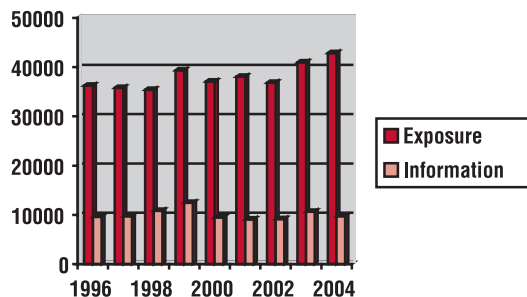




Poison Control Center

Annual Report

Service: The UPCC is a 24-hour resource for poison information, clinical toxicology consultation and poison prevention education. The UPCC has responded to more than 1.1 million calls for assistance. The UPCC is a program of the University of Utah, College of Pharmacy. The following is a breakdown of poison exposure calls and information requests for the past nine years.



Mission: The mission of the Utah Poison Control Center is to prevent and minimize adverse health effects from a poison exposure through education, service, and research.

Staff: The UPCC is staffed twenty-four hours a day with registered pharmacists, nurses and physicians with additional training in clinical toxicology. Specialists in Poison Information (SPIs) undergo an extensive 12-week training program prior to independently answering poison exposure calls. Specialists are required to sit for the Specialists in Poison Information Proficiency Examination to become a Certified Specialist in Poison Information (CSPI) after completing 2000 hours (approximately one year) in the center and handling 2,000 poison exposure calls. Medical and clinical toxicologists are available to physicians and UPCC staff members for consultation at all times.

Standards of Excellence: The UPCC is nationally recognized as a Certified Regional Poison Control Center by the American Association of Poison Control Centers. The UPCC is one of 54 centers with such distinction.

National and State Recognition: Dr. Caravati is an Associate Editor (Toxicology) for the Annals of Emergency Medicine, a member of the Board of Trustees of the American Academy of Clinical Toxicology (AACT) and a member of the National Poison Center Guidelines Consensus Panel of the Maternal Child Health Bureau, Health Resources and Services Administration (HRSA). Dr. Crouch serves as chair of the CSPI Examination Committee of the American Association of Poison Control Centers (AAPCC). This committee is responsible for the

national examination to certify specialists in poison information. She also sits on the State HRSA Bioterrorism Grant Advisory Committee.

The UPCC Celebrates 50 years of Excellence: The first poison center in Utah was established in 1954, making it the 2nd or 3rd poison center to be established in the United States. The poison center movement began in 1950 when the American Academy of Pediatrics established an injury prevention committee to look at ways to reduce injuries in children. In the early 1950's, poisoning was one of the most common injuries. A serious problem at that time was the lack of good information on product ingredients. Alan K. Done, MD, a pediatrician, established the first Utah poison center in Salt Lake General Hospital's emergency department (ED). It was primarily a service to physicians. In 1966, Anthony R. Temple, MD, then a chief pediatric resident, began working with Dr. Done. Drs. Done and Temple developed the concept for regional poison centers. This led to a change in focus of the service from physician only to a service that anyone could call. This concept became the Intermountain Regional Poison Control Center (IRPCC).

The IRPCC was established in 1971. It was located in a room adjacent to the emergency department at University Hospital and Dr. Temple served as the IRPCC's first director. The IRPCC served the entire state of Utah and provided outreach to some of the surrounding states in early years. In the mid 1970's staffing changed from a primarily student run program to paid dedicated staff and eventually 24-hour staffing. The poison center changed its name in 1992 to the Utah Poison Control Center (UPCC) to more accurately reflect its service area.

Advisory Board: A UPCC Advisory Board continues to represent the interests of the public, university and state, and to provide fiscal oversight. The following individuals serve on the Advisory Board:

- *Chair:* Anthony R. Temple, MD, Newly retired as Vice President, Medical Affairs, McNeil Consumer & Specialty Pharmaceuticals
- *Chair-elect:* Kim Wirthlin, MPA, Vice President Governmental Relations and Associate Vice President Marketing and Communications, Health Sciences, University of Utah
- *Immediate Past-Chair:* Jolie Coleman- Development Officer, College of Engineering, University of Utah
- Diana I. Brixner, PhD, Chair, Department of Pharmacotherapy, University of Utah
- Bennion Buchanan, MD, MBA, FACEP, Emergency Department Director, Mountain West Medical Center,



Representative, Utah Chapter of the American College of Emergency Physicians

- Jan M. Buttrey, MBA, Director, Bureau of Emergency Medical Services, Coordinator, Bioterrorism Preparedness Program, Deputy Director, Division of Health Systems Improvement, Utah Department of Health
- Tim Cosgrove, MA, Specialist, Child Advocacy, Primary Children's Medical Center
- Sarah E. Croskell, MD, MPH, Assistant Professor, Department of Pediatrics, University of Utah
- Larry Dew, MBA, CPA, Assistant Vice President for Health Sciences, University of Utah
- Carina Elsenboss, Program Manager, Lead Free Kids, Salt Lake Valley Health Department
- Trisha Keller, RN, MPH, Director, Bureau of Violence and Injury Prevention, Utah Department of Health
- John W. Mauger, PhD, Dean, College of Pharmacy, University of Utah
- Jillanne C. Vicory, Director of Community and Member Affairs, Utah Hospital and Health Systems Association

Data: The UPCC participates in the American Association of Poison Control Center's Toxic Exposure Surveillance System (TESS). TESS is the single largest database of poison exposures in the United States. This database combines the experience of the UPCC and other poison centers in the United States. These data allow for the surveillance of trends in Utah and the United States to identify potential public health risks and to help direct education efforts aimed at decreasing adverse effects from poisoning.

The UPCC is pleased to share with you the following highlights from 2004:

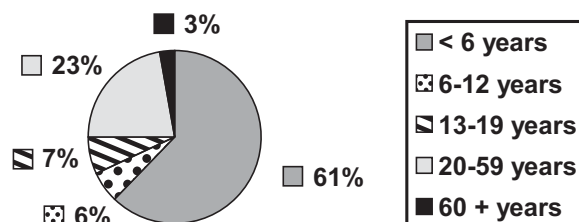
Call Type: The following chart breaks down the total number of calls to the UPCC during 2004. The majority of calls to the UPCC are actual poison exposures (44,670).

Call Type	Number	Percent
Exposure	44,670	82.1
Drug identification	4,521	8.3
Drug information	1,894	3.5
Poison information	945	1.7
Medical information	798	1.5
Environmental information	684	1.3
Substance Abuse	308	0.6
Other information	172	0.3
Teratogenicity information	103	0.2
Prevention/safety information	90	0.2
Confirmed Nonexposure	18	0.0
Occupational information	17	0.0
Other	190	0.3
Total	54,410	100.0

The remaining calls are for information only. Information calls usually involve questions about proper use, storage and precautions regarding drugs and chemicals. Of the 44,670 poison exposures, 1,758 involved animals—mostly dogs and cats.

The remainder of this report reflects the 42,912 actual human poison exposures reported to the UPCC.

Age Distribution: Children are naturally curious and orally explore their environment. Therefore, children less than six years of age (especially 12 months through two years) are particularly "at risk" for a poison exposure.



County Distribution: Human exposure calls to the UPCC originated in all 29 Utah counties. The following table provides a breakdown of the number of human poison

County	Human Exposures	Percent of Calls	Penetrance
Beaver	92	0.2	14.6
Box Elder	639	1.5	14.3
Cache	1,718	4.0	17.1
Carbon	333	0.8	17.2
Daggett	13	0.0	13.6
Davis	4,679	10.9	17.4
Duchesne	388	0.9	26.0
Emery	184	0.4	17.5
Garfield	80	0.2	17.3
Grand	117	0.3	13.6
Iron	599	1.4	15.4
Juab	152	0.4	17.2
Kane	80	0.2	13.2
Millard	186	0.4	14.2
Morgan	94	0.2	11.4
Piute	10	0.0	7.3
Rich	33	0.1	15.9
Salt Lake	16,409	38.2	17.2
San Juan	97	0.2	6.8
Sanpete	330	0.8	13.2
Sevier	288	0.6	14.8
Summit	458	1.1	13.1
Tooele	942	2.2	18.8
Uintah	471	1.1	18.0
Utah	8,657	20.2	19.8
Wasatch	327	0.8	17.1
Washington	1,789	4.2	15.2
Wayne	30	0.1	11.9
Weber	3,363	7.8	16.0
Out of State	354	0.8	
Total	42,912	100.0	17.2



exposures reported for each county and the rate (penetrance) of reporting based on the population of each county. The average penetrance reported in 2003 by poison centers nationwide was 8.1 exposures per 1,000 population. The UPCC had a penetrance of 17.2 in 2004.

Reason for Exposure: The majority of poison exposures reported to the UPCC were unintentional and involved children orally exploring their environment. Ninety-nine percent of exposures in children less than six years of age were unintentional compared to only 44.7% in the age group of 13-19 years. The majority of exposures in adults were unintentional (63.1%). Adult unintentional exposures involved therapeutic errors (taking the wrong dose or wrong medication) as well as ocular and dermal exposures to household chemicals, pesticides and automotive products.

Reason for Exposure	Number	Percent
Unintentional General	25,802	60.1
Therapeutic Error	3,570	8.3
Unintentional Misuse	2,109	4.9
Bite/Sting	1,523	3.6
Environmental	1,504	3.5
Food Poisoning	1,060	2.5
Occupational	655	1.5
Unintentional Unknown	14	0.0
Total Unintentional	36,237	84.4
Suicide	2,470	5.8
Intentional Misuse	1,082	2.5
Abuse	953	2.2
Intentional Unknown	76	0.2
Total Intentional	4,581	10.7
Drug Reaction	1,110	2.6
Food Reaction	123	0.3
Other Reaction	114	0.2
Total Adverse Reaction	1,347	3.1
Tampering	286	0.7
Malicious	240	0.6
Withdrawal	48	0.1
Total Other	574	1.4
Unknown Reason	173	0.4
Total	42,912	100.0

Medical Outcome: The majority of poison exposures are followed to a known outcome (60.8%). Less than 0.5% of poison exposures resulted in a major effect or fatal outcome. Serious adverse effects and death were more frequent in adults (83.2%) and when the reason for exposure was intentional (77.4%).

Exposure Site: The majority of poison exposures occur in the home, whether it is the patient's residence or another residence such as grandparents or caretakers. Use of child-resistant closures, keeping medicine and household products in locked cabinets, and other safety measures help reduce the occurrence of poisoning. However, even in the best poison-proofed home, poison exposures still occur because the majority of exposures occur when the product is in use.

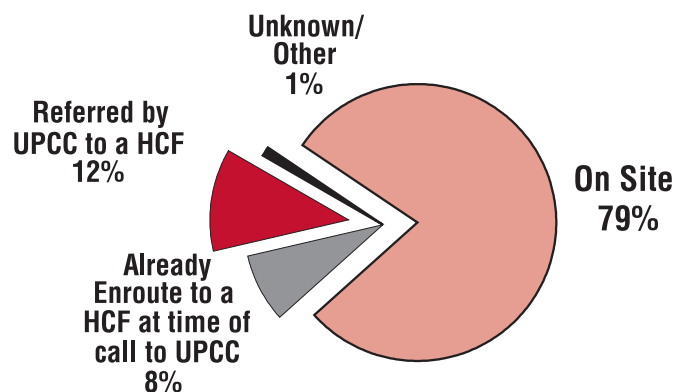
Exposure Site	Number	Percent
Own Residence	36,945	86.1
Other Residence	2,663	6.2
Workplace	888	2.1
Public Area	751	1.7
Restaurant/Food Service	284	0.7
School	279	0.6
Health Care Facility	118	0.3
Other	382	0.9
Unknown	602	1.4
Total	42,912	100.0

Substance Categories: The types of substances involved in poison exposures include products available in the home, workplace and the environment. The most common substance category involved in exposures in children less than six years of age were cosmetics and personal care items (12.7%); in children 6-12 years of age, foreign bodies (9.7%) were most prevalent; in 13-19 years of age, analgesics (25.3%) were most prevalent; and in adults, analgesics (15.8%) were most prevalent. Ibuprofen was the most common analgesic involved in a poison exposure, accounting for 1,669 (3.9%) exposures to the UPCC in 2004. The following are the most common substance categories involved in all poison exposures reported to the UPCC:

Most Common Substances	Number	Percent
Analgesics	5,170	10.8
Household Cleaning Substances	3,995	8.3
Cosmetics & Personal Care		
Products	3,927	8.2
Topicals	2,035	4.2
Cold and Cough Preparations	2,024	4.2
Foreign Bodies, Toys, Misc	1,918	4.0
Sedatives/Hypnotics/		
Antipsychotics	1,866	3.9
Antidepressants	1,632	3.4
Bites and Envenomations	1,619	3.4
Pesticides	1,597	3.3
Total	25,783	53.7



Management Site: The majority of poison exposures (78.1%) were managed on site with telephone follow-up. Children less than six years of age were more likely to be managed on-site (90.6%) as compared to those age 13-19 years managed on-site (49.0%). Treatment in a health care facility was provided in 17.6% and recommended in another 2.9% of patients who refused the referral.



Of the 7,560 poison exposures that were managed in a health care facility:

- 71.0% were treated and released from the emergency department
- 8.2% were admitted for medical care in an intensive care setting
- 6.3% were admitted for medical care in a non-intensive care setting
- 4.4% were admitted for psychiatric care
- 10.1% were lost to follow-up and/or left against medical advice

Health Care Facilities: The majority of patients (84.9%) who required treatment in a health care facility were treated in an acute care hospital. Other management sites included urgent care clinics (4.2%) and practitioner offices (12.5%). The percentages can total to greater than 100% because some patients are managed in more than one facility. The table below shows the distribution of poison exposures reported to the UPCC that were managed in acute care hospitals in Utah.

Public Education

Outreach activities targeted parents of children under age 6 and underserved populations such as racial/ethnic groups and seniors. Twenty-three media interviews were conducted by UPCC staff. National Poison Prevention Week was celebrated by distributing outreach materials to pharmacies and pediatricians throughout the state. The national toll-free poison control number, 800-222-1222 continues to be a major focus of all outreach activities.

Trainer Update Conference

The UPCC established a Train-the-Trainer program to train educators throughout the state to provide poison prevention education in their community. The program was established in 2002 and was conducted at all 12 health districts throughout the state. The UPCC recognized the need for regular training updates to provide up-to-date information and to provide training to new educators. The UPCC offered its first Train-the-Trainer Update Conference in 2004. The conference reinforced the Train-the-Trainer program and provided updates on new and emerging poison hazards. The topics covered at this conference included bites and stings, poisonous plants,

Treating Hospital	Number of Patients	Percent	Treating Hospital	Number of Patients	Percent
Primary Children's Medical Center	461	6.1	Brigham City Community Hospital	83	1.1
Jordan Valley Hospital	380	5.0	Salt Lake Regional Medical Center	74	1.0
Cottonwood Hospital Medical Center	363	4.8	Valley View Medical Center	70	0.9
Utah Valley Medical Center	363	4.8	Ashley Valley Medical Center	65	0.9
Alta View Hospital	337	4.5	Heber Valley Medical Center	54	0.7
Davis Hospital and Medical Center	333	4.4	Orem Community Hospital	50	0.7
Pioneer Valley Hospital	326	4.3	Sanpete Valley Hospital	50	0.7
McKay-Dee Hospital	324	4.3	Central Valley Medical Center	42	0.6
Univ. of Utah Hospitals and Clinics	318	4.2	Veterans Administration Med. Center	42	0.6
St. Marks Hospital	264	3.5	Sevier Valley Hospital	38	0.5
American Fork Hospital	247	3.3	Bear River Valley Hospital	32	0.4
Dixie Regional Medical Center	237	3.1	Delta Community Medical Center	22	0.3
Logan Regional Hospital	208	2.8	Gunnison Valley Hospital	22	0.3
LDS Hospital	189	2.5	Allen Memorial Hospital	21	0.3
Lakeview Hospital	156	2.1	Cache Valley Specialty Hospital	20	0.3
Castleview Hospital	138	1.8	San Juan Hospital	18	0.2
Ogden Regional Medical Center	133	1.8	Beaver Valley Hospital	16	0.2
Mountain West Medical Center	132	1.7	Fillmore Medical Center	16	0.2
Mountain View Hospital	111	1.5	Kane County Hospital	16	0.2
Timpanogos Regional Hospital	90	1.2	Garfield Memorial Hospital	10	0.1
Uintah Basin Medical Center	84	1.1	Hill Air Force Base Hospital	10	0.1



carbon monoxide, club drugs and inhalants, and poison awareness and prevention education. The education was provided by UPCC staff. The conference was held in both Northern and Southern Utah to allow easy access. Over 70 poison safety advocates attended, including representatives from local health departments, pharmacies, law enforcement, and daycare facilities. Plans are being made for the next conference in 2006.

Poison Education Materials: A total of 260,265 pieces of poison prevention education material were distributed throughout Utah in 2004. Materials were distributed to individuals, state and local health departments, fire departments, law enforcement agencies, hospitals, physician offices, schools, universities, church groups, scouts, businesses and county agencies throughout the state.

Presentations: The staff of the UPCC gave 40 poison prevention presentations to various organizations and groups including Head Start staff, elementary, middle school, high school and university students, senior citizens, public health professionals, and day care providers. Over 2,400 people attended these presentations.

Health and Safety Fairs:

The UPCC was represented at 61 health and safety fairs in 2004. Over 18,000 people attended these fairs. The following are some examples of the health and safety fairs where the UPCC was represented:

- SAFE KIDS Fair
- Senior Expo
- The Junior League Community Assistance and Resource Fair (CARE)
- Discover Financial Services Employee Health Fair
- Neighborhood House Fair, Salt Lake County
- Natural Resource Festival, Richfield
- University of Utah Neuropsychiatric Institute Kid's Fair
- Bringing Hope to Single Mothers Resource Fair
- IHC Family Festival
- Intermountain Trauma Network Conference

Professional Education

Publications

The UPCC continues to distribute **Utox Update**, a newsletter for health professionals throughout the state. The newsletter is published quarterly and is distributed statewide. Timely clinical toxicology related articles are included. Topics for 2004 included bismuth, superwarfarins, carbon monoxide and the UPCC 50th Anniversary. Support for printing and distribution of the newsletter was provided by McNeil Consumer & Specialty Pharmaceuticals in 2004.

The following are a list of other publications involving UPCC staff in 2004:

Crouch BI, Caravati EM, Mitchell A, Martin AC. Poisoning in older adults: A 5-year experience of US poison control centers. *Ann Pharmacother* 2004;38:2005-2011.

Crouch BI, Caravati EM, Booth J. Trends in Child and Teen Nonprescription Drug Abuse Reported to a Regional Poison Control Center. *Am J Health Syst Pharm* 2004;61:1252-1257.

Caravati EM, Heilesen H, Jones M. Treatment of Severe Pediatric Ethylene Glycol Intoxication Without Hemodialysis. *J Toxicol Clin Toxicol* 2004;42:255-259.

Caravati EM. Copperhead Bites and Crotalidae Polyvalent Immune Fab (Ovine): Routine Use Requires Evidence of Improved Outcomes. *Ann Emerg Med* 2004;43:207-208.

Dart RC, **Caravati EM, McGuigan MA, et al:** Medical Toxicology, 3rd edition, Lippincott, Williams and Wilkins, 2004.

- Caravati, Chapters: Hydrogen Sulfide, Plants, Anorectic Agents and Respiratory and Cerebral Stimulants, Alkali, Acids, Boron Compounds, Natural Toxins: Lizards, Newts and Toads, Hallucinogenic Drugs, Marijuana and other Cannabinoids, Smooth Muscle Relaxants, Local Anesthetics, Flumazenil, Protamine, Prussian Blue, Arsenic and Arsenic Gas, Bismuth, Type I Antidysrhythmic Agents, Ascending Paralysis, Hallucinations, Metformin (Biguanides), Dantrolene, D-Penicillamine, Phytionadione (Vitamin K).
- Crouch, Chapter: Toxic Exposures during Pregnancy and Lactation
- Marshall, Chapter: Plants

Presentations

“Wonderful World of Poisons”, Salt Lake Community College, February 2004. (Dahl)

“Emergency Toxicology”, Emergency Medical Students and House Staff, University of Utah Hospital. (Caravati)

February 11, 2004	March 24, 2004
April 10, 2004	August 11, 2004
September 23, 2004	October 11, 2004
November 12, 2004	December 9, 2004

“Cocaine Associated Chest Pain”, Emergency Medicine Journal Club, Salt Lake City, UT, March 9, 2004. (Caravati)

“Management of Acetaminophen Toxicity”, Internal Residency Program, University of Utah Hospital March 30, 2004. (Caravati)

“Serotonin Syndrome”, Resident’s Conference, Department of Psychiatry, University of Utah Hospital, May 5, 2004. (Caravati)

“Carbon Monoxide”, Utah Poison Control Center Education Update Conference. (Stromness)

- Salt Lake City, UT, June 16, 2004
- Cedar City, UT, June 25, 2004

“Fangs and Stingers: A Primer on Utah’s Venomous Creatures”, Utah Poison Control Center Education Update Conference. (Caravati)

- Salt Lake City, UT, June 16, 2004
- Cedar City, UT, June 25, 2004

“Kids and Drugs: An Update to Adverse Health Consequences Associated with Popular Substances of Abuse”, Utah Poison Control Center Education Update Conference. (Crouch)



- Salt Lake City, UT, June 16, 2004
- Cedar City, UT, June 25 2004

“Toxic Native Plants of Utah”, Utah Poison Control Center Education Update Conference. (Marshall)

- Salt Lake City, UT, June 16, 2004
- Cedar City, UT, June 25, 2004

“Utah and Poisons”, Utah Poison Control Center Education Update Conference. (Malheiro)

- Salt Lake City, UT, June 16, 2004
- Cedar City, UT, June 25, 2004

“Venomous Bites and Stings”, U of U PA Program, Salt Lake City, UT, July 7, 2004. (Caravati)

“Emergency Evaluation of the Poisoned Patient”, U of U PA Program, SLC, UT, July 7, 2004. (Caravati)

“Medical Emergencies: The Poisoned Patient”, Internal Medicine Residents Lecture Series, UUMC, LDS, & VA, July 12, 27, 30, 2004. (Caravati)

“A Unique Case of Antifreeze Poisoning”, Emergency Department, University of Utah Hospital, August 10, 2004. (Caravati)

“UPCC’s 50th Anniversary”, Health Sciences Leadership, University of Utah, October 10, 2004. (Crouch)

“Chemical Events”, Basic Disaster Life Support Course, Salt Lake City, UT, November 2004. (Crouch)

“Challenging Case Presentations in Toxicology”, Emergency Fellows, Primary Children’s Medical Center, November 17, 2004. (Caravati)

UPCC staff members also participate in teaching at the University of Utah College of Pharmacy and School of Medicine. PharmD students, pediatric emergency medicine fellows, medical students and clinical pharmacy residents rotate through the UPCC to further their education and experience in clinical toxicology. In addition, the staff of the UPCC teach a didactic class in Clinical Toxicology which is required for the third professional year pharmacy students.

The UPCC gratefully acknowledges the following for their generosity in 2004:
MCNEIL CONSUMER & SPECIALTY PHARMACEUTICALS

And, for their support, the UPCC would also like to acknowledge:

UTAH DEPARTMENT OF HEALTH
 UNIVERSITY OF UTAH HEALTH SCIENCES
 UNIVERSITY OF UTAH COLLEGE OF PHARMACY
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