

Developing a Medication Safety KPI dashboard

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Background

With the introduction of an electronic medication management (eMM) system in our hospital, the amount of data stored in the system may provide valuable insights into the medication safety system. Also, having readily-available data is useful in assessing compliance with parameters required in NSQHS Standard 4 (Medication Safety) and can identify trends in the medication management pathway.

Objective

To develop a standard set of KPIs that are easily measurable and relevant to one or more of the parameters in Standard 4 with the ultimate goal that reports of these KPIs should be easy to generate and readily reproducible.

Method

The senior pharmacists brainstormed which parameters were appropriate and measurable. The KPIs were broken down into subsections, which mirror the patient admission journey (admission, inpatient and discharge) or drug distribution functions (dispensing and distribution). These KPIs were agreed upon by the hospital executive. A Microsoft Excel spreadsheet was used to record the data (see Fig 1) and separate tabs were used for KPIs that required increased monitoring (see Fig 2). These include medication reconciliation on admission, medication administration rate and recording of adverse drug reaction information.

Evaluation

The data collected in the dashboard has been regularly tabled at the hospital's Medication Safety Committee and was provided as evidence for hospital accreditation. 58 discrete parameters were identified as relevant and measurable, and data is collected on a monthly basis. Whilst continuing to collect these KPIs proves ultimately valuable, the time taken to run the reports manually needs to be taken into consideration.

Discussion

The up-to-date and readily available Medication Safety Dashboard can reduce burden of evidence collection and allow rapid and routine assessments. A sister hospital in the district has set up a similar dashboard, which was used for their accreditation this year.

Next steps will include automating the data collection and standardising KPIs across all sites in the district. Ideally, all sites in NSW should be able to easily generate key performance indicators and benchmark against each other.

2023 Indicator	Relevant Standard(s)	Notes	Dispensing	Value	Source
Admission					
Clinical Pharmacist FTE available	N/A	Staffing rosters	Good catches (near misses)	4.2	from iPharmacy
BPMH completed within KPI (%)	4.3, 4.5	Whole Facility	CMI reports - antibiotics (%)	4.3, 4.11, 4.15	from iPharmacy
BPMH completed within KPI (%)	4.3, 4.5	At Pharmacy Service Level	CMI reports - opioids (%)	4.3, 4.11, 4.15	from iPharmacy
BPMH completed (prior to discharge) (%)	4.3, 4.5	At Pharmacy Service Level	CMI reports - other	4.3, 4.11	from iPharmacy
BPMH completed (prior to discharge) (%)	4.3, 4.5	Whole Facility	Barcode scanning (%)	4.14	from iPharmacy
MedRec completed (%)	4.6	At Pharmacy Service Level	Medlist reports	4.11, 4.12	from iPharmacy
MedRec completed (%)	4.6	Whole Facility	IMS+ for dispensing	4.2	IMS+ data
Time to BPMH completion (hours)	4.5	Whole Facility	How many dispensed items after hours	4.14	from iPharmacy (2000-0800)
Time to MMP completion (hours)	4.5	Whole Facility			
Weight recorded <=12yrs	4.1	using Quality Informatics	Distribution Stock-Out	4.14	Knowledge Portal
Weight recorded adults	4.1	using Quality Informatics	No. of Pockets without remove >90 days	4.14	Knowledge Portal
ADR Information (%)	4.7, 4.8	Mandatory	CS Discrepancies Unresolved within 24 Hours	4.14	Knowledge Portal
Admission related medication interventions	4.6	eMeds intervention tool	Profile Overrides	4.14	Knowledge Portal
			Accountable drug usage/distribution	4.14	from Pharmacylix (# transactions)
			Non formulary use	4.14	from Pharmacylix (# transactions)
			Time SRM was in range (%)	4.14	Pyxix Server
Inpatient					
MAR Medication Review (%)	4.10	Total number	End of month expiry (Ward) #	4.14	iPharmacy
Anticoagulant education (%)	4.3, 4.11, 4.15	via Powerchart consults	End of month expiry (Ward) \$	4.14	iPharmacy
Recording of indication (%)	4.2	All meds, regular and prn	End of month expiry (Pharmacy) #	4.14	iPharmacy
Recording of indication (%)	4.15	High risk meds only	End of month expiry (Pharmacy) \$	4.14	iPharmacy
Medication Administration Rate - regular meds (%)	4.2	From EM004 report (overdue)			
Maximum number of doses/24hrs for PRN orders (%)	4.2	From EM006	Discharge		
Max # doses/24hrs for PRN orders - high-risk meds	4.10, 4.15	From EM006	Discharge related medication interventions	4.12	via eMeds intervention tool
TOTAL			Number of Discharges Received by Pharmacy	4.12	from Discharge Tracker
Pharmacist clinical interventions - total	4.6, 4.10	Total number	Medication Reconciliation on discharge (%)*	4.6	from Discharge Tracker
Pharmacist clinical interventions - inpatient	4.10	Not related to adm or DC	Preparation time	N/A	from Discharge Tracker
Clinical interventions - ratings	4.10	% of moderate or higher	Delivery / collection time	N/A	from Discharge Tracker
HACs from QIDS data	4.1	Number	Number of outstanding discharge summaries	4.12	JMO unit stats
HACs from QIDS data	4.2	Rate per 1000 separations	Did the patient feel involved in the use of new	4.3	Patient experience survey (%)
AMS data	4.10	Appropriateness from eASY (%)	Were the instructions provided easy to understand	4.11	Patient experience survey (%)
Completion rate of pharmacist consults	4.3, 4.10, 4.11	PD, MedRec, ICU stepdown, counselling	Opioid supply on discharge	4.15	# transactions - Pharmacylix
IMS+ numbers	4.2	IMS+ data	Antibiotic supply on discharge	4.15	# transactions - Pharmacylix
Counselling via intervention tool	4.3	via intervention tool	Endone prepack use	4.15	from Pharmacylix

Fig 1 - KPIs collected on Medication Safety Dashboard

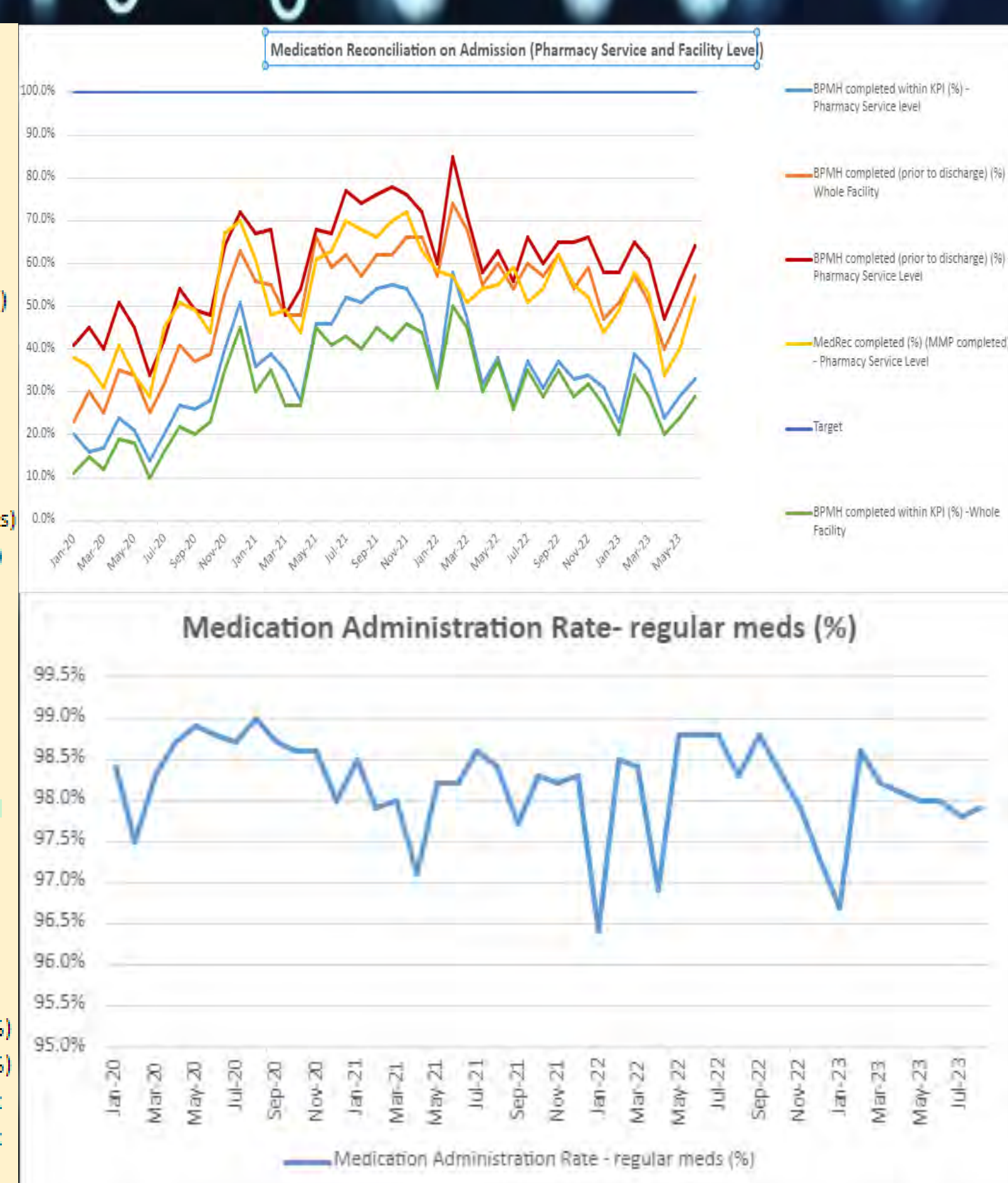


Fig 2 - Example of closely-monitored KPIs