

Consumer Safety

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346 INJURY AND ACCIDENT DATA COLLECTION EFFORTS IN EUROPE IN SUPPORT OF CONSUMER PRODUCT SAFETY POLICY

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Background Availability of data on the external causes of injuries/accidents which includes product related information is a prerequisite to guide targeted preventive actions in the area of consumer product safety and to support market surveillance enforcement and policy efforts in the EU.

Description of the problem Unlike in the USA, no common injury database with meaningful information to support product safety work is currently in force in the EU. Data on injuries/accidents are collected in an extremely patchy and diverse way across Member States. Yet, the amount of data available at national level in diverse fields (e.g. injury datasets, fire statistics, poison centres) can potentially provide relevant information for market surveillance and product safety policy and enforcement purposes. However, it is frequently not comparable due to lack of harmonised methodology and classification, covers only a limited number of injury types or has a limited territorial coverage.

Results/Changes EC (DG JUST and DG JRC) collaborate on injuries/accident data collection for product safety and market surveillance with the aim to: map existing data collection systems on injuries/accidents of relevance for product safety and market surveillance in MS; explore innovative IT tools to improve systems' interoperability; develop a methodology to organise/filter/extract/use available data trends; identify possible alternatives/solutions with a view to increase the availability of injury/accident data useful for product safety purposes and assessing the related costs.

Conclusions European Commission works towards adding EU value to existing national data collections in MS on accident/injuries in support of product safety and market surveillance with traceable policy impact and societal benefits: informing and boosting the effectiveness of product safety policy actions; improving product safety standards; reducing societal burden of injuries and accidents due to unsafe products and related health costs.

347 USING MACHINE LEARNING TO CATEGORISE EMERGENCY DEPARTMENT DATA FOR PRODUCT SAFETY SURVEILLANCE

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Background Emergency departments (ED) around the world collect valuable injury data with potential to inform consumer product regulators. However, many of these systems store key information in unstructured text fields, making case identification and analysis difficult. Machine learning approaches allow auto-coding of large amounts of data, increasing the utility of these

data for surveillance. This study aimed to evaluate the performance of different classifiers for categorising mechanisms and objects involved in injury-related ED presentations.

Methods A sample of 100,000 cases from a special injury surveillance system was used to train the classifiers (Naïve Bayesian, support vector machine (SVM) and logistic regression) and algorithms were tested on 10,000 cases. Accuracy results of each classifier were compared. The classifier obtaining the highest accuracy was then applied to state-wide ED text to autocode the data. A sample of cases were manually coded and reviewed to assess the accuracy of the algorithm for the larger dataset.

Results All classifiers were found to achieve high levels of accuracy for categorising mechanism and moderate levels of accuracy for categorising objects involved. The SVM approach showed the highest accuracy, and was used to classify state-wide ED injury data. Over 75% of the statewide database was assigned a specified mechanism and almost a quarter of cases were categorised as involving a consumer product. Comparison with gold standard manual coding for a sample of cases found high accuracy of the SVM classifier for the statewide data.

Conclusions Consumer product regulators are increasingly requiring an evidence base to support regulatory responses, and ED data provides a valuable yet underutilised source of injury data. Machine learning approaches can be used to quickly and accurately code free text descriptions to categorise data for further extraction, analysis and interpretation.

348 THE BATTERY CONTROLLED: AN INTER-AGENCY PARTNERSHIP TO ADDRESS A LITTLE-KNOWN RISK TO CHILDREN

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Background When a child swallows or inserts a button battery into the nose or ears, it can get stuck in the throat or in the nose or ear canal. Saliva triggers an electrical current causing severe burns and tissue damage within 2 hours. This results in serious injury that may require surgery, or even the death of a child.

Between 2011 and 2013, the National Poisons Centre of New Zealand received 175 calls regarding children under 6 years swallowing or inserting batteries into their nose or ears. 63 children have also been treated at the Starship Children's Health Emergency Department from March 2009 to February 2012.

Children under 6 years old represent the greatest risk. Small children often have easy access to coin-sized batteries and devices that use them, and many parents do not know there is a risk.

Objective Develop an effective collaboration with government and non-government agencies, industry, design experts and medical first responders to proactively address an emerging child injury issue—the ingestion and insertion of powerful coin sized lithium batteries by children.

Results In April 2014, Safekids Aotearoa announced The Battery Controlled – a partnership to raise awareness about this issue and share information with the medical first responders, medical community, regulators, parents, caregivers, manufacturers and retailers.

This effort is committed to helping prevent children from swallowing coin-sized button batteries, and for parents and medical first responders to know what to do if they suspect a child has swallowed a button battery.

This presentation will describe the key components of the campaign, including identifying key partners and how each contributed to addressing the injury issue from all angles – regulation, product design, packaging, education and awareness.

15,000 pamphlets were distributed throughout education and health providers, home visitors and care givers to families around the country. 240 kits to demonstrate the risks of the product and how the injury can be prevented were provided to organisations and government services. 90% of the resource users evaluated the material as effective and very effective and that they learnt a lot about the issue.

The presentation also describes the different mediums and technology used to reach the right audience.

Conclusions Outcomes to date include support from the then Ministers of Health and Consumer Affairs, International recognition for New Zealand as a world-leader in button battery child injury prevention, strong media support and heightened public awareness of the injury issue.

349 MACHINE SAFETY REGULATION IN THE EU AND THE US

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Background This paper discusses the results of a study focusing on the differences of regulation around product safety, especially machines for use at work, between the European Union (EU) and the United States of America (US). Authors analyse how the differences effect on European companies manufacturing machines for use at work and what kind of compliance management practices the companies have to tackle the differing regulation.

Methods The results of the study were gathered by literature review and interviews. The semi-structured interviews were conducted to representatives of six globally operating companies manufacturing machines for use at work and to representatives of organisations formulating and/or influencing EU legislation and standardisation.

Results European integration has clarified the companies' operations significantly within the EU. At present the legislation and standards on machinery are mostly harmonised. By contrast the European companies consider that US market is difficult because of the state-specific regulation and completely different framework to consider safety issues. Especially the costs of possible legal actions induce uncertainty.

Conclusions The differing requirements between market areas may hinder export, and hence the globally operating machine manufacturing companies need tools and practices for recognising and applying safety requirements more effectively. In addition, the proposed Transatlantic Trade and Investment Partnership (TTIP) between the EU and the US can have significant effects on the field of requirements as well as the legislative framework in the future.

350 PRODUCT RELATED HEAD INJURIES IN INFANTS AND TODDLERS – STARTING POINT FOR A CAMPAIGN

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Background The highest hospitalisation rates in < 18 ys for all injuries as well as head injuries (S0-09) according to the national report on “Injuries by Accidents, Self-harm and Violence” (Ellsäßer 2014) were observed in infants (<1 y) and toddlers (1–4 ys). Although this is valuable information for injury prevention we need detailed information on injury events. The Full Injury Database (FDS) contains product related injuries as well as the doctor's narratives. Since 2008 we have managed to implement a FDS at three major German hospitals reporting to the Brandenburg Department of Health.

Methods Monitoring of injured patient hospital admissions (< 18 ys), either at emergency or ward, based on the European IDB standard. Case analysis of a total of 5,969 head injuries according to ICD-10 (S00–S09) in the < 5-year-olds (2008–2014). An injury was considered as an injury involving a product, when a product was categorised as “triggering“ the injury. In-depth analysis of the doctor's narrative.

Results Head injuries in infants made up 77% (644) of all injuries (831). 87% (561) of head injuries were triggered by a product. The five most frequent product related injury events were falling from/out of: #1 changing tables 20%/111, #2 furniture (e.g. couches) 17%/96, #3 parental bed 15%/84, #4 buggies 7%/40, #5 carriers 4%/20. These events pertained 62% of all product related head injuries (561).

Head injuries in 1-to 4-year-olds made up 56% (2,876) of all injuries (5,183). 77% (2,222) were triggered by a product. The five most frequent product related injury events were falling from: #1 stairs 12%/257, #2 furniture 7%/159, #3 parental bed 4%/88, #4 bunk beds 3%/73, tricycles 2%/54.

Conclusions Products play an important role as triggers of head injuries among young children. Age specific safety recommendations for parents and caretakers, as currently in development by the paediatric association, are an important step in reducing those injuries.

351 CONSUMER PRODUCT SAFETY POLICY REVISITED

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Background Consumer products are associated with multiple deaths and millions of hospital treated injuries each year in the developed world, with the health sector bearing much of the multi-billion dollar cost.

Description of the problem In Australia, as in many countries, consumer product safety is administered by multiple jurisdictions – often with blurred boundaries between jurisdictional responsibilities. Under the Australian Consumer Law (2011) – Trade Practices Amendment Act – *consumer goods* are defined as “goods that are intended to be used, or are of a kind likely to be used, for personal, domestic or household use or consumption”. The Australian Competition and Consumer Commission administers this law as it applies to product safety, but only for certain products. Since injuries and their prevention do not follow jurisdictional boundaries, from the public health perspective, a broader response to consumer goods is desirable to include any manufactured product likely to be used by consumers.

Aims As exemplified by Australia, to explore complexities and shortcomings of the product safety system and to propose remedies to improve the alignment of public health, public policy and the legal operating framework to enhance product safety.