



Swiss Toxicological
Information Centre

■ Annual Report 2008

www.toxi.ch
24-h-Emergency Service 145

Contents

- 3 **Editorial**
- 4 **Introduction**
- 5 **Focus**
- 6 **Emergency and information service**
 - 6 Overview of all calls
 - 8 Human poisoning
 - 14 Animal poisoning
- 16 **Other activities**
 - 16 Services
 - 16 Teaching and continuing education
 - 16 Research projects
 - 17 Collaborations
- 18 **The Swiss Antidote Network**
- 20 **Publications**
- 21 **Income and expenditure**
- 22 **Donations**

■ Editorial

Dear Readers

In 2008 I was satisfied and pleased to note that even in times of impending economic crisis and financial constraints it is very apparent that the organisations supporting the Swiss Toxicological Information Centre (STIC) continue to be willing to support and finance the STIC. This declaration of intent is a responsibility for us, but also gives me the opportunity to express my thanks for this support.

The commitment to the STIC is evident in the new service level agreement with the Federal Office of Public Health which came into effect at the beginning of 2008 after prolonged and not always easy negotiations. Without the contract with the Federal Office of Public Health the STIC would have had to face substantial financial problems which in the medium and long term could have caused a reduction of services and at worst could have led to the end of the 24-hour emergency service. It would also have been a signal whose impact should not be underestimated. A further service level agreement was also completed with the Federal Office for the Environment.

This development has prompted the Foundation Council to pay more attention to such possible future developments. Our efforts thus concentrated on the one hand on developing strategies to broaden the financial basis of the Foundation – a challenge that has been apparent ever since the foundation of the STIC – and on the other hand on planning for and mastering possible future financial shortfalls. During two retreats the Foundation Council has come to the conclusion that the latter problem can only be solved by building up medium and long term financial reserves and we have started working towards this.

The service level agreements with the cantons (via the Swiss Conference of Cantonal Directors of Public Health GDK) covering the emergency service given to the public in poisoning incidents with pharmaceuticals and chemicals was signed in 2007 and became effective on 1 January 2008. This represents a long-awaited recognition of the STIC.

Two pending items are yet to be finally resolved: the medical profession represented by FMH which chiefly benefits from the services of the STIC remains on the sidelines, and I once more express my hope that we will succeed in regaining the support of FMH as a contributor. We also expect the planned association with the University of Zurich to be finalised in 2009 with a view to maintaining the high quality standard.

The Foundation Council, made up of highly competent members committed to finding goal-orientated solutions, has lost trusted colleagues in the reporting year. In the beginning of 2008 our member Fritz Britt (santésuisse) passed away and St. Kaufmann, the new Director of santésuisse was appointed as his successor. Dr. W. Morger (SUVA) and Dr. B. Schläppi (SGCI) retired and were replaced with Dr. M. Jost and Dr. Th. Weiser. I would like to thank my colleagues for their commitment to the STIC and wish the new members success, but also joy in their new tasks.

My thanks go to the management and staff of the STIC for their commitment and contribution, and to the Foundation Council and supporting organisations for their confidence in and support of the STIC.

DR. FRANZ MERKI
PRESIDENT OF THE FOUNDATION COUNCIL



Introduction

The annual report for the year 2008 of the Swiss Toxicological Information Centre (STIC) 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 limited to a tabular format of poisoning incidents. More detailed information can be found in an appendix to this annual report which is accessible on our website.

The number of enquiries increased substantially in the reporting year (33 366, +4.5%) following an increase in 2007 which had in turn been preceded by a slight decline in 2006. This cannot just be explained by population growth. Overall, poisoning incidents in Switzerland remain stable, but there have been individual changes. Dealing with theoretical enquiries has decreased consistently in the last years from 6 823 in 2003 to 4 180 in the reporting year. The answers to straightforward questions can easily be found on the Internet, and the STIC is therefore faced with fewer, but more complicated questions. Accidental poisonings increased disproportionately by 12% over the last few years (from 19 112 in 2006 to 21 378 in 2008). Analysis of these cases shows that poisoning incidents with pharmaceuticals, household products, and illicit and recreational drugs are responsible for this increase. This is equally true for adults and children for the first two groups of agents involved. In the case of drugs, however, mostly adults are affected. This shows that continued efforts are necessary in the prevention of poisonings.

The preparations for the European Football Championships in 2008 have shown that the STIC can play an important role in dealing with major incidents possibly involving chemical and warfare agents and must be included. Discussions with the medical and emergency services on the provision of antidotes for such an event have led to a continuing collaboration and coordination of activities. First results are the contribution of the STIC to the project entitled eLearning for medical and

emergency handling of ABC-incidents and the implementation of the first «Advanced Hazmat Life Support» seminar in the first half of 2009.

It is gratifying that the STIC was able to come to an agreement with the Federal Office of Public Health and that a new service level agreement has been completed. This covers the services the STIC provides in accordance with the Chemicals Act and the financial compensation it receives. This secures the services of the STIC, but also the financing of these services through the BAG until 2014. In addition the Federal Office for the Environment has entered into an agreement with the STIC to cover toxicovigilance of biocides and other harmful substances over three years. Thus the books for 2008 are balanced again and close with a small surplus.

The project to transfer data from microfilms to an electronic system has been mostly completed in the reporting year. This has not only ensured that the data are safe, but has also enabled access via the computer without having to change media. This project is part of our efforts to join all data bases together in one standardised IT system.

High quality research and teaching activities serve to strengthen the scientific reputation of the STIC as a competent partner in the field of clinical toxicology. The position of «Head of Scientific Services» plays an integral part in this undertaking to develop and improve research and teaching at the STIC. International experts who evaluated the STIC in 2006 encouraged the creation of such a position which is part of an agreement on objectives negotiated with the Medical Faculty of the University of Zurich. Unfortunately there has been a delay in filling the position of «Head of Scientific Services» in the reporting year, but this is now expected for 2009. The negotiations for the planned association with the University of Zurich are expected to be completed in 2009.

■ Focus

11 **fatal poisonings** in humans were registered by the STIC in the reporting year which is about average compared to the past few years. In animals there were 13 cases. Drugs and pharmaceuticals were predominant in fatal human poisonings. Fatal cases not caused by pharmaceuticals were due to ecstasy, methanol and silo gases (one case each).

Accidents in **silos and manure pits** are rare, but often prove to be severe or even fatal. Different gases develop in manure pits during the decaying process; the most important ones are carbon dioxide (CO₂) and hydrogen sulphide (H₂S). In silos carbon dioxide and nitrogen oxides (NO_x) develop predominantly during fermentation. Hydrogen sulphide blocks cell respiration and thus quickly leads to unconsciousness and apnoea. Carbon dioxide leads to lack of oxygen due to oxygen being displaced in the breathable air. Hydrogen sulphide and nitrogen oxides are both respiratory irritants. In 2008 the STIC recorded nine cases (4 in silos and 5 in manure pits) which represent an unusually high number. A male was found unconscious in a silo and died due to anoxic brain damage. Five further severe cases were noted. One case is noteworthy as the rescuer also suffered severe symptoms. Treatment of these poisonings depends on the symptoms. In poisonings with hydrogen sulphide nitrite can be administered or hyperbaric oxygen can be considered. However, both treatments are not generally established.

Honey is considered to be healthy, but can hold unexpected dangers when it is contaminated by micro-organisms or toxins. Typical examples are spores of *Clostridium botulinum* which causes botulism and grayanotoxins of poisonous rhododendron varieties which are widely found in Turkey and Asia Minor. Western European honey is safe as it is mostly gathered from different flowers, although varieties of rhododendron are also common in our gardens and parks. Last year a poisoning which is usually rare in Switzerland occurred with honey imported from Turkey and containing grayano toxin. A 58 year old male required treatment for nausea, vomiting, bradycardia and hypotension. After a short stay in hospital the man fully recovered. His wife also had to be treated for bradycardia.

Honey contaminated with clostridia and dust are considered to be the most important sources of botulism in infants. The gut of older children and adults is protected against overgrowth of these ubiquitous bacteria. Children under the age of one year should therefore not be given any honey. Although the STIC is not aware of a confirmed case of infant botulism, an incident was reported in 2008 in which an infant developed typical symptoms (lazy feeding/sucking weakness, muscular hypotension, constipation, wide fixed pupils) and had to be temporarily tube-fed. The source of infection could not be ascertained; it was possible, however, to rule out honey.

Eye exposures («eye splashes») are comparatively rare and have therefore not been widely studied. In connection with the new European classification and labelling system «Globally Harmonised System of Classification and Labelling of Chemicals (GHS)», the Society of Clinical Toxicology under the leadership of the STIC has carried out a multinational retrospective data analysis looking at how often dishwashing detergents lead to corrosive eye lesions. The first of this two-part study has been completed. Over a 10 year period 1.8 million human exposures were reported to the 11 German-speaking Poisons Centres. In 28 956 cases (1.6 %) eye exposure was confirmed. In the sub group analysis six product groups of detergent and cleaning agents were analysed. 2 230 cases of eye exposure could be identified. These cases were gathered in a joint data bank and are currently being analysed. First results show no significant and especially no permanent eye lesions caused by dishwasher detergents.



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 enquiries 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 2008, the information service of the STIC received 33 366 enquiries which represents an increase of 4.49% compared to the previous year.

Figure 1

Number of enquiries to the centre over the last ten years

1999	29 669
2000	30 935
2001	32 330
2002	33 111
2003	32 217
2004	31 404
2005	33 512
2006	31 184
2007	31 933
2008	33 366

Origin of calls

Table 1 shows the number of calls received in 2008 from the individual cantons of Switzerland and the different population groups.

The largest number of calls came from the general public (64.3%). These calls reflect the need for information by the general public, and also how well the STIC is known amongst the public. The largest proportion of calls from the public originated from the canton of Zurich (4.2 per 1 000 inhabitants). The smallest number of calls was received from the cantons of Appenzell Inner- and Ausserrhoden and Tessin.

Physicians used our service 8 989 (26.9%) times. Compared to the year 2007 calls made by hospital physicians increased by 342 whereas calls by general practitioners decreased by 121. Based on population, the largest proportion of physician calls came from the cantons of Basel-Stadt and Jura, followed by the cantons of Zurich and Thurgau. Veterinarians accounted for 625 calls to the STIC, pharmacists for 517.

The STIC answered 148 requests for information from the media (newspapers, radio and television). 1 617 enquiries were received from organisations such as emergency services, care homes, industry, poison centres abroad and non-specified organisations.

Table 1

The number of calls received in 2008 by cantons and population groups

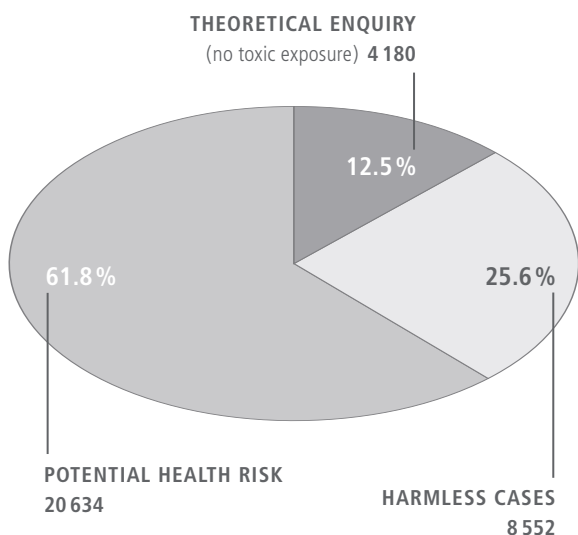
Canton	Population							Total	Calls / 1000 inhabitants	
		General public	Hospital doctors	Practitioners	Veterinarians	Pharmacists	Various		Public	Physicians
AG	581 562	1 628	541	71	31	44	133	2 448	2.8	1.1
AI	15 471	27	3	4	1	–	3	38	1.7	0.5
AR	52 654	91	33	11	5	1	4	145	1.7	0.9
BE	962 982	2 882	755	195	86	58	247	4 223	3.0	1.1
BL	269 145	804	243	54	35	17	34	1 187	3.0	1.2
BS	185 227	564	325	47	5	31	57	1 029	3.0	2.0
FR	263 241	572	213	30	18	21	39	893	2.2	1.0
GE	438 177	955	455	80	18	43	63	1 614	2.2	1.3
GL	38 237	76	27	15	9	–	8	135	2.0	1.3
GR	188 762	480	158	70	15	10	28	761	2.5	1.3
JU	69 555	127	102	5	5	6	17	262	1.8	1.6
LU	363 475	823	330	76	25	13	60	1 327	2.3	1.2
NE	169 782	305	138	18	16	8	15	500	1.8	1.0
NW	40 287	86	8	11	4	1	5	115	2.1	0.6
OW	33 997	60	9	3	1	–	2	75	1.8	0.4
SG	465 937	1 112	443	107	34	12	90	1 798	2.4	1.3
SH	74 527	176	64	25	8	5	12	290	2.4	1.3
SO	250 240	604	112	43	12	7	35	813	2.4	0.7
SZ	141 024	317	101	29	9	5	15	476	2.2	1.0
TG	238 316	587	245	62	19	6	49	968	2.5	1.4
TI	328 580	405	339	52	12	16	21	845	1.2	1.2
UR	34 989	79	23	7	–	1	6	116	2.3	0.9
VD	672 039	1 634	651	89	51	72	113	2 610	2.4	1.2
VS	298 580	568	143	53	19	28	41	852	1.9	0.7
ZG	109 141	309	81	22	11	6	24	453	2.8	1.0
ZH	1 307 567	5 547	1 456	330	132	99	567	8 131	4.2	1.5
FL	35 356	90	10	17	1	–	5	123	2.5	0.8
Foreign	–	192	423	21	42	5	55	738	–	–
Unknown	–	370	4	7	1	2	17	401	–	–
Total	7 628 850	21 470	7 435	1 554	625	517	1 765	33 366	2.8	1.3
%	–	64.3	22.3	4.7	1.9	1.5	5.3	100	–	–



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 = 33 366)



Among the 4 180 calls (compared to 4 425 in the previous year, -5.54%) without toxic exposure, frequent questions concerned drugs and antidotes, toxicity of plants to children and pets, and the risk of poisoning from spoilt 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 29 186 calls received following potentially toxic exposure concerned 27 802 humans (compared to 26 263 in the previous year, +5.86%) and 1 384 animals (compared to 1 245, +10.04%). 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 (27 802). Children were involved in 54.1% of the cases, adults in 45.6%. In 90 cases (0.3%), the age group remained unknown.

The highest number of calls involved children under five years of age (43.3%). The proportion of harmless cases was significantly higher in children (22.7%) than in adults (7.0%). In contrast, the proportion of cases with potential health risk was somewhat higher in adults (38.6%) than in children (31.4%). Boys were more frequently represented amongst the children (26.9% vs. 23.7%) and women amongst the adults (26.2% vs. 18.2%).

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

		Harmless cases		Potential health risk		Total	
Children		6 317	22.7%	8 721	31.4%	15 038	54.1%
Age	< 5 years	5 345	19.2%	6 699	24.1%	12 044	43.3%
	5 – < 10 years	364	1.3%	700	2.5%	1 064	3.8%
	10 – < 16 years	179	0.6%	755	2.7%	934	3.4%
	unknown	429	1.5%	567	2.0%	996	3.6%
Sex	girls	2 821	10.1%	3 766	13.5%	6 587	23.7%
	boys	3 065	11.0%	4 417	15.9%	7 482	26.9%
	unknown	431	1.6%	538	1.9%	969	3.5%
Adults		1 943	7.0%	10 731	38.6%	12 674	45.6%
Sex	female	1 157	4.2%	6 128	22.0%	7 285	26.2%
	male	726	2.6%	4 341	15.6%	5 067	18.2%
	unknown	60	0.2%	262	0.9%	322	1.2%
Unknown		27	0.1%	63	0.2%	90	0.3%
Total		8 287	29.8%	19 515	70.2%	27 802	100%

Circumstances of poisoning

Table 3 shows the circumstances of poisoning in the 27 802 cases with potentially toxic exposure. **Acute accidental intoxications** (21 378, compared to 19 849 in the previous year, + 7.15%) represented the largest group. These occurred frequently at home with children ingesting easily accessible household products, pharmaceuticals, or plant parts. Adults too were involved in toxic exposures at home, but a significant number of enquiries involved work place accidents (931).

Acute intentional poisoning was mostly due to attempted suicide (3 864 cases, compared to 3 777 in the previous year, + 2.25%), less frequently due to drug abuse (481 cases), poisoning incidents in connection with criminal actions however increased slightly (91 cases, previous year 86).

Chronic poisoning was relatively rare (750 cases) compared to acute intoxications. **Adverse drug reactions** in therapeutic doses led to 177 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 < 8 h)		Chronic poisoning (Exposure > 8 h)
Accidental domestic	19 445	69.9 %	275	1.0 %
Accidental occupational	931	3.3 %	83	0.3 %
Accidental environmental	21	0.1 %	12	0.04 %
Accidental others	981	3.5 %	70	0.3 %
Total accidental	21 378	76.9 %	440	1.6 %
Intentional suicide	3 864	13.9 %	33	0.1 %
Intentional abuse	481	1.7 %	70	0.3 %
Intentional criminal	91	0.3 %	11	0.04 %
Intentional others	885	3.2 %	196	0.7 %
Total intentional	5 321	19.1 %	310	1.1 %
Total accidental and intentional	26 699	96.0 %	750	2.7 %
Total acute and chronic		27 449	98.7 %	
Adverse drug reactions		177	0.6 %	
Unclassifiable		176	0.6 %	
Total		27 802	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 27 802 poisonings in humans.

Most toxic exposures occurred with pharmaceuticals (36.3%), followed by household products (25.7%) and plants (10.2%). Details of the individual agent groups are available in a supplement to this Annual Report which can be ordered separately.

Severity of poisonings

6 525 enquiries from physicians (73% 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	5 596	4 479	4	10 079	36.3%
Household products	2 306	4 817	24	7 147	25.7%
Plants	518	2 294	11	2 823	10.2%
Technical and industrial products	1 410	387	8	1 805	6.5%
Cosmetics and personal care products	190	1 229	–	1 419	5.1%
Food and beverages	608	433	17	1 058	3.8%
Recreational drugs, alcohol	535	441	–	976	3.5%
Agricultural and horticultural products	358	370	2	730	2.6%
Mushrooms	297	183	7	487	1.8%
Venomous animals	242	117	2	361	1.3%
Veterinary drugs	61	45	–	106	0.4%
Others or unknown agents	553	243	15	811	2.9%
Total	12 674	15 038	90	27 802	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.

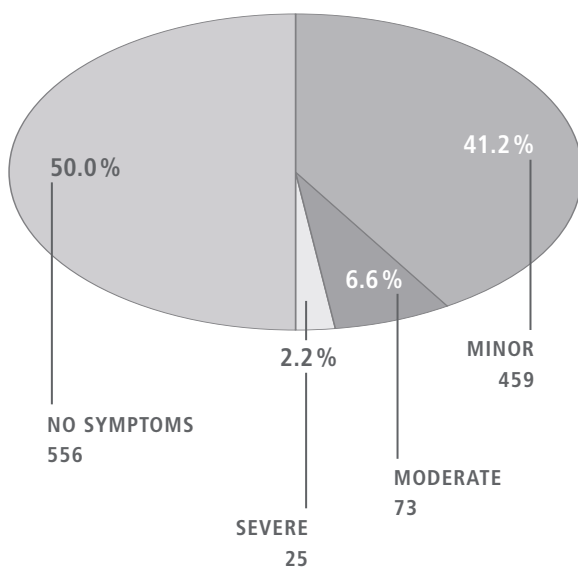
4 393 human cases both asymptomatic and symptomatic with sufficient evidence of causality were analysed further with regard to clinical course.

1 113 cases involved children and 3 280 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.

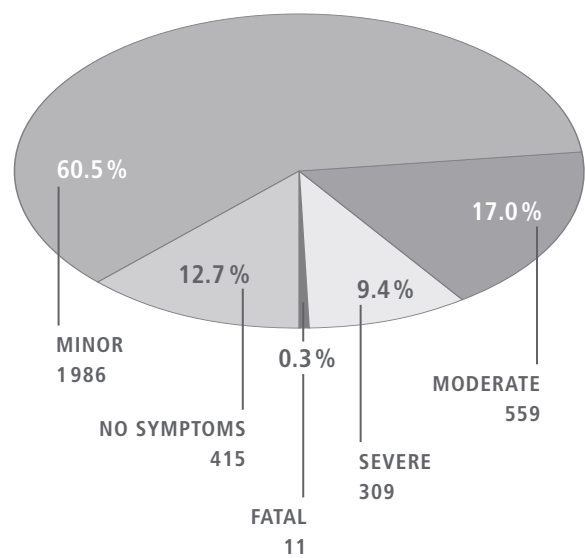


Figure 3
Clinical outcome of poisoning cases in children and adults

Children (n = 1 113)



Adults (n = 3 280)



Amongst children, half of the cases (556 = 50.0%) were asymptomatic in contrast to adults where only 415 (12.7%) were asymptomatic. Minor symptoms were observed in 459 children (41.2%) and in 1 986 adults (60.5%). Moderate symptoms were seen in 73 children (6.6%) and 559 adults (17.0%). Severe poisoning occurred in 25 children (2.2%) and 309 adults (9.4%). 11 cases in adults had a fatal outcome (0.3%).

Of the 4 393 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 (64.5%), followed by household products (10.4%) and technical and industrial products (7.6%).

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	1300	342	231	8	342	245	49	16	–	2833	64.5%
Household products	34	165	30	8	–	109	105	3	1	–	455	10.4%
Technical and industrial products	35	227	25	6	1	7	26	6	1	–	334	7.6%
Recreational drugs, alcohol	15	124	86	42	1	10	15	6	2	–	301	6.9%
Mushrooms	5	27	40	3	–	14	6	1	1	–	97	2.2%
Plants	5	21	10	3	–	27	13	2	1	–	82	1.9%
Agricultural and horticultural products	6	25	8	6	1	13	2	–	1	–	62	1.4%
Cosmetics and personal care products	–	13	2	–	–	20	19	1	–	–	55	1.3%
Venomous animals	1	16	5	4	–	3	10	2	2	–	43	1.0%
Food and beverages	2	14	1	1	–	3	5	–	–	–	26	0.6%
Veterinary drugs	4	7	–	1	–	2	1	–	–	–	15	0.3%
Others or unknown agents	8	47	10	4	–	6	12	3	–	–	90	2.0%
Total	415	1986	559	309	11	556	459	73	25	0	4393	100%

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



Animal poisoning

Animals involved

The 1 384 calls received concerned the following animal species: 895 dogs, 337 cats, 47 equine animals (horses, ponies, donkeys), 28 bovine animals (calves, cows, cattle, sheep, goats), 31 rodents (chinchilla, degu, hamster, hares/ rabbits, rats, chipmunks), 10 guinea pigs, 9 birds (parrots, peacock, pigeons, budgerigars), 4 reptiles (tortoises, corn snakes, lizards), 6 fish, 4 pigs, 3 chickens, 3 hedgehogs, 2 lamas, 1 duck, 1 ferret, 1 raccoon. 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	
Plants	328	23.7 %
Agricultural and horticultural products	288	20.8 %
Human pharmaceuticals	241	17.4 %
Household products	165	11.9 %
Food and beverages	128	9.2 %
Veterinary drugs	75	5.4 %
Technical and industrial products	42	3.0 %
Cosmetics and personal care products	22	1.6 %
Recreational drugs, alcohol	21	1.5 %
Venomous animals	12	0.9 %
Mushrooms	11	0.8 %
Others or unknown agents	51	3.7 %
Total	1 384	100 %

The calls primarily concerned plants (23.7 %) followed by calls relating to agricultural and horticultural products (20.8%), pharmaceuticals (17.4%), household products (11.9%), food and beverages (9.2%) as well as veterinary drugs (5.4%).

Severity of poisonings

Veterinarians were also requested to submit clinical reports on animal poisoning. We received a total of 270 reports which could be analysed. Of those 133 cases remained without symptoms, 83 were classified as minor and 54 cases had moderate, severe or fatal outcomes (Table 7).

Table 7
Agent groups and severity of animal poisoning

Agent groups	Outcome					Total	
	N	Mi	Mo	S	F		
Agricultural and horticultural products	38	11	6	8	2	65	24.1%
Pharmaceuticals	34	21	4	2	1	62	23.0%
Veterinary products	12	15	6	1	–	34	12.6%
Plants	16	7	6	2	–	31	11.5%
Household products	14	12	1	2	1	30	11.1%
Food and beverages (except mushrooms and alcohol)	12	7	–	–	6	25	9.3%
Technical and industrial products	3	5	1	1	2	12	4.4%
Recreational drugs, alcohol	1	4	–	–	–	5	1.9%
Cosmetics and personal care products	3	–	–	–	–	3	1.1%
Venomous animals	–	1	–	–	1	2	0.7%
Mushrooms	–	–	–	–	–	0	0.0%
Others or unknown agents	–	–	1	–	–	1	0.4%
Total	133	83	25	16	13	270	100%

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



Other activities

Services

The STIC was contracted to provide principally the following services:

1. compilation of expert reports paying particular attention to unpublished experience of the STIC
2. toxin-based anonymised case reports for the pharmaceutical and chemical industry
3. handling medical emergency advice for Swiss products abroad (utilising safety data sheets and transport documentation) while having detailed product information available
4. provision of medical emergency advice outside office hours for the pharmaceutical and chemical industry including unblinding in randomized clinical trials
5. distribution of printed materials, in particular 10 496 pamphlets.

The fee-for-service doping hotline for athletes whose establishment was mandated by Swiss Olympic was utilised 397 times.

The web site was visited 144 498 times (previous year 153 250). Hit rates have thus remained virtually constant.

Senior medical staff regularly carry out clinical toxicological consultations at the Department of Internal Medicine of the University Hospital Zurich (mostly on emergency and intensive care wards).

Teaching and continuing education

The STIC continues its collaboration with the Division of Clinical Pharmacology and Toxicology at the University Hospital Zurich headed by Prof. Gerd Kullak-Ublick. Academic staff of the STIC continue to participate regularly and actively in the joint continuing education activities in clinical pharmacology and toxicology.

H. Kupferschmidt continues to contribute to the training of medical students as a lecturer in the subject of special clinical toxicology (3rd year) and in the module emergency medicine (4th year). Permanent academic staff regularly gave presenta-

tions in clinical toxicology for the postgraduate and continuing education of physicians and other members of the medical profession and professional organisations. Of particular note is the all day seminar for paramedics offered annually in collaboration with the Zurich Emergency Services and the half day seminar for nurses taking place four times a year at the education centre of the University Hospital Zurich.

Eight papers were presented at the annual congress of the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT) in Seville, two at the North American Congress of Clinical Toxicology (NACCT) in Toronto. A poster was presented and a workshop on psychotropic drugs offered at the 76th annual meeting of the Swiss Society for Internal Medicine and the Swiss Society for Clinical Pharmacology and Toxicology in Lausanne.

Research projects

The main focus of the STIC's research efforts continues to be dose-effect relationships in human poisonings, in particular relating to drug overdose. The investigation on poisonings with clozapine and quetiapine was completed as part of a master thesis in pharmaceuticals. The three year study entitled «Multi-centre Data Collection in European Poison Centres Using Paraquat as an Example» was continued in its third year. H. Kupferschmidt represents the EAPCCT in an international project entitled «Development of an Alerting System and the Criteria for Development of a Health Surveillance System for the Deliberate Release of Chemicals by Terrorists (ASHT)» of the European Commission which will result in a Rapid Alerting System for Chemical Releases (RAS-Chem). The STIC also contributes to the study project «PlantLibra» on the safety of plant-derived food additives, which is financed as part of the 7th Research Frame Work of the EU (FP7).

Collaborations

Universities: Apart from 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 at the ETHZ/University Zurich/EAWAG (XERR). This collaboration increases staff competence in general and special toxicological questions and offers the opportunity to pass enquiries on to other specialists within this centre of excellence.

Poisonings in animals were handled in part jointly with the Institute for Veterinary Pharmacology and Toxicology of the University in Zurich. A veterinarian from this Institute, Dr. med. vet. J. Kupper, works part-time at the STIC and is responsible for the areas of plant toxicology and poisonings in animals.

Authorities: It is the state's responsibility to protect its population from exposure to dangerous chemicals. By systematically gathering and evaluating incident data, necessary measures can quickly be taken to limit any potential damage and to recommend amendments to existing legislation to avoid such incidents in future. The new chemicals law has abolished comprehensive authorisation and registration of all compounds and preparations. Correspondingly, new ways had to be found to ensure protection of the population's health, and the STIC has taken on parts of these. This involves particularly the availability of a Poison Centre for exposures with chemicals and compounds covered by this law. The Federal Office of Public Health (FOPH) benefits from the competence and 24-hour service of the STIC, and the STIC in exchange has constant access to the confidential data in the Federal Office of Public Health's product database Indatox Plus.

S. Lüde and H. Kupferschmidt are members of the working group «Selected Foreign Substances and Ingredients in Foods» (AFIL) of the Federal Office of Public Health.

In the context of its collaboration with the Spiez Laboratory and the Coordinated Medical Services (KSD) the STIC contributes to the Project eLearning for medical and emergency handling of NRBC-incidents.

The Swiss Agency for Therapeutic Products (**Swissmedic**) has contracted the STIC to ensure toxicovigilance for pharmaceuticals. This helps Swissmedic in the early detection, risk assessment, handling and prevention of poisoning with animal and human medicines. The STIC notifies Swissmedic of new or unusual toxicity and prepares a quarterly analysis on poisoning with pharmaceuticals as well as abuse of drugs and medicines. The STIC thus plays an important role in ensuring drug safety in the areas of overdose and misuse.

The STIC collates information on undesired drug effects as part of the national pharmacovigilance network under the technical leadership of the Division of Clinical Pharmacology and Toxicology at the Zurich University Hospital.

International: The STIC collaborates closely with partner poison centres abroad and gains access to other networks (such as Toxbase in the UK and Toxinz in New Zealand). It is represented in working groups of the Society for Clinical Toxicology representing German-speaking poison centres whose current president is A. Stürer. The STIC is also represented in the Executive Committee of the European Association of Poison Centres and Clinical Toxicologists (EAPCCT). H. Kupferschmidt has been president of the association since May 2008 and in addition has been the association's webmaster for several years now.



■ The Swiss Antidote Network

Distribution and storage of antidotes in Switzerland is uniformly regulated by order of the Swiss conference of the cantonal directors of public health (CDS). 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, on the location where an antidote is needed, 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 2009: The hospital pharmacy Aarau ceased production of antidotes at the end of 2008. Other suppliers had to be found for the antidotes concerned. As a result the military pharmacy will become more involved with the provision of antidotes. Representatives of the military pharmacy have correspondingly joined the working party.

More than half of the preparations on the list of antidotes are not registered and on the basis of Article 36 of the Drug Registration Law (AMBV) therefore have to be obtained directly from the manufacturers or from pharmacies across the border. The storage of this emergency medications is without any legal basis. In order to rectify this situation Swissmedic is currently developing guidelines for the possible registration of rarely used antidotes on a simplified and practice oriented basis. The rarely used antidotes on the list should be regarded as «well established» according to this new concept and proper registration should be made possible based on complete quality documentation available from the manufacturers. The lack of preclinical and clinical data is to be compensated by increased monitoring of its clinical effectiveness and any unwanted side effects by documenting poisoning incidents. Legal control of antidotes is therefore tangibly close.

For part of the antidotes their use is not licensed as such (so called «off label use»). An example is subcutaneous infiltration of calcium gluconate to treat chemical burns caused by hydrofluoric acid. A corresponding inclusion in the list of indications is mostly not sought by the manufacturers for various reasons. Nevertheless the list of antidotes mentions the off label use of such preparations.

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, insulin, 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- and Diphtheria-Antitoxin are stored at the Swiss Army's pharmacy and can be obtained via STIC.

The Swiss Antivenin Depot Network ANTIVENIN-CH comprises the pharmacies of the University hospitals in Berne (Inselspital), Geneva and Zurich, the cantonal hospitals in Chur and Münsterlingen, and the Ospedale San Giovanni in Bellinzona.

Availability and supply of radionuclide-antidotes is still being reconsidered and reorganised.

The Swiss List of Antidotes is updated annually by a special working group 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 group are L. Cingria (Geneva), M. Eggenberger (Aarau), C. Fähr (Winterthur), D. Heer (Ittigen), Th. Meister (Ittigen), Ch. Rauber-Lüthy (Zurich), A. Züst (Zurich) and H. Kupferschmidt (Chairman, Zurich).



Publications

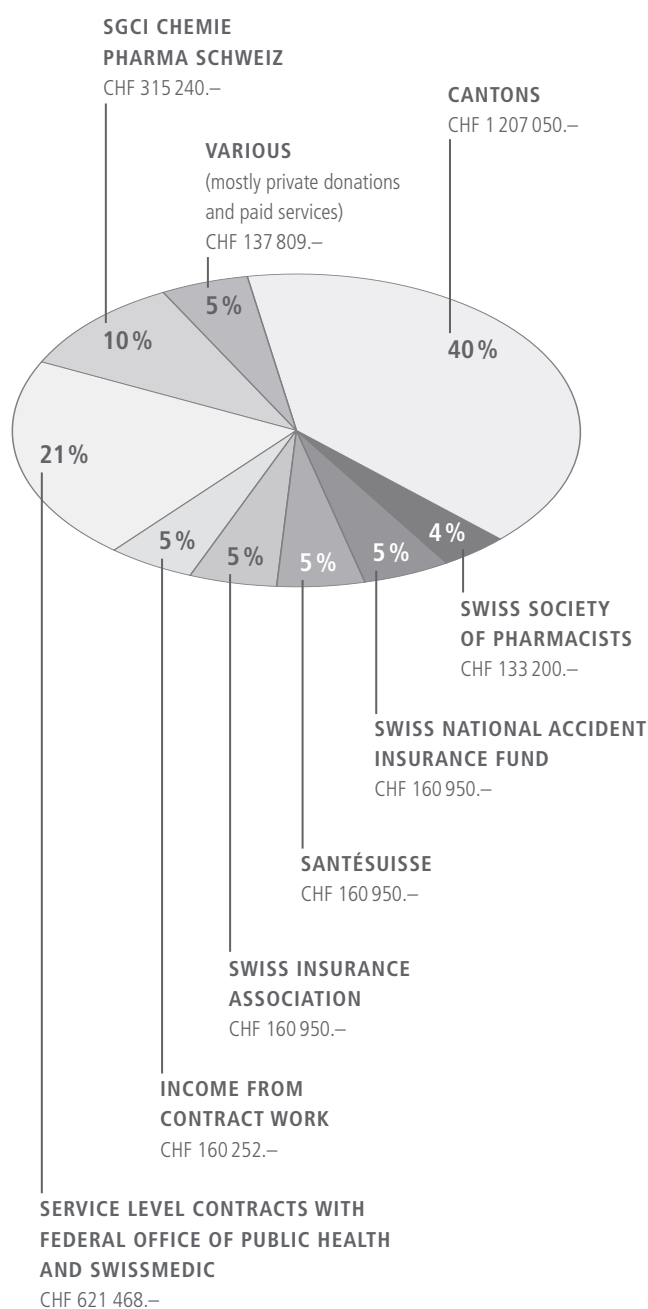
	Order number		Order number
Are Poisons Centres Recognized by EU Legislation? [abstract] Desel H., Duarte-Davidson R., Edwards NJ., Kupferschmidt H., Schaper A., O'Connell S., Mockeviciute J., Tempowski J. Clin Toxicol 2008; 46: 399.	1-08	Teuflische Engelstropfen oder – der nächste Sommer kommt bestimmt. Rauber-Lüthy Ch. Forum News 25, Sommer 2008.	14-08
Inhalationstrauma und Verbrennungen 3. Grades bei Anwendung von handelsüblichem Isolierschaum. Esslinger A., Rauber-Lüthy Ch., Koppenberg J. Notfall & Rettungsmedizin 2008; 11: 1–3.	2-08	Präklinische Gabe von Medizinalkohole. Rauber-Lüthy Ch., Kupferschmidt H. Star of Life 2008; 2: 20–21.	15-08
Isolierschaum + Bohrmaschine = drittgradige Verbrennung. Esslinger A., Rauber-Lüthy Ch., Koppenberg J. Swiss Med Forum 2008; 8: 598.	3-08	Inhalational Methanol Exposure in an Occupational Setting [abstract]. Reichert C., Stürer A., Rauber-Lüthy Ch., Bertke P., Kupferschmidt H. Clin Toxicol 2008; 46: 418–9.	16-08
Multicentre Data Collection on Paraquat Poisoning in Europe [abstract]. Gutscher K., Rato F., Esteban M., Neou P., Kupferschmidt H. Clin Toxicol 2008; 46: 417.	4-08	Delayed neurologic sequelae after acute carbon monoxide poisoning [abstract]. Ruggieri F., Al-Haj Husain N., Kupferschmidt H., Joos B., Fischler M. Swiss Med Forum 2008; 8 (suppl. 40): 79.	17-08
Low Dose Toxicity of Veratrum Album in Children – A Case Series [abstract]. Halbsguth U., König N., Mögevand C., Zihlmann K., Kupferschmidt H., Rauber-Lüthy C. Clin Toxicol 2008; 46: 407.	5-08	Severe Pediatric Tolperisone Poisoning [abstract]. Schenk-Jäger K., Rauber-Lüthy Ch., Kupferschmidt H., Mann C. Clin Toxicol 2008; 46: 363.	18-08
Acute intoxication with quetiapine: A cohort study [abstract]. Krämer I., Rauber-Lüthy Ch., Kupferschmidt H. Clin Toxicol 2008; 46: 643.	6-08	Wenn Genuss und Verdruss beim Verzehr von Pilzen nahe beisammenliegen. Schenk-Jäger K., Rauber-Lüthy Ch. Media Planet 2008 (Juni).	19-08
Akute Vergiftungen mit Quetiapin und Clozapin beim Menschen. Eine Fallanalyse aus der Datenbank des Schweizerischen Toxikologischen Informationszentrums (STIZ). Krämer I., Kupferschmidt H., Rauber-Lüthy Ch. Masterarbeit Universität Basel, Departement für klinische Pharmazie, 2008.	7-08	Pilzvergiftungen 2007 Schenk-Jäger K. SZP - Schweiz Zschrft Pilzkunde 2008; 3: 108.	20-08
Akute Vergiftungen. Kupferschmidt H., Rauber-Lüthy Ch. In: Schoenenberger R.A., Haefeli W.E., Schifferli J. (Hrsg.): Internistische Notfälle, 8. Auflage, Georg Thieme Verlag, Stuttgart 2009.	8-08	Amlodipine: Collection and Analysis of Case Data in the Society of Clinical Toxicology of German Speaking Countries (GfKT) [abstract]. Stedtler U., Hofmann-Walbeck P., Prasa D., Rauber-Lüthy Ch., Reinecke HJ. Clin Toxicol 2008; 46: 362.	21-08
Antidote bei Vergiftungen 2008. Kupferschmidt H., Rauber-Lüthy Ch., Fäh C., Eggenberger M., Cingria L., Züst A. Bull BAG 2008; (6), 90–102.	9-08	ASHT Project: Poisons Centre Attitudes to an EU-Wide Database of Enquiries [abstract]. Tempowski J., Sparrow E., Schaper A., O'Connell S., Mockeviciute J., Kupferschmidt H., Edwards NJ., Duarte-Davidson R., Desel H. Clin Toxicol 2008; 46: 370.	22-08
Causality Assessment in Poisoning: An essential part of data quality [abstract]. Kupferschmidt H. Clin Toxicol 2008; 46: 380.	10-08	First intoxication with freshly picked Amanita phalloides in winter time in central Europe. Thaler T., Aceto L., Kupferschmidt H., Müllhaupt B., Greutmann M. J Gastrointest Liver Dis 2008; 17: 111.	23-08
Vergiftungen in der Schweiz. Zum Jahresbericht 2007 des Schweizerischen Toxikologischen Informationszentrums (STIZ). Kupferschmidt H. Schweiz Ärztezeitg 2008; 89: 1906–10.	11-08	Acute renal failure in a neonate after acyclovir overdose: Complete recovery in the long term follow-up. Trück J., Rauber-Lüthy Ch., Goetschel Ph. Swiss Med Wkly 2008; 138 (suppl. 164): 27–28.	24-08
Cyanide poisoning associated with the feeding of apricot kernels to dairy cattle. Kupper J., Schuman M., Wennig R., Gorber U., Mittelholzer A., Artho R., Meyer S., Kupferschmidt H., Naegeli H. Vet Rec 2008; 162: 488–9.	12-08	Escitalopram Causes Fewer Seizures in Human Overdose Than Citalopram [abstract]. Yilmaz Z., Rauber-Lüthy Ch., Sauer O., Stedler U., Prasa D., Seidel C., Hackl E., Hoffmann P., Gerber G., Bauer K., Kupferschmidt H., Kullak G., Wilks M. Clin Toxicol 2008; 46: 592.	25-08
Vergiftungen: Das können Apotheker tun. Lüde S., Rauber-Lüthy C. PharmaJournal 2008; 146: 17–19.	13-08		

The publications listed above may be ordered quoting the relevant order numbers via telephone (+41 44 251 66 66), fax (+41 44 252 88 33), or by e-mail to info@toxi.ch.

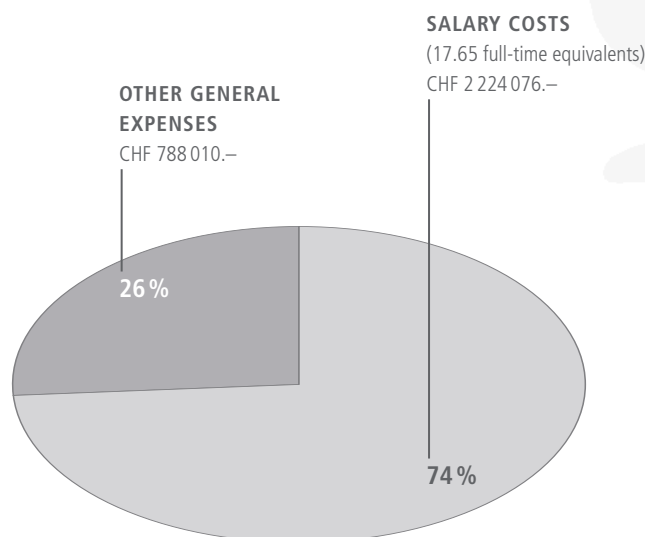
In addition, the revised leaflet about first aid and poisoning prevention is available as well as emergency telephone number stickers in German, French and Italian. Dissertations are only available on loan.

Income and expenditure

Income CHF 3 057 869.–



Expenditure CHF 3 012 086.–





Donations

F. Hoffmann-La Roche AG	10 000
City of Zurich	10 000
Reckitt Benckiser (Switzerland) AG	4 000
Colgate-Palmolive AG	3 000
Henkel & Cie AG	3 000
Procter & Gamble Switzerland Sarl	3 000
The Swiss Cosmetic and Detergent Association	3 000
Unilever Schweiz GmbH	3 000
Kernkraftwerk Gösgen-Däniken AG	2 500
Swiss Association for Small Animal Medicine	2 000
Unione Farmaceutica Distribuzione SA	1 500
Aldi Suisse AG	1 000
AstraZeneca AG	1 000
Biomed AG	1 000
Coop	1 000
Düring AG	1 000
Janssen-Cilag AG	1 000
Karl Bubenhofer AG	1 000
Kurt Wehrli AG	1 000
Martec Handels AG	1 000
Octapharma AG	1 000
Omya (Schweiz) AG	1 000
Sanitized AG	1 000
Selectchemie AG	1 000
Staerkle & Nagler AG	1 000
Streuli Pharma AG	1 000
Swiss Society of Chemical Industries	1 000
Swiss Society of Druggists	1 000
Syngenta Crop Protection AG	1 000
Victorinox AG	1 000
Voigt AG	1 000
VWR International AG	1 000

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

Support

The Swiss Toxicological Information Centre (STIC) is supported by a private charitable foundation and by the Swiss Conference of the Cantonal Directors of Public Health (CDS).

The supporting organisations are:

- the Swiss Society of Pharmacists (SSP)
- the SGCI Chemie Pharma Schweiz
- the Swiss National Accident Insurance Fund (SNAIF)
- the Swiss Insurance Association (SIA)
- the santésuisse (SAS).

The Federal Office of Health (BAG, consumer protection directorate) has a service level agreement with the STIC for tasks in compliance with the chemicals law. Swissmedic pays for services in the area of toxicovigilance of drugs, also on the basis of a service level agreement. Substantial donations and contributions are also received from private companies and individuals.

Foundation Council

President: Dr. Franz Merki (SSP)

Vice-President: Dr. Dieter Grauer (SGCI)

Members: Hans Peter Brändle (SIA), Dr. Roland Charrière (SFOPH), Armin Hüppin (State Councillor, CDS), Dominique Jordan (SSP), Stefan Kaufmann (SAS), Dr. Martin Kuster (SGCI), Dr. Marcel Jost (SNAIF), Dr. Werner Pletscher (CDS), Dr. Jean Claude Tarchini (SSP), Dr. Thomas Weiser

Honorary President: Dr. Dr. h.c. Attilio Nisoli

Cadre

Director: Dr. med. Hugo Kupferschmidt

Head physician and Deputy Director:

Dr. med. Christine Rauber-Lüthy

Head of scientific services: vacant

Senior physicians:

Dr. med. Cornelia Reichert, Dr. med. Andreas Stürer

Administration: Elfi Blum

Staff

Natascha Anders, dipl. pharm. Alexandra Bloch, Danièle Chanson, Dr. med. Colette Degrandi, med. pract. Anja Dessauvague, Dr. med. Katrin Faber, med. pract. Elmira Far, Joanna Farmakis, med. pract. Joan Fuchs, med. pract. Mirjam Gessler, Brigitte Guldimann, med. pract. Karen Gutscher, Rose-Marie Hauser-Panagl, Dr. med. Katharina Hofer, Dr. med. Irene Jost-Lippuner, Dr. med. Helen Klingler, Dr. med. Sandra Koller-Palenzona, Dr. med. vet. Jacqueline Kupper, Dr. phil. II Saskia Lüde, Franziska Möhr-Spahr, Gabriela Pintadu-Hess, Trudy Saile-Schneider, med. pract. Katharina Schenk, med. pract. Stefanie Schulte-Vels, Jolanda Tremp, Sonja Tscherry, Dr. med. Margot von Dechend.

Advisers

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, mycologist).

Responsible for information technology: Daniel Künzi, Inf. Ing. HTL, Software-Entwicklungs GmbH, Bülach.

June 2009

Images: © STIC
Graphics: Pomcany's, Zurich



Swiss Toxicological
Information Centre

24-h-Emergency Service 145
International +41 44 251 51 51
Non urgent cases 044 251 66 66
Fax 044 252 88 33
Freiestrasse 16
CH-8032 Zürich
PC 80-26074-7
Internet: www.toxi.ch
eMail: info@toxi.ch