AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

Guide to Auditing the NIMC

For NIMC, long-stay, private hospital and paediatric versions

DATE	VERSION	VERSION TITLE	REVISION DESCRIPTION	AUTHOR
15/08/11	1.1	Guide to Auditing the NIMC, for NIMC, long stay, private hospital and paediatric versions	Change advice on audit education requirement	G. Bedford
15/04/12	1.2	Guide to Auditing the NIMC ,for NIMC, long stay, private hospital and paediatric versions	Updated *Error Prone Abbreviations* section, ACSQHC web links to NIMC support materials	A. Wai
30/07/12	1.3	Guide to Auditing the NIMC ,for NIMC, long stay, private hospital and paediatric versions	Updated details on Adverse Drug Reaction (ADR) alert stickers	A. Wai

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This document is based on a guide developed by the Safe Medication Practice Unit, Medication Services Queensland, Queensland Health for use in Queensland hospitals. The Australian Commission on Safety and Quality in Health Care acknowledges the significant work of Medication Services Queensland in the development of the original document and the support provided in the development of this document.

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

Other resources available from www.safetyandquality.gov.au include:
National Inpatient Medication Chart
National Inpatient Medication Chart long-stay
National Inpatient Medication Chart paediatric
National Inpatient Medication Chart long-stay paediatric
National Inpatient Medication Chart private hospital
National terminology, abbreviations and symbols to be used in prescribing and administering medicines in Australian Hospitals
National Inpatient Medication Chart User Guide
National Inpatient Medication Chart Local Management Guidelines

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1. Introduction

Auditing National Inpatient Medication Charts

Following implementation of the National Inpatient Medication Charts (NIMC), it is recommended that re-audits are completed at regular intervals. However, if significant non-compliance with the chart's safety features is identified during the audits, it is recommended that audits occur more frequently within a quality improvement cycle (e.g. Plan Do Study Act cycle) until compliance with the safety features of the chart improves.

The objectives of the audits are to:

- Evaluate the effect of the medication chart, and the implementation process, on the safety and quality of prescribing and medication documentation;
- Identify further areas for improvement in medication management.

The nationally coordinated NIMC audit occurs every two years starting from 1 August to 30 September 2012.

2. Audit tool form

National Inpatient Medication Chart Audit Form (paper-based) is available to collect audit data. The audit form can be used to audit the NIMC and the paediatric versions of the chart. The Audit form is available on the Commission's website at: www.safetyandquality.gov.au/wp-content/uploads/2012/02/NIMC-Audit-Form.pdf

Electronic versions of the audit form entitled *NIMC Audit Spreadsheet* and web-based *NIMC Audit System* are also available on the Commission web site.

Local criteria can be included in the audit, using the 'Comments' section on page 1 of the form to document the information e.g. height. (These additional criteria should also be listed on form A.) In addition, the comments section of the form can be used to document examples of errors identified during the audit. This information can be included in the compiled audit report.

Legend

A legend has been included to assist you in determining the appropriate responses to each audit criteria.

3. Audit instructions

1. This Guide should be read by staff completing the audits. The *NIMC User Guide* also provides useful background material. The guidelines are available at: www.safetyandquality.gov.au/publications/national-inpatient-medication-chart-audit-system-user-guide/
2. Read local medication related procedures and guidelines e.g. the approved trade names list. If you do not have any local policies, you will need to define acceptable abbreviations to use for all audits. This will ensure consistency between auditors and between audits. Refer to the *National terminology, abbreviations and symbols*[1] document which is available at: www.safetyandquality.gov.au/publications/national-recommendations-for-user-applied-labelling-of-injectable-medicines-fluids-and-lines/
3. The audit team decides the number of charts to audit. Refer to the section below titled 'Number and type of charts to audit'.
4. Enter the state, hospital, ward, date, gender, date of birth (DOB) reviewer(s) name(s) and unique record (UR) number on the front page of the NIMC Audit form/tool.

A response should be entered for each of the criteria,

i.e. yes, no, unknown or a number.

'N/A' should be recorded if the criterion is not relevant to the facility.

Number and type of charts to audit

Initial audit

Ideally, all available NIMC 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, paediatric etc) should be reviewed in order to evaluate any significant changes to medication safety. 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

Where possible these should be identical to the initial audit 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). Ideally the same team who completed the initial audit should also conduct reaudits to minimise variability in data collected.

However, 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. Time to time part audits can also form part of targeted interventions. While full or part audits are possible, the main issue is not varying the individual audit data components so that meaningful measures over time can be obtained.

Who should complete the audit?

To minimise observer bias the audit should be conducted by two people. A registered nurse must be involved as they are the key people who interpret the prescription and administration information. A pharmacist should assist where available, otherwise a medical officer or another nurse should be a part of the audit team.

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

It is recommended that all auditors read the *Guide to Auditing the NIMC* prior to commencing the audit.

4. Data collection

Form A - Audit demographics

Some jurisdictions require a separate audit demographic form to be completed. If so, complete ONE copy ensuring that all details are completed.

Form B - National Inpatient Medication Chart Audit Form

Complete one copy for each patient.

Complete all the information requested in the top section of the page. I.e.:

- State
- Hospital
- Unique Record (UR) number
- Gender
- Ward
- Bed No.
- Audit Date
- Date of birth
- Name of reviewer 1
- Name of reviewer 2
- Chart type (e.g. NIMC, NIMC Paediatric version)

To ensure confidentiality of patient information included in the NIMC Audit, the UR number and date of birth of each patient collected on the paper audit form will not be transmitted beyond the hospital. The electronic NIMC Audit Spreadsheet and the web-based NIMC Audit System will automatically assign individual ID de-identifying each patient.

1. Patient Identification & Weight

1.1 Total current *Medication Charts* (i.e. charts in use)
Record the total number of current medication charts i.e. charts in use on the day of the audit.

1.2 *Patient ID* complete on all pages (must include printed name if label used)
Each medication chart has **two** points where patient identification is required i.e. page 3 and page 4.

Identification details may be handwritten or a patient identification (ID) label (UR sticker) 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.

To be given a 'Yes' the following patient identification information must be visible and correct on all pages of the medication chart:

- Unique Record (UR) number
- Patient name (family name and given name)
- Patient address
- Date of birth
- If a patient ID label is used the first prescriber **must** print the patient's name

Rationale: *Incomplete patient identifiers or patient identification that is not visible on all sections of the chart may result in:*

- *an adverse drug event where the medication is administered to the incorrect patient*
- *a patient being prescribed or administered medication intended for another patient.*

This is also a safety requirement for all hospital Pharmaceutical Benefit Scheme prescriptions. Medicare Australia identified that patients were at risk of from incorrect identification labels being placed on prescriptions.

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/prescription.

1.3 *Weight* documented on a *Medication Chart*

Record 'Yes' if the patient's weight is documented on at least one medication chart currently in use. For paediatric patients record 'Yes' only if the patient's weight is recorded on **all** medication charts currently in use.

Rationale: *A number of high risk medications, and the majority of paediatric doses, are based on bodyweight. Inaccurate dosing may result when the actual weight is not readily available.*

2. Adverse Drug Reaction (ADR) Details

2.1 *ADR* documentation complete on all charts (including nil known (NKDA) / unknown)

Record 'Yes' if the following are documented on all current medication charts:

- Nil known or unknown box ticked, or adverse drug reactions (ADRs) documented
- Drug name and reaction documented when the patient has had a previous ADR
- Clinician signature.

Rationale: *Omission of ADR information risks re-prescribing and administering a medicine that has previously caused an adverse reaction or a similar agent. Recording of the clinician's signature assigns accountability for the information obtained.*

2.2 Patient has previous *ADR*

Ask the patient about their ADR history. Record 'Yes' when the patient has a known previous ADR. If the patient is unavailable, document 'unknown'.

If 'No' or 'Unknown' for question 2.2, please proceed to question 3.1.

2.3 Similar class of medicine prescribed

(Document drug reaction and re-prescribed medicine in Comments section at bottom of page)

Record 'Yes' if the patient has a medication (or the same class of medication) prescribed that has been identified previously as causing an ADR.

Where 'Yes' is recorded, document the name of the allergen, the re-prescribed medication, the type of reaction previously experienced and if any doses have been administered.

Rationale: *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?

Each National Inpatient Medication Chart has **two** locations where an ADR alert sticker is required i.e. on pages 3 and 4. Record 'Yes' if a patient has an ADR recorded, and all current medication charts have ADR alert stickers in place on pages 3 and 4. Record 'NA' if your facility does not use ADR alert stickers or have another form of ADR alert.

NB: Only include ADR stickers where there is a **drug** allergy/ADR and not other allergies e.g. micropore, food, bees, etc.

Rationale: *The ADR alert sticker is intended to 1) Draw the attention of prescribers, pharmacists, nurses and allied health staff to previous patient adverse drug reactions and allergies; and 2) Reduce re-prescribing drugs which have previously caused ADRs and allergic reactions.*

Sample NIMC ADR alert sticker design files are available from the Commission web site at www.safetyandquality.gov.au/our-work/medication-safety/medication-chart/support-material/nimc-adverse-drug-reaction-alert-sticker/

3. Medication History

3.1 *Medication History* documented on the front of the *Medication Chart*
Record 'Yes' if the patient's medication history (including 'nil regular meds') is recorded on at least one medication chart that is currently in use.
(If Yes, go to question 3.3)

Rationale: *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 medication chart that is currently in use i.e. see previous medication chart or refer to the Medication Management Plan, medication history/reconciliation form.

3.3 *Medication Management Plan (MMP) Form* in the 'end of bed' folder?
Record 'Yes' if there is a MMP form in the end of bed folder.
(If No, go to question 4.1)

Rationale: *The Medication Management Plan (or medication history/reconciliation form) can be used as an alternative to the medication chart to document 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*
Record 'Yes' if the Allergies/ADR box contains an allergy/ADR or the 'nil known' or 'unknown' box has been ticked.

Rationale: *Allergies/ADR information is obtained during the patient/carer medication history interview. New Allergies/ADR information may be obtained.*

NB: Any new information must be transferred to the medication chart.

3.5 No. (Number of) medicines taken prior to presentation to hospital recorded on the *MMP Form*
Indicate the number of **medicines** listed in the 'medicines taken prior to presentation to hospital' section of the MMP form. If no medicines were recorded (i.e. left blank) enter the value '0' as your answer.

Rationale: *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 No. (Number of) medicines with *Dr's Plan on Admission* completed on *MMP Form*
Record the number of **medicines** listed in the 'medicines taken prior to presentation to hospital' section with the **'Dr's Plan on Admission'** completed on the MMP / medication reconciliation form.

Rationale: *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, drug-drug and drug-disease interactions.

3.7 No. (Number) of medicines with *Reconcile* column ticked on *MMP Form*
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 / medication reconciliation form.

Rationale: *Medication reconciliation ensures the patient receives all intended medicines and reduces common errors of transcription, omission, commission, duplication, drug-drug and drug-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*
Record a 'Yes' if more than one source has been ticked in the **'Sources of Medicine List'** box with or without annotation of who confirmed the information and the date it was confirmed.

Rationale: *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.*

4. Variable Dose

4.1 No. (Number) of *Variable Dose* medications (Variable Dose & Regular Medications sections)
Tally the total number of variable dose medicines prescribed in both the *Variable Dose Medication* section and the *Regular s*ection. (Include ceased orders, exclude Warfarin and PRN medications.)

If variable dose medicines are prescribed in the *Regular s*ection, write name and frequency of the medicine in the comments section of page 1 e.g. clozapine BD.
(If Nil, go to question 5.1)

All other Variable Dose prescribing and administering information to be recorded on page 2 of the audit form/tool.

5. Venous thromboembolism (VTE) prophylaxis

5.1 VTE risk assessment documented on any medication chart
Record 'Yes' if both a VTE risk assessment and contraindications section is completed **on at least one** medication chart that is currently in use. Record NA if a long stay NIMC or paediatric NIMC.
(If NA, go to question 6.1)

5.2 VTE prophylaxis prescribed
Record 'Yes' if VTE prophylaxis is prescribed in either the VTE section or the Regular Order section. VTE prophylaxis may include pharmacological prophylaxis, mechanical prophylaxis, or both.
(If 'No', go to question 6.1)

5.3 VTE prophylaxis prescribed in *VTE* Section
Record 'Yes' if VTE prophylaxis is prescribed in the VTE section. If multiple VTE prophylaxis orders are on the current medication chart, at least one must be in the VTE section. VTE prophylaxis may include pharmacological prophylaxis, mechanical prophylaxis or both.

6. Warfarin

6.1 *Warfarin Guidelines* at end of the patient's bed or with *Medication Chart*
Record 'Yes' if the Warfarin Guidelines are available at the end of the bed and /or with the medication chart for all adult beds excluding mental health, maternity, and gynaecology and 'No' if not available. Record 'NA' for paediatric patients.

Rationale: *Warfarin prescribing guidelines should be available at the point of prescribing to reduce risk of unsafe prescribing.*

6.2 No. (Number of) times patient prescribed Warfarin (Warfarin & Regular Order sections including ceased orders)
Indicate the number of times warfarin is prescribed either in the *Warfarin* section or the *Regular* section of the chart. (Note this is the number of Warfarin prescriptions/orders on the NIMC and not count of doses.)
(If zero, go to question 7.1)

6.3 No. (Number) of *Target INR* ranges documented if prescribed in Warfarin Section
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.)

Rationale: *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 No. of *Target INR* ranges documented if prescribed in Regular Section
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.)

Rationale: *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
Record 'Yes' if the *Warfarin Education Record* has been fully completed for patients prescribed warfarin.

Rationale: *Because of the well-documented risks associated with the use of warfarin, all patients should receive counselling about the use of warfarin and should be given warfarin education materials. This should be documented on the medication chart as a record of completion.*

All warfarin prescribing and administration information (using warfarin and regular order sections) should be audited and recorded on page 2 of the audit form/tool.

7. Sustained Release

7.1 No. (Number of) Sustained Release medications ordered (Regular Medications section)
Record the number of sustained release medications prescribed in the *Regular Medications* section of the chart (including ceased orders.)
(If Nil, go to question 8.1)

7.2 No. (Number of) *Sustained Release* medications with *SR* box ticked
Record the number of sustained release medications documented in the *Regular Medications* section of the chart that have the SR box ticked.

Rationale: *If the sustained release form is not specified, then immediate release preparations may be administered in error (e.g. 3x80mg normal release administered when 1 x Verapamil 240mg SR intended).*

8. Intermittent Medications

8.1 No. (Number of) *Intermittent* medications ordered (i.e. weekly, fortnightly, twice weekly),
Record the number of medicines prescribed intermittently. (Include ceased orders and regular medication orders only.)
(If Nil, go to question 9.1)

8.2 No. (Number of) *Intermittent* medications ordered and 'boxed'
Record the number of intermittent medications where all relevant boxes have been crossed out to flag dose(s) not to be administered.

Rationale: *Crossing out boxes reduces the risk of patients receiving unintended doses of medicines.*

9. Duplicated Orders

9.1 Number of Duplicated orders
Record the number of current *Once Only, Stat, Telephone, Regular,* and *PRN* medication orders duplicated for the same medication or class of medication, which would result in the patient receiving unintentional additional doses of the medication, e.g. ordering of captopril as well as lisinopril.

Where an order has been duplicated, document the names of the medicines in the comments section. (NB In many instances it is acceptable to have both regular and PRN medication orders eg Salbutamol. In such cases the orders need to be clearly cross referenced and have a maximum dose specified in PRN order).

Rationale: *Patients are at risk of receiving excessive doses when duplicate orders exist.*

10. Pharmaceutical Review

10.1 *Pharmaceutical Review* occurred (i.e. initial/s at bottom of chart)
Record 'Yes' if the *Pharmaceutical Review* section has been initialled at least once on the medication chart regardless of patient length of stay.

Rationale: *Review of medication charts by clinical pharmacists reduces the risk of patients experiencing harm from preventable prescribing and administering errors.*

11. Prescribing and Administration

The following information is required to be documented separately for each medication order i.e. *Once Only/Stat, Variable Dose, Warfarin, Regular* and *PRN*– **including ceased orders.**

Each column must have a response documented.

11.1 Allocate a number to each order

E.g. the first order reviewed will be Order No. 1, second order reviewed – Order No. 2 etc.

11.2 Drug Order (include ceased orders)

Enter the relevant code from the *Drug Order* legend to identify the **section** of the medication chart **where the medication is prescribed**:

Drug order legend	
R	***Regular***
P	***PRN***
S	***Stat/Once Only/telephone***
V	***Variable dose***
W	***Warfarin***

NB: One order can only be attributed one type e.g.

- If warfarin is prescribed in the *Regular* section of the chart record as R, if prescribed in *Warfarin* section record as W
- If variable dose medication is prescribed in the *Regular* section record as R, if variable dose medication prescribed in *Variable dose* section record as V

11.3 Drug Name (include ceased orders)

Enter the relevant code from the *Drug Name* legend.

Drug name legend		Explanation	Rationale
U	**Unclear**	Use if the name of the medicine is unclear to the auditor/s e.g. where the medication 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 the clinician administering the medicine may misinterpret the order and administer the wrong medication.
T	**Trade name**	Indicate if the medication name is prescribed using an unacceptable trade name i.e. not on list of accepted drug trade names for your hospital. A list of acceptable trade names should be determined prior to the audit and used for future audits to ensure consistency between auditors and between audits.	The generic name should always be used when prescribing. For example, where Diclocil®, Floxsig®, Timentin® or Augmentin® is written, it may not be 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 medications, using the generic name helps to identify that the medication contains penicillin *and may be the cause of an ADR*. There may be many brands available for a single generic medication. Medicines are stored, labelled, dispensed and distributed by the generic name. Trade names that sound alike and look alike can lead to medication selection errors by nursing and pharmacy staff.
C	**Clear**	If medication name is clear and no potential for error identified.	

11.4 Route (include ceased orders)
Enter the relevant code from the *Route/Dose/Freq* legend.

Route legend		Explanation	Rationale
C	**Clear and correct**	If medication 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) - 'subcut' is acceptable. The practice of 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.	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 (include ceased orders)
Enter the relevant code from the *Route/Dose/Freq* legend.

Dose legend		Explanation	Rationale
C	**Clear and correct**	If medication dose is clear, correct and there is no potential for error identified.	
M	**Missing**	No dose documented	
U	**Unclear**	Medication doses must be specified using metric and Arabic systems. Abbreviations should be 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 are can be misinterpreted as an extra zero e.g. 5000U when handwritten can look like 50000.
I	**Incorrect**	Dose documented is incorrect. **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).	

11.6 Frequency (include ceased orders)
Enter the relevant code from the *Frequency* legend.

Frequency legend		Explanation	Rationale
C	**Clear**	If medication frequency is clear and there is no potential for error identified.	
M	**Missing**	No frequency documented	
U	**Unclear**	Medication doses must be specified using metric and Arabic systems. Abbreviations should be avoided. **Note:** For PRN medications, if *PRN* is all that is documented for the frequency this is considered a missing frequency e.g. morphine 10mg PRN **must** include a time interval i.e. morphine 10mg 4 hourly PRN. Frequency is unclear if illegible or unacceptable abbreviations are used (e.g. order is written using unsafe abbreviations i.e. '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'. **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 medication 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, nursing 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. Use of unclear frequencies can lead to administration errors and patient harm.
I	**Incorrect**	Frequency documented is incorrect.	
NA	**Not Applicable**	If Stat/Once Only medication, Warfarin when prescribed in Warfarin section and Variable Dose medication when prescribed in the Variable Dose Section	

11.7 Dose Calculation Documented (include ceased orders)

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.

Rationale: *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 is Correct (include ceased orders)

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. **Circle N** if dose calculation is incorrect. **Circle NA** if not auditing the NIMC paediatric versions or if calculation documentation is not required for the medication order.

Rationale: *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 Abbreviations used

Circle Y if an error prone abbreviation is used, **circle N** if an error prone abbreviation is not used.

Examples of error prone abbreviations

Error prone abbreviation	Intended meaning	Misinterpretation	Correct abbreviation
Ug, mcg or µg	microgram	Mistaken for milligram when handwritten	microgram or microg
U or u	unit	Mistaken as the numbers '0' or '4', causing a 10-fold overdose or greater (e.g. 4U seen as '40' or 4u seen as '44').	unit(s)
OD, od or d	Once a day Once daily	Mistaken for twice a day **d** is easily missed	daily or the specific time
QD or qd	Every day	Mistaken as qid (four times a day)	daily
Q4h	Every 4 hours		Every 4 hrs, 4 hourly, 4 hrly
SC	subcutaneous	Mistaken for sublingual	subcut or subcutaneous
SL or S/L	sublingual	Mistaken for SC and interpreted as subcutaneous	subling or sublingual
No zero before decimal point (*e.g. .5mg*)	0.5mg	Misread as 5mg	0.5 mg or write 500 microgram or 500 microg
Trailing zero after decimal point(*e.g. 5.0mg*)	5mg	Misread as 50mg	Do not use trailing zero after decimal points after whole numbers

Hospitals may wish to develop more extensive lists of error prone abbreviations. Refer to the *National terminology, abbreviations and symbols for use in prescribing and administering medicines in Australian Hospitals.*[1]

***Rationale**: 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 (include ceased orders)

This field **must** be marked **Not Applicable** for **Stat/Once Only medications**

Circle Y if indication is documented, **circle N** if not documented or **circle NA** for *Stat/Once Only* medication.

***Rationale:** The prescription can be reviewed in the context of why it was prescribed for that particular patient, therefore 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.*

11.11 Pharmacy Annotation (include ceased orders)
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 no annotation is absent.

***Rationale:** Clarification and review of medication 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 (include ceased orders)
Circle Y if the medication order has been signed by the prescriber or **circle N** if not signed.

Note: A doctor's signature is required within 24 hours of a telephone order.

***Rationale:** State and Territory legislation requires medication orders to be signed by a medical practitioner. This excludes standing orders and drugs approved for prescribing by nurse practitioners.*

11.13 Prescriber Name Clear (include ceased orders)
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:** The prescriber must be identifiable in order to allow nursing, pharmacy or other medical staff to contact the prescriber should orders require clarification.*

11.14 Frequency Correlates with Administration Time (include ceased orders)

This field **must** be marked **Not Applicable** for **Stat/Once Only**, **Warfarin when prescribed in Warfarin section**, and **PRN medications**

Circle Y if times correlate with frequency or **circle N** if times do not correlate with frequency e.g. prescriber ordered metoprolol TDS and administration times entered as BD.

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 “Frequency Correlates with Administration Time” nurse entered administration times incorrectly.

NA = Not Applicable: Stat/Once Only, Warfarin (when prescribed in *Warfarin* section) and PRN medications.

Rationale: *The administration times must be entered on the chart by the prescriber at the same time as the frequency. Many medication errors have been reported where nurses have interpreted the frequency ordered by the prescriber incorrectly, and written wrong times on the chart e.g. frequency ordered QID – times written as 0800, 1400 and 2200.*

11.15 Drug Ceased
Circle Y if the drug has been ceased or **circle N** if still an active order.

11.16 Drug Ceased Correctly (include ceased orders)

This field **must** be marked ‘**NA’** if the medication is **not ceased**

Circle Y if medication has been ceased correctly, **circle N** if incorrect and **circle NA** if medication not ceased.

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 impinge on other orders. The medical officer 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, date and initial the entry.

Rationale: *If an order has not been clearly ceased additional dose/s may be administered.*

11.17 Doses Required (include ceased orders)

This field **must** be marked **‘0’ (zero)** for **PRN medication.**

Record the number of doses that **should have been administered**. Count all 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/Once Only medication.

11.18 Doses administered (include ceased orders)
Record the number of doses that **have been administered**, including doses that have a ‘reason for not administering’ code documented.

Note: Administration record should be signed when the medication has been administered or an administration code (circled and un-circled) documented.

Rationale: *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 (include ceased orders)

This field **must** be marked **'NA'** for **Stat/Once Only**, **Variable Dose**, **Warfarin** and **Regular medications**

Circle Y if a *PRN* medication order has the maximum dose documented, N if no maximum dose documented and NA for Stat/Once Only, Variable Dose, Warfarin and Regular medication.

Rationale: *Some PRN medicines may need to be given frequently, but have a maximum dose that can safely to 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.*

Each column must have a response documented

5. References

1. Australian Commission on Safety and Quality in Health Care. National terminology, abbreviations and symbols to be used in the prescribing and administering of medicines in Australian hospitals, 2011.
2. New South Wales Therapeutic Advisory Group. *Indicators for Quality Use of Medicines in Australian Hospitals*, 2012.