



Recommendations for
**terminology, abbreviations
and symbols** used in
medicines documentation

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AUSTRALIAN COMMISSION
ON SAFETY AND QUALITY IN HEALTH CARE

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1. Introduction

This document is a revision of the *Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines*.^[1]

The document has been modified by the Australian Commission on Safety and Quality in Health Care (the Commission) based on reported adverse events and international trends in error-prone abbreviations. This document aligns with information outlined in the *National guidelines for the on-screen display of clinical medicines information*.^[2]

Medication errors are one of the most commonly reported clinical incidents in acute health care settings and, while rates of serious harm are low, their prevalence is of concern particularly as many are preventable. One of the major causes of medication errors remains the ongoing use of potentially dangerous abbreviations and dose expressions,^[3] with error-prone abbreviations being used in 8.4% of in-hospital handwritten medication orders.^[4]

An abbreviation, term or symbol used by a prescriber may mean something quite different to the person interpreting the medicine order. Abbreviations that appear unclear, ambiguous or incomplete may be misunderstood, and when combined with other words or numerals may appear as something altogether unintended. These terminologies are error-prone and are a critical patient safety issue.

In order to eliminate the use of ambiguous error-prone terminology and promote patient safety, this document sets out:

- principles for safe, clear and consistent terminology for medicines
- safe terms, abbreviations and dose designations for medicines.

While abbreviations may be a timesaving convenience, their routine use does not always promote patient safety.^[5] Patients and their carers have the right to understand which medications are being prescribed and administered to them. Using codes or an outmoded language is not acceptable.

1.1 Application of these recommendations

The principles and list of safe terms, abbreviations and dose designations apply to *all* medicine orders and medicines documentation. This includes all handwritten, pre-printed or digitally generated medicine-related material used in hospitals or health services.

As health services move from paper-based to digital medication management systems, efforts should focus on integrating principles from the Commission's *National guidelines for the on-screen display of clinical medicines information*. Hybrid versions of these systems may be in use, for example, where medicine orders are digitally generated and printed to paper. Health services with hybrid systems will find this document useful to support safe prescribing, administration and documentation of medicines-related information in the interim.

1. Introduction

1.2 Limitations, implementation and monitoring

This document does not aim to be an exhaustive list of all terminologies considered safe. The Institute for Safe Medication Practices (ISMP) is a peak body based in America focused solely on improving the safety of medication systems and medicines use. The ISMP maintains a complete list of terminologies known to be error-prone.^[6]

Where health service organisations wish to include additional terminologies considered safe, their clinical governance groups should apply the *Principles for safe, clear and consistent terminology for medicines* before these terminologies are accepted and included in local policy. These governance groups should continue to monitor incidents associated with prescribing terminology.

In most cases, this document aligns with recommendations described in the *National guidelines for the on-screen display of clinical medicines information* and Australian Medicines Terminology.^[7] However, there are some differences that may be due to supporting evidence for handwritten orders or ‘real-world’ practicalities such as the difference between handwriting information on a piece of paper with limited space versus presenting it on-screen where these limitations do not apply.

Monitoring the use of error-prone abbreviations

Use of error-prone terminologies within health service organisations should be targeted as part of a comprehensive program of continuous quality improvement activities. The *National Quality Use of Medicines Indicators for Australian Hospitals Indicator 3.3: Percentage of medication orders that include error-prone abbreviations* may assist organisations to assess ongoing progress and performance.^[8] Use of error-prone abbreviations may also be monitored through the National Inpatient Medication Chart Audit.^[9]

This document is valid as at October 2016 and may be modified based on issues arising from ‘error-prone’ abbreviations. Requests for additions to this list will be considered by the Commission. Evidence or information regarding the potential safety risks should be emailed to mail@safetyandquality.gov.au.

2. Principles for safe, clear and consistent terminology for medicines

1. Use plain English – avoid jargon.

Plain language is easier to understand and less likely to cause confusion.

2. Write all characters clearly and individually – especially when writing medicine names.

3. Write instructions and routes of administration in full.

Avoid using abbreviations, including Latin abbreviations that aren't universally understood.

Common error-prone abbreviations for instructions and routes of administration^[1,6] include:

Unacceptable abbreviations	Recommended alternative	Issue
gutte	drops	Latin term that is not understood by all people at all times
qds	qid	Latin term that is not understood by all people at all times
D/C	'discharge' or 'discontinue', whichever is intended	Use of term risks causing premature discontinuation of medicines if discharge is the intended meaning
IO	intraosseous	Can be mistaken as 10 (ten) or 'oral'
IP	intraperitoneal	Can be confused with 'IV' ^[10]
IVI	IV	Can be mistaken as 'IV 1'
OD	'once a day' or 'daily'	Can be mistaken as 'right eye' (OD-oculus dexter), leading to oral liquid medicines being administered in the eye Can also be mistaken as 'BD twice daily' or 'QID four times a day'
OJ	orange juice	Can be mistaken as 'OD' or 'OS' (right or left eye); medicines meant to be diluted in orange juice may be given in the eye
U or u	unit(s)	Can be mistaken as the number '0' or '4', causing a 10-fold overdose or greater (e.g. '8U' seen as '80' or '4u' seen as '44') Can be mistaken as 'cc' so dose given as a volume instead of units (e.g. '4u' seen as '4 cc')
IU	unit(s)	Can be mistaken as 'IV' (intravenous) or 10
SSRI or SSI	sliding scale (regular) insulin	Can be mistaken as 'Selective Serotonin Reuptake Inhibitor' or 'Strong Solution of Iodine'
Mcg	microgram, MICROg, microg	Can be mistaken as milligram (mg)

2. Principles for safe, clear and consistent terminology for medicines

4. Instructions must be clear.

Avoid vague statements such as 'take as directed'.^[11] Clear directions are necessary to check the medicine dose for dispensing and administration and to support effective counselling.

5. Use generic medicine names (active ingredient or approved name).

Exceptions may be made for combination products, but only if the trade name adequately identifies the medicine(s) being prescribed.

For example, combination products containing a penicillin may not be identified as penicillins if trade names are used, for example:

- Augmentin® should be written as 'amoxicillin and clavulanate'
- Tazocin® should be written as 'piperacillin and tazobactam'.

Exceptions may be made when there are different product formulations and selection error is a risk.

Use the trade name as well as the active ingredient, for example:

- oxycodone (Endone®) and oxycodone controlled-release (Oxycontin®)
- insulin glargine (Lantus®) and insulin aspart (Novorapid®)
- morphine [as sustained release pellets in a capsule] (Kapanol®) and morphine [controlled release tablets] (MS Contin®).

Exceptions may be made when there are significant differences in bioavailability between brands.

For example, warfarin or cyclosporin.

6. Write medicine names in full – do not abbreviate any medicine name.

Exceptions may be made for modified-release products.

The description used in the trade name to denote the release characteristics should also be included with the generic medicine name. For example, 'tramadol **SR**', 'carbamazepine **CR**'. This applies to slow-release, controlled-release, osmotic controlled-release, continuous-release or other modified or time-release formulations.

For protocols with multiple medicines, prescribe each medicine separately and in full.

Do not use acronyms – for example, do not prescribe chemotherapy as 'CHOP'.^[12]

2. Principles for safe, clear and consistent terminology for medicines

7. Write chemical names in full, for example:

Unacceptable abbreviations	Recommended alternative
G-CSF	filgrastim, lenograstim or pegfilgrastim
AZT	zidovudine
5-FU	fluorouracil
EPO	epoetin
MS or MSO ₄	morphine
TPA or r-TPA	tissue plasminogen activator, alteplase
MgSO ₄	magnesium sulfate
KCl	potassium chloride
MTX	methotrexate
6-MP	mercaptopurine
AZA	azathioprine
NaCl, saline, NS	sodium chloride, sodium chloride 0.9%
½ NS	sodium chloride 0.45%
NaHCO ₃	sodium bicarbonate
G5W	5% glucose in water
ISMN	isosorbide mononitrate

2. Principles for safe, clear and consistent terminology for medicines

8. Do not include the salt of the chemical unless it is clinically significant.

For example, 'mycophenolate mofetil' or 'mycophenolate sodium' are examples of salts that are clinically significant. Where a salt is part of the name, it should follow the medicine name and not precede it.

9. Use National Tall Man Lettering^[13] for 'look-alike, sound-alike' medicines.

This should be done for medicines known to cause confusion for medicine orders that are digitally generated and printed.

10. Dose

- **Use words or Hindu-arabic numbers.** Use 1, 2, 3 etc., preferably followed by the unit of measure, i.e. '1 tab/tablet', '2 puffs', '3 caps/capsules'.
- **Do not use Roman numerals.** Do not use 'ii' to mean two, 'iii' for three, 'v' for five etc.
- **Use metric units.** Use metric units such as 'gram' or 'mL' rather than Imperial or other measurements.
- **Clearly separate different elements of the medicine order.** Ensure letters do not appear to flow into the numbers that follow.
- **Use a leading zero in front of a decimal point for a dose less than 1.** Do not use a 'naked' decimal point without a leading zero; for example, use '0.5' not '.5'.
- **Do not use trailing zeros.** For example, use '5' not '5.0' for doses of medicines expressed in whole numbers

Exception: While the recording of pathology or laboratory results is out of the scope of this document, it is acknowledged that a 'trailing zero' may be used to express the level of precision of the reported value (e.g. where blood levels are reported on the chart).

- **Do not follow abbreviations such as 'mg' or 'mL' with a decimal point or full stop ('mg.' or 'mL.').** This can be mistaken as the number 1 if written poorly.
- **For oral liquid preparations, express dose in weight as well as volume.** For example, in the case of morphine oral solution (5 mg/mL), prescribe the dose in mg and confirm the volume in brackets, e.g. '10 mg (2 mL)'.
- **Express dosage frequency unambiguously.** For example, use 'three times a week' not 'three times weekly', as the latter could be confused as 'every three weeks'.

11. Use 24-hour time for time-of-day administration.

Midnight medicine administration should be avoided where possible.

12. Avoid fractions.

For example:

- '1/7' could be interpreted as 'for one day', 'once daily', 'for one week' or 'once weekly'
- '1/2' could be interpreted as 'half' or as 'one to two'.

13. Do not use symbols.

Avoid, for example, '°2' to mean 'every two hours'.

14. Avoid acronyms or abbreviations for medical terms and procedure names on orders or prescriptions.

For example, avoid using 'EBM' to mean 'expressed breast milk'.

15. Use words to express numbers of 1,000 or more.

For example, say 'one thousand' instead of '1,000', and 'one million' instead of '1,000,000' or '1m'. Otherwise use commas for dosing units at or above 1,000.

3. List of safe terms, abbreviations and dose designations for medicines

The following tables list the terms and abbreviations that are commonly used and understood and therefore considered acceptable for use.

Safe terms and abbreviations should be written **exactly** as shown.

Dose frequency or timing

Intended meaning	Safe terms or abbreviations
(in the) morning	morning, mane
(at) midday	midday
(at) night	night, nocte
twice a day	bd
three times a day	tds
four times a day	qid
every 4 hours	every 4 hrs, 4 hourly, 4 hrly
every 6 hours	every 6 hrs, 6 hourly, 6 hrly
every 8 hours	every 8 hrs, 8 hourly, 8 hrly
once a week	'once a week' and specify the day; e.g., 'once a week on Tues' (or Tuesdays)
three times a week	'three times a week' and specify the exact days, e.g., 'three times a week on Mon, Wed and Sat'
when required	prn
immediately	stat
before food	before food
after food	after food
with food	with food
< or >	less than, greater than
every two weeks, per fortnight	every two weeks
days of the week	Mon, Tues, Wed, Thurs, Fri, Sat, Sun
hourly, every hour	hourly, every hour
every two hours	every 2 hrs, every 2 hours
every 12 hours	every 12 hrs, every 12 hours
every second day, on alternate days	every 2 days
bedtime	bedtime
once daily, once a day, daily, every day	'once a day' (preferably specifying the time of day), 'daily'
single dose	once
for one day only	for 1 day
for three days	for 3 days

3. List of safe terms, abbreviations and dose designations for medicines

Routes of administration

Intended meaning	Safe terms or abbreviations
epidural	epidural
inhale, inhalation	inhale, inhalation
intraarticular	intraarticular
intramuscular	IM
intrathecal	intrathecal
intranasal	intranasal
intravenous	IV
irrigation	irrigation
left	left
nebulised	NEB
naso-gastric	NG
oral	PO
percutaneous enteral gastrostomy	PEG
per vagina	PV
per rectum	PR
peripherally inserted central catheter	PICC
right	right
subcutaneous	subcut
sublingual	subling, under the tongue
topical	topical
buccal	buccal
ear or eye (specify left, right or each)	(right/left/each) ear or eye
intra-dermal	intra-dermal
intra-peritoneal	intra-peritoneal
intra-osseous	intra-osseous

3. List of safe terms, abbreviations and dose designations for medicines

Units of measure and concentration

Intended meaning	Safe terms or abbreviations
gram(s)	g
International unit(s)	unit(s)
unit(s)	unit(s)
litre(s)	L
milligram(s)	mg
millilitre(s)	mL
microgram(s)	microgram, MICROg, microg
percentage	%
millimole	mmol
milligram per litre	mg/L
metre	metre
microlitre, micromol	microlitre, micromol
kilogram	kg
hour, minute	hour, minute
centimetre, millimetre	cm, mm

3. List of safe terms, abbreviations and dose designations for medicines

Dose forms

Intended meaning	Safe terms or abbreviations
capsule	capsule, cap
cream	cream
ear drops	ear drops
ear ointment	ear ointment, ear oint
eye drops	eye drops
eye ointment	eye ointment, eye oint
injection	injection, inj
metered dose inhaler	metered dose inhaler, inhaler, MDI
mixture	mixture
ointment	ointment, oint
pessary	pess
powder	powder
suppository	supp
tablet	tablet, tab
patient controlled analgesia	PCA
nebule	NEB

Australian Health Ministers endorsed the *Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines* in December 2008 for use in all Australian hospitals. It was prepared for, and is maintained by, the Australian Commission on Safety and Quality in Health Care.

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