THE NATIONAL STANDARDS FOR LABELLING OF INJECTABLES IN HEALTHCARE FACILITIES

2018

ACKNOWLEDGEMENTS

The *National Standards for Labelling of Injectables in Healthcare Facilities 2018* has been developed by the Labelling of Injectables Workgroup (see Table 1 for composition) under the National Medication Safety Committee (NMSC) 2017-2020 term (see Table 2 for composition).

Table 1. Composition of Labelling of Injectables Workgroup, July 2017 to June 2020

Name	Institution	Designation
Dr Chua Mei Chien (Lead)	KKH	Head and Senior Consultant, Department of Neonatology
Dr Ang Mei Kim (Co-Lead)	NCC	Senior Consultant, Division of Medical Oncology
Ms Chua Hui Min	NCIS	Senior Clinical Pharmacist

Table 2. Composition of the National Medication Safety Committee, July 2017 to June 2020

Name	Institution	Designation
Members		
Adj A/Prof Augustine Tee (Chairperson)	CGH	Chief, Medicine, Chief & Senior Consultant, Department of Respiratory & Critical Care Medicine
Mr Wu Tuck Seng (Immediate Past Chairperson)	NUH	Deputy Director, Pharmacy Department
Dr Chua Mei Chien	KKH	Head and Senior Consultant, Department of Neonatology
Dr Loh Seow Siang	KTPH	Senior Consultant, Department of Acute and Emergency Medicine / Patient Safety Officer
Dr Kurumbian Chandran	NTFGH	Director of Endocrinology; Co-chair of the Medication safety committee
A/Prof Ng Heng Joo	SGH	Senior Consultant, Department of Haematology; Director of Patient Safety
Ms Angelina Tan Hui Min	SKGH	Head, Pharmacy
Dr Tan Sze-Chin	TTSH	Consultant, Department of Rheumatology, Allergy and Immunology; Chair of the Medication Safety Team
Ms Soh Lay Beng	IMH	Head, Pharmacy Department

Name	Institution	Designation
Dr Ang Mei Kim	NCC	Senior Consultant, Division of Medical Oncology
Prof Ding Zee Pin/	NHC	Senior Consultant, Department of Cardiology; Chairperson, Pharmacy & Therapeutics Committee
Mr Li Kaihui Benny	NSC	Manager (Pharmacy Quality & Safety)
Dr Marcus Ang	SNEC	Consultant, Corneal and External Eye Disease Department
Ms Chua Hui Min	NCIS	Senior Clinical Pharmacist
Asst. Prof Yeo Wee Tiong	NUHCS	Consultant, Department of Cardiology
Dr Peter Moey	SHP	Director, SingHealth Polyclinics-Pasir Ris; Chair Pharmaceutical & Therapeutics Committee, SHP
Dr Valerie Teo	NHGP	Associate Consultant Family Physician; Deputy Head, Ang Mo Kio Polyclinic; Chairperson, Medication Management and Usage Committee, NHGP
Dr Steven Chong Shih Tsze	NUP	Head, Clementi Polyclinic; Chair, Medication Management and Utilisation Committee, NUP
Ms Quek Hui Chen	JCH	Head of Pharmacy
Dr Colin Ngeow	YCH	Consultant, Medical Services
Dr Lou Huei-Xin	IHiS	Director, Clinical Safety, Governance and Measurements, Information System Division
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INTRODUCTION

The process of preparation of injectable medicines is complex and error prone. Inadequate or unclear labelling of medications may result in medication error. Labelling of injectable medicines often omits information e.g. name of medicine, medicine dose, patient name. In addition, at points of transition of care, errors relating to medicine swaps frequently occur.[1-6]

International organizations such as World Health Organisation (WHO), National Patient Safety Agency (NPSA), Institute of Safe Medication Practice (ISMP), Joint Commission International (JCI) have recommended to standardise labelling of injectable medicines and administration lines. Medicines in well labelled syringes are more likely to have been prepared correctly.[7-8]

The National Medication Safety Committee has therefore established a minimum set of standards for labelling of injectables in all healthcare facilities to enhance medication safety. These include all injectable products prepared in clinical areas, including perioperative and sterile fields where injectable medications and fluids are administered.

CONTENT

1. LABELLING REQUIREMENT

As a general rule, all injectable medications which are prepared and not administered immediately must be labelled. This includes:

a) Medications transferred out of their original packaging;
b) Medications administered via burettes, syringe pumps and infusion pumps;
c) Medications in syringes; and
d) Medications used over the course of a procedure.

Labelling is not required for the following situations:

a) All medications which are prepared for a single patient in one uninterrupted process where the syringe does not leave the hands of the person who prepared it and that same person administers the medication immediately; and
b) An infusion with no added additives which is stored in its original container that is labelled by the manufacturer.

2. LABEL CONTENT

The label on the preparations should contain all of the following information:

a) Drug name (Generic);
b) Drug dose and final volume/ concentration;
c) Date and time of preparation;
d) Expiry date and time*;
e) Two patient identifiers; and
f) Prepared by**.

Notes:

**The expiry date and time do not have to be indicated on the label if guidelines on the expiry of the reconstituted or prepared medication or solution are readily available in the institution.*

***Provision for signatories is not required on the label where other means of recording labelling and preparation are available*

2.1 Special Circumstances

2.1.1. Single dose immediate administration

When medications are prepared for immediate administration during a procedure where a single patient is receiving an injectable medication (i.e. there is no possibility that the identification of the patient is unknown) and the medication is prepared in the presence of the patient, the labelling need not incorporate two patient's identifiers.

In addition, if unused portions are discarded immediately, date of preparation and expiry date is not necessary. Reconstituted mediations which are not used immediately must be labelled with expiry date and time.

2.1.2. Operating Theatre and emergency situations

For specialised areas such as the Operating Theatre, only the labelling of drug name, dose and total volume/ concentration is mandatory.

For resuscitation or code blue situations, labelling is recommended. If it is not possible, other measures to minimize medication errors due to unlabelled syringes should be employed e.g. verbal check and show when drug is withdrawn into syringe and passed from nurse to doctor.

2.1.3. Batch compounding for single dose use

When medications are prepared by batch compounding and the full dose is given in a single administration with the remaining discarded, labelling of two patient identifiers are not required.

3. LABELLING PROCESS

In general, each injectable medication drawn up in a bag or syringe should be prepared and labelled as a single operation by the same person. Preparation and labelling of medicines for paediatrics/neonates, chemotherapy and selected high risk medications should be independently checked by a second person who signs the label. However, provision for signatories is not required on the label where other means of recording labelling and preparation are available.

3.1. Placement of Labels

The recommendations for placement of labels for infusion bags, infusion bottles and syringes are as follows.

3.1.1. Infusion Bags or Bottles

The name of infusion as well as the expiry date and batch number should not be obscured.

3.1.2. Syringes

a) Markings on the syringe should not be obscured;
b) When application of the entire label to the syringe is impractical (e.g. small syringes), apply label as a “flag”. Flag labelling is a method of attaching labels to small syringes and containers where part of the label is applied to the syringe leaving an exposed “flag” portion to ensure details on the labels can be read and the syringe markings and contents of the syringe remain visible; and
c) A duplicate label should be applied to any outer wrapper which does not allow clear visibility of the primary label attached to the bag or syringe.

3.2. Labelling of More Than One Medication

When preparing several medications at a time for IV push administration, medications should be prepared and labelled one at a time. Labelling should be done immediately after each preparation. There should be no pre-labelling of empty syringes prior to use.

3.3. Use of Abbreviations in Labels

The Standardized list of “Do Not Use” Abbreviations/Symbols recommended in the National Medication Safety Guideline Manual (June 2013) should be adhered to. Refer to the list in Appendix 1.

3.4. Use of Auxiliary Labels

Auxiliary labels are required for HAM and especially for cytotoxic drugs.

3.4.1 High alert medications (HAM)

HAM should be labelled with “high alert” medication labels. An example of an auxiliary label for HAM is shown in Figure 1.

Figure 1: Example of auxiliary label for HAM

3.4.2. Cytotoxics/ Chemotherapy

Cytotoxics are considered as HAM but need not be labelled with a HAM label. Instead all cytotoxics should be labelled with purple coloured “cytotoxic” label. An example of an auxiliary label for cytotoxics is shown in Figure 2.

Figure 2: Example of auxiliary label for Cytotoxics

3.4.3. Other Auxiliary Labels

Other auxiliary labels should be used where appropriate, examples as follows:

a) Do not refrigerate/ Expiry after removal from fridge/ Please refrigerate; and
b) Fatal if given intra-thecally / For intravenous use only.

In the case when an outer bag is used to cover the chemotherapy infusion, the outer bag should be labelled as well. Affix the label on the front side of the infusion bag with a purple cytotoxic label as well as the drug label. Ensure that the placing of labels does not obscure the drug label.

3.5. Use of Colour Codes

In general, there is no standard colour code to be used for specific drugs or drug categories. Instead, colour-coded labels can be used as part of institution or specialty guidelines e.g. anaesthesia.

However, the use of colour-coded labels is intended only as a visual aid in the identification of drug groups/ categories and standard labelling requirements apply.

3.6. Labelling of Infusion Pumps and Conduits

If infusions or pumps or cassettes are being used, they should be labelled as mentioned in section 2.

The identification and labelling of conduits and lines in use for medication infusion is often overlooked. This can lead to errors particularly if there are different routes of infusion for the same patient. Thus in these situations, it is recommended that all conduits, other than peripheral intravenous routes, be labelled with route labels.

APPENDIX 1

STANDARDISED LIST OF "DO NOT USE" ABBREVIATIONS/ SYMBOLS*

Do not use	Reason	Use
U or IU	It may be mistaken as zero	unit
iu or IU	It may be mistaken as IV or 10	unit
µg or UG	It may be mistaken for mg (1000x more)	mcg; micrograms
Qd, QOD, qod	It may be mistaken for 4 times daily	daily, every other day
qH, qHS	It may be interpreted as QDS	At night or ON
DC, D/C	Misinterpreted as 'discontinued' when followed by a list of medications	discontinue
.5mg	It may be mistaken for '5mg' (10x more)	0.5mg with a leading zero
10.0mg	It may be mistaken for '100mg' (10x more)	10mg without a trailing zero
cc	It may be mistaken for 'u' (units)	mL or ml
> or <	Easily mistaken as opposite of intended: "<10" can be mistaken as 40	greater than or lesser than
@	Can be confused for "2"	at
ID	May be mistaken for "10"	intradermal
IN	May be mistaken for "IM" or "IV"	intranasal
IA	May be mistaken for "14"	intra-arterial
per os	The "os" may be mistaken as OS (left eye)	"PO" or by mouth or orally
SC, SQ, sub q	Mistaken as SL (sublingual) or "5 every"	subcutaneous
AD, AS or AU (R/ L/ both ears)	May be mistaken for OD, OS or OU (eyes)	"right ear", left ear" or "both ears"
OD, OD or OU (R/L/both eyes)	May be mistaken for AD, AS or AU (ears)	"right eye", left eye" or "both eyes"
SL	Mistaken as SC (subcutaneous)	sublingual
MS, MSO4, MgSO4	Confusion between morphine sulphate and magnesium sulphate	Magnesium sulphate, Morphine sulphate

*Excerpt from the National Medication Safety Guidelines Manual – June 2013

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