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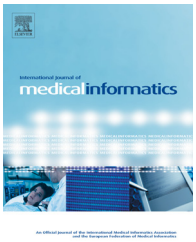

The utilization of poisons information resources in Australasia

J.S. Fountain[a,b,c,*], *D.M. Reith*[a,b,c], *A. Holt*[a,b,c]

[a] *Department of Preventive and Social Medicine, University of Otago, Dunedin, New Zealand*
[b] *Dunedin School of Medicine, University of Otago, Dunedin, New Zealand*
[c] *Department of Information Science, University of Otago, Dunedin, New Zealand*

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ABSTRACT

Purpose: To identify poisons information resources most commonly utilized by Australasian Emergency Department staff, and examine attitudes regarding the benefits and user experience of the electronic products used.
Methods: A survey tool was mailed to six Emergency Departments each in New Zealand and Australia to be answered by medical and nursing staff.
Results: Eighty six (71.7%) responses were received from the 120 survey forms sent: 70 (81%) responders were medical staff, the remainder nursing. Electronic resources were the most accessed poisons information resource in New Zealand; Australians preferring discussion with a colleague; Poisons Information Centers were the least utilized resource in both countries. With regard to electronic resources, further differences were recognized between countries in: ease of access, ease of use, quality of information and quantity of information, with New Zealand better in all four themes.
Conclusions: New Zealand ED staff favored electronic poisons information resources while Australians preferred discussion with a colleague. That Poisons Information Centers were the least utilized resource was surprising.

1. Introduction

Poisoning and potentially toxic exposures account for up to 4% of presentations to Australasian Emergency Departments (EDs) [1]. While physicians are familiar with the treatment of common poisonings, the range of toxic compounds is enormous and ever-expanding, and the knowledge required to adequately manage such patients is highly specialized (arguably a sub-specialty). This situation is further complicated by continuing refinement of established management regimens; introduction of novel treatments/antidotes; new research challenging established thinking, and; areas of ongoing debate.

Clinicians requiring specialist toxicology information have long been supported by expert advice provided from Poisons Information Centers (PICs); a model introduced to Australasia in the 1960's [2]. Indeed, with the exception of drug information units, this type of service is unique in medicine. However, use of the New Zealand National Poisons Center telephone service by hospital-based callers declined by 73% from 1995 to 2005 [3], coinciding with the Center's introduction to EDs of an electronic poisons information (PI) resource, initially a CD-ROM in 1996, then via the Internet in 2002 [6,9]. In other countries, electronic poisons information products are also available: Poisindex® made available on CD-ROM in the USA from 1985 [19]; and, ToxBase, accessible through the Internet in the UK from 1999 [11].

* *Corresponding author at*: Department of Preventive and Social Medicine, University of Otago, Dunedin, New Zealand. Tel.: +64 3 479 5168.
E-mail address: john.fountain@otago.ac.nz (J.S. Fountain).

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However, not all resources now available within Australasia have been found adequate when assessed by clinical toxicologists: a review recommending that one source not be used as a primary reference for poisons information [4], with an accompanying editorial declaring the product as "inaccurate, out-of-date and potentially dangerous" [5]. Recognition of the use of poor PI raised interest in the range of clinical decision support (CDS) accessed by ED staff for the management of poisoned patients.

The aim of this study is to identify poisons information sources most commonly utilized by Australasian ED staff, access to and perceived quality of that information, and to examine attitudes regarding the benefits and user experience of the electronic products.

2. Methods

Australasian ED staff were surveyed to identify sources of poisons information and record opinion of those resources. In particular, respondent's views of electronic poisons informatics products and the utility of the Internet were explored. New Zealand and Australian results were then compared to identify differences between: sources used by each country, experience with those resources, and ICT infrastructure. These results identified a series of themes were disparities existed between countries.

Six hospitals in New Zealand and six in Australia were identified for survey as they: were geographically spread throughout their respective countries; known to have EDs which treated poisoned patients; were all general treatment facilities; provided five tertiary level and one secondary level facility from each country, and; provided total patient catchment sizes of 1,909,000 and 3,444,000, representing 43.4% and 16.4% of the total populations of New Zealand and Australia respectively (Table 1). The size and spread of these populations therefore represented a good sample of the study regions. Furthermore, the New Zealand hospitals had previously been surveyed with a similar tool allowing potential for additional analysis of results [6,9]. The Medical Directors of each of these departments were mailed ten questionnaires on the 14th April 2008 (120 in total) and asked to have the surveys answered by both the clinical and nursing staff of their departments. Responses were not accepted after 30th June 2008.

The survey (based on a previously published version [6]) was developed and presented for validation to a group of House Officers, Registrars and Consultant Emergency Physicians at Dunedin Hospital Emergency Department, New Zealand; and a final version of the questionnaire produced. Respondents answered using continuous scales of agreement/disagreement. The distance from the agreement end of the scale was measured in a scale of 0–100 mm, where 0 mm represents complete agreement and 100 mm represents complete disagreement. The results were recorded in an Excel spreadsheet. Summary statistics are presented as median (range) and hypothesis tests were performed using the Wilcoxon Rank-Sum test using Stata®.

3. Results

There were 86 (71.7%) responses to the 120 questionnaires. Of those received, 49 (81.7%) were from New Zealand with 37 (61.7%) returned from Australia. Of New Zealand respondents, 77.6% were doctors, as were 86.5% of Australian replies; all remaining surveys were received from nursing staff (Table 2). Consultant level practitioners–doctors qualified in the specialty of emergency medicine – comprised 20.4% of doctors replying from New Zealand, and 46.0% of those from Australia. The remaining doctors were: House Officer – a doctor in their first two years following graduation with a medical degree; Medial Officer Special Scale – a doctor beyond house officer level not training in a medical specialty, and; Registrar – a doctor currently under training in a medical specialty following their house officer experience.

Multiple sources of PI were reported as used, including: electronic databases, colleagues, department protocols, text books, and PICs (Table 3). Resource preference differed between countries. New Zealand's leading choice – electronic resources – twice as popular for daily or weekly use as in Australia, and followed by discussion with a colleague and in-house protocols. In Australia, while consulting a colleague was

Table 1 – Description of surveyed hospitals.

Hospital	Country	Level	Population catchment	Beds	ED patient encounters/year
Auckland	NZL	Tertiary	500,000	710	50,000
Waikato	NZL	Tertiary	370,000	600	60,000
Wellington	NZL	Tertiary	250,000	434	45,000
Christchurch	NZL	Tertiary	500,000	650	72,000
Dunedin	NZL	Tertiary	181,000	388	36,000
Invercargill	NZL	Secondary	108,000	181	30,000
Prince of Wales	AUS	Tertiary	313,000	440	45,000
Royal Perth	AUS	Tertiary	241,000	833	54,000
Monash MC	AUS	Tertiary	1,000,000	640	70,000
Austin	AUS	Tertiary	250,000	400	70,000
Westmead	AUS	Tertiary	1,500,000	975	50,000
Caboolture	AUS	Secondary	140,000	190	45,000

Source: Information derived from hospital websites accessed 9 April 2013.

NZL, New Zealand; AUS, Australia.