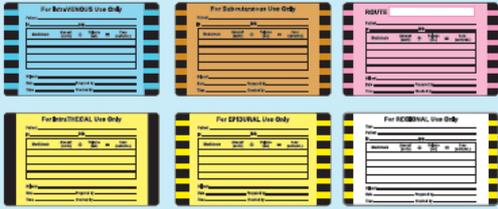


A joint statement supporting user-applied labelling standardisation for all injectable medicines and fluids by the Australian Commission on Safety and Quality in Health Care, and the Australian and New Zealand College of Anaesthetists

National Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines

Perioperative Labelling of Medicines and Fluids

CLOSED PRACTICE ENVIRONMENT (a single patient with established identity)	OPEN PRACTICE ENVIRONMENT (more than one patient in the same area)						
<p>Label syringes containing medicines used during anaesthesia</p> <p>For example:</p> <table border="0"> <tr> <td>Morphine mg/mL</td> <td>Ephedrine mg/mL</td> <td>Ketamine mg/mL</td> </tr> <tr> <td>Atropine mg/mL</td> <td>Flumazenil mg/mL</td> <td>Suxamethonium mg/mL</td> </tr> </table> <p>Continue using ISO 26825:2008 compliant labels.</p>	Morphine mg/mL	Ephedrine mg/mL	Ketamine mg/mL	Atropine mg/mL	Flumazenil mg/mL	Suxamethonium mg/mL	<p>Label all containers (including syringes) containing medicines to continue beyond the operating room</p> 
Morphine mg/mL	Ephedrine mg/mL	Ketamine mg/mL					
Atropine mg/mL	Flumazenil mg/mL	Suxamethonium mg/mL					
<p>Label containers in the sterile field, for example:</p> <table border="0"> <tr> <td>0.9% Sodium chloride</td> <td>Lactated Ringers Solution</td> </tr> <tr> <td>Adrenaline 1 in 1000</td> <td>Bupivacaine</td> </tr> <tr> <td>Morphine 10mg/mL</td> <td></td> </tr> </table> <p>Use sterile labels and marker pens</p> 	0.9% Sodium chloride	Lactated Ringers Solution	Adrenaline 1 in 1000	Bupivacaine	Morphine 10mg/mL		<p>Label lines to identify route</p>  <p>+</p> <p>Label lines to identify medicine in a dedicated continuous infusion line, for example:</p> 
0.9% Sodium chloride	Lactated Ringers Solution						
Adrenaline 1 in 1000	Bupivacaine						
Morphine 10mg/mL							

To be read in conjunction with National Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines (February 2012). (Copyright Australian Commission on Safety and Quality in Health Care). The Commission acknowledges the significant contribution of the Victorian Government Department of Health, December 2012.

ANZCA Endorsed by the Australian and New Zealand College of Anaesthetists

Endorsed by the Australian College of Operating Room Nurses

AUSTRALIAN COMMISSION ON SAFETY AND QUALITY IN HEALTH CARE

Figure 1 above is a poster demonstrating user-applied labelling of medicines and fluids in open and closed practice environments. The poster is endorsed by the Australian and New Zealand College of Anaesthetists, the Australian College of Operating Room Nurses and the Australian Commission on Safety and Quality in Health Care.

Implementation support for user-applied labelling of injectable medicines

Preparation of injectable medicines for bolus injection or infusion is complicated and with multiple opportunities for error.¹ Adverse medication events, including serious patient harm, can result from some of these errors. The Australian and New Zealand College of Anaesthetists and the Australian Commission on Safety and Quality in Health Care support user-applied labelling standardisation for all injectable medicines and fluids to improve patient safety.

The Australian and New Zealand College of Anaesthetists (ANZCA) addressed the risk to patient safety through its Guidelines for the safe administration of injectable drugs in anaesthesia.² The guidelines recommend labelling of medicines used during anaesthesia consistent with the Australian/New Zealand Standard AS/NZS 4375:1996³ and which has been superseded by the international standard for labelling drugs in syringes used during anaesthesia (ISO26825: 2008 User-applied labels for syringes containing drugs used during anaesthesia).⁴

The Australian Commission on Safety and Quality in Health Care (the Commission) developed the National Recommendations for User-applied Labelling of Injectable Medicines, Fluids and Lines⁵ to address the same patient risk but for all circumstances other than those addressed in the ANZCA anaesthetic labelling standard. The Commission's Labelling Recommendations standardise labels used to identify medicines removed from original packaging for safer patient administration.

In practice, the Commission's Labelling Recommendations work in parallel with ANZCA's anaesthetic labelling standard. Both standardisations aim to reduce patient harm from medication errors caused by unlabelled, or incompletely labelled, injectable medicines and fluids. The application of the two user-applied labelling standardisations in open and closed practice environments (such as operating rooms) is demonstrated in Figure 1.

Colour coding medicines labels according to the anaesthetic labelling standard

The anaesthetic labelling standard colour codes medicines labels according to drug class and is well recognised. It should be implemented in all areas where medicines are administered in syringes during anaesthesia. Table 1 below describes medicines and associated label colours according to the anaesthetic labelling standard.

Because the anaesthetic labelling standard's colour coding according to drug class is well recognised, it has been agreed that colour coding medicines labels according to drug class will be applied more broadly in the following circumstances:

1. Medicines labels for dedicated continuous infusion lines
2. Medicines labels for containers (such as syringes and basins) on perioperative sterile fields including cardiac catheterisation laboratories.

While colour can assist identification, there are risks relying solely on colour and so the written word should be emphasised as the primary identifier.

If a medicine is not reflected in Table 1 (see below), the general principle for finding the right medicine label colour is to categorise according to primary therapeutic use rather than pharmacological class.

The Commission and ANZCA endorse use of the Labelling Recommendations and the anaesthetic labelling standard throughout all Australian health services. The use of colour on medicines labels in areas within and beyond anaesthesia should comply with the anaesthetic labelling standard.

Drug class	RGB colour	Examples of drugs
Induction agents	Yellow	Thiopentone, methohexitone, propofol, ketamine
Benzodiazepines	Orange	Diazepam, midazolam
Benzodiazepine antagonists	Orange with white diagonal stripes	Flumazenil
Muscle relaxants	Flourescent red or warm red	Suxamethonium, d-tubocurare, pancuronium, atracurium, vecuronium
Relaxant reversal agents	Flourescent red or warm red with white diagonal stripes	Neostigmine, edrophonium, pyridostigmine
Opioids	Blue	Morphine, fentanyl, pethidine
Opioid antagonists	Blue with white diagonal stripes	Naloxone
Vasopressors	Violet	Adrenaline, ephedrine, phenylephrine, metaraminol
Hypotensive agents	Violet with white diagonal stripes	Sodium nitroprusside, glyceryl trinitrate, phentolamine, hydralazine
Local anaesthetics	Grey	Procaine, lignocaine, bupivacaine, ropivacaine
Anticholinergic agents	Green	Atropine, glycopyrolate
Anti-emetics	Salmon	Droperidol, metoclopramide, tropisetron
Heparin	White with solid black border	
Protamine	White with hatched black border	
Miscellaneous drugs	White	E.g. oxytocin, potassium chloride, antibiotics

Table 1 above shows user-applied label colours for use on syringes containing drugs used during anaesthesia.

References

1. Taxis K, Barber N. Ethnographic study of incidence and severity of intravenous drug errors. *British Medical Journal* 2003; 326:684-687
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3. User-applied labels for use on syringes containing drugs used during anaesthesia (AS/NZS 4375:1996). Sydney: Standards Australia International Pty Ltd, 1996.
4. International Organization for Standardization. Anaesthetic and respiratory equipment – User-applied labels for syringes containing drugs used during anaesthesia – Colours, design and performance. 1st edition. ISO 26825:2008(E). Geneva: ISO, 2008
5. Australian Commission on Safety and Quality in Health Care Web site. www.safetyandquality.gov.au/our-work/medication-safety/user-applied-labelling/ Accessed February 27, 2013