AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

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National Standard Medication Chart

National audit summary report 2018

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Contents

Summary

This report outlines the findings and recommendations from the National Standard Medication Chart (NSMC) national audit conducted in 2018.

Context

The Australian Commission on Safety and Quality in Health Care (the Commission) provides stewardship of the NSMC. The NSMC audit aims to drive local safety and quality improvements in medicines management. This aligns to the four priority areas of the Commission's Strategic Plan 2014–2019[1]:

- Patient safety
- Partnering with patients, consumers and communities
- Quality, cost and value
- Supporting health professionals to provide safe and high-quality care.

Background

National audits of the National Inpatient Medication Chart (NIMC) were conducted annually for the period 2009–2012 and then in 2014. When the Pharmaceutical Benefits Scheme hospital medication chart (PBS HMC) was implemented in 2016, a new audit system was required. The NSMC includes both the NIMC and the PBS HMC.

The Commission appointed NPS MedicineWise to undertake a review of the NIMC audit materials in 2017. The revised materials were used to build a new NSMC audit module[*]. The new online audit module is user friendly, accessible and compatible with mobile and tablet devices. Participating hospitals can use the audit module to generate their own reports from the national audit. It can also be used to conduct separate, customisable local audits at the discretion of the local organisation outside of the national audit period.

Best practice indicators (Appendix 1) were used to assess the NSMC safety features.

Objective

The NSMC audit report aims to:

- Determine compliance with the NSMC safety features in hospitals
- Identify if there are specific aspects of the NSMC or the audit process that might require modification
- Identify other medication safety considerations for the Commission's Health Services Medication Expert Advisory Group (HSMEAG).

The NSMC audit system enables participating hospitals to produce their own report for internal reporting purposes. They are able to:

- Obtain a baseline measure of the quality of NSMC chart use and identify areas for local medication management improvement
- Evaluate the effectiveness of local medication management quality improvement initiatives

[*] https://www.safetyandquality.gov.au/our-work/medication-safety/nsmc-audit/

- Identify if there are local prescribing and medicine administration behaviours that could be improved.

Scope

The audit findings provide a snapshot of compliance with the NSMC safety features as defined by best practice indicators (Appendix 1).

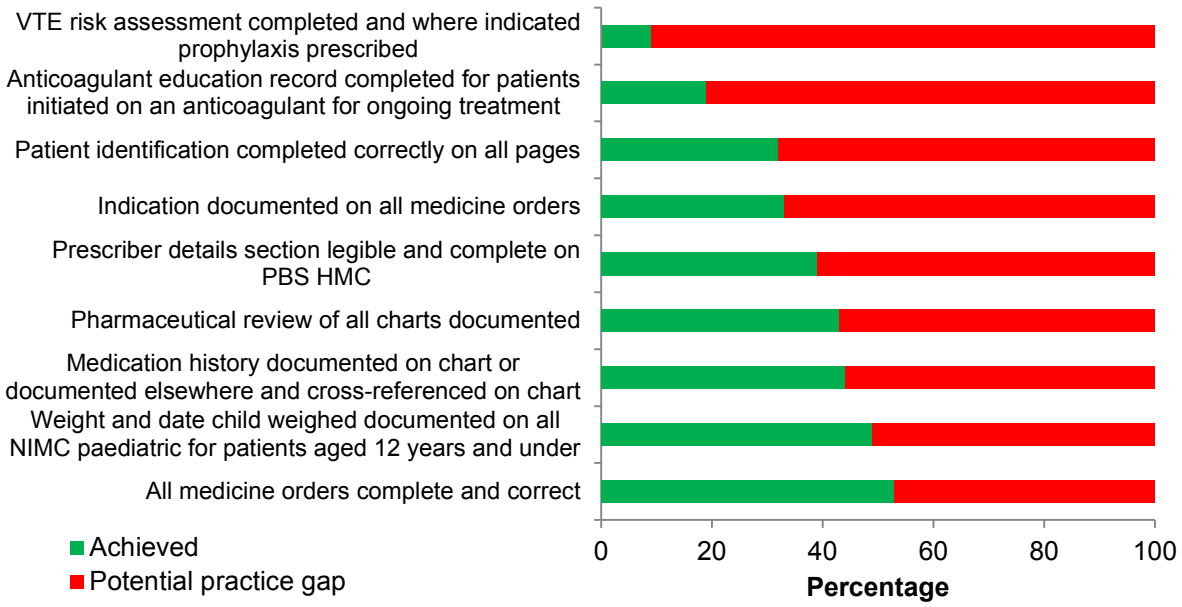
Electronic medication management (EMM) systems were not part of the NSMC national audit.

Findings from the NSMC national audit 2018

The 2018 national audit was conducted from 1 October to 31 October 2018. Three hundred and sixty one hospitals from all states and territories participated in the national audit. This was an 8% decrease in hospital participation when compared to the NIMC 2014 national audit[2]. Increased uptake of EMM systems particularly in NSW during this period may have contributed to this difference. There were 10,608 individual patient charts audited.

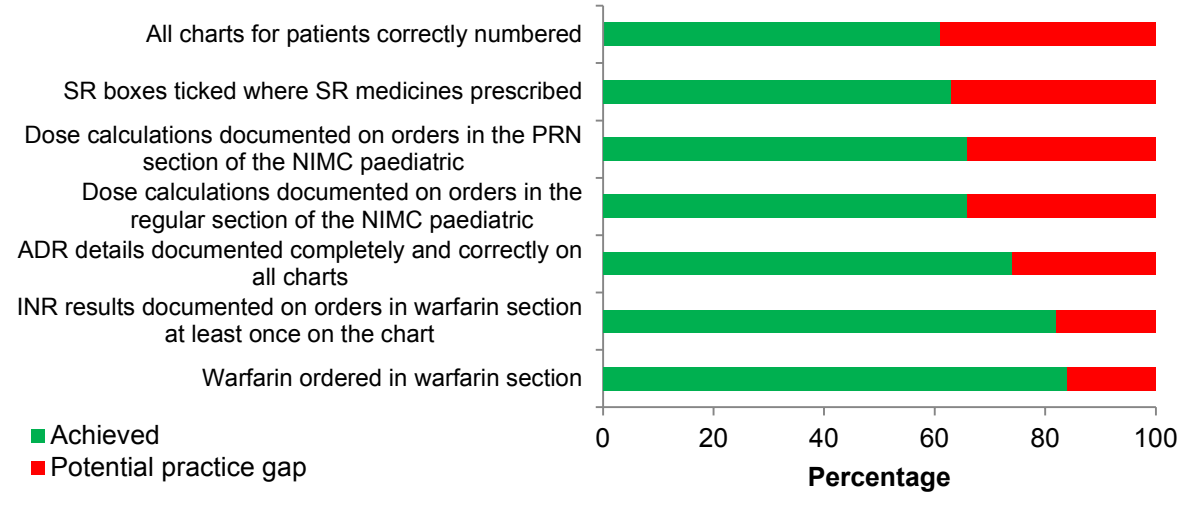
The findings from the NSMC national audit 2018 are presented in relation to identified best practice indicators which reflect the NSMC safety features. A number of safety features of the NSMC had a level of compliance where significant improvement is required (Figure 1).

Figure 1: Safety features of the NSMC at a level of compliance that requires significant improvement



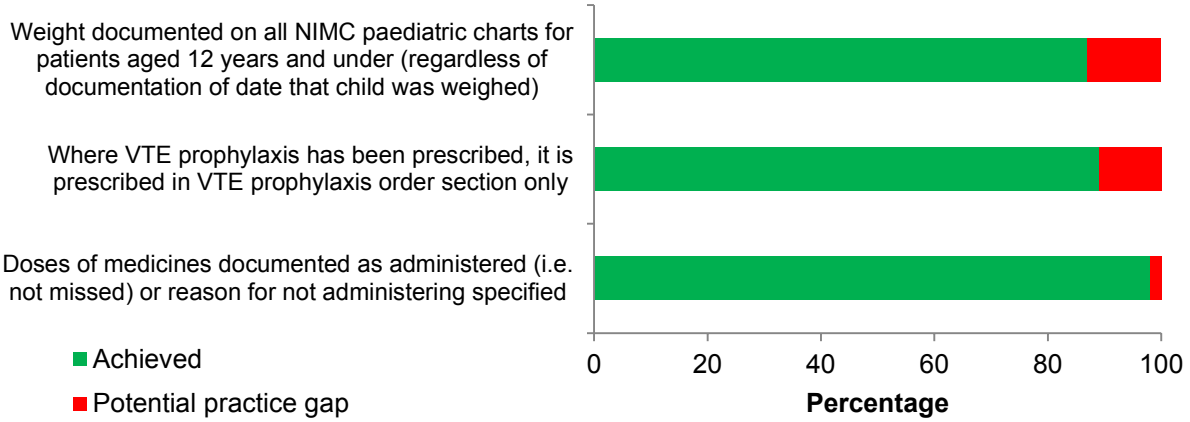
Some safety features of the NSMC were found to be at a moderate level of compliance (60-85%) where some improvement is required (Figure 2).

Figure 2: Safety features of the NSMC at a level of compliance that requires some improvement



Some NSMC safety features showed high levels of compliance (>85%) in the national audit (Figure 3).

Figure 3: Safety features of the NSMC at a high level of compliance



Nine indicators were identified as being comparable to findings from the NIMC 2014 national audit[2]. Seven indicators showed improvement or negligible change while two identified a decline in use of a specific safety feature. These were:

- Patient identification completed correctly on all pages
- ADR details documented completely and correctly on all charts.

The Commission received 47 items of feedback about the audit and audit process from participants. These were reviewed and enhancements were suggested for issues where the audit or audit process could be improved. Where an issue has only been reported once it was logged and will be monitored.

Conclusions

The findings from the NSMC national audit 2018 show compliance with many of the safety features of the NSMC is sub-optimal. Failure to effectively use the NSMC safety features increases the risk of medication errors. Nine indicators were found to be at a level of compliance which suggests significant improvement is required. A further seven indicators require moderate improvement. Health service organisations are responsible for coordinating local action to address the results identified by the report.

Audit changes limit comparisons to findings from previous audits of the NIMC. However nine indicators were comparable. Of these, indicators relating to patient identification and ADR documentation declined notably.

While many NSMC safety features had sub-optimal compliance, venous thromboembolism (VTE) risk assessment documentation had the lowest level of compliance (9%). As VTE is a major cause of morbidity and mortality for patients admitted to hospital[3], organisations should review current initiatives to improve the documentation of VTE risk assessment.

Informal feedback received by the Commission from audit participants indicates no major issues with the audit design or content. The majority of issues raised after the NSMC national audit 2018 will be resolved as users gain increased familiarity with the new audit system. Some minor changes to the audit support materials have been made following feedback.

Recommendations

The recommendations following the NSMC national audit 2018 are consistent with the Commission's strategic plan and focus on activities which align to the Commission's operational work plan.

Recommendation 1

Participating hospitals should share audit findings with clinicians to drive local review and development of action plans to address areas of sub-optimal performance.

The NSMC national audit report 2018 identifies a number of safety features of the NSMC that are at a level of compliance where significant improvement is required nationally. Participating hospitals should determine areas of sub-optimal performance within their own site and engage clinicians to drive local improvement. Particular attention should be made to safety features identified at a level of compliance where significant improvement is required.

Recommendation 2

Participating hospitals review current initiatives to improve the use of the VTE risk assessment safety feature on the NSMC.

The findings of the NSMC national audit indicate sub-optimal compliance (9%) to the VTE risk assessment section on the NSMC. As VTE is a major cause of morbidity and mortality for patients admitted to hospital[3] failure to optimally use the VTE risk assessment section can lead to patient harm. Prevention strategies have been shown to significantly reduce the incidence of VTE by about 70%[3]. The prevention of hospital-acquired VTE relates to the following National Safety and Quality Health Service (NSQHS) Standards[4]:

- Standard 1: Clinical Governance
- Standard 2: Partnering with Consumers
- Standard 4: Medication Safety
- Standard 6: Communication for Safety
- Standard 8: Recognising and Responding to Acute Deterioration.

Resources to assist with this are available from the Commission[†].

Recommendation 3

The Commission should seek comment from HSMEAG to evaluate the audit process, use of results, and changes made following the audit to assess the utility of the NSMC national audit.

The 2018 national audit of the NSMC was the first since the NIMC national audit was adapted in 2017. Feedback from end-users at participating facilities will help the Commission evaluate the audit process changes and identify any areas for improvement. Feedback from non-participants could also be beneficial to identify barriers to participation.

[†] https://www.safetyandquality.gov.au/our-work/clinical-care-standards/venous-thromboembolism-prevention-clinical-care-standard/

Appendix

Appendix 1 – Best practice indicators linked to NSQHS Standard 4: Medication Safety[4] and National QUM Indicators for Australian Hospitals[5]

Best practice indicators		Link to NSQHS Standard 4: Medication Safety[4]	Link to National QUM Indicators for Australian Hospitals[5]
1	**Patient identification completed correctly on all pages**	4.1, 5.1	
1.1	Patient ID section completed on all pages		
1.2	Handwritten patient details legible and complete		
1.3	Patient's name handwritten under patient identification label(s) by first prescriber		
2	**Prescriber details section legible and complete on PBS HMC**	4.4, 5.4	
2.1	All prescribers listed in prescriber details section of PBS HMC		
3	**Weight and date child was weighed documented on all NIMC paediatric for patients aged 12 years and under**	4.11, 4.13	3.4
3.1	Weight documented on all NIMC paediatric charts for patients aged 12 years and under (regardless of documentation of date that child was weighed)		
4	**ADR details documented completely and correctly on all charts**	4.7, 4.8	3.2
4.1	ADR section has the medicine (or other) section and reaction type documented.		
4.2	ADR section has the medicine and reaction type documented and is signed by person documenting the ADR		
5	**Medication history documented on chart or documented elsewhere and cross-referenced on chart**	4.5, 4.6, 4.13	3.1
5.1	Medication history documented on the chart for current episode of care		
5.2	Medication history cross-referenced on chart where documented elsewhere (according to local procedure) for current episode of care		
6a	**VTE risk assessment completed and where**	4.15	1.1

Best practice indicators		Link to NSQHS Standard 4: Medication Safety[4]	Link to National QUM Indicators for Australian Hospitals[5]
	indicated prophylaxis prescribed		
6a.1	VTE prophylaxis prescribed (in the VTE prophylaxis order section, regular medicines section or both) where indicated		
6a.2	VTE prophylaxis prescribed in VTE prophylaxis order section only		
7	**Pharmaceutical review of all charts documented**	4.10	6.2
8	**All charts for patients correctly numbered**	4.1, 4.13	
9	**Anticoagulant education record completed for patients initiated on an anticoagulant for ongoing treatment**	4.3, 4.11, 4.15	5.4
10a	**Regular medicine orders complete and correct**	4.1, 4.15	3.3
10a.1	Orders are legible		
10a.2	Orders do not contain error-prone abbreviations		
10a.3	Medicine name complete and correct on orders		
10a.4	Route complete and correct on orders		
10a.5	Dose complete and correct on orders		
10a.6	Frequency complete and correct on orders		
10a.7	Prescriber name legible on the chart		
10a.8	Orders signed by prescriber		
10b	**Indication documented on orders in regular section**	4.1, 4.15	3.3
10c	**SR boxes ticked where SR medicines prescribed**	4.1, 4.13	
10d	**Dose calculations documented on orders in regular section {NIMC paediatric only}**	4.1, 4.11, 4.13	3.4
10e	**Doses of regular medicines documented as administered (i.e. not missed) or reason for not administering specified**	4.1, 4.13	
11a	**PRN medicine orders complete and correct**	4.1, 4.15	3.3
11a.1	Orders are legible		

Best practice indicators		Link to NSQHS Standard 4: Medication Safety[4]	Link to National QUM Indicators for Australian Hospitals[5]
11a.2	Orders do not contain error-prone abbreviations		
11a.3	Medicine name complete and correct on orders		
11a.4	Route complete and correct on orders		
11a.5	Dose complete and correct on orders		
11a.6	Hourly frequency complete and correct on orders		
11a.7	Prescriber name legible on the chart		
11a.8	Orders signed by prescriber		
11a.9	Maximum PRN dose in 24 hours documented on orders		
11b	**Indication documented on orders in PRN section**	4.1, 4.15	3.3
11c	**Dose calculations documented on orders in PRN section {NIMC paediatric only}**	4.1, 4.11, 4.13	3.4
12a	**Once only, nurse initiated & phone orders complete and correct**	4.1, 4.15	3.3
12a.1	Orders are legible		
12a.2	Orders do not contain error-prone abbreviations		
12a.3	Medicine name complete and correct on orders		
12a.4	Route complete and correct on orders		
12a.5	Dose complete and correct on orders		
12a.6	Frequency complete and correct on orders {phone orders only}		
12a.7	Double signatures complete on orders {phone orders only}		
12a.8	Prescriber name legible on the chart		
12a.9	Orders signed by prescriber		
12b	**Doses of once only, nurse initiated & phone orders documented as administered (i.e. not missed) or appropriate code for not administering specified**	4.1, 4.13	
13a	**Variable dose medicine orders complete and**	4.1, 4.15	3.3

Best practice indicators		Link to NSQHS Standard 4: Medication Safety[4]	Link to National QUM Indicators for Australian Hospitals[5]
	correct		
13a.1	Orders are legible		
13a.2	Orders do not contain error-prone abbreviations		
13a.3	Medicine name complete and correct on orders		
13a.4	Route complete and correct on orders		
13a.5	Dose complete and correct for each day of administration on orders		
13a.6	Frequency complete and correct on orders		
13a.7	Time to be given documented on orders		
13a.8	Prescriber name legible on the chart		
13a.9	Orders signed by prescriber		
13b	**Indication documented on variable dose medicine orders**	4.1, 4.15	3.3
13c	**Doses of variable dose medicines documented as administered (i.e. not missed) or appropriate code for not administering specified**	4.1, 4.11, 4.13	3.4
14a	**Warfarin orders complete and correct**	4.1, 4.15	3.3
14a.1	Orders are legible		
14a.2	Orders do not contain error-prone abbreviations		
14a.3	Brand name selected on orders		
14a.4	Route complete and correct on orders		
14a.5	Prescriber name legible on the chart		
14a.6	Orders signed by prescriber		
14a.7	Daily doses of warfarin documented and signed on orders		
14b	**INR results documented on orders in warfarin section at least once on the chart**	4.1, 4.13, 4.15	5.4
14c	**INR target ranges documented on orders in warfarin**	4.1, 4.13, 4.15	5.4

Best practice indicators		Link to NSQHS Standard 4: Medication Safety[4]	Link to National QUM Indicators for Australian Hospitals[5]
	section		
14d	**Indication documented on orders in warfarin section**	4.1, 4.15	3.3
14e	**Doses of warfarin documented as administered (i.e. not missed) or appropriate code for not administering specified**	4.1, 4.13	
14f	**Warfarin ordered in warfarin section**	4.1, 4.13, 4.15	5.4

Glossary

Term	Definition
ADR	adverse drug reaction
EMM	electronic medication management
GEM	geriatric evaluation and management
ID	identification
INR	international normalised ratio
NIMC	National Inpatient Medication Chart
NSMC	National Standard Medication Chart
NSQHS	National Safety and Quality Health Service
PBS HMC	Pharmaceutical Benefits Scheme Hospital Medication Chart
PRN	when necessary
QUM	quality use of medicines
SR	slow-release
VTE	venous thromboembolism

References

1. Australian Commission on Safety and Quality in Health Care. Strategic Plan 2014–2019. Sydney: ACSQHC; 2014.

2. Australian Commission on Safety and Quality in Health Care 2015, National Inpatient Medication Chart 2014 National Audit Report, ACSQHC, Sydney

3. Australian Commission on Safety and Quality in Health Care. Venous Thromboembolism Prevention Clinical Care Standard. Sydney: ACSQHC; 2018

4. Australian Commission on Safety and Quality in Health Care. National Safety and Quality Health Service Standards. 2nd ed. Sydney: ACSQHC; 2017.

5. Australian Commission on Safety and Quality in Health Care and NSW Therapeutic Advisory Group Inc. National Quality Use of Medicines Indicators for Australian Hospitals. Sydney: ACSQHC; 2014.

Acknowledgements

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