AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

TRIM: D18-22543

National Standard Medication Chart (NSMC) Audit Guide

September 2022

Published by the Australian Commission on Safety and Quality in Health Care
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> Australian Commission on Safety and Quality in Health Care. National Standard Medication Chart (NSMC) Audit Guide. Sydney: ACSQHC; 2022.

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About the national standard medication charts

The Australian Commission on Safety and Quality in Health Care (the Commission) maintains a suite of national standard medication charts (NSMCs). These charts help to communicate information consistently between clinicians on the intended use of medicines for an individual patient.

The Australian Health Ministers' Advisory Council has endorsed NSMCs for use in public hospitals. Private hospitals have also widely adopted NSMCs..

The Commission has produced the following NSMCs to support the delivery of appropriate care to hospitalised patients:

- Pharmaceutical Benefits Scheme hospital medication chart (PBS HMC)
    - acute and long-stay
- National inpatient medication chart (NIMC)
    - adults, paediatrics, day surgery, general practitioners
- Subcutaneous insulin chart
- National residential medication chart (NRMC)
- Clozapine titration chart.

The charts and associated support materials are available on the Commission's website.

The use of national standard charts to order and record the administration of medicines is required under the National Safety and Quality Health Service (NSQHS) Medication Safety Standard.[1]

This document guides Australian hospitals on how to audit NSMC.

Why audit the national standard medication charts?

Using data to measure performance is an essential element in improving the safety and quality of health care. Whether the aim is to improve outcomes or process of care, data is central to assessing the quality of health care being provided. Data helps to determine where there are opportunities for improvement and document the impact that system change interventions (such as NSMCs) have made on the processes of care for patients. Measuring performance is critical to evaluating how your practice compares with best practices.

Data about how clinicians are using medication charts can help guide your healthcare facility in measuring clinical practice. This can lead to improved health outcomes for patients and helps to drive continuous quality improvement within hospitals.

The NSMC Audits aim to:

- Provide a baseline for NSMC use and future quality improvement initiatives
- Improve the safety of medication charting in hospitals
- Evaluate the effectiveness of NSMC safety features in hospitals
- Evaluate the safety and quality of prescribing and related medication documentation
- Identify areas for medication management improvement.

Quality improvement activities can use NSMC Audit data in order to measure the impact of that activities are having,as well as provide evidence to support accreditation according to the NSQHS Standards.

Australian hospitals and day procedure centres can use the NSMC Audit System to take part in the NSMC national audit or alternatively to coordinat a local audit. The national audit will

usually use the full set of audit data elements, while local audits can be configured to use smaller sets of data to directly measure the impact of specific interventions and quality improvement projects. As an example, a hospital may design an intervention to improve the use of the 'Allergies and ADR box' based on the outcome of a national audit. Having established a baseline, the intervention can then be implemented and the effect measured at that point.

National audits

The Commission periodically coordinates national audits in which all Australian hospitals that use NSMCs are invited to participate.

Published reports of previous national audits are available on the Commission's website.

Scope of this guide

This guide, and all related resources, are intended for use by all workforce members involved in auditing of NSMCs* including the:

- NIMC (acute) and private hospital version
- NIMC (long-stay) and private hospital version
- NIMC (paediatric) and private hospital version
- NIMC (paediatric long-stay) and private hospital version
- PBS HMC (acute)
- PBS HMC (long-stay).

This guide and the audit questions are not designed for auditing the NIMC (clozapine titration), NIMC (subcutaneous insulin) or NRMC, nor are they intended for conducting audits of electronic medication ordering systems.

Health service organisations using other medication charts and prescribing systems will need to develop audit tools, resources and systems to prove these charts and systems are safe.

*The NSMC Audit has been designed so that the common safety features of the Western Australia and Queensland charts that are a part of NSMCs can be audited.

Preparing for an audit

The preparation for an audit is as important as undertaking the actual audit itself. Your organisation should think about:

- Why is your orginsation undertaking the audit?
- What will your orginisation do with the results of the audit?
- Who needs to be involved in the audit team?

Typically, there are four steps in preparing for an audit:

- Write an audit project plan
- Assemble the audit team
- Seek approval from the drug and therapeutics committee to undertake the audit
- Prepare a communications plan that can be used to inform clinicians about the audit project.

Audit project plan

Set up aworking party of interested clinicians to oversee the audit project. Consult with any relevant stakeholders to determine the approach to data collection, including the population, the sample size and the auditors.[2]

Consider how the audit results will be used and presented in order to inform practice. The sample should be large enough for managers and senior clinicians to be willing to implement changes based on the indicator results. See Appendix 1 for the NSMC Audit indicators of best practice and the rationale for including each indicator.

Local audit teams should familiarise themselves with local medication-related procedures and guidelines such as a list of approved trade names for prescribing. This will ensure consistency between auditors and allow the local audit results to be compared over time.

Assemble the audit team

An audit should be multidisciplinary to more accurately reflect the way in which clinicians use the NSMCs. Pairs of auditors are required to eliminate bias from the assessment of the audit questions.

Once identified, auditors should be paired so that a nurse works with either a doctor or a pharmacist. These pairings will reduce observer bias and mimic the normal conditions within which medication charts are used.

Assign each pair to a clinical area where they do not normally work so that non-standard practices can be easily identified. Each pair will be required to review the active medication charts of a defined number of patients.

At a minimum, auditors should review the Commission’s audit training materials, including watching the YouTube training videos.

Before starting the audit, brief the whole audit team about the process. Undertaking sample audits can be useful to check that each auditor understands the audit process.

Provide each auditor with a copy of *Recommendations for Terminology, Abbreviations and Symbols used in Medicines Documentation.*[3]

The NIMC User Guide[4] provides useful background information and instructions for using the NSMC.

Planning the resources required for the audit

Fully trained and experienced auditors will work more quickly than untrained or inexperienced auditors. Medication charts in medical or geriatric wards will take longer to audit than those in paediatrics or surgical wards.

Analysing the patient mix on each ward and calculating a shortest and longest expected time will help to predict the total effort required to complete the audit.

Reliable, accurate data will help the organisation plan high-quality interventions and drive improvement.

Frequency of audit

Consider the following when deciding how often your organisation should audit NSMCs:

- Results from previous audits
- Risk of medication misadventure
- Rate of clinician turnover
- Local factors identified by the drug and therapeutics committee.

Conduct a full audit every 1–2 years – ideally as part of the national audit. Use the modular functionality to schedule quicker, more frequent audits of specific parts of the medication chart.

If previous NSMC Audits identified areas for medication management improvement, audit these areas more often as part of a quality improvement cycle.

Characteristics of the audit

An NSMC Audit should review all sections of the NSMCs in current use* for each patient. This allows errors that occur infrequently and in different patient types to be identified more easily.

Where time and resources are limited, include as many medication charts as possible from each ward type. For example, review charts from medical, surgical, critical care, geriatric and paediatric areas.

To allow for enough patient charts to be reviewed, allow several weeks for all the data to be collected.†

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* An ‘NSMC in current use’ is an active chart with medicine orders that are being administered on the day of the audit. NSMCs that do not contain any current orders, or where all orders have been ceased or have otherwise expired, should be excluded from the audit.

† The Commission periodically coordinates national NSMC audits in which all Australian hospitals that use NSMCs are invited to participate.

Review and act on audit results

The audit team and relevant stakeholders should review the audit results to:

- Compare practice against previous audit results, or other similar hospitals, state/territory or national results
- Recognise and acknowledge areas where careis meeting indicators of best practice within the workforce
- Analyse identified gaps in achieving best practice indicators highlighted by the audit
- Consider barriers to best practice that can be addressed
- Develop and implement local education initiatives to respond to specific gaps in practice
- Conduct follow-up audits as necessary to evaluate changes in practice.

Continuous quality improvement

Where possible, subsequent audits should be made up of similar sample sizes, patient cohorts and the same wards as previous audits to enable more accurate comparisons. If a baseline audit identified practice gaps with one or more specific section(s) of the NSMC, and action has been taken to address these gaps, you may decide to conduct a partial audit targeting the specific areas of concern. This can help to evaluate practice changes after implementation of education or quality improvement activities. Ideally, the same auditors should also conduct follow-up audits to minimise variability between audits.

Collecting data for National Standard Medication Chart Audits

If any errors or risks to patients are identified during data collection, these must be resolved immediately by referring the issue to members of the clinical team. Recorded audit data should reflect NSMC use **before** any action is taken to address issues which have been identified duringdata collection.

Audit data collection tools

NSMC Audit data collection tools are used to collect patient-level audit data.

The **NSMC Audit form** is a paper form for collecting data for one patient. Data collected on the NSMC Audit form must be entered directly into the NSMC Audit System.

The **NSMC Audit System** is a web-based application that provides an electronic version of the audit form. Audit data can be entered directly into the Audit System.

All the audit tools, and guidance on how to use them, are available at:
https://www.safetyandquality.gov.au/our-work/medication-safety/nsmc-audit/

Answering the audit questions

Only include charts which are 'active' and in current use at the time of audit – that is, do not include charts where all orders have been ceased or have otherwise expired.

General information

Question (i) Hospital name

The NSMC paper audit form includes space to record your hospital name. The NSMC Audit System contains all registered hospitals in Australia. Once you register for an account, the hospital name drop-down list will be automatically populated with the hospitals that you have access to. Please select the relevant hospital from the drop-down list.

Question (ii) Date of audit

This is the date that the patient's active chart(s) was audited. Please enter the date in DD/MM/YYYY format.

Information for local use only

Question a) Unique record (UR) number

The NSMC paper audit form includes space to record the patient's UR number for internal record keeping. This enables local identification of patients involved in the audit. This information is not transmitted beyond the hospital.

Question b) Ward

The NSMC paper audit form includes space to record the ward for internal record keeping. This information is not transmitted beyond the hospital.

To ensure confidentiality of patient information, these fields (questions a and b) are not saved in the online audit system. The web-based NSMC Audit System will automatically assign an identifier to each patient audited.

Hospitals can reference this identifier to individual patient details by recording it locally against the patient's UR number. This will need to be done at the time of data entry.

Chart type and age of patient

Question (iii) Please specify chart type being audited

Record the chart type being audited for the patient. Only include charts that are 'active' and in current use at the time of audit (that is, do not include charts where all orders have been ceased or have otherwise expired). You may only record one chart type per patient. If the patient has multiple charts in current use, you can audit each chart type separately.

Question (iv) The patient is aged 12 years or under

This question applies to all patients and all chart types.

Record **Y** if the patient is aged **12 years or under**.

Record **N** if the patient is aged **over 12 years**.

Section 1 Patient ID

Question 1.1 Patient ID section is completed using (select one option only):

- Handwritten patient details
- Printed patient identification labels
- A mix of printed patient identification labels and handwritten details.

Record only one option above that applies to all the patient's active charts.

Question 1.2 Patient identification section is completed on all pages of all active charts.

Record **Y** if the Patient ID section has been completed on **all pages of all** active charts in current use using **either** a patient ID label **or** handwritten details.

Record **N** if any Patient ID sections are **not** complete**.**

Question 1.3 Handwritten patient details are legible and complete (that is, at least 3 patient identifiers documented).

This question only applies when either 'handwritten patient details', or 'a mix of printed patient identification labels and handwritten details' was selected for question 1.1.

Record **Y** if, where handwritten patient details are used, **at least three** of the following patient identifiers are visible and correct on **all** pages of the active charts in current use:

- Medical record number (URN) or Individual Healthcare Identifier
- Patient name (family name and given names)
- Date of birth
- Gender
- Patient address.

Record **N** if, where handwritten patient details are used, **two or fewer** of the above patient identifiers are visible and correct on **one or more** of the charts.

Question 1.4 Patient's name is handwritten under patient identification label(s) by first prescriber.

This question only applies when either 'printed patient identification labels', or 'a mix of printed patient identification labels and handwritten details' was selected for question 1.1.

Record **Y** if the patient's **full name** has been handwritten by the first prescriber under each printed patient identification label on **all** active charts in current use.

Record **N** if the **patient's full name** has **not** been handwritten by the first prescriber under one or more printed patient identification labels.

Section 2 Prescriber details (PBS HMC only)0

Question 2.1 All prescribers who have ordered a medicine for the patient are listed in the prescriber details section of the PBS HMC.

This question only applies to patients with a PBS HMC.

Record **Y** if **all** prescribers who have ordered a medicine for the patient are listed in the prescriber details section of the active PBS HMC(s) containing the prescriber's current medicine orders.

Otherwise record **N**. If no, go to question 3.1.

Question 2.2 The prescriber details section of the PBS HMC is legible and complete.

This question only applies to patients with a PBS HMC where **yes** was selected for question 2.1.

Record **Y** if **all** the details below are recorded and legible for **each** prescriber in the prescriber details section on the PBS HMC:

- Name
- PBS prescriber number
- Contact number
- Address
- Signature
- Date.

Otherwise record **N.**

Section 3 Weight documentation (patients aged 12 years or under and using NIMC paediatric only)

Question 3.1 Weight is documented on all charts.

This question applies to all patients aged 12 years and under using NIMC paediatric or NIMC paediatric long-stay:

Record **Y** if the weight **field is complete** on **all** active charts in current use.

Record N if the weight field is **not** complete on one or more charts. If no, go to question 4.1.

Question 3.2: Date weighed is documented with weight on all charts.

This question applies to all patients aged 12 years and under using NIMC paediatric or NIMC paediatric long-stay:

Record **Y** if the **date has been completed** with the corresponding weight on **all** active charts in current use.

Record **N** if the date weighed field is **not complete** on one or more charts.

Section 4 Adverse drug reactions (ADRs)

Question 4.1 The following has been documented in the ADR section (select **one** option only):

- Details of any medicine (or other) allergies or ADR(s) **[go to Q4.2]**
- 'Nil known' or 'unknown' box marked with signature, name and date on all active charts **[go to Q5.1]**
- None of the above apply **[go to Q5.1]**.

This question applies to all patients.

Record only one option above that applies to all the patient's active charts. If the first response is selected, move to the next question (Q4.2), otherwise skip to the next section (Q5.1).

Question 4.2 The medicine (or other) section and reaction type has been documented on all active charts.

This question only applies to patients where the first option 'details of any medicine (or other) allergies or ADR(s)' was selected for question 4.1.

Record **Y** if **both** of the following have been documented on **all** active charts in current use in the ADR section:

- The medicine (or other) name
- Reaction type.

Otherwise record **N.**

Question 4.3 The ADR documentation includes signature, name and date on all active charts.

This question only applies to patients where the first option 'details of any medicine (or other) allergies or ADR(s)' was selected for question 4.1.

Record **Y** if **both** of the following have been documented on **all** active charts in current use in the ADR section:

- Signature and name of the clinician documenting the information
- Date of documentation

Otherwise record **N.**

Section 5 Medication history

Question 5.1 Medication history for the current episode of care is (select **one** option only):

- Documented on the chart **[go to Q6.1]**

- Documented elsewhere according to local procedure **[go to Q5.2]**
- Not documented **[go to Q6.1]**.

This question applies to all patients.

Record **how** the medication history for the current episode of care is documented (including 'nil regular meds' or equivalent). Record only one option above that applies to **at least one** of the patient's active charts. If the first response is selected, move to the next section (Q6.1); if the second response is selected, move to the next question (Q5.2); and if the last response is selected, move to the next section (Q6.1).

Question 5.2 Where medication history is documented elsewhere according to local procedure, it has been cross-referenced on the chart.

This question only applies to patients where medication history for the current episode of care was documented elsewhere according to local procedure (option 2 was selected for question 5.1).

Record **Y** if documentation of medication history elsewhere (e.g. MMP or eMR) **is** cross-referenced, with a note in the medicines section taken before admission section indicating where this is recorded, on **at least one** active chart in current use. *Note: This is **not** the same as reconciling medication history.*

Please note that the PBS HMC has a preprinted note indicating that medication history is recorded in the MMP, so please record **Y** for these patients.

Otherwise record **N.**

Section 6 Venous thromboembolism (VTE) risk assessment and VTE prophylaxis (NIMC acute and PBS HMC acute only)

Question 6.1 The following has been documented in the VTE risk assessment section (select **all** that apply):

- 'Yes' box marked
- 'Prophylaxis not required' or 'contraindicated' box marked
- Signature and date documented
- None of the above apply.

This question only applies to patients with an NIMC acute or a PBS HMC acute.

Record what has been documented in the VTE risk assessment section on **at least one** active chart in current use and select **all** that apply.

Note: The VTE risk assessment section is only required to be completed on **one** *active chart in current use.*

Question 6.2 VTE prophylaxis has been prescribed.

This question only applies to patients with an NIMC acute or a PBS HMC acute.

Record **Y** if VTE prophylaxis is currently prescribed in any section of **one or more** active charts in current use – that is, in the VTE prophylaxis section or the regular medicines section.

Otherwise record **N.** If no, go to question 7.1.

Note: VTE prophylaxis includes pharmacological prophylaxis, mechanical prophylaxis or both.

Question 6.3 Section in which VTE prophylaxis was prescribed (select **one** option only):

- The VTE prophylaxis order section only
- The regular medicines order section only
- Both the VTE prophylaxis and regular medicines sections.

This question only applies to patients with an NIMC acute or a PBS HMC acute if **Y** was selected for question 6.2.

Record where the VTE prophylaxis prescription was written by choosing one of the responses above.

Section 7 Pharmaceutical review

Question 7.1 Pharmaceutical review has been documented at least once on all charts (that is, clinician initials are recorded in the pharmaceutical review box under the regular medicines section).

This question applies to all patients.

Record **Y** if a clinician's initials **are** recorded in the pharmaceutical review box **at least once** on **all** active charts in current use, regardless of patient length of stay.

Record **N** if there are **no** pharmacist initials in the pharmaceutical review box on **one or more** of the charts.

*Note: Pharmaceutical review is **not** the same as pharmacy annotation of individual medicine orders.*

Section 8 Chart numbering

Question 8.1 All charts for the patient are correctly numbered.

This question applies to all patients. Refer to the space provided for chart numbering on the front of all active charts in current use.

Record **Y** if the chart number **and** the total number of active charts in current use for the patient (such as '1 of 1', or '1 of 2' and '2 of 2') are correctly documented in the space provided on **all** charts.

Record **N** if the chart number and the total number of active charts in current use for the patient are **not** documented in the space provided on one or more charts, **or** if the chart numbering is **not** correct on one or more charts.

Note: Chart numbering must be updated when extra charts are written or charts are ceased.

Section 9 Anticoagulant education record (NIMC acute, NIMC long-stay, PBS HMC acute and PBS HMC long-stay only)

Question 9.1 The patient has been initiated on an anticoagulant for ongoing treatment.

This question only applies to patients with an NIMC acute, an NIMC long-stay, a PBS HMC acute or a PBS HMC acute.

Record **Y** if the patient has been initiated on an anticoagulant for ongoing treatment during this episode of care.

Record **N** if the patient has **not** been initiated on an anticoagulant for ongoing treatment during this episode of care. If no, go to question 10.1.

Question 9.2 The anticoagulant education record has been completed.

This question only applies to patients with a NIMC acute, NIMC long-stay, PBS HMC acute or PBS HMC acute where **Y** was selected for question 9.1.

Record **Y** if a clinician has completed all fields in the anticoagulant education record on **at least one** active chart in current use.

Otherwise record **N.**

Medicine orders

Orders should be considered complete and correct if there is no potential for misinterpretation or administration error, based on the documentation on the chart.

Section 10 Regular medicine orders

This section applies to **all** medicine orders in the regular sections of **all** active charts in current use.

Question 10.1 Total number of regular medicine orders.

Record the **total number** of regular medicine **orders** currently prescribed. If reviewing more than one chart for the patient, ensure that all medicine orders for each section (on all 'active' charts in current use) are included in the total.

If there are **no** regular medicine orders currently prescribed, **record 0** for this question. **If 0, go to Section 11.**

Question 10.2 Record the number of orders in this section where the following errors are identified.

Reviewing all the orders in the regular medicines section, record the number of **orders** where the specified error has been identified. Take care to record the number of orders where the errors occur, not the total number of errors. Put a 0 in the box if there are no orders with the specified error.

Order **not** legible

Record the number of orders that are **not legible to both** auditors, with risk of misinterpretation identified. Legibility is referring to the handwriting only.

Order contains one or more error-prone abbreviation(s)

Record the number of orders that contain **one or more error-prone abbreviations**. *Note: See the National Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines*[3] *and local policy.*

Medicine name **not** complete and correct

Record the number of orders where the **medicine name** is **not** complete and correct, with potential for error identified. *Note: refer to local policy to determine if generic or brand name is considered correct.*

Route **not** complete and correct

Record the number of orders where the **route** is **not** complete and correct, with potential for error identified.

Dose **not** complete and correct

Record the number of orders where the **dose** is **not** complete and correct, with potential for error identified. *Note: where reviewing orders for paediatric patients, consider correctness and consistency with any dose calculations documented on the chart.*

Frequency **not** complete and correct

Record the number of orders where the **frequency** is **not** complete and correct, with potential for error identified.

Prescriber name **not** legible on the chart

Record the number of orders where **the prescriber's name** is **not legibly** written somewhere on the chart containing the order. Prescriber name needs to be printed only once on the chart.

Order **not** signed by the prescriber

Record the number of orders where the **prescriber** has **not** signed the order.

Note: Each answer should contain a number, if none of the orders contain errors, record 0.

Question 10.3 How many regular medicine orders contain one or more of the above errors?

Record the **number** of regular medicine **orders** where **one or more** of the errors listed in question 10.2 were identified. Do not record the total number of errors.

Question 10.4 Total number of SR medicine orders.

Record the **total number** of medicine orders that are slow release (SR), regardless of whether the SR box has been ticked. Note that this is a subset of the total number of regular medicine orders.

Question 10.5 Number of orders where SR box is not ticked for SR medicines.

Record the **number** of orders where prescriber has **not** ticked the SR box.

Question 10.6 Number of orders where indication is not documented.

Record the **number** of orders where the prescriber has **not** documented the indication.

Question 10.7 Number of orders where dose calculation is not documented for patient aged 12 years or under. (NIMC paediatric and patients aged 12 years and under only)

Record the **number** of orders where the prescriber has **not** documented a dose calculation.

Note: Dose calculations should refer to a dose from an appropriate reference and specify the dose per body weight (for example, in mg/kg) or per body surface area (for example, microgram/m^2/dose).

Question 10.8 Total number of required doses prescribed in the regular medicines section.

Record the total number of doses in the regular medicines section that are required to have been administered since the order was written, considering the current date and time.

Question 10.9 How many doses were missed without a reason for not administering specified?

Record the **number of required doses** in the regular medicines section that appear to have been **missed**, that is, have **not** been documented as administered and a code for not administering has **not** been specified.

Section 11 PRN medicine orders

This section applies to **all** medicine orders in the PRN sections of **all** active charts in current use.

Question 11.1 Total number of PRN medicine orders.

Record the **total number** of PRN medicine **orders** currently prescribed. If reviewing more than one chart for the patient, ensure that all medicine orders for each section (on all 'active' charts in current use) are included in the total.

If there are **no** PRN medicine orders currently prescribed, **record 0** for this question. **If 0, go to Section 12.**

Question 11.2 Record the number of orders in this section where the following errors are identified.

Reviewing all the orders in the PRN medicines section, record the number of **orders** where the specified error has been identified. Take care to record the number of orders where the errors occur, not the total number of errors. Put a 0 in the box if there are no orders with the specified error.

Order **not** legible

Record the number of orders that are **not legible to both** auditors, with risk of misinterpretation identified. Legibility is referring to the handwriting only.

Order contains one or more error-prone abbreviation(s)

Record the number of orders that contain **one or more error-prone abbreviations**. *Note: See the National Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines*[3] *and local policy.*

Medicine name **not** complete and correct

Record the number of orders where the **medicine name** is **not** complete and correct, with potential for error identified. *Note: refer to local policy to determine if generic or brand name is considered correct.*

Route **not** complete and correct

Record the number of orders where the **route** is **not** complete and correct, with potential for error identified.

Dose **not** complete and correct

Record the number of orders where the **dose** is **not** complete and correct, with potential for error identified. *Note: where reviewing orders for paediatric patients, consider correctness and consistency with any dose calculations documented on the chart.*

Hourly frequency **not** complete and correct

Record the number of orders where the **hourly frequency** is **not** complete and correct, with potential for error identified.

Maximum PRN dose in 24 hours **not** documented

Record the number of orders where the **maximum PRN dose** in 24 hours is **not** documented.

Prescriber name **not** legible on the chart

Record the number of orders where **the prescriber's name** is **not legibly** written somewhere on the chart containing the order. Prescriber name needs to be printed only once on the chart.

Order **not** signed by prescriber

Record the number of orders where the **prescriber** has **not** signed the order.

Note: Each answer should contain a number, if none of the orders contain errors, record 0.

Question 11.3 How many PRN medicine orders contain one or more of the above errors?

Record the **number** of PRN medicine **orders** where **one or more** of the errors listed in question 11.2 were identified. Do not record the total number of errors.

Question 11.4 Number of orders where indication is not documented.

Record the **number** of orders where the indication has **not** been documented by the prescriber.

Question 11.5 Number of orders where dose calculation is not documented for patient aged 12 years or under. (NIMC paediatric and patients aged 12 years and under only)

Record the **number** of orders where a dose calculation has **not** been documented by the prescriber.

Note: Dose calculations should refer to a dose from an appropriate reference and specify the dose per body weight (for example, in mg/kg) or per body surface area (for example, microgram/m^2/dose).

Section 12 Once only, nurse-initiated and phone orders

This section applies to **all** medicine orders in the once only, nurse-initiated and phone order sections of **all** active charts in current use.

Question 12.1 Total number of once only and nurse-initiated orders.

Record the **total number** of once only and nurse-initiated medicine orders. If reviewing more than one chart for the patient, ensure that all medicine orders for each section (on all 'active' charts in current use) are included in the total.

If there are **no** once only and nurse-initiated medicine orders currently prescribed, **record 0** for this question.

Question 12.2 Total number of phone orders.

Record the **total number** of phone orders. If reviewing more than one chart for the patient, ensure that all medicine orders for each section (on all 'active' charts in current use) are included in the total.

If there are no phone orders currently prescribed, record 0 for this question. If the answer is 0 for both 12.1 and 12.2, go to Section 13.

Question 12.3 Record the number of orders in this section where the following errors are identified.

Reviewing all the orders in the once only, nurse-initiated and phone orders medicines section, record the number of **orders** where the specified error has been identified. Take care to record the number of orders where the errors occur, not the total number of errors. Put a 0 in the box if there are no orders with the specified error.

Order **not** legible

Record the number of orders that are **not legible to both** auditors, with risk of misinterpretation identified. Legibility is referring to the handwriting only.

Order contains one or more error-prone abbreviation(s)

Record the number of orders that contain **one or more error-prone abbreviations**. *Note: See the National Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines[3] and local policy.*

Medicine name **not** complete and correct

Record the number of orders where the **medicine name** is **not** complete and correct, with potential for error identified. *Note: refer to local policy to determine if generic or brand name is considered correct.*

Route **not** complete and correct

Record the number of orders where the **route** is **not** complete and correct, with potential for error identified.

Dose **not** complete and correct

Record the number of orders where the **dose** is **not** complete and correct, with potential for error identified.

Frequency **not** complete and correct (phone orders only)

Looking only at the phone orders, record the number of orders where the **frequency** is **not** complete and correct, with potential for error identified.

Double signature **not** complete (phone orders only)

Looking only at the phone orders, record the number of orders where the **double signature** of two clinicians receiving the order is **not** complete.

Prescriber name **not** legible on the chart

Record the number of orders where **the prescriber's name** is **not legibly** written somewhere on the chart containing the order. Prescriber name needs to be printed only once on the chart.

Order **not** signed by prescriber

Record the number of orders where the **prescriber** has **not** signed the order.

Note: Each answer should contain a number, if none of the orders contain errors, record 0.

Question 12.4 How many once only, nurse-initiated and phone orders contain one or more of the above errors?

Record the **number** of once only, nurse-initiated and phone **orders** where **one or more** of the errors listed in question 12.3 were identified. Do not record the total number of errors.

Question 12.5 Total number of required doses prescribed in the once only, nurse-initiated and phone order section.

Record the total number of doses in the once only, nurse-initiated and phone order section that should have been administered since the order was written, considering the current date and time.

Question 12.6 How many doses were missed without a reason for not administering specified?

Record the **number of required doses** in the once only, nurse-initiated and phone order section that appear to have been **missed** – that is, have **not** been documented as administered and a code for not administering has **not** been specified.

Section 13 Variable dose medicine orders (NIMC acute & PBS HMC acute only)

This section applies to **all** medicine orders in the variable dose sections of **all** active charts in current use.

Question 13.1 Total number of variable dose medicine orders.

Record the **total number** of variable dose medicine **orders** currently prescribed. If reviewing more than one chart for the patient, ensure that all medicine orders for each section (on all 'active' charts in current use) are included in the total.

If there are **no** variable dose medicine orders currently prescribed, **record 0** for this question. **If 0, go to Section 14.**

Question 13.2 Record the number of orders in this section where the following errors are identified.

Reviewing all the orders in the variable dose medicines section, record the number of orders where the specified error has been identified. Take care to record the number of orders where the errors occur, not the total number of errors. Put a 0 in the box if there are no orders with the specified error.

Order **not** legible

Record the number of orders that are **not legible to both** auditors, with risk of misinterpretation identified. Legibility is referring to the handwriting only.

Order contains one or more error-prone abbreviation(s)

Record the number of orders that contain **one or more error-prone abbreviations**. *Note: See the National Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines[3] and local policy.*

Medicine name **not** complete and correct

Record the number of orders where the **medicine name** is **not** complete and correct, with potential for error identified. *Note: refer to local policy to determine if generic or brand name is considered correct.*

Route **not** complete and correct

Record the number of orders where the **route** is **not** complete and correct, with potential for error identified.

Dose **not** complete and correct for each day of administration

Record the number of orders where the **dose** is **not** complete **for each day of administration**, with potential for error identified.

Frequency **not** complete and correct

Record the number of orders where the **frequency** is **not** complete and correct, with potential for error identified.

Time to be given **not** documented

Record the number of orders where the **time to be given** has **not** been documented.

Prescriber name **not** legible on the chart

Record the number of orders where **the prescriber's name** is **not legibly** written somewhere on the chart containing the order. Prescriber name needs to be printed only once on the chart.

Order **not** signed by prescriber

Record the number of orders where the **prescriber** has **not** signed the order.

Note: Each answer should contain a number, if none of the orders contain errors, record 0.

Question 13.3 How many variable dose medicine orders contain one or more of the above errors?

Record the **number** of variable dose medicine **orders** where **one or more** of the errors listed in question 13.2 were identified. Do not record the total number of errors.

Question 13.4 Number of orders where indication is not documented.

Record the **number** of orders where the prescriber has **not** documented the indication.

Question 13.5 Total number of required doses prescribed in the variable dose section.

Record the total number of doses in the variable dose section that are required to have been administered since the order was written, considering the current date and time.

Question 13.6 How many doses were missed without a reason for not administering specified?

Record the **number of required doses** in the variable dose section that appear to have been **missed** – that is, have **not** been documented as administered and a code for not administering has **not** been specified.

Section 14 Warfarin orders (NIMC acute, NIMC long-stay, PBS HMC acute and PBS HMC long-stay only)

This section applies to **all** orders in the warfarin sections of **all** active charts in current use.

Question 14.1 Total number of orders in the warfarin section.

Record the **total number** of warfarin orders currently prescribed. Do **not** include warfarin prescribed in the regular section.

If there are **no** orders currently prescribed in the warfarin section, **record 0** for this question **and go to Q14.9**.

Question 14.2: Record the number of orders in this section where the following errors are identified.

Reviewing all the orders in the warfarin section, record the number of orders where the specified error has been identified. Take care to record the number of **orders** where the errors occur, not the total number of errors. Put a 0 in the box if there are no orders with the specified error.

Order **not** legible

Record the number of orders that are **not legible to both** auditors, with risk of misinterpretation identified. Legibility is referring to the handwriting only.

Order contains one or more error-prone abbreviation(s)

Record the number of orders that contain **one or more error-prone abbreviations**. *Note: See the National Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines[3] and local policy.*

Brand name has **not** been selected

Record the number of orders where the **brand name** is **not** selected.

Route **not** complete and correct

Record the number of orders where the **route** is **not** complete and correct, with potential for error identified.

Daily warfarin dose **not** documented and signed

Record the number of **orders** where the **daily warfarin dose** is **not** documented and signed. If one or more doses in the warfarin section are not documented and signed, count this as one incorrect order only.

Prescriber name **not** legible on the chart

Record the number of orders where **the prescriber's name** is **not legibly** written somewhere on the chart containing the order. Prescriber name needs to be printed only once on the chart.

Order **not** signed by prescriber

Record the number of orders where the **prescriber** has **not** signed the order.

Note: Each answer should contain a number, if none of the orders contain errors, record 0.

Question 14.3 How many orders in the warfarin section contain one or more of the above errors?

Record the **number** of warfarin orders where **one or more** of the errors listed in question 14.2 were identified. Do not record the total number of errors.

Question 14.4 Number of orders where INR result(s) are not documented at least once on the chart.

Record the **number** of orders where the prescriber has **not** documented the INR results.

Question 14.5 Number of orders where INR target range is not documented.

Record the **number** of orders where the prescriber has **not** documented the INR target range.

Question 14.6 Number of orders where indication is not documented.

Record the **number** of orders where the prescriber has **not** documented the indication.

Question 14.7 Total number of required doses prescribed in the warfarin section.

Record the total number of doses in the warfarin section that are required to have been administered since the order was written, considering the current date and time.

Question 14.8 How many doses were missed without a reason for not administering specified?

Record the **number of required doses** in the warfarin section that appear to have been **missed** – that is, have **not** been documented as administered and a code for not administering has **not** been specified.

Question 14.9 How many warfarin orders are prescribed in the regular medicines section?

Review the regular medicines section of **all** active charts in current use and record the number of warfarin orders prescribed in the **regular** medicines section.

Glossary and shortened forms

Term	Definition
Full audit	An NSMC Audit that includes all 14 sections on the NSMC Audit form.
Local audit	An NSMC Audit that is coordinated at a local level. This could be statewide, or at the Local Health Network or hospital level.
National audit	An audit coordinated by the Commission that all hospitals and day procedure centres in Australia are invited to take part in.
NIMC	National inpatient medication chart
NSMC	National standard medication chart
Partial audit	An NSMC Audit that does not include all sections on the form. It could be made up of one or more sections.
PBS HMC	Pharmaceutical Benefits Scheme hospital medication chart
the Commission	Australian Commission on Safety and Quality in Health Care

Appendix 1 Best practice indicators

The following are best practice indicators for the NSMC Audits.

Patient characteristics and chart type

ID number and indicator: ind i – NIMC paediatric used for patients aged 12 years and under

Rationale: The NIMC paediatric should be used to prescribe medicines for all patients aged 12 years and under. It combines the safety features of the NIMC acute with extra safety features identified as important in paediatric patients. These features include space for recording weight, the date on which the patient was weighed, height and body surface area. Where the NIMC paediatric is used for patients older than 12 years, use of the safety features specific to the NIMC paediatric will not be assessed for the audit.

Section 1 Patient ID

ID number and indicator: ind 1 – Patient identification completed correctly on all pages

ID number and sub-indicator:

- s.ind 1.1 – Patient ID section completed on all pages
- s.ind 1.2 – Handwritten patient details legible and complete
- s.ind 1.3 – Patient's name handwritten under patient identification label(s) by first prescriber.

Rationale: An incomplete or illegible patient ID or a patient ID not visible from all sections of the chart may result in medicine administration to the incorrect patient. The requirement for the prescriber to print the patient's name under a patient ID label ensures that the correct patient ID label is on the chart.

Section 2 Prescriber details

ID number and indicator: ind 2 – Prescriber details section legible and complete on PBS HMC

ID number and sub-indicator: s.ind 2.1 – All prescribers listed in prescriber details section of PBS HMC

Rationale: This section is on the front of the PBS HMC. It facilitates documentation of approved PBS prescriber details and is required for claiming eligible PBS medicines. Full prescriber details are required to confirm the prescriber's authority to prescribe and to provide contact details if follow up is required.

Section 3 Weight documentation

ID number and indicator: ind 3 – Weight and date child was weighed documented on all NIMC paediatric for patients aged 12 years and under

ID number and sub-indicator: s.ind 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)

Rationale: Dosage errors are one of the most common medication errors in paediatric patients. Each patient's actual weight should be available at the point of prescribing so that doses of medicines that are based on body weight can be calculated. A paediatric patient's weight may change through an episode of care. Completion of the date weighed field shows how recently the weight was recorded.

Section 4 Adverse drug reactions (ADRs)

ID number and indicator: ind 4 – ADR details documented completely and correctly on all charts

ID number and sub-indicator:

- s.ind 4.1 – ADR section has the medicine (or other) section and reaction type documented
- s.ind 4.2 – ADR section has the medicine and reaction type documented and is signed by person documenting the ADR

Rationale: Documentation of ADR information communicates the existence of known allergies and ADRs, or that there are no known allergies or ADRs previously experienced by the patient. This should avoid patient harm by preventing the prescribing, dispensing or administration of a medicine, or one similar to it, that has previously caused an ADR. Recording the clinician's signature assigns accountability for the information and allows for follow up, if required.

Section 5 Medication history

ID number and indicator: ind 5 – Medication history documented on chart or documented elsewhere and cross-referenced on chart

ID number and sub-indicator:

- s.ind 5.1 – Medication history documented on the chart for current episode of care
- s.ind 5.2 – Medication history cross-referenced on chart where documented elsewhere (according to local procedure) for current episode of care

Rationale: Unintentional changes to existing patient medicine regimens are a common type of medication error during transitions of care. These errors can cause patient harm during a hospital stay or after discharge. Accurate information on medicines taken before admission, an important component of medication reconciliation, should be available at the point of prescribing to inform decisions about treatment, and to improve safety and quality of care.

Section 6 VTE risk assessment and VTE prophylaxis

ID number and indicator:

- ind 6a – Medication history documented on chart or documented elsewhere and cross-referenced on chart
- ind 6b – VTE prophylaxis prescribed in VTE prophylaxis order section only

ID number and sub-indicator: s.ind 6a.1 – VTE risk assessment completed and where indicated prophylaxis prescribed

Rationale: Reducing the rate of hospital-associated VTE is a national safety and quality priority because of the strong evidence base for preventive measures and high potential for improvements in patient outcomes.

Section 7 Pharmaceutical review

ID number and indicator: ind 7 – Pharmaceutical review of all charts documented

Rationale: Review of medication charts by clinical pharmacists reduces the risk of patient harm from preventable prescribing and administration errors.

Section 8 Chart numbering

ID number and indicator: ind 8 – All charts for patients correctly numbered

Rationale: Correctly numbered charts reduce prescribing and administration errors, and improve patient safety by ensuring clarity about all available clinical information for a patient when multiple charts are in use.

Section 9 Anticoagulant education record

ID number and indicator: ind 9 – Anticoagulant education record completed for patients initiated on an anticoagulant for ongoing treatment

Rationale: Risks associated with anticoagulant use are well documented. Therefore, all patients should receive structured verbal and written information and education. Documenting on the chart that education has been conducted ensures clinicians know the patient has been instructed on safe management of the anticoagulant medicine, including any required monitoring and dose adjustments.

Section 10 Regular medicine orders

ID number and indicator:

- ind 10a – Regular medicine orders complete and correct
- ind 10b – Indication documented on orders in regular section
- ind 10c – SR boxes ticked where SR medicines prescribed
- ind 10d – Dose calculations documented on orders in regular section (NIMC paediatric only)
- ind 10e – Doses of regular medicines documented as administered (i.e. not missed) or reason for not administering specified

ID number and sub-indicator:

- s.ind 10a.1 – Orders are legible
- s.ind 10a.2 – Orders do not contain error-prone abbreviations
- s.ind 10a.3 – Medicine name complete and correct on orders
- s.ind 10a.4 – Route complete and correct on orders
- s.ind 10a.5 – Dose complete and correct on orders
- s.ind 10a.6 – Frequency complete and correct on orders
- s.ind 10a.7 – Prescriber name legible on the chart
- s.ind 10a.8 – Orders signed by prescriber

Rationale: The intended medicine, formulation, dose and frequency should be complete and correct so there is no risk that the responsible clinician will misinterpret the information when dispensing, administering or transcribing medicines. Unsafe abbreviations can increase the potential for medication errors. Documentation of indication enables the prescription to be reviewed in the context of why it was prescribed, therefore reducing the risk of inadvertent changes to therapy, misinterpretation of orders or other errors.

NIMC paediatric only: Incorrect dosing is the most common medication error reported in paediatric patients. Documentation of dose calculation enables important double-checks to be conducted by clinicians responsible for dispensing, administering or documenting medicines for patients.

Reasons for not administering must be recorded by documenting the appropriate code. Circling the code minimises the risk that it is misinterpreted as someone's initials indicating that the dose has been given.

If a clinician administers a medicine but forgets to initial the chart, the next clinician will not know if the medicine has been administered or not. This can lead to double dosing or omission of a dose.

Section 11 PRN medicine orders

ID number and indicator:

- ind 11a – PRN medicine orders complete and correct
- ind 11b – Indication documented on orders in PRN section
- ind 11c – Dose calculations documented on orders in PRN section (NIMC paediatric only)

ID number and sub-indicator:

- s.ind 11a.1 – Orders are legible
- s.ind 11a.2 – Orders do not contain error-prone abbreviations
- s.ind 11a.3 – Medicine name complete and correct on orders
- s.ind 11a.4 – Route complete and correct on orders
- s.ind 11a.5 – Dose complete and correct on orders
- s.ind 11a.6 – Frequency complete and correct on orders
- s.ind 11a.7 – Prescriber name legible on the chart
- s.ind 11a.8 – Orders signed by prescriber
- s.ind 11a.9 – Maximum PRN dose in 24 hours documented on orders

Rationale: The intended medicine, formulation, dose, frequency and minimum dosing interval should be clear so there is no risk that the responsible clinician will misinterpret the information when dispensing, administering or transcribing medicines. Unsafe abbreviations can increase the potential for medication errors. Documentation of indication enables the prescription to be reviewed in the context of why it was prescribed, therefore reducing the risk of inadvertent changes to therapy, misinterpretation of orders or other errors.

NIMC paediatric only: Incorrect dosing is the most common medication error reported in paediatric patients. Documentation of dose calculation enables the responsible clinician to do important double-checks when dispensing, administering or documenting medicines for patients.

Section 12 Once only, nurse-initiated and phone orders

ID number and indicator:

- ind 12a – Once only, nurse-initiated and phone orders complete and correct
- ind 12b – Doses of once only, nurse-initiated and phone orders documented as administered (i.e. not missed) or appropriate code for not administering specified

ID number and sub-indicator:

- s.ind 12a.1 – Orders are legible
- s.ind 12a.2 – Orders do not contain error-prone abbreviations
- s.ind 12a.3 – Medicine name complete and correct on orders
- s.ind 12a.4 – Route complete and correct on orders
- s.ind 12a.5 – Dose complete and correct on orders
- s.ind 12a.6 – Frequency complete and correct on orders
- s.ind 12a.7 – Double signatures complete on orders (phone orders only)
- s.ind 12a.8 – Prescriber name legible on the chart
- s.ind 12a.9 – Orders signed by prescriber

Rationale: The intended medicine, formulation, dose and frequency should be clear so there is no risk that the responsible clinician will misinterpret the information when dispensing, administering or transcribing medicines. Unsafe abbreviations can increase the potential for medication errors.

Phone orders require two clinicians to listen to the directions of the prescriber and document their signatures, to reduce the risk of misinterpretation of orders conveyed over the phone. Reasons for not administering must be recorded by documenting the appropriate code. Circling the code minimises the risk that it is misinterpreted as someone's initials indicating that the dose has been given. If a clinician administers a medicine but forgets to initial the chart, the next clinician will not know if the medicine has been administered or not. This can lead to double dosing or omission of a dose.

Section 13 Variable dose medicine orders

ID number and indicator:

- ind 13a – Variable dose medicine orders complete and correct
- ind 13b – Indication documented on variable dose medicine orders
- ind 13c – Doses of variable dose medicines documented as administered (i.e. not missed) or appropriate code for not administering specified

ID number and sub-indicator:

- s.ind 13a.1 – Orders are legible
- s.ind 13a.2 – Orders do not contain error-prone abbreviations
- s.ind 13a.3 – Medicine name complete and correct on orders
- s.ind 13a.4 – Route complete and correct on orders
- s.ind 13a.5 – Dose complete and correct on orders
- s.ind 13a.6 – Frequency complete and correct on orders
- s.ind 13a.7 – Time to be given documented on orders
- s.ind 13a.8 – Prescriber name legible on the chart
- s.ind 13a.9 – Orders signed by prescriber

Rationale: The intended medicine, formulation, dose and frequency should be clear so there is no risk that the responsible clinician will misinterpret the information when dispensing, administering or transcribing medicines. Unsafe abbreviations can increase the potential for medication errors.

Phone orders require two clinicians to listen to the directions of the prescriber and document their signatures, to reduce the risk of misinterpretation of orders conveyed over the phone. Reasons for not administering must be recorded by documenting the appropriate code. Circling the code minimises the risk that it is misinterpreted as someone's initials indicating that the dose has been given. If a clinician administers a medicine but forgets to initial the chart, the next clinician will not know if the medicine has been administered or not. This can lead to double dosing or omission of a dose.

Section 14 Orders in warfarin section

ID number and indicator:

- ind 14a – Warfarin orders complete and correct
- ind 14b – INR results documented on orders in warfarin section at least once on the chart
- ind 14c – INR target ranges documented on orders in warfarin section
- ind 14d – Indication documented on orders in warfarin section
- ind 14e – Doses of warfarin documented as administered (i.e. not missed) or appropriate code for not administering specified
- ind 14f – Warfarin ordered in warfarin section

ID number and sub-indicator:

- s.ind 14a.1 – Orders are legible
- s.ind 14a.2 – Orders do not contain error-prone abbreviations
- s.ind 14a.3 – Brand name selected on orders
- s.ind 14a.4 – Route complete and correct on orders
- s.ind 14a.5 – Prescriber name legible on the chart
- s.ind 14a.6 – Orders signed by prescriber
- s.ind 14a.7 – Daily doses of warfarin documented and signed on orders

Rationale: The intended formulation and dose should be clear so there is no risk that the responsible clinician will misinterpret the information when dispensing, administering or transcribing medicines. Unsafe abbreviations can increase the potential for medication errors.

Prompting at the point of prescribing for indication, target INR range and INR results will assist the attending team to make informed decisions on warfarin doses. Reasons for not administering must be recorded by documenting the appropriate code. Circling the code minimises the risk that it is misinterpreted as someone's initials indicating that the dose has been given. If a clinician administers a medicine but forgets to initial the chart, the next clinician will not know if the medicine has been administered or not. This can lead to double dosing or omission of a dose.

Sections 10–14 Medicine orders

ID number and indicator:

- ind 15 – Medicine orders complete and correct

- ind 16 – Doses of medicines documented as administered (i.e. not missed) or reason for not administering specified

Rationale: The intended medicine, formulation, dose and frequency should be complete and correct so there is less risk that the responsible clinician will misinterpret the information when dispensing, administering or transcribing medicines. Unsafe abbreviations can increase the potential for medication errors. Reasons for not administering must be recorded by documenting the appropriate code. Circling the code minimises the risk that it is misinterpreted as someone's initials indicating that the dose has been given. If a clinician administers a medicine but forgets to initial the chart, the next clinician will not know if the medicine has been administered or not. This can lead to double dosing or omission of a dose.

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