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## **Frequency of use and activation of safety-engineered sharps devices: a sharps container audit in five Australian capital cities**

**Terry Grimmond** FASM, BAgrSc, GrDpAdEd

Grimmond and Associates, Hamilton 3216, New Zealand. Email: [terry@terrygrimmond.com](mailto:terry@terrygrimmond.com)

### **ABSTRACT**

#### **Introduction**

Sharps injuries (SI) among healthcare personnel (HCP) in Australia are of such concern the matter was brought before Parliament in 2013. Many SI from safety-engineered devices (SED) are due to non-activation. Monitoring of activation is recommended. This paper outlines a sharps container (SC) contents audit conducted in Australian capital cities.

#### **Methods**

Reusable, 22 L SC (Sharpsmart, Daniels Corporation, Melbourne) were randomly selected from random healthcare facilities (HCF) in five cities. Wearing protective apparel, the operator opened and decanted SC and sorted hollow-bore needles (HBN) into: capped v. uncapped non-SED, and activated or non-fully activated SED. Volumes and weights were recorded for inter-study comparisons. WinPepi v2.78 was used to calculate probability (significance set at  $_{0.05}$ ), relative-risk and confidence limits.

#### **Results**

1212 L of sharps (167.9 kg) from 102 SC from 27 hospitals were audited. Many devices were blood-contaminated. Of the 9651 HBN, 30.4% were SED and 19.4% of the SED were not, or partially, activated. Of the 6718 non-SED, 30.6% were capped needles or needle-syringes. City averages for capped or naked sharps ranged from 64.2% (Sydney) to 97.8% (Adelaide) while hospital averages ranged from 32.6 to 100%. Overall, 54.2% of devices were discarded 'sharp'.

#### **Conclusions**

It is disturbing that 75.5% of hollow-bore needles were capped or naked, indicating a high proportion of Australian HCP are unnecessarily at risk of SI while handling sharps. The high non-use of SED and non-activation of SED needs researching. Widespread SED evaluation and adoption (automatic and semi-automatic SED where feasible), repetitive competency training and safety-ownership are needed. Legislation may be indicated.