregory	Weeks	FSHP
Ms	Susan	Welch	FSHP
Ms	Kylie	Woolcock	AHHA
Ms	Yen Nie	Yeoh	MSHP
Mrs	Angela	Young	MSHP

SHPA Staff			
Ms	Kristin	Michaels	SHPA
Ms	Sally	Ridgers	SHPA
Ms	Johanna	de Wever	SHPA
Mr	Dan	Guidone	SHPA
Ms	Kylee	Hayward	SHPA
Mr	Jerry	Yik	SHPA
Ms	Courtney	Munro	SHPA
Ms	Susannah	Murray	SHPA

MSHP = Member, SHPA

FSHP = Fellow, SHPA



