Government of **Western Australia**
South Metropolitan Health Service
Fiona Stanley Fremantle Hospitals Group

SnaPI: Snapshot of Pharmacist Interventions across five Western Australian hospitals using a standardised recording tool

Rachel Thorson[1], Tanya Burgess[2], Katherine Travers[3], Samantha Hilmi[4], Nasima Esat[5], Rohini Singam[3]
[1]Fiona Stanley Hospital; [2]Fremantle Hospital; [3]Sir Charles Gardiner Hospital, [4]Royal Perth Hospital, [5]Osbourne Park Hospital
Contact: **rachel.thorson@health.wa.gov.au**

Background/description

- Clinical pharmacists play an essential role in contributing to patient care in the hospital setting however a standardised approach to documenting pharmacist interventions is lacking.
- Five Western Australian (WA) hospitals collaborated to develop and utilise a standardised pharmacist intervention recording tool (SnaPI) to allow characterisation of the type and nature of clinical pharmacist led interventions.

Action

- A prospective point-prevalence audit was undertaken across five WA metropolitan hospitals: one general, one specialist and three tertiary hospitals on the 9th April 2019.
- Each clinical pharmacist completed a standardised Excel data collection sheet for all interventions made.
- Interventions were classified into 38 categories fitting broadly under 'prescribed', 'administered', 'documented', 'recommended/optimised' and 'other' as per Figure 1 below:

Figure 1: SnaPI (Snapshot of Pharmacist Interventions) Recording

Prescribed	Administered	Documented (notes/letter)	Recommended	Other
1. Not prescribed a. MHMP not complete b. MHMP complete 2. Inappropriate medication for indication 3. Unnecessary medication or duplication 4. Prescription error, wrong: a. Patient b. Drug c. Dose, strength d. Brand* e. Frequency f. Duration g. Formulation h. Rate i. Route j. Time 5. Incomplete script (legal) 6. Illegible script 7. Prescribed despite allergy/ADR 8. Unsafe drug interaction a. Drug-drug b. Drug-disease 9. Contraindicated medication prescribed	10. Not administered a. Medication not available b. Other 11. Incomplete administration 12. Administered early 13. Administration delayed 14. Administered extra dose 15. Administration error, wrong: a. Patient b. Drug c. Dose, strength d. Frequency e. Duration f. Formulation g. Rate h. Route i. Time 16. Administered expired medication 17. Administered without prescription 18. Administered with an incomplete script eg dose/route missing 19. Administered with an illegal script eg no signature 20. Nurse initiated medicine administered despite documented allergy/ADR 21. Administered despite documented allergy/ADR	22. Medication not documented 23. Documentation error, wrong: a. Patient b. Drug c. Dose, strength d. Frequency e. Duration f. Formulation g. Rate h. Route i. Time	14. Starting a medication 25. Restarting a medication 26. Recommend alternative medication 27. Ceasing a medication 28. Dose change 29. Withholding a medication 30. Drug level monitoring 11. Laboratory test 12. Specialty team referral	13. Medication history search 14. Incorrect storage conditions of drug 15. Patient counselling 16. IPA/SAS co-ordination and supply 17. Provide administration advice 18. Other

Evaluation

A total of 2038 interventions were documented across the various intervention categories for the 1350 patients reviewed.

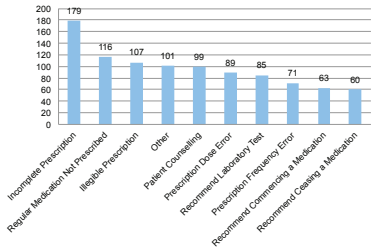
Table 1: Clinical Pharmacy Service by Hospital

Hospital with classification	Patients on wards with Pharmacist Service	Average Beds per Pharmacist FTE	Percentage of Patients Reviewed on Audit Day	Interventions per Patient Reviewed by Pharmacist
A (tertiary)	790	20	79%	1.5
B (tertiary)	353	19	54%	2.6
C (tertiary)	608	33	63%	0.6
D (specialist)	203	29	82%	1.1
E (general)	100	25	81%	2.6

Types of Interventions

The most common primary interventions made by pharmacists were prescribing interventions as shown by subcategory in Figure 2 below:

Figure 2: Top 10 Primary Intervention Categories

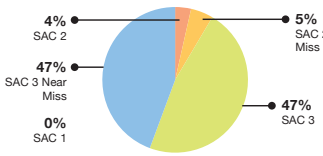


Interventions recorded as 'Other' included a broad range of documentation, liaison and medication queries

Medication errors

Just over a quarter (n=539) of the total recorded interventions were documented by the pharmacists as potential or actual medication errors. A breakdown of incidents by the SAC rating is shown in Figure 3 below where SAC 1 is defined as Catastrophic/Major Harm, SAC 2 as Moderate Harm and SAC 3 as Insignificant Harm.

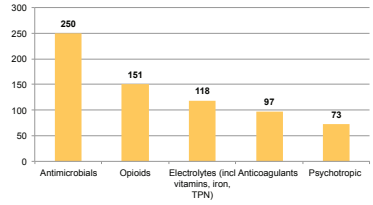
Figure 3: Medication Error Interventions by Severity Assessment Code (SAC) Rating



Most Common Medications Involved in Interventions

63% of pharmacist interventions involved high risk medications (defined by the WA Health High Risk Medication Policy as Antimicrobials, Potassium and other Electrolytes, Psychotropic medications, Insulin, Narcotics/Opioids, Chemotherapeutic agents, Heparin and other anticoagulants) which included the top five medication classes outlined in Figure 4.

Figure 4: Top 5 Medication Classes for Pharmacist Interventions



Examples of Interventions

Several clinically significant interventions were recorded including:

- A patient given vancomycin orally instead of intravenously over a 4 day period which would have resulted in negligible systemic absorption
- Ciclosporin charted as 500mg twice daily when patient's usual dose was 100mg twice daily
- Methotrexate prescribed daily instead of weekly
- Methadone charted as 85mL (=425mg) but patient usually on 85mg (=17mL)
- Klebsiella in urine resistant to trimethoprim (on day 7 of treatment), suggest changing to cefalexin
- Facilitation of warfarin and enoxaparin prescription and education/treatment plan provision to a patient who had already been discharged and wasn't aware they needed to be on anticoagulation due to lack of communication from prescriber
- Fluorouracil/oxaliplatin prescribed at full dose when required 25% dose reduction due to low platelet count

Implications

- The SnaPI intervention recording tool was used across five separate hospital clinical pharmacy services.
- The most common medication related incidents and optimisation opportunities will inform further education and training of hospital staff.
- The SnaPI audit results quantify the medication error risk better than organisational clinical incident monitoring systems alone; of the 538 actual and near-miss errors recorded only 11 (<1%) were reported in the clinical incident monitoring system Datix®.
- Further refining of the SnaPI tool will be undertaken based on pharmacist feedback.
- The SnaPI tool has the potential for wider use after validation in other Australian settings.

Acknowledgements:
Sir Charles Gairdner Hospital – Snapshot of Errors Associated with Medicines Audit Data Collection Tool