

High-risk medicines



Harm from falls



\$600
Estimated cost to the health service of a fall causing minor injuries

\$135,000
Estimated cost of hip fracture with complications requiring admission to an aged care facility¹

\$47,000 21
Estimated cost of hip fracture resulting in three-week stay in hospital¹

\$3–5 million
Direct costs of patient falls in hospitals for 2010–11¹

126,000
New accepted ACC claims in 2013–14 for falls in people aged over 65.

Of these **4500** were fractured neck of femur

27% will die within a year⁴

10–20% will be admitted to residential care⁵

1/2 will require support with daily living or mobilising.⁶

30,000
Fall-related discharges in 2013–14
Over half represented those aged over 65

891 serious and sentinel events

492 patient falls

202 patient falls associated with a hip fracture*

* It is estimated that 22 more people died than we would otherwise expect.
Source: 2013–14 serious and sentinel events reported by district health boards to the Health Quality & Safety Commission.

Patient falls that result in harm are the most frequently reported adverse event in public hospitals.

Half of those who walked without help before fracturing a hip will no longer be able to walk independently in the year following the fracture.⁶

Fracturing a hip while in hospital can extend a person's length of stay by over a month.

\$26,000 conservative estimated cost¹

ADE collaborative
The medicines that were most commonly implicated for causing an ADE were:¹³

- 33%** opioids
- 10%** anticoagulants

Up to \$158m
is the estimated annual cost of preventable ADEs in New Zealand.^{10–12}

Frequency of ADEs

- 13% with two medicines
- 58% with five medicines
- 82% with seven or more³

high-risk medicines include

- oral methotrexate
- concentrated potassium
- insulin
- warfarin
- heparin
- morphine

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

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 insulin⁵

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 insulin⁴

3/4 of New Zealanders are estimated to have had a prescription for one or more medicines in the year ended 30 June 2013.¹

1. De Raad JP. 2012. Towards a value proposition... scoping the cost of falls. Wellington: New Zealand Institute of Economic Research.
 2. Rubenstein LZ. 2006. Falls in older people: epidemiology, risk factors and strategies for prevention. Age and Ageing 35:52: i37–i41.
 3. Health Quality & Safety Commission. 2015. Atlas of Healthcare Variation (falls domain). Wellington: Health Quality & Safety Commission. URL: www.hqsc.govt.nz/atlas/falls (retrieved 18 March 2015).
 4. New Zealand Health Information Service. 2002. Fractured Neck of Femur Services in New Zealand Hospitals 1999–2000. Wellington: Ministry of Health.
 5. Autier P, Haentjens P, Bontin J et al. 2000. Costs induced by hip fractures: a prospective controlled study in Belgium. Belgian Hip Fracture Study Group. Osteoporosis International 11(5): 373–80.
 6. Osteoporosis New Zealand. 2012. Bone Care 2020. Wellington: Osteoporosis New Zealand.

Surgical site infections (SSIs)

2–5%

Surgical site infections (SSIs) occur in approximately 2–5 percent of patients undergoing inpatient surgery.¹



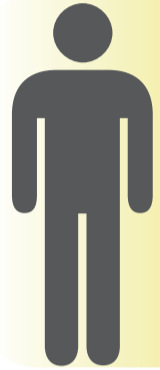
2nd MOST COMMON

SSIs are the second most commonly reported healthcare associated infection (HAI).²



17–20% of HAIs

SSIs comprise approximately 17–20 percent of HAIs in developed countries.^{2,3}



2 x \$

A patient with an SSI costs approximately twice the amount of a patient without an infection.⁴



3–4 x \$

An SSI following hip or knee replacement costs three to four times as much as the original surgery.⁵



SSIs following joint replacements (joint arthroplasty) are strongly associated with increased morbidity and mortality, prolonged hospital stay, and long-term antibiotic treatment.⁵



2–3 times

SSIs following hip replacement surgery increase the length of stay by at least 2–3 times.^{6,7,8}



2–11-fold Increased risk

Patients with an SSI have a 2–11-fold increased risk of death compared to postoperative patients without a SSI.⁹



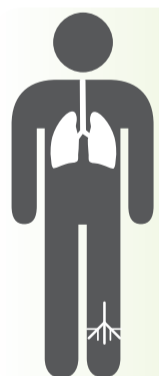
32 days \$45,000

SSIs following open heart surgery extend the length of hospital stay by an average of 32 days at an average cost of NZ\$45,000 per patient.¹⁰

- Anderson DJ, et al. SHEA/IDSA Practice Recommendation: Strategies to Prevent Surgical Site Infections in Acute Care Hospitals. *Inf Cont Hosp Epidemiol*, 2008; 29: 551–561.
- World Health Organization (WHO). Report on the Burden of Endemic Health care-associated Infection Worldwide. Geneva, 2011.
- Klevens R M, Edwards J R, Richards C L Jr, Horan, TC, Gaynes RP, Pollock D A, & Cardo D. Estimating health care-associated infections and deaths in U.S. hospitals. *Public Health Reports*, 2007, 122:2: 160–166
- Broex ECJ, et al. Surgical site infections: How high are the costs? *J Hosp Inf*, 2009;72: 193–201.
- Institute for Healthcare Improvement. The Business Case for Implementing Interventions Recommended in the IHI How-to guide: Prevent Surgical Site Infection for Hip and Knee Arthroplasty, November 2012.
- Ridgevay S et al, Health Protection Agency England. Infection of the surgical site after arthroplasty of the hip. *J Bone Joint Surg*, 2005; 87-B: 6: June 2005.
- Jodra VM, Soler LS, Perez CD, Requejo CMS, Farras NP. Excess length of stay attributable to surgical site infection following hip replacement: a nested case control study. *Inf Cont Hosp Epidemiol*, December 2006, 27: 12: 1299–1303.
- Coello R, Charlett A, Wilson J, Ward V, Pearson A, Boriello, P. Adverse impact of surgical site infections in English hospitals. *J Hosp Inf*, 2005; 60: 93–103.
- Society of Healthcare Epidemiologists of America, *Practical Healthcare Epidemiology*, 3rd edition, 2010, Chapter 15, pp.173–185.
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Perioperative harm

>300,000 publicly funded operations are performed in New Zealand each year.



759

patients¹ suffered deep vein thrombosis/pulmonary embolism while still in hospital or readmitted within 28 days of surgery.

1. Source: National Minimum Dataset 2012



2178

The patients needed an estimated 2178 extra bed-days.

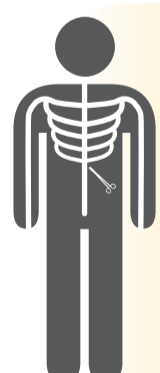
Estimated cost

\$1.7 million



205 claims

Between 2005–06 and 2010–11, ACC accepted 205 claims for retained equipment or wrong-site surgery.



Foreign bodies left in during a procedure²

OECD average 5.0

New Zealand rate 10.6

2. Based on 2011 administrative data and the rates per 100,000 hospital discharges.



Accidental puncture or laceration during surgery²

OECD average 220

New Zealand 405

2. Based on 2009 administrative data and the rates per 100,000 hospital discharges.

The World Health Organization's Surgical Safety Checklist covers a core set of safety checks.

A more systematic use of the checklist is likely to lead to an estimated 21–36 percent reduction in avoidable complications.

The anticipated benefit to the public health system from this reduction is estimated at \$5.7 million per annum.³

3. Range \$1.3–14.5 million. See Hefford M, Blick G. 2012. Cost benefit analysis of the surgical safety checklist. Sapere Research Group.



21–36%

reduction in avoidable complications

\$5.7 million

per annum benefit to public health system



Clinical Governance Assessment Project

31%

of respondents said they found it hard to 'speak up' when they saw problems with patient care.⁴



43%

of respondents believed that their DHB did not work well as a team.

4. Gauld R, Horsburgh S. 2012. Clinical governance assessment project: Analysis of three quality and safety questions in a national survey of New Zealand health professionals. Dunedin: Centre for Health Systems, University of Otago.