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MEDIA RELEASE

# DEFIBRILLATOR USE ON THE RISE IN AUSTRALIA

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IMPLANTABLE cardioverter defibrillators (ICDs) – life-saving devices that prevent sudden cardiac death – are being surgically inserted in patients at increasing rates at a cost of almost $155 million a year, according to research published in the *Medical Journal of Australia*.

The Australian-first study analysed data from the National Hospital Morbidity Database to determine the number of ICD procedures by year, patient age and sex, and to estimate age group-specific population rates and associated costs.

The researchers, led by Dr Jodie Ingles, Head of the Clinical Cardiac Genetics Group at the Centenary Institute, found that the number of ICD procedures increased from 1844 in 2002–03 to 6504 in 2014–15. More than 75% of procedures were in men.

"In 2014–15, the ICD insertion rate for people aged 70 or more was 78.1 per 100 000 population, 22 per 100 000 for those aged 35–69 years, and 1.40 per 100 000 people under 35," Ingles and colleagues wrote.

"The reported complication rate decreased from 45% in 2002–03 to 19% in 2014–15, partly because of a change in the coding of complications [from 'severe and catastrophic' to 'catastrophic' only]. The number of removals corresponded to at least 4% of the number of insertions each year.

"The aggregate cost of hospitalisations with an ICD procedure during 2011–14 was $445 644 566.

In terms of specific ICD procedures, the authors found that:

- The rate of ICD insertion procedures increased from 5.68 in 2002–03 to 17.9 per 100 000 persons in 2014–15;
- The rate of ICD replacement procedures increased from 1.67 in 2002–03 to 8.55 per 100 000 persons in 2014–15;
- The rate of ICD adjustment procedures increased from 0.23 in 2002–03 to 0.46 per 100 000 persons in 2014–15; and,
- The rate of ICD removal procedures increased from 0.27 in 2002–03 to 0.77 per 100 000 persons in 2014–15.

"It is unclear whether the overall increase in procedure rates reflected an increasing need for ICD therapy, or was a direct result of increased awareness of risk factors for sudden death," Ingles and colleagues wrote.

"A patient-centred approach to care, including discussing the benefits and risks of ICD therapy with the patient and their family, is essential. The proportion of women among patients undergoing ICD procedures is relatively small (about 20%); the possibility that ICD therapy is underused in female patients should be investigated."

The authors were surprised by one set of results in particular – the increased rate of ICD removals.

"The most frequent reasons for ICD removal are post-surgical infection (clinically accepted infection rate: 1%), device malfunction, misdiagnosis of a heart condition, or lack of clinical benefit," they wrote.

"The unexpectedly high rate of removals we found should be a priority for investigation."

**Please remember to credit *The MJA*.**

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