

710.2
COMMISSION
OF THE
EUROPEAN COMMUNITIES

710.2
WORLD FEDERATION
OF ASSOCIATIONS
OF CLINICAL
TOXICOLOGY CENTRES
AND
POISON CONTROL CENTRES

710.2
INTERNATIONAL PROGRAMME
ON
CHEMICAL SAFETY
(UNEP-ILO-WHO)

*enter this out
'157*

8776

*poison control centers
Europe*

DRAFT

DRAFT REPORT ON THE SURVEY OF POISON CONTROL
CENTRES AND RELATED TOXICOLOGICAL SERVICES

prepared by

M. Govaerts, L. Roche, A. Berlin, J. Haines and M. Th. van der Venne

on the basis of a questionnaire

CEC/LUX/V/E/3/27/86
IPCS/86-18/1

PREAMBLE

This draft report was prepared on the basis of a survey carried by the World Federation of Associations of Clinical Toxicology and Poison Control Centres, the International Programme on Chemical Safety and the Commission of the European Communities in 1984-85. The survey covered more than 150 institutions in all regions of the world, concentrating predominantly on poison centres.

An analysis of the main features and problems of these institutions is presented together with an identification of activities requiring further attention and strengthening and suggestions for the promotion of a more effective use of existing facilities.

This report is being distributed as a draft to all institutions replying to the survey. Comments and suggested amendments should be sent by 1 December 1986 at the latest to one of the Secretariats of the three Organizations, after which the report will be finalized for publication.

Table of Contents

	<u>Page</u>
Introduction: Overview and preliminary conclusions	4
Section I: Administrative structure and available facilities	10
Section II: Organization of information services	12
Section III: Clinical services	16
Section IV: Analytical services	17
Section V: Staff and qualifications	18
Section VI: Training and teaching activities	20
Section VII: Toxicovigilance and prevention activities	21
Section VIII: Relationships with other institutions	24
Section IX: Special problems and future objectives	26
Annex I: Questionnaire on poison control centres and related toxicological services	
Annex II: Institutions that have replied to the survey and their main functions	

INTRODUCTION: OVERVIEW OF CURRENT STATUS OF POISON CONTROL CENTRES AND RELATED TOXICOLOGICAL SERVICES AND PRELIMINARY CONCLUSIONS

1. While there are over 60 000 man-made chemicals in common use throughout the world in most industrialized countries there are between one and two million products (mixtures of chemicals). The number is growing each year. Up to one third of the formulations of these products, may change each year, depending on various market factors. The situation in the rapidly industrializing developing countries is similar to that of the developed countries and even in the least developed countries there is a growing use of agrochemicals (pesticides and fertilizers), basic industrial chemicals and chemicals commonly used in household and commercial products, including pharmaceuticals. Additionally each country has a variety of various natural toxins, to which the local population may be exposed.
2. The important and globally growing number of incidence of poisoning from accidental exposure to chemicals as well as the recent industrial and transport accidents involving chemicals which have lead to acute intoxication of local populations have highlighted the importance of countries having poison control programmes with adequate facilities for dealing with poisonings. Facilities are needed for diagnosis of poisonings (information and medical advice services and analytical laboratories) and their treatment (clinical toxicological facilities). Toxicovigilance and prevention are also key elements of a poison control programme. The facilities needed will depend on the circumstances and types of poisonings encountered.
3. During the last thirty years facilities for dealing with poisonings have been established in most industrialized countries. Furthermore, facilities are also being established in many of the more rapidly industrializing developing countries. The World Federation of Associations of Clinical Toxicology and Poison Control Centres, created in 1975, provides an international forum for cooperation among various institutions throughout the world dealing with poisonings. The International Programme on Chemical Safety (IPCS) a collaborative venture of the United Nations Environment Programme (UNEP), the International Labour Organisation (ILO) and the World Health Organization (WHO), has been established to enable countries throughout the world to cooperate in ensuring the safety of health and the environment in all activities involving chemicals. The toxicology programme of the Commission of the European Communities provides a focus for activities among countries of the European Communities as concerns protection of health from the toxic effects of chemicals. These three organizations cooperate in activities to foster the establishment and improvement of poison control programmes and facilities for dealing with poisonings in countries.
4. With a view to establishing an overview of facilities available throughout the world for dealing with poisonings and to identifying activities requiring further attention and strengthening as well as to promoting a more effective use of existing facilities, the three organizations decided to undertake a survey of poison control centres and related toxicological services. A working party of the three organizations developed a questionnaire (see Annex I) as the basis for this survey. Questionnaires in English, French, German and Spanish were distributed during 1984 to about 800 institutions throughout the world dealing with poisonings. These institutions included not only poison centres, whose main function is to provide information and advice, and clinical toxicology centres which treat patients,

but also toxicological analytical laboratories, as well as a number of relevant research centres.

5. By mid-1986, 164 replies had been received from 37 countries covering a variety of institutions. These replies cover 21 out of the 25 countries with members in the World Federation and 7 of the 14 corresponding members. All 12 Member States of the European Community and each of the WHO geographical regions were covered.

6. Any analysis of the replies must take into consideration that the survey was sent to a wide variety of institutions, some providing uniquely poison information/advice or analytical or clinical toxicological services, others having a mixture of functions. Based on the information provided by institutions in their replies a review of the functions of those institutions replying to the survey shows that 77 (just under half) are poison centres providing essentially information and advice, 27 (16%) are analytical laboratories, and 5 (3%) are purely clinical centres. Sixteen (10%) replies were from integrated centres producing the full range of services (information, analysis and clinical toxicology), 3 (2%) replies were from centres providing information and laboratory analysis, 25 (15%) replies were from centres providing information and clinical services and 4 (2%) replies were from institutions providing laboratory analytical and clinical toxicological services. The remaining 7 were from research institutions, teaching faculties, or government services involved in poison control programmes but not directly providing information/advice, analytical or clinical toxicological services as their main function. Annex II lists the institutions replying to the survey with an analysis of their main functions according to whether they reported providing a telephone response service, treating patients or undertaking laboratory analyses. Seventy-four percent of the replying institutions provide a poison information/advice service, 30% provide analytical services and 31% provide clinical toxicological services. Three institutions report teaching as their main function, 1 report research, 2 report coordination and 1 institution reports providing chemical information.

7. The survey consisted of 75 different questions, some requiring multiple answers, covering a wide range of activities concerned with the structure and function of poison control programmes in countries: administrative structure and available facilities, organization of information services, clinical services, analytical services, staff and qualifications, training and teaching activities, toxicovigilance and prevention activities, relations with other institutions and future developments. Thirty-three questions called for comments or further descriptive material. A preliminary evaluation of the survey replies has required a considerable amount of effort including detailed statistical analysis of 472 elements. The effort required in analysis of the survey replies has been compounded by the need to take into consideration the various principal and ancillary functions of each of the institutions replying. Consequently, the conclusions drawn at this stage must be considered as preliminary and subject to further subsequent detailed analysis.

8. The initial analysis of the replies was undertaken on behalf of the three Organizations by Professor Louis Roche and Madame Nadjiba Saif Roche (Department of Clinical Toxicology, Lyon), and by Professor Gérard Duru (Groupement scientifique "Pratiques, Gestion et Systemes de Santé", Université Claude Bernard, Lyon). Work on the analysis began at the end of 1985, at which time 127 replies had been received and much of the statistical analysis

is based on these initial replies. In April 1986 further more detailed statistical analysis was undertaken for selected individual questions, where the functions of the institutions were critical to the analysis. At that time 139 replies had been received. Subsequent cross analysis of the results obtained based on the initial 127 replies, those on the 139 replies and all 164 replies indicates that statistically the results are similar and not significantly modified when all 164 replies are considered. A detailed analytical report is under preparation and a draft will be issued shortly to those taking part in the survey for their comments, before a more definitive report is issued.

9. The main tentative conclusions that may be drawn from the analysis of the survey are:

- (i) the survey is representative of situations in all regions of the world where poison control facilities exist and covers all types of facilities or institutions for poison control. However, the survey is principally concerned with poison centres and related toxicological facilities.
- (ii) Few centres provide the full range of information/advice, analytical and clinical toxicological facilities on one site or in an integrated manner.
- (iii) Most institutions depend on a hospital administration and are, to some extent, connected to the public health service in their country. Likewise most institutions are supported, at least partially, by public funding.
- (iv) Facilities for responding to poisonings are growing with an increasing number of countries establishing facilities. Almost all poison centres providing a telephone information service report a major increase in the number of calls during the decade 1972-82. The actual number of calls depends on the population area covered and the increase may be due to a better awareness of the problems of poisoning. Furthermore, a significant number of the centres have been established since 1972.
- (v) Whilst toxicovigilance and prevention of poisonings is of growing concern to institutions, it is not yet a major activity at most institutions. Awareness of the need for toxicovigilance and prevention seems to be greatest at those institutions having more than one major function.
- (vi) Cooperation amongst institutions concerning special cases of poisonings incidents appears to be generally good with about half of them receiving documentation or having access to information from other institutions.
- (vii) While a large majority of poison centres have access to some information on local products there appears to remain, in general, considerable difficulties in having access to complete quantified information, in addition to packaging and labelling descriptions, on product composition for the full range of materials on the local market. Access to information on foreign products is usually difficult and centres rely on their own

direct relationships with centres in the product producing country. A more effective mechanism needs to be developed to obtain that information on products required by centres in responding to cases of poisoning.

- (viii) Nearly all centres produce some form of internal documentation; the responsibility for which varies greatly among centres and includes physicians, pharmacists and nurses. Very few centres have a trained documentalist. Of centres producing their own documentation the great majority record case data, but less than half prepare files on calls. There appears to be a consensus that it would be highly valuable for centres to exchange case data and for a mechanism to be established to review case data. Only one third of centres have access to computerized data storage facilities. Over half the centres systematically follow up cases or at least the most serious or special cases, e.g. pregnant women; and the calls from physicians are followed up more consistently with a higher success rate than from other persons. There appears to be a consensus that it would be desirable for centres to improve their own data handling facilities, and be most valuable for centres to exchange case data and for a mechanism to be established to review case data.
- (ix) A 24 hour a day telephone response service is provided by 4 out of 5 centres. At many centres a variety of types of personnel reply to telephone enquiries including physicians, pharmacists, nurses and documentalists. Over half the centres have medical personnel available to reply to calls in the day time, but less than 15% at night, when some of the more urgent cases occur. Reduced medical coverage during the night may be due to lack of resources. Whilst some centres only respond to enquiries from doctors, almost three-quarters of centres reply to calls from the public.
- (x) Cosmetics, pharmaceuticals, pesticides, industrial chemicals and household products are the main reasons for consultations at most centres. Plants and animal toxins are important at a few centres. Most of the consultations at poison centres are by telephone, although 20% of institutions require written requests for information. In some instances the consultations do not concern poisonings, but are requests for advice.
- (xi) Two thirds of those replying to the survey have access to hospitalization facilities, the majority which have intensive care services or a unit specialized in clinical toxicology. About half of the institutions providing clinical services offer consultations at the centre itself and physicians at somewhat less than half of the institutions provide consultations outside the centre. Clients of clinical toxicology centres come mainly from doctors and physicians, other hospital services and the emergency services.
- (xii) Only about half of the institutions have access directly or indirectly to laboratory analytical facilities on a regular basis. Furthermore only about one quarter of poison centres consider that they required analytical services, mainly in

relation to gastric lavage, urine and blood samples. Few centres require analysis of non-biological samples on a routine basis.

- (xiii) A wide variety of professional staff work at poison centres and related toxicological facilities. Surprisingly over one third of institutions do not have a permanent medically qualified staff member while some of them do have part time medical staff. Two thirds of institutions do not have a pharmacist on the staff. Less than a third have a nurse on the staff and only about 10% of institutions have a computer scientist.
- (xiv) Centres throughout the world appear to have difficulties in recruiting adequately qualified staff. Two thirds of institutions are unable to find physicians trained in toxicology. There seems to be relatively little problem in recruiting veterinary professionals qualified in toxicology, although very few institutions have this type of expertise. About only one third of institutions are able to find suitably trained biochemists and nurses and very few institutions are able to recruit trained communications or computer scientists. Many centres have to train their own staff.
- (xv) About half of the institutions, covering the full range of countries, consider that there are good career possibilities for their staff. However, veterinarians, biochemists and nurses seem to have the best career prospects, followed by pharmacists and computer scientists with the physicians in the worst position.
- (xvi) More than half of the institutions are involved in teaching either in-house training for their own staff or various specialities. Industry is involved in training for about 10% of institutions. About half of the institutions indicate that they would accept personnel undertaking thesis work.
- (xvii) Although many centres are concerned to be more active in the field of prevention, this area of their work is in general not so well developed. Most of the prevention activities are directed towards education of the public. Few centres have developed views of the concepts of toxicovigilance and there is a tendency to confuse it with pharmacovigilance and drug abuse. With the few exceptions where national programmes exist, there appears to be no toxicovigilance activities outside centres in other institutions. Toxicovigilance and prevention are areas for further development of activities at all levels. In a particular toxicovigilance activities by centres would help improve the data base on human toxicology.
- (xviii) While poison and clinical toxicology centres and related analytical facilities provide the main thrust of poison control programmes in countries they are associated with other partners in almost all countries, usually with a government ministry or agency. The Ministry of Health or a related service is the main partner usually, although Ministries of Labour and Agriculture are important partners in some countries. A few countries also have activities with Ministries of Environment and of Education. Various governmental authorities seek the help of centres in

relation to specific problems associated with poisonings. Depending on the local situation there is a growing relationship between centres and industry in cooperation concerning products and preparations; although this is an area where there is major room for improvement in many countries.

- (xix) Insufficient financial support is the most important problem expressed by centres, closely followed by lack of sufficiently qualified staff. The priorities for the next five years of most institutions is to further develop and improve their data base as well as staff training.
- (xx) Areas where institutions would like to increase international cooperation include collection and review of case data, and development and improved availability of antidotes.

SECTION I: ADMINISTRATIVE STRUCTURE AND AVAILABLE FACILITIES

10. Most of the institutions (74%) replying to the survey depend on a hospital for their administrative organization. Many are also associated with a university (32.5%). Only 6.5% are uniquely part of a university and 32% of the centres are either uniquely (17%) or partially incorporated into the public health service. Only 3.5% are uniquely sponsored by or located at other institutions, such as private foundations.

11. concerning the principle source of finance for these institutions, 29% are completely and 12 % partially supported by national administrations, while 24% are completely and 16% partially supported by regional administrations. Three institutions (2%), all in the USA depend entirely on voluntary contributions, while 5.5% (6 out of 9 institutions of which are in the USA) are partially funded from voluntary contributions. 12 institutions receive partial funding from industrial sources; 8 out of the 10 centres are in the USA, one each in the Federal Republic of Germany, Japan, Switzerland and the United Kingdom.

12. The area of coverage of institutions varies greatly. Less than 10% report that their coverage extends beyond their national frontiers. 39 institutions (28% claim to cover complete countries; 79 (57%) cover one or more regions within a country. Of the 27 institutions covering mainly a city or a metropolitan area most of them are either in the USA or in the Federal Republic of Germany. 115 institutions reported the population of the area which they covered. The population reported varies with the area of coverage and ranges from 100 000 for institutions covering cities such as Darwin (Australia), Denville (New Jersey, USA) and Hickory (North Carolina, USA) to many millions for institutions covering whole countries. The single poison centres in Algiers (Algeria), Dublin (Ireland), Haifa (Israel), Rabat (Morocco), Dunedin (New Zealand), Lisbon (Portugal), Stockholm (Sweden), Hanoi (Viet Nam), Montevideo (Uruguay), San Jose (Costa Rica), Vienna (Austria), Zurich (Switzerland), Helsinki (Finland) and Oslo (Norway) cover the population of their national territories. However, some centres are recognized as national centres (e.g. Bilthoven, Netherlands) although other institutions are functioning in their country.

13. With respect to their main functions, advice on cases of acute poisoning is a major activity in 73% of institutions and on cases of chronic poisoning in 56%. 17% of institutions do not provide advice on acute poisoning and 24% on chronic poisoning. Care of poisoned patients is reported as an important or very important function in 47% of institutions while 51% of institutions do not provide clinical toxicology facilities. Analysis is a major function of 36% of institutions but 58% provide no toxicological analytical facilities. 47% of institutions are actively engaged in toxicovigilance and prevention, while 42% do not have activities in this area. 39% of institutions produce their own toxicological documentation, while 43% have not reported an activity in this area. Training and teaching is a major activity in 55% of institutions, while 36% have not reported an activity in this area.

14. 45% of institutions reported having had activities during the decade 1972-1982 and the most complete replies covered the number of telephone calls. Almost all institutions reported a major increase in the number of calls during this period. Of the 90 centres providing a telephone reply service in 1982, 12 replied to fewer than 500 replies and 5 to more than 50

000. Centres replying to more than 50,000 calls included: Paris (France) and in the USA, Baltimore (Maryland), Boise (Idaho), Boston (Massachusetts), Denver (Colorado) and Salt Lake City (Utah). Furthermore, in 1982, 39% of centres provided, in addition to replies to telephone, replies to written requests for information, the number of these replies ranging up to 500 for Paris (France), Stockholm (Sweden), Farmington and Tuscon (USA), 700 for Minneapolis (Minnesota, USA) and 999 for East Meadow (USA).

15. 26% of institutions reported providing consultations in 1982, the number of patients seen either in the institution itself or outside ranging from less than 100 at 8 to over 2 000 at 4. 11 institutions reported providing consultations at the centre itself, the number of patients seen ranging from 145 at Birmingham, Alabama (USA) to 6 874 at Mashhad (Iran). The institutions receiving 1 000 patients per annum included: East Meadow (USA), Santa Fe (Argentina), La Plata (Argentina) and Algiers (Algeria). The number of patients hospitalized ranged from less than one hundred for 9 institutions to over one thousand for 14 institutions.

16. 26% of institutions also reported providing laboratory analyses in 1982, the number ranging from less than 500 for 13 institutions to over 10 000 for 3 institutions. Ten of these institutions are essentially analytical facilities and do not provide an information reply or consultation service. Aberdeen (USA), Luxembourg, Freiburg (Federal Republic of Germany), Naples (Italy) and one of the 2 Berlin institutions provide an information reply service but no clinical toxicology facilities. Of the 26% of institutions providing laboratory analyses, 64% provide the analytical services at the centre itself.

17. In terms of toxicovigilance and prevention, these do not seem to be a major concern from the answers received at least in relation to the main activities, i.e. information, patient treatment and analysis. About 25% of the answers recognize the importance of these activities with only 7% giving them high priority. It is in general institutions having more than one function which show the greatest awareness. There seems to be however a discrepancy with the answers given in Section VII - Toxicovigilance and Prevention Activities - from which a much greater interest emerges. This might be due to the difficulties in quantifying such activities.

SECTION II: ORGANIZATION OF INFORMATION SERVICES

18. One of the basic functions of a poison centre (68% of institutions responding to the survey) is the provision of an information service for response to requests concerning poisonings. The basic documentation which supports this information service consists essentially of publications, such as books and professional periodicals, various commercial data bases and files prepared by centres themselves. As indicated in the introduction, the number of chemical substances on the market amounts to several tens of thousands, but there are between 1 and 2 million products or commercial mixtures of substances, up to 30% of which may be reformulated or modified in various ways each year, e.g. change of solvent. Technical data concerning substances (e.g. physico-chemical, analytical and toxicological properties) are generally available from the published literature, although in many cases data is insufficient. Data on products need to be collected nationally or regionally depending on the local product market and this requires close cooperation with product manufacturers. Certain highly valuable data concerning human toxicology and methods of treatment as well as epidemiological data useful to the health community, may be derived internally by poison centres from cases on poisoning. Consequently systematic follow-up of calls and documentation of cases are important aspects of the information services provided by centres.

19. Most institutions have access to a University or Hospital library with medical textbooks and journals although some institutions, such as the poison centres in Luxembourg, Stockholm and Zurich have their own library. Based on the initial 127 replies, there are 19% of institutions which do not have their own library, but some report having access to a hospital or university library. 37% of institutions have fewer than 50 books, 14% between 50 and 100 books, 13% between 100 and 250; 9% between 200 and 500 and 8% (10 institutions) have more than 500 books.

20. Concerning professional journals and periodicals, 2 institutions receive more than 100 journals, 45 of institutions between 50 and 100 journals, 9% between 20 and 50 journals, 15% between 10 and 20 journals and 31% less than 10 journals. 35 institutions did not reply and 15 did not indicate the number of journals they receive.

21. 52 institutions (41%) report subscribing to a card information system, 75 (59%) replied negatively. 75 institutions (59%) reported using microfiche systems. About half of the institutions have access to data bases or data banks. 39 institutions (31%) produce their own information cards.

22. Just under half of the institutions have access to information on card-indexes of other institutions, essentially by telephone. 21 centres reported having received various regular documentation and information prepared by other centres or by different associations, e.g. the former USA National Clearing House survey document; 9 centres exchange their own documentation; 17 centres receive the micro-fiches from other centres and 3 centres exchange their micro-fiches regularly; 12 centres reported that they have an on-line contact with other data bases. 79 institutions reported on the frequency of exchanges of information and documentation: for 18 institutions (14%) these exchanges are on regular basis; for 8 institutions (6%) they are frequent; for 47 institutions (37%) they are rare and 6 institutions have never taken part in exchange of information.

23. Concerning information on commercial products, 79 institutions replying (62%), i.e. 85% of all poison centres have files with complete quantitative information on the composition of some products, in particular pharmaceuticals and pesticides; 51 institutions (40%) (i.e. 65% of poison centres) reported having only qualitative data on products. 48 institutions (38%) (i.e. 60% of poison centres) have a description of the packaging and labelling of products; 24 institutions (19%) (30% of poison centres) have samples of packaging or copies of labels.

24. 58% of replies (74 institutions) reported there was a compulsory registration of product (excluding drugs) information in their countries. If drugs are included 81 institutions (64%) reported having registration systems in their countries. Only six institutions have the registration data at their centre. Normally the data is deposited at various national agencies. All institutions replying positively reported that pesticides were included in the compulsory registration; 57 institutions (45%) reported that cosmetics and industrial products; 12 institutions (9%) reported other products were also included.

25. 85% of all poison centres produce their own documentation and of these 80% prepare information sheets on cases, 47% prepare files on calls, 48% prepare information on substances and 35% on commercial products; 20% prepare other types of documentation.

26. Physicians are responsible for the documentation at 63% of poison centres, and only 12% of centres have a documentalist responsible. Other centres have a pharmacist, or staff with other types of expertise, responsible for documentation.

27. 54 institutions commented on various aspects of the basic documentation system and how it could be improved. These comments fall into four main groups. First, adequate information should be provided on the composition of products by manufacturers and commercial distributors of products. While some institutions consider that a voluntary system between manufacturers and centres would be adequate, the majority of commentaries consider that there should be a national system of compulsory registration of products with a file on product composition. The national agency or agencies responsible for such a system would make available appropriate information to poison centres. The majority consider specific legislation would not be necessary, but that an improved awareness and education of relevant personnel at product manufacturers and distributors are desirable. Second, collaboration among centres in the field of information should be improved both at the national and international levels. This raises the question of exchange of information, particularly confidentiality aspects. The various issues relating to information exchange need to be examined. Third, computerization at centres could improve the information service which they provide. Fourth, a number of centres observed that no improvements could be made in the current financial climate.

28. The main role of poison centres is to provide information and advice adapted to the specific circumstances and conditions of poisoning, taking into consideration the nature of the enquirer, i.e. whether the enquirer is a member of the public, medically trained and the level of this training. Centres provide this information service essentially by telephone. Additionally, laboratories provide analytical information, essentially to centres treating patients.

29. 101 institutions (80%) reported that they provide a 24 hour a day telephone call response service, but not all of these institutions reported that they provided it every day; only 61% of institutions. While certain institutions do not work at the weekends it may be presumed that any institutions providing a 24 hour service would do so every day.

30. It is evident from the survey replies that centres use a variety of personnel to provide their telephone call response service. At 63% of centres medical personnel reply to calls during the day and 14% during the night; but also at 46% of centres students by day and 32% at night; at 16% of centres pharmacists by day and 17% by night; at 11% of centres nurses by day and 30% at night; at 29% of centres chemists by day and 16% at night; at 27% of centres secretaries by day and 4% at night; at 6% of centres documentalists/informational scientist by day and 3% at night. These categories of personnel are not mutually exclusive and many centres will have a mixture of the types of personnel able to reply to calls. There are many advantages of having a multidisciplinary team. It would appear, however, that in general the coverage at night is not as complete as during the day. Severity of cases are not necessarily related to the time of day and it is at night when some of the most urgent cases occur. Is this reduction in coverage at night due to financial constraints or because there are genuinely fewer cases to be dealt with during that period?

31. Bearing in mind that not all institutions replying to the survey are poison centres and that laboratories and clinical toxicology centres would tend only to provide their response services to medical practitioners (90% of institutions); 83% of institutions for emergency services; 62% of institutions for pharmacists; 67% of institutions for others health professionals; 72% of institutions the general public.

32. 93% of poison centres report providing medical advice with help in diagnosis and treatment. About half of these centres also provide a service through reading a prepared card. Some provide only a service through reading a card.

33. Information on calls and subsequently on specific cases provide valuable and sometimes unique epidemiological and human toxicological data, which make the follow up of calls an important task of centres. All poison centres appear to record the main context of calls; 75% of centres prepare files, 29% use magnetic tapes, which implies that a few centres use both files and magnetic tapes; 34% of institutions report using a computer to store information.

34. 63% of centres report following up systematically their cases; some centres remark that they only follow up the most serious cases. The response rate of follow up made at once, shortly after and long time after the initial call is highly variable among centres and appears to be maximum shortly after but no clear conclusions could be drawn. It appears that more calls from physicians are followed up than calls from other enquirers. Of those centres following up calls all of them follow up at least some calls from physicians and over half the centres follow up more than 50% of calls. Concerning calls from others, approximately half of these centres replying follow up some calls and only about 40% follow up over half the calls. Of the follow-up of calls from physicians approximately 60% are made by telephone, 25% by letter and 15% by visit; the success rate for telephone calls being greater than 50% for 90% of centres; for letter being greater than 50% for 40% of centres; and for

visits being greater than 50% for 25% of centres. Of the follow-up of calls from others, i.e. non-physicians, approximately 80% are made by telephone, 15% by letter and 5% by visit; the success rate for telephone follow-up being greater than 50% for about 90% of centres, for letter being greater than 50% at a third of centres and for visits being less than 50% at all centres reporting this type of follow-up.

35. Special follow-ups are made at 20% of centres in the case of poisonings involving pregnant women; about 30% of centres make a special follow-up in cases of disasters and 20% of centres in other cases. About 40% of centres making special follow-ups disseminate the results.

36. It must be borne in mind that not all consultations or calls to a poison centre involve a case of poisoning. For example most calls involving cosmetics in children, although disquieting for the parents are rarely cases of severe poisoning and usually involve quite mild symptoms. Concerning the motivation for calls in relation to poisoning of adults: 76% of centres report medicines of which 35% indicate that medicines account for 50% or more of these calls, 66% of centres report pesticides of which 18% indicate that pesticide account for 50% or more of the calls; 68% of centres report industrial products of which 14% indicate that these products account for 50% or more of the calls, 66% of centres report household products of which 5% of these centres indicate that these products account for 50% of the calls. 54% of centres report cosmetics, at none of which do cosmetics account for more than 20-30% of calls and at most centres correspond to less than 5% of calls; 51% of centres report plants which account for less than 20% of calls at 90% of these centres, 45% of centres indicate animal toxins, which account for more than 30% of calls at 6 centres (for example at Salvador, Bahia, Brazil), but less than 10% at 60% of centres. 38% of centres report other toxins accounting for a few percent of their calls.

37. Concerning children: 68% of centres indicate medicines as a source of poisoning at which 40% of centres medicines account for 50% or more of these cases in children; 52% of centres indicate pesticides, but only 3 centres (6%) indicate that the % of poisonings cases in children is greater than 50%; 43% of centres indicate industrial products, but these represent a very small proportion, usually less than 10% of poisoning cases; 56% of centres indicate household products and 25% of centres report that the % of poisonings is greater than 50%; 49% of centres indicate cosmetics but at 83% of centres these represent 30% or less of the calls; 49% of centres indicate animal toxins of which 24% of centres report more than 50% of poisonings in this category, 34% of centres report other causes of poisonings for children which represent a small proportion of cases.

38. 20% of institutions receive the same type of written requests as by telephone; other institutions receive written requests on other subjects such medico-legal subjects, poison prevention, special documentation, etc. 26% of institutions report following up written requests.

SECTION III: CLINICAL SERVICES

39. Clinical toxicology is an essential constituent of a poison control programme and many of the more severe cases of poisoning require hospitalization. Many poison centres have their own clinical toxicology centres or are very closely associated with such a centre. Other poison centres send patients to various local hospitals.

40. Patients are hospitalized in a great variety of institutions and it is not possible to tell from the replies how many beds are reserved for poisoned patients. Replies tend to indicate the maximum potential for poisoned patients at an institution. 46% of institutions replying to the survey indicate that they support a hospital unit either directly or indirectly. 93% of these replies indicate the number of beds, which ranges from less than 50 beds for 67% of these institutions and over 100 for 33%. Half of these replies indicate the number of hospital staff, which ranges from less than 10 percent for 20% of these institutions, and between 10 and 40 persons for 30% of these institutions. One institution has 40 staff and 3 have around 100 staff. Obviously not all of these staff are fully occupied with poisoned patients. Patients are hospitalized in different types of wards depending on the particular case and various facilities at hospitals for treating poisoned patients are not exclusively used for this purpose. 33% of these institutions which support a hospital unit indicate that the unit is dedicated only to poisoned patients. 85% of these replies indicate that an intensive care unit is part of the clinical service for poisoned patients; 40% that an emergency ward is part of the service; 43% that internal medicine is part of the service; 34% that pediatrics is part of the service and 10% that patients are treated elsewhere. 22% of those 54% of institutions replying that they do not support a hospital unit indicate that a unit specialized in clinical toxicology exists in their area.

41. Concerning the organization of the clinical services, 48% of institutions replying to the survey indicate that consultations are offered at the centre itself; and 40% indicate that consultations are given outside the centre by staff as consulting physicians. All centres which offer consultations at the centre see patients in an emergency situation. Of the 48% of institutions, offering consultations at the centre, 89% indicate that they provided the services on a daily basis; and 36% by appointment, which does not exclude daily consultations.

42. Clients at centres offering consultations come from different sources. Of the centres offering consultations, 92% report receiving patients from doctors or physicians, 30% from pharmacists, 62% from hospital services, 34% from other medical professions, 64% from the police, fire brigade and other emergency services, and 70% from patients coming by themselves. 80% of centres offering consultations treat the data arising therefrom in the same way as they treat data from telephone calls and written requests.

SECTION IV: ANALYTICAL SECTION

43. Analytical services provide an essential support to the diagnosis and treatment of poisoning and should be considered as an integral element of any poison control programme. Laboratory facilities are required for the identification, characterization and quantification of toxic substances in both biological and non-biological samples. It is important that clinical services treating patients have direct access to suitable laboratory facilities not only for the diagnosis of intoxications but also for the surveillance of the evaluation of various cases of poisoning and the efficacy of the treatment provided.

44. 32% of replying to the survey reported that they supported their own analytical laboratory and provided a 24 hour a day service; and these replies are presumably from laboratories themselves which are providing the analytical service uniquely or in the context of a poison and/or clinical toxicology service. 40% of institutions replying indicated that they had access to other laboratories on a 24-hour-a-day basis, presumably implying that they do not provide any analytical facilities themselves although this has not been verified. 20% of institutions have access to laboratory facilities only in cases of emergency.

45. 60% of institutions replying to the survey indicated their need for analytical services in the detection, identification and quantification of toxic substances. Assuming that all clinical centres require such services and all laboratories provide such services (a total of 47% of institutions replying to the survey), this would imply that of the just under half of the institutions replying to the survey which are purely poison information centres (i.e. providing no clinical or analytical facilities) namely 75 centres, 27% of these centres require analytical services. This figure may be slightly lower if some of the 7 institutions replying to the questionnaire which are neither poison centres, nor clinical toxicology centres not analytical laboratories require analytical services.

46. Concerning specific types of analysis, 55% of institutions replying to the survey indicated that they required or provided analysis of gastric lavage, 64% of urine samples, 64% of blood samples, and 25% of other body fluids. Only 16% of institutions replying to the survey indicated their need for or providing analysis of non-biological samples on a routine basis, 23% in the case of research, 24% for drugs, 20 for industrial products, 13 for others, such as food.

SECTION V: STAFF AND QUALIFICATIONS

47. The results of the survey demonstrate a very wide variety of expertise among staff of poison centres ranging from highly specialized professionals such as clinical toxicologists and research scientists to pharmacists, nurses and information scientists. A few centres specialize in veterinary poisonings. The specialized medical staff are often supported by computer personnel and secretaries. Analytical services will also have biochemists.

48. Analysis of the initial 127 replies to the survey indicated that 49 do not have a permanent physician on the staff, 50 (39%) have between 1 and 3 permanent physicians and 1 institution has 24. Physicians in some cases, may only be part-time. 5 institutions have permanent veterinarians, and 7 have part-time. 50 institutions have at least 1 permanent pharmacist on the staff, 1 institution has 10 and another 13, but 77 institutions (61%) have no pharmacist. At least one biochemist is found at 35 institutions (28%) and several institutions, providing essentially analytical facilities, have over 10 biochemists. Relatively few institutions, 33 (26%) have permanent nurses on the staff, and of these, 17 have more than 10 nurses, 6 have over 20 nurses. Only 11 institutions (9%) have a permanent information scientist and 3 of these have more than 5; 4 have part-time staff. 20 institutions (16%) have permanent computer personnel and only 4 have 2 or more such staff. Part-time computer staff are found at 5 institutions. At least one permanent secretary is found at 68 institutions (54%) and one has 12 permanent secretaries, 11 have 7 temporary secretaries and 4 have 1. Part-time secretaries are found at 20 institutions. 37 institutions (29%) report having other permanent staff. It has not been possible from the survey to evaluate the growth of qualified staff working at poison centres and other institutions.

49. Not all institutions are able to recruit staff already trained in toxicology and allied subjects. 81 institutions (64%) were not able to recruit physicians trained in toxicology, 16 (13%) recruited at least one trained physician and 2 were able to recruit more than 10 trained physicians. Of the 5 institutions employing veterinarians, only 1 was not able to recruit a person already qualified in toxicology. 23 institutions (18%) recruited 1 or more pharmacists already trained in toxicology. Only 12 out of 36 institutions employing biochemists were able to recruit persons already suitably trained. Likewise only 12 out of 33 institutions were able to recruit suitably trained nurses. 3 institutions found suitably trained communications scientists and 4 trained computer personnel. Specialized training had to be given to secretaries in 11 institutions.

50. Many institutions provide in-house or external training for staff while they are employed there. 32 institutions (25%) give in-house training to physicians and 9 institutions external training. External and internal training for veterinarians is provided at each of the 2 centres specialized in this area. Pharmacists are trained internally at 24 institutions (19%) and externally at 6 (5%). Biochemists are trained internally at 9 institutions (7%) and externally at 3. Internal training is provided for nurses at 18 institutions (14%) and external training at 3. Communication scientists are trained internally at 8 institutions and externally at 2, computer personnel internally at 5. 16 institutions provide internal training for secretaries and 1 centre external training.

51. Career possibilities for various personnel are reported at 58 institutions (46%), but it is uncertain whether the possibilities are comparable among institutions, even within the same country. In some cases there may be possibilities for advancement through training and education, but probably in most cases a positive response means stable or permanent employment within a speciality. While almost half of the 25 institutions replying positively are in the USA, a wide variety of institutions from other countries state that it is possible to make one's career at their centres and include countries such as Algeria, Argentina, Australia, Belgium, Brazil, Canada, Denmark, France, Ireland, Israel, Japan, Morocco, New Zealand, Poland, Federal Republic of Germany, Sweden, Venezuela, Luxembourg, Switzerland and China.

52. If one assumes that career possibilities within an institution would essentially be for full-time permanent staff, comparing the number of centres employing various categories of staff with those offering career possibilities, veterinarians appear to be in the most favourable position with all 12 centres employing them offering career possibilities. For biochemists, 22 institutions out of 35 offer career possibilities, for nurses 26 out of 33, for pharmacists 24 out of 50, for computer personnel 13 out of 20, for secretaries only 27 out of 68 and for physicians only 22 out of 78. There appears to be an anomaly with information scientists where 16 institutions report offering career possibilities, but only 11 employ permanent staff. (N.B. this anomaly may be due to analysis of staff employment being on the basis of the original 127 replies and the subsequent analysis of career possibilities being based on 139 replies.)

53. 55 institutions replied that they had difficulty in funding temporary staff. This difference may not necessarily reflect that it is easier to find temporary staff but rather that far fewer centres employ temporary than permanent staff. Countries having difficulties in finding temporary staff included developing countries, such as Argentina, Brazil and Iran, but also developed countries such as Australia, France, Italy, Netherlands, USA and United Kingdom. Likewise for permanent staff countries having difficulties included Algeria, Argentina, Brazil, Iran, Israel, Venezuela, Costa Rica and China, but also Australia, Belgium, France, Federal Republic of Germany, Greece, Italy, Japan, Poland, Portugal, Luxembourg, Spain, and USA (16 centres).

54. Assuming again that only institutions employing permanent staff in the various categories would have replied concerning difficulties in finding such personnel: 23 out of 78 have difficulties in finding physicians, 4 out of 12, veterinarians, 12 out of 50, pharmacists, 9 out of 35, biochemists, 12 out of 33, nurses, 8 out of 11, information scientists, 8 out of 20, computer scientists and 9 out of 68, secretaries.

55. For temporary staff it is difficult to make a comparison. Six institutions reported having difficulty in finding physicians, 1 in finding veterinarians, 5, pharmacists, 4, biochemists, 5, nurses, 4, information scientists, 3, computer personnel and 3, secretaries. Sixty institutions from almost all countries suggested ways of improving career possibilities and 68 institutions suggested ways of improving the toxicological qualifications of their professional staff.

SECTION VI: TRAINING AND TEACHING ACTIVITIES

56. Many institutions are actively involved in toxicological training and teaching, through various members of their staff. These activities are mainly at universities, but may also involve industry or other sectors. Out of 127 institutions, 69 (54%) have staff members teaching medical studies, 37 (29%), pharmacy, 10 (8%), biochemistry, 7 (5%), veterinary medicine, 48 (38%), nursing, 9 (7%), dentistry, 22 (17%), other studies. Nine institutions provide training in the pharmaceutical industry and 11 (9%) in the chemical industry. Training elsewhere is provided by 17 centres (13%).

57. 85 institutions (67%) organize in-house training, 60 institutions (47%) indicate that they accepted studies for thesis work. 54 institutions (43%) considered that training and teaching were important activities for poison centres. The considerable number of comments on training and teaching activities have not yet been analyzed.

SECTION VII: TOXICOVIGILANCE AND PREVENTION ACTIVITIES

58. Toxicovigilance is the active investigation of various toxic risks in the community with a view to taking measures to reduce these risks. It is a relatively new concept and the survey asked institutions what was their conception of it. Out of the total of 163 institutions 56 (34%) did not reply to this question, these institutions being mainly toxicology laboratories, as well as centres in developing countries, new centres and small centres. Nevertheless a number of those not giving a conceptual view of toxicovigilance, nor having an organization dedicated to toxicovigilance gave examples of their activities in this field. Amongst those replying, a number of institutions remarked that the concept was unknown to them. Nine replies observed that toxicovigilance was more than information and treatment and nine that the concept included toxicological surveillance of workers. Four institutions observed that they did not have any toxicovigilance activities due to lack of resources or of time or that the centre had just been initiated. Several replies noted the importance of toxicovigilance and that it was a role of centres.

59. Many of those replying concerning the concept of toxicovigilance confused it with other activities such as pharmacovigilance and drug overdose, follow up of patient care, collection of data and information, patient care, epidemiology and, most frequently, prevention and education. However, sometimes, these centres indicated toxicovigilance activities which they had undertaken.

60. It appears either from the comments on the concept or the examples given, that only 26 institutions have a significant activity in the field of toxicovigilance. These are Algiers (0101), La Plata (0203), Santa Fe (0204), Perth (0304), Herston, Queensland (0305), Casuarina (0306), Brussels (0404), Porto Alegre (0505), Copenhagen (0701), Copenhagen (0702), Grenoble (0803), Lyon (0805), Paris (0807), London (0904), Bilthoven (1101), Groningen (1102), Dunedin (1801), Warsaw (1904), Lisbon (2001), Wuppertal (2114), Minneapolis (2521), Philadelphia (2526), Pittsburg (2542), Farmington (2544), St. Louis (2548), Zurich (3201). All these institutions are poison centres except Wuppertal and Minneapolis. In general these are also centres which participate with the World Federation, with the exception of the Australian centres.

61. 106 replies were received on whether there was an organization dedicated to toxicovigilance in the area. 45 institutions (42% of those replying) indicated that the organization was in the centre itself; these replies being from many countries throughout the world. In France, 6 institutions out of 13 indicated the organization was at the centre itself and in the USA 12 out of 25. There is little toxicovigilance outside centres. Nevertheless, some countries, such as France have a national toxicovigilance commission. Some centres refer to institutions of the public health service e.g. in the Federal Republic of Germany, Sweden, USA. Most of the institutions replying that an organization dedicated to toxicovigilance existed elsewhere in their district than the centres were in the USA and referred in particular to health education activities, exhibitions and the "Poison Prevention Week". There was also often the confusion, as referred to above, as to the nature of toxicovigilance with one centre referring to alert systems, another to the identification of risk factors. Many institutions cited various studies and surveys undertaken in their countries.

62. Institutions were also asked whether any activities were undertaken in relation to pharmacovigilance and again there were many replies which were positive but for which examples were not relevant. Nevertheless 46 institutions (45%) replied positively and 3 partially out of 103 replying to the question. If one excludes laboratories, this indicates that about 40% of all institutions replying to the survey are interested in pharmacovigilance. All institutions in France replying, except one, were positive on this question and about half of the replies from USA. In the Federal Republic of Germany the two positive replies indicated that there was an official organization responsible for pharmacovigilance in the country. In conclusion, whilst pharmacovigilance is of great interest to centres few have the responsibility for it and there are different conceptions of pharmacovigilance among countries.

63. 87% of institutions, i.e. a total of 139 indicated whether they were involved in poison prevention activities and health education, and 115 institutions (83%) replied positively and 24 institutions (17%) negatively. Over half of the institutions replying have either initiated activities or participated in activities of other organizations regarding prevention and education and many of these institutions gave examples and comments. However, most of the examples given referred to education and information in general rather than preventive measures. Few centres gave examples of cases to limit the use of products or ensure safe packaging and labelling. Many cases of involving the mass media and distribution of brochures and posters were cited, which indicated a concern with education of children, the young and new parents. Identification of the populations at risk and seasonal sources of poisonings were also cited as specific measures.

64. The majority of centres involved in prevention undertake activities mainly with other partners such as education centres, pediatric centres and organizations concerned with safety but also with consumer protection associations, insurance companies and hospitals. New centres often lack the resources to be involved in prevention. Laboratories only tend to take an active role in prevention when there is no recognized poison control centre e.g. as in Luxembourg. For countries where several institutions replied but there exists only one poison control centre (e.g. Belgium, Denmark, Greece), it is this centre which appears to take the lead role in prevention.

65. It is interesting to compare replies for countries where there are a number of centres. In France, for example, of the 15 centres (out of the 17 officially recognized centres) which replied to the survey all of them reported that they had activities in the field of prevention and that they wished to develop these activities further. Many of the centres work with the local education authorities as well as having their own activities. It is considered that preventive education should begin at school. These centres are involved a lot with subjects of local concern, such as prevention of carbon monoxide intoxication, snake bites (for example in national parks), mushroom poisoning. Certain centres take advantage of trade or agricultural fairs and botanical exhibitions and shows to promulgate the message of prevention.

66. In the smaller countries, institutions, whatever their main function, seem to be concerned with preventive activities. In developing countries such as Algeria, Brazil, Costa Rica, Egypt, Iran and Morocco there is a strong recognition of the need for prevention. Nearly all centres in Australia and Argentina are developing preventive activities. In the USA only 4 of the 51

institutions replying did not indicate that they were concerned with preventive activities and the majority have important activities in the field of preventive education. Several centres expressed the need to further develop systematic preventive programmes for the schools. Centres in the USA strongly support the National Poison Prevention Week as well as health fairs and other communal activities; they often work in association with local public health organizations.

67. Few institutions (16%) have made an assessment of the efficacy of their preventive activities. Compared with other countries, centres in the USA seemed to have endeavoured more to evaluate their activities in this area. Argentina is another country where there is a notion of evaluation. Other countries where some centres make an attempt to evaluate the effectiveness of their preventive activities include: Italy, Spain, the Netherlands, Poland, Japan, Federal Republic of Germany and United Kingdom.

68. 89 institutions (50%) expressed the view that prevention was an important activity which should be expanded and many comments pointed to the need to improve awareness of poisoning prevention among young parents, school children, workers. Others commented on the need for more resources, financial and manpower, to pursue preventive activities, as well as the need for improved coordination in this field with other organizations and centres. Whilst certain centres actively involved in prevention did not reply to this question, most of those not replying were those having no activities in this area at all. Only one institution from the USA replied negatively.

SECTION VIII: RELATIONSHIPS WITH OTHER INSTITUTIONS

69. While the main elements of a poison control programme are provided by poison centres, clinical and analytical services, other partners may play important roles and it is essential for the main partners to be in good working relationship with certain other institutions. In particular relationships are essential on the one hand with various governmental ministries (such as ministries of health, labour, environment, agriculture, interior, justice and education), as police fire brigade, civil defence and the media and on the other hand with industry, which has much of the primary information about products, certain information on substances and important experience concerning prevention of intoxications. Relations with other partners may raise special problems of independence on the one hand and confidentiality on the other.

70. In the first area concerning relationships with various ministries and public authorities, 68% of institutions replying to the survey responded, these institutions concerning 37 countries. With a few exceptions the formal relationship exists with the ministry or department of health. The survey indicates that reports, generally on an annual basis and some on a quarterly basis, are required by authorities in 10 countries, but does not exclude others where reports were not mentioned. Other authorities, usually related to ministries of health are in relationships with institutions in 6 countries and include FDA (Food and Drug Administration) and CPSC (Consumers Product Safety Commission) in the USA, Bundesgesundheitsamt in the Federal Republic of Germany, as well as pesticide boards, medical boards, pollution control, drug control and petroleum products agencies in other countries. Informal relations with ministries of labour exist in 9 countries, with justice ministries (often formal relations for questions of forensic medicine) in 8 countries, ministries of agriculture in 8 countries (with formal relations in Uruguay), ministries of environment in 6 countries, ministries of education in 5 countries and ministries of the interior in 1 country. Relationships with authorities responsible for narcotics exist in 1 country, for security in 1 country and suppression of fraud in 1 country. In 7 countries there are relationships with emergency services, police, local and regional authorities and in 2 countries there are relationships with national or regional poison centres.

71. Many examples were given of special tasks requested by authorities of poison centres and included main areas of responsibilities of centres such as antidotes and areas of clinical toxicology, specific groups of substances, such as pesticides, alkaloids, water softeners, cosmetics, specific problems, such as mercury phenylacetate intoxication, methadone treatment, tylenol.

72. In general, poison centres have relationships with industry in order to obtain information on composition of products. Such information is usually provided on a voluntary or personal contact basis. Confidentiality is guaranteed by the centre receiving information. The main industrial contacts are with pharmaceuticals, chemicals industries and household products manufacturers. Depending on the local situation other industries involved include: shipping, paint, ceramics, and pesticides. The survey shows that the contacts with industry and exchange of information ranges from very good to limited and non-existent.

73. In certain countries, poison centres act as consultants to industries, providing toxicology data and advice on prevention and first aid measures in case of intoxication.

SECTION IX: SPECIAL PROBLEMS AND FUTURE OBJECTIVES

74. Over 85% of institutions taking part in the survey replied to the final section dealing with future objectives and problems in meeting these objectives. 11% of these institutions reported that they had special problems in pursuing the objectives and tasks entrusted to them. Such problems are mainly due, in general, to lack of sufficient staff and financial resources. For developing countries in particular, lack of infrastructure and of technical information were important problems. Often institutions in these countries are new and they may be regional difficulties. Several special cases could be noted such as absence of recognition of the centre, independence of the centre, competition with a private centre. Lack of computerized information and of data on the composition of products were also referred to as problems.

75. 90% of institutions described some of their priorities for the next five years, which included the intention to develop and improve the information base for the centre through computerized data and data bases, staff training, teaching, epidemiology, toxicovigilance, education and training. A number of developing countries expressed the need to create regional centres and to develop central information systems as well as to develop clinical, experimental and occupational toxicology services. Specialized areas referred to were development of antidotes and their availability, studies of mechanisms of toxicity and immunotoxicology.

76. Over half of the institutions commented on how they envisaged increasing the effectiveness of their work, and replies were concerned mainly with improving either existing functions or exchange of experience, or awareness and education. Many centres consider that connection with data banks and computerization of their information systems would improve their effectiveness as would for some centres, better access to the literature. Exchange of information on case histories and recent experience in diagnosis and treatment of poisonings was also considered an important means of improving effectiveness and it was observed that exchanges of information should be coordinated amongst centres. One suggestion was to centralize the protocols for poison management with a clearing-house collecting data on calls and a review on how specific calls were handled and followed up. Many centres wanted to encourage an easier and freer exchange of information and experience between centres, including exchange of staff. The technical experience of staff could also be improved through attendance at national and international scientific meetings. Another means of improving the effectiveness suggested was the development of human toxicology centres. The effectiveness of the prevention and toxicovigilance work of centres could be improved on the one hand by the education of health department administrators and the training of poison information centre staff and on the other by the better use of the news media. The problems of lack of resources and of technical information were again raised as hinderances to improved effectiveness.

77. 40% of institutions had further comments amongst which were a number of specific proposals that could be considered further, namely development of a system for peer review of data generated by centres, the standardized treatment of protocols used by centres and the development of certain centres and national reference laboratories and/or regional service centres.

COMMISSION
OF THE
EUROPEAN COMMUNITIES

WORLD FEDERATION
OF ASSOCIATIONS
OF CLINICAL
TOXICOLOGY CENTERS
AND
POISON CONTROL CENTERS

INTERNATIONAL PROGRAMME
ON
CHEMICAL SAFETY
(UNEP-ILO-WHO)

QUESTIONNAIRE
ON
POISON CONTROL CENTRES
AND
RELATED TOXICOLOGICAL SERVICES

CENTER OF :

ADDRESS :

DATE OF OPENING :

PERSON IN CHARGE :

OTHER CONTACT PERSON(S) :

BRIEF OVERALL DESCRIPTION OF YOUR CENTER, INCLUDING MANDATE AND
MAIN FUNCTIONS :

QUESTIONNAIRE TO BE RETURNED TO :

I. ADMINISTRATIVE STRUCTURE AND AVAILABLE FACILITIES

1.1 - What is the actual name of your Center ?

1.2 - What is its administrative organization ?

- 1.2.1 * It is included in a hospital
- * It is a part of a university
- * Public Health Service
- * Sponsored by different organizations ? Which ones ?
- * Other(s) e.g. private foundation :

1.2.2 Main financial support(s) :

Is the Center supported by :	completely	partly ... (%)
* National administration	<input type="checkbox"/>	<input type="checkbox"/>
* Regional administration	<input type="checkbox"/>	<input type="checkbox"/>
* Industry	<input type="checkbox"/>	<input type="checkbox"/>
* Voluntary organizations	<input type="checkbox"/>	<input type="checkbox"/>
* Different contributions	<input type="checkbox"/>	<input type="checkbox"/>
* Others (please describe) :	<input type="checkbox"/>	<input type="checkbox"/>

1.3 Area and volume of activity

- 1.3.1 Area * City and/or vicinity
- * Region
- * Country
- * International

Please describe :

1.3.2 How many people do you serve ? (in 10^6 inhabitants)

.../...

1.3.3 Main functions of the Center ?

For each function assess the relative importance using 1: very important;
2: important; 3: minor importance.

	No	Yes	If yes, assess as above	% of staff time
* Advice in case of acute poisoning				
* Advice in case of chronic poisoning				
* Care of poisoned people				
* Toxicovigilance & primary prevention				
* Analysis				
* Production of documents in toxicology				
* Training and teaching				
* Others (please specify) :				

Other comments :

1.3.4 Size of activity

Since ten years does your activity :

- increased ?
- decreased ?
- remained the same ?

Could you give details :

	in 1972* * if not available for this year, enter available year	in 1977* * if not available for this year, enter available year	in 1982
number of phone calls			
number of written requests for specific information			
number of consultations (patients seen)			
- in the Center			
- out the Center			
number of in-patients			
number of laboratory analysis			
- done in the Center			
- done elsewhere			
development of documentation and dissemination of information			
prevention operations			
others (please specify) :			

.../...

II. ORGANIZATION OF INFORMATION SERVICES

2.1 Basic documentation

2.1.1 Type of sources :

Books : number

Professional periodicals : number

Please supply a list if available.

2.1.2 Do you receive or subscribe to a card information system
on chemicals ?

Yes No

If yes, please describe :

2.1.3 Do you utilize micro-fiches ?

Yes No

If yes, please describe : (yours, others...)

2.1.4 Do you have access to data bases and data banks ?

Yes No

If yes, please describe :

Indicate the availability of the data base on a 24 h/day basis
and whether or not it is on line. If accessibility is res-
tricted, please discuss.

2.1.5 Do you produce cards ?

About what ?

How many per year ?

.../...

2.1.6 Do you have card-indexes of other Centers or access to them ?

- * only by phone call ?
- * receiving standardized documents ?
- * exchanging standardized documents ?
- * receiving microcards ?
- exchanging microcards ?
- * on line ?
- * number and names of Centers with which you have contacts :

* how often these exchanges take place :

- never
- rarely
- often
- regularly

2.1.7 Do you have files with compositions of commercial products ?

- | | Yes | No |
|--|--------------------------|--------------------------|
| * with complete quantitative data | <input type="checkbox"/> | <input type="checkbox"/> |
| * only with qualitative data | <input type="checkbox"/> | <input type="checkbox"/> |
| * with packaging and labelling description | <input type="checkbox"/> | <input type="checkbox"/> |
| * with samples of packaging or copy of label | <input type="checkbox"/> | <input type="checkbox"/> |

2.2 Is compulsory registration of product information required in your country ?

Yes No

If yes, is the registration data

- with your Center
- with another agency, if so please indicate :

2.2.1 For what types of products ?

- medicaments
- pesticides
- cosmetics
- industrial products
- household products
- others :

.../...

2.2.2 Do you have any suggestion whereby the acquisition of the above information could be improved ?

2.3 Do you produce any documentations ? Yes No

If so, what kind :

- * informationsheets on cases
- * call cards
- * constituent information
- * product information
- * others :

2.4 Who is responsible for your documentation ?

- * physicians
- * documentalist
- * other(s) (describe) :

2.5 Answers to the phone calls

2.5.1 When are the calls answered ?

- * on a 24 h basis ?
- * every day ?
- * others (give details) :
- * if not, from.....to.....
- * if not, when ?

2.5.2 Who answers the calls ?

- | | day | night |
|---------------------------------------|--------------------------|--------------------------|
| * medical personnel | <input type="checkbox"/> | <input type="checkbox"/> |
| * student | <input type="checkbox"/> | <input type="checkbox"/> |
| * pharmacist | <input type="checkbox"/> | <input type="checkbox"/> |
| * nurse | <input type="checkbox"/> | <input type="checkbox"/> |
| * chemist | <input type="checkbox"/> | <input type="checkbox"/> |
| * secretary | <input type="checkbox"/> | <input type="checkbox"/> |
| * documentalist/information scientist | <input type="checkbox"/> | <input type="checkbox"/> |
| * others (please specify) : | | |

2.5.3 For whom do you provide a service, please indicate % ?

- * medical practioners
- * emergency services
- * pharmacist
- * other health professions
- * general public
- * others

2.5.4 How do you respond ?

estimation of percentages

- * giving a medical advice with help to diagnosis and treatment %
- * reading a card %

2.6 - Follow up of calls

2.6.1 Do you record immediately the content of the calls ?

Yes No

on file on magnetic tapes comment :

2.6.2 Do you use a computer to store information about calls ?

Yes No

2.6.3 Do you follow up the cases systematically ?

Yes No

If no, please comment :

If yes, is it :

efficacy in percentages

- at once %
- shortly after %
- late after %

2.6.4 What is the percentage of cases selected for follow up ?

- * from physicians %
- * from others %

2.6.5 Of those selected in 2.6.4 above, what was the percentage of successes ?

- * from physicians :
 - . by telephone %
 - . by letter %
 - . by visit %
- * from others :
 - . by telephone %
 - . by letter %
 - . by visit %

.../...

2.6.6. Do you make a special follow up ?

for pregnant women ?

in disasters ?

others (give details) :

Do you disseminate results of these follow up ? Yes No

If yes, by what method :

If no, please comment :

2.7 - Motivation of calls

How many in percentages	
adults	children

medicaments

pesticides

industrial products

household products

cosmetics

plants

animals

others

2.8 - The written requests

2.8.1 Do you receive by mail the same type of requests as you have by phone ?

Yes No

Please comment :

2.8.2 Do you follow up the written requests as you do for the phone calls ?

Yes No

Please comment :

.../...

III. CLINICAL SERVICES

3.1 - Do you support an hospital unit ? Yes No

* of how many beds ?

* size of the staff (number) :

- If yes, is this unit dedicated only to poisoned people ? Yes No

- If yes, where is it situated ?

- intensive care
- emergencies
- internal medicine
- pediatrics
- somewhere else (give details) :

- If no, please indicate in the righthand column above the percentage bed occupancy by poisoned cases in the appropriate ward.

3.1.1 If you have no special unit, is there a unit specialized in clinical toxicology in your area ? Yes No

Give details :

Could you give the list of the main intense care units of your area receiving the poisoned patients ?

3.2 - Outpatients and clinics

3.2.1 Organization :

- Do you offer consultations in the Center ? Yes No

- Do you give consultations outside the Center as consulting physician ? Yes No

.../...

- Do you see patients in an emergency situation ? Yes No

- Patients can receive advice ?

* every day ? from to hrs

* on appointment ?

- Who sends you the patients ? (in percentage)

* physicians %

* pharmacists %

* hospital services %

* other medical professions %

* emergency services (e.g. police,
firebrigade, etc...) %

* patients coming by themselves %

3.2.2 Data recording :

- Is the data arising from these consultations treated
in the same way as telephone calls or written requests ? Yes No

If no, please describe procedure :

3.2.3 Follow up :

The patient is seen :

- only one time

- several times

IV. ANALYTICAL SERVICES

- | | | |
|---|--------------------------|--------------------------|
| | 24 h service | in emergency |
| 4.1 - <u>Do you support your own laboratory ?</u> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Do you have access to other laboratories ? | <input type="checkbox"/> | <input type="checkbox"/> |
| Which ones ? | | |

Could you join the list of the laboratories of clinical toxicology of your area ?

4.2 - Types of demands :

- | | | |
|---------------------------------------|--------------------------|---------|
| * detection of a toxic substance | <input type="checkbox"/> | % |
| * amount of a toxic substance | <input type="checkbox"/> | % |
| * identification of a toxic substance | <input type="checkbox"/> | % |
| - In biological fluids : | | |
| * gastric lavage | <input type="checkbox"/> | % |
| * urines | <input type="checkbox"/> | % |
| * blood | <input type="checkbox"/> | % |
| * other(s) : | <input type="checkbox"/> | % |
| - In non biological samples : | | |
| * routine | <input type="checkbox"/> | % |
| * for research sake | <input type="checkbox"/> | % |
| * drugs | <input type="checkbox"/> | % |
| * industrial products | <input type="checkbox"/> | % |
| * other(s) (describe) : | <input type="checkbox"/> | % |

.../...

V. STAFF AND QUALIFICATIONS

5.1 - Distribution

	permanent staff	temporary staff	full time	part time
	number	number	number	number
physicians				
veterinarians				
pharmacists				
biochemists				
nurses				
information scientists				
computer personnel				
secretaries				
others				

5.2 - Staff growth

number of persons working in the Center	1 9 . .		1 9 8 3		1 9 8 8			
	No.	total hours per week	No.	total hours per week	No.	optimal total hours per week	No.	expected total hours per week
physicians								
veterinarians								
pharmacists								
biochemists								
nurses								
information scientists								
computer personnel								
secretaries								
others								

.../...

5.3 - Staff qualifications in toxicology and allied subjects

5.3.1 Before working in the Center ?	Yes (give numbers)	No
physicians
veterinarians
pharmacists
biochemists
nurses
information scientists
computer personnel
secretaries
others

Please give details for each type of personnel :

5.3.2 During employment at the Center ?

	in house training (give numbers)	external training (give numbers)
physicians
veterinarians
pharmacists
biochemists
nurses
information scientists
computer personnel
secretaries
others

Please give details, e.g. type of training, number of hours, and if possible, add training curricula :

.../...

5.4 - Career

5.4.1 Is it possible to make one's career in the Center ?

	Yes	No
physicians
veterinarians
pharmacists
biochemists
nurses
information scientists
computer personnel
secretaries
others

Could you give examples of careers in your Center :

5.4.2 Could you please comment on career prospects, on lack of them for key personnel, including a quantitative evaluation, if possible, and an indication of staff turnover :

.../...

5.4.3 Do you have difficulties to find personnel ?

	permanent staff		temporary staff	
	Yes	No	Yes	No
physicians
veterinarians
pharmacists
biochemists
nurses
information scientists
computer personnel
secretaries
others

Please comment specifically with respect to suitable qualifications :

5.4.4 What do you suggest to improve possibilities of career in your Center ?

5.4.5 What do you suggest to improve professional qualifications of the staff in toxicology ?

.../...

7.2 - Prevention and health education

7.2.1 Has your unit been concerned with any activities in prevention and health education ?

Yes No

7.2.2 Do you initiate activities in this area and on what basis ?

Please give examples :

7.2.3 Have you participated in activities initiated by other organizations and if so, please indicate the organization and the type of activities ?

7.2.4 Have evaluations been made to assess the efficacy of the activity ?

7.2.5 Do you consider then to be an important activity which should be expanded and how ?

.../...

VIII. RELATIONSHIPS WITH OTHER INSTITUTIONS

8.1 - Please indicate the Governmental Ministries or other public authorities with whom you have some type of relationship. For each one, please indicate the type of relationship e.g. formal or informal and any statutory duties involved e.g. the furnishing of an annual report, the delivery of warnings on toxic hazards, the furnishing of any form of systematic documentation or any other duties imposed by an authority.

8.2 - Were any special tasks requested during 1982 ?

Please indicate their nature and implication for the workload of the PCC :

8.3 Do you have any relationships with industry and if so, please give details of type of industry and kind of problems dealt with, and any special considerations such as issues of confidentiality ?

IX, SPECIAL PROBLEMS, FUTURE OBJECTIVES AND ADDITIONAL COMMENTS

9.1- Special problems

Do you face special problems when pursuing your objectives or to tasks entrusted to your Center ?

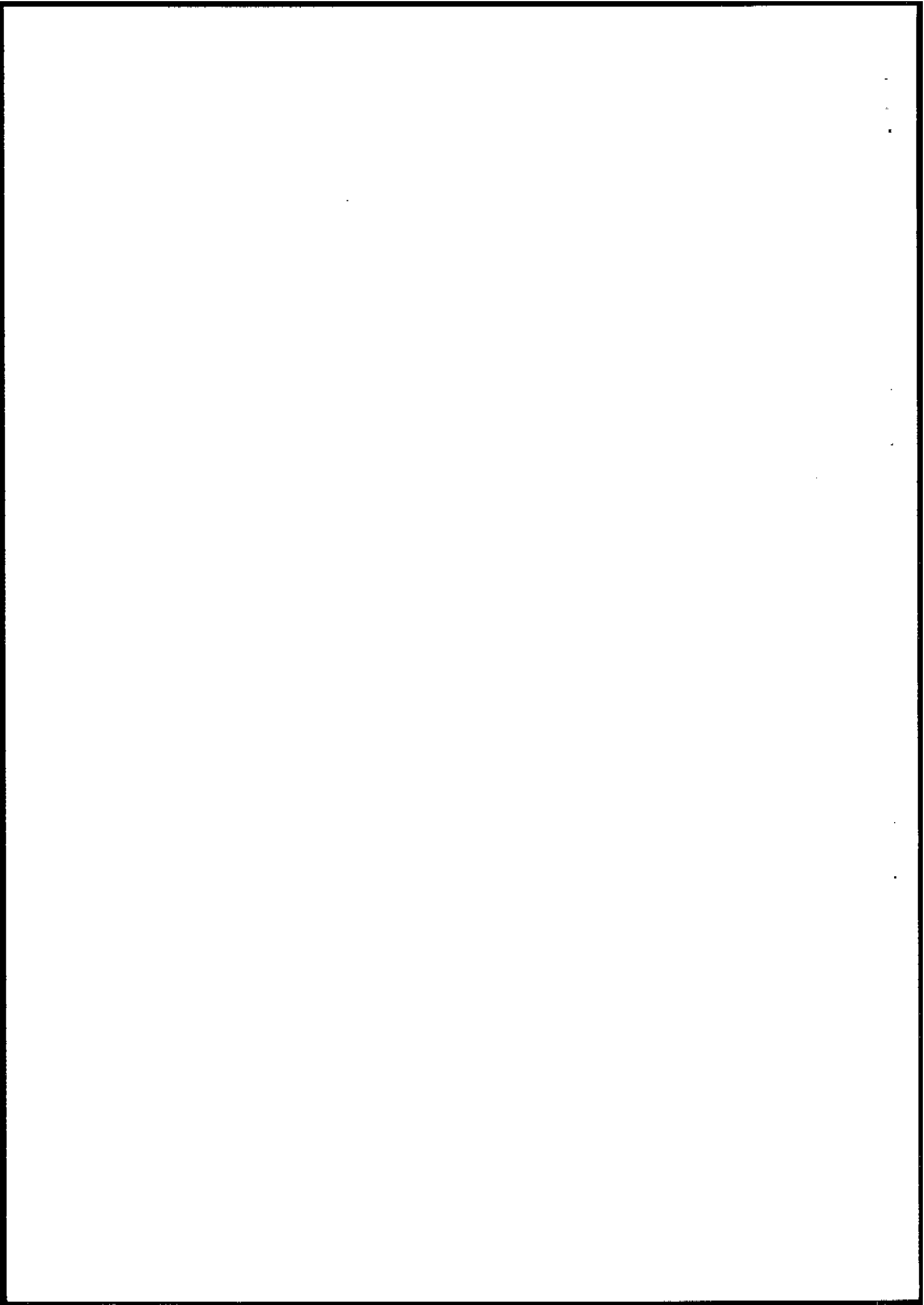
Yes

No

9.2- Could you describe some of your priorities for the next 5 years ?

9.3- How do you envisage increasing the effectiveness of your PCC and how could the interchange of recent experiences in human toxicology be made more efficient ?

9.4- Have you any further comments ?



ANNEX II: INSTITUTIONS THAT HAVE REPLIED TO THE SURVEY AND THEIR MAIN FUNCTIONS

S U M M A R Y

<u>Institutions by Type of Function</u>	<u>Abbreviation</u>	<u>Number</u>	<u>Σ</u>	<u>Institutions by Type of Services</u>	<u>Number</u>	<u>Σ</u>
Poison Centre (Telephone Service)	PC	77	47	Poison Information by Telephone	121	74
Clinical Service (Patient Care)	C	5	3	Clinical Services (Patient Care)	51	31
Analytical Service (Laboratory)	A	27	16	Analytical Services (Laboratory)	49	30
Multifunctional (i.e. PC + C + A)	M	16	10	Other	7	4
Poison Centre and Clinical Service	PC + C	25	15			
Poison Centre and Analytical Service	PC + A	3	2			
Clinical and Analytical Service	C + A	4	2			
Teaching	T	3				
Research	R	1				
National Coordination	NC	2				
Chemical Information	CI	1				
T O T A L						164

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population cover- age in millions
					Answer by tel.	Patients	Analysis	Toxicovigilance	Other		
<u>Algeria</u>	0101	Algiers	Centre National d'Etudes, de Recherches et de Résistances Antipoisons	Prof. M. Drif	2	2	2	1	0	M	4
<u>Argentina</u>	0201	Buenos Aires	Centro Nacional de Información y Asesoramiento Toxicológico, Univ. Salvador	Prof. E. Astolfi (décédé)	0	1	0	0	2	T	-
	0202	Buenos Aires	Centro de Investigaciones Toxicológicas	Dr C.A. Gotelli	0	0	2	0	1	A	-
	0203	La Plata	Centro de Asesoramiento Toxicológico	Dr J. Rodríguez Len	2	2	1	1	0	PC	2
	0204	Santa Fe	Centro Regional de Información y Asesoramiento Toxicológico	Dr N. de Marco	2	2	2	1	0	M	1
<u>Australia</u>	0301	Acton	Poisons Information Centre Canberra Hospital	Dr S. Alexander	2	1	0	0	0	PC	1
	0302	Camperdown	Poisons Information Centre	Mrs J. West	2	0	0	0	0	PC	5
	0303	Parkville	Poisons Information Centre	Mrs J. Nobilia	2	0	0	0	0	PC	4
	0304	Perth	Poisons Information Centre	Miss G.A. Heedes	2	0	0	1	1	PC	1.4
	0305	Herston, Queensland	Poisons Information Centre	Mr A.F. Petrie	2	0	0	0	1	PC	2
	0306	Casuarina	Poisons Information Centre	M. I. Mackney	2	0	0	0	0	PC	0.1
	0307	North Adelaide	Poisons Information Centre	Mrs E. Bander	2	0	0	0	0	PC	1.3

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population covered in millions
					Answer by tel.	Patients	Analyses	Other	Rating: 0 = No activity 1 = Minor 2 = Major		
<u>Belgium</u>	0401	Brussels	Centre de Toxicologie Clinique, Thérapeutique des Intoxications Aiguës Cliniques, Univ. St Luc	Prof. Mahieu Prof. Hassoun Prof. Lauwerijs	0	2	2	0	1	C + A + T	-
	0402	Wilrijk	Laboratorium voor Toxicologie	Prof. P. Schepens	0	0	2	0	0	A + T	-
	0403	Brussels	Laboratoire Central de Toxicologie	Prof. L. Melle	0	0	2	0	0	A + T	-
	0404	Brussels	Centre belge antipoisons - Antigifcentrum van België	Dr M. Govaerts	2	0	0	1	0	PC	10
	0405	Liege	Laboratoire de Toxicologie Clinique et Médico-Légale	Dr A. Noirfalise	0	0	2	1	0	A + T	-
<u>Brazil</u>	0501	Salvador, Bahia	Centro de Informaçoes anti-veneno de Bahia	Dr D.S. Rodrigues	2	2	0	1	0	PC + C	-
	0502	Cerqueira Cesar, Sao Paulo	Coordenadora Regional dos Centros de Informaçao Toxicologica de Sao Paulo	Dr L.A. Cassanha Galvao	0	0	0	2	2	NC	-
	0503	Campinas, Sao Paulo	Centro de Controle de Intoxicações de Campinas	Dr F.A.D. Zanbrone	0	1	0	2	2	T + C	-
	0504	Ribeirao Preto, Sao Paulo	Centro de Controle de Intoxicações de Ribeirao Preto	Dr J.B. de Menezes	2	2	2	0	0	M	3.5
	0505	Porto Alegre, Rio Grande do Sul	Centro de Informaçao Toxicologica, Coordenaçao Nacional	Dr A. Furtado-Rahl	2	1	1	2	2	M	6

Country	Code	Town	Name of Institution	Person in Charge	Answer by tel.	Function of Institution					Main Function	Population covered - age in millions
						Patients	Analysis	Toxicovigilance	Other	Rating: 0 = No activity 1 = Minor 2 = Major		
	0506	Botucatu, Sao Paulo	Centro de Controle de Intoxicações de Botucatu	Dr I. Vassiloff	2	1	2	1	1	1	PC + A	3
<u>Canada</u>	0601	Toronto, Ontario	Poison Control Centre	Dr M.A. Mc Guigan	2	0	0	1	0	0	PC	6
	0701	Copenhagen	Poisons Information Centre	Dr A. Fogh	2	0	0	1	0	0	PC	5
	0702	Copenhagen	Bispebjerg Hospital	Dr K. Jensen	2	1	0	0	0	0	PC + C	1
<u>France</u>	0801	Angers	Centre Antipoisons	Prof. P. Alquier	2	2	2	2	0	0	M	3
	0802	Bordeaux	Centre Antipoisons	Dr A. Brachet- Liermain	2	0	0	0	0	0	PC	4
	0803	Grenoble	Centre Antipoisons	Prof. J. Faure (décédé)	2	2	0	0	0	0	PC + C	3
	0804	Lyon	Centre de Toxicologie Clinique, Service d'Urgence	Prof. L. Roche	0	2	0	0	0	0	C	-
	0805	Lyon	Centre Antipoisons	Dr V. Vincent (décédé)	2	0	1	1	0	0	PC	10
	0806	Montpellier	Centre Antipoisons	Dr Laillar	2	2	0	0	0	0	PC + C	2
	0807	Paris	Centre Antipoisons	Prof. M.L. Efthymiou	2	1	0	0	0	0	PC	?
	0808	Reims	Centre Antipoisons	Dr M. Buffet	2	2	0	0	0	0	PC + C	1.7
	0809	Rouen	Centre Antipoisons	Dr J.M. Droy	2	0	0	0	0	0	PC	3

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution						Main Function	Population covered in millions
					Answer by col.	Patients	Analysis	Toxicovigilance	Other	Rating: 0 = No activity 1 = Minor 2 = Major		
	0810	Strasbourg	Centre Antipoisons	Dr A. Jaeger	2	2	0	2	0	PC + C	2.5	
	0811	Toulouse	Centre Antipoisons	Dr M. Fabre	2	2	0	0	0	PC + C	3	
	0812	Clermont-Ferrand	Centre Antipoisons	Dr J.P. Haberer	2	0	0	1	0	PC	1.5	
	0813	Marseille	Centre Antipoisons et de Toxicologie Clinique	Dr J. Jouglard	2	2	2	1	1	H	4.5	
	0814	Tours	Centre Antipoisons	Dr Autret	2	0	0	0	1	PC + F	2.5	
	0815	Rennes	Centre Antipoisons	Dr J.P. Curtes	2	2	0	2	0	PC + C	?	
<u>Great-Britain</u>	0901	Belfast	Northern Ireland Regional Drug and Poisons Information Centre	Mrs E. Smith	2	1	0	0	0	PC	1.5	
	0902	Birmingham	West Midlands Poisons Unit	Dr J.A. Vale Dr Stron	2	2	2	0	0	H	3	
	0903	Cardiff	National Poisons Information Centre	Dr C.M. Mitchell	2	0	0	0	0	PC	2.5	
	0904	London	Poisons Unit, National Poisons Information Service	Dr G. Volans	2	0	2	1	0	PC + C	46	
	0905	Penarth, South Glamorgan	District Toxicology Laboratory	Mr B.P. Spragg	0	0	2	0	1	A	-	
<u>Greece</u>	1001	Athens	Poison Information Centre	Dr P. Vlachos	2	0	0	0	0	PC	?	
	1002	Thessalonika	Laboratory of Legal Medicine and Toxicology	Dr A. Thodossy	2	0	0	0	0	PC	3	

Country	Code	Town	Name of Institution	Person in Charge	Answer by tel.	Patients	Analysis	Toxicovigilance	Other	Main Function	Population covered in millions	Function of Institution	
												Rating: 0 = No activity	1 = Minor 2 = Major
<u>Netherlands</u>	1101	Bilthoven	Nationaal Vergiftigingen Informatie Centrum	Prof. A.N.P. Van Heyst	2	2	0	0	0	PC + C	14		
	1102	Groningen	Laboratorium voor Toxicologie	Dr R.A. de Zeeuw	0	0	2	0	1	A	-		
	1103	Rijswijk	Medical Biological Laboratory I.M.O.	Dr J.F. Bleichrodt	0	0	1	0	2	R	-		
<u>Italy</u>	1201	Cesena	Centro Provinciale Antiveleni	Dr S. Righini	2	2	0	0	0	PC + C	?		
	1202	Naples	Centro antiveleni	Dr R. Carducci	2	2	0	0	0	PC + C	10		
	1203	Pavia	Laboratorio di Tossicologia	Dr M. Montagna	0	0	2	0	0	A	-		
	1204	Roma	Centro antiveleni	Dr S.I. Magalini	2	2	0	1	0	PC + C	50		
	1205	Roma	Centro di Prevenzione, Profilassi, Informazioni e Terapia delle Intossicazioni	Dr E. Malizia	2	2	2	0	0	M	10		
<u>Iran</u>	1301	Mashhad	Poisons Treatment Unit	Dr M. Baijali-Rood	2	2	2	0	0	M	8		
<u>Ireland</u>	1401	Dublin	Poisons Information Centre	Dr J.A. Woodcock	2	0	2	1	0	PC + A	3.5		
<u>Israel</u>	1501	Haifa	Poison Control Centre	Dr U. Taitelman	2	2	1	0	0	PC + C	5		
<u>Japan</u>	1601	Ibraki-Ken	Poison Control Center	Prof. H. Naito	2	1	1	0	0	PC	115		

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population cover- age in millions	
					Answer by cell.	Patients	Analysis	Toxicovigilance	Other			Rating: 0 = No activity 1 = Minor 2 = Major
	1602	Osaka	Poison Control Center	Prof. K. Morimoto	2	0	0	0	0	0	PC	8
	1603	Setagaya-Ku, Tokyo	Division of Information on Chemical Safety	Prof. Y. Takemura	0	0	0	0	2	0	CI	-
<u>Morocco</u>	1701	Rabat	Laboratoire de Toxicologie Clinique, Serv. Réanimation polyvalente, Hôpital d'enfants	Prof. I. Alaoui	1	2	0	0	0	0	C	-
<u>New Zealand</u>	1801	Dunedin	National Poisons & Hazardous Chemicals Information Centre, Toxicology Unit	Dr I.R. Edwards	2	0	0	0	0	0	PC	3
<u>Poland</u>	1901	Gdansk	Poison Control Centre - Miejscowski Ośrodek Toksykologiczny	Dr M. Zegarski	1	2	1	0	0	0	C	-
	1902	Cracow	Poison Control Centre - Miejscowski Ośrodek Toksykologiczny	Dr P.-J. Pach	2	2	2	0	0	0	M	6
	1903	Warsaw	Poison Control Centre - Stoleczny Ośrodek Ostrych Zatruc	Dr J.M. SzaJeuski	2	2	2	0	0	0	M	6
	1904	Poznan	Ośrodek Toksykologiczny	Dr M. Sikorski	2	2	2	0	0	0	M	-
	1905	Lodz	Laboratory Diagnostic Department	Dr Hanke	2	2	2	1	1	1	M	5

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population covered are in millions
					Answer by tel.	Patients	Analysis	Toxicovigilance	Other		
<u>Portugal</u>	2001	Lisbon	Intoxicacoes Evacuamentosas	Dr A. Borges	2	0	0	1	0	PC	10
<u>Federal Republic of Germany</u>	2101	Berlin	Informationszentrale Erkennung und Behandlung von Vergiftungen	Dr Fabricius	0	0	0	1	2	NC	-
	2102	Berlin	Beratungsstelle für Vergiftungserscheinungen im Kindesalter	Dr E.G. Krienke	2	1	0	0	0	PC	?
	2103	Bonn	Informationszentrale gegen Vergiftungen	Dr W. Burneister	2	1	0	0	0	PC	1
	2104	Braunschweig	Medizinische Klinik des Städtischen Klinikums	Dr K. Gahl	2	0	0	0	0	PC	2
	2105	Bremerhaven	Zentrallabor, Zentral- Krankenhaus	Dr H.J. Schoop	0	0	2	1	0	A	-
	2106	Düsseldorf	Institutes für Blutgerinnungswesen und Transfusionsmedizin der Universität	Dr H. Bruster	2	2	0	0	0	PC + C	1
	2107	Düsseldorf	Landeshauptstadt Düsseldorf Chemisches und Lebensmittel- Untersuchungsamt	Dr H. Vogel	0	0	2	0	0	A	-
	2108	Giessen	Institut für Rechtsmedizin	Dr R. Schutz	0	0	2	0	0	A	-
	2109	Freiburg	Informationszentrale für Vergiftungen	Dr S. Gadeke	2	1	0	0	0	PC	?
	2110	Herford	Kreiskrankenhaus, Zentrallabor	Dr Wallenstein	0	0	2	0	1	A	-

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population covered in millions	
					Answer by tel.	Patients	Analysis	Toxicovigilance	Other			
	2111	Ludwigshafen	Vergiftungsinformationszentrale	Dr H. Gillmann	2	0	0	0	0	0	PC	1
	2112	Munich	Institut für Rechtsmedizin der Universität	Dr G. Kauert	0	0	2	0	0	0	A	-
	2113	Ulm	Toxikologisch-Analyt. Labor Abteilung Rechtsmedizin der Univ. Klinik, Oberer Eisberg	Dr H. Sachs	0	0	2	0	1	0	A	-
	2114	Wuppertal	Toxik. Labor. Chemisches Untersuchungsinstitut	Dr L. Bertling	1	0	2	0	0	0	A	-
	2115	Stuttgart	Toxik. Labor. Chemisches Untersuchungsinstitut	Dr R. Barchet	0	0	2	0	0	0	A	-
	2116	Kassel	Laborpraxis	Dr H. Hess	0	0	2	0	0	0	A	-
	2117	Cologne	Zentrallaboratorium am Krankenhaus Köln-Heiweide	Dr H. Stroek	0	0	2	0	0	0	A	-
	2118	Koblenz	Entgiftungszentrale Stadt. Krankenhaus Kemperhof	Dr E. Seifert	1	2	1	0	0	0	C	-
	2119	Trier	Chemisches Untersuchungsamt Rheinlandpfalz	Dr Moller	1	0	2	0	0	0	A	-
	2120	Nürnberg	Chemisch-Toxik. Laboratorium Institut für Klinische Chemie-Toxikologie Labor	Dr F. Degel	0	0	2	0	0	0	A	-
	2121	Hamburg	Giftinformationszentrale Allgemeines Krankenhaus Barabek	Dr A. Donhardt	2	2	0	0	0	0	PC & C	12

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population covered in millions	
					Answer by tel.	Patients	Analysis	Toxicovigilance	Other			
	2122	Speyer	Chemisches Untersuchungsamt Speyer-Rheinlandpfalz	Dr Ristow	0	0	2	0	0	A	-	
	2123	Leverkusen	Gemeinschaftspraxis für Laboratoriumsmedizin- Toxikologie	Dr H. Lommel	1	0	2	0	0	A	-	
	2124	Bonn	Deutsche Forschungsgemeinschaft- Toxikologische Labor.	Dr E. Seibold	0	0	2	0	0	A	-	
	2125	Erlangen	Toxikologisch Laboratorium Institut für Rechtsmedizin	Dr M. Geldmacher- von Mallinckrodt	0	0	2	0	0	A	-	
<u>Egypt</u>	2201	Alexandria	Alexandria Poison Centre	Dr El Sayed M. Saleh	1	2	2	2	0	C + A	-	
<u>Sweden</u>	2301	Stockholm	Poison Information Centre	Dr H. Persson	2	0	0	0	0	PC	8	
<u>Turkey</u>	2401	Ankara	Poison Research Directorate	M. Besbelli (pharm.)	1	0	2	0	0	A	-	
<u>United States of America</u>	2501	Aberdeen, South Dakota	The Dakota Midland Poison Control Center	-	2	1	0	0	0	PC	-	
	2502	Anchorage, Alaska	Anchorage Poison Center	Dr Bucler	2	0	0	1	0	PC	0.5	
	2503	Rochester, Minnesota	Southeastern Minnesota Poison Control Center	-	2	1	0	0	0	PC	-	
	2504	Boston, Massachusetts	Massachusetts Poison Control System	Dr Lovejoy	2	0	0	1	1	PC	7	

Country	Code	Town	Name of Institution	Person in Charge	Answer by tel.	Patients	Analysis	Toxicovigilance	Other	Main Function	Population covered in millions	Function of Institution		
												Rating: 0 = No activity	1 = Minor	2 = Major
	2505	Birmingham, New York	Our Lady of Lourdes Memorial Hospital	Dr A.S. Casiris	2	1	0	0	0	PC	0.2			
	2506	Buffalo, New York	Brooks Memorial Hospital	Dr Eddy	2	0	0	0	0	PC	1.7			
	2507	Charlotte, North Carolina	Mercy Hospital	Dr Knowles	2	0	0	0	0	PC	1			
	2508	Coldwater, Michigan	Community Health Center of Branch Country	Dr J. Ameen	2	2	0	0	0	PC + C	0.03			
	2509	Danville, Pennsylvania	Susquehanna Poison Center	Dr G. Edson	2	2	2	0	0	N	4			
	2510	Denville, New Jersey	St Clare's Hospital	Dr Kenwood	2	2	0	0	0	PC + C	0.1			
	2511	Duluth, Minnesota	St Mary's Hospital	Dr Kianzie	2	1	0	0	0	PC	0.6			
	2512	East-Meadow, New York	Long Island Regional Poison Control Center	Dr Cazaccio	2	1	0	0	0	PC	-			
	2513	El Paso, Texas	El Paso Poison Control Center	Dr Dzierba	2	2	0	0	0	PC + C	1.5			
	2514	Pensacola, Florida	Gulf Region Poison Center	Dr R. Skuanski	2	0	0	0	0	PC	1			
	2515	Galveston, Texas	Southeast Texas Poison Center	Dr Ellis	2	1	0	2	0	PC	6			
	2516	Helena, Montana	Department of Health and Environmental Sciences	Dr B. Rumack (PCC Denver, Col.)	2	0	0	0	0	PC	0.8			

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution				Main Function	Population covered in millions	
					Answer by tel.	Patents	Analysis	Toxicovigilance			Other
	2517	Hickory, North Carolina	Catawba Memorial Hospital	Dr K. Burleson	2	0	0	0	0	PC	0.1
	2518	Boise, Idaho	Idaho Emergency Medical Poison Center	Dr Emerson	2	0	0	0	0	PC	1
	2519	Charlottesville, Virginia	Blue Ridge Poison Center	-	2	0	0	0	0	PC	2.5
	2520	Madison, Wisconsin	Madison Area Poison Center	Dr K.L. Grant	2	0	0	0	1	PC	1.3
	2521	Minneapolis, Minnesota	EMS Section, Minnesota Dept. of Health	Dr Wieland	2	0	0	0	0	PC	1.2
	2522	Newark, New Jersey	Newark Beth Israel Medical Center	-	2	0	0	0	0	PC	7.5
	2523	Norfolk, Virginia	DePaul Hospital	Dr Snyder	2	0	0	0	0	PC	1
	2524	Mayaguez, Puerto Rico	Mayaguez Medical Center Department of Health	-	2	2	0	0	0	PC + C	0.5
	2525	Petersburg, Virginia	Petersburg General Hospital	Dr B.J. Atkins	2	2	0	0	0	PC + C	0.2
	2526	Philadelphia, Pennsylvania	Philadelphia Poison Information	Dr Speaker	2	0	0	2	0	PC	6
	2527	San Juan, Puerto Rico	Pharmacy School, Medical Sciences Campus	Dr Miro	2	0	0	0	0	PC	3.5
	2528	St-Louis, Missouri	St Louis Children's Hospital	Dr Middelkamp	2	0	0	0	0	PC	2.5

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution						Main Function	Population covered in millions
					Answer by tel.	Patients	Analysis	Toxicovigilance	Other	Rating: 0 = No activity 1 = Minor 2 = Major		
	2540	Topeka, Kansas	Stormont-Vail Regional Medical Center	-	2	0	0	1	0	0	PC	-
	2541	Birmingham, Alabama	The Children's Hospital	Dr King	2	0	0	0	0	0	PC	3.5
	2542	Pittsburgh, Pennsylvania	Pittsburgh Poison Center, Children's Hospital	-	2	1	0	0	0	0	PC	2.5
	2543	University Mississippi	University of Mississippi, School of Pharmacy, Poison Information Center	Dr K.S. Ladner	2	0	0	0	0	0	PC	2.0
	2544	Farmington, Connecticut	Connecticut Poison Control Center, Univ. Health Center	Dr Crean	2	0	0	2	0	0	PC	2.7
	2545	Erie, Pennsylvania	Saint Vincent's Health Center	Dr Ashworth	2	0	0	1	0	0	PC	1.6
	2546	Denver, Colorado	Rocky Mountain Poison Center	Dr S. Rumack	2	2	1	0	1	0	PC + C	-
	2547	Ann Arbor, Michigan	Poison Control Center, University Hospital	Dr J.R. Mackenzie	2	0	0	0	0	0	PC	-
	2548	St-Louis, Missouri	St-Louis Children's Hospital, Drug & Poison Information Center, Southwest Ohio Regional Drug & Poison Information Center	-	2	0	0	1	0	0	PC	1.8
	2549	Salt Lake City, Utah	Intermountain Regional Poison Control Center	-	2	0	0	0	0	0	PC	1.4
	2550	South Bend, Indiana	St Joseph's Medical Center	S. Wagner	0	1	0	0	2	0	C	-

Country	Code	Town	Name of Institution	Person in Charge	Function of Institution					Main Function	Population cover- age in millions	
					Answer by tel.	Patients	Analysis	Toxicovigilance	Other			
<u>Switzerland</u>	3201	Zurich	Centre Suisse d'Information Toxicologique	Dr J. Velvart	2	0	0	1	0	0	PC	5
<u>China</u>	3301	Beijing	National Poison Control Center	Dr Pengsheng	1	2	2	0	0	0	C + A	
<u>Spain</u>	3401	Madrid	Instituto Nacional de Toxicologia	Dr G. Tena	2	0	2	0	0	0	PC + A	30
	3402	Sevilla	Instituto Nacional de Toxicologia	Dr M.J. Repetto	1	0	2	0	0	0	A	-
<u>Czechoslovakia</u>	3501	Bratislava	Poison Information Center, Clinic for Occupational Diseases	Dr Igor Batota	2	1	1	0	0	0	M	5
<u>Finland</u>	3601	Melsinki	Poison Information Centre	Dr J.K. Vilksa	2	1	0	1	1	1	PC	4.8
<u>Norway</u>	3701	Oslo	National Poison Information Centre	Dr E. Wickstrom	2	0	0	0	0	0	PC	4