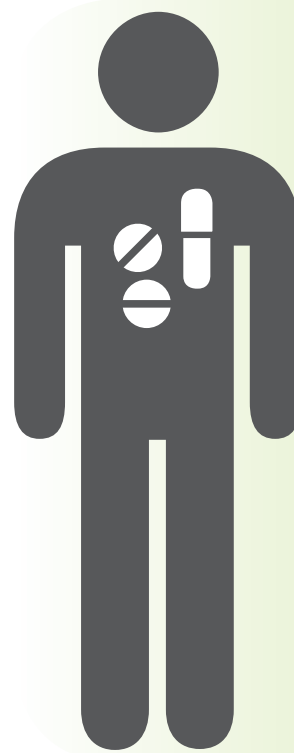




# High-risk medicines



**3/4** of New Zealanders are estimated to have had a prescription for one or more medicines in the year ended 30 June 2013.<sup>1</sup>





1. Extrapolation based on PHARMAC Annual report 2012/2013.





Up to **60%** of adverse drug events (ADEs) are thought to be preventable.<sup>2</sup> Medication errors and adverse drug reactions (ADRs) are the main causes of ADEs.

2. Bates DW, Cullen DJ, Laird N et al. Incidence of adverse drug events and potential adverse drug events: implications for prevention. JAMA 1995; 274:29–34.

Frequency of ADEs 

13% with two medicines 

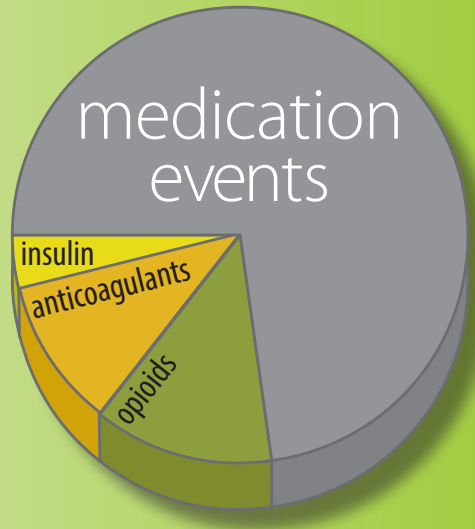
58% with five medicines 

82% with seven or more<sup>3</sup> 

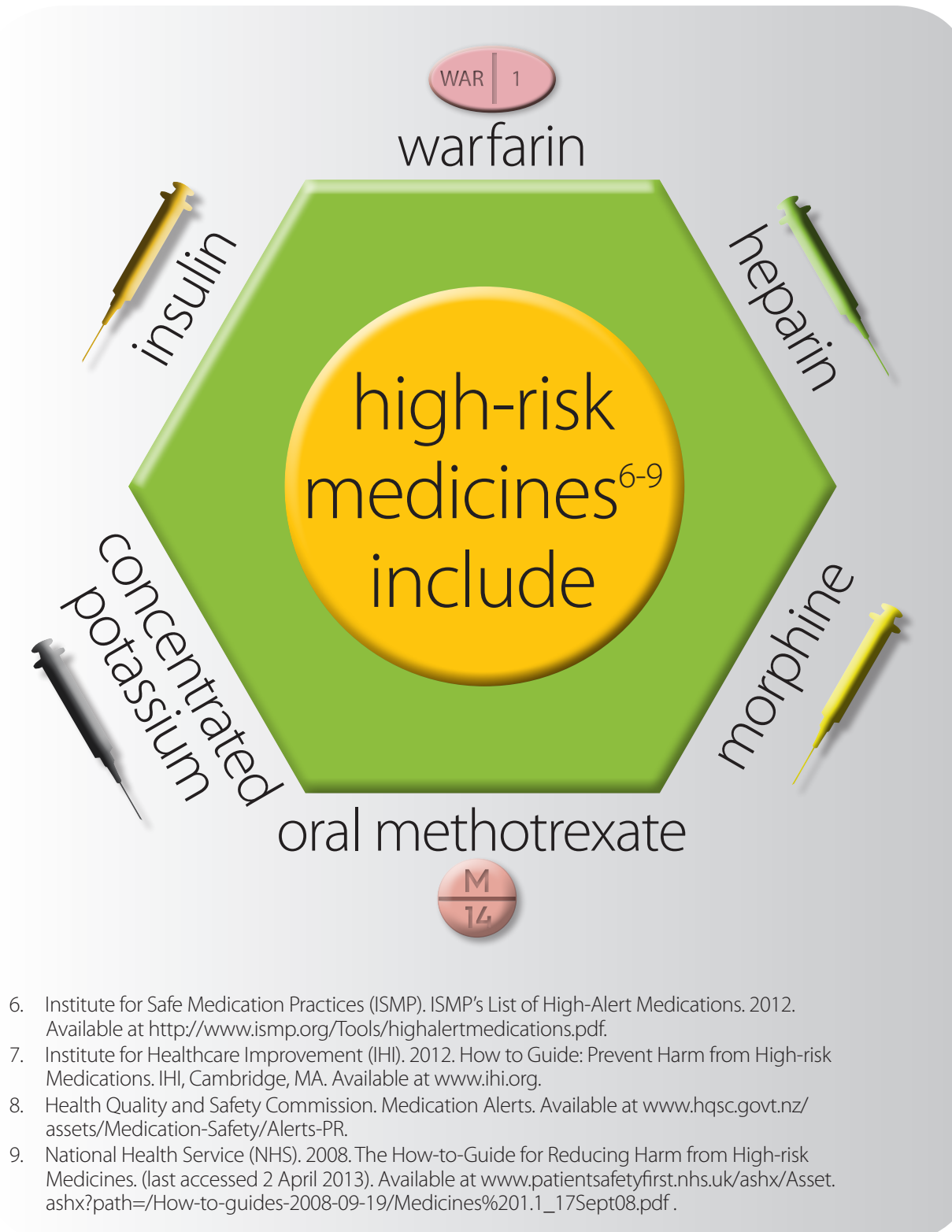
3. Patterson S, et al. Interventions to improve the appropriate use of polypharmacy for older people. Cochrane Database of Systematic Reviews 2012, Issue 5.

Between July 2007 and June 2013: 2159 reported serious adverse events

- 132 medication events
- 23 related to opioids
- 19 related to anticoagulants
- 7 related to insulin<sup>4</sup>



4. Health Quality & Safety Commission Reportable Events <http://www.hqsc.govt.nz/our-programmes/reportable-events/serious-and-sentinel-event-reports/>.



high-risk medicines<sup>6-9</sup> include

WAR 1 warfarin

insulin

heparin

M 14 morphine

concentrated potassium


oral methotrexate

6. Institute for Safe Medication Practices (ISMP). ISMP's List of High-Alert Medications. 2012. Available at <http://www.ismp.org/Tools/highalertmedications.pdf>.

7. Institute for Healthcare Improvement (IHI). 2012. How to Guide: Prevent Harm from High-risk Medications. IHI, Cambridge, MA. Available at [www.ihp.org](http://www.ihp.org).

8. Health Quality and Safety Commission. Medication Alerts. Available at [www.hqsc.govt.nz/assets/Medication-Safety/Alerts-PR](http://www.hqsc.govt.nz/assets/Medication-Safety/Alerts-PR).

9. National Health Service (NHS). 2008. The How-to-Guide for Reducing Harm from High-risk Medicines. (last accessed 2 April 2013). Available at [www.patientsafetyfirst.nhs.uk/ashx/Asset.ashx?path=/How-to-guides-2008-09-19/Medicines%201.1\\_17Sept08.pdf](http://www.patientsafetyfirst.nhs.uk/ashx/Asset.ashx?path=/How-to-guides-2008-09-19/Medicines%201.1_17Sept08.pdf).



Up to **\$158m** is the estimated annual cost of preventable ADEs in New Zealand.<sup>10-12</sup>

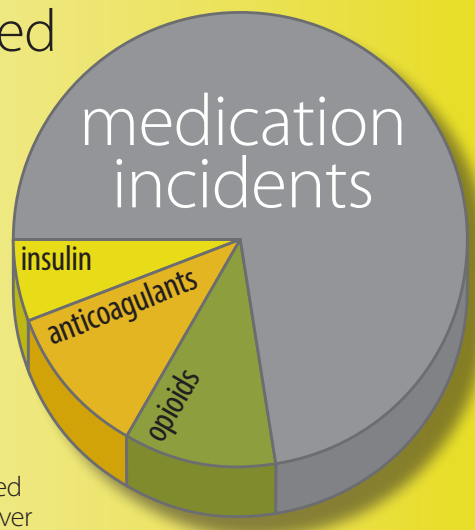
10. Briant R, Ali W, Lay-Yee R, Davis P. Representative case series from public hospital admissions 199: drug and related therapeutic adverse events. NZ Med J 2004; 117 (1188).

11. Brown P, McArthur C, Newby L et al. Cost of medical injury in New Zealand: a retrospective cohort study. J Health Serv Res Policy 2002; 7: 29–34.

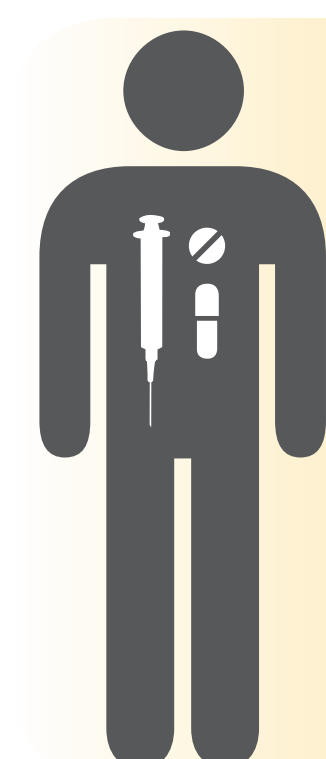
12. Kunac DL, Kennedy J, Austin N et al. Incidence, preventability and impact of adverse drug events (ADEs) and potential ADEs in hospitalized children in New Zealand. Pediatr Drugs 2009; 11(2): 153–160.

During 2005–2010 the National Reporting and Learning System in England and Wales had:

- 822 medication incidents reported causing death and severe harm
- 91 related to anticoagulants
- 89 related to opioids
- 46 related to insulin<sup>5</sup>



5. Cousins D, Gerrett D, Warner B. A review of medication incidents reported to the National Reporting and Learning System in England and Wales over 6 years (2005–2010). Br J Clin Pharmacol Oct 2012; 74(4): 597–604.



**ADE collaborative**

The medicines that were most commonly implicated for causing an ADE were:<sup>13</sup>

33% opioids

10% anticoagulants

13. Seddon ME, Jackson A, Cameron C et al. The Adverse Drug Event Collaborative: a joint venture to measure medication-related patient harm. NZMJ 25 January 2013, Vol 126: 9–20.