HEALTH QUALITY & SAFETY COMMISSION NEW ZEALAND
Kupu Taurangi Hauora o Aotearoa

**Alert 16 – August 2014**

# Medication Alert

# Metoprolol

For the attention of: Chief Executive Officers

For action by: Chief Medical Officers

## Purpose of this alert

To highlight the risk of inadvertent overdose associated with administration of metoprolol succinate in hospital when the dose prescribed is 11.875mg and is misread as 118.75mg.

## Background to this alert

- Three serious adverse events have occurred in New Zealand hospitals.
- Two of these events had **fatal outcomes**.
- All three events related to a prescribed dose of metoprolol 11.875mg (half a 23.75mg tablet) being administered as 118.75mg (a 95mg plus a 23.75mg tablet).
- In all cases, the nurse read the dose as 118.75mg because of confirmation bias. 118.75mg is seen more commonly than 11.875mg in hospital.

## REQUIRED ACTION

Organisational

1. Doses of metoprolol lower than 23.75mg (ie, metoprolol 11.875mg) should not be prescribed for adults in the District Health Board (DHB). Steps required to achieve this include:
   i. Agree with your hospital cardiologists that metoprolol 11.875mg should not be prescribed for adult patients throughout the DHB.
   ii. Agree with cardiologists whether adult patients should either have their metoprolol 11.875mg stopped or have their dose increased to 23.75mg according to clinical circumstances.
   iii. Communicate the DHB's recommendation on metoprolol 11.875mg prescribing to general practitioners (proforma attached) and hospital clinicians (prescribers, pharmacists and nurses).

## Clinical information

There is no evidence to support the use of 11.875mg metoprolol controlled release:

- 11.875mg metoprolol controlled release has not been shown to provide any cardioprotective benefit in heart failure and the dose is too small to be of value in other conditions.
- Current heart failure guidelines recommend starting metoprolol controlled release at a dose of 23.75mg.

## Further background to this alert

- The funded metoprolol controlled release product is metoprolol succinate. This is available as 23.75mg, 47.5mg and 95mg tablets. When half a 23.75mg tablet is prescribed, the dose becomes 11.875mg.
- The Medication Safety Expert Advisory Group issued a 'safety signal' in 2012 following the first two serious adverse events involving 118.75mg administration when 11.875mg was prescribed.
- All DHBs have patients taking 11.875mg and 118.75mg doses of metoprolol (source: PHARMAC prescribing data).
- Internationally, most countries use metoprolol tartrate slow release, which comes in whole number tablet strengths. The metoprolol tartrate tablets funded in New Zealand are the immediate release preparation (50mg and 100mg) and modified release 200mg.

## Further actions

- The Medication Safety Expert Advisory Group will work with Medsafe, PHARMAC and the manufacturer of the currently funded metoprolol succinate product to remove reference to an 11.875mg dose in the product datasheet.
- The Medication Safety Expert Advisory Group will investigate the possibility of an alert being displayed in electronic prescribing systems if an 11.875mg dose is prescribed.

**For an electronic version of this alert, download from: www.hqsc.govt.nz or contact Beth Loe: beth.loe@hqsc.govt.nz**

**If you require any further information or wish to provide feedback on this alert, please go to www.hqsc.govt.nz**