



## Description of the Nature of the Accidental Misuse of Chemicals and Chemical Products (DeNaMiC)

### Background

In recent years there has been a change in the perception that unintentional injuries (including accidental poisonings) are a result of random and unavoidable accidents, to the recognition that these events are largely preventable events. Hence developing and implementing effective injury prevention policy is a firm public health concern. A prerequisite to action, however, is to develop a good understanding of the nature and extent of injury caused by accidental poisoning. It is also important to have a means for evaluation of the effectiveness of preventative measures.

In the case of household chemical consumer products a number of preventative (risk management) measures have been introduced either via regulations or, as part of the manufacturer's commitment to promote stewardship and responsible care when using their products. In spite of these efforts, however, exposure to household chemical consumer products continues to occur, and there is a need to better understand the nature and extent of these accidental poisoning exposures. The information currently available regarding the burden of injury related to such exposures is incomplete and varies throughout Europe. Sources of data include Poison Centres, national morbidity and mortality statistics and injury statistics collected through specific national or regional schemes. However, there are differences in the ways that these data are organised and reported and they are not always readily accessible.

### Purpose of the Project

The overall objective of this project is to provide an overview of the nature and extent of injury from chemicals and chemical products in the European region and detail information on the circumstances of how these exposures occur. The outcomes of this research will improve understanding of accidental poisoning and exposure to chemicals in household consumer products.

The aim is to identify what data are available to characterise the nature and extent of injury from chemicals in household consumer chemicals and chemical products within Europe, and to find out what conclusions can be drawn from these data sources. It also aims to explore the feasibility of extracting information from poison centre's databases for the same purpose, both retrospectively and prospectively. It is envisaged that the project findings will be used to evaluate and improve risk assessment and risk management measures to reduce the incidence and severity of poisoning exposures.

To address the specific objectives of the project the work has been divided into five subcomponents as outlined below.

1. Undertake a literature review of published statistical data on the nature and frequency of incidents and events related to accidental exposures to household chemical products to provide an overview of what information is currently available<sup>1</sup>.
2. Review the data collected by two poisons centres on the circumstances of exposure to consumer chemical products by undertaking a retrospective analysis of enquiries made to two key European poisons centres over a three year period.
3. Evaluate the information collected through the retrospective study to determine how useful these data are for risk assessment purposes and to what extent such data can be collected on a European-wide basis.
4. Undertake a review of risk management measures currently used to reduce risk of poisoning from chemical consumer products. This will include an assessment of the alerting mechanisms used by poisons centres and lessons learned from toxicovigilance activities (e.g. monitoring toxicity of commercial products or identifying products causing significant morbidity or mortality).
5. Design and execute a prospective feasibility study to investigate in more detail the circumstances of exposure to a defined set of consumer chemical poisoning incidents. The design of the study will take into account the results and recommendations of the other subcomponents. The study will involve four poisons centres (Lille, London, Göttingen and Prague) and will be conducted over a six month period. Selected cases reported during this time will be analysed to assess the effectiveness of controls and barriers. This will include information on the circumstances of exposure and severity of poisoning and an assessment of possible preventative measures.

Results from individual subcomponents will be reported in due course.

## **Project Partners**

**Health Protection Agency, Chilton, UK**

**World Health Organization, Geneva, Switzerland**

**Guy's and St Thomas' NHS Foundation Trust, London, UK**

**Federal Bureau for Risk Assessment, Berlin, Germany**

**Giz-Nord Poisons Centre, Göttingen, Germany**

**CHRU de Lille Poisons Centre, Lille, France**

**Toxicology Information Service, Prague, Czech Republic**

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<sup>1</sup> Findings from this review have been published in the Chemical Hazards and Poisons Report (May 2008), Health Protection Agency, UK and is available at <http://www.hpa.org.uk>.