



Swiss Toxicological
Information Centre

■ Annual Report 2005

www.toxi.ch

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■ Editorial

Dear Readers

Last year we have been able to consolidate our efforts and focus on the future after an eventful year in 2004.

The Foundation Council has been strengthened by recruiting a representative from the Federal Office for Public Health as an additional member; Swissmedic, however, declined the same offer. The service level agreements entered into are evidence of the good cooperation which the STIC enjoys with both organisations. It continues to be our aim to put the STIC on a firm basis of support from all stakeholders in the health service, and it remains our ambition to regain FMH support. Corresponding talks have been agreed and we hope that the medical profession will return to the Foundation Council which befits its status as main beneficiary.

With regard to finances it appears that the cantonal contributions need to be based on a more solid legal foundation and the separation from the tasks of the Federation needs to be made more transparent. Through their contributions the cantons ensure that the population has round-the-clock (24 hours on 365 days) access to a centre which competently advises health professionals and the general public in cases of poisoning emergencies. It has been shown several years ago that this service saves public health services a considerable amount of money by preventing expensive stays in hospitals. In contrast the service level agreements by the Federation cover certain tasks prescribed by law.

The work at the STIC has to be based on scientific principles which are also valid for the collection and evaluation of data. A permanent link with academic research and teaching is therefore of great importance. For obvious reasons this is focussed on the University of Zurich. During the reporting year initial contacts have been made and first talks held on how the STIC as an independent and service-orientated organisation could enter into a regular cooperation with the institutes and clinical departments of the medical faculty of the University of Zurich, allowing both organisations to bene-

fit from synergies in knowledge and infrastructure. We expect a final decision by the beginning of 2007.

It is with great pleasure and satisfaction that I can say that the STIC – thanks to its leadership team which fulfil its tasks focussed and with great enthusiasm – has become an invaluable institution in our health service, and one which also contributes to a reduction in costs. The management and staff of the STIC deserve our respect, trust and thanks.

I am grateful to the Foundation Council and especially the supporting organisations for their trust and continued support of the STIC in an increasingly difficult economic environment.

DR. FRANZ MERKI
PRESIDENT OF THE FOUNDATION COUNCIL



Introduction

This annual report 2005 provides in the usual manner information on enquiry statistics, type and severity of poisoning incidents, educational activities, research projects, collaborations, the Swiss Antidote Network and publications. The section entitled «human poisoning» is summarised in tabular format. More detailed information can be found in an appendix to this annual report which is available separately through the STIC.

After a slight reduction in the number of enquiries received in 2003 and 2004 we have seen a significant 6.7 % increase to an unprecedented 33 512 calls in the reporting year. This rise was mostly due to calls because of toxic exposure (+ 7.5 %). Theoretical enquiries increased to a lesser degree (+ 1.8 %). We have observed a particularly strong increase in acute accidental poisonings (+ 9.6 %). This increase was proportionate across all parts of the country and cantons to its respective population and is seen as a sign of the esteem in which health professionals and the general public hold the STIC. Poisonings in children rose by 10 %, in particular with respect to poisonings with household products (+ 15.4 %). However, physicians' follow-up reports show no increase in severe poisonings. Visits to the website also continue to rise.

An analysis of the number of enquiries received over the years shows that a plateau has been reached around which the number of calls fluctuates from year to year. A comparison with other European poison centres has shown that call numbers of this order of magnitude can be expected in a population of about seven million in a central European country. In its current structure the STIC has reached its capacity with this number of calls. A further significant increase could only be handled with additional staff. The aim of any publicity must therefore not be to increase the number of calls but to ensure that every resident of Switzerland is aware of the services the STIC offers and knows how to avoid poisonings.

The national emergency number 145 for poisoning emergencies is now well established and has demonstrated its value. A significant increase in additional mistaken calls has been

observed as an accompanying effect. This concerned up to 35 % of the call volume and led to a considerable disruption of the advisory activities. This problem has now been solved by technical means; a new automated response has reduced mistaken calls by over 80 %, however, this has necessitated upgrading the telephone system at considerable expense.

Following the introduction of the new Chemicals Law in August 2005 the STIC has been able to gain initial experience with the new system. The replacement of the former poison classifications by the hazard symbols and the reference to risks and safety (R- and S-phrases) has been well accepted by staff and callers alike. The new system gives the consumer more differentiated information on the kind of toxic dangers posed than the previous system. However, during a transition phase the use of the old classification is still permitted. In some respects the new law has led to deaterioration as far as the STIC is concerned: due to the reduced notification the complete composition of products is only available at the Federal Office for Public Health for those products classified as dangerous and freely available. For all other products the STIC has to request the complete composition from the manufacturers which entails an additional, not insignificant amount of work.

During the course of 2005 a new IT project has been started, since significant parts of the documentation and database systems have reached their age limits and have to be replaced and updated to keep up with technical developments. The new information technology will be more uniform and will link its most important components so that entering and analysis of data will be quicker and more varied. Migration to the new system is expected in the second half of 2006.

■ Focus

New technological developments such as nano technology or problems due to the procurement of toxic products via the Internet increasingly affect the STIC's advisory service. Globalisation in transport and trade of products and chemicals, together with an ever increasing number of new chemical entities being introduced in the market, considerably increase the amount of work involved in searching for information in case of emergencies. Timely advice can therefore become difficult in individual cases. Therefore, the international networking of poison information centres is becoming increasingly important.

Nano technology is considered to be the technology of the future. In Switzerland nearly 300 products have the term «nano» as part of their trade name. Although nano particles are usually considered to be particles with a size below 100 nanometres, it is not always clear what is meant by the term for individual products. Many open questions also remain with regard to the health impact of nano particles. This is exemplified by an increase in acute respiratory illnesses after use of a new surface sealing spray in March 2006 in Germany which promised high efficacy with «nano» technology. Within three days more than 100 persons suffered from lung damage, including severe effects, after having used the product in accordance with usage instructions (spray cans with propellant gas). In Switzerland only one person was affected. This incidence is reminiscent of an episode with water-proofing sprays three years ago in Switzerland. At that time too the geographic distribution could be rapidly shown through the network of European poison information centres. Producers and authorities were immediately informed and the products withdrawn from the shelves within days. Meanwhile, investigations have shown that both products causing the current epidemic in Germany did not contain any nano particles. The precise cause of the health effects has not yet been finally established. However, the toxicological effect seems to be related to its use in a spray can with propellant gas since the same product composition never caused health damage when used in pump sprays.

Overall, enquiries related to **mushroom poisoning** were slightly reduced in the reporting year (366 as compared to 433 in 2004). However, there has been a marked increase in poisonings with *Amanita phalloides*. Whereas in previous years 0 to 3 cases were reported annually, seven cases were reported in 2005. With four patients over the age of 60, elderly people were over-represented, however a 7-year old child was also affected. Ingestion was confirmed in all patients by means of the ELISA test. The poisoning was not classifiable in one case, mild in two cases and severe in a further three cases. One lady died after six days from acute liver failure. The reason for this increase is most likely due to the ample growth of *Amanita phalloides* during the mushroom season of 2005 as confirmed by the STIC's mushroom expert.

Although patients with severe *Amanita* poisoning can only be saved by means of a liver transplant, it is still not clear in which cases and at what time the decision to transplant should be taken. A multicentre study by the poison centre in Munich is currently investigating whether the criteria used with other severe liver diseases could also be applied in this case. The STIC was able to enter all seven cases into this study. Again, this shows that such a project is only made possible by international cooperation of all poison centres.

Poisonings with household products account for about 25 % of all incidents and therefore represent the second largest group of all poisoning incidents recorded by the STIC. One of its most important projects, suggested by the Federal Office for Public Health, therefore is a new edition of «**Toxicology of Household Products**». The book, which was written by the former Chief Medical Officer of the STIC, Dr. Josef Velvart, and last reissued in 1993, is being completely revised and supplemented. The toxicological knowledge base for this will be – apart from scientific literature – the data collection of the STIC covering the years of 1997 to 2005 which will be evaluated for this project based on various criteria. The texts will no longer be published as a book, but online on the STIC Website.



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 2005, the information service of the STIC received 33 512 enquiries which represents an increase of 6.7 % compared to the previous year.

Figure 1

Number of enquiries to the centre over the last ten years

1996	29 496
1997	29 506
1998	29 510
1999	29 669
2000	30 935
2001	32 330
2002	33 111
2003	32 217
2004	31 404
2005	33 512

Origin of calls

Table 1 shows the number of calls received in 2005 from the individual cantons of Switzerland and the different population groups.

The largest number of calls came from the general public (63.2 %). 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 (4.6 per 1 000 inhabitants). The smallest number of calls was received from the cantons of Ticino, Jura, Appenzell Innerrhoden and Valais.

Physicians used our service 9 069 times. Compared to the year 2004 this represented an increase of 161 calls by hospital physicians and a slight decrease of 22 calls by general practitioners. Based on population, the largest proportion of physician calls came from the cantons of Basel-Stadt and Glarus, followed by the cantons of Schaffhausen, Zurich, Jura, Geneva and Ticino. Veterinarians accounted for 567 calls to the STIC, pharmacists for 868.

The STIC answered 130 requests for information from the media (newspapers, radio and television). 1 715 enquiries were received from organisations such as emergency services, care homes, industry, poison centres abroad and other non-specified organisations.

Table 1

The number of calls received in 2005 by cantons and populations groups

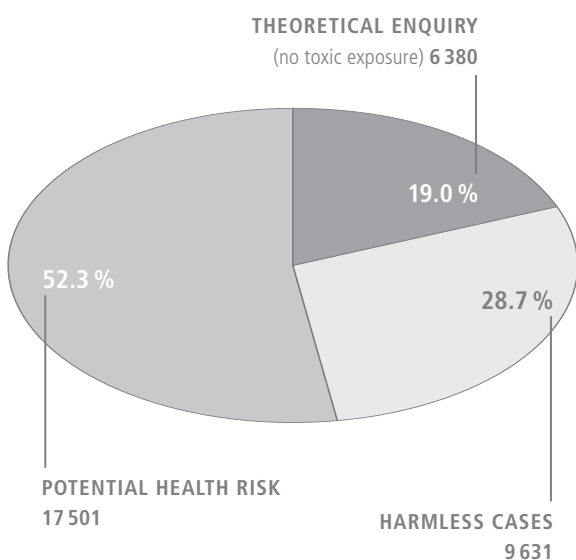
Canton	Population	General public	Hospital doctors	Practitioners	Veterinarians	Pharmacists	Various	Total	Calls per 1000 inhabitants	
									Public	Physicians
AG	565 122	1 583	516	90	35	71	118	2 413	2.8	1.1
AI	15 029	26	5	4	3	1	–	39	1.7	0.8
AR	52 841	110	29	9	5	4	7	164	2.1	0.8
BE	955 378	2 811	800	237	73	136	250	4 307	2.9	1.2
BL	265 305	656	224	60	30	26	55	1 051	2.5	1.2
BS	186 753	473	374	57	7	33	64	1 008	2.5	2.3
FR	250 377	536	195	27	16	29	26	829	2.1	1.0
GE	427 396	977	470	86	13	59	64	1 669	2.3	1.3
GL	38 317	83	55	15	6	1	6	166	2.2	2.0
GR	187 812	447	143	67	11	32	22	722	2.4	1.2
JU	69 091	107	82	8	4	13	4	218	1.5	1.4
LU	354 731	726	273	93	22	13	63	1 190	2.0	1.1
NE	167 910	368	150	24	14	38	27	621	2.2	1.1
NW	39 497	78	11	14	1	2	3	109	2.0	0.7
OW	33 162	81	24	8	1	1	5	120	2.4	1.0
SG	458 821	1 056	335	107	25	25	94	1 642	2.3	1.0
SH	73 788	197	102	21	6	10	18	354	2.7	1.7
SO	247 379	534	149	53	14	9	46	805	2.2	0.9
SZ	135 989	293	89	32	9	10	11	444	2.2	1.0
TG	232 978	500	196	62	20	9	49	836	2.2	1.2
TI	319 931	386	352	46	18	43	38	883	1.3	1.3
UR	35 083	78	22	8	–	3	3	114	2.2	0.9
VD	647 382	1 743	551	90	47	90	122	2 643	2.7	1.1
VS	287 976	493	225	65	27	40	26	876	1.7	1.1
ZG	105 244	329	96	19	5	3	23	475	3.1	1.1
ZH	1 261 810	5 778	1 385	427	129	156	624	8 499	4.6	1.5
FL	34 600	69	7	9	1	3	–	89	2.0	0.5
Foreign	–	232	421	31	19	5	52	760	–	–
Unknown	–	413	10	9	6	3	25	466	–	–
Total	7 449 702	21 163	7 291	1 778	567	868	1 845	33 512	2.8	1.2
%	–	63.2	21.7	5.3	1.7	2.6	5.5	100.00	–	–



Types of calls

Calls can be sub-divided into enquiries without exposure and enquiries where exposure has taken place. In cases of exposure we differentiate 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 = 33 512)



Among the 6 380 calls (compared to 6 269 in the previous year, + 1.8 %) without toxic exposure, frequent questions concerned drugs and antidotes, toxicity of plants to children and pets, and dangers of poisoning from spoiled food, household products and chemicals, with the recommendations given by the STIC being predominantly of a preventive nature. 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 27 132 calls received following potentially toxic exposure concerned 25 875 humans (compared to 24 061 in the previous year, + 7.5 %) and 1 257 animals (compared to 1 074). The following section discusses human poisoning, whereas animal poisoning is dealt with in a separate section (pages 14 – 15).

Human poisoning

Table 2 shows an overview of the calls received with potentially toxic exposure (25 875). Children were involved in 52.5 % of the cases, adults in 47.2 %. In 79 cases (0.3 %), the age group remained unknown.

The highest number of calls involved children under five years of age (39.3 %). The proportion of harmless cases was significantly higher in children (27.4 %) than in adults (8.5 %). In contrast, the proportion of cases with potential health risk was somewhat higher in adults (38.7 %) than in children (25.1 %). Boys were more frequently represented amongst the children (21.3 % vs. 19.9 %) and women amongst the adults (26.2 % vs. 17.5 %).

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

		Harmless cases		Potential health risk		Total	
Children		7 093	27.4 %	6 494	25.1 %	13 587	52.5 %
Age	< 5 years	5 608	21.7 %	4 556	17.6 %	10 164	39.3 %
	5 – < 10 years	482	1.9 %	539	2.1 %	1 021	4.0 %
	10 – < 16 years	191	0.7 %	623	2.4 %	814	3.1 %
	unknown	812	3.1 %	776	3.0 %	1 588	6.1 %
Sex	girls	2 743	10.6 %	2 401	9.3 %	5 144	19.9 %
	boys	3 021	11.7 %	2 495	9.6 %	5 516	21.3 %
	unknown	1 329	5.1 %	1 598	6.2 %	2 927	11.3 %
Adults		2 204	8.5 %	10 005	38.7 %	12 209	47.2 %
Sex	female	1 214	4.7 %	5 556	21.5 %	6 770	26.2 %
	male	744	2.9 %	3 786	14.6 %	4 530	17.5 %
	unknown	246	0.9 %	663	2.6 %	909	3.5 %
Unknown		37	0.1 %	42	0.2 %	79	0.3 %
Total		9 334	36.0 %	16 541	64.0 %	25 875	100 %

Circumstances of poisoning

Table 3 shows the circumstances of poisoning in the 25 875 cases with potentially toxic exposure. **Acute accidental intoxications** (19 376, compared to 17 684 in the previous year, + 9.6 %) 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 (897).

Acute intentional poisoning was mostly due to attempted suicide (4 120 cases, compared to 3 819 in the previous year, + 7.9 %), less frequently due to drug abuse (567 cases) or related to criminal behaviour (48 cases).

Chronic poisoning was relatively rare (584 cases) compared to acute intoxications. **Adverse drug reactions** in therapeutic doses led to 180 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	17 779	68.7 %	197	0.7 %
Accidental occupational	897	3.4 %	85	0.3 %
Accidental environmental	6	0.1 %	5	0.1 %
Accidental others	694	2.7 %	65	0.2 %
Total accidental	19 376	74.9 %	352	1.3 %
Intentional suicide	4 120	15.9 %	29	0.1 %
Intentional abuse	567	2.2 %	59	0.2 %
Intentional criminal	48	0.2 %	11	0.1 %
Intentional others	877	3.4 %	133	0.5 %
Total intentional	5 612	21.7 %	232	0.9 %
Total accidental and intentional	24 988	96.6 %	584	2.2 %
Total acute and chronic		25 572	98.8 %	
Adverse drug reactions		180	0.7 %	
Unclassifiable		123	0.5 %	
Total		25 875	100 %	

Agents involved

For analysis, the agents and toxins were split up into twelve groups. Table 4 shows these different groups and how often they were involved in the total of 25 875 poisonings in humans.

Most toxic exposures occurred with pharmaceuticals (35.6 %), followed by household products (25.4 %) and plants (11.2 %). Details of the individual agent groups are available in the supplement to this Annual Report which can be ordered separately.

Severity of poisonings

5 774 enquiries from physicians (68 % 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 75 % 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	5 378	3 837	3	9 218	35.6 %
Household products	2 146	4 403	20	6 569	25.4 %
Plants	597	2 277	8	2 882	11.2 %
Technical and industrial products	1 361	348	4	1 713	6.6 %
Cosmetics and personal care products	182	1 085	–	1 267	4.9 %
Food and beverages	597	326	12	935	3.6 %
Recreational drugs, alcohol	462	410	1	873	3.4 %
Agricultural and horticultural products	367	360	3	730	2.8 %
Venomous animals	313	147	3	463	1.8 %
Mushrooms	233	128	5	366	1.4 %
Veterinary drugs	40	42	1	83	0.3 %
Others or unknown agents	533	224	19	776	3.0 %
Total	12 209	13 587	79	25 875	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.

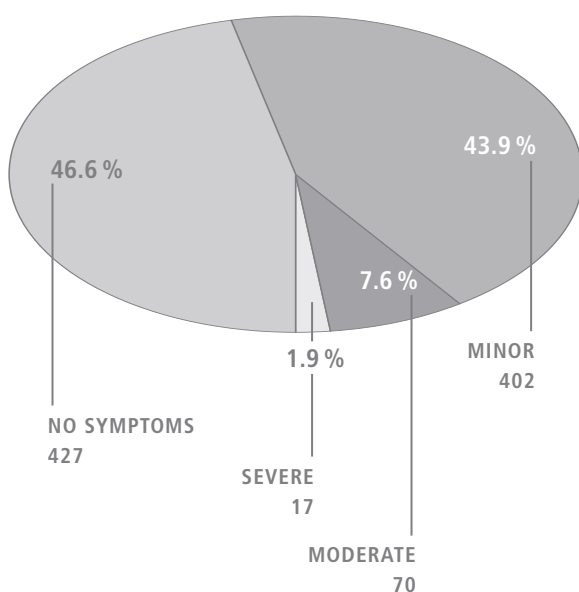
3 817 human cases both asymptomatic and symptomatic with sufficient evidence of causality were analysed further with regard to clinical course.

916 cases involved children and 2 901 adults. The severity of these cases is documented in Figure 3 with cases categorised 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.

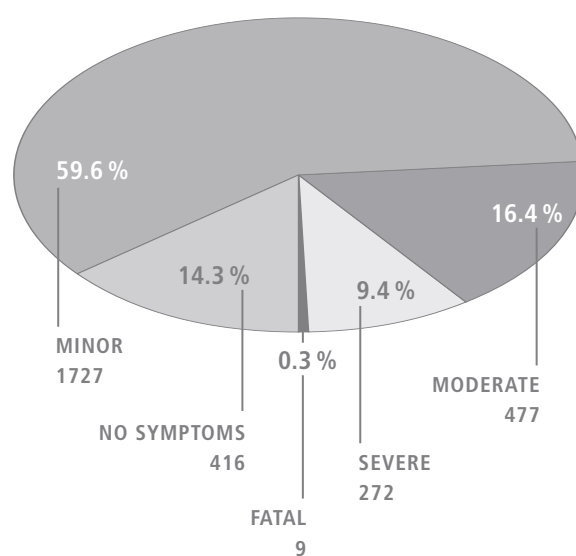


Figure 3
Clinical outcome of poisoning cases in children and adults

Children (n = 916)



Adults (n = 2 901)



Amongst children, half of the cases (427 = 46.6 %) were asymptomatic in contrast to adults where only 416 (14.3 %) were asymptomatic. Minor symptoms were observed in 402 children (43.9%) and in 1727 adults (59.6%). Moderate symptoms were seen in 70 children (7.6%) and 477 adults (16.4%). Severe poisoning occurred in 17 children (1.9%) and 272 adults (9.4%). Nine cases in adults had a fatal outcome (0.3 %).

Of the 3817 cases where causality was confirmed or likely (Table 5), about three fifths involved ingestion of only one toxin. In 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, pharmaceuticals were again the most frequent cause of poisoning (67.9 %), followed by household products (9.1 %) and technical and industrial products (7.8 %).

Table 5

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

Agent groups Severity of poisoning	Adults					Children					Total	
	N	Mi	Mo	S	F	N	Mi	Mo	S	F		
Pharmaceuticals	300	1214	317	203	5	263	236	43	10	–	2591	67.9%
Household products	31	126	14	7	–	81	81	5	3	–	348	9.1%
Technical and industrial products	36	174	41	8	–	12	19	5	2	–	297	7.8%
Recreational drugs, alcohol	13	71	61	43	–	10	18	2	–	–	218	5.7%
Plants	6	29	11	3	–	17	16	1	–	–	83	2.2%
Agricultural and horticultural products	7	17	2	3	3	13	5	1	–	–	51	1.3%
Mushrooms	2	23	13	2	1	2	–	4	1	–	48	1.3%
Cosmetics and personal care products	7	7	1	–	–	18	11	3	–	–	47	1.2%
Venomous animals	3	14	8	1	–	2	6	4	1	–	39	1.0%
Food and beverages	1	7	1	–	–	4	1	1	–	–	15	0.4%
Veterinary drugs	3	2	–	2	–	2	–	–	–	–	9	0.2%
Others or unknown agents	7	43	8	–	–	3	9	1	–	–	71	1.9%
Total	416	1727	477	272	9	427	402	70	17	0	3817	100%

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



Animal poisoning

Animals involved

The 1257 calls received concerned the following animal species: 770 dogs, 298 cats, 54 horses/ponies, 28 rabbits/hares, 24 cattle, 12 birds, 9 guinea pigs, 7 goats, 7 sheep, 6 donkeys, 5 tortoises, 3 chickens, 3 pigs, 3 rats, 2 fish, 1 ferret, 1 lizard, 1 llama, 1 hedgehog, 1 monkey, 1 mouse, 1 ocelot and 1 zebu. The other cases related to several or unknown animal species.

Agents involved

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

Table 6
Agents involved in calls concerning animals

Agent groups	No. of cases	
Agricultural and horticultural products	326	25.9 %
Plants	319	25.4 %
Human pharmaceuticals	186	14.8 %
Household products	163	13.0 %
Veterinary drugs	64	5.1 %
Food and beverages	54	4.3 %
Technical and industrial products	51	4.0 %
Recreational drugs, alcohol	16	1.3 %
Venomous animals	12	0.9 %
Cosmetics and personal care products	9	0.7 %
Mushrooms	7	0.6 %
Others or unknown agents	50	4.0 %
Total	1257	100 %

The calls primarily concerned agricultural and horticultural products (25.9%) followed by calls relating to plants (25.4%), pharmaceuticals (14.8%), household products (13.0%), veterinary drugs (5.1%) as well as food and beverages (4.3%).

Severity of poisonings

Veterinarians were also requested to submit clinical reports on animal poisoning. We received a total of 229 reports which could be analysed. Of those 113 cases remained without symptoms, 65 were classified as minor and 51 cases had moderate, severe or fatal outcomes (Table 7).

Table 7
Agent groups and severity of animal poisoning

Agent groups	Outcome					Total	Total
	N	Mi	Mo	S	F		
Agricultural and horticultural products	45	13	8	6	2	74	32.3 %
Pharmaceuticals	26	24	6	3	1	60	26.2 %
Plants	15	10	3	2	3	33	14.4 %
Veterinary products	8	9	5	5	–	27	11.8 %
Household products	4	5	3	1	–	13	5.7 %
Technical and industrial products	6	2	–	1	–	9	3.9 %
Food and beverages (except mushrooms and alcohol)	6	–	1	–	–	7	3.1 %
Recreational drugs, alcohol	1	2	1	–	–	4	1.7 %
Venomous animals	–	–	–	–	–	0	0.0 %
Cosmetics and personal care products	–	–	–	–	–	0	0.0 %
Mushrooms	–	–	–	–	–	0	0.0 %
Others or unknown agents	2	–	–	–	–	2	0.9 %
Total	113	65	27	18	6	229	100 %

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



Other activities

Services

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 7 114 first aid guidelines.

Under a service level agreement with the Federal Office for Public Health (BAG) granting the STIC access to confidential data of the BAG's product data bank, the BAG receives anonymised reports on all serious incidents involving compounds covered by the Chemicals Law. In addition, the STIC worked on several projects for the BAG concerning education and prevention of incidents with toxic chemicals and products. Toxicovigilance for pharmaceuticals by the STIC is regulated in a contract with the Swiss Agency for Therapeutic Products (Swissmedic).

On behalf of the Swiss Olympic Association the STIC provided a chargeable doping hotline for athletes which was called 829 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 163 704 times (compared to 120 977 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 Institute 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 Institute of Clinical Pharmacology and Toxicology of the University Hospital Zurich as part of the ongoing collaboration.

The Director teaches at the post-diploma course «Risk and Safety» of the ETH (Swiss Federal Institute of Technology) and the University of St. Gallen. The STIC's permanent academic staff regularly contribute to continuing education programmes in clinical pharmacology and toxicology for physicians and other staff in the health sector and professional associations.

Research results were presented at the annual congress of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) in Berlin (five contributions), at the annual conference of the North American Congress of Clinical Toxicology (NACCT) in Seattle (one contribution), at the 73rd annual meeting of the Swiss Society for Internal Medicine and the Section Clinical Pharmacology and Toxicology in Basel (three contributions).

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. An investigation on poisonings with clotiapin was completed as part of a doctoral thesis. A survey was carried out on the incidence of colchicin poisonings in European countries.

Collaborations

In addition to closely collaborating with the Institut 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.

Animal poisonings were in part jointly dealt with with the Institute of Veterinary Pharmacology and Toxicology at the University of Zurich. A veterinarian of the Institute, Dr. J. Kupper, DVM, works part-time at the STIC and is responsible for the areas of plant toxicology and animal poisonings.

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

The STIC has been contracted by the Federal Office for Public Health (BAG, Division of Consumer Protection) to fulfill tasks related to the Chemicals Law. We have also been tasked by the BAG to update «Toxicology of Household Products» and make it available online.





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 antidotes is being used and its availability. In general antidotes are only included in the list if they do not belong to 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 2006: The new Medicines Law has increased the amount of work involved in the import and distribution of antidotes which are not formally registered (Good Distribution Practice, permits). It is no longer possible, but also not necessary, for one centralised point to take charge of this. Registration of preparations previously registered by the pharmacy in Wülflingen was withdrawn. Products which are not licensed in Switzerland, but registered abroad, can be ordered directly from the producers or from pharmacies near the border according to Article 36 of the AMBV. The antidote list shows where antidotes which are not formally registered can be obtained.

Pharmacies at the cantonal hospital in Chur, the Ospedale San Giovanni in Bellinzona and the Inselspital in Bern have joined the Swiss Antivenin Depot Network ANTIVENIN-CH which now includes six centres.

Table 8

The 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), 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, hydroxycobalamine, methylene blue, octreotide, obidoxime, phentolamine, physostigmine salicylate, silibinin, sodium thiosulfate.

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

Special supplies: The availability of antivenins for venomous snake bites can be seen on the list of the Swiss Antivenin Depot Network ANTIVENIN-CH (www.toxi.ch).

Botulinus-Antitoxin is stored at the Swiss Army's pharmacy and can be obtained via STIC.

N-acetyl cysteine powder and **pyridoxin** vials of 1 g were deleted from the antidote list since the products are hardly ever used and the workload involved in obtaining registration would be too high. Alternative products are available. The dosage recommendations for intra-artery use of **calcium gluconate** and for **glucagon** to treat severe poisonings with calcium channel- and betablockers were adjusted. Poisonings with d-penicillamine have been deleted as an indication for the treatment with **pyridoxin** since there is not enough evidence in the scientific literature to support this. **Penicillin** is no longer recommended for the treatment of *Amanita phalloides* poisonings based on recent scientific evidence. **Fomepizol** is now also stored at the regional centre Sion.

The cantonal pharmacy in Zurich stores decontamination products and antidotes for radionuclides in agreement with the Swiss Accident Insurance Society (SUVA). The products are available to all hospitals and pharmacies if and when required.

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» or at «www.pharmavista.net».

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



Publications

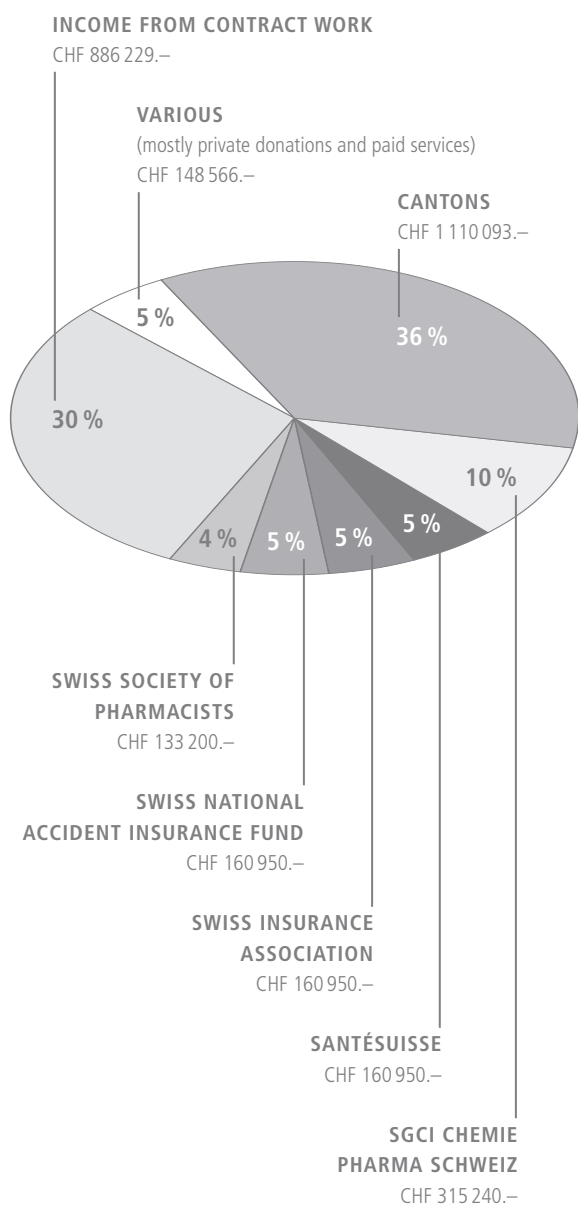
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The publications listed above may be ordered quoting the relevant order numbers via telephone (+41 44 634 10 20), fax (+41 44 252 88 33), or by e-mail to info@toxi.ch.

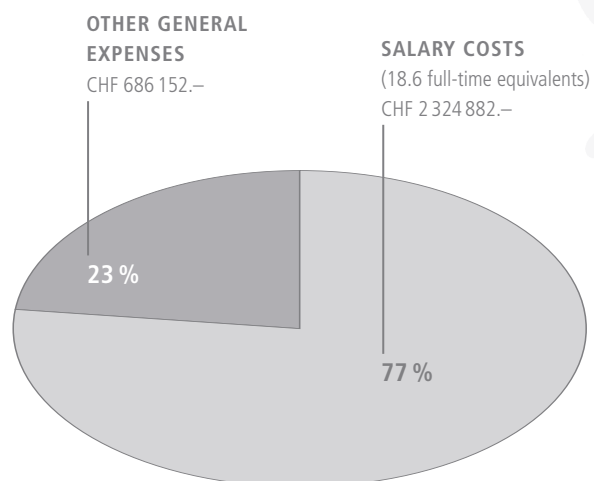
In addition, the revised leaflet about first aid and poisoning prevention is available as well as emergency telephone number stickers in German, French and Italian. Dissertations are only available on loan.

Income and expenditure

Income CHF 3 076 178.–



Expenditure CHF 3 011 034.–





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Numerous experts from hospitals, institutes, state and federal organisations act as honorary advisers, most notably Jean-Pierre Lorent (former Director of the STIC), Dr. Martin Wilks (Syngenta), Prof. Dr. med. Philippe Hotz (University of Zurich, occupational and environmental medicine) and Hanspeter Neukom (Kantonales Labor Zurich, expert on mushrooms).

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