AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

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# Guide to Auditing the NIMC

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Copies of this document, and further information on the work of the Commission, can be found at www.safetyandquality.gov.au

# Contents

# 1. Introduction

This document provides guidance to Australian hospitals on how to audit the National Inpatient Medication Chart.

## 1a. NIMC auditing

The National Inpatient Medication Chart (NIMC) is the standard medication chart used in Australian hospitals. It is recommended that health service organisations audit NIMC use at regular intervals, usually yearly. Using, and auditing use of the NIMC are accrediting activities for the purposes of the National Safety and Quality in Health Service Standards.

Auditing the NIMC:

- provides a baseline for NIMC use and future quality improvement initiatives
- improves the safety of medication charting in hospitals
- evaluates the effectiveness of NIMC safety features in hospitals.

Frequency of auditing will depend on the rate of staff changes, the risk of medication misadventure and other local factors identified by the health service organisation.

However, and if significant non-compliance is identified during auditing, it is recommended that audits occur more frequently within a quality improvement cycle (e.g. plan do study act cycle) until safety feature compliance improves.

The objectives of NIMC audits are to:

- evaluate use of the NIMC safety features
- evaluate the safety and quality of prescribing and related medication documentation
- identify areas for medication management improvement.

The Australian Commission on Safety and Quality in Health Care (the Commission) periodically coordinates national NIMC audits. National audits have been previously conducted in 2009, 2010, 2011, 2012 and 2014. The Commission will notify registered users of the NIMC Audit System well in advance of any national audit being held, and all hospitals in Australia who use the NIMC are invited to participate. Free, published reports are available on the Commission's website at http://www.safetyandquality.gov.au for each previous national audit.

This guide, and all related resources, is designed solely for the NIMC including:

- 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

It is not designed for NIMC (clozapine titration) or NIMC (subcutaneous insulin).

Neither this guide, nor all related resources, is designed for medication charts other than the NIMC. Health service organisations using non-NIMC medication charts will need to develop audit tools and other support materials to evidence the safety of their charts and related systems.

## 1b. Guide to Auditing the NIMC

This document should be read by staff auditing the NIMC.

Staff auditing the NIMC should also familiarise themselves with the NIMC User Guide[1] which provides useful background information for NIMC auditing. The guide is available on the Commission web site.

Local audit teams should familiarise themselves with local medication-related procedures and guidelines such as the list of approved trade names for prescribing. If you do not have any local procedures or policies, you will need to agree some audit parameters, such as acceptable abbreviations and acceptable use of trade names. This will ensure consistency between auditors and between audits.

The following documents, which are relevant to auditing the NIMC, are available to download from the NIMC Audit System website at www.safetyandquality.gov.au/nimcaudit:

- NIMC Audit System User Guide
- NIMC Audit Spreadsheet
- Guide to Using the NIMC Audit Spreadsheet
- NIMC User Guide
- NIMC Audit Form
- Audit Summary Report Formulae

# 2. Collecting NIMC audit data

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

The **NIMC Audit Form** is a paper form for collecting data for one patient. Data collected on the NIMC Audit Form can either be entered directly into the NIMC Audit System or entered into the NIMC Audit Spreadsheet and then uploaded to the NIMC Audit System.

The **NIMC Audit Spreadsheet** is an Excel version of the NIMC Audit Form and can be saved and used locally to create and collect NIMC patient audits. It has some business rules incorporated into the spreadsheet and collates successive patient audits. When completed, audit data are exported from the spreadsheet and then uploaded to the NIMC Audit System.

The **NIMC Audit System** is a web-based application which includes an electronic version of the NIMC Audit Form and into which audit data can be entered directly.

All the audit tools, and guidance on how to use them, are available on the Commission's web site at: www.safetyandquality.gov.au/nimcaudit

Note: Some jurisdictions require a separate audit demographic form to be completed with each patient NIMC audit. If so, complete ONE copy ensuring that all details are completed.

# 3. Preparing for NIMC auditing

## 3a. Number and type of charts to audit

***First audit***

Ideally, all active NIMCs should be reviewed. This allows the identification of errors that occur infrequently and in different patient types. Where time and resources are limited, as many medication charts as possible from each ward type e.g. medical, surgical, critical care, geriatric and paediatric should be reviewed. To enable a large number of patient charts to be reviewed, the data collection may take place over a number of weeks i.e. 5 charts per week for one month.

**Table 1: Suggested audit sample size***

| Number of adult beds in hospital | Sample size |
|---|---|
| 150 or more | 20% of current patients |
| 30 -149 | 30 current patients |
| Less than 30 | All current patients |

* Suggested sample size derived from Indicators for Quality Use of Medicines in Australian Hospitals[2]

### Subsequent audits

Subsequent audits should be identical to the initial audit where possible to ensure a comparison of similar wards, patients and numbers. (However if the initial audit consisted of less than 20 charts, it is recommended that 20 charts are audited).

The burden of data collection is not insignificant. Therefore hospitals may wish to acknowledge areas of high performance in earlier audits and target subsequent audits at specific areas of concern. From time to time, partial audits can also form part of targeted interventions. While full or partial audits are possible, the main issue is not varying the individual audit data components so that meaningful measures over time can be obtained.

### 3b. Identifying auditors

To minimise observer bias, NIMC audits should be conducted by two people working together. One of the audit team should be a registered nurse as they are the main group who interpret the prescription and administration information. The second should be a pharmacist where available, otherwise a medical officer or another nurse should be part of the audit team.

Ideally the audit team who completed the initial audit should also conduct re-audits to minimise inter-auditor variability.

# 4. Beginning NIMC auditing

Complete one NIMC audit collection tool for each patient (see Section 2 for options).

NOTE: The clinical responsibilities of those auditing the charts are first and foremost. Should any errors be detected on any of the charts audited, these must be resolved.

### Patient and hospital demographic information

Complete all the demographic information requested in the top section of the page:

- state
- healthcare facility code (contact nimc.audit@safetyandquality.gov.au for the correct code)
- hospital name
- unique record (UR) number *
- gender
- ward
- bed no.
- audit date
- date of birth *
- name of reviewer 1
- name of reviewer 2
- chart type. Either: NIMC acute, NIMC long stay, NIMC paediatric or NIMC paediatric long stay

A response should be entered for each of the criteria: yes, no, unknown or a number. N/A should be recorded if the criterion is not relevant to the facility.

*To ensure confidentiality of patient information, the UR number and date of birth is not transmitted beyond the hospital, therefore neither of these fields is saved in the NIMC audit system. The electronic NIMC Audit Spreadsheet and the web-based NIMC Audit System will automatically assign an identifier to each patient audited, which hospitals can use to link patient-identifying audit information to in the future. Simply record the identifier on the screen, locally against each patient's UR. This will need to be done at the time of data entry.

## Section 1. Patient identification and weight

| | |
|---|---|
| **1.1** | **Total current medication charts (i.e. charts in use)** |
| | **Use**<br>Record the patient's total number of current medication charts in use on the day of the audit. The NIMC Audit System validates responses to this question to ensure that they are between 1 and 9. |
| | **Rationale**<br>Information on the number of active charts per patient is important information for understanding NIMC use and can help assess whether the NIMC is being used correctly. |
| **1.2** | **Patient ID complete on all pages (must include printed name if label used)** |
| | **Use**<br>Each medication chart has two points where patient identification is required, one each on pages 3 and 4 of the paper-based chart.<br>Identification details may be handwritten or a patient identification (ID) label used. If a patient ID label is used, the first prescriber must print the patient's name ensuring that the identification label is correct. It is not required to print the patient's name if the patient details are handwritten. Record yes if three of the following patient identifiers are visible and correct from all pages of all active medication charts in use on the day of the audit:<br>• medical record number (URN) or Individual Healthcare Identifier<br>• patient name (family name and given names)<br>• date of birth<br>• gender<br>• patient address |
| | **Rationale**<br>Incomplete patient identifiers or patient identification that is not visible on all sections of the chart may result in:<br>• an adverse drug event where the medication is administered to the incorrect patient<br>• a patient being prescribed or administered medication intended for another patient.<br>This is also a requirement for all hospital Pharmaceutical Benefit Scheme prescriptions on medication charts.<br>Printing of the patient name under an identification label was introduced as a compulsory safety mechanism for the prescriber to ensure that the correct patient identification was placed on the medication chart and associated prescriptions. |
| **1.3** | **Weight documented on a medication chart** |
| | **Use**<br>Record yes if the patient's weight is documented on at least one active medication chart or on a general observations chart.<br>For paediatric patients, record yes only if the patient's weight is recorded on all active medication charts . |
| | **Rationale**<br>A number of high risk medicines, and the majority of paediatric doses, are based on body weight. Inaccurate dosing may result when the actual weight is not readily available. |

## Section 2. Adverse drug reaction (ADR) details

| | |
|---|---|
| **2.1** | **ADR documentation complete on all charts (including nil known (NKDA) / unknown)** |
| | **Use**<br>Record yes if the following ADR information is documented on all active medication charts:<br>• nil known or unknown box ticked, or adverse drug reactions (ADRs) documented<br>• medicine name and reaction documented including when the patient had a previous ADR (if known)<br>• clinician signature. |
| | **Rationale**<br>Omission of ADR information risks re-prescribing and administering a medicine that has previously caused an adverse reaction or a similar agent. Recording the clinician's signature assigns accountability for the information obtained. |
| **2.2** | **Patient has previous ADR** |
| | **Use**<br>Ask the patient about their ADR history. Record yes when the patient has a known previous ADR. If the patient is unavailable, document unknown.<br>**If no or unknown, go to Question 3.1.** |
| | **Rationale**<br>Documentation of ADR details and the use of ADR alerts should prevent patients being re-prescribed, dispensed or administered a medicine to which they have previously had a reaction. |
| **2.3** | **Similar class of medicine prescribed** |
| | **Use**<br>Record yes if the patient has a medicine (or the same class of medicine) prescribed that has been identified previously as causing an ADR.<br>Where yes is recorded, document the re-prescribed medicine, the type of reaction previously experienced and if any doses have been administered.<br>**This question is mandatory where the response to 2.2 is yes. This question should be skipped if 2.2 is no or unknown.**<br>**Document additional information in the comments section at the bottom of the page.** |
| | **Rationale**<br>Documentation of ADR details and the use of ADR alerts should prevent patients being re-prescribed, dispensed or administered a medication to which they have previously had a reaction. |
| **2.4** | **If a previous ADR, do all pages have ADR alert stickers in place?** |
| | **Use**<br>Each NIMC requires an ADR alert sticker on pages 3 and 4 if an ADR is recorded. Record yes if a patient has an ADR recorded, and all active medication charts have ADR alert stickers in place. Record NA if your facility does not use ADR alert stickers or have another form of ADR alert. NB: Only include ADR stickers when there is a medicine allergy or ADR and not other allergies, such as micropore, food stuffs or insects.<br>**This question is mandatory where the response to 2.2 is yes. This question should be skipped if 2.2 is no or unknown.** |
| | **Rationale**<br>The ADR alert sticker is intended to reduce re-prescribing of medicines which have previously caused ADRs and allergic reactions. A sample NIMC ADR alert sticker (and design files) is available from the Commission web site. |

## Section 3. Medication history

| | |
|---|---|
| **3.1** | **Medication history documented on the front of the medication chart** |
| | **Use**<br>Record yes if the patient's medication history (including nil regular meds) is recorded on at least one active medication chart.<br>**If yes, go to Question 3.3.** |
| | **Rationale**<br>Accurate information on the medicines patients are taking prior to admission is an important component of the medication reconciliation process and forms a basis for future decisions about therapy. |
| **3.2** | **If no, is a medication history cross-referenced on medication chart?** |
| | Record yes if the patient's medication history is cross-referenced on at least one active medication chart, or refers to the Medication Management Plan or equivalent form.<br>**This question is mandatory where the response to 3.1 is no. This question should be skipped if the response to 3.1 is yes.** |
| | **Rationale**<br>Ensuring that critical clinical information, such as the patient's medication history, is available at the point of prescribing can improve the safety and quality of care. |
| **3.3** | **Medication Management Plan form in the end of bed folder?** |
| | **Use**<br>Record yes if there is a MMP form in the end of bed folder. |
| | **Rationale**<br>The Medication Management Plan or equivalent form can be used as an alternative to the medication chart for recording the patient's medication history as well as changes made to orders when checked with the medication chart (reconciliation) and issues identified during medication review. Documenting these processes improves communication and medication management. |
| **3.4** | **Allergies/ADR box completed on MMP Form** |
| | **Use**<br>Record yes if the allergies/ADR box on the MMP or equivalent form notes an allergy/ADR or if either the nil known or unknown boxes have been ticked.<br>**This question is mandatory where the response to 3.3 is yes. This question should be skipped if the response to 3.3 is no.** |
| | **Rationale**<br>Allergies/ADR information is obtained during the patient/carer medication history interview. New allergies/ADR information may be obtained during the admission. Note that any new information must be transferred to the medication chart. |
| **3.5** | **Number of medicines taken prior to presentation to hospital recorded on the MMP form** |
| | **Use**<br>Indicate the number of medicines listed in the medicines taken prior to presentation to hospital section of the MMP or equivalent form. If no medicines were recorded (i.e. left blank) enter the value 0 as your answer. The NIMC Audit System validates responses to this question to ensure that they are between 0 and 40.<br>**This question is mandatory where the response to 3.3 is yes. This question should be skipped if the response to 3.3 is no.** |
| | **Rationale**<br>Accurate information on the patient's medication prior to admission is an important component of the medication reconciliation process and essential for the attending team to make appropriate decisions. |

| 3.6 | Number of medicines with doctor's plan on admission completed on MMP form |
|---|---|
| | **Use**<br>Record the number of medicines listed in the medicines taken prior to presentation to hospital section with the doctor's plan on admission completed on the MMP or equivalent form.<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 40 and not greater than the response to question 3.5.<br>**This question is mandatory where the response to 3.3 is yes. This question should be skipped if the response to 3.3 is no.** |
| | **Rationale**<br>To complete the medication reconciliation process (checking the medicines taken prior to admission with the prescribed medicines), the care plan for each of the patient's prior to admission medicines has to be known. Medication reconciliation ensures the patient receives all intended medicines and reduces common errors of transcription, omission, commission, duplication, medicine-medicine and medicine-disease interactions. |
| **3.7** | **Number of medicines with reconcile column ticked on MMP form** |
| | **Use**<br>Record the number of medicines listed in the medicines taken prior to presentation to hospital section with a tick in the reconcile column of the MMP or equivalent form.<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 40 and not greater than the response to question 3.5.<br>**This question is mandatory where the response to 3.3 is yes. This question should be skipped if the response to 3.3 is no.** |
| | **Rationale**<br>Medication reconciliation ensures the patient receives all intended medicines and reduces common errors of transcription, omission, commission, duplication, medicine-medicine and medicine-disease interactions. Placing a tick in the reconcile column communicates to other clinicians that the medication reconciliation process has been completed. |
| **3.8** | **More than one source indicated on MMP form** |
| | **Use**<br>Record a yes if more than one source has been ticked in the sources of medicine list section with or without annotation of who confirmed the information and the date it was confirmed.<br>**This question is mandatory where the response to 3.3 is yes. This question should be skipped if the response to 3.3 is no.** |
| | **Rationale**<br>To ensure a complete and accurate list of medicines taken prior to presentation to hospital, confirmation with a second source is recommended. Documenting the source communicates to other clinicians the reliability of the information and enables further clarification to be made if required. |

### Section 4. Variable dose

| 4.1 | Number of variable dose medicines (variable dose and regular medicines sections) |
|---|---|
| | **Use**<br>Tally the total number of variable dose medicines prescribed in both the variable dose medicine section and the regular medicine section (include ceased orders, exclude warfarin and PRN medicines).<br>If variable dose medicines are prescribed in the regular medicines section, write the name and frequency of the medicine in the comments section on page 1 e.g. clozapine BD.<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 9. |

| | |
|---|---|
| | **If nil, go to Question 5.1.**<br>All other variable dose prescribing and administering information should be recorded in section 11, Prescribing and Administration (on page 2 of the paper-based NIMC Audit Tool or down the bottom of the screen in the online tool / NIMC audit spreadsheet). |
| | **Rationale**<br>Evidence of the volume and accuracy of variable dose medicine prescribing is important for managing NIMC use and its pre-printed variable dose medicines section. |

## Section 5. Venous thromboembolism (VTE) prophylaxis

| | |
|---|---|
| **5.1** | **VTE risk assessment documented on NIMC acute chart** |
| | **Use**<br>Record yes if both a VTE risk assessment and contraindications section is completed on at least one active NIMC acute. Record NA if a NIMC long-stay, NIMC paediatric or NIMC paediatric long-stay is in use or if there is no pre-printed VTE prophylaxis section on the NIMC acute medication chart.<br>This question is mandatory in the NIMC Audit System when chart type NIMC acute is selected. If the chart type selected is NIMC long stay, NIMC paediatric or NIMC paediatric long stay, responses are not accepted.<br>Please see rationale below for further information.<br>**If NA, go to Question 6.1.** |
| | **Rationale**<br>Reducing the rate of hospital-associated VTE is a national safety and quality priority. Measuring compliance with pre-printed NIMC prompts on the NIMC acute assists health services to manage a leading patient safety risk. |
| **5.2** | **VTE prophylaxis prescribed** |
| | **Use**<br>Record yes if VTE prophylaxis is prescribed in either the VTE section or the regular medicines section. VTE prophylaxis may include pharmacological prophylaxis, mechanical prophylaxis, or both.<br>This question is mandatory in the NIMC Audit System when the response to question 5.1 is yes or no. If the chart type selected is NIMC long stay, NIMC paediatric or NIMC paediatric long stay, or the response to question 5.1 is NA, responses are not accepted.<br>**If No, go to Question 6.1.** |
| | **Rationale**<br>Reducing the rate of hospital-associated VTE is a national safety and quality priority. Measuring compliance with pre-printed NIMC prompts on the NIMC acute assists health services to manage a leading patient safety risk. |
| **5.3** | **VTE prophylaxis prescribed in VTE section** |
| | **Use**<br>Record yes if VTE prophylaxis is prescribed in the VTE section. If multiple VTE prophylaxis orders are on the active medication chart, at least one must be in the VTE section. VTE prophylaxis may include pharmacological prophylaxis, mechanical prophylaxis or both.<br>This question is mandatory in the NIMC Audit System when the response to question 5.2 is yes. If the chart type selected is NIMC long stay, NIMC paediatric or NIMC paediatric long stay, or the response to question 5.1 is NA or the response to 5.2 is no, responses are not accepted. |
| | **Rationale**<br>Anticoagulant double dosing is a potential patient safety risk which needs to be monitored. |

## Section 6. Warfarin

| | |
|---|---|
| **6.1** | **Warfarin guidelines at end of the patient's bed or with the medication chart** |
| | **Use**<br>Record yes if warfarin guidelines are available at the end of the bed or with the medication chart for all adult patients excluding mental health, maternity and gynaecology patients. Record no if not available. Record NA where NIMC paediatric is the chart selected for auditing. |
| | **Rationale**<br>Warfarin prescribing guidelines should be available at the point of prescribing to reduce risk of unsafe prescribing. |
| **6.2** | **Number of times patient prescribed warfarin (warfarin and regular medicines sections and including ceased orders)** |
| | **Use**<br>Indicate the number of times warfarin is prescribed either in the warfarin section or the regular section. (Note that this is the number of warfarin orders and not a count of the required doses.)<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 9. The response to question 6.2 cannot be greater than the number of warfarin drug orders recorded in section 11. Prescribing and Administration.<br>If the chart type selected is NIMC paediatric or NIMC paediatric long stay, responses are not accepted.<br>**If zero, go to Question 7.1.** |
| | **Rationale**<br>Rate of warfarin prescribing provides insights into use of the pre-printed NIMC warfarin section and its adequacy. |
| **6.3** | **Number of target INR ranges documented if prescribed in warfarin section** |
| | **Use**<br>Indicate the number of times that a target INR range is documented when warfarin is prescribed in the warfarin section. (Note this is the number of times the INR range is documented and not the INR result.)<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 9. The response to question 6.3 cannot be greater than the response to 6.2.<br>If the chart type selected is NIMC paediatric or NIMC paediatric long stay, responses are not accepted. |
| | **Rationale**<br>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. |
| **6.4** | **Number of target INR ranges documented if prescribed in regular medicines section** |
| | **Use**<br>Record the number of times that a target INR range is documented when warfarin is prescribed in the regular section. (Note this is the number of times the INR range is documented and not the INR result.)<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 9. The response to question 6.4 cannot be greater than the response to 6.2. The sum of responses to 6.3 and 6.4 cannot be greater than the response to 6.2.<br>If the chart type selected is NIMC paediatric or NIMC paediatric long stay, responses are not accepted. |
| | **Rationale**<br>Prompting at the point of prescribing for indication, target INR and INR results will assist |

| | |
|---|---|
| | the attending team to make informed decisions on warfarin doses. |
| **6.5** | **Warfarin education record** |
| | **Use**<br>Record yes if the warfarin education record has been fully completed for patients prescribed warfarin.<br>If patients have previously been prescribed warfarin, they may have already received warfarin education. |
| | **Rationale**<br>Because of the well-documented risks associated with the use of warfarin, all patients should receive structured warfarin initiation including warfarin use education and a warfarin book for recording essential information. This should be documented on the medication chart as a record of completion. |

### Section 7. Sustained release

| **7.1** | **Number of sustained release medicines ordered (regular medicines section)** |
|---|---|
| | **Use**<br>Record the number of sustained release medicines prescribed in the regular medicines section (including ceased orders.)<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 19.<br>**If Nil, go to Question 8.1.** |
| | **Rationale**<br>This information provides a denominator for reporting on the sustained release medicines prescribed with the slow release box ticked. |
| **7.2** | **Number of sustained release medicines with the SR box ticked** |
| | **Use**<br>Record the number of sustained release medicines documented in the regular medicines section that have the slow release box ticked.<br>The NIMC audit System validates responses to this question to ensure that they are between 0 and 19. |
| | **Rationale**<br>If the sustained release form is not specified, then immediate release preparations may be administered in error (e.g. 3 x 80 mg normal release administered when 1 x Verapamil 240 mg SR intended). |

### Section 8. Intermittent medicines

| **8.1** | **Number of intermittent medicines ordered (i.e. weekly, fortnightly, twice weekly)** |
|---|---|
| | **Use**<br>Record the number of intermittent medicines prescribed (include ceased orders and regular medicine orders only).<br>The NIMC audit System validates responses to this question to ensure that they are between 0 and 9.<br>**If Nil, go to Question 9.1.** |
| | **Rationale**<br>This information provides a denominator for reporting on intermittent medicines correctly ordered including boxed to prevent inadvertent administration. |
| **8.2** | **Number of Intermittent medicines ordered and boxed** |
| | **Use**<br>Record the number of intermittent medications where all relevant boxes have been |

| | |
|---|---|
| | crossed out to flag doses not to be administered.<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 9. |
| | **Rationale**<br>Crossing out boxes reduces the risk of patients receiving unintended doses of medicines. |

### Section 9. Duplicated orders

| 9.1 | Number of duplicated orders |
|---|---|
| | **Use**<br>Record the number of current stat/phone/once only, regular and PRN medicine orders duplicated for the same medicine or medicine class, which would result in the patient receiving unintentional additional doses of the medicine e.g. ordering of captopril as well as lisinopril.<br>Where an order has been duplicated, document the names of the medicines in the comments section. (Note that in many instances it is acceptable to have both regular and PRN medication orders e.g. salbutamol. In such cases, the orders need to be clearly cross referenced and have a maximum PRN 24 hour dose specified).<br>The NIMC Audit System validates responses to this question to ensure that they are between 0 and 9. The comments section is mandatory when the response to question 9.1 is greater than 0. |
| | **Rationale**<br>Patients are at risk of receiving excessive doses when duplicate orders exist. |

### Section 10. Pharmaceutical review

| 10.1 | Pharmaceutical review occurred (i.e. initial/s at bottom of chart) |
|---|---|
| | **Use**<br>Record yes if the pharmaceutical review section has been initialled at least once on the medication chart regardless of patient length of stay. |
| | **Rationale**<br>Review of medication charts by clinical pharmacists (and evidenced by initialling on the medication chart) reduces the risk of patients experiencing harm from preventable prescribing and administering errors. |

## Section 11. Prescribing and administration

The following information is required to be documented separately for each medicine order i.e. stat/phone/once only, variable dose, warfarin, regular and PRN including ceased orders.

**Each column must have a response documented.**

### 11.1 Allocate a number to each order

**Use**

For example, the first order audited will be medicine order number 1, second order audited will be order number 2, etc.

**Rationale**

This information records the number of medicine orders per patient which is a denominator for several NIMC audit reports.

### 11.2 Medicine order

**Use**

Enter the relevant code from the medicine order legend to identify the section of the medication chart where the medicine is prescribed as follows:

| | |
|---|---|
| **R** | Regular |
| **P** | PRN |
| **S** | Stat / Phone / Once only |
| **V** | Variable dose |
| **W** | Warfarin |

Each order can only be attributed one type e.g. if warfarin is prescribed in the regular medicine section, record as R but if prescribed in the warfarin section record as W. If a variable dose medicine is prescribed in the regular medicine section, record as R, but if prescribed in the variable dose medicine section, record as V.

If the chart type selected is NIMC paediatric or NIMC paediatric long stay, warfarin responses are not accepted.

**Rationale**

This information records the types of medicines orders and provides a numerator and denominator for several NIMC audit reports.

### 11.3 Medicine name

**Use**

Enter the relevant code from the medicine name legend.

| Medicine name legend | | Explanation | Rationale |
|---|---|---|---|
| **C** | **Clear** | Medicine name is clear and there is no potential for error identified. | |
| **U** | **Unclear** | Medicine name is unclear to the auditor/s e.g. where the medicine order might be interpreted as another product or is illegible. The name of the medicine must be clearly identified by both auditors. | If the name of the medicine is unclear then the clinician administering the medicine may misinterpret the order and administer the wrong medicine. |
| **T** | **Trade name** | Medicine is prescribed using an unacceptable trade name i.e. not on the local list of accepted medicine trade names. A list of | The generic name should always be used when prescribing. For example, when Diclocil®, Floxsig®, Timentin® or Augmentin® is written, it may not be |

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| | | acceptable trade names should be determined prior to the audit and used to ensure consistency between auditors and between audits.<br>If W (warfarin) is selected, drug name cannot be prescribed using a Trade name, because by definition it was prescribed in the warfarin section. (If warfarin is prescribed in the Regular section, it should be captured as an "R" order). | recognised as penicillin which, if administered to a patient allergic to penicillin, could result in an ADR. While trade names may be accepted for combination medicines, using the generic name helps to identify that the medicine contains penicillin and may be the cause of an ADR. There may be many brands available for a single generic medicine. Medicines are stored, labelled, dispensed and distributed by the generic name. Trade names that sound alike and look alike can lead to medicine selection errors by nursing and pharmacy staff. |

**11.4 Route**

**Use**

Enter the relevant code from the route legend.

| Route legend | | Explanation | Rationale |
|---|---|---|---|
| **C** | **Clear and correct** | Medicine route is clear, correct and there is no potential for error identified. | |
| **M** | **Missing** | No route documented | |
| **U** | **Unclear** | Route is unclear e.g. SC can be mistaken for SL (and vice versa) while subcut is acceptable. Ordinarily, ordering two routes on the one order (e.g. IV/PO) is not considered safe as some medicines (e.g. ranitidine) have different doses depending on the route of administration. However local policy may permit multiple route ordering and should not be audited as unclear if permitted. | Abbreviations may appear to be good time savers, but if unsafe abbreviations are used they can increase the potential for medication errors. |
| **I** | **Incorrect** | Route documented is incorrect | |

**11.5 Dose**

**Use**

Enter the relevant code from the dose legend.

| Dose legend | | Explanation | Rationale |
|---|---|---|---|
| **C** | **Clear and correct** | Medicine dose is clear, correct and there is no potential for error identified. | |
| **M** | **Missing** | No dose documented. | |
| **U** | **Unclear** | Medicine doses are specified using metric and Arabic systems and unacceptable abbreviations avoided. | Many medicines come in multiple dosage forms. If the dose does not include the strength to be administered, the wrong dose may be administered e.g. 'enalapril 1 tablet each morning' could be 2.5mg, 5mg, 10mg or 20mg. Use of abbreviations such as 'U' for units can be misinterpreted as an extra zero e.g. 5000U when handwritten |

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| | | | can look like 50000. |
| **I** | **Incorrect** | Dose documented is incorrect.<br>**Special note for paediatric charts:** The dose should be the safe, total dose (with the auditor to calculate using the patient's body weight or BSA and a current paediatric dosing reference endorsed by the local drug and therapeutics committee or equivalent). | |

### 11.6 Frequency

**Use**

Enter the relevant code from the frequency legend.

| Frequency legend | | Explanation | Rationale |
|---|---|---|---|
| **C** | **Clear** | Medicine frequency is clear and there is no potential for error identified. | |
| **M** | **Missing** | No frequency documented | |
| **U** | **Unclear** | Medicine doses are specified using metric and Arabic systems and unacceptable abbreviations are avoided.<br>**Note:** If PRN is all that is documented for the frequency of a PRN medicine, this is considered a missing frequency e.g. morphine 10mg PRN **must** include a time interval i.e. morphine 10mg 4 hourly PRN.<br>Frequency is unclear if illegible or unacceptable abbreviations are used e.g. order is written using unsafe abbreviations such as 'frusemide 40mg qd' is not acceptable, it must be specified as 'frusemide 40mg mane'. The abbreviation OD is also unacceptable as it can be misinterpreted as 'BD' or 'QID'.<br>**Note:** Abbreviations such as BD, TDS or QID are considered unclear for PRN orders as hourly frequency is required. For example, if metoclopramide is prescribed 10-20 mg TDS this may result in administration of doses every 8 hours, however it may be clinically acceptable to administer this medicine more frequently and the nursing staff need adequate guidelines i.e. '10-20 mg 4-6 hourly'. | If the frequency of a dose to be administered PRN is not stated, staff may administer a medicine more frequently than recommended, resulting in the patient receiving an excessive dose. For example, morphine 10mg PRN could be administered at 15 minute intervals as no interval has been defined.<br>Use of unclear frequencies can lead to administration errors and patient harm. |
| **I** | **Incorrect** | Frequency documented is incorrect. | |
| **NA** | **Not Applicable** | Select NA for Stat/phone/once only medicines.<br>Select NA for warfarin when it is prescribed in the warfarin section. | |

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| **11.7 Dose calculation documented** | |
| | **Use**<br>Circle Y if basis for dose calculation is documented in dose calculation box (e.g. mg/kg/dose or microgram/$m^{2/}$dose). Circle N if not documented. Circle NA if not auditing the NIMC paediatric versions or in the case that a dose calculation is not required for a medication on a NIMC paediatric chart.<br>If the chart type selected is NIMC acute or NIMC long stay, the NIMC Audit System validates responses to this question to ensure that they are NA.<br>**If NA, go to question 11.9.** |
| | **Rationale**<br>Incorrect dosing is the most common medication error reported in paediatric patients. The intended dose per kilogram body weight (or dose per body surface area) and the total calculated dose should appear on all orders for paediatric patients. |
| **11.8 Dose calculation documented correctly** | |
| | **Use**<br>Circle Y if dose calculation documented is correct based on the recommended dose in a current paediatric dosing reference endorsed by the local drug and therapeutics committee or equivalent.<br>Circle N if dose calculation is incorrect. Circle NA if not auditing the NIMC paediatric versions or if a dose calculation is not required for the medicine order.<br>The NIMC Audit System validates responses to this question: auditors cannot answer NA if they answered Yes to question 11.7. |
| | **Rationale**<br>Incorrect dosing is the most common medication error reported in paediatric patients. The intended dose per kilogram body weight (or dose per body surface area) and the total calculated dose should appear on all orders for paediatric patients. |
| **11.9 Error-prone abbreviation used** | |
| | **Use**<br>Circle Y if an error prone abbreviation is used in one or more elements of the medicine order. Consider: medicine name, dose, dose form, route and frequency.<br>Circle N if an error prone abbreviation is not used.<br>See the National Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines[3]. |
| | **Rationale**<br>Abbreviations may appear to be good time savers but if not used properly they can increase the potential for medication errors. |
| **11.10 Indication documented** | |
| | **Use**<br>Circle Y if indication is documented, circle N if not documented or circle NA for stat/phone/once only medicine orders. |
| | **Rationale**<br>The prescription can be reviewed in the context of why it was prescribed for that particular patient, thereby reducing the risk of inadvertent cessation of therapy or other error e.g. gabapentin being used for neuropathic pain or epilepsy requiring different dosing, lasix being misread as losec and vice versa. |

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| **11.11 Pharmacy annotation** | |
| | **Use**<br>Circle Y if a pharmacist has annotated the order e.g. clarified any ordering details including medication name, frequency, and administration information as well as supply information. Circle N if there is no annotation evident on the chart. |
| | **Rationale**<br>Clarification and review of medicine orders, and provision of information by clinical pharmacists, reduces the risk of patients experiencing harm from preventable prescribing and administering errors. |
| **11.12 Prescriber signature** | |
| | **Use**<br>Circle Y if the medication order has been signed by the prescriber or circle N if not signed. Note that a doctor's signature is required within 24 hours of a telephone order. |
| | **Rationale**<br>State and territory legislation requires medicine orders to be signed by a medical practitioner. This excludes standing orders and medicines approved for prescribing by nurse practitioners. |
| **11.13 Prescriber name clear** | |
| | **Use**<br>Circle Y if the prescriber's name is clear. Prescribers should print their surname at least once on the medication chart to enable other clinicians to identify their signature. Circle N if not clear. |
| | **Rationale**<br>The prescriber must be identifiable in order to allow other clinicians to contact the prescriber should orders require clarification. |
| **11.14 Frequency matches administration time** | |
| | **Use**<br>Circle Y if administration times correlate with frequency prescribed or circle N if times do not correlate with frequency e.g. prescriber ordered metoprolol TDS and administration times entered as BD.<br>If times do not correlate with frequency, document who entered the administration times (i.e. doctor, nurse or pharmacist) in comments section on page 1 e.g. Question 11.14 nurse entered administration times incorrectly.<br>Circle NA for stat/phone/once only, warfarin (when prescribed in Warfarin section) and PRN medicines. |
| | **Rationale**<br>The administration times must be entered on the chart by the prescriber at the same time as the frequency. Many medicine errors have been reported in which nurses interpreted the frequency ordered by the prescriber incorrectly and write wrong administration times on the chart e.g. frequency ordered QID but written as 0800, 1400 and 2200. |
| **11.15 Medicine ceased** | |
| | **Use**<br>Circle Y if the drug has been ceased or circle N if still an active order. Circle N for stat/phone/once only orders. |
| | **Rationale**<br>This audit data element provides a denominator for calculating medicines correctly ceased (see 11.6 below). |

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| **11.16 Medicine ceased correctly** | |
| | **Use**<br>Circle Y if the medicine has been ceased correctly, circle N if not ceased correctly.<br>Responses to this question must be Y or N when the response to 11.15 was Y.<br>Circle NA if the medicine is not ceased (that is, auditors must select NA if their response to 11.15 was N).<br>Note: When a medicine is ceased, the original order must not be obliterated. The prescriber must draw a clear line through the order in both the prescription and the administration record sections, taking care that the line does not cross into other orders. The prescriber must write the reason for changing the order (e.g. cease, written in error, increased dose etc.) at an appropriate place in the administration record section and then date and initial the entry. |
| | **Rationale**<br>If an order has not been clearly ceased, additional dose/s may be administered erroneously. |
| **11.17 Doses required** | |
| | **Use**<br>Record the total number of doses that should have been administered from the commencement of the chart to the time of the audit by counting the administration boxes. Include stat/phone/once only medicines.<br>Enter 0 for PRN medicines. PRN medicines are excluded from this question. |
| | **Rationale**<br>This audit data element provides a denominator for calculating total doses administered as prescribed. |
| **11.18 Doses administered** | |
| | **Use**<br>Record the number of doses that have been administered, including doses that have a reason for not administering code documented.<br>Enter 0 for PRN medicines. PRN medicines are excluded from this question.<br>The administration record should be initialled when the medicine is administered or an administration code (circled and un-circled) documented. |
| | **Rationale**<br>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. |
| **11.19 If PRN, max dose documented** | |
| | **Use**<br>Circle Y if each PRN medicine order has a PRN 24 hours maximum dose documented, N if no maximum dose documented and NA for stat/phone/once only, variable dose, warfarin and regular medicines. |
| | **Rationale**<br>Some PRN medicines may need to be given frequently but have a maximum dose that can safely be given in any 24 hour period. For example, if diazepam 5-10mg is ordered every 2-3 hours for agitation, the prescriber might want to limit a patient to 40mg in every 24 hour period to prevent any adverse effects, e.g. respiratory depression. |

# 5. References

1.Australian Commission on Safety and Quality in Health Care. National Inpatient Medication Chart User Guide. Sydney. ACSQHC, 2016.

2.NSW Therapeutic Advisory Group. Indicators for Quality Use of Medicines in Australian Hospitals, 2007.

3. Australian Commission on Safety and Quality in Health Care. Recommendations for Terminology, Abbreviations and Symbols used in Medicines Documentation. Sydney. ACSQHC, 2016.