



National Safety Council

Position/Policy Statement

Children's Acute Poisoning Prevention

The Educational Resources Division submits to the National Safety Council's Board of Directors for approval a position statement on the prevention of children's acute poisonings. This paper also includes background information and rationale.

The National Safety Council contends that preventive measures are the key to reducing the poisonings occurring to infants and young children. Preventive measures that the Council promotes and endorses include new product development and engineering improvements in current products and packaging such as: development of child-resistant latches for cabinets; improved child-resistant container closures/caps that provide less resistance to older adults but enough to children; use of child resistant closures on all medication containers; imprinting on solid medications – both over-the-counter (OTC) and prescription; and the inclusion of bittering agents in mild-to-moderately toxic house, garden and automotive consumer products. The Council also promotes and endorses adult education of preventive measures, especially to expectant parents, grandparents and paid professional adult care givers; it also promotes and endorses careful and proper in-home storage of toxic materials and children's supervision, especially when toxic materials are open and in use. The Council acknowledges that appropriate and timely responses to poisoning occurrences are essential in reducing fatalities; therefore, the Council promotes and endorses the use of our nation's growing network of certified, regional poison control centers.

This position statement reflects the opinions of the National Safety Council but not necessarily those of each member organization.

Submitted by the Educational Resources Division
Approved by the Board of Directors, May 5, 1989

Background

The American Association of Poison Control Center's National Data Collection System states that 1,098,894 and 1,166,940 human exposures were reported in 1986 and 1987 respectively.* This collection system's data indicates, on the basis of 57 reporting centers, that the majority of all their reported exposures: involve children under six years (47% under three years), take place in the home (schools accounted for about 8%), involve only one substance (about 93%) and are accidental (about 89%). Victims under 12 years are the only population that indicate a male predominance. Although most exposures involve children, about 63% under six years, the majority of fatalities involve intentional ingestions by individuals over 17 years. Ingestions account for about 78% of all poisonings; other exposure routes – dermal, ophthalmic and inhalation, account for between 5% to 6% each and bites/stings for about another 3%.

Product Development and Engineering

In the area of product development and engineering, the development of child resistant closures have made great strides in reducing poisonings by aspirin and other over-the-counter (OTC) drugs and prescription medicines. Child resistant closures and other protective packaging measures have helped prevent children from being able to ingest potentially dangerous materials. Product developers, however, need to continue researching newer approaches to child resistant closures, including opaque blisters and strips, to offer a wider variety of resistant closures to suit the needs and limitations of a broader group of consumers, including older adults. Additionally, marketing and sales agents should be quick to adopt and place innovative solutions in consumer outlets.

Another method of trying to prevent infants and children from poisonings by mild to moderately toxic liquids is to make the product taste so awful that ingestion may be severely limited. One of the bitterest substances in the world is denatonium benzoate. It was discovered in the late 1950's and was found to be detected by taste at 10 parts per billion (ppb) and was recognizably bitter at 50 ppb. Denatonium benzoate is odorless, colorless and nontoxic. When added to products at a level of 10 parts per million, the product will become so bitter that many children will reject the product upon, or shortly after, tasting it. Some research shows that it significantly reduces the likelihood of an ingestion involving multiple swallows. (It should be noted that with some products any ingestion at all is fatal, so that the inclusion of a bittering agent in those products would be useless.) Denatonium benzoate should be added by manufacturers to all mild-to-moderately toxic products, where appropriate, especially household, garden and automotive chemicals in an attempt only to mitigate the severity of a poisoning episode.

* The number of reporting poison control centers increased from 1986 to 1987. The data represented covers approximately 57% of the U.S. population; thus the 1987 projected statistics would indicate over two million exposures. c1989 National Safety Council

In addition to the inclusion of bittering agents where appropriate, there is another step that some manufacturers can take to help mitigate loss from poisonings – across the board solid drug imprinting. Imprinting assists health professionals in the identification of substances involved in poisonings. Currently, less than half our states require drug manufacturers to imprint solid prescription medications (tablets, capsules and caplets) with an alpha-numeric code. Imprinting all solid medications with a code can result in improved product identification which can favorably impact upon: treatment outcomes, identification of counterfeit brand name drugs, and quality control maintenance in hospital and pharmacy distribution activities. It would be in the best public interest to have all manufacturers of prescription and/or OTC drugs to imprint their products in the same manner. We encourage the eventual development of a universal coding language, possibly through the World Health Organization, to allow for speedy drug identification worldwide.

Education

Regardless of the progress made in product development and engineering, some poisonings will continue to occur. Education is a key component in reducing poisoning problems and can lead to an informed society concerning poison prevention. Everyone should be educated about poison prevention, but special efforts should be aimed at parents, grandparents, expectant parents, and child care providers. Before their child is mobile, parents should make certain their home is safe for babies and toddlers. Medicines should be placed in enclosures in a high location with latches or locks. Outdated prescriptions should be properly discarded. If medicine cabinets need to be locked, use a combination lock. Grandparents will need to remember to take special care with their OTC and prescription drugs when grandchildren are visiting.

Day care staff and other care givers, community outreach groups, early childhood educators, babysitters and pediatric health professionals all need proper background information and educational materials. The American Association of Poison Control Centers' certified regional poison control centers, among others, are able to provide up-to-date and reliable information about childhood poisonings and how they can be prevented.

A variety of persons should be involved in educating the public about poisoning prevention. These include community and public health educators, day care/nursery school staff, pediatricians, pediatric health nurses, poison control center staff, national non-profit safety and health organizations, early childhood and elementary school teachers, and consumer representatives for industry.

Supervision

The importance of continuous, adequate supervision of young children cannot be under-emphasized. Studies show that nearly 75% of poisoning accidents occurred when the victim was not supervised. However, another important fact is that most poisonings involving household products occur while the product is in

use. Parents need to be alerted to the accident potential when they turn their back to a child or pause during household cleaning activities for a phone call or doorbell ring. Grandparents and babysitters need to be informed of the importance of proper supervision of children in their care. Paid day care staff, early childhood and primary school educators need basic information on the importance of continuous, adequate supervision of children and knowledge of emergency response including basic first aid.

Emergency Response

Even though we hope that product development and engineering, education and proper supervision can decrease accidental childhood poisonings, we must continue to be prepared for the actual poisoning occurrence. Parents and child care providers must keep the telephone number of the nearest certified regional poison control center posted next to each telephone. Additionally, the name, telephone number, etc. of the child's physician and hospital should be available.

It is important that proper emergency action for poisoning be taken. The most effective approach to take includes: 1) identifying the drug or chemical that caused the poisoning, 2) contacting the poison control center for medical advice, and 3) closely following the instructions given by the poison information specialist(s). 4) If unable to contact them, call your local emergency number (911 in most areas) or a hospital emergency room.

Parents and child care providers will want to keep ipecac syrup available in their locked medicine cabinet. (It is recommended that one, one-ounce, bottle be kept for each child five years or older.) This medication, available without a prescription, induces vomiting and is often recommended when a child ingests a harmful substance. However, ipecac syrup should only be given under the advice and supervision of poison control center information specialist or a physician.

In closing, the Council would like to acknowledge that there are numerous factors, environments and vehicles that went unmentioned in this paper. This is not to diminish the importance of topics such as lead in interior house paint and drinking water, chemical splashes and fume inhalation from home rehabilitation work, or poisonous spiders, snakes and plants. However, it is the intent of this paper to address only the most common and acute poisoning occurrences to infants and young children.

An Aside: Technical Reviewers

Many members of the Educational Resources Division worked on the development of this position paper, most notably Dr. Dale Ritzel who acted as the volunteer coordinator of the project, and Linda Basehore of the Indiana Poison Control Center who set many activities in motion with her lecture during

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