NSW tag New South Wales Therapeutic Advisory Group Inc.

SAFER
Safer Medicines Group

Recommendations for Terminology, Abbreviations and Symbols used in the Prescribing and Administration of Medicines

Introduction

One of the major causes of medication errors is the ongoing use of potentially dangerous abbreviations and dose expressions.[1] This is a critical patient safety issue. A study to identify and quantify prescribing errors in a large US urban teaching hospital found that 29% of prescriptions contained a dangerous abbreviation.[2] An abbreviation used by a prescriber may mean something quite different to the person interpreting the prescription. Abbreviations may not only be misunderstood but can also be combined with other words or numerals to appear as something altogether unintended.

In addition, there have been changes to training of health care professionals, to health care delivery and to societal expectations, which also necessitate a rethinking of the language used to communicate medication prescribing and administration. Latin was once the language of health care and its use made medical literature universally readable among educated persons.[3] Today, English is the predominant language of medical literature.[3] Despite this, Latin abbreviations continue to be used amongst health professionals. Although this may be a timesaving convenience, their routine use does not promote patient safety.[3]

Changes to policy enabling staff with differing levels of training to administer medicines, also necessitates the use of English. This training does not include Latin nor does it include comprehensive training in terms used for the administration of medicines. In addition, patients and their carers have the right to understand what is being prescribed and administered to them. Prescribing using codes or an outmoded language is no longer acceptable.

Objectives

In order to promote patient safety and clear and unambiguous prescribing of medicines, this document establishes the following:

- **Principles for consistent prescribing terminology (Table 1)**
- **A set of recommended terms and acceptable abbreviations (Table 2)**
- **A list of error-prone abbreviations, symbols and dose designations that have a history of causing error and must be avoided (Table 3)**

Scope

The principles and recommendations apply to:

- ALL medication orders or prescriptions that are handwritten, pre-printed, computer-generated (printed hard copy) or electronic
- ALL communications and records concerning medicines, including telephone/verbal orders/prescriptions, medication administration records and labels for drug storage.[4]

Printed or electronic orders/ prescriptions should not contain ANY abbreviations other than those that are in universal and common use, such as the term ‘prn’ meaning ‘when required’. All drug names, protocols and procedures should be in English and written in full.

It is recommended that hospitals develop policies for prescribing terminology together with strategies for implementation within their institutions. In developing strategies, hospitals may wish to refer to the Joint Commission on Accreditation of Healthcare Organisations (JCAHO) “implementation tips” for eliminating dangerous abbreviations (http://wwwjointcommission.org/ PatientSafety/DoNotUseList/).

Although this NSW TAG document provides recommendations it is not all-inclusive. There may also be specific circumstances where other terminology may be considered safe. However, before hospital Drug and Therapeutic Committees (DTCs) decide to include such terminology in local policies the principles outlined in Table 1 should be applied. DTCs should continue to monitor incidents associated with prescribing terminology.

Please note this document is valid as at October 2006 and will be modified on the basis of reported adverse events associated with terminology, abbreviations and/or symbols used in the prescribing or administration of medicines. In addition, when moving to electronic prescribing a reassessment of what is safe terminology should be made.

TABLE 1: Principles for consistent prescribing terminology

1. **Use plain English - avoid jargon**

2. **Write in full - avoid using abbreviations wherever possible, including Latin abbreviations**

3. **Print all text - especially drug names**

4. **Use generic drug names**

   Exception may be made for combination products, but only if the trade name adequately identifies the medication being prescribed. For example, if trade names are used, combination products containing a penicillin (eg Augmentin®, Timentin®) may not be identified as penicillins.

   Exception may also be made where significant bioavailability issues exist, for example cyclosporin, amphotericin

5. **Write drug names in full. NEVER abbreviate any drug name**
   Some examples of **unacceptable** drug name abbreviations are: G-CSF (use filgrastim or lenograstim or pegfilgrastim), AZT (use zidovudine), 5-FU (use 5-fluorouracil), DTIC (use dacarbazine), EPO (use epoetin), TAC (use triamcinolone)

   Exception may be made for modified release products
   For slow release, controlled release, continuous release or other modified release products, the description used in the trade name to denote the release characteristics should be included with the generic drug name, for example tramadol **SR**, carbamazepine **CR**

   For multi-drug protocols, prescribe each drug in full and do not use acronyms, for example do not prescribe chemotherapy as 'CHOP'. Prescribe each drug separately

6. **Do not use chemical names/symbols,** for example HCl (hydrochloric acid or hydrochloride) may be mistaken for KCl (potassium chloride)

   Do not include the salt of the chemical unless there are multiple salts available
   Where the salt is part of the name, it should follow the drug name and not precede it, for example, mycophenolate sodium or mycophenolate mofetil

7. **Dose**

   - **Use words or Hindu-Arabic numbers,** ie 1, 2, 3 etc
     Do not use Roman numerals, ie do not use ii for two, iii for three, v for five etc

   - **Use metric units,** such as gram or mL
     Do not use apothecary units, such as minims or drams

   - **Use a leading zero in front of a decimal point for a dose less than 1,** for example use 0.5 not .5
     Do not use trailing zeros, for example use 5 not 5.0

   - **For oral liquid preparations, express dose in weight as well as volume,** for example in the case of morphine oral solution (5mg/mL) prescribe the dose in mg and confirm the volume in brackets: eg 10mg (2mL)

   - **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'

8. **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'

9. **Do not use symbols**

10. **Avoid acronyms or abbreviations for medical terms and procedure names on orders or prescriptions,** for example avoid EBM meaning 'expressed breast milk'

TABLE 2: Acceptable terms and abbreviations

The following table lists the terms and abbreviations that are commonly used and understood and therefore considered acceptable for use. Where there is more than one acceptable term the preferred term is shown first in the right hand column.

Intended meaning	Acceptable Terms or Abbreviations
Dose Frequency or Timing	
(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 in full, eg, once a week on Tuesdays
three times a week	three times a week **and** specify the exact days in full, eg three times a week on Mondays, Wednesdays and Saturdays
when required	prn
immediately	stat
before food	before food
after food	after food
with food	with food
Route of administration	
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
topical	topical

TABLE 2: Acceptable terms and abbreviations (continued)

The following table lists the terms and abbreviations that are commonly used and understood and therefore considered acceptable for use. Where there is more than one acceptable term the preferred term is shown first in the right hand column.

Intended meaning	Acceptable Terms or Abbreviations
Units of Measure and Concentration	
gram(s)	g
International unit(s)	International unit(s)
unit(s)	unit(s)
litre(s)	L
milligram(s)	mg
millilitre(s)	mL
microgram(s)	microgram, microg
percentage	%
millimole	mmol
Dose Forms	
capsule	cap
cream	cream
ear drops	ear drops
ear ointment	ear ointment
eye drops	eye drops
eye ointment	eye ointment
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

TABLE 3: Error-prone abbreviations, symbols and dose designations to be avoided

(Adapted from the Institute of Safe Medication Practices [ISMP] list of the same name[4], with permission from ISMP)

Error-prone Abbreviation ✘	Intended Meaning	Why?	What should be used ✔
µg, mcg or ug	microgram	Mistaken as 'mg'	microgram
BID or bid	twice daily	Mistaken as 'tid' (three times daily)	bd
BT or bt	bedtime	Mistaken as 'BID' (twice daily)	bedtime
cc	cubic centimetres	Mistaken as 'u' (units)	mL
D/C	discharge or discontinue	Premature discontinuation of medications if discharge intended	'discharge' or 'discontinue' whichever is intended
e or E	ear or eye	Mistaken for 'ear' when 'eye' intended or for 'eye' when 'ear' intended	'eye' or 'ear' and specify whether 'left', 'right' or 'both'
gtt or gutte	drops	Latin abbreviation meaning 'drops', not universally understood.	'drops' or 'eye drops' whichever is intended
HS hs	half-strength at bedtime, hours of sleep	Mistaken as bedtime Mistaken as half-strength	'half-strength' or 'bedtime' whichever is intended
IJ	injection	Mistaken as 'IV' or 'intrajugular'	injection
IN	intranasal	Mistaken as 'IM'or 'IV'	intranasal
IT	intrathecal	Mistaken as Intravenous	intrathecal
IU	International units	Mistaken as 'IV' (Intravenous) or '10' (ten)	International units
M	morning	Mistaken for 'n' (night)	morning
N	night	Mistaken for 'm' (morning)	night
Oc or Occ	eye ointment	Mistaken for eye drops	eye ointment
mist	mixture	Latin abbreviation, not universally understood	mixture
o.d. or OD	once daily	Mistaken as 'right eye' (OD-oculus dexter), leading to oral liquid medications administered in the eye. Can also be mistaken for BD (twice daily)	'daily', preferably specifying the time of the day, eg 'morning', 'mid-day', 'at night'
OJ	orange juice	Mistaken as 'OD' or 'OS' (right or left eye); drugs meant to be diluted in orange juice may be given in the eye	orange juice
OW	once a week	Not universally understood	once a week
p/f	per fortnight	Not universally understood	every two weeks, per fortnight
qd or QD	every day	Mistaken as 'Qid', especially if the period after the 'q' or the tail of the 'q' is misunderstood as an 'i'	daily
pulv	powder	Latin abbreviation, not universally understood	powder
Qhs	nightly at bedtime	Mistaken as 'qhr' or every hour	'night', 'daily at bedtime'
Qh	every hour	Not universally understood	'hourly', 'every hour'
qod or QOD	every other day	Mistaken as 'qd' (daily) or 'qid' (four times daily)	'every second day', 'on alternate days'
Q6PM etc	every evening at 6 pm	Mistaken as every six hours	'6pm daily', 'every night at 6pm', 'every day at 6 pm'

TABLE 3: Error-prone abbreviations, symbols and dose designations to be avoided (continued)

(Adapted from the Institute of Safe Medication Practices [ISMP] list of the same name[4], with permission from ISMP)

Error-prone Abbreviation ✘	Intended Meaning	Why?	What should be used ✔
SC	subcutaneous	Mistaken as 'SL' (Sublingual)	'subcut', 'subcutaneous'
SL or S/L	sublingual	Mistaken as 'SC' (Subcutaneous)	'subling', 'under the tongue'
Ss	sliding scale (insulin) or half (apothecary)	Mistaken as '55'	'sliding scale' or 'half' whichever is intended
SSRI or SSI	sliding scale regular insulin or sliding scale insulin	Mistaken as selective serotonin reuptake inhibitor; Mistaken as Strong Solution of Iodine (Lugols)	sliding scale insulin
TID	three times a day	Mistaken as 'bd'	tds
TIW	three times a week	Mistaken as 'three times daily'	'three times a week' and specify exact days in full, for example 'on Mondays, Wednesdays and Saturdays'
i/D	one daily	Mistaken as 'tid'	one daily
U or u	unit	Mistaken as the numbers '0' or '4', causing a 10-fold overdose or greater (eg 4U seen as '40' or 4u seen as '44'). Mistaken as 'cc' so dose given as a volume instead of units (eg 4u seen as 4 cc)	unit
ung	ointment	Latin abbreviation, not universally understood	ointment

Error-prone frequency and dosage abbreviations ✘	Intended Meaning	Why?	What should be used ✔
6/24	every six hours	Mistaken as 'six times a day'	'every 6 hrs', '6 hourly', '6 hrly'
1/7	for one day	Mistaken as 'for one week'	for one day only
1/2	half	Mistaken as 'one or two'	half
i, ii,iii,iv (Roman numerals)	1,2,3,4 etc		Hindu-Arabic numbers, 1,2,3,4 etc or words

TABLE 3: Error-prone abbreviations, symbols and dose designations to be avoided (continued)

(Adapted from the Institute of Safe Medication Practices [ISMP] list of the same name[4], with permission from ISMP)

Error-prone dose designations and other information ✘	Intended meaning	Why?	What should be used ✔
Trailing zero after decimal point (eg 1.0mg)	1mg	Mistaken as 10mg if the decimal point is not seen	Do not use trailing zeros for doses expressed in whole numbers
No leading zero before a decimal point (eg .5mg)	0.5mg	Mistaken as 5mg if the decimal point is not seen	Use zero before a decimal point when the dose is less than a whole unit
Large doses without properly placed commas (eg 100000units, 1000000 units)	100,000 units 1,000,000	100000 has been mistaken as 10,000, or 1,000,000; 1000000 has been mistaken as 100,000	For figures above 100 use words to express intent eg, one thousand, one million, six million etc. Otherwise use commas for dosing units at or above 1,000
10^6 etc	one million	Not universally understood	Use one million or 1,000,000

Error-prone symbols ✘	Intended Meaning	Why?	What should be used ✔
X3d	for three days	Mistaken as '3 doses'	for three days
> or <	greater than or less than	Mistaken or used as the opposite of intended; '<10' mistaken as '40'	'greater than' or 'less than'
/ (slash mark)	separates two doses or indicates 'per'	Mistaken as the number 1 eg '25 units/10units' misread as '25 units and 110 units'	'per' rather than a slash mark to separate doses
@	at	Mistaken as '2'	at
&	and	Mistaken as '2'	and
+	plus or and	Mistaken as '4'	and
°	hour	Mistaken as a zero (eg q2° seen as q20)	hour

This document was prepared by a Working Group of the NSW TAG Safer Medicines Group in consultation with health practitioners and with reference to the following documents:

- St Vincent's Hospital, Sydney, Standard Abbreviations for Prescribing (adapted with permission from Central Coast Health)
- Sydney Children's Hospital, Recommendations on 'Safe Prescribing' October 03
- National Prescribing Service – National Prescribing Curriculum.
- Australian Medicines Handbook 2006
- Prince of Wales Hospital and Sydney Children's Hospital approved list of abbreviations
- National Inpatient Medication Chart – NSW Health Guidelines for use
- Australian Pharmaceutical Formulary and Handbook (APF), 19th Edition
- Joint Commission on Accreditation of Healthcare Organisations (JCAHO), Medication errors related to potentially dangerous abbreviations 2001
- Institute for Safe Medication Practices (ISMP), List of Error-Prone Abbreviations, Symbols, and Dose Designations, 2005
- NSW Health Policy Directive PD2005_206, 'Policy on the Handling of Medication in New South Wales Public Hospitals'
- Queensland Health Department's state-wide abbreviation guidelines used in prescribing and administering medications.

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References:

1. JCAHO. Sentinel Event Alert - Medication errors related to potentially dangerous abbreviations: Joint Commission on Accreditation of Healthcare Organisations, 2001.
2. Garbutt J, Milligan P, McNaughton C, Waterman B, Clairborne Dunagan W, Fraser V. A Practical Approach to Measure the Quality of Handwritten Medication Orders. J Patient Saf 2005; 1:195-200.
3. Dunn E, Wolfe J. Let Go of Latin! Vet Human Toxicol 2001; 43:235-236.
4. ISMP. List of Error-Prone Abbreviations, Symbols, and Dose Designations: Institute for Safe Medication Practices, 2005.

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