



Swiss Toxicological
Information Centre

Annual Report 2003

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Support

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- the Swiss Society of Pharmacists (SSP)
- the Swiss Society of Chemical Industries (SSCI)
- the Swiss National Accident Insurance Fund (SNAIF)
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Advisers

Numerous experts from hospitals, institutes, state and federal organisations act as honorary advisers, most notably Jean-Pierre Lorent (former Director of the STIC) and Dr. Martin Wilks (Syngenta).



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Editorial

Dear Readers

The year 2003 represents a milestone in the history of the Swiss Toxicological Information Centre (STIC) in more than one way.

The introduction of the national emergency telephone number 145 in November 2003 has been very satisfying for us as it brought about the (long awaited) and deserved official recognition of the STIC as the central Swiss Poisons Information Centre.

The end of this year, however, also brought about two important changes in personnel. After 15 years as Medical Director of the STIC, Prof. Dr. Peter J. Meier-Abt resigned from his post. His highly regarded and internationally recognised expertise enabled a quantum leap for the STIC by establishing a close cooperation with the University and clinical medicine.

Another era also came to an end in 2003 with the retirement of the Administrative Director Jean-Pierre Lorent. After having already been involved in the preparations for the foundation of the STIC in 1964, he was appointed Administrative Director by the Foundation Council in 1973. It is mainly due to his determined and focused work in setting up the STIC that our country today has an internationally recognised national poisons information centre which is accessible free of charge to the whole population and has become an integral part of the Swiss health service.

The Foundation Council is very grateful to both gentlemen for their outstanding work. Dr. Hugo Kupferschmidt, previously Chief Resident, has been appointed Director and Responsible Physician with effect from March 2004. At the same time, Dr. med. Christine Rauber-Lüthy was appointed Head of the Information Service and Deputy Director.

The fact that the capacity of the STIC in its current organisational structure is increasingly being stretched to its limits has led to the conclusion that a reorganisation is necessary.

Consequently, an operational analysis has been undertaken by senior management in 2003. The financial breakdown has for several years now shown expenditures exceeding income and this is clear evidence that – in view of the financial means available – the service expected from the STIC cannot be provided in future without substantial structural changes. The plans for reorganisation will be approved by the Foundation Council in 2004 with a view to becoming effective from January 1st, 2005. New financial contributions will have to be found in addition to the existing funding. This has also meant that we showed some restraint in our communication of the introduction of the national emergency number 145 to our partners and the general public in order to avoid an uncontrollable increase in calls and requests to the service.

We are grateful to our existing sponsors who support us in times of all encompassing budget constraints and do not take their support for granted. Without this the STIC could not fulfill its task of advising the whole population free of charge in poisoning incidents. Thanks are also due to our members of staff who fulfill their duties with great dedication in an increasingly difficult environment.

DR. FRANZ MERKI
PRESIDENT OF THE FOUNDATION COUNCIL

■ Introduction

In the format which has been used since 1999, this annual report provides information on the utilisation of the emergency and information service, type and severity of poisoning incidents, educational activities, research projects, collaborations, the Swiss Antidote Network and publications. The section entitled human poisoning is for the first time summarised in table format and provides an easily accessible overview of the incidents.

The low key introduction of the national emergency telephone number 145 has ensured that the number of calls received (32217) did not increase in comparison with 2002 (33111), but staid within the range known from previous years. The number of visitors to our website, however, has increased from 71669 to 100461. This shows an increased interest in the STIC and in awareness of poisoning dangers. In addition to the telephone emergency advisory service, the services of the STIC continue to be used by industry, the media and other organisations (Swiss Federal Office of Public Health, Swissmedic, Swiss Olympic). In addition we dealt with considerable media interest in the activities of the STIC resulting from the introduction of the national emergency number 145. Easy access via the national emergency number has led to a significant increase in mistaken calls which significantly impair the work of the advisory service. We will have to address this situation in 2004 unless these calls spontaneously decrease to an acceptable level.

Efforts to streamline internal processes to deal with the qualitatively and quantitatively increased demands have reached a natural limit. Although the number of calls received remained static in the reporting year, it must not be forgotten that there has been a 6% increase in the number of calls received since our move in 1999, and 21% since 1990, with no corresponding change in the number of staff available to provide the telephone advisory service. Senior management has analysed the internal structures and processes and initiated a project of reorganisation which will be fully realised in 2004. Emphasis will be placed on maintaining and improving in-house expertise through increased training of staff, closer

cooperation with external experts, a reduction in staff turnover and further development of the IT area. We have maintained our already well established cooperation with experts from the University Hospital Zurich and toxicologists based at Zurich University and the Swiss Federal Institute of Technology to deal with complex cases especially in relation to chronic toxicity.

This annual report also contains information on an increased incidence of severe respiratory effects following the use of textile waterproofing sprays whose composition had been changed. The STIC recognised this change in incidence pattern and advised manufacturers and authorities accordingly which led to an immediate withdrawal of these products from the market. Nevertheless nearly 200 people suffered respiratory problems which at least in part necessitated a visit to the doctor or even hospital admission. The episode clearly shows that toxicovigilance is not only of theoretical importance, but demonstrates the important role which the STIC plays in this area. This experience however also shows where improvements in the recognition of signals are possible.

The introduction of a new medicines law led to new challenges in the procurement and distribution of unregistered antidotes. These can only be successfully overcome in close cooperation with hospital pharmacies and colleagues from the corresponding federal authorities. The new requirements make it impossible for the private pharmacy Wülflingen to continue their involvement in antidote distribution. In January 2004 Swiss snake bite antidote depots formed a network entitled «ANTIVENIN-CH» to enable compliance with the new legal requirements for the supply of antidotes for exotic snake bites.

Reporting adverse drug reactions to Swissmedic (the Swiss Agency for Therapeutic Products) by the STIC has now been well established. Through the collaboration with the Division of Clinical Pharmacology and Toxicology at the University Hospital Zurich the STIC provides a fast and efficient service at a high scientific level.



Emergency and information service

The main services provided by the STIC are telephone consultations for members of the general public and physicians in cases of acute and chronic poisoning. In addition, the centre answers theoretical questions and contributes to the prevention of accidental poisoning.

All calls to the information service of the STIC are recorded electronically in its own data base, and are analysed in the Annual Report.

Overview of all calls

Use of the service

In 2003, the information service of the STIC received 32 217 enquiries which represents a decrease of 2.7% compared to the previous year.

Figure 1

Number of enquiries to the centre over the last ten years

1994	29 534
1995	29 788
1996	29 469
1997	29 506
1998	29 510
1999	29 669
2000	30 935
2001	32 330
2002	33 111
2003	32 217

Origin of calls

Table 1 shows the number of calls received in 2003 from the individual cantons of Switzerland and the different population groups.

The largest number of calls came from the general public (61.6%). These calls reflect the need for information by the general public, and also how well the STIC is known. The largest proportion of calls from the public originated from the canton of Zurich (4.4 per 1000 inhabitants). The smallest number of calls was received from the cantons of Appenzell Innerrhoden, Ticino and Nidwalden.

Physicians used our service 9314 times. Compared to the year 2002 this represented a decrease of 287 and 277 calls by hospital physicians and general practitioners respectively. Based on population, the largest proportion of physician calls came from the cantons of Basel-Stadt and Jura, followed by the cantons of Geneva and Zurich. Veterinarians accounted for 525 calls to the STIC, pharmacists for 526.

The STIC also supplies information to the media (newspapers, radio and television), the emergency services, care homes, industry and poisons centres abroad. In 2003 we received a total of 2010 requests for information from these different and diverse organisations.

Table 1

Shows the number of calls received in 2003 from the individual cantons of Switzerland and the different population groups

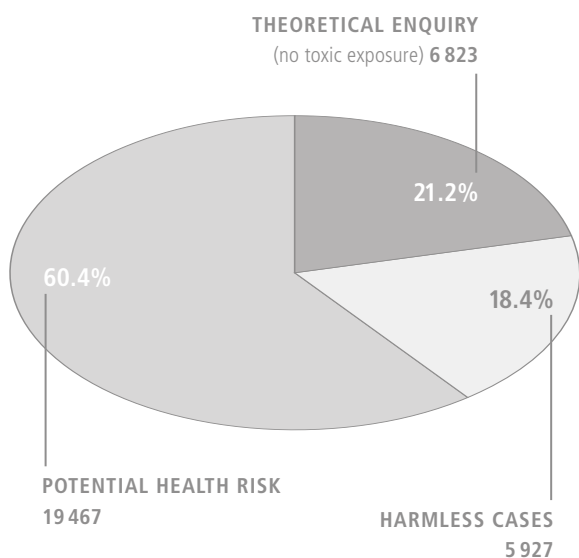
Canton	Population	General public	Hospital doctors	Practitioners	Veterinarians	Pharmacists	Various	Total	Calls per 1000 inhabitants	
									Public	Physicians
AG	556 229	1 475	557	112	20	44	115	2 323	2.7	1.2
AI	14 995	18	5	5	2	–	–	30	1.2	0.8
AR	53 189	108	47	8	2	1	10	176	2.0	1.1
BE	950 209	2 719	758	235	93	72	248	4 125	2.9	1.1
BL	263 194	704	163	64	22	12	45	1 010	2.7	1.0
BS	186 871	451	304	55	14	20	75	919	2.4	2.0
FR	242 679	471	239	32	16	19	34	811	1.9	1.2
GE	419 254	901	608	87	19	41	77	1 733	2.2	1.7
GL	38 380	76	28	16	3	–	4	127	2.0	1.2
GR	186 105	537	128	78	19	20	18	800	2.9	1.2
JU	69 196	95	121	13	11	12	4	256	1.4	2.1
LU	352 311	767	292	109	19	7	79	1 273	2.2	1.2
NE	166 949	305	164	23	8	14	32	546	1.8	1.2
NW	38 897	50	16	8	3	2	3	82	1.3	0.7
OW	32 999	64	20	10	–	2	4	100	1.9	0.9
SG	455 193	1 086	382	122	17	18	107	1 732	2.4	1.1
SH	73 916	178	67	18	6	2	19	290	2.4	1.2
SO	246 504	487	164	45	11	6	57	770	2.0	0.9
SZ	133 358	257	81	34	4	2	25	403	1.9	0.9
TG	229 882	497	165	70	16	8	57	813	2.2	1.1
TI	314 563	365	303	60	21	13	44	806	1.2	1.2
UR	35 246	71	20	10	1	1	2	105	2.0	0.9
VD	631 999	1 393	663	102	36	63	109	2 366	2.2	1.3
VS	281 020	409	265	66	24	26	26	816	1.5	1.3
ZG	102 247	238	93	19	7	1	41	399	2.3	1.2
ZH	1 242 488	5 407	1 403	412	108	114	671	8 115	4.4	1.6
FL	33 863	49	11	22	–	2	5	89	1.5	1.0
Foreign	–	192	361	25	18	3	66	665	–	–
Unknown	–	472	5	21	5	1	33	537	–	–
Total	7 351 736	19 842	7 433	1 881	525	526	2 010	32 217	2.7	1.3
%	–	61.6	23.1	5.9	1.6	1.6	6.2	100	–	–



Types of calls

Calls can be sub-divided into enquiries without exposure and enquiries where exposure has taken place. In cases of exposure there is a difference between harmless situations where no or no relevant symptoms are to be expected, and cases of potential or definite health risk.

Figure 2
Types of calls (n = 32 217)



Among the 6 823 calls without toxic exposure, frequent questions concerned drugs and antidotes, toxicity of plants to children and pets, and dangers of poisoning from spoilt food, household products and chemicals. This sub-category also includes advice and preparing reports for authorities, media, private individuals and various organisations as well as distribution of fact sheets and referring enquiries to appropriate experts.

The 25 394 calls received following potentially toxic exposure concerned 24 284 humans and 1 110 animals. The following section discusses human poisoning, whereas animal poisoning is dealt with in a separate section (page 12).

Human poisoning

Table 2 shows an overview of the calls received with potentially toxic exposure (24 284). Children were involved in 50.1% of the cases, adults in 49.3%. In 144 cases (0.6%), the age group remained unknown.

The highest number of calls involved children under five years of age (37.1%). The proportion of harmless cases was significantly higher in children (18.1%) than in adults (5.5%). In contrast, the proportion of cases with potential health risk was somewhat higher in adults (43.8%) than in children (32.0%). Boys were more frequently represented amongst the children (21.5% vs. 19.0%) and women amongst the adults (26.3% vs. 17.2%).

Table 2
Age and gender of human cases with potentially toxic exposure

		Harmless cases		Potential health risk		Total	
Children		4 396	18.1%	7 767	32.0%	12 163	50.1%
Age	< 5 years	3 497	14.4%	5 501	22.7%	8 998	37.1%
	5 – < 10 years	258	1.1%	657	2.7%	915	3.8%
	10 – < 16 years	130	0.5%	629	2.6%	759	3.1%
	unknown	511	2.1%	980	4.0%	1 491	6.1%
Sex	girls	1 678	6.9%	2 941	12.1%	4 619	19.0%
	boys	1 841	7.6%	3 376	13.9%	5 217	21.5%
	unknown	877	3.6%	1 450	6.0%	2 327	9.6%
Adults		1 349	5.5%	10 628	43.8%	11 977	49.3%
Sex	female	698	2.9%	5 685	23.4%	6 383	26.3%
	male	393	1.6%	3 786	15.6%	4 179	17.2%
	unknown	258	1.1%	1 157	4.8%	1 415	5.8%
Unknown		25	0.1%	119	0.5%	144	0.6%
Total		5 770	23.7%	18 514	76.3%	24 284	100%

Circumstances of poisoning

Table 3 shows the circumstances of poisoning in the 24 284 cases with potentially toxic exposure. **Acute accidental intoxications** (17 669) represented the largest group. These occurred frequently at home with children ingesting easily accessible drugs, household products or plant parts. Adults too were involved in toxic exposures at home, but a significant number of enquiries involved work place accidents (818).

Acute intentional poisoning was mostly due to attempted suicide (4 018 cases), less frequently due to drug abuse (561 cases) or related to criminal behaviour (52 cases).

Chronic poisoning was relatively rare (595 cases) compared to acute intoxications. **Adverse drug reactions** in therapeutic doses led to 261 information requests. These were mainly related to the establishment of a causal link between the observed symptoms and the medication taken.



Table 3
Circumstances of toxic exposures

Circumstances of toxic exposures		Acute poisoning (Exposure <8h)		Chronic poisoning (Exposure >8h)
Accidental domestic	15 785	65.0%	183	0.8%
Accidental occupational	818	3.4%	95	0.4%
Accidental environmental	30	0.1%	24	0.1%
Accidental others	1 036	4.3%	70	0.3%
Total accidental	17 669	72.8%	372	1.6%
Intentional suicide	4 018	16.5%	31	0.1%
Intentional abuse	561	2.3%	64	0.2%
Intentional criminal	52	0.2%	11	0.1%
Intentional others	771	3.2%	117	0.5%
Total intentional	5 402	22.2%	223	0.9%
Total accidental and intentional	23 071	95.0%	595	2.5%
Total acute and chronic		23 666	97.5%	
Adverse drug reactions		261	1.0%	
Unclassifiable		357	1.5%	
Total		24 284	100%	

Agents involved

For analysis, the agents and toxins involved in enquiries were split up into 12 groups. Table 4 shows these different groups and how often they were involved in the total of 24 284 poisonings in humans.

Most toxic exposures occurred with pharmaceuticals (37.1%), followed by household products (24.5%) and plants (10.7%). Details of the individual agent groups are available in the supplement to this Annual Report which can be ordered separately.

Severity of poisonings

6 749 enquiries from physicians (72% of all medical calls) were concerned with cases of expected or already established poisoning. In these cases, the treating physicians received a written follow-up of the telephone consultation, together with a request for feedback on the clinical outcome. The STIC received a report on the outcome in 67% of these cases. Thus the STIC received additional information, evaluated by physicians, concerning symptoms, clinical outcome and treatment of acute and chronic poisonings which was entered and analysed in our in-house information system.

Table 4

Agents involved in all cases of poisonings in humans

Agents/Age groups	Adults	Children	Age unknown		Total
Pharmaceuticals	5 484	3 510	24	9 018	37.1%
Household products	2 180	3 740	39	5 959	24.5%
Plants	509	2 076	16	2 601	10.7%
Technical and industrial products	1 254	401	15	1 670	6.9%
Cosmetics and personal care products	159	914	2	1 075	4.4%
Food and beverages	565	291	14	870	3.6%
Recreational drugs, alcohol	466	388	5	859	3.5%
Agricultural and horticultural products	341	371	6	718	3.0%
Venomous animals	320	119	2	441	1.8%
Mushrooms	204	119	4	327	1.4%
Veterinary drugs	22	42	–	64	0.3%
Others or unknown agents	473	192	17	682	2.8%
Total	11 977	12 163	144	24 284	100%

Data capture and data evaluation was standardised according to circumstances, causality and severity of poisoning. This annual report only includes poisonings where the causality was confirmed or likely. Confirmed means the toxin has been found in the body, the time course and symptoms are compatible with the toxin, and the symptoms could not be explained by an underlying illness or any other cause. Likely causality fulfils the same criteria, except that the agent has not been detected in the body.

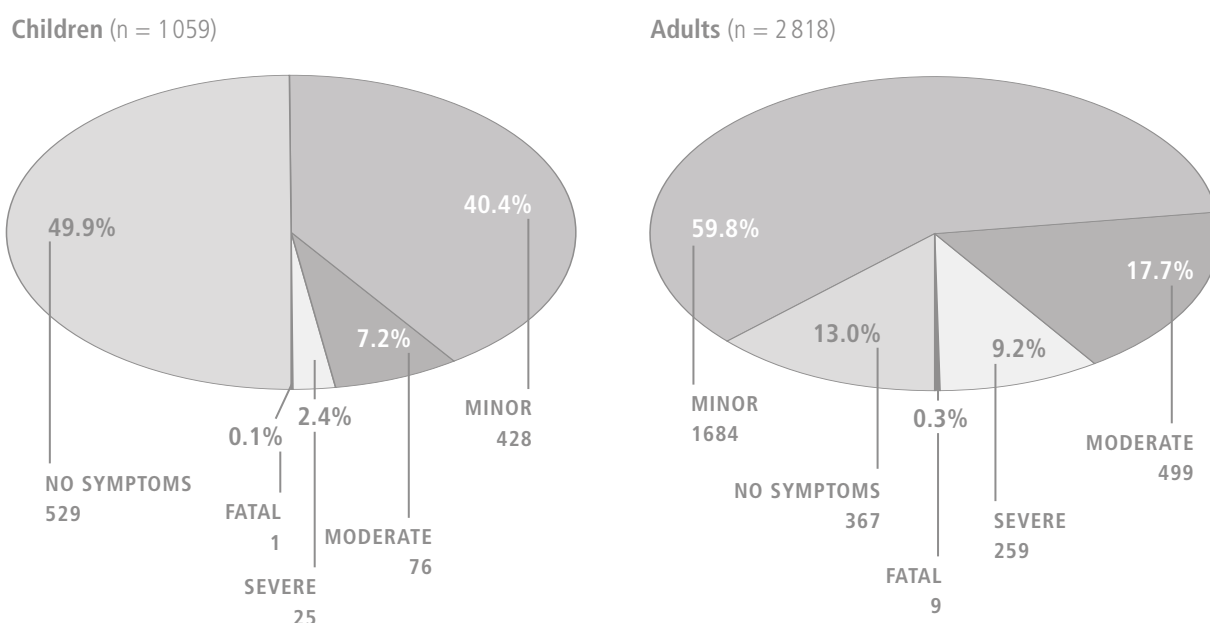
3 877 human cases both asymptomatic and symptomatic with sufficient evidence of causality were analysed further with regard to clinical course.

1 059 cases involved children and 2 818 adults. The severity of these cases is documented in Figure 3 with cases catego-

rised as follows: no symptoms, minor, moderate, severe, or fatal. Minor symptoms generally require no treatment; moderate symptoms usually require treatment, and cases with severe symptoms must always be treated.



Figure 3
Clinical outcome of poisoning cases in children and adults



Amongst children, half of the cases (529 = 49.9%) were asymptomatic in contrast to adults where only 367 (13.0%) were asymptomatic. Minor symptoms were observed in 428 children (40.4%) and in 1 684 adults (59.8%). Moderate symptoms were seen in 76 children (7.2%) and 499 adults (17.7%). Severe poisoning occurred in 25 children (2.4%) and 259 adults (9.2%). Amongst children only one case had a fatal outcome (0.1%) as opposed to 9 cases in adults (0.3%).

Of the 3 877 cases where causality was confirmed or likely (Table 5), about three fifths involved ingestion of only one toxin. In approximately two fifths of the cases, two or more agents were involved. For the purpose of this report, these cases have been classified according to the most important agent involved. In those cases where follow up information was received and analysed, therapeutic drugs were again the most frequent cause of poisoning (64.7%), followed by household products (12.0%), and technical and industrial products (7.1%).

Table 5

Frequency of agent group and severity of human poisoning in cases where medical feedback was received and analysed

Agent group Severity of poisoning	Adults					Children					Total	
	N	Mi	Mo	S	F	N	Mi	Mo	S	F		
Pharmaceuticals	272	1 146	313	174	5	312	232	36	16	1	2 507	64.7%
Household products	24	171	42	17	–	103	91	16	3	–	467	12.0%
Technical and industrial products	24	149	31	14	–	19	31	5	3	–	276	7.1%
Recreational drugs, alcohol	12	86	70	42	2	14	12	3	1	–	242	6.2%
Plants	7	16	16	–	–	27	13	9	–	–	88	2.3%
Agricultural and horticultural products	3	18	4	6	1	28	7	–	1	–	68	1.8%
Cosmetics and personal care products	7	11	3	–	–	9	19	2	–	–	51	1.3%
Mushrooms	5	20	10	–	–	5	2	1	–	–	43	1.1%
Venomous animals	1	21	2	–	–	2	7	2	1	–	36	0.9%
Food and beverages	2	6	2	1	–	–	4	1	–	–	16	0.4%
Veterinary drugs	–	1	–	1	1	6	1	–	–	–	10	0.3%
Others or unknown agents	10	39	6	4	–	4	9	1	–	–	73	1.9%
Total	367	1 684	499	259	9	529	428	76	25	1	3 877	100%

Severity of poisoning: N = no symptoms, Mi = minor, Mo = moderate, S = severe, F = fatal



Animal poisoning

Animals involved

The 1110 calls received concerned the following animal species: 739 dogs, 238 cats, 40 horses/ponies, 20 rabbits/hares, 10 guinea pigs, 10 ruminants, 9 birds, 9 goats, 8 donkeys, 8 sheep, 2 chickens, 2 mice, 2 rats, 1 chinchilla, 1 lizard, 1 fish, 1 llama, 1 duck, 1 ferret, 1 hamster, 1 tortoise, 1 snail and 1 pig. The other cases related to several or unknown animal species.

Agents involved

Table 6 shows the number of calls for the 12 different groups of agents.

Table 6
Agents involved in calls concerning animals

Agent groups	No. of cases	
Agricultural and horticultural products	294	26.4%
Plants	283	25.6%
Human Pharmaceuticals	173	15.5%
Household products	126	11.4%
Technical and industrial products	53	4.7%
Veterinary drugs	40	3.6%
Recreational drugs, alcohol	23	2.1%
Food and beverages	22	2.0%
Venomous animals	18	1.6%
Cosmetics and personal care products	14	1.3%
Mushrooms	12	1.1%
Others or unknown agents	52	4.7%
Total	1 110	100%

The calls primarily concerned agricultural and horticultural products (26.4%) followed by calls relating to plants (23.6%), Pharmaceuticals (15.5%), household products (11.4%), technical and industrial products (4.7%) as well as veterinary drugs (3.6%).

Severity of poisonings

Veterinarians were also requested to submit clinical reports on animal poisoning. We received a total of 227 reports which could be analysed. Of those 94 cases remained without symptoms, 67 were classified as minor and 66 cases had moderate, severe or fatal outcomes (Table 7).

Table 7
Agent groups and severity of animal poisoning

Agent groups Severity of poisoning	Outcome					Total	
	N	Mi	Mo	S	F		
Agricultural and horticultural products	44	15	8	14	4	85	37.4%
Pharmaceuticals	20	14	10	2	–	46	20.3%
Plants	5	13	1	2	3	24	10.6%
Veterinary products	6	9	5	4	–	24	10.6%
Household products	10	5	2	–	–	17	7.5%
Technical and industrial products	4	5	2	–	1	12	5.3%
Recreational drugs, alcohol	1	3	2	1	–	7	3.0%
Food and beverages (except mushrooms and alcohol)	–	3	1	1	–	5	2.2%
Cosmetics and personal care products	4	–	–	–	–	4	1.8%
Venomous animals	–	–	–	2	–	2	0.9%
Mushrooms	–	–	1	–	–	1	0.4%
Others or unknown agents	–	–	–	–	–	0	0.0%
Total	94	67	32	26	8	227	100%

Severity of poisoning: N = no symptoms, Mi = minor, Mo = moderate, S = severe, F = fatale



Other activities

Service

We received financial compensation for the following services provided:

1. expert statements with particular emphasis on unpublished experience of the STIC,
2. anonymised case analysis in relation to specific toxins for the pharmaceutical industry,
3. keeping a record of manufacturers' safety data sheets for urgent enquiries from Switzerland and abroad and
4. distribution of printed material, in particular 14 953 first aid guidelines.

The Swiss Federal Office of Public Health provided STIC with free access to its confidential product data bank in exchange for anonymised reports on all serious incidents involving agents covered by the Swiss poisons law.

At the request of the Swiss Olympic Sports Association the STIC provided a chargeable doping hotline for athletes which was called 504 times.

Use of the emergency telephone service remains free of charge. The same applies to information provided on our web site (www.toxi.ch) which was visited 100 461 times (compared to 71 669 times in the previous year).

Senior physicians carried out regular consultations in clinical toxicology in the Department for Internal Medicine at the University Hospital Zurich (in particular for the emergency and intensive care units). This includes weekly ward rounds in the Department for Internal Medicine together with staff from the Division of Clinical Pharmacology and Toxicology.

Teaching and continuing education

The academic members of the STIC actively participate in the teaching and continuing education programme at the Division of Clinical Pharmacology and Toxicology of the University Hospital Zurich as part of the ongoing collaboration.

The experience of the STIC forms an important basis for the teaching of medical students in clinical toxicology, and of the University's environmental science students in environmental hygiene which is undertaken by the STIC's Chief physician.

Senior medical staff of the STIC regularly contribute to the continuing education of physicians and members of other professional organisations in clinical pharmacology and toxicology. In 2003, the STIC was consulted 111 times by the media on current issues in human toxicology.

Research results were presented at the annual congress of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) in Rome (four contributions), at the annual conference of the North American Congress of Clinical Toxicology (NACCT) in Chicago (two contributions) and the 71st annual meeting of the Swiss Society for Internal Medicine and the Section Clinical Pharmacology and Toxicology in Basel (two contributions). The Chief physician of the STIC has been invited to lecture at several national and international workshops and congresses.

Research projects

The main emphasis of our research efforts continues to be on dose-effect relationships in human poisoning incidents, in particular relating to drug overdose. In collaboration with the Swiss Orphan Lung Disease Registry in Geneva we commenced a study to gather data on exposure and clinical findings in respiratory system dysfunction caused by waterproofing aerosols. Specific research projects are being carried out in the Division of Clinical Pharmacology and Toxicology at the University Hospital Zurich investigating pharmaco-epidemiology of adverse drug reactions, interactions between drugs and phytopharmaceuticals as well as genetic transporter polymorphisms as risk factors for severe incidents in clinical pharmacology and clinical toxicology.

Collaborations

In addition to closely collaborating with the Division of Clinical Pharmacology and Toxicology at the University Hospital Zurich, the STIC is a member of the Centre for Xenobiotic and Environmental Risk Research (XERR) at the Swiss Federal Institute of Technology and the University of Zurich. This cooperation not only increases the competence of STIC staff in general and specific issues in toxicology, but also provides the opportunity of redirecting theoretical enquiries to other experts.

Within the framework of the national pharmacovigilance network and under the direction of the Zurich University Division of Clinical Pharmacology and Toxicology a point of contact exists at the STIC Centre for reports on adverse drug reactions.



The Swiss Antidote Network

In Switzerland, the distribution and storage of antidotes is uniformly organised. Information on the individual antidotes and their availability is published regularly in the Swiss List of Antidotes. Antidotes are classified in three complementary categories based on the frequency of poisonings, where the antidote is being used and its availability. In general antidotes are only included in the list if they do not belong to the standard range available at pharmacies in the community and in hospitals.

The inclusion criteria stipulate that:

1. the substance is used as a classic antidote,
2. the substance used as an antidote is not commonly available in hospitals,
3. the quantity of the drug if administered as an antidote exceeds the quantity that is usually available in hospitals for therapeutic use,
4. the use of the drug as an antidote is not well known.

The Swiss List of Antidotes does not aim to be fully comprehensive, but wants to ensure the safe and rapid availability of the selected substances.

News 2003: The pharmacy in Wülflingen has organised the distribution of antidotes for many years, but will have to cease this service during the course of 2004 due to the increased demands put on the distribution of antidotes. The working party «Antidota» is very grateful for Mrs dipl. pharm. C. Fähr for her long-standing commitment and contribution to the Swiss Antidote Network. It is intended that the hospital pharmacy of the cantonal hospital Aarau will take over this task in addition to the important work it has already taken on producing selected antidotes registered with Swissmedic.

The working party has moved amyl nitrite ampoules from the basic supply available at pharmacies in the community to that available at hospital pharmacies since it has to be assumed that in an emergency there would not be enough time to obtain amyl nitrite from pharmacies in the community. Furthermore, the product is already available at factories working with cyanide and stocks are possibly also held by the emergency services.

Table 8

The three categories of antidotes on the Swiss Antidote List

Basic supply available at pharmacies in the community: activated charcoal, biperidene (tablets), calcium gluconate (hydrogel), simeticone (drops or tablets).

Basic supply available at hospital pharmacies: amyl nitrite, atropine (1 ml), biperidene (ampoules), calcium gluconate (ampoules), colestyramine, dantrolene, ethanol, flumazenil, glucagon, magnesium, N-acetylcysteine (vials and powder), naloxone, sodium bicarbonate, sodium polystyrene sulfonate, neostigmine, phytomenadione (vit. K), pyridoxine (vit. B6).

Additionally available at regional centres: atropine (100 ml), calcium-disodium-EDTA, desferrioxamine, digitalis antidote, dimethylaminophenol (4-DMAP), dimercaptopropane sulfonate (DMPS, Unithiol), dimercaptosuccinic acid (DMSA, Succimer), iron-(III)-hexacyanoferrate(II) (Prussian blue), fomepizole, glycine, hydroxycobalamine, methylene blue, obidoxime, phentolamine, physostigmine salicylate, silibinin, sodium thiosulfate.

Regional centres and their telephone numbers are included in the list.

Decontaminants and antidotes for radioactive materials are stored at the Cantonal Pharmacy in Zurich, and can be ordered by hospitals and other pharmacies when required. Botulinus-Antitoxin is stored at the Swiss Army's pharmacy and can be obtained via STIC.

Since the new Swiss Medicines Law came into effect at the beginning of the year 2002 new regulations apply for the procurement and distribution of snake bite antivenins. Availability of antivenins for exotic snake bites had been variable and confusing and their supply in an emergency uncertain. In the beginning of 2004 the hospital pharmacies in Münstertingen (Institute for Hospital Pharmacy at the Cantonal

Hospital Münsterlingen), Geneva (Pharmacies des Hôpitaux Universitaires de Genève) and Zurich (Cantonal Pharmacy Zurich), which were already storing snake bite antivenins, formed «ANTIVENIN-CH». The network aims to make the distribution of snake bite antivenins in Switzerland faster, more secure and easily understood. The Swiss Toxicological Information Centre (STIC) has taken over coordination of the network's collaboration which is supported by the Swiss Agency for Therapeutic Products, Swissmedic. Dr. Thomas Junghans of Heidelberg University acts as expert adviser. The participating antivenin depots publish their available supply in a joint list (www.toxi.ch→Antidotes→Antidotes Network), supply snake bite antivenins to each other when needed and exchange knowledge and information on snake bite antivenins. Its members stock antivenins only for venomous snakes registered with the authorities.

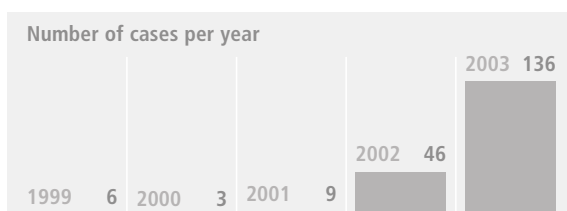
The Swiss List of Antidotes is updated annually by a special working party of the STIC and the Swiss Association of Hospital Pharmacists. It is published in the Bulletin of the Swiss Federal Office of Public Health and can also be viewed on the Internet at «www.toxi.ch» (Antidotes) or at «www.pharmavista.net».

Members of the working party are M. Eggenberger (Berne), C. Fäh (Winterthur), S. Mühlebach (Aarau), Ch. Rauber-Lüthy (Zurich), A. Züst (Zurich) and H. Kupferschmidt (Chairman, Zurich).



Focus: Signals in 2003 – Examples of toxicovigilance through the Swiss Toxicological Information Centre

Towards the end of 2002 and in particular in the first quarter of 2003, the doctors advising callers to the STIC noticed a substantial increase in the number of calls relating to acute respiratory problems following use of **textile waterproofing sprays**. The people concerned suffered from heavy coughing and shortness of breath shortly after using the sprays which necessitated a visit to the doctor or even admission to hospital in a significant number of cases. A total of nearly 200 cases was registered compared to less than 10 incidents in previous years which rarely required medical assistance. Enquiries made to authorities and manufacturers revealed that changes in the products' composition had preceded this episode. The products were immediately taken off the market which brought the epidemic to a halt within a short period of time.



This episode shows the significance of toxicovigilance undertaken by a poisons centre. It is likely that complaints only to the distributors or authorities would have led to a significant delay in the recognition of the problem and its true dimensions may well never have been established. Other incidents underlining the importance of toxicovigilance are described below.

Enquiries relating to **recreational drugs and alcohol** are relatively rare and only amount to 3.5% of all calls to the STIC. The effects of many of these substances are well known and therefore rarely lead to enquiries. In addition there are a number of other centres (e.g. addiction prevention centres, drop-in centres, Swiss Institute for the Prevention of Alcho-

lism and other Drug-related Problems) which give advice. The STIC is being called when new and not yet well known drugs appear on the market or whenever unusual symptoms are being noticed.

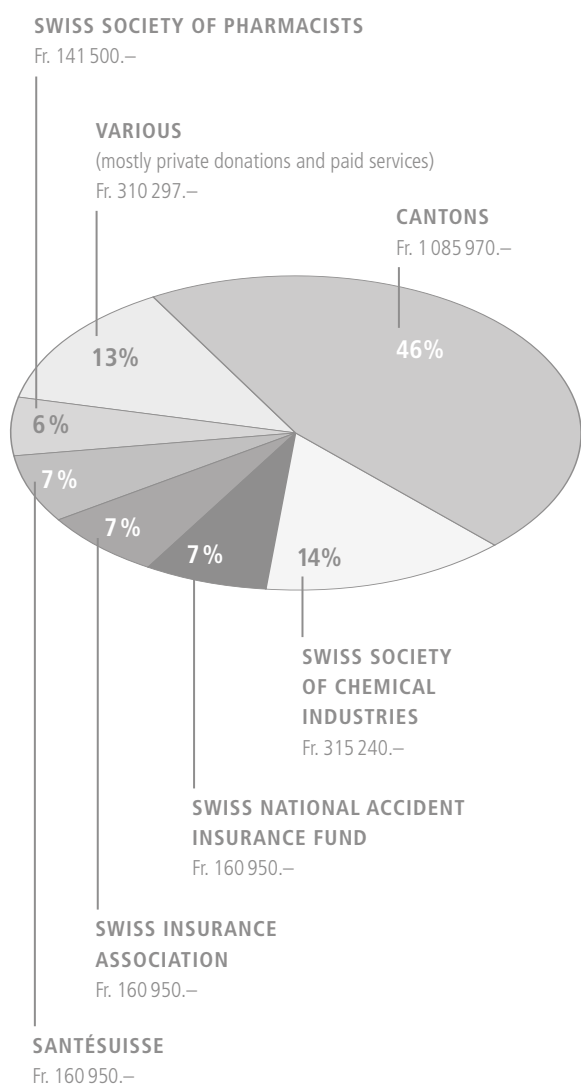
This year the STIC was confronted with a significant increase in enquiries relating to gamma-butyrolactone (GBL). This solvent is metabolised in the body to the narcotic gamma-hydroxybutyrate (GHB) which is being misused as a drug. GHB was placed under the narcotics law at the end of 2001 and since then the black market seems to have increasingly focussed on GBL. Whereas in the year 2001 54 incidents involved GHB as opposed to three incidents with GBL, this relationship shifted in 2003 to 38 versus 22.

A small unusual series of drugs-related cases was registered at the STIC when patients participating in a methadone programme suffered from acute opiate withdrawal symptoms following the consumption of cocaine. Laboratory investigations showed that the cocaine had been diluted by half with naltrexone, an opiate antagonist. Cocaine is frequently diluted with products such as lactose, mannitol but also lignocaine and caffeine. Its mixture with naltrexone was a very unusual occurrence which was soon recognised due to several enquiries received from different places on the same day.

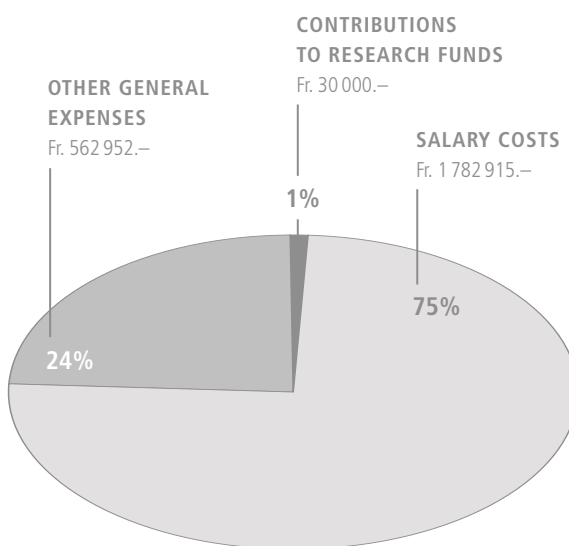
Our attention was also drawn to an enquiry relating to a patient who suffered unexplained coagulation problems following i.v. injection of dissolved methadone capsules. Enquiries revealed that kaolin had been added to the capsules to render the contents gelatinous in order to prevent intravenous abuse. Since kaolin affects coagulation, the question needs to be raised whether kaolin is a suitable auxiliary agent for oral distribution forms where there is a danger of misuse.

Income and expenditure

Income Fr. 2 335 857.–



Expenditure Fr. 2 375 867.–





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Smaller contributions not listed here are frequent and very welcome. We extend grateful thanks to all donors.

Publications

	Bestell- nummer		Bestell- nummer
Fehler in der Medikamententherapie im Fallkollektiv des Schweizerischen Toxikologischen Informationszentrums. Curjuri I. Thesis University of Zurich, 2003, 33 p.	1-03	Tox-Zentrum: Fokus 2002. Meier-Abt A., Lorent J.P., Guirguis M., Rauber-Lüthy Ch. Schweizer Apothekezeitung 141 (22), 852–855, 2003.	13-03
Errors in drug-therapy reported by medical professionals and lay persons (Abstract). Curjuri I., Guirguis M., Kupferschmidt H., Meier-Abt P. 71. Jahresversammlung der Schweizerischen Gesellschaft für Innere Medizin, 21.–23. Mai 2003, Basel.	2-03	Keine Giftpflanzen auf Kinderspielplätzen. Meier-Abt A. g'plus – die Gärtner-Fachzeitschrift 18, 30–32, 2003.	14-03
An 11-month-old boy with psychomotor regression and auto-aggressive behaviour. Chrysochoou Ch., Rutishauser Ch., Rauber-Lüthy Ch., Neuhaus Th., Boltshauser E., Superti-Furga A. European Journal of Pediatrics 162, 559–561, 2003.	3-03	Akute Vergiftungen. Meier-Abt P.J., Kupferschmidt H. In: N.E. Gyr, R.A. Schoenenberger, W.E. Haefeli (Hrsg.): Internistische Notfälle, 7. Auflage, Georg Thieme Verlag, Stuttgart, New York 2003, S. 449–482.	15-03
Human clotiapine poisoning (Abstract). Duméril K., Kupferschmidt H. Journal of Toxicology – Clinical Toxicology 41 (5), 505–506, 2003.	4-03	Methotrexate Toxicity: Mechanism(s), Symptoms and Treatment (Abstract). Meier-Abt P.J. Journal of Toxicology – Clinical Toxicology 41 (5), 433–434, 2003.	16-03
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Interaktionen zwischen Phytopharmaka und Arzneimitteln. Fattinger K., Meier-Abt A. Swiss Medical Forum 29/30, 693–700, 2003.	6-03	A multi-centre feasibility study for collecting information from poisons centres for risk assessment purposes (Abstract). Onyon L., Edwards N., Heinemeyer G., Laborde-Garcia A., Kuroki Y., Kupferschmidt H., Mathieu-Nolf M., Murray L. Journal of Toxicology – Clinical Toxicology 41 (5), 451–452, 2003	18-03
Tox-Zentrum: Brennpunkte 2002. Guirguis M., Rauber-Lüthy C., Egli G., Kupferschmidt H. Schweizerische Ärztezeitung 84 (45), 2353–2356, 2003.	7-03	Misdiagnosed fatal meadow saffron poisoning in a toddler (Abstract). Rauber-Lüthy Ch., Baer W., Rentsch K., Meier-Abt A. Journal of Toxicology – Clinical Toxicology 41 (5), 728, 2003.	19-03
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Epidemy of acute respiratory illness linked to use of waterproofing textile and leather spray (Abstract). Kupferschmidt H. Journal of Toxicology – Clinical Toxicology 41 (5), 665–666, 2003.	9-03	Das Schweizerische Toxikologische Informationszentrum. Tschudi M. Galexis 3, 20–22, 2003.	21-03
Antidotliste 2003. Kupferschmidt H. Schweizer Apothekezeitung 141 (7), 253–254, 2003.	10-03	The publications listed above may be ordered quoting the relevant order numbers via telephone (+41 44 634 10 20), fax (+41 44 252 88 33), or by e-mail to (info@toxi.ch).	
Akute Intoxikationen mit Drogen. Kupferschmidt H. Therapeutische Umschau 60 (6), 341–346, 2003.	11-03	In addition, the revised leaflet about first aid and poisoning prevention is available as well as emergency telephone number stickers in German, French and Italian. Dissertations are only available on loan.	
Syndrome respiratoire aigu après inhalation de sprays imperméabilisants. Lazor R., Heinzer R., Blanchet C., Kupferschmidt H., Fitting J.-W. Médecine & Hygiène 61, 2175–2177, 2003	12-03	If you require several documents, please order by mail, enclosing stamps to the value CHF 4.50 per document, or the equivalent in international reply coupons.	



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