The Iowa Statewide Poison Control Center represents a unique public-private partnership in which public funds and private resources have been combined to provide our state with a cost-effective and life-saving public health service. The ISPCC has experienced a **65% increase** in calls since 2000 when funds were first appropriated for the Center by the Iowa Legislature. The center answered **38,175** poison-related calls last year at an average cost of **$22** per call.

Thousands of Iowans avoided adverse health effects because of the vital information we provided in emergency situations, as well as through distribution of poison prevention materials and public and professional presentations. In addition, over **21,000** children and adults last year were safely and appropriately managed at home, entirely by telephone, without the need for using more costly health care resources!

We continue to work closely with state and local authorities to improve Iowa's preparedness to handle natural and manmade disasters. As always, the ISPCC is positioned to play a vital role in any large or small-scale emergency. The center's staff is available on a moment's notice to disseminate accurate information on poison exposures to the 120 Iowa hospitals we serve. We are also among the nation's 62 poison centers providing critical elements in the nation's developing bioterrorism response network.

We remain committed to providing quality poison control services for the State of Iowa. We would like to acknowledge the strong support and financial commitment of the Iowa State Legislature, Iowa Department of Public Health, U.S. Health Resources and Services Administration, and our sponsoring organizations Iowa Health System and University of Iowa Hospitals and Clinics. Funding for the ISPCC remains a constant challenge. Permanent, stable funding for programs such as poison prevention and public awareness, professional education and research will continue to be a high priority in the upcoming year. In the meantime, with the support of our public and private partners, we will continue our work to protect and improve the health of Iowans!
**Types of Calls**

- **Human Exposures**: 28,187
- **Animal Exposures**: 1,298
- **Information Calls**: 8,586
- **Drug Identification**: 4,820
- **Drug Information**: 1,026
- **Environmental Information**: 416
- **Poison Information**: 677
- **Prevention/Safety Information**: 1,094
- **Other Information**: 657
- **Total Incoming Calls**: 38,175

**Reason**

- **Unintentional**: 23,562
  - General: 15,857
  - Environmental: 1,113
  - Occupational: 831
  - Therapeutic error: 3,127
  - Misuse: 1,843
  - Bite/sting: 326
  - Food Poisoning: 457
  - Unknown: 8

- **Intentional**: 3,525
  - Suspected suicide: 2,141
  - Misuse: 684
  - Abuse: 588
  - Unknown: 112

- **Other**: 276
  - Contamination/tampering: 40
  - Malicious: 212
  - Withdrawal: 24

- **Adverse Reaction**: 709
  - Drug: 473
  - Food: 68
  - Other: 168

- **Unknown reason**: 115

**Total**: 28,187

**Patient Age**

Poisonings remain a major health hazard among young children. Children under six years of age account for the majority (54%) of the poisonings managed by the ISPCC during FY 03-04. The same age distribution was noted in FY 02-03. Although the incidence of poisoning is still greater in children, the most severe poisonings and poisoning deaths occur in adolescents and adults due to their intentional nature.

**Calls by County: Poison Center Utilization**

Poison center utilization and awareness of its services directly results in decreased injury or deaths and reduces unnecessary emergency department visits and inappropriate use of medical resources. In an effort to raise awareness about poison center services, the center's public education efforts target counties with low utilization rates (< 7) through media opportunities, partnerships and general outreach.
Management Site

| Management on site (home, school, etc) (76%) | 21,545 |
| Managed in health care facility           | 5,652 |
| Treated/evaluated and released            | 2,833 |
| Admitted to critical care unit            | 1,158 |
| Admitted to noncritical care unit         | 470  |
| Admitted to psychiatric facility          | 521  |
| Patient lost to follow-up/left AMA        | 670  |
| Other                                     | 296  |
| Refused referral                          | 677  |
| Unknown                                   | 17   |

**Total (human exposures)** 28,187

Medical Outcome

The ISPCC continually monitors patient outcomes. Nearly 90% of all cases reported to the ISPCC resulted in either no effect or only minor effects. Few cases had poor outcomes. Of the 28,187 human exposures managed by the ISPCC, less than one percent (0.07%) resulted in the death of the victim.

<table>
<thead>
<tr>
<th>Medical Outcome</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>No effect</td>
<td>5,055</td>
</tr>
<tr>
<td>Minor effect</td>
<td>6,735</td>
</tr>
<tr>
<td>Moderate effect</td>
<td>1,157</td>
</tr>
<tr>
<td>Major effect</td>
<td>138</td>
</tr>
<tr>
<td>Death</td>
<td>21</td>
</tr>
<tr>
<td>Unable to follow, potentially toxic</td>
<td>817</td>
</tr>
<tr>
<td>Unrelated effect</td>
<td>840</td>
</tr>
<tr>
<td>Unable to follow, nontoxic or minimal effect</td>
<td>13,424</td>
</tr>
</tbody>
</table>

**Total** 28,187

Who Benefits from the Iowa Poison Center?

We all do! The Iowa Statewide Poison Control Center answers questions about toxic substances and provides emergency poison information 24 hours a day, seven days a week for all Iowans through a toll-free telephone number, 1-800-222-1222. Each year, the Center receives calls from all 99 counties in the state. In addition, access is available for the hearing impaired through TDD/TTY, and non-English speaking callers are supported by interpreters who are conferenced in by phone on a moment's notice. Most people who call the ISPCC are concerned individuals, but nearly 15 percent of all inquiries come from physicians and nurses who need expert advice to treat a patient. Last year the ISPCC team assisted all hospitals statewide.
Consumer awareness and prevention education are key goals of the Iowa Statewide Poison Control Center. We work with state and local health departments, schools, pharmacies, hospitals, teaching institutions, the media and other organizations to extend the reach of our services and to distribute poison prevention materials statewide.

ISPCC educators deliver public education programs to thousands of people each year - from preschoolers to seniors. Special programs are presented on such topics as poison prevention, medication safety, plants, drugs of abuse, and more. With our own full-time educator, and partnering with many other injury prevention coordinators in the state, we conducted over 100 educational programs during the year. Post-testing of participants showed improved knowledge and desired behaviors after a poison prevention program.

There were 52 media contacts made during the year to reporters from local, regional, state and national newspapers, radio and television stations, magazines and newsletters on such topics as dextromethorphan abuse, National Poison Prevention Week, insect repellents/DEET, use of insecticides, syrup of ipecac, and holiday hazards.

Materials distributed through mass mailing also keeps our educators busy throughout the year. We distributed 92,183 pieces of free poison education materials to groups and individuals! Each year during National Poison Prevention Week, held the third week of March, the ISPCC launches a statewide awareness campaign which includes mailings of bulk materials to pharmacies, hospitals, health departments, EMS, physicians, schools and others.

The ISPCC website, www.iowapoison.org, was redesigned during the year to include an educator's archive of programs, online ordering of materials for educators and health care providers. The website offers expert information on a variety of topics for the public including seasonal hazards, medication safety for seniors, poison prevention advice, pet poisoning, games for kids, and more! Parents, grandparents and caretakers can order a free home packet through the site. Last year there were 23,371 visits to the ISPCC website.

The ISPCC is a source of expert toxicology education. Professional education provided by the ISPCC for EMS personnel, police, HAZMAT teams, physicians, nurses, pharmacists, students and other health care providers plays an important role in assuring up-to-date management for poisoned patients across Iowa. Students of medicine, nursing and pharmacy participate in on-site rotations at the ISPCC. These training opportunities result in a greater number of health care providers who have gained expertise in the management of poisoned, overdosed and occupationally exposed patients. Our website contains information directed to health care providers along with our electronic newsletter, Hotline, published twice a year.

### Facts at a Glance

- **Incoming calls**: 38,175
- **Follow-up Calls**: 28,986
- **Total Case-Related Calls**: 67,161
- **Human Poison Exposures**: 28,187
- **Animal Poison Exposures**: 1,298
- **Information Calls**: 8,586
- **Exposures Occurred at a Home**: 91%
- **Unintentional Exposures**: 83%
- **Exposures Involving Children < 6 Yrs of Age**: 54%
- **Exposures Managed at Home**: 76%
Dr. Howard Burns has been named Associate Medical Director of the Iowa Statewide Poison Control Center. He will assist ISPCC Medical Director, Dr. Ed Bottei, in providing 24 hour toxicological consultation, medical management and case follow-up. He also will review medical management protocols and assist in staff development and quality assurance activities.

Dr. Burns is currently practicing emergency medicine in South Dakota. He previously served as Medical Director of the McKennan Poison Center in Sioux Falls from 1980 until the center closed in 1998. He provided leadership on various emergency and poison-related committees during that time. Included in a long list of accomplishments, Dr. Burns initiated the first Pediatric Advanced Life Support (PALS) course in South Dakota and also the first Advanced Trauma Life Support (ATLS) course. He has been an active member in the American College of Emergency Physicians and the American Association of Poison Control Centers.

He received his medical degree from Temple University School of Medicine in Philadelphia, PA. He earned undergraduate degrees from the University of South Dakota (B.S. Medicine) and University of Nebraska (B.S. Zoology) and completed two years of a surgical residency in Phoenix, AZ before starting his emergency medicine career.

Dr. Burns' expertise includes emergency management of poisonings, heat and cold injuries, trauma-related injuries and bioterrorism. He has lectured extensively on toxicology topics to physician groups and other health care professionals. He is board-certified in both emergency medicine and medical toxicology. In his spare time, he enjoys playing foosball placing 2nd in the National Foosball Tournament over 35 doubles!

The ISPCC was lauded in a survey conducted by national experts sponsored by Child Magazine (October 2003) which ranked Iowa seventh in the "Ten Best States to Have a Baby." Iowa is one of only a few states that require their poison centers to be certified in order to receive state funding.

"Our Toddler Drank Poison" was the title of an article appearing in the November 2003 issue of Parents Magazine involving a 17 month old who drank highly toxic antifreeze. The mother dialed 911 and dispatchers connected her with staff of the ISPCC.

ISPCC Medical Director, Dr. Ed Bottei, was quoted in an article appearing in USA Today on Dextromethorphan abuse (Youths Risk Death in Latest Drug Abuse Trend, 12/28/03)
Summary of Information Provided by the ISPCC

- Assessment of severity of exposure
- Home-based treatment recommendations
- Product formulation and identification
- Decontamination recommendations
- Toxic effects from hazardous materials exposures
- Laboratory monitoring parameters and hospital management guidelines
- Antidote indications and recommendations
- Refer to expert toxicology consultants
- Recommendations for poison prevention strategies
- Advice to EMS personnel about need for treatment and transport

Therapy Provided

<table>
<thead>
<tr>
<th>Therapy Provided</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No therapy</td>
<td>19</td>
</tr>
<tr>
<td>Observation</td>
<td>15</td>
</tr>
<tr>
<td>Decontamination only</td>
<td>40</td>
</tr>
<tr>
<td>Other therapy only</td>
<td>3</td>
</tr>
<tr>
<td>Decontamination and therapy</td>
<td>9</td>
</tr>
<tr>
<td>Patient refused help</td>
<td>1</td>
</tr>
<tr>
<td>Unknown if therapy provided</td>
<td>13</td>
</tr>
</tbody>
</table>

Route of Exposure

<table>
<thead>
<tr>
<th>Route of Exposure</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ingestion</td>
<td>22,545</td>
</tr>
<tr>
<td>Inhalation</td>
<td>2,324</td>
</tr>
<tr>
<td>Ocular</td>
<td>1,721</td>
</tr>
<tr>
<td>Dermal</td>
<td>2,635</td>
</tr>
<tr>
<td>Bite/sting</td>
<td>330</td>
</tr>
<tr>
<td>Other</td>
<td>424</td>
</tr>
</tbody>
</table>

Health Care Providers Utilization of the ISPCC

While the vast majority of calls to the ISPCC are from residences (74%); nearly 15% originate from a health care facility and the remainder from schools, workplaces, and other sites. Callers seek prognostic, diagnostic or treatment recommendations. ISPCC Poison Specialists (health care professionals with training in clinical toxicology) collect case data while providing triage and case management recommendations. Approximately 44% of cases are followed-up, allowing the clinical course of the exposure and its outcome to be documented. Last year over 8,300 calls originated from an Iowa health care facility.

<table>
<thead>
<tr>
<th>Iowa Health Care Facility</th>
<th># calls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospitals</td>
<td>3,730</td>
</tr>
<tr>
<td>Physician Office/Clinics</td>
<td>614</td>
</tr>
<tr>
<td>Nursing Home/Chronic Care Facilities</td>
<td>375</td>
</tr>
<tr>
<td>Nurse (Health Info. Line, School, Occupational, Jail, Public Health)</td>
<td>1,809</td>
</tr>
<tr>
<td>Ambulance, EMT, Hazmat, Police, Sheriff, 911 Transfer call</td>
<td>418</td>
</tr>
<tr>
<td>Detox Center, Mental Health Centers, Psychologist, Suicide Help Lines</td>
<td>220</td>
</tr>
<tr>
<td>Pharmacists</td>
<td>781</td>
</tr>
<tr>
<td>Veterinarians (involving animal exposures)</td>
<td>389</td>
</tr>
</tbody>
</table>

Services

Emergency Hotline: The ISPCC provides poison information and poison management advice, over the telephone, for all 2.9 million citizens of Iowa.

Toxicology consultation: Our physician toxicologists provide 24-hour coverage for health care providers throughout the state.

Public Education: ISPCC educators promote poison prevention and awareness to all ages through education programs, media contacts, poison center website, and distribution of poison prevention materials.

Professional Education: The ISPCC offers a 5-week rotation for pharmacy students; toxicology education is provided for physicians, nurses, pharmacists, EMS personnel, police, HAZMAT teams and other health care providers.

Research: Our staff actively engages in clinical and educational research activities involving poison-related topics.

Disaster Hotline: The ISPCC’s ability to acquire and disseminate information 24/7 in a disaster makes it a critical information resource for the public, emergency responders, health care providers and disaster planners.

Toxic Exposure Surveillance System (TESS): Every 15 minutes, information from the ISPCC is automatically uploaded into TESS, a national database compiled by the American Association of Poison Control Centers in Washington, DC where it is blended with information from other U.S. poison centers in an effort to identify new drug or product hazards early, focus prevention education, and detect chemical/bioterrorism incidents.

Statewide Toxicosurveillance: The ISPCC works closely with the Epidemiology Division of the Iowa Department of Public Health to identify and monitor present or potential poisoning or drug hazards within Iowa and help to alert the public of such trends.

Website: Check out our newly designed website, www.iowapoison.org, for up-to-date information and education on various poisoning topics for the public and health care providers.
On Our Team...ISPCC 2003-04 Staff

Medical Director
Edward Bottei, MD, FCCP
BotteiEM@StLukes.org or edward-bottei@uiowa.edu

Associate Medical Director
Howard Burns, MD, FACEP, DABMT
HowBu@aol.com

Managing Director
Linda Kalin, RN, BS, CSPI
KalinLB@ihs.org

Education Coordinator
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Mary Ross, RPh, MBA
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Specialists in Poison Information
Denise Brumm, RN, CSPI
Kim Byrne, RN, CSPI
Randy Crouch, MS, RN, CSPI
Janet Gray, RN, BSN, CSPI
Pat Gunia, RN, BSN, CSPI
Chris Mueller, RN, CSPI
Sue Ringling, RN, BSN, CSPI
Sue Gottsch, RN, BSN, CSPI

A Public-Private Partnership

In fiscal year 03-04, the annual operating budget for the ISPCC was $837,052. Personnel expenses comprised 82% of poison center direct expenses.

Total direct expenses have risen 61% while the call volume has increased 65% since 2000 when funds were first appropriated by the Iowa Legislature.

State funding (tobacco settlement funds) through the Iowa Department of Public Health has remained the same since 2000 and provided 52% ($437,000) of the funding for Center operations last year and is expected to cover less than 50% of the cost to operate the facility this year. Our contract with the state is subject to renewal every year.

Independent sources, primarily its founding sponsors, Iowa Health System and the University of Iowa Hospitals and Clinics, continue to underwrite a significant portion (17%) of its operating costs.

A St. Luke's Children's Miracle Network grant (Sioux City) of $19,483 funded poison prevention materials including telephone stickers, magnets, brochures, and maintaining the ISPCC website.
Reducing Health Care Costs

A study conducted in 2003, commissioned by the Iowa Department of Public Health, evaluated the financial impact on Iowa's health care system if poison control services were not available.*

**Highlights of this study:**

- Last year 20,067 cases (76%) were managed safely over the telephone by ISPCC staff at an average cost of $29 per case. If other parts of the medical care system instead of ISPCC are involved, treatment costs average $205 per case. **Every dollar spent on ISPCC services saves an estimated $7 in medical spending.**
- The **net savings** to Iowa's health care system for the ISPCC managing 20,067 poisoning cases at home for FY 02-03 was **$3.5 million**!
- If the ISPCC was not accessible, 68% of Iowans would go to emergency departments.
- 18% of respondents are covered by Medicaid. Their seeking alternative care would result in charges of **$745,000 to Iowa's Medicaid program.**
- The ISPCC spends $29.17 for each human exposure call received. In 2002, the average cost of a human exposure call for U.S. certified poison centers, including estimated indirect costs, is $46.15.
- In addition to incurring higher costs, directing poisoning exposure cases to other health care providers results in **inappropriate management** and causes people to postpone seeking appropriate medical advice, which can lead to grave consequences.

*This study, Effectiveness of the Iowa Poison Center: Impact on Health Care Costs, was accepted for presentation at the 2004 North American Congress of Clinical Toxicology held in Seattle, WA on September 8-14, 2004. Copies may be obtained by emailing Linda Kalin at KalinLB@ihs.org.

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**Research**

Poison Specialists Chris Mueller, Pat Gunia and Sue Ringling stand by one of their posters presented at the NACCT annual meeting held in Chicago.

Staff of the ISPCC were well represented at the Annual Meeting of the North American Congress of Clinical Toxicology (NACCT) held in Chicago, IL September 4-9, 2003. Medical Director, Dr. Ed Bottei, and various staff presented four posters. The abstract titles and their authors follow:

- **Suicide From Tilmicosin Injection: Case Report and Blood Levels**
  - Chris Mueller, Ed Bottei
- **Methemoglobinemia From Nitrite-Contaminated Punch**
  - Sue Ringling, Tom Boo (Iowa Department of Public Health), Ed Bottei
- **Treatment of Dermal Exposure to Common Household Items**
  - Pat Gunia, Janet Gray, Sue Gottsch, Linda Kalin, Sue Ringling, Ed Bottei
- **Escitalopram, A Review of Adverse Effects in Overdose Reported to Select Regional Poison Centers**
  - Stacey Bangh (Hennepin Regional Poison Center, Minnesota), Chris Mueller