



Queensland University of Technology
Brisbane Australia

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[Limbong, Jesani, Vallmuur, Kirsten, & Walker, Sue](#)
(2013)

Utilising hospital data to inform product safety prioritisation : the application of RAPEX severity rankings in ICD-coded Burn Data. In *11th Australasian Injury Prevention & Safety Promotion Conference*, 11 – 13 November 2013, Fremantle, Western Australia. (Unpublished)

This file was downloaded from: <http://eprints.qut.edu.au/65276/>

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Utilising hospital data to inform product safety prioritisation: The application of RAPEX severity rankings in ICD-coded Burn Data

Limbong, J.¹, Vallmuur, K.¹ & Walker, S.²

¹ Centre for Accident Research & Road Safety Queensland, Queensland University of Technology

² National Centre for Health Information Research and Training, Queensland University of Technology

Background

The implementation of the Australian Consumer Law in 2011 highlighted the need for better use of injury data to improve the effectiveness and responsiveness of product safety (PS) initiatives. In the PS system, resources are allocated to different priority issues using risk assessment tools. The rapid exchange of information (RAPEX) tool to prioritise hazards, developed by the European Commission, is currently being adopted in Australia. Injury data is required as a basic input to the RAPEX tool in the risk assessment process. One of the challenges in utilising injury data in the PS system is the complexity of translating detailed clinical coded data into broad categories such as those used in the RAPEX tool.

Aims

This study aims to translate hospital burns data into a simplified format by mapping the International Statistical Classification of Disease and Related Health Problems (Tenth Revision) Australian Modification (ICD-10-AM) burn codes into RAPEX severity rankings, using these rankings to identify priority areas in childhood product-related burns data.

Methods

ICD-10-AM burn codes were mapped into four levels of severity using the RAPEX guide table by assigning rankings from 1-4, in order of increasing severity. RAPEX rankings were determined by the thickness and surface area of the burn (BSA) with information extracted from the fourth character of T20-T30 codes for burn thickness, and the fourth and fifth characters of T31 codes for the BSA. Following the mapping process, secondary data analysis of 2008-2010 Queensland Hospital Admitted Patient Data Collection (QHAPDC) paediatric data was conducted to identify priority areas in product-related burns.

Results

The application of RAPEX rankings in QHAPDC burn data showed approximately 70% of paediatric burns in Queensland hospitals were categorised under RAPEX levels 1 and 2, 25% under RAPEX 3 and 4, with the remaining 5% unclassifiable. In the PS system, prioritisations are made to issues categorised under RAPEX levels 3 and 4. Analysis of external cause codes within these levels showed that flammable materials (for children aged 10-15yo) and hot substances (for children aged <2yo) were the most frequently identified products.

Discussion and conclusions

The mapping of ICD-10-AM burn codes into RAPEX rankings showed a favourable degree of compatibility between both classification systems, suggesting that ICD-10-AM coded burn data can be simplified to more effectively support PS initiatives. Additionally, the secondary data analysis showed that only 25% of all admitted burn cases in Queensland were severe enough to trigger a PS response.