

**INDIANA
POISON
CENTER**

**1998
Annual
Statistical
Summary**

**Designated as the Regional Poison Information
Center for Indiana by the Indiana State
Department of Health and Certified by the
American Association of Poison Control Centers**

*This year, the Indiana Poison Center received over 81,000 calls for help. While we experienced a 29% increase in information calls to more than 14,400, the vast majority of calls involved specific poison exposures, in which human exposures decreased by 0.6% compared to 1997. Information calls were boosted this year by the scares over potential asbestos contamination of Hostess snack products, which produced over 800 calls alone and many calls concerning the anthrax-letter terrorism incidents. Children remain our most commonly exposed age group, although usually with benign effects. Intentional poisonings continue to contribute to a more severe case mix. We are very pleased that our contacts in the health care community remain strong. Your input is always welcome to help develop our program to better serve the needs of health care providers throughout the state. Examples of this are continuation of the state's only inpatient medical toxicology treatment center at our host hospital to help manage the care of poisoned patients and of our Medical Toxicology Fellowship program to train physicians in medical toxicology. Response to these services remains brisk. Reports of animal poisoning increased significantly again this year by 12% to almost 4,400 cases. The strength of our personnel continues to be the backbone of the Center, and we have been able to retain all our staff in the past year. Nationally, many poison centers remain in shaky financial condition as host institutions and government agencies attempt to reduce medical care costs. The Indiana Poison Center has not been immune to this. The full impact of the Indiana State Department of Health cutting our funding by \$200,000 per fiscal year is now being seen. To answer this shortfall, our Member Hospital Network was reworked by substantially increasing the yearly membership and initiating charges to non-member hospitals for consultations they initiated on poisoned patients. This strategy, while financially successful and possibly capable of providing the Poison Center with adequate funds to operate until the end of our next contract period with the Indiana State Department of Health, also resulted in a 44% decrease in calls from non-member hospitals, which is concerning. This decrease far outpaces the small general decrease in poison calls we saw last year. Poison centers, such as the Indiana Poison Center, have been at the forefront of managed care and medical care cost containment since their inception. The cost effectiveness of poison centers has been documented by the U.S. House of Representatives, two recent publications and the Department of Health and Human Services.^{1, 2, 3} The CDC and HRSA Final Report of the Poison Control Center Advisory Work Group urges Federal ongoing "fair share" support of poison centers including interim support of poison center until permanent funding can be found and recommends six projects to improve poison center function, including a national toll-free number.³ The CDC is now moving forward on developing a national toll-free number, and the **Poison Center Enhancement and Awareness Act** (S.632, H.R..1221) has been introduced in both houses of Congress. This bill, which would provide assistance for poison prevention and to stabilize funding of poison centers, is garnering wide support among both parties. Your letters in support of this legislation would be welcome. Development of stable, adequate, ongoing, and dedicated sources of funding for the Indiana Poison Center remains crucial for it's survival in this era of medical care cost cutting. We look forward to the coming year as an opportunity for our services to you to further evolve, in order to meet the ever-growing toxicologic needs of Indiana.*



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1. Harrison DL et al. Cost-effectiveness of regional poison control centers. Arch Intern Med 1996; 156:2601.
2. Miller TR. Cost of poisoning in the United States and savings from poison control centers: a benefit cost analysis. Ann Emerg Med 1997; 29:239.
3. The Poison Control Center Advisory Work Group. Final Report. Centers for Disease Control and Health Resources and Services Administration, December 1996.

INTRODUCTION

The Indiana Poison Center (IPC) was established to provide toll-free access to emergency poison exposure information for all Hoosiers. In its nineteenth year of operation, the center is a round-the-clock information and treatment resource for all citizens of Indiana.

The IPC is a collaborative effort of the Indiana State Department of Health, Clarian Health Partners, and health care providers throughout the state. It is designated as the official poison information center for the state by the Indiana State Department of Health and is certified as a regional poison information center by the American Association of Poison Control Centers, one of only 52 in the nation and the only one in Indiana.

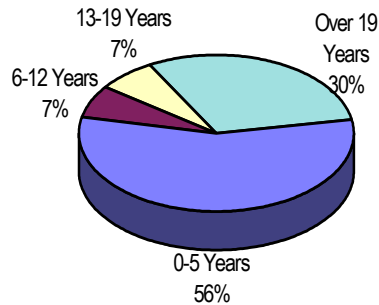
In 1998, the IPC received 81,048 requests for assistance (averaging 222 calls per day). Of these calls, 66,617 concerned exposures to poisons and 14,431 were callers seeking information without an exposure. The 66,617 poison exposure calls resulted from 62,219 human and 4,399 animal poisoning cases. The 62,219 human poison exposure cases managed represents a 0.6% decrease over 1996. In addition, the staff of the Poison Center placed 51,592 calls to patients and health care professionals for patient care follow-up (averaging 141 calls per day).

This report presents an overview of IPC poisoning data and other activities for 1998. Additional information is available upon request. Data was available to evaluate 62,052 confirmed human cases.

AGE

Poisonings remain a major health hazard among young children. Children under six years of age account for the majority (56%) of the poisonings managed by the IPC during 1998, approximately the same as in 1997. Although the incidence of poisoning is still greater in children, most severe poisonings

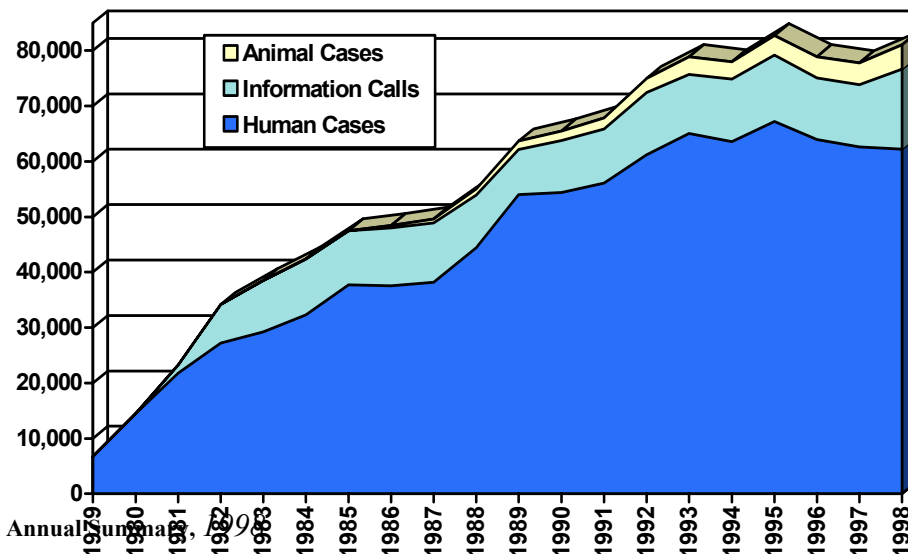
and poisoning deaths occur in adolescents and adults (44% of cases) due to their being intentional in nature. The trend for increasing age as compared to historical averages was not seen this year except in the 50-69 year old range, which posted a 10% increase.



Age (Years)	Number		Total	%
	Males	Females		
<1	2,111	1,945	4,070	6.6%
1	5,459	5,181	10,659	17.2%
2	5,913	5,315	11,239	18.1%
3	2,641	2,351	5,001	8.1%
4	1,349	1,048	2,398	3.9%
5	709	576	1,287	2.1%
6 - 12	2,315	1,729	4,048	6.5%
13 - 19	1,864	2,407	4,274	6.9%
20 - 29	2,378	3,028	5,411	8.7%
30 - 49	3,358	4,937	8,299	13.4%
50 - 69	975	1,747	2,724	4.4%
70 - 99	380	813	1,194	1.9%
Unk Adult	490	631	1,168	1.9%
Unk Infant	11	20	34	0.1%
Unk Child	21	14	53	0.1%
Unknown	50	59	193	0.3%
Total	30,024	31,801	62,052	100%

GENDER

Examination of calls where the gender was documented shows an almost even split between males and females. Males predominate in childhood (55%), while females predominate in both the adolescent and adult ages (59%).



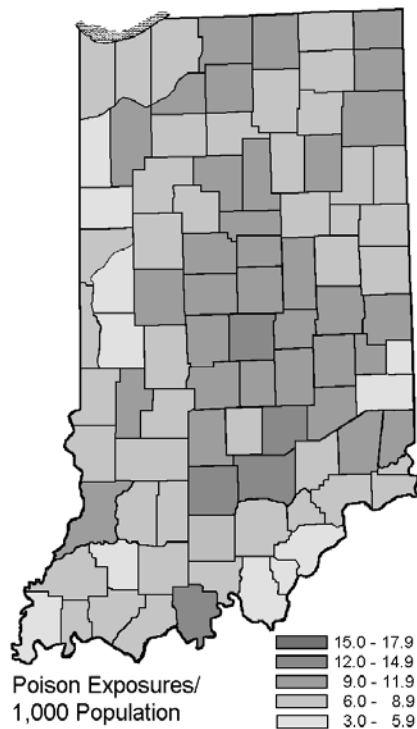
GEOGRAPHIC DISTRIBUTION

Overall, 99.6% of exposure calls originated in Indiana. In addition, the IPC received calls from 23 other states and Mexico, with Alabama, Illinois, Michigan, Ohio and Kentucky accounting for 77% of these out-of-state calls. One out of every 95 Hoosiers utilized the Indiana Poison Center's services in 1998.

CALLER

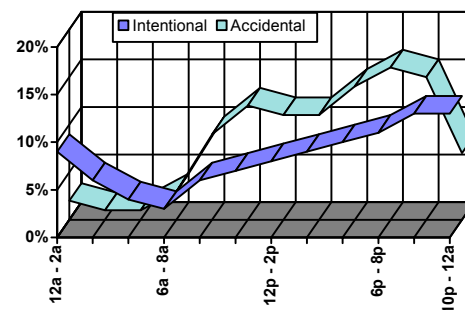
In 1998, 66,578 calls (82%) were received from the general public. Calls were also received from 13,347 health caregivers (physicians, nurses, EMT's, paramedics, and pharmacists), with 7,711 of these coming from hospitals throughout the state. Daily contacts were made consisting of IPC referral of patients to emergency departments for treatment or hospital initiated requests for information and/or consultation on cases managed either in-house or by telephone.

City	Hospital	Patients Referred to ED	Request or Consult
Anderson	Community	51	58
	St. John's Health System	52	138
Angola	Cameron	17	36
Auburn	DeKalb Memorial	18	47
Batesville	Margaret Mary	15	36
Bedford	Bedford Regional	23	58
	Medical Center	24	53
Beech Grove	St. Francis	99	196
Bloomington	Bloomington	90	129
Bluffton	Caylor-Nickel	23	41
	Wells Community	5	15
Booneville	St. Mary's Warrick	12	13
Brazil	Clay County	10	25
Bremen	Community of		
	German Township	7	7
Carmel	St. Vincent - Carmel	31	37
Charleston	Medical Center of		
	Southern Indiana	2	2
Clinton	West Central		
	Community	7	3
Columbia City	Whitley Memorial	14	40
Columbus	Columbus Regional	71	96
Connorsville	Fayette Memorial	20	36
Corydon	Harrison County	11	6
Crawfordsville	Culver Union	19	89
Crown Point	St. Anthony		
	Medical Center	31	71
Danville	Hendricks County	47	69
Decatur	Adams County	10	17
Dyer	St. Margaret Mercy	11	105
East Chicago	St. Catherine	6	5
Elkhart	Elkhart General	71	194
Elwood	St. Vincent Mercy	5	15
Evansville	Deaconess	40	52
	St. Mary's		
	Medical Center	56	35
	Welborn Memorial		
	Baptist Hospital	19	5
Fort Wayne	Lutheran	49	19
	Parkview Memorial	134	280
	St. Joseph's	31	40
	Ft. Wayne State	0	0
	VA Medical Center	0	0



City	Hospital	Referred to ED	or Consult
Marion	Marion General	42	116
	VA Medical Center	5	7
Martinsville	Morgan County	28	21
Merrillville	Methodist (Southlake)	27	100
Michigan City	Memorial	1	5
	St. Anthony	28	118
Mishawaka	St. Joseph	24	47
Monticello	White County	17	52
Mooresville	Kendrick Memorial	0	1
Muncie	Ball Memorial	62	39
Munster	Community	40	153
New Albany	Floyd Memorial	20	5
New Castle	Henry County	23	64
Noblesville	Riverview	26	16
North Vernon	Jennings Community	17	17
Oakland City	Wirth Regional	3	2
Paoli	Orange County	19	34
Peru	Dukes Memorial	25	38
Plymouth	St. Joseph's	21	47
Portland	Jay County	7	32
Princeton	Gibson General	12	14
Rensselaer	Jasper County	13	46
Richmond	Reid Memorial	40	71
Rochester	Woodlawn	6	13
Rushville	Rush Memorial	6	22
Salem	Washington County	8	6
Scottsburg	Scott County	8	3
Seymour	Jackson County	44	129
Shelbyville	Major Hospital	21	65
South Bend	Memorial	68	212
	St. Joseph's Medical Center	40	61
South Bend	St. Mary Community	0	0
Sullivan	Sullivan County	17	39
Tell City	Perry County	5	50
Terre Haute	Terre Haute Regional	24	96
	Union	19	10
Tipton	Tipton County	4	23
Valparaiso	Porter Memorial	42	143
Vincennes	Good Samaritan	22	94
Wabash	Wabash County	16	29
Warsaw	Kosciusko Community	39	8
Washington	Daviess County	12	43
West Lafayette	Purdue University	1	5
West Lafayette	Wabash Valley Center	0	0
Williamsport	St. Vincent - Williamsport	3	33
Winamac	Pulaski County	1	21
Winchester	Randolph County	7	16

around mealtimes. Intentional poisonings, on the other hand, show a higher incidence than unintentional poisonings from midnight to 6 am and then steadily increase throughout the day, finally peaking at between 10 pm and midnight.



CIRCUMSTANCE

Acute exposures account for 98.8% of the total calls, while the remaining 1.2% are chronic in nature. Occupational exposure calls have remained constant from 1989 through 1998, while environmental exposures have almost doubled since 1990. The specific reasons for exposures are:

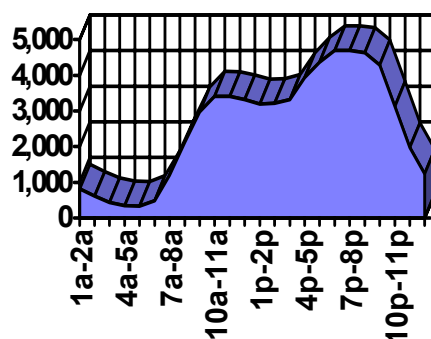
Reason	Number	Percent
Unintentional		
General	42,589	68.6%
Environmental	981	1.6%
Occupational	1,814	2.9%
Therapeutic Error	3,689	6.0%
Misuse	1,717	2.8%
Bite/Sting	1,050	1.7%
Food Poisoning	1,397	2.3%
Unknown	20	0.0%
Total Unintentional	53,257	85.8%
Intentional		
Suicidal	5,407	8.7%
Misuse	695	1.1%
Abuse	963	1.6%
Unknown	125	0.2%
Total Intentional	7,190	11.6%
Other		
Contaminant/Tampering	97	0.2%
Malicious	203	0.3%
Total Other	300	0.5%
Adverse Reaction		
Drug	924	1.5%
Food	141	0.2%
Other	126	0.2%
Total Adverse Reaction	1,191	1.9%
Unknown	114	0.2%

City	Hospital	Patients Referred to ED	Request or Consult
Frankfort	Clinton County	19	84
Franklin	Johnson County	27	38
Gary	Methodist (Northlake)	44	171
Gary	Northwest Family	0	2
Goshen	Goshen General	64	117
Greencastle	Putnam County	22	33
Greenfield	Hancock County	28	19
Greensburg	Decatur County	16	55
Hammond	St. Margaret Mercy	37	225
Hartford City	Blackford County	6	25
Hobart	St. Mary Medical Center	35	78
Huntingburg	St. Joseph's	9	21
Huntington	Huntington Memorial	19	38
Indianapolis	Community East	70	131
	Community North	71	122
	Community South	48	115
	Fairbanks	0	1
	Indiana University	56	56
	Larue Carter	0	5
	Methodist	264	405
	St. Vincent	76	149
	VA Medical Center	2	30
	Westview Hospital	2	3
	Winona Memorial	2	9
	Wishard Memorial	150	575
Jasper	Memorial	15	43
Jeffersonville	Clark County	24	2
Kendallville	McCray Memorial	20	68
Knox	Starke Memorial	17	33
Kokomo	Howard Community	28	66
	St. Joseph Memorial	30	16
Lafayette	Lafayette Home	57	126
	St. Elizabeth Medical Center	21	27
LaGrange	LaGrange County	11	25
LaPorte	LaPorte Hospital	16	36
Lawrenceburg	Dearborn County	37	113
Lebanon	Witham Memorial	23	50
Linton	Greene County	6	34
Logansport	Memorial Hospital	26	86
Madison	King's Daughters'	22	6

TIME OF CALLS

The total call volume to IPC shows an initial peak between 10 am and noon with a larger peak occurring between 7 pm and 9 pm.

This is primarily accounted for by the distribution of accidental poisonings peaking



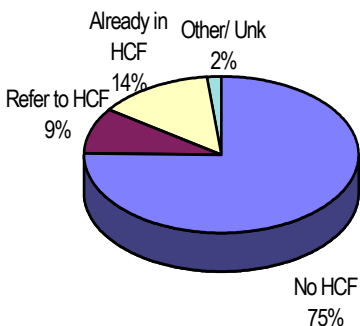
SITE OF EXPOSURE

The most frequent site of exposure is a residence, although calls for exposures in the workplace account for 3% of our calls.

<u>Site of Exposure</u>	<u>Number</u>	<u>Percent</u>
Own Residence	56,274	90.7%
Other Residence	1,261	2.0%
Workplace	1,973	3.2%
Health Care Facility	150	0.2%
School	751	1.2%
Restaurant/Food Service	347	0.6%
Public Area	378	0.6%
Other	700	1.1%
Unknown	218	.4%

TREATMENT LOCATION

The majority of poison exposures either require no treatment or can be treated at the exposure site. The most common treatments at the exposure site include dilution and no treatment for oral exposures and flushing or irrigating the skin or eyes for dermal or ocular exposures.



<u>Location</u>	<u>Number</u>	<u>Percent</u>
Non Health Care Facility (HCF)	46,759	75.4%
Referred to HCF by IPC		
Treated & Released	2,071	3.3%
Adm to Critical Care	327	0.5%
Adm to Noncritical Care	252	0.4%
Adm to Psychiatry	136	0.2%
Refused Referral	1,333	2.1%
Lost to Follow Up	1,669	2.7%
Total Referred	5,788	9.3%
Patient Already in HCF		
Treated & Released	4,874	7.9%
Adm to Critical Care	1,886	3.0%
Adm to Noncritical Care	573	0.9%
Adm to Psychiatry	749	1.2%
Lost to Follow Up	369	0.6%
Total Already in HCF	8,451	13.6%
Other	553	0.9%
Unknown	501	0.8%

Overall, the IPC referred 5,788 (9.3%) patients for medical care and was consulted on another 8,451 cases that were already in a health care facility (HCF).

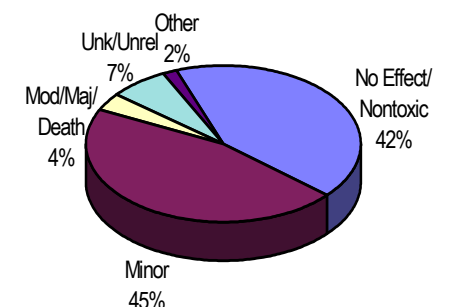
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FOLLOW-UP CALLS

The IPC attempts to make follow-up calls on all cases with the potential for toxicity to the patient to ensure patient compliance with treatment recommendations, direct the management of the case and verify the medical outcome. In 1998, follow-up was made 49,755 times on 20,540 human cases (2.4 calls/case). An additional 60,508 cases or information calls did not require or refused follow-up.

MEDICAL OUTCOME

The medical outcome is assessed based upon the inherent toxicity of the agent, and the severity of the clinical effects noted during case management. The increased severity in case mix seen since 1990 has been continued in 1998.



<u>Medical Outcome</u>	<u>Number</u>	<u>Percent</u>
No Effect	11,474	18.5%
Minor Effect	10,700	17.2%
Moderate Effect	1,934	3.1%
Major Effect	252	0.4%
Death	31	0.1%
No Follow-up		
Judged Nontoxic	14,991	24.2%
Judged Minimal Effects	18,190	29.3%
Potentially Toxic	2,588	4.2%
Unrelated Effect	1,892	3.1%

AGENTS INVOLVED

During 1998, the IPC staff managed 62,219 human poison exposures. Prescription and nonprescription drugs accounted for 43% of these exposures, with an additional 37% were to household products. Plants, animals, industrial and agricultural products were also commonly reported. A single substance was involved in 93% of the cases, but exposures to over nine substances were seen in other cases.

<u>Agent Involved</u>	<u>Number</u>
Analgesics	6,342
Anesthetics	249
Anticholinergics	147
Anticoagulants	71
Anticonvulsants	547
Antidepressants	2,044
Antihistamines	1,349
Antimicrobials	1,706
Antineoplastics	19
Asthma Therapies	511
Cardiovascular Drugs	1,270
Cold and Cough Preparations	2,987
Diagnostic Agents	13
Diuretics	130
Electrolytes/Minerals	436
Eye, Ear, Nose, and Throat Preparations	424
Gastrointestinal Preparations	1,320
Hormone Products	971
Muscle Relaxants	338
Narcotic Antagonists	2
Radiopharmaceuticals	0
Sedative/Hypnotics/Anti-Anxiety/ Anti-Psychotics	2,044
Serums, Toxoids, Vaccines	49
Stimulants/Street Drugs	962
Topicals	2,299
Veterinary Drugs	123
Vitamins	1,358
Miscellaneous	495
Unknown Drugs	231

Total Drugs 28,437

<u>Agent Involved</u>	<u>Number</u>
Adhesives, Glues, Cements	647
Alcohols	1,585
Arts, Crafts, Writing Products, Office Supplies	1,189
Automotive Products	444
Batteries	247
Bites and Envenomations	1,264
Building and Construction Products	309
Chemicals	1,570
Cleaning Substances	
- Household	5,883
- Industrial	269
Cosmetics and Personal Care Products	6,211
Deodorizers	631
Dyes	76
Essential Oils	101
Fertilizers	289
Fire Extinguishers	98
Food Products/Food Poisoning	2,088
Foreign Bodies	3,000
Fumes, Gases, Vapors	1,236
Fungicides	23
Heavy Metals (excluding iron)	356
Herbicides	218
Hydrocarbons	2,043
Insecticides	1,622
Lacrimators	124
Matches/Fireworks/Explosives	59
Moth Repellants	123
Mushrooms	249
Paints, Varnishes, Lacquers	740
Photographic Products	24
Plants	3,202
Polishes and Waxes	221

Radioisotopes	8
Rodenticides	707
Sporting Equipment	19
Swimming Pool/Aquarium Products	222
Tobacco Products	421
Unknown Substance (Non-Drug)	388

Total Non-Drugs 37,906

Total Agents 66,343

Additional information that is useful to note are the most common poisonings in the pediatric age group and intentional exposures.

Pediatric Top Ten Number

Cosmetics and Personal Care Products	4,742
Cleaning Substances - Household	3,670
Analgesics	2,542
Foreign Bodies	2,282
Plants	2,217
Cold and Cough Preparations	1,968
Topicals	1,899
Vitamins	1,075
Gastrointestinal Preparations	1,049
Antimicrobials	1,028

The pediatric top ten remained the same this year compared to last year, with foreign bodies and plants swapping 4th and 5th place and antimicrobials dropping two spots to 10th place. Cardiovascular drugs jumped two spots on the intentional top ten, while Anticonvulsants and Muscle Relaxants swapped places on the list. The number of intentional exposures reported for most classes decreased this year in concert with the overall decrease in intentional cases except for analgesics, sedative/hypnotics, antidepressants and cardiovascular drugs which actually increased.

Intentional Top Ten Number

Analgesics	2,553
Sedative/Hypnotics/Anti-Anxiety/ Anti-Psychotics	1,433
Antidepressants	1,329
Alcohols	792
Stimulants/Street Drugs	528
Antihistamines	434
Cold and Cough Preparations	318
Cardiovascular Drugs	243
Anticonvulsants	242
Muscle Relaxants	219

The following table represents the substances seen in the most serious poisonings resulting in major symptoms or death. The sustained decrease in serious toxicity with antidepressants even considering they show the highest level of toxicity is probably due to the increased use of newer drugs with lower toxicity. Cardiovascular drug exposures continued to increase in severity, while serious toxicity from muscle relaxants doubled from last year.

Most Serious Intoxications Number

Antidepressants	73
Analgesics	70
Sedative/Hypnotics/Anti-Anxiety/ Anti-Psychotics	64
Stimulants/Street Drugs	33
Cardiovascular Drugs	21
Alcohols	19
Muscle Relaxants	18
Anticonvulsants	17
Fumes, Gases, Vapors	13
Chemicals	7

THERAPY

Supportive care is the single most critical component in the care of the poisoned patient. In 7,215 (11.6%) patients no therapy was needed and observation alone was used in an additional 5,733 (9.2%). IPC advice was refused in 1,449 cases (2.3%). Specific therapeutic methods utilized in poisonings included decontamination, antidotal therapy, and enhancing elimination. The most common antidotal treatments were oxygen, n-acetylcysteine, antihistamines, alkalization and naloxone. A summary of some specific therapies follows:

Decontamination Number

Ipecac	344
Activated Charcoal, Single Dose	3,907
Activated Charcoal, Multiple Dose	44
Cathartic	157
Lavage	531
Whole Bowel Irrigation	8
Dilute/Irrigate/Wash	35,742
Fresh Air	2,499
Food Snack	805
Other Emetic	80

Total Decontamination 44,117

Antidotal / Other Therapy 5,930

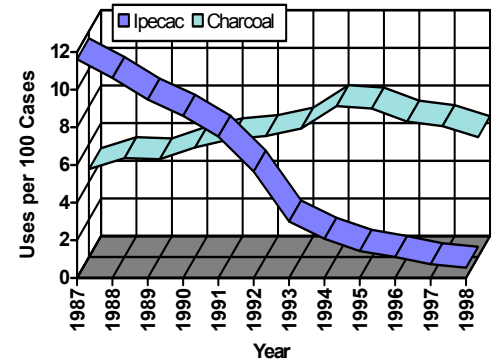
IV Fluids	859
Oxygen	594
N-acetylcysteine	330
Antihistamines	246
Intubation	252
Alkalinization	205
Ventilator	207
Naloxone	176
Bronchodilators	173
Anticonvulsants	89

Enhancement of Elimination

Hemodialysis	18
Hemoperfusion	0
Other	1

Total Enhancement 19

Use of activated charcoal again greatly exceeded that of syrup of ipecac. Syrup of ipecac use has dropped 95% in the past eleven years (24% in 1998 alone), while the use of activated charcoal has increased by



37% reflecting changes in usage in the hospital setting.

MORTALITY

Sixty-seven unintentional poisoning deaths were reported to the Indiana State Department of Health during 1992. The average number since the inception of the Poison Center has been 77 per year down from an average of 116 per year prior to 1979. Data from the National Center for Injury Prevention and Control showed 75 unintentional poison deaths in Indiana for 1996. Indiana's unintentional death rate continues to be well below the national average showing a slight downward trend since 1979 as shown in the following graph. The Indiana Poison Center was consulted on 31 patients who died during 1998. Most of the deaths (23) were intentional in nature. In some cases, the cause of death was not determined to be related to the exposure such as the suspected mushroom being alcoholic liver disease, the mothball being a skull fracture and the potpourri being too thick to drink.

Age Sex Agent (Reason)

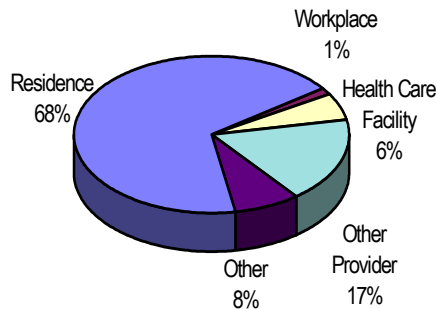
14m	F	cocaine (unknown)
2	F	chloral hydrate, ketamine, diphenhydramine (adverse reaction)
3	M	charcoal lighter fluid (unintentional)
13	F	paint thinner, lighter fluid (suicide)
16	M	albuterol, LSD, benzodiazepines (intentional misuse)
17	M	malathion (suicide)
20's	F	cocaine (abuse)
20	M	carbamazepine (suicide)
26	M	cocaine, petroleum distillates, marijuana (abuse)
28	M	acetaminophen (suicide)
33	F	baking soda, zolpidem (suicide)
34	F	clonazepam (suicide)
34	F	tramadol, nefazodone, diphenoxylate/atropine (suicide)
35	F	carbon monoxide (environmental)
36	M	hydrocodone, diazepam (suicide)
36	M	acetaminophen, hydrocodone (suicide)
36	M	olanzapine, mirtazapine (unknown)
40	F	carbon monoxide (suicide)
40	M	Ma Huang (adverse reaction)
41	M	methadone, chlordiazepoxide (intentional misuse)
42	M	amlodipine, diazepam, clonidine (unknown)
42	F	acetaminophen, hydrocodone (abuse)
42	M	amitriptyline (suicide)
46	F	acetaminophen, opiates, theophylline (suicide)
46	M	cyanide (suicide)
51	M	anticoagulant rodenticide (suicide)
66	F	carbon monoxide (environmental)
69	M	isopropyl alcohol, acetone (suicide)
70	F	lithium, fluoxetine, trazodone (therapeutic error)

75	M	mercurochrome (intentional misuse)
80	F	verapamil, digoxin (adverse reaction)
Unk	F	carbon monoxide (environmental)

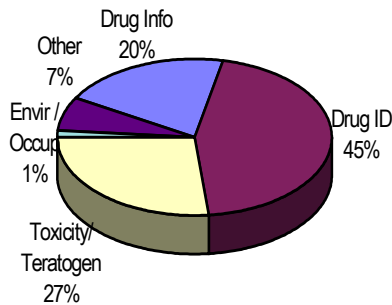
The most common classes of substances involved in deaths reported to the IPC were analgesics, sedative/hypnotics, cocaine/stimulants, carbon monoxide and hydrocarbons.

INFORMATION CALLS

In 1998, the IPC staff responded to 14,431 inquiries from health professionals and the general public when no poison exposure had occurred. Seventy-seven percent of the calls were received from the general public, 68% in a residence and 1% in the workplace.

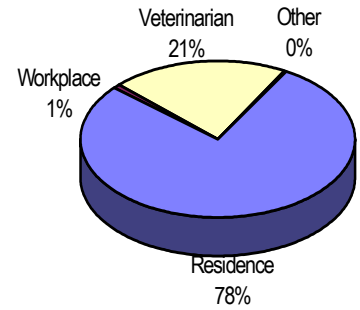


The information calls can be divided into several categories: 1) drug identification / information, 2) environmental, 3) medical, 4) occupational, 5) toxicity / symptoms, 6) prevention and safety, 7) teratogenicity and 8) other.



ANIMAL POISONINGS

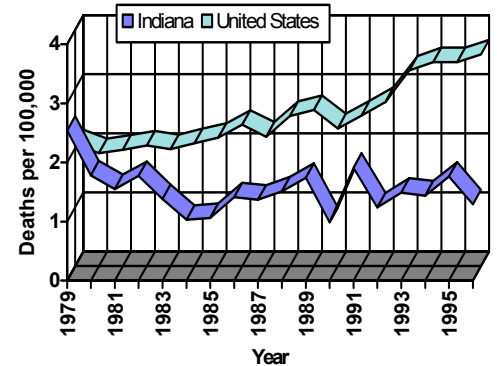
In 1998, the IPC managed 3,924 poisonings to domestic animals, a 2% increase over 1997. Calls were received primarily from the pet's owners although veterinarians generated a significant proportion.



Seven out of the top ten animal exposures were also seen in children. Significant differences included a very large percentage of insecticide and rodenticide exposures as compared to children.

Animal Top Ten

Animal Top Ten	Number
Insecticides	607
Plants	415
Rodenticides	396
Cleaning Substances - Household	294
Analgesics	214
Foreign Bodies	179
Antimicrobials	139
Topicals	134
Cosmetics and Personal Care Products	126



Hydrocarbons

123

EDUCATION PROGRAMS

Personnel from the IPC teach health care professionals basic and advanced techniques in the management of poison emergencies and provide assistance, consultation, and programs in teaching poison prevention to private citizens.

Professional Education

Professional education activities include the Annual Regional Toxicology Symposium, a quarterly education bulletin (TOXI-GRAM), and numerous inservices and lectures.

Health Professional Education	
<u>Contact Hours Supervised Experience in Poison Center</u>	
Emergency Medicine Residents	3,680
Doctor of Pharmacy Students	1,440
Pharmacy Students	72
<u>Academic and Continuing Education Lectures Presented</u>	
	67
<u>TOXI-GRAMs Published</u>	
Valproic Acid Toxicity	
Bupropion Overdose	
Jimson Weed Toxicity	
Methotrexate Toxicity	

The IPC sponsored its 14th Annual Toxicology Seminar: Trendy Toxins in April that was well attended by health care professionals from throughout Indiana and featured presentations on herbal medicine, diet aids, newer drugs of abuse, newer psychiatric drugs, nerve gases, fomipezole for toxic alcohols, the cutting edge in toxicology and an interactive case study session. In addition, staff from the center presented topics and cases at the Midwest Regional Toxicology Conference held in April in Louisville, KY.

Under the guidance of Mark A. Kirk, M.D. the two-year Medical Toxicology Fellowship program started in 1994 continues to draw outstanding physicians in training. This fellowship program is one of only a few available in the United States. All our past fellows Dr. Jane Witman, Dr. Mary Wermuth and Dr. Christopher Holstege have passed their Medical Toxicology boards and are practicing in Wisconsin, Indiana and Virginia. Our current fellow, Dr. William Dribben, will be joined in July by Drs. Daniel Rusyniak, from the Methodist Hospital Emergency Medicine Residency and Lisa Snyder from the University of Virginia Emergency Medicine Residency.

The staff of IPC also contributes to the medical toxicology literature with five book chapters and three abstracts presented at the North American Congress of Clinical Toxicology 1998.

Book Chapters

- Kerns WP, Kirk MA. Cyanide and Hydrogen Sulfide. In, Goldfrank LR, Flomenbaum NE, Lewin NA et al (eds). Goldfrank's Toxicologic Emergencies, 6th Edition. Appleton & Lange: Stamford, 1998
- Kirk MA, Anticholinergics and Antihistamines. In, Haddad LM, Shannon MW, Winchester JF (eds). Clinical Management of Poisoning and Drug Overdose, 3rd Edition. WB Saunders: Philadelphia, 1998.
- Kirk MA, Holstege CP. Smoke Inhalation. In, Goldfrank LR, Flomenbaum NE, Lewin NA et al (eds). Goldfrank's

Toxicologic Emergencies, 6th Edition. Appleton & Lange: Stamford, 1998

- Kirk MA. Use of the Intensive Care Unit. In, Goldfrank LR, Flomenbaum NE, Lewin NA et al (eds). Goldfrank's Toxicologic Emergencies, 6th Edition. Appleton & Lange: Stamford, 1998
- Witman JK, Furbee BF. Class IA Antiarrhythmics: Quinidine, Procainamide, and Disopyramide. In, Haddad LM, Shannon MW, Winchester JF (eds). Clinical Management of Poisoning and Drug Overdose, 3rd Edition. WB Saunders: Philadelphia, 1998.

Abstracts

- Dribben W, Kirk M, Trippi J, Cordell W. A pilot study to assess the safety of dobutamine stress echocardiography (DSE) in the emergency department evaluation of cocaine-associated chest pain [abstract]. J Toxicol Clin Toxicol 1998;36:506.
- Holstege CP, Kirk MA, Furbee RB, Wermuth ME. Wide complex dysrhythmia in calcium channel blocker overdose responsive to sodium bicarbonate therapy [abstract]. J Toxicol Clin Toxicol 1998;36:509.
- Seifert S, Holstege CP, Furbee RB, Kirk MA. Organ procurement after brodifacoum poisoning [abstract]. J Toxicol Clin Toxicol 1998;36:463.

Public Education

The IPC has been joined by the Indiana Safe Kids Coalition, 80 member hospitals, and 124 member physicians in teaching poison prevention to Hoosiers through educational programs, brochures, a quarterly newsletter (TOXIC TRIVIA), and promotions for children and adults.

Public Education Activities

Pieces of Poison Prevention Material Distributed	341,295
Annual Poster Contest Contestants (for 1999 NPPW)	4,400
Schools represented	49
TV & Radio appearances	21
Newspaper interviews	8
News Releases Distributed	13
Newspaper articles published	38
Number of different newspapers publishing articles	28
<u>TOXIC TRIVIA's Published</u>	
Spring into Spring Safety	
Sail into Summer Safety	
Avoid autumn accidents	
Home Safe Home for the Holidays	

National Poison Prevention Week activities included an awards ceremony for the thirteenth annual poison prevention week poster contest, press packets distributed to all print and broadcast news organizations in the state and too numerous to mention public education programs by the IPC and our Member Hospitals. Our winning poster was honored to be selected as the 1998 National Poison Prevention Week poster.

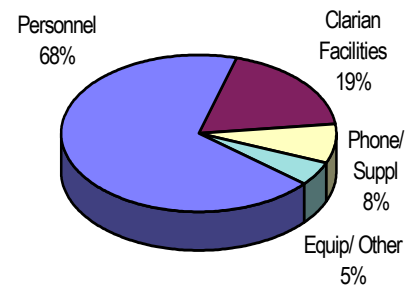
The news release distribution program in conjunction with the Indianapolis FDA Office continued to reach all print and broadcast media in the State as well as county health organizations. And through our new relationship with the Indiana Safe Kids Coalition, we began giving poison safety talks to children at Safetyville in Indianapolis.

Cooperative long-term efforts such as these maintain a coordinated statewide poison prevention education program and bolsters the efforts of the IPC to reduce death and injury from poisoning.

FINANCIAL REVIEW

Expenses

Recent studies have shown that *every dollar* spent on poison centers returns **\$6.50** in medical care cost savings through the prevention of unnecessary hospital visits for poison exposures. Over the past 20 years, this represents savings of over **\$89 million** in Indiana.



Personnel	\$925,120
Clarian Health Facilities	\$252,689
Telephone	\$35,474
Supplies (w/information resources)	\$70,471
<u>Equipment</u>	<u>\$69,280</u>
Total Expenses	\$1,353,034

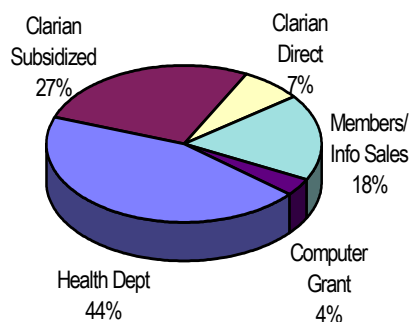
While total direct expenses have risen from \$117,369 in 1979 to \$937,476 in 1998, the cost per human poison case has dropped from \$17 to \$15 and the cost per productive call has dropped from \$17 to \$12.

Revenues

Direct state funding through the Indiana State Department of Health remains at the decreased level of \$600,000 per year (down from approximately \$800,000 per year) resulting in the proportion of direct state

Indiana Poison Center Staff	
Director James B. Mowry, PharmD	Specialists in Poison Information Lynn Ballentine, BSN, CSPI* (Chair, Public Education) Jo Beckerich, BSN, MS, CSPI* Susan Boots, RN, CSPI* Gwenn Christianson, RN, MSN, CSPI* Diane Ely, RN Laura Genduso, Pharm.D. Georgia Impiciche, BSN, CSPI* Susan Jackson, RN, CSPI* Karen Lytle, BSN, CSPI* Susie McKnight, RN, CSPI* Warren Patitz, BA, RN, CSPI* Jayne Santfleben, BSN, CSPI* Joanne Smith, BA, RN, CSPI* Laura Smith, BSN, CSPI* Phil Tanasovich, RN, CSPI* Elliott Taylor, BSN, CSPI* * AAPCC Certified Specialist in Poison Information
Medical Director R. Brent Furbee, MD	
Associate Medical Director Mark A. Kirk, MD	
Toxicologist/HBO Coordinator Mary Wermuth, MD	
Administrative Secretary Maggie Showalter	
Medical Toxicology Fellowship Mark A. Kirk, MD, Director William Dribben, MD, Fellow	

funding remaining at 55% from 90% in 1996. This decrease in state funding compelled the Center to re-design its Member Hospital Program by increasing the membership fee to \$3,000 per year and charging non-member hospitals for consultations that they generate. Clarian Health, in addition to providing up to \$100,000 in direct support as needed, also contributes space and other in-kind services for the operation of the IPC listed as Clarian Health - Subsidized.



Indiana State Department of Health	\$600,003
Clarian Health - Subsidized	\$365,558
Clarian Health - Direct	\$99,944
Members / Information Sales	\$237,529
Build Indiana Computer Grant	\$50,000
Total Revenues	\$1,353,034

STAFF MEMBERS

Our Specialists in Poison Information

The backbone of the Indiana Poison Center is its highly trained and dedicated Specialists in Poison Information: registered nurses who handle the emergency calls 24 hours a day.

The Specialists in Poison Information provide precise, immediate information in situations where seconds could make the difference between life and death. The Center's poison information staff are required to be certified by the American Association of Poison Control Centers. Currently, all staff that are eligible have either fulfilled the requirements or are currently working toward certification.

Additional responsibilities expected of the Specialists include presenting public and professional education programs and maintaining committees on Public Education, Professional Education and Protocols.

Our Administrative Team

James B. Mowry, Pharm.D., Director of the IPC since August 1981 is board certified by the American Board of Applied Toxicology, is a Fellow of the American Academy of Clinical Toxicology and has more than 20 years of experience in pharmacology and clinical toxicology.

Serving as the Center's Medical Director is Brent Furbee, M.D. Dr. Furbee is board certified in medical toxicology and emergency medicine with more than 18 years

of experience in emergency medicine and medical toxicology. Mark A. Kirk, M.D. joined the staff in 1996 as Director of the Medical Toxicology Fellowship Program and Associate Medical Director. He is board certified in medical toxicology and emergency medicine and has more than 9 years experience in emergency medicine and medical toxicology.

Maggie Showalter serves as Administrative Secretary for the Indiana Poison Center and Medical Toxicology of Indiana. In addition to her secretarial duties she distributes poison prevention education materials, schedules all education programs and acts as liaison with Member Hospitals and the Safe Kids Coalition.

CONSULTANTS

The IPC maintains a relationship with a number of expert consultants in many areas related to toxicology should a question be found that our usual and customary resources cannot handle. We would like to acknowledge their contributions to the program.

Robert J. Alonso, M.D.
Robert T. Anger, M.S.
Rita E. Banes
Waqar Bhatti, Ph.D.
James A. Brenneman, Ph.D.
Michael Buran, M.D.
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R. Lyle Christensen, Ph.D.
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Peg Davee, MS
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Alan R. Hanks, Ph.D.
Steven Hooser, DVM, Ph.D.
Daniel McCoy, Ph.D.
John W. Mead
Sherman A. Minton, M.D.
John Pless, M.D.
James E. Robbers, Ph.D.
Charles Sinclair, DVM, MSPH
Sam S. Slosman
Kenneth Sun, Ph.D.
Walter Sundberg, Ph.D.
Michael R. Tansey, Ph.D.
David Weaver, M.D.

MEMBER ORGANIZATIONS FOR 1998

It is with great appreciation that we recognize the support and contributions made by the following people and institutions to the Indiana Poison Center.

MEMBER HOSPITALS

The Indiana Poison Center Member Hospital Network was significantly revised in 1996 in response to decreasing state funding. The membership fee, which had been \$1,000 for many years, was increased to \$3,000 per year. In addition, hospitals that chose not to join the network, are now charged \$150 per poison consultation that is generated by their hospital. Full or partial year membership in the network has increased by almost 100%, from 42 in 1995 to 80 members in 1998.

Bedford Regional Medical Center, Bedford	Mary Sherman Hospital, Sullivan
Blackford County Hospital, Hartford City	Memorial Hospital, Jasper
Bloomington Hospital, Bloomington	Memorial Hospital, Logansport
Cameron Memorial Community Hospital, Angola	Memorial Hospital of South Bend, South Bend
Caylor-Nickel Medical Center, Bluffton	Methodist Hospital, Indianapolis
Clay County Hospital, Brazil	Methodist Hospital (Northlake), Gary
Clinton County Hospital, Frankfort	Methodist Hospital (Southlake), Merrillville
Columbus Regional Hospital, Columbus	Morgan County Memorial Hospital, Martinsville
Community Hospital, Munster	Orange County Hospital, Paoli
Community Hospital East, Indianapolis	Parkview Memorial Hospital, Fort Wayne
Community Hospital North, Indianapolis	Perry County Memorial Hospital, Tell City
Community Hospital of Anderson, Anderson	Porter Memorial Hospital, Valparaiso
Community Hospital South, Indianapolis	Pulaski Memorial Hospital, Winamac
Culver Union Hospital, Crawfordsville	Putnam County Hospital, Greencastle
Daviess County Hospital, Washington	Reid Memorial Hospital, Richmond
Deaconess Hospital, Evansville	Rush Memorial Hospital, Rushville
Dearborn County Hospital, Lawrenceburg	St. Anthony Hospital, Michigan City
Decatur County Hospital, Greensburg	St. Anthony Medical Center, Inc., Crown Point
DeKalb Memorial Hospital, Auburn	St. Elizabeth Medical Center, Lafayette
Dukes Memorial Hospital, Peru	St. Francis Hospital Center, Beech Grove
Dunn Memorial Hospital, Bedford	St. John's Health System, Anderson
Elkhart General Hospital, Elkhart	St. Joseph Hospital, Mishawaka
Fayette Memorial Hospital, Connorsville	St. Joseph's Hospital, Huntingburg
Good Samaritan Hospital, Vincennes	St. Joseph's Hospital of Marshall Co., Plymouth
Goshen General Hospital, Goshen	St. Joseph's Medical Center, South Bend
Greene County General Hospital, Linton	St. Margaret Mercy Hospital, Dyer
Hendricks County Hospital, Danville	St. Margaret Mercy Hospital, Hammond
Henry County Hospital, New Castle	St. Mary Medical Center, Hobart
Howard Community Hospital, Kokomo	St. Vincent Hospital, Indianapolis
Huntington Memorial Hospital, Huntington	St. Vincent Hospital - Carmel, Carmel
Indiana University Hospitals, Indianapolis	St. Vincent Mercy Hospital, Elwood
Jackson County Memorial Hospital, Seymour	St. Vincent Williamsport Hospital, Williamsport
Jasper County Hospital, Rensselaer	Terre Haute Regional Hospital, Terre Haute
Jay County Hospital, Portland	Tipton County Memorial Hospital, Tipton
Lafayette Home Hospital, Lafayette	Veterans Administration Hospital, Indianapolis
LaGrange County Hospital, LaGrange	White County Memorial Hospital, Monticello
LaPorte Hospital, LaPorte	Whitley Memorial Hospital, Columbia City
Major Hospital, Shelbyville	Wishard Memorial Hospital, Indianapolis
Margaret Mary Community Hospital, Batesville	Witham Memorial Hospital, Lebanon
Marion General Hospital, Marion	Woodlawn Hospital, Rochester

MEMBER PHYSICIANS

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Zionsville
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 Middlebury
 Don Zent, MD, Kokomo Family Care Inc., Kokomo
 Barbara Zimmerman, MD, Elkhart Emergency Physicians,
 Elkhart

OTHER INDIANA POISON CENTER DATA SETS

The annual Indiana Poison Center statistical data also includes other frequency distributions and cross-tabulations of selected data items. Copies of these reports are available upon request.

1. Month by Call Type	All Calls	28. Clinical Effects by Reason	Human
2. Patient Type by Multiple	Human	29. Medical Outcome by Reason Group	Human
3. Months by Patient Type	Human	30. Medical Outcome by Reasons	Human
4. Acute/Chronic	Human	31. Medical Outcome by Management Site	Human
5. Callsite by Call Type	All Calls	32. Ipecac by Age by Management Site	Human
6. Exposure to Multiple Substances	Human	33. Charcoal Administered by Age/Mgmt Site	Human
7. Route of Exposure	Human	34. Reason by Exposure Chronicity	Human
8. Frequency of Clinical Effects	Human	35. Route of Exposure by Age	Human
9. Distribution of Clinical Effects	Human	36. Route of Exposure by Reason	Human
10. Management Site by Referral Pattern	Human	37. Management Site by Age	Human
11. HCF2 Codes by Referral Pattern	Human	38. Treatment by Management Site	Human
12. HCF3 Codes by Referral Pattern	Human	39. Decontamination by Management Site	Human
13. Decontamination and Therapeutic Intervention	Human	40. Treatment by Management Site	Human
14. Duration of Effects by Medical Outcome	Human	41. Medical Outcome by Age/Adults Lumped	Human
15. Day of Week by Hour for Human	Human	42. Medical Outcome by Age/Adults Decades	Human
16. Call Site by Call Type	All Calls	43. Log by Generic Categories	Human
17. Age by Gender	Human	44. Log by Specific Products	Human
18. Age (Year/Month/Day by Gender)	Human	45. Generic Codes by Category by Call Type	All Calls
19. Age by Trimester of Pregnancy	Human	46. Generic Codes by Category by Age	Human
20. Pregnancy Duration	Human	47. Generic Codes by Category by Reason	Human
21. HCF2 Codes by Age	Human	48. Generic Codes by Category by Outcome	Human
22. Reason by Age (Adults lumped)	Human	49. Generic Codes by Category by Mgmt Site	Human
23. Reason by Age (Adults in decades)	Human	50. Caller Location by Call Type	Human
24. Reason by Gender	Human	51. Animal Species	Animal
25. Reason by Term of Pregnancy	Human	52. Medical Outcome by Route of Exposure	Human
26. Route by Management Site	Human	53. Age, Reason, HCF, Outcome Summary Data by Generic Code	Human
27. Clinical Effects by Age	Human		