Medication Safety Watch
A bulletin for all health professionals and health care managers working with medicines or patient safety.

Key messages
• Adrenaline safety in emergency situations
• ‘One step’ competition for clinicians
• Safe use of opioids collaborative
• Incidents and cautions

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Medication alerts and safety signals
These alerts and safety signals provide information and actions about high-risk medicines and situations. They are issued to health care staff, managers and organisations. For more information, contact Beth Loe at beth.loe@hqsc.govt.nz.

COMPETITION: Win and be published! The Health Quality & Safety Commission is looking for your additions to its series of ‘one steps’, activities designed to help clinicians identify risks and change systems and practices relating to high-risk medicines. Go to: www.open.hqsc.govt.nz/medication/one-step for more information about entering.

Adrenaline (epinephrine) safety in emergency situations
The risk of wrong route or wrong dose errors with adrenaline can be reduced by reviewing how adrenaline is stored and used in emergency situations. Have there been incidents or near miss incidents reported in your organisation when:
• intravenous (IV) adrenaline was given or was going to be given to a patient with an allergic reaction
• the wrong dose of adrenaline was given?
These incidents have occurred in New Zealand and internationally.1,2

Background
Adrenaline injection is available in two strengths and labelled with unfamiliar ratio dose expressions:
• 1:10,000 (1mg in 10mL)
• 1:1,000 (1mg in 1mL).
Adrenaline can be given by various routes:
• IV bolus, where it produces an immediate response – a sharp rise in heart rate and blood pressure, and an increase in ventricular contraction. IV bolus is used in immediately life-threatening situations such as cardiac arrest.
• Intramuscular (IM) (or occasionally subcutaneous) for the treatment of hypersensitivity reactions, including allergic reactions and acute severe asthma. If given as an IV push or by rapid infusion for these indications then severe harm, for example, cardiac arrhythmia or cerebrovascular haemorrhage, or death can occur.

Contributing factors to wrong route and wrong dose incidents include the following:
• A sense of urgency and a verbal order for IM adrenaline can lead staff with previous experience of giving IV adrenaline to conclude that IV is the route required.
• Staff are often involved in giving adrenaline for both indications and confirmation bias occurs.
• Other IV medicines are given to treat allergic reactions and this contributes to route confusion.
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• Confusion over the dose because the concentration is expressed as a ratio and adrenaline is available in two concentrations.
• Having different types of emergency trolleys/trays for different areas in an organisation without clearly labelling the adrenaline injections with the indications and directions.
• No independent second check of the adrenaline strength and route.
• Unfamiliarity of staff with emergency procedures, for example, locums.

Review current practices for adrenaline storage and use in your organisation
• Review the presentation and availability of emergency medicines and equipment to standardise these wherever possible across the organisation.
• Clearly differentiate between IV and IM adrenaline dosage; either use auto-injector pens for treating anaphylaxis/hypersensitivity and ampoules for cardiac arrest, or create an anaphylaxis subsection of the trolley or emergency kit.
• Clearly indicate the appropriate adrenaline route and dose for each indication wherever adrenaline injection is stored for emergency use.
• Consider an independent double check procedure for administering adrenaline injection.

Ensure all clinical staff are familiar with:
• emergency procedures in their work area
• the dose and administration route for adrenaline in various clinical situations.

References
What’s new?

**Medicine Error Reporting Programme (MERP) goes national**

MERP was developed and successfully piloted during 2011–12 in primary care by the New Zealand Pharmacovigilance Centre. The findings were recently published in the August 2014 edition of the New Zealand Medical Journal (abstract available at: www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2014/vol-127-no-1401/6275). The pilot study demonstrated how the use of a common platform for capturing key information about an error can identify system weaknesses that can be targeted for error-reduction strategies.

Continued funding for MERP is now in place.

We encourage primary care reporting of medication and vaccine errors and any potential safety issues to MERP. The findings from MERP will be used to support the Commission in its work to improve medication safety. An online report form is available at: nzphvc.otago.ac.nz.

**Tenecteplase/Alteplase work underway**

The Medication Safety Expert Advisory Group and the National Stroke Network are working together to develop a suite of interventions to reduce the risk of serious adverse events when the tenecteplase dose or preparation is used in error instead of alteplase in the treatment of acute stroke.

**Safe use of opioids collaborative update**

The regional learning session zeros for members of each district health board’s (DHB’s) collaborative team were held in October and November. Regional clinicians presented on the successful central line associated bacteraemia collaborative and opioid management projects underway or recently completed. The teams identified the strengths and weaknesses of aspects of the collaborative in their respective DHBs and developed a draft project charter. See www.hqsc.govt.nz/our-programmes/medication-safety/projects/collaborative.

**Potassium chloride**

A registered formulation of potassium chloride 40mmol and 0.9% sodium chloride 100mL is now available.

**Standard for intravenous fluid therapy in adults**

The National Institute for Health and Care Excellence (NICE) has recently published a quality standard on intravenous fluid therapy in adults in hospital. Quality measures relating to each statement in the standard are included. See www.nice.org.uk/guidance/qs66.

**Tall Man lettering list review**

The medicines included in the New Zealand Tall Man lettering list will be reviewed over the coming months. If you have identified any medicine name pairs for inclusion or removal from the current list (available at www.hqsc.govt.nz/our-programmes/medication-safety/publications-and-resources/publication/1281/), please email the details to Emma Forbes (emma.forbes@hqsc.govt.nz).

**Glypressin® solution for injection labelling**

Ferring Pharmaceuticals has responded to the sector’s safety concerns on the labelling of Glypressin® solution as terlipressin 0.85mg/8.5mL. A new pack of Glypressin® solution for injection labelled 1mg/8.5mL will be phased in from 19 January 2015. The product labelled as Glypressin® Solution terlipressin 0.85mg/8.5mL will be phased out by 1 March 2015.

**Incidents and cautions**

**Eptacog alfa (activated)**

 protests against lookalike packaging can lead to the wrong product being supplied, dispensed or administered.

The two strengths of eptacog alfa (activated) (NovoSeven® RT) are now packaged with identical red strips along the top of the box. The strength is written in a small font and uses a trailing zero. NovoSeven® RT is not an insulin but a human, recombinant coagulation factor VIIa used primarily for treating bleeding problems in people with factor VII deficiency.

No incidents relating to NovoSeven® RT have been reported to date, however the Commission is raising the issue of the unsafe packaging with the manufacturer and the appropriate authorities.

In the meantime, please consider how to manage the storage of the two strengths of this product to reduce the risk of the wrong strength being dispensed or administered. The product may be supplied from blood banks so please alert them to the issue.

**Upcoming events**
