

Concurrent session 7A  
Books and medicine in history I

Chair

D. J. Wright

## DOCUMENTATION IN THE HISTORY OF SCIENCE AND MEDICINE: THE POSSIBLE ROLE OF BIOMEDICAL LIBRAIRIES

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My participation in this session, dedicated to the historical dimension of medicine and the books which are its sources, places itself at the beginning of every possible way of historiographic research namely that of documents, their preservation, their degree of availability and consultation. In this field it seems to me that we can identify a role, therefore a responsibility, for librarians who should promote historical awareness in the areas of advanced scientific research, in sanitary institutions, in biomedical industries. In this sense we can take advantage of the increasing attention towards the history and the teaching of that scientific and technological dimension which dominates our culture. I shall refer to the Italian situation with particular reference to the problems of Rome, which are for many aspects emblematic, and also to the British system which I was able to study thanks to a British Council grant and a contribution from the Institute for which I work (Istituto della Enciclopedia Italiana founded by G. Treccani). I shall necessarily talk in general terms owing both to the short time available and to the aim itself of this paper, which is essentially methodological.

In the world of cultural organizations in Italy we can identify a prevailing characteristic, that is an enormous gap between the resources they have and how they make it possible for citizens, as well as for scholars, to make use of them. After all we are very far from a full use of these resources, which include not only artistic towns and their museums, now assailed by visitors, but also a very rich tissue of documents scattered all over the cultural institutions placed in the towns of the historical regions of our country. This is the complex tank of sources from which the history of medicine and biological sciences - that cross the whole history of ideas and technology for the problems they touch - derive their information. In this sense, what we usually know about the general conditions of Italian libraries is true; this condition is too well known to be again illustrated in this session. To tell the truth it must be said that antiquarian collections have been catalogued, often by scholars of worth, at least in the big public libraries, university and municipal libraries of old tradition, and for many years an intense descriptive activity has been carried out according to international standards. The real problem is the state of services which makes a catalogued book unavailable, because closed in places that are unfit for use; I shall mention the case, meaningful in its seriousness of the Biblioteca Universitaria Alessandrina in Rome, founded in 1661 and opened to the public in 1670, whose book stores were closed by USL (Sanitary Local Unit) because they did not meet the requirements, thus making consultation impossible at least until the end of this year.

If nothing else, the State acknowledges institutional tasks to these structures and in the last few years some libraries, owning antiquarian collections of greatest value, have been carrying on an intense activity to make the most of manuscripts and printed material concerning scientific and medical-sanitary subjects through the preparation of bibliographical exhibitions and annexed catalogues. Of all I shall quote the beautiful exhibition held at the Biblioteca Vallicelliana "*Those who serve the sick. Assistance and medicine in Rome in the XVIIth and XVIIIth centuries*", showing in Rome from the 18th May to the 18th June 1988. Even more dramatic is the situation of libraries, as well as of archives, belonging to the many scientific academies born between the XVIIth and XIXth century in every political center of the sovereign states into which Italy was divided. These institutions were protagonists of the scientific debate in these past centuries, but the decline of the role played by academies caused acquisitions to be ceased and collections to fall into oblivion, to be dismembered and closed to the public. Also in the most important ones, like the Accademia Nazionale dei Lincei, expenses for offices, staff and publications totally absorb the budget, to a great extent State contributions, and generally management criteria are inadequate to make a change. An overall picture of the situation is given by the

protagonists in the Proceedings of the IInd National Conference of Cultural Academies and Institutions, in *"Accademie e Biblioteche d'Italia"*, n.4-5, 1984.

Also for many scientific museums, cultural institutions, either autonomous or annexed to universities and hospital institutions, we can say that they are at a standstill. After all they have been debating for years how to overcome the nineteenth century conception of scientific museums, in the wake of recent studies on science vulgarization and education, developed particularly in France and in the United States. As a consequence attention has been drawn on the various projects of new museums of history of science and technology. Anyhow it seems particularly serious that the Museo Storico Nazionale dell'Arte Sanitaria, which is placed at the Ospedale S.Spirito in Rome's, has been closed since immemorial time, because Rome municipal administration has not the staff which should be necessary to make the town museum system work. If we consider that in the sixteenth-century Palazzo del Commendatore, next to the Renaissance hospital, we find the Biblioteca Lancisiana - well-known for its collection, surely one of the richest in Europe, which consists of old editions of medical books - it is clear how in the same unit of incomparable urbanistic value many unique works of the history of medicine are contained there and largely forgotten. Of course some dynamic institutions, particularly in Florence, Bologna, Milan, Turin, do operate in this field; we might say that Rome is luckily not to mention as an example even in Italy. What is important is to give an overall view, underlining the substantial continuity between the organizational level of historical resources, the present state of documentation, and the future tools which will enable historians to reconstruct the past.

Still in the first decades of this century, history of science studies were very far from being consolidated in our country as on the contrary they were in France and Germany. Aldo Mieli, one of the founders of this discipline in Italy, fought in order to obtain the establishment of a university chair and that the Italian bibliographies of history of science could be compiled and a special library could be founded. This library should have been connected with a large general one, which should have enabled everyone to consult all the classics scattered in so many libraries, and to be informed on modern foreign publications, elsewhere unobtainable. Mieli had his mind on a network of institutions like the Museum of Physics and Natural History and the National Library of Florence, which, with the support of specialized collections, should give a complete apparatus of sources and tools for research. While he fully reached his bibliographical aim founding the journal *"Archivio di storia della scienza"* and with it the *"Bibliografia metodica dei lavori di storia della scienza in Italia"* - which contained the works from the beginning of this century - in spite of all his efforts he did not manage to realize the special library. This is not so different from the situation of history of science collections today. While the subject has been asserting itself at University, however the establishment of one or more special libraries - which could assure a wide coverage of at least current production of monographs and periodicals in various languages - is still being held back not so much by lack of resources, as would be easier to conceive, but on the contrary by particularism of universities and individual chairs, which create the collections necessary for their research work, seldom taking into account the problem of specialization and public use. Therefore the greatest specialized collections are owned by institutes that carry on a systematic scientific, educational and publishing activity in the field of the history of science, with a programmatic task in recovering and arranging sources: the Domus Galilaean (Pisa) which produces the journal *Physis* (1959- ); the Istituto e Museo di Storia della Scienza (Florence) producing the *Annali* (1976- ) and the *Bibliografia Italiana di Storia della Scienza* (1985- ); the Istituto della Enciclopedia Italiana Treccani (Rome) which publishes the journal *Archives Internationales d'Histoire des Sciences* (1919- ).

History of medicine has an older academic tradition in Italy than history of science has, consequently its cultural carrying structures are more widespread; anyway, while history of science is part of historical studies departments, history of individual sciences forms part of scientific departments in which obviously research areas are privileged. This causes libraries and collections specialized in the history of medicine, as well as of physics or chemistry, neither to develop nor to play a role of coordination and stimulus as analogous institutions do in other countries. The library of the Institute for the History of Medicine in Rome, founded by A. Pazzini in 1936 with the Institute and the Museum, plays an irreplaceable role, although with the aforesaid limits, in biobibliographical documentation, particularly in relation to the union catalogue of medical printed works owned by Italian libraries.

Of such a heterogeneous situation information science has become part of it in the last few years, with all the stimulus and changes it induces. As a matter of fact if on the one hand automation - and the many investments by which it is accompanied - is proving to be the great opportunity for Italian information services, on the other hand it brings in itself the risk of uncontrolled modifications involved by the unprincipled use of technology which prevails on contents. In the field which concerns us, the necessity of establishing historical archives finds it hard to assert itself in firms, hospitals, universities, publishing houses, thus bringing about enormous gaps in sources; gaps which will be originated more and more if discard and preservation criteria are not defined as far as materials produced by automatic managements are concerned. At the same time information science is making it possible to realize extensive programs to assess and describe collections like, for example, the *Archivio della corrispondenza degli scienziati italiani* and the *Schedario nazionale degli strumenti scientifici italiani*, produced by the Istituto e Museo di Storia della Scienza in Florence. In the bibliographical field we are carrying out with great difficulty the Servizio Bibliotecario Nazionale (SBN), a library network which will enable knowledge and then use of book resources, especially of those collections not yet well known, if and to the extent that private libraries will join the initiative. They are exacting and long term programs, but they are the only ones which can prevent a corpus of records, which are really necessary for historical reconstruction according to social history methods, from disappearing.

Investing in documentation sources and structures would not seem in contrast with the needs of a developed country, since the richest nations are just investing in this field in spite of fund reducing policies. During my stay in England, where I studied sources and services in the field of history of science - with particular regard to Academies, Royal and Learned Societies structure - what seemed to me fundamental in the system's functionality was the fact that it is based not only on the still very rich libraries of Colleges but to a large extent on the articulated tissue of museums, archives and libraries belonging to Academies and charity institutions, non profit foundations financed by private citizens, professional associations, firms and only in part by the State. In the XXth century some associations have arisen for the social history of medicine, for the history of pharmacy and veterinary science, foundations like the Wellcome Institute for the History of Medicine to which Wellcome Foundation Ltd, an international pharmaceutical industry, assigns its profits in order to finance research and medical history. The Institute includes academic units at universities and the Library which is one of the three most important ones for medical history in the world. In 1979 the Contemporary Medical Archives Centre was established at the Library, with the task of promoting preservation of materials, documents and archives concerned with medicine and research in the XXth century in Great Britain. The centre was constituted on the model of the Contemporary Scientific Archives Centre, founded at Oxford in 1973 and transferred to Bath University, in 1987, as National Cataloguing Unit for the Archives of Contemporary Scientists. It is not an archive: as a matter of fact it does not keep the collections it puts in order, but with much reduced staff (a director, two archivists) and budget it offers multidisciplinary services to find and reorder contemporary scientists' documents, which will then be placed at University or national libraries according to the owners' requests. The National Unit is placed at the University Library, the equipments of which it makes use of, is based on philanthropic aids and is under the aegis of the Royal Society. It is interesting to underline that in its research activity Bath University is among the most connected ones with business but at the same time it is the seat of the Centre for the History of Technology, Science and Society. To the researchers and in general to those who make use of it, it appears therefore as an articulated tissue of coordinated structures which involve various professional abilities and offer both the opportunity of moving easily from one to another and catalogue tools to know the collections, besides services which enable their consultation.

Thinking over the English experience, being back in Italy again, does not at all mean that one wants to export a model abstracting it from the culture which expressed it. On the contrary it is important to identify the ways that can be tried, and the possible role of librarians to offer research resources which can be adequate to our historical wealth, to history of science and biomedical science studies. A first need comes out, if we consider how vast the research area is, characteristic of these disciplines: it is the necessity of giving priority to collections and services rather than to the institutions which own them. In this sense we must overcome the dualism between public and private, identifying methods of intervention which allow the State to collaborate with private citizens in preserving a common wealth and making it usable. In this direction it is useful to promote knowledge of book and archive wealth, participation to interlibrarian systems and cooperation initiatives, on condition that contents are reliable through accurate methodologies.

Biomedical librarians, as cultural operators and information specialists, might promote - in institutions, hospitals, industries, administrative units, research centers - a historical awareness which links the past to the present and allows investments in documentation carrying structures. Besides increasing the value of antiquarian collections, we can encourage the establishment of specialized sections, at various levels of study, also to popularize knowledge, in the history of science, in the history of the institution, in the discipline area. When an institution has no historical archive and no material preservation policy, librarians are often the only ones who can make managers assume a responsibility, asking for archive superintendences' interventions and historians' opinion.

I would like to conclude, asking again to pay particular attention to XXth century materials which are scientists', medical experience, sanitary structure records and which, even more than older historical materials, run the risk of being destroyed.

AN OUTLINE OF THE "ANCIENT ART OF THE GATHERER" AND OF THE FOUNDATION OF THE FIRST OBSTETRICAL SCHOOL IN ITALY AT THE UNIVERSITY OF TURIN

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INTRODUCTION

A wide definition of Obstetrics is given by Ambrogio Bertrandi (1) in his postumous work, issued in 1790: "The Obstetrical art teaches the helps which must be given to the pregnant woman both in pregnancy, during the delivery and after it. But since these helps are much more needed at the time of delivery, the name of the art comes from its most important role, which is, for the Obsterician to be present at the woman's labour and to gather the delivery and to rescue her in all the other things that she may need".

OBSTETRICS FROM THE ORIGINS TO THE 16th CENTURY

There exist numerous sources that testify that during the past centuries the assistance given to the expectant mother was traditionally entrusted to women (2,3,4,5,6). The history of childbirth was intertwined with that of the daily life especially since this event was part of a context that was linked very closely to nature. In ancient times, the women mutually helped each other and a greater authority was conferred to those who had already had the experience of childbirth. In fact, helping the parturient, one would usually find her mother, village women, neighbours and the midwife, while the men were totally absent from the scene; therefore a strong female solidarity developed, linking these very personal experiences. For a long time, there were no known texts or any recognized masters, but slowly an inheritance of knowledge and experience, exclusively female, came about, passed down orally. This inheritance of knowledge became the foundation of the preparation for the midwives.

Only around the year 1050 in Italy, with the development of the Salernitana School would one of the first Obstetrical textbooks be compiled, "De Mulierum Passionibus". This work was credited to many authors over the centuries. Initially it was credited to Erotto, physician liberated by Julia, while successively most of the historian recognized in Trotula its real authoress (7). Even today, the figure of the writer has many obscure sides; for many centuries there were discussions about its gender. In fact, to many historians it seemed improbable that a woman, in that period, could have written a

medical textbook. The same progressive modification from the name of a female to that of a male confirms the reluctance there was to admit that the author could have been a woman. In the second place, the historians were not sure of her role in the School ambient and it is not known if, in fact, she was a doctor or a midwife. In Trotula's textbook there were many suggestions on how to comport oneself during the mother's labour. This text represents a real milestone in the story of the Salernitana School from which all western medical science was derived.

Following, only in the 14th, 15th, 16th centuries there was a progressive rebirth of medicine and of the anatomical sciences, flourishing above all in Italy. While the new concept of medicine, which was observation of different phenomenon, substituted, in the second half of the 1400, the beliefs based on ancient astrological superstitions, yet, to the end of this century the delivery scene was totally occupied by midwives who continued to utilize their traditional knowledge.

#### THE MEDICINE AND THE DIFFUSION OF THE PRESS

In the 16th century, the discovery and the diffusion of the printing press modified substantially the cultural relationships, making the exchange of knowledge easier to obtain. Even the Universities were diffused in all Europe and medicine took advantage of this favorable social and cultural context. In Italy, the major representatives of the Anatomy School were Realdo Colombo, Fallopio, Eustachio, Aranzio, Fabrizio d'Acquapendente and Vesalio (8).

In this same period, Obstetrics became autonomous from the other branches of medicine, therefore constituting a sort of specialty. The first manual dedicated exclusively to this topic was the "De Partu Hominis", written by Eucharius Roesslin and printed in 1513. Towards the end of the 16th century, there appeared two textbooks for the midwives: the "De Custodienda Puerorum Sanitate ante Partum, in Partum et post Partum" by Giacomo Tronconi and "La Commare o' Raccoglitrice" by Mercurio Scipione (9). While the first has no historical importance, the second had a big influence on the instruction of the midwives. It was written in 1595 in common language. Mercurio Scipione was born in Rome in 1540; his book represents an accurate textbook of Obstetrics. In this text, the principal problems that could occur during the delivery were discussed. In his treatise, he suggested the positioning of the parturient depending on whether they were fat or thin. There existed contrasting opinions on Mercurio's work. In fact, Nardi (6) believed that "La Commare" was "the best expression of an epoch in which Obstetrics was passing from the past to the wave of the new current ideas". Others, instead, retained that it was a collection of old superstitions and that its value was just historical (13).

## THE NECESSITY FOR THE FOUNDATION OF THE OBSTETRICAL SCHOOLS

At the same pace with which medical and scientific knowledge expanded, the governments also realized that there was a lack of theoretical preparation for the midwives and started to regulate it. The Church also contributed to increase the control on the assistance given during delivery. It, in fact, retained it necessary that the midwives be capable to baptize the newborns in case of emergency and therefore that they were adequately instructed. The best way to guarantee an adequate knowledge of Obstetrics by the midwives appeared to be that of instituting the schools to provide this instruction. In Europe, the first schools were founded in Munich in 1589 and in Paris in 1618.

Instead, in Italy, no obstetrical school was instituted until 1728, even though there existed an obstetrical ward in Ferrara, dating from 1580, "La Casa di S. Maria" for unwed mothers founded by Lucrezia D'Este. With the institution of the schools, specialized literature flourished and there was a notable development of scientific journalism and of bibliographical information, even in the obstetrical field. In fact, in the 18th century, just here in Italy, 25 textbooks were edited; for example those by Valle (10), Tanarón (11), Nessi (12), and Bertrandi (1) etc., are just a few of the many that can be listed.

It is necessary to remember the important progress that were to produce changes among which were the introduction of the forceps. The diffusion of this discovery and its exclusive use by the physicians contributed to increase the distance between their scientific knowledge and the traditional one of the midwives.

In consequence of the control both by the doctors and the governments on the obstetrical activity, the midwives without a diploma disappeared. This role then became substituted by the new figure of a midwife who was much more competent. The instruction of the midwives in an educational structure was taught by teachers with degrees in medicine. Thus, the supremacy of the physicians became sanctified and men made their appearance in Obstetrics from that moment on. It carried over to the delimitation of the field of action of the midwives to whom was permitted to assist exclusively at the physiological delivery while, for the surgeon, his role became predominant in the pathological cases. The midwives, in this way, did not represent any more an independent professional figure and actually became the professor's assistant. This differentiation of roles was evident even in the numerous published work of that period; in fact, the manuals for the exclusive use of the midwives were entitled "Guide to Minor Obstetrics" (13).

## THE OBSTETRICAL SCHOOL OF TURIN FROM ITS FOUNDATION TO NOW

In Italy, the first school for midwives was instituted in Turin in 1728 by the order of King Vittorio Amedeo II who



gave orders to the Vicario of the city to request the rectors and administrators of the "Ospedale Maggiore di S. Giovanni Battista" to form the "Opera delle Donne Partorienti" (14,15,16,17,18). The "Regio Viglietto" of May 6th, 1728 ordered the construction of the work and by the following year it was functioning.

The obstetrical teaching at the University, instead, started only later, due to the merit of Ambrogio Bertrandi. He both a valiant surgeon and excellent observator, also in the best of relation with the royal family, suggested to Carlo Emanuele III the idea of constructing, under the auspices of the "Opera delle Partorienti" courses in Obstetrics for surgeons. A surgeon, therefore, that wanted to become an obstetrician had to have followed these courses which were at that time exclusively theoretical. Only in 1834, could one talk about a true teaching program of the basics of Obstetrics under the authority of the University of Turin. Bertrandi, the above mentioned surgeon, was succeeded by valiant surgeons and, among these, we can remember along Riberi and Alliprandi who in 1838 organized both the theoretic and practical teaching of Obstetrics (16). This organization rendered this specialty definitely independent of Surgery.

In 1916, the then Dean of the Faculty of Medicine underlined the need to transfer the "Regia Opera di Maternita'" to a better site; this came about in 1938 following the involvement of Professor Ercole Cova who directed the clinic for six years. The new site included a wing for the "Regia Opera di Maternita'" and one for the University Clinic. After the war, the name of the building was changed to "Ospedale S. Anna" a ward of which was given to university management. Now the "Ospedale S. Anna" represents the most complex structure in this specialization in Europe.

#### THE LIBRARY

It was impossible to reconstruct the details of the history of the library. This was because references were very scarce in the texts that record the vicissitudes of the Ostetric School in Turin. The first reference that was found, was in a book by Viana-Vozza: "L'Ostetricia e la Ginecologia in Italia", written in 1933 (18); in which it was engolized "the vastness and numerous volumes of work present in the library among which is the collection of more than 100 volumes of original memories" constituting the "Miscellanea Tibone". Tibone was the director of the Clinic until the beginnings of the 1900. Yet, testimony has already been found stating that the major part of the patrimony represented by the oldest volumes, came from donations. The donor was Professor Ercole Cova and from examining ex libris and signed autographs, we can determine that numerous volumes of this collection belonged originally to the "Bibliotheque du Citoyen Jean Jourdan, Chirurgien". Then, with the transfer of the "Clinica Ostetrica" to its present site, in 1938, the library was

ammassed and set up in a site especially designed for the purpose of a library. The new library consisted of two rooms organized in such a way for both conservation and consultation of the books. Among the most prestigious ancient texts that we have conserved we can refer to an Italian text published in 1790 by Penchienati and Brugnone that gathered and expanded the dissertations of their teacher Ambrogio Bertrandi, the 1798 text by Pietro Paolo Tanaron, Tuscan physician and surgeon, the one by Nessi, where the author researched and wrote about the distinction between a theoretical and practical part of Obstetrics, Valle's famous textbook and the work of Asdrubali which is considered to be the epitome peak of the literature of that era. A particular citation must be made for the meritorious work by Mercurio Scipione "La Commare" which was published in 18 issues. Ours was added to the collection in imperfect conditions. The preface of the text was mutilated and even if we researched its bibliographical date, we were not able to establish if it is a 1703 or a 1713 edition. As for European works the manuals of Andrea Levret written in 1750, the manual of J.L. Baudelocque dating to 1818, world renowned obstetrician, the "Traite' complet des accouchements naturels, non naturels, et contre nature" by De La Motte (1721) and the 1740 edition of Mauriceau, first surgical teacher of Obstetrics at the Hotel Dieu of Paris are among the volumes in our collection. Included also in our collection are the texts by the Englishman Smellie (1771), by the German Roeder (1759), Stein (1816) and Negaele (1853), the latter considered by Cuzzi to be the Euclide of Obstetrics. The patrimony of the library also includes numerous obstetrical and gynecological journals both in Italian and foreign languages. This is important to note because since the beginnings of 19th century medical journals were known as the most rapid and efficient means to divulge scientific knowledge. Various medical societies and academies also played a crucial role in the communication of scientific knowledge. In our collection, one can find copies of the very first communications; for example of "Transaction of the Obstetrical Society of London" (1865), "La Gynecologie" (1896), the "American Journal of Obstetrics and Gynecology" (1883), the latter being the first specialized journal in the United States. The "Annali di Ostetricia e Ginecologia" (1896) is also among our collection. This is the oldest Italian journal and should be taken into consideration when making the necessary references in reconstructing the history of Italian Obstetrics.

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THE LIBRARY OF THE ROYAL COLLEGE OF SAN FERNANDO IN MADRID  
(1806-1843)

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The "Minutes Book of the Royal College of Pharmacy of Madrid" (1806-1823/1830-1843) and the loose documents, inventories, catalogues and indexes belonging to the library, allow us to reconstruct the library stock of this educational institution, to put forward some hypothesis about its evolution and to analyse the suitability, within the European context, of education received in the centre since it was established. The library stock mentioned is preserved today in the Faculty of Pharmacy of the Complutense University in Madrid (UCM) together with an important part of the volumes referred to therein.

After a short historical introduction about the Royal College of San Fernando (1806-1843), forerunner of the present Faculty of Pharmacy of Madrid, we studied the situation and distribution in the space of the library, the organization of the books by subjects, the organization of the catalogues (authors, subjects and topographical catalogues), and the reasons that led to making these documents in chronological stages following a specific institutional order. We also studied the figure of the librarian as a complementary position to that stand-in, with the consequent limitations in the working of this service.

Finally, the bringing up to date of education methods is valued on the lines of the catalogued books, centering on study on the subjects of Botany and Chemistry. We are surprised by the great number of valuable books belonging to the XVI, XVII and XVIII centuries, some of them illustrated and whose ex-libris indicates that they belong to this library.

Concurrent session 7B  
Special information services

Chair

U. Hausen

THE DOCUMENTATION CENTRE AT THE REHABILITATION AND RESEARCH  
CENTRE FOR TORTURE VICTIMS IN COPENHAGEN: A PRESENTATION

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A short account of the history of the RCT will be given followed by a description of the establishment of the Documentation Centre, the collection of materials, the data base project, and the services that we can offer to researchers and health personnel involved in the work with torture victims all over the world.

The results of the first year of operation will be presented along with some outlines of our plans for the future.

INTRODUCTION

The Rehabilitation and Research Centre for Torture Victims in Copenhagen is an independent, humanitarian, unpolitical, non-profit corporation established to help victims of torture and to contribute to the prevention of torture.

The activities are

- to run a centre for the rehabilitation of persons who have been subjected to torture and their families,
- to instruct Danish and foreign health staff in the examination and treatment of persons who have been subjected to torture and by teaching in a wider forum to contribute to spreading the knowledge of torture, the torture methods and the possibilities for rehabilitating persons who have been subjected to torture,
- to carry out and initiate research on torture and on the nature and extent of the consequences of torture,
- to run and develop an international documentation centre.

The establishment of the RCT as an independent institution is a spin-off of the medical work carried out by Amnesty International in the early 70s when the first medical groups were set up. The members of these groups travelled to countries in which the government subjected their opponents to torture such as Chile, Greece, Northern Ireland, South Korea, Spain and the Middle East.

Through systematic medical examinations evidence was produced which enabled Amnesty International to prove that the regimes of those countries had actually subjected their adversaries to torture.

Very soon doctors and medical staff involved in this work realized that it was not just a matter of producing evidence to be used in court but of finding methods that could help torture victims.

After meetings in Athens (1), London and Copenhagen (2), Amnesty International decided in 1979 that rehabilitation centres must be established to provide free medical and psychiatric help and social counselling to torture victims. The Danish medical group had already gained some experience from its work and was therefore asked to establish the first centre. The group approached the Governors of the Copenhagen University Hospital, who made arrangements for the group to hospitalize up to ten torture victims a year.

During the next few years the group gained considerable experience, and formulated the principles for treatment of torture victims. It was found that

1. procedures which may remind the person of the torture he or she had been exposed to should be avoided as far as possible.
2. treatment should be both physical and mental with physiotherapy as an important element of the physical treatment.
3. the physical and the psychological treatment shall take place at the same time.
4. the social conditions shall be included as an important factor, and social work form part of the treatment.
5. the treatment shall include not only the individual victim of torture but also his or her family.

1982 saw the establishment of the RCT as an independent institution with its own premises, no longer under the aegis of Amnesty International or the Copenhagen University Hospital.

In 1984 the RCT moved to the two buildings near the Copenhagen University Hospital which today house the Centre.

The RCT has a staff of 34 which comprises doctors, psychotherapists, physiotherapists, nurses, social workers, doctors' secretaries, interpreters, librarians, and administrative staff. Other professionals work at the Centre in a consultative capacity such as medical specialists and dentists. All in all in Denmark close to 100 people from the social and health sectors have received specialized training

in the rehabilitation of torture victims, all of whom cooperate with the RCT as part of an external network.

Today the annual budget amounts to approximately 2 mio. US dollars partly from the Danish Government, partly from foundation grants, private donations, etc.

### THE RCT DOCUMENTATION CENTRE

In 1985 it was decided to establish and run an international documentation centre and the initial steps were taken at the end of that year. The Documentation Centre was founded with support from the Project Group Scheme and a major donation from the Egmont Foundation.

The objective of the Documentation Centre is two-fold: first to collect and register literature on torture, the sequelae of torture and on the treatment and rehabilitation of torture victims and secondly to disseminate this information to health personnel and researchers in various institutions and organizations all over the world involved in the work with torture victims.

Thanks to its numerous international contacts, the RCT is in a unique position to build an international documentation centre. The collection of torture-related material has been in progress for many years. Before the Centre was established, Amnesty's medical groups were active in this field, and many of their original documents are now part of the RCT collection.

This is the first attempt to compile all the available information under one roof, and the RCT Documentation Centre is the first institution to strive for implementation of the WHO proposal from April 1986 calling for the centralization of literature on organized violence (3).

### THE COLLECTION

It is proposed that the collection includes material from all over the world and on all aspects of torture in whatever form or language it may be available.

Greatest importance is attached to disciplines relating to the rehabilitation and treatment of torture victims, i.e. medicine, psychotherapy, physiotherapy, nursing and social work. The greater part of the literature in this field is in English or Spanish.

The collection also contains some material on related research, e.g. medical ethics (especially on health personnel participating in torture), the results of the examinations of concentration camp prisoners and prisoners of war (including Norwegian, Danish and American research), legal aspects of torture, international and humanitarian law and human rights.

The collection includes books and articles from journals and magazines as well as literature which is hard to obtain due to lack of registration in international data bases and bibliographies, i.e. seminar papers, reports, typescripts, cases, and similar "grey" literature.



The Documentation Centre also comprises a considerable collection of audiovisual material: videos produced by the RCT and by Danish and international television, series of slides and a collection of posters and water colour paintings artistically portraying the many faces of torture.

It should be stressed that the collection does not include medical records and we do not keep dossiers on individuals.

### HURIDOCS

It was realized early on that efficiency in the Documentation Centre would require the introduction of new technology.

As it appeared that organizations working with documentation in the field of human rights were already cooperating within a network, HURIDOCS (Human Rights Information and Documentation System), we naturally took up contact with this network.

HURIDOCS is a global network of over one hundred human rights organizations, whose aim is to improve access to and dissemination of public information on human rights. HURIDOCS have had consultative status with UNESCO since 1980.

HURIDOCS has developed a format for the registration of documentation on human rights (4). The format is a set of guidelines for the registration and exchange of data which takes into account both manual and computerized routines and procedures in a documentation centre, making it possible for rich and poor organizations alike to participate, thus providing the most efficient and best possible exchange of data in this field.

The RCT chose to apply the HURIDOCS Standard Format and right from the outset registration of the collection in the Documentation Centre has been made in accordance with the HURIDOCS standards.

Computerized members of the HURIDOCS network include the human rights institutes in several European countries, the Refugee Councils in Denmark, Norway and in the United Kingdom, the Human Rights Documentation Centre under the UN High Commissioner for Refugees, the Human Rights Documentation Centre under the Council of Europe and the Human Rights Internet at Harvard Law School as well as others (5).

### THE DATA BASE

In early 1987, a donation from the American L.C. Skaggs and Mary C. Skaggs Foundation enabled the RCT to purchase the necessary computer equipment required for a data base. In May 1987, a highly sophisticated data base program for bibliographic data, BRS/SEARCH, was installed on a personal computer.

Up to now more than 1,400 bibliographic references relating to torture have been entered.

Concurrently with the registration process keywords are chosen to create a unique English indexation language and to prepare a thesaurus, also in English.

## SERVICE

The Documentation Centre was inaugurated on October 1, 1987. Since the official opening the Centre has offered searches in its own data base, printouts of references and to some extent, lending and photocopying services. Its services are at present primarily intended for researchers and health personnel involved in the work with torture victims. Out of consideration for the torture victims under care, the Documentation Centre is open for written inquiries only, addressed to the RCT.

## THE FIRST YEAR OF OPERATION

In late 1987 the Documentation Centre was accepted as a member of the Danish Research Library Association, whereby the Centre also became part of the inter-lending library system in Denmark.

To strengthen cooperation with other medical libraries in Denmark and Europe the librarian of the Documentation Centre became a member of the Group of Danish Medical Librarians and the European Association for Health Information and Libraries.

The staff at the Documentation Centre has written articles (6,7) and also participated in seminars and meetings on both national and international level.

The Documentation Centre has received visitors from all parts of the world and many of the visitors have donated valuable material in the forms of articles, typescripts, pictures and videos.

August 1988 saw the first issue of an international newsletter on treatment and rehabilitation of torture victims (8). The purpose of this newsletter is to improve the exchange of experience and research between professionals working with torture victims. The publication will be quarterly and each issue is planned to contain a feature article of professional interest, other presentations of relevant work, a presentation of other treatment and rehabilitation centres as well as reviews and lists of books and articles received in the RCT International Documentation Centre.

## FUTURE PERSPECTIVES

The many visitors and the great interest shown in the Documentation Centre during the first year of operation has revealed a profound need for centres like the one at RCT and we hope to be able to meet with the demand for information on the subjects covered by our centre.

It is our aspiration within the next few years to get facilities that will enable researchers to study in Copenhagen having direct access to the material in the Documentation Centre. Today limited space and security considerations do not allow such arrangements.

In 1989 we expect to be able to send out acquisitions lists along with our newsletter and thus provide researchers and health professionals with relevant information.

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WISMIC - un centre international d'information socio-medicale

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Je vais vous presenter un centre d'information qui est établi à Oslo tout récemment. Ce centre porte le sigle "WISMIC", cela veut dire:

- en anglais: World Veterans Federation International Socio-Medical Information Centre;

- en francais: Centre International de la Federation Mondiale des Anciens Combattants sur l'Information Socio-Medicale

La Fédération Mondiale des Anciens Combattants est une fédération internationale et apolitique des associations des anciens combattants et des invalides de guerre, d'un certain nombre de pays (y compris des états de l'est et du tiers-monde). Le siège est à Paris.

La connaissance, que les événements graves de guerre peuvent avoir des conséquences sur la santé mentale, n'est pas nouvelle. Depuis la fin de la Deuxième Guerre Mondiale, on est aussi devenu concient que des événements graves liés aux autres domaines de la vie, comme la violence, les accidents industriels, les viols etc., peuvent causer des troubles psychiques. La théorie de stress a ainsi trouvé une nouvelle et plus large application.

A partir de 1980, on trouve Troubles post-traumatiques du stress (Post-Traumatic Stress Disorders-PTSD) comme une propre unité diagnostique dans la classification de DSM III.

Que sont les troubles post-traumatiques du stress?

Je cite le professeur Weisæth, médecin chef du WISMIC, qui explique ainsi son point-vue:

"A la suite d'un ou de plusieurs traumatismes graves, tout type de problème psycho-social ou de maladie psychiatrique peut se développer. En temps de guerre aussi bien qu'en période de paix, bien des traumatismes sont d'une nature composite, comprenant à la fois des aspects physiques et psychologiques.

Les combats, les actes de terrorisme, les prises d'otages, l'emprisonnement dans des camps de concentration, la torture, les bombardements de la population civile, constituent des exemples du vécu qui menace la vie physique de la personne elle-même et qui provoque la perte d'êtres chers. Les enfants sont particulièrement vulnérables à la disparition des parents, aussi bien par la mort que par la séparation géographique qui est fréquente en temps de guerre.

La guerre moderne est devenue de plus en plus destructrice et meurtrière physiquement, et traumatisante mentalement. A notre époque, la guerre fait des victimes parmi la population civile sensiblement de la même manière que parmi le personnel militaire. De plus, il n'y a plus de distinction nette entre la guerre et la paix. Les forces militaires de maintien de la paix des Nations Unis sont engagées dans des "conflits ni guerre, ni paix". Dans le terrorisme moderne, les civils deviennent les victimes d'une

agression qui est essentiellement dirigée, comme dans la guerre, contre l'Etat.

L'intensité de la menace de mort qui constitue une partie essentielle de toutes les expériences vécues de grands dangers, durant la paix ou la guerre, produit pratiquement chez tout le monde, un certain degré de réactions post-traumatiques du stress. Dans certaines conditions, il peut en résulter une affection longue, durable et quelquefois chronique. Or, au cours du siècle passé, de nombreux termes de diagnostic ont été utilisés pour désigner cette condition : le choc provoqué par les obus ("shell shock"), la névrose de la guerre ("war neurosis"), la névrose traumatique cardiaque du soldat. Aujourd'hui, le terme de diagnostic utilisé de préférence est le trouble post-traumatique du stress ("Post-Traumatic Stress Disorders-PTSD"). Ce terme a pour avantage de permettre de relier d'une part en temps de guerre les séquelles psychiques constatées chez des civils et chez le personnel militaire et, d'autre part, de faire ressortir l'analogie éventuelle entre le trouble post-traumatique du stress (PTSD) du temps de guerre et celui du temps de paix.

Les troubles post-traumatiques du stress sont essentiellement des états d'anxiété causés par l'angoisse de la situation traumatique. Si l'exposition au traumatisme a été de longue durée et la nature du traumatisme extrême, comme par exemple le vécu des camps de concentration, le traumatisme peut être identifié à lui seul comme l'agent causal de l'affection résultante."

Toutes ces nouvelles connaissances ont presque dégagé une explosion de demandes d'information sur ce sujet. La Fédération Mondiale des Anciens Combattants a aussi fortement ressenti ces demandes par ses associations, en particulier celles du tiers-monde.

La Fédération Mondiale des Anciens Combattants a exprimé le souhait de transmettre toute connaissance accessible à la nouvelle génération des médecins, qui, aujourd'hui, ont, et dans le futur vont avoir la responsabilité d'examiner, de soigner et de réhabiliter les anciens combattants et les invalides de guerre. Une question importante sera d'évaluer si il y a un rapport entre l'invalidité et les événements de la guerre vécus.

En 1984 les premiers pas ont été pris pour créer un centre d'information, et en 1987-88 la création de WISMIC est devenue une réalité. Le centre en est établi, au Département de psychiatrie des catastrophes, à l'Université d'Oslo.

Si Oslo a été choisi comme siège de WISMIC, il y a pour cela plusieurs raisons:

Il y a en Norvège des traditions dans ce domaine : des études psychiatriques des victimes ont commencé au cours des années 50. Ces travaux sont encore aujourd'hui uniques dans leur genre.

La question principale à laquelle on cherchait à trouver une réponse, était la suivante : quels sont les effets à long terme du stress extrême lié à la guerre, sur les différentes populations civiles, comme les réfugiés, les survivants des camps de concentration et les marins de guerre.

Les travaux les plus connus sont les suivants :

- Eitinger L. Psykiatriske undersøkelser blant flyktninger i Norge. Oslo: Univesitetsforlaget, 1958. (English summary).  
(Examens psychiatriques parmi les réfugiés en Norvège.)

Le Professeur Eitinger a personnellement examiné tous les réfugiés qui sont arrivés en Norvège entre 1940 et 1955 et qui ont été en contact avec une institution psychiatrique. La morbidité psychiatrique était 5 à 10 fois plus élevée que dans une population norvégienne équivalente.

- Strøm A, ed. Norwegian concentration camp survivors. Oslo: Universitetsforlaget, 1968. (Etude faite par Le Conseil des Médecins Norvégiens de 1957).

La plupart des anciens prisonniers des camps de concentration se sont rétabli assez vite après leur libération durant le printemps de 1945. Leur guérison a été en partie causée par l'enthousiasme d'avoir échappé au "royaume de la mort". Leurs médecins ont partagé le même optimisme. Cet état idyllique n'a pas duré. Dans les années qui ont suivies, des rapports de plus en plus fréquents, ont décrit des maladies chez les anciens prisonniers : troubles nerveux combinés avec le syndrome de camps de concentration (cc), qui inclu plusieurs symptômes, entre autres celui de vieillissement prématuré.

En Norvège "Le Conseil des Médecins Norvégiens de 1957" a fait une étude approfondie et étendue sur les anciens prisonniers des camps de concentration. Ils ont pu prouvé que le syndrome de cc est causé par la combinaison de torture, de traumatisme crânien, de perte du poids du corps et d'anxiété grave et de longue durée. Jusque-là, l'opinion avait pensé que, puisque l'ex-prisonnier s'était si vite rétabli, et avait été au travail pendant plusieurs années sans symptômes, les troubles qui apparaissaient maintenant n'avaient rien à voir avec les événements de la guerre. L'existence d'une "periode latente" était maintenant reconnue.

- Eitinger L. Concentration camp survivors in Norway and Israel. Oslo: Universitetsforlaget, 1964.

Etude comparée entre les survivant des camps de concentration en Norvège et en Israel. Cette étude est unique.

- Eitinger L, Strøm A. Mortality and morbidity after excessive stress: a follow-up investigation of Norwegian concentration camp survivors. Oslo: Universitetsforlaget, 1973.

En Norvège, il a été possible de constituer un registre complet et contrôlé, de tous les citoyens qui ont été déportés pendant la guerre. Car en effet, nous avons un unique registre pour tout l'ensemble des mortalités, des maladies et des hospitalisations de notre pays. Pour ces raisons, la Norvège est le seul pays où on a pu faire des études sur la mortalité d'après-guerre et la morbidité des prisonniers de guerre, et de les comparer avec des groupes de control adéquates.

Même 30 années après la guerre, les anciens prisonniers des camps de concentration ont une mortalité plus élevée que la population générale.

- Askevold F. War sailor syndrome. Psychother Psychosom 1976-77;27:133-8.

Un tiers des marins norvégiens qui ont survécu à leur service dans la marine marchande durant la deuxième guerre mondiale, étaient invalides par

suite de leurs expériences de guerre. Quelques uns les ont subis à partir des années 70. Les symptômes de marins de guerre ressemblent beaucoup aux symptômes de camps de concentration, et à ceux des troubles post-traumatiques du stress.

Un deuxième élément important pour choisir Oslo comme siège de WISMIC est celui-ci : La recherche et le travail de psychiatrie clinique déjà faits par le professeur Weisæth et ses collaborateurs au Département de psychiatrie des catastrophes. Ceux-ci ont une position de leader dans le monde sur le domaine des catastrophes et des événements traumatiques, aussi bien en temps de guerre qu'en temps de paix.

Le but de leurs travaux est : comment prévenir et éviter les troubles post-traumatiques du stress chez ceux qui ont été exposés, et d'aider par leurs connaissances ceux qui sont chargés d'organiser et de donner de l'aide aux victimes.

En conséquence, le personnel du Département de psychiatrie des catastrophes est souvent interrogé pour donner leur avis, pour des consultations, et pour superviser des unités locales de la Santé publique. Ils sont aussi préparés à aller sur "la scène du catastrophe" pour aider à organiser le personnel d'aide de secours.

En Norvège, il y a eu ces dernières années un certain nombre d'accidents graves où l'équipe du Département de psychiatrie a joué un rôle actif dans l'organisation de l'aide aux victimes, aux parents proches, et aux sauveteurs et équipes de premiers secours.

Les activités du personnel du Département de psychiatrie des catastrophes ont donné de bons résultats reconnus par tout le monde, pour la prévention des troubles post-traumatiques du stress de ces victimes.

Un troisième élément pour choisir Oslo a été la collaboration avec l'Université d'Oslo qui s'est intéressé à la recherche et la collection d'informations.

Enfin, l'Association des Invalides de Guerre en Norvège (Krigsinvalidforbundet) a promis de soutenir WISMIC, par tous ses moyens.

#### Les directives pour WISMIC sont les suivantes:

- Le Centre est un organisme indépendant et autonome établi par la Fédération mondiale des anciens combattants en coopération avec l'Université d'Oslo.

- Le Centre a pour objet: de réunir, analyser et diffuser l'information médicale sur les troubles post-traumatiques du stress (post-traumatic stress disorders-PTSD) à court, moyen et long terme et sur les autres problèmes médico-sociaux, concernant les expériences vécues de stress durant la guerre ou lors de situations graves de stress d'un caractère similaire, en y incluant les aspects particuliers concernant les femmes et les enfants. Cette information porte sur les points suivants :

- Diagnostic,
- Etiologie,
- Traitement.
- Réadaptation, et
- Prévention.

Le centre a pour objet aussi de susciter et d'encourager les recherches appropriées dans ces domaines.

- L'activité scientifique du Centre est orientée par le Conseil médical consultatif.

Le premier but de WISMIC a été d'établir une bibliographie aussi complète que possible sur les conséquences des traumatismes graves de guerre ou de

paix. Une première liste a été établie, mais doit être révisée critiquement et complétée par diverses références et annotations.

On demande aux associations membres d'envoyer à WISMIC des études qui n'ont pas fait l'objet de publications. Nous commençons à en recevoir quelques unes, et le professeur Eitinger est en train de les lire et d'en faire des résumés.

Les langues utilisées à WISMIC sont jusqu'à présent l'anglais, le français et l'allemand.

Nous devons avoir très prochainement un micro-ordinateur qui nous permettra de collectionner toutes les données disponibles pour réunir les informations nécessaires à l'établissement d'une base de données, enfin de pouvoir répondre à toute demande concernant ces problèmes. Nous établirons une liste de mots-clés propre à nos besoins. Ces mots-clés seront proches de ceux de "Medical Subject Headings" de "National Library of Medicine" (la Bibliothèque Nationale de Médecine aux États Unis).



THE CURRENT AWARENESS TOPICS SERVICES (CATS) DATABASE

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Abstract

A new database produced by the Medical Information Service of the British Library covering the fields of complementary/alternative medicine, occupational therapy, physiotherapy, rehabilitation and terminal care is described. The database uses a hierarchical vocabulary based on Medical Subject Headings (MeSH) but extended to cover these particular subject areas in greater detail. It also uses a limited set of subheadings to qualify the descriptors, following the pattern of MEDLINE indexing.

The CATS database is mounted on a Microvax 2000 computer using CAIRS (Computer Assisted Information Retrieval Systems) software, and holds 20,000 records from 1985 onwards. Features of the indexing and retrieval system are described, including the resolution of space problems inherent in the use of MeSH descriptor "trees" as a hierarchical retrieval feature within the hardware limitations of a small computer system.

The CATS database is used to produce the hard copy publications Complementary Medicine Index, Occupational Therapy Index, Physiotherapy Index and Terminal Care Index using desk-top publishing methods to ensure rapid publication within one month of the receipt of journal issues at the British Library. SDI and retrospective searches of the database are available, giving unique coverage of subject areas that are poorly served by MEDLINE and other available databases.

## Introduction

Although the core literature of medicine is covered by the major indexes and abstracts like Index Medicus and Excerpta Medica, they are not fully comprehensive in any particular subject area. Index Medicus covers around 3,000 journals, and Excerpta Medica a similar number (although not the same set). It has been estimated that over 20,000 biomedical serials are currently published of which around 10,000 carry substantive articles. Despite the existence of more specialised abstracting and indexing services like Cumulative Index to Nursing and Allied Health Literature (CINAHL) there are many gaps in journal coverage, particularly in areas on the fringe of clinical medicine. So there is obviously a lack of easy access to a substantial amount of literature.

Two areas which came to our attention were complementary or alternative medicine (which includes acupuncture, homoeopathy, chiropractic, osteopathy, psychosomatic therapies, diet therapies, herbalism and other unconventional treatments), and physiotherapy. We began to index the English language journals of complementary medicine and physiotherapy in late 1985, creating a database of citations on an IBM AT microcomputer in order to publish the titles now known as Complementary Medicine Index, and Physiotherapy Index. In the autumn of 1986 we added the title Occupational Therapy Index following approaches from occupational therapists in the UK. This year we have added a further title Terminal Care Index, covering the literature of hospice and palliative care, death and dying, bereavement and counselling. We call this series of bibliographic indexes Current Awareness Topics Services or CATS, and the database from which we generate the indexes the CATS database.

## Development of the CATS database

The Medical Information Service of the British Library is one of the foreign centres contributing indexing to Index Medicus and the MEDLINE database. We wished to keep in line with the general structure and principles of MEDLINE indexing for our own database. However, there are obvious problems of machine size limitation in trying to transfer the hierarchical thesaurus Medical Subject Headings (MeSH) in its entirety with 16,000 descriptors and 70 subheadings on to a microcomputer with limited memory. In practice, most of MeSH is redundant for the areas we are indexing for the CATS database, but there are other areas where the existing MeSH descriptors are inadequate for various reasons.

In general we have used the Medical Subject Headings (MeSH) descriptors we require in their original form, except that we have frequently de-inverted headings due to system limitations in our original MIRABILIS software. The prime consideration in the selection and form of headings is their usefulness to end users of the system.

Additional headings have been added to the vocabulary for the subject areas in which we are interested for three reasons: (a) literary warrant, that is, the concepts keep appearing in the literature, (b) requests from the profession for particular concepts to be indexed where no suitable MeSH descriptor exists, and (c) structural headings to facilitate the grouping of headings into hierarchies.

#### Levels of indexing

Within the CATS database we have three indexing fields: entry terms, keywords and minor terms. Entry terms are used to create the subject keyword indexes. The vocabulary for entry terms is semi-controlled: we use MeSH headings wherever possible, but also allow more specific headings by literary warrant, for example, specific treatments in physiotherapy, specific plant names in herbalism. We keep an authority list of previously used terms to control indexing in this field and the number of entry terms is currently around 5,000.

The keyword field is rigorously controlled. All headings are checked by the computer against the CATS thesaurus and rejected if not found, or if the spelling is incorrect. Entry terms are mapped manually to the nearest thesaurus heading or combination of headings. The most commonly used entry terms are duplicated by keyword headings, and this is not surprising since frequency of use is the main reason for creating additions to the thesaurus.

(Figure: part of the thesaurus, showing the physiotherapy methods tree)

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E METHODS AND EQUIPMENT
.PHYSIOTHERAPY METHODS
..COLD THERAPY
..ELECTROTHERAPY
...ELECTROACUPUNCTURE
...TENS
..EXERCISE THERAPY
..HEAT THERAPY
...SHORT WAVE DIATHERMY
..HYDROTHERAPY
..INTERFERENTIAL THERAPY
..MANIPULATION
...PERIPHERAL MANIPULATION
..VERTEBRAL MANIPULATION
..MASSAGE
..MOBILISATION
...PERIPHERAL MOBILISATION
...VERTEBRAL MOBILISATION
..TRACTION
..ULTRASONIC THERAPY
..VIBRATION

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The thesaurus contains 612 headings organized according to the broad categories of MeSH descriptors: A - anatomy, B - organisms, C - diseases, and so on. Within each of these categories the headings are arranged in hierarchies based on MeSH subcategories and extended down to seven levels of specificity, although the arrangement at each level is alphabetical rather than alphabetical within the numerical subcategories of the MeSH trees.

Some of the MeSH trees are represented only by the top headings in the hierarchies, for example, the drug subcategories. Since the function of the hierarchies is to facilitate grouping headings together for searching, the extent and specificity of hierarchies within the trees is determined by their frequency of use. For example, none of the subject areas we index generates much use of drug headings, although when searching the database specific named drugs are retrievable at the entry term level, and groups of drugs at the top of tree level.

Keywords as well as entry terms represent the central concept or main points of the article. The third indexing field, the minor terms, is where we place coordinate headings and secondary concepts from the article. The minor terms are controlled through the thesaurus, and selected from the same list of permitted headings.

### Subheadings

The keywords and minor terms in the thesaurus can have subheadings applied to them. The CATS database has 22 subheadings rather than the 70 found in MeSH, but similar rules apply restricting the use of particular subheadings to appropriate categories, and with particular thesaurus headings.

The CATS database has three unique subheadings not found in MeSH. "Biomechanics" is available to anatomical headings, and the subheadings "physiotherapy" and "occupational therapy" may be used with disease headings in categories C (diseases) and F (psychiatry and psychology) for treatments given by physiotherapists or occupational therapists.

Some of the MeSH subheadings have been condensed together for the CATS database. The subheading "physiology" is used with categories A, C and D for function in both normal and disease states. As you know, MeSH has two subheadings "physiology" for normal function and "physiopathology" for function in disease. A similar economy has been made with the use of the subheading "anatomy" to cover the concepts indexed by the MeSH subheadings "anatomy & histology", "cytology", "pathology", and "ultrastructure". Restricting the subheadings in this way was necessary to limit the proliferation of heading/subheading combinations in the thesaurus hierarchies, which has implications for the

memory requirement of the thesaurus within the microcomputer.

#### Software and hardware

As I mentioned earlier, the original CATS database was mounted on an IBM AT microcomputer with a 20 Megabyte hard disk, using MIRABILIS, a commercial software package supplied by the University of London, which we bought for £300. The software is quite flexible, allowing individual database design and structure within limitations, and has excellent retrieval features. However it does suffer from being limited to a maximum of 15 fields in any record and a limit of 1024 postings for any index term. The postings limit meant that we had to create a new file for each year's records to avoid running over the limit. Also, due to the nature of the MIRABILIS indexes we were not able to manipulate these as computer files in the production of author and subject indexes for the CATS bibliographies. One other disadvantage was that MIRABILIS does not have the facility to create an hierarchical thesaurus. We overcame this to some extent by having a tree number field, and allocating MeSH tree head numbers while indexing. This allowed us to mimic the use of "explosions" of headings in searching.

In May 1987 we bought MICROCAIRS software to upgrade the database on the IBM AT microcomputer. MICROCAIRS enabled us to create a structured hierarchical thesaurus which can be searched at any level of specificity, and allowed us to include an abstract field for each record, among other enhancements. The postings limit increased to 32,000 citations, removing that constraint. The one disadvantage was that the MICROCAIRS database programs used up a large amount of disk space, and we also began to have the problem of several people wishing to use the computer at the same time. Early in 1988 we began to consider whether we should buy larger disks to accommodate the growing database on the existing AT microcomputer, or whether to split the database between several machines either by date or by subject, or whether we should progress to a larger capacity, multi-user machine. We chose the last option and purchased a MicroVAX 2000 computer with four user terminals and a 160 Megabyte hard disk which we installed in May this year. The database has been growing steadily by around 650 citations each month, and now has 20,000 records from 1985 onwards.

#### Publishing the CATS bibliographies

The two functions of the database are to facilitate the publication of the CATS bibliographies and to provide both retrospective and SDI searches.

Our aim with regard to the CATS bibliographies is to index journals as soon as they are received at the

British Library Document Supply Centre, and to publish and send out copies of the bibliographies within two to three days of closing the computer file at the end of each month. This is a very rapid production cycle, which we feel is necessary for a current awareness publication.

The author and subject keyword indexes are generated automatically from the subset of citations stored and retrieved for each bibliography. The arrangement of the citations into sections within the text of each bibliography is also pre-encoded at the time of indexing. Master copies produced by the computer's laser printer are used to reproduce copies of the CATS bibliographies on a Kodak Ektaprint 235AF high volume photoduplicator. This copies, assembles and staples the issues (complete with covers), working at a rate of 80 page-copies per minute.

### Searching

The CATS database is searchable by author name, entry terms, thesaurus keywords at any level, by journal, and by textwords from titles of citations using the operators and "&", or "+", and not "#", and brackets "()". The thesaurus checking device can be switched on or off, allowing all or only selected indexing fields to be searched, and truncation is available. SDI profiles can be stored and run automatically each month, or at any desired frequency.

Output formats are user defined. We have stored various options including short bibliographic citation, short citation plus keywords, and citation plus keywords and/or abstract, as well as the full record.

We have begun adding abstracts to the database for selected citations in complementary medicine. These are supplied to us by the Research Council for Complementary Medicine, and are added to the database retrospectively after we have listed the citation in Complementary Medicine Index. We have over 300 abstracts stored on the database at present, with a further 200 awaiting keyboarding.

(Figure: a sample record)

0011960

Murphy JJ, Heptinstall S, Mitchell JR  
 Randomised double-blind placebo-controlled trial of  
 feverfew in migraine prevention  
 Lancet 1988 July 23;2(8604):189-92  
 Tanacetum parthenium, migraine, clinical trials, double  
 blind method, random allocation  
 HEADACHE - ther, HERBALISM  
 RESEARCH DESIGN

The use of feverfew (*Tanacetum parthenium*) for migrain  
 prophylaxis was assessed in a randomised, double-blind,  
 placebo-controlled crossover study. After a one-month  
 single-blind, placebo run-in, 72 volunteers were randomly  
 allocated to receive either one capsule of dried feverfew  
 leaves a day or matching placebo for four months and then  
 transferred to the other treatment limb for a further  
 four months. Frequency and severity of attacks were  
 determined from diary cards which were issued every two  
 months; efficacy of each treatment was also assessed by  
 visual analogue scores. 60 patients completed the study  
 and full information was available in 59. Treatment with  
 feverfew was associated with a reduction in the mean  
 number and severity of attacks in each two-month period,  
 and in the degree of vomiting; duration of individual  
 attacks was unaltered. Visual analogue scores also  
 indicated a significant improvement with feverfew. There  
 were no serious side-effects.

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Up to the present time we have been concerned with  
 indexing mainly English language articles, although we  
 have begun taking articles in French and German,  
 particularly in the area of complementary medicine.  
 Unlike Index Medicus we do not translate the original  
 title into English, although the indexing terms are of  
 course still in English.

#### Conclusion

It is likely that the CATS program will expand and take  
 on new subject areas, but people need to be made aware of  
 what we are doing already, particularly our colleagues in  
 Europe. Complementary Medicine Index, Physiotherapy  
 Index, Occupational Therapy Index and Terminal Care Index  
 have been created with the help and encouragement of the  
 professions to give health practitioners in these areas  
 access to their professional literature. We would like to  
 extend these benefits to health workers in these fields  
 in Europe. We would welcome suggestions for journals we  
 should include in the bibliographies and on the database.  
 We would also encourage you to make your  
 physiotherapists, occupational therapists, complementary  
 medicine practitioners and providers of palliative care  
 in hospices and hospitals aware that you can provide  
 computer searches and bibliographies of their  
 professional literature.

## TOXIBASE: UNE BASE DE DONNEES SUR LES PHARMACODEPENDANCES

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### Abstract

Toxibase is a data base devoted not only to conventional drugs as heroin or marijuana, but also to all products inducing a physical or psychic dependence. Its aim is to cover all the facets of drug addiction; consequently it covers medical literature as the sociological one. With the support of french Health Ministry, the data base is maintained by a network of 6 Centers working in close cooperation: the abstracts of the literature cited in Toxibase are written by the members of these Centers, physicians or psychologists, actively working in the field of pharmacodependence. Toxibase can be questioned in french or english. Cooperation with some european countries is in way of implementation.

Une nouvelle base de données, TOXIBASE, vient prendre place auprès des quelques 3.800 bases de données actuellement accessibles au public et parmi la centaine, environ, intéressants ceux qui, de près ou de loin, sont concernés par l'information dans le domaine de la médecine et de la santé publique.

### I. Domaine couvert

Toxibase a l'ambition de couvrir le domaine des pharmacodépendances.

On peut définir la pharmacodépendance comme la dépendance physique et/ou psychologique à des produits licites ou illicites. C'est dire que cette banque de données doit couvrir tout le domaine de ce qu'on appelle couramment la drogue, mais aussi bien la dépendance que l'on voit d'ailleurs croître actuellement, à l'égard de médicaments classiques, tels que les tranquillisants ou certains produits hormonaux, à des produits non médicamenteux, tels que café, thé, ..... colle... L'alcool et le tabac qui rentrent dans cette dernière catégorie ne sont traités que de façon secondaire: en effet, de nombreux services d'informations, entièrement et uniquement consacrés à ces deux produits, existent dans la majorité des pays; il ne nous a donc pas paru opportun de multiplier les duplications.

### II. Raisons et objectifs de la création de TOXIBASE

Mais pourquoi investir financièrement et intellectuellement dans la création d'un nouvel outil d'information? Des informations sur la drogue n'existent-elles pas dans MEDLINE ou dans EMBASE, outils fréquemment interrogés, et par conséquent bien maîtrisés, par tous les professionnels de l'information médicale?

C'est que le problème de la toxicomanie n'est pas intégralement identifiable à un problème strictement médical: il a des composantes psychiatriques, psychologiques, sociales, juridiques, économiques, de la plus haute importance et qui lui sont propres. Le résultat en est que celui qui désire être au courant d'un thème, qu'il soit médecin généraliste, ou psychologue, doit interroger de nombreuses bases de données s'il veut réellement couvrir toutes les facettes de son problème.



En se limitant aux banques de données les plus usuelles, on peut schématiser la situation ainsi:

### TOXICOMANIES

Aspect Médical

MEDLINE  
EMBASE  
PASCAL  
-----

Aspect Biologique

BIOSIS  
EMBASE  
DERWENT  
-----

Aspect Psychologique

PSYCHOLOGICAL ABSTR.  
FRANCIS  
-----

Aspect Sociologique

SOCIOLOGICAL ABSTR.  
DRUGINFO  
-----

Aspect Juridique

LEXIS  
JURIDIAL  
-----

Une telle situation est éminemment dissuasive pour un utilisateur: en effet, ces banques de données ne sont pas toutes regroupées sur un même serveur, mais sont implantées sur des serveurs différents; ainsi, l'utilisateur aura non seulement à changer la formulation de sa question en fonction des diverses banques interrogées et de leurs thésaurus ou lexicques respectifs, mais encore il devra changer de langage de commande suivant le serveur interrogé.

Cette difficulté d'accès à l'information, ce besoin, a déjà été exprimé à plusieurs reprises dans des réunions françaises et européennes (ROME, 1986; LYON, 1987), lors de colloques regroupant thérapeutes, chercheurs, travailleurs sociaux, magistrats, enseignants. D'où l'idée de créer un outil documentaire de haut niveau, centré sur l'approche interdisciplinaire des problèmes de toxicomanies.

Si, certes, le premier objectif de Toxibase est d'améliorer le niveau des chercheurs et des intervenants en toxicomanie en leur rendant aisé l'accès à l'information professionnelle qui leur est nécessaire, cette simple facilitation n'était pas suffisante; on eût pu en effet concevoir une telle banque de donnée fabriquée uniquement à partir d'éléments extraits des banques citées plus haut et reformatées sous un format commun. Mais l'étude des diverses banques de données existantes nous a montré la mauvaise représentation des travaux européens, en particulier quand ces travaux ne sont pas en langue anglaise. Or, facteur aggravant, de nombreux travaux, de première importance, effectués dans le secteur des toxicomanies, ne suivent pas les circuits classiques de production et de diffusion, ne sont pas publiés dans les revues scientifiques: ce sont par exemple, des études épidémiologiques réalisées à la demande d'une ville ou d'un ministère, des études psychologiques demandées par des autorités judiciaires, ... De tels documents sont écrits dans la langue de leur pays d'origine, et non en anglais et de plus sont difficiles à obtenir (quand déjà on connaît leur existence!) si l'on n'a pas un réseau de collecte organisé à cet effet.

La littérature grise ayant une importance particulière dans le secteur de la drogue et étant de plus écrite dans les diverses langues nationales, c'est dire que les banques de données traditionnelles présentent de graves lacunes, en particulier quand à la littérature des divers pays européens.

Le deuxième objectif de TOXIBASE est donc d'avoir non

seulement la littérature parue dans la presse scientifique internationale à dominante américaine et de langue anglaise, mais aussi d'avoir une bonne représentation de l'activité des divers pays européens et ainsi de mieux faire connaître la production scientifique européenne.

On espère ainsi mettre à disposition et diffuser les informations de tout type nécessaires à:

- la prévention
- le traitement
- la formation
- la recherche
- l'information

dans le domaine des toxicomanies.

### III. TOXIBASE: Pour Qui?

Etant donné les objectifs de Toxibase énoncés plus haut, cette exigence d'interdisciplinarité, les utilisateurs visés par Toxibase sont tous ceux qui à un titre quelconque interviennent dans le domaine des toxicomanies: ils sont donc nombreux et de nature très diverse, ce qui a par ailleurs rendu plus complexe la réalisation technique de Toxibase. Les catégories les plus importantes d'utilisateurs concernés sont les:

- Médecins généralistes
- Psychiatres
- Psychologues
- Travailleurs sociaux
- Enseignants
- Associations de parents
- Magistrats et juristes
- Sociologues
- -----

### IV. Modalités de réalisation

#### IV. 1. Structure administrative.

TOXIBASE est une association sans but lucratif dont la budget est financé par le Ministère de la Santé (France). Cette association repose sur un réseau de six Centres, tous déjà actifs à des titres divers dans la prévention, le traitement,..... et la documentation en toxicomanie.

Ce fonctionnement en réseau, plus lourd et plus difficile à gérer qu'une organisation centralisée a été retenu pour différentes raisons:

- le désir d'assurer une meilleure articulation avec la recherche, la clinique...

- la nécessité d'une décentralisation de l'analyse du document primaire pour bénéficier des spécificités des divers membres du réseau et mieux assurer ainsi la multidisciplinarité recherchée;

- la possibilité d'avoir un appui sur les structures documentaires existant dans les six centres coopérant;

- l'existence de relais d'interrogation répartis sur un territoire.

Pour mener à bien la gestion, définir et modifier la politique de la banque de données, l'Association Toxibase est assistée par un Conseil Scientifique et Ethique et possède un réseau de correspondants scientifiques représentant toutes les microdisciplines impliquées dans le domaine des toxicomanies.

#### IV. 2 Principes de réalisation

TOXIBASE, vu les objectifs énoncés plus haut, est donc une base de données horizontale, multidisciplinaire. Elle est formée de plusieurs sous-bases:

- 1 base de données bibliographique
- 1 base sur les recherches en cours
- 1 base sur le matériel didactique et scientifique
- 1 base sur les textes légaux et les jurisprudences

A l'heure actuelle, seule la base bibliographique est accessible au public; il ne sera donc fait ici mention que de cette base.

Réaliser une banque de données satisfaisant les besoins de publics fort différents, tout en répondant à leur exigences de qualité n'était pas chose facile.

Le premier problème à résoudre, et non le moindre, était un problème terminologique: comment mettre d'accord sur l'acception précise d'un terme des psychiatres d'écoles philosophiques différentes, des chercheurs en toxicologie, et des magistrats?! Il est vite apparu que l'accord, impossible à obtenir si l'on descendait à un niveau trop fin de spécialisation, pouvait être réalisé si l'on n'affinait pas outre mesure le langage de description choisi.

Aussi, la solution suivante a-t-elle été adoptée:

- un lexique de descripteurs en nombre relativement restreint, environ 800, parfaitement non ambigu pour tous (ce lexique étant transformé en thesaurus au cours de 1989), utilisé pour l'indexation de la littérature;

- un résumé, utilisant, lui, une terminologie hautement spécifique et respectant, si besoin en est, les "jargons" propres aux différentes écoles de pensée.

Cette méthode permet d'allier l'univocité nécessaire à une base de données multidisciplinaire à la spécialisation indispensable dans chacune des disciplines concernées.

Pour arriver à cette fin, on a cherché à faire un partage du travail entre "scientifiques" et documentalistes au mieux de leurs compétences respectives. Les "scientifiques" sont chargés de résumer la littérature à analyser, ainsi que de la traduction éventuelle des titres, de l'indexation et de l'indication d'un certain nombre d'indicateurs de contenu (voir ci-dessous); seuls les documents correspondant à leur domaine d'activité professionnelle leur sont confiés. Aussi des directives trop strictes ne leur sont point données: analysant la littérature dans un secteur qui relève de leur pratique quotidienne, ils peuvent juger en connaissance de cause de l'importance à donner à un résumé: rien, deux lignes ou vingt lignes.

Les documentalistes sont chargées de vérifier et au besoin de modifier l'indexation, ainsi que de toutes les opérations formelles, catalogage, caractéristiques diverses..

Afin de répondre à notre objectif, fournir le nombre le plus faible possible de documents, mais des documents réellement pertinents pour l'utilisateur, Toxibase présente indépendamment des données classiques, telles que auteurs, source, langue, affiliation des auteurs,..... des caractéristiques propres. Les deux plus importantes sont "Nature du public" et "Nature de l'étude".

Après une étude faite sur la nature de ceux qui s'adressent actuellement pour information auprès des membres du réseau, un certain nombre de grandes catégories sont apparues; il nous a paru intéressant de noter lors de l'analyse de la littérature, si tel ou tel document pouvait particulièrement répondre à une catégorie définie: en effet, une question posée avec des descripteurs identiques, fournira des réponses dont les unes seront acceptables par un chercheur, et d'autres par un médecin généralistes. Donc, si l'on se trouve en face d'un article bien ciblé, pourquoi ne pas noter sa (ou ses) catégories d'utilisateurs potentiels: les utilisateurs pressés ou très orientés joueront de ce critère de sélection et obtiendront ainsi un lot d'informations immédiatement

utilisables. On a ainsi identifié les catégories suivantes:

- jeunes scolarisés
- enseignants du secondaire
- chercheurs et enseignants universitaires
- parents et associations de parents
- travailleurs sociaux-personnel de santé
- médecins praticiens
- justice-magistrature
- tous publics

De même, un examen de la structure de la littérature nous a permis d'y introduire une caractérisation sur la nature du travail, là encore afin de mieux cibler les réponses et de diminuer le nombre de documents fournis:

- expérimentation sur animal ou in vitro
- étude théorique
- étude sur un très faible nombre de cas
- étude sur de très nombreux cas avec analyse statistique
- article de synthèse
- généralités

Dans un but d'accès international, tous les titres des documents analysés sont présents et interrogeables en français et en anglais. Le lexique des descripteurs a été traduit en anglais afin qu'on puisse interroger (et indexer) en anglais comme en français. D'autre part, des accords sont en cours avec divers organismes européens et sud-américains pour obtenir les documents primaires produits par leur pays, Toxibase mettant bien évidemment déjà en mémoire la production française et les périodiques de classe internationale. Dès maintenant, de nombreux documents espagnols et hollandais ont pu être enregistrés.

#### IV.3 Organisation technique

Assurer la cohérence d'un système d'information fonctionnant en réseau est difficile. Aussi l'organisation suivante a-t-elle été mise place: les six Centres coopérant ont chacun un responsable pour Toxibase; celui-ci coordonne toute l'activité des analystes et des documentalistes relevant de son Centre, choisit dans la littérature les articles à analyser, il est responsable de la qualité technique et intellectuelle du travail fait. L'ensemble des analyse est envoyé au Centre Coordonnateur de Toxibase situé à Lyon; ce dernier assure un deuxième contrôle au niveau formel et intellectuel; ce double contrôle a paru indispensable dans un secteur aussi sensible que la drogue et pour pallier les inconvénients inhérents à une analyse décentralisée.

Toute la suite des opérations se passe au Centre Coordonnateur. En effet ce Centre est équipé d'un Miniordinateur remplissant le rôle de serveur puisqu'il peut permettre jusqu'à 16 accès simultanés. Le logiciel choisi pour Toxibase est BRS en langage C. L'accès au serveur réservé jusqu'alors aux membres du réseau sera ouvert au public au premier trimestre 1989.

Bien évidemment la consultation de la base en ligne s'accompagne des services complémentaires classiques, profils, fourniture de photocopies, prêt, ... Il est à noter que, par principe, le Centre Coordonnateur possède tous les documents cités dans la base de données et peut donc en assurer la reproduction.

On espère avoir ainsi, avec ce premier volet de Toxibase, fait oeuvre utile en fournissant un outil de travail pour tous ceux qui interviennent dans le domaine des toxicomanies.

Concurrent session 7C  
Pharmaceutical information

Chair

E. Kjellander

SPECIALIZED INFORMATION IN THE FIELD OF HEALTH  
THE INFORMATION AND DOCUMENTATION CENTER IN A  
PHARMACEUTICAL INDUSTRY

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## 1 - INTRODUCTION. OBJECTIVES OF THIS PAPER

The specialized information, independently of the area of knowledge, is one of the springs of development of a country and the common denominator of the social and most economically developed societies.

In a less advanced country with scarce resources, the situation of technical and scientific delay can only be surpassed by an integrated resources management and treatment, and diffusion of knowledge generated by the research and development which are the necessary conditions for the innovation and progress not to become affected by a deficient formation and application of the available means.

In the scientific information field since the public administration policy is often slow in its definition, the implantation and co-ordination, it is extremely useful that the private institutions contribute, in an active way, to complement them and to eliminate gaps in critical areas. This procedure will also allow, in the domain of the biomedical sciences, to strengthen links between the medical class and the pharmaceutical industry.

Thus, in the present paper, after a brief approach of the meaning and importance of the scientific information in the health area, particularly in Portugal, we witness the objectives, organization and line of services offered by the Information and Documentation Centre (IDC) of the Smith Kline & French group in Lisbon, the re-structuration and activity of which are guided by the above mentioned concept. Finally, it is stressed the support given by the GALENO bibliographic database, slides service and videotec of that IDC to the information and post-formation activities, as well as its impact near the Portuguese medical community.

## 2 - THE PRESENT ROLE OF THE SPECIALIZED INFORMATION IN THE DOMAIN OF THE BIOMEDICAL SCIENCES. IMPORTANCE OF THE INFORMATION TECHNOLOGIES

The biomedical sciences, with special incidence in some areas of the medicine, are technologies that require a continuous formation, almost in terms of professional survival.

Such permanent update of knowledge is traditionally accomplished through several activities - congresses, symposia, workshops, courses of post-school formation and, daily, through the information obtained by means of periodical publications of the speciality.

But what information? Considering the bibliographic boom of

nowadays - as we know, only in the domain of the biomedicine, we estimate that two million articles are published per year - the selection of the documents to consult will have to be cautiously made.

In what concerns the reading selection, it appears in first place, the choice of original articles. These articles, resulting from planned researches, present, almost always, precise details which are fundamental to the clinical evaluation of the expresses case. Another wise procedure is to read only articles of clinical practice.

However, before any option regarding the kind of article to analyse, the safer methodology will be to resort to a good information service, where the users can define their own profile of interest and, periodically, receive the update bibliography references as well as the analytical summary of what was published in their area of study. To choose, from this list, if we are going to consult originals, editorials or other types of texts, is less exigent and dispersive and, on the other hand, safer.

To stress the importance of the specialized information results in a common place. Nevertheless, not all of us are aware of this evidence. In fact, talking at least of the Portuguese reality, we can say that the perception of the benefit of this bi-reciprocal relation

HEALTH TECHNICIAN  $\longleftrightarrow$  INFORMATION TECHNICIAN  
is not generalized yet. This is the essential binomial for the good development of the giant task of update and transfer knowledge.

There is, however, a lot to do in order to accomplish this mutual help through the articulation of initiatives and congregation of the means of public administration research, teaching and private industry entities.

The progress, unsuspectable a few years ago, which was made viable by the development of the telecommunications - for instance, the use of teletext and the access to databases - had a chock effect even to the most resigned and indifferent professional. However, in the presence of all those technologies, the information technician has even a more vital role, "the filter function", fundamental to those who want better information and not more information, and cannot by themselves, investigate and select the enormous variety available.

### 3 - INFORMATION AND DOCUMENTATION CENTRE (IDC) OF A PHARMACEUTICAL INDUSTRY. WITNESS OF A EXPERIENCE

#### 3.1 - BRIEF HISTORY OF THE IDC OF INSTITUTO LUSO-FÁRMACO

The library of the Instituto Luso-Fármaco has about three decades of existance. Its patrimony was mainly constituted by 320 periodic publications, some basic manuals and also by national and international legislation including E.E.C..

Until the middle of the 70's, the service accomplished the two main objectives of its existance:

- source of information directed to the several departments of the organism;
- image of quality near the medical community, through an open and free service to all who needed it.

During those two decades several generations of doctors, in different phases of formation and specialization has considered and disclosed the Library as the best source of medical bibliographic information of the country.

Nevertheless, the exponential growth of the articles published all over the world, allied with the wearing out caused by the lack of adequate technical and human resources, did not allow the articulation in terms of functionality and precision of research, the needs with traditional information methods of treatment followed until then.

During three years of impasse, concerning the solution to adopt, the consequences of a lesser operationality were felt - deterioration of the level of interest, both external and internal.

Upon the acquisition of Instituto Luso-Fármaco by Smith Kline & French, it was decided by the re-structuration of the Library equipping it with a microcomputer system, which, complemented with other structural and functional measures, would transform the "old library" into an efficient and dynamic information service, capable of recovering the image of past times and assuming full use of the new technologies.

### 3.2 - PHILOSOPHY AND METHODOLOGY FOLLOWED IN ITS RE-STRUCTURATION

The re-structuration of the service started with an important premise, assumed by all persons responsible, within the company - the new information system to be created, would also have a marketing mission to accomplish. It would be a kind of a "visiting card" outside the company, a presence worried about ethics and quality, the reflex of a mature industry with large experience and knowledge.

The definition of the methodology to follow had to obey to a logical trinomial:

DOCUMENTATION      →      TREATMENT      →      INFORMATION

After having collected all documents existing in the Library and before choosing the adequate way of treating those documents, it was necessary to decide precisely to whom the information to be produced was addressed.

Thus, in the internal plan, it was necessary to re-define, according to the new structure, the profile of the technicians of the several departments, who daily used the specialized information. The adjustments made were more in form than in content, since the drugs of the company kept on being based on three areas of Medicine - Cardiology, Gastroenterology and Central Nervous System.

Regarding the external user, the field of interest was multidisciplinary with diversified information needs - medical doctors, teachers and students from several schools, pharmacists, and health technicians. However, the requested themes coincided, in great percentage, with the privileged areas of the company, what was justifiable, due to the great number of documents existing in the mentioned specialized areas.

It is obvious that not all the existing documents in the library could be treated - 10 000 articles per year would not be adjusted to the restricted human resources - the above mention-



ed conditions advised to begin the re-structuration through the treatment of information in the most requested areas.

Once decided "what to handle", the next step was "how to handle". In terms of equipment, we have chosen a microcomputer with an adequate memory capacity and a software which allows, besides the current management of a library - lendings, acquisitions of publications, readers - the bibliographic research through the classical fields and the dissemination of digested information.

Within the phase "how to handle", special attention was paid to a last aspect, the last but not the least, the keywords concerning the indexation of documents.

The translation of the THESAURUS from the National Library of Medicine (MESH) into Portuguese language, executed by BIRENE, was being used by GTIS(\*), as the first basis of work, in the elaboration of a national language in the Health Area. Thus, it was logical to adopt the work already developed for the reality of the company, that is to say, to adjust and add it whenever necessary with the specific terms inherent to the specialized databases.

The permanent support given by the two specialized doctors, not only in the terminology but also in the consequent indexation of documents, was the guarantee that the work accomplished in this field was in accordance with the requirements of the future users.

### 3.3 - TARGETS PURSUED AND ALREADY ACHIEVED. IMPACT IN THE PORTUGUESE MEDICAL COMMUNITY

The treatment of information accomplished in the way previously pointed out, gave origin to the GALENO database. Its exploitation "gave back", almost immediately, the users who, in time, were standing back, and "conquered" many others, namely specialists in the strong domains of the library.

This way, the main objective was achieved, that is to say, the recovery of an impressive image created all over the several years, with the particularity of thus occurring in a special time for the Portuguese pharmaceutical industry - new governmental legislation and adhesion of our country to the E.E.C..

After the first year of activity, the universe of external and internal users exceeds three hundred health technicians per month. Moreover, a permanent service of dissemination of the information by user profile, conveyed to two hundred specialists and technicians in a post-formation phase, whose profile was previously defined in detail, was maintained.

The enthusiasm of the users through the easiness of research and the consult of documents contaminated the IDC staff itself, who, motivated by the echo caused by their work, redouble the energy, efficiency, and professionalism.

Thus, the necessary conditions for the development, by the IDC, as a bridge function between the industry and the medical class, to which it was supposed to give support, were created. This is an advantageous link for both parts, since it gathers professionals with a common objective - to improve health and, consequently,

(\*) Working group concerning the information on the Health's field

the quality of life of the citizens.

This gearing caused a dynamic situation, directly proportional not only to the real needs, but also to those expected in a near future. Thus, recently, we enlarge the accessible information field, with the organisation of a videotec and a slides service. They both ensure an important support to the actions of formation directed to specific groups of professionals who wish to update their knowledge in a certain area of the Medicine.

For example, a group of cardiologists of a hospital who want to make an update training course on post-infarction therapy, will find at IDC the most recent bibliography published in magazines of the speciality, videos with the most advanced techniques on PTCA or aortocoronary bypass, and will also have access to slides on specific aspects of a cardiac surgery.

The line of services given to the outside, has been potentialized in terms of marketing, in an action conjugated with the respective departments, as was expected. The resulting contacts originated an information exchange, monthly summarized by a statistical treatment, where the name and affiliation of the user as well as the theme of the study that motivated the search, are mentioned.

Therefore, we can say that the IDC concentrates its attention in multiple objectives, obviously integrated and all included in an aim:

- THE SPECIALIZED INFORMATION AT THE SERVICE OF THE MEDICAL CLASS

and in a principle:

- TO SUPPLY THE USER WITH THE RIGHT INFORMATION AT THE RIGHT TIME

## CONCEPTUAL ISSUES IN DESIGNING AND ORGANIZING A BIOMEDICAL DOCUMENTATION CENTRE (BDC). OUR EXPERIENCE AT ZAMBON GROUP BDC

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### Introduction

The term biomedical documentation center (BDC) means different things to the different departments of a pharmaceutical company. Broadly, it represents a reference point for the information requirements of individual departments in the development of internal projects and external relationships. It is now acknowledged that a BDC is an essential part of the information system of a pharmaceutical company whatever type of amount of information-related problems it has to face. The organizational structure of documentation units and documentary information flow, gathering and retrieval in industrial organizations has been widely debated (1,2,3). There is no ideal model: but the design of a new information service and its implementation must be based on the users' profile and environment and the size of the company so as to meet users' needs and tailor management of the service in terms of cost-efficacy. Such issues and the related problems challenge the information services of medium-sized companies where small units have to aim for high ideals and develop their own competitive structure. A BDC in a medium-sized pharmaceutical company has to follow three main potential directions: a) support to the marketing department to make available main and secondary literature concerning the major products sold by the company and the therapeutic areas in which they are involved; b) full involvement in the company's research projects so as to provide all necessary support for new or current projects; c) a mixture of a) and b). In all these situations it is clear that information becomes one source of profit especially for research-based pharmaceutical companies where information can improve decision-making, put into clearer focus biomedical problems, and allow strategic planning of investments and savings. The benefits, of information are always difficult to quantify. First there are no common scales of measurement and second, the impact of both the informative support potential and expression of a BDC depends on a combination of knowledge, creativity, skill, hard work and sometimes luck of the individual persons involved and of the whole company organization. Value of information, however, can only be studied through its use which means that economics of information cannot be described without studying its users and the effects of its use (4). The information specialist in charge of the organization and development of the BDC must establish clearly the unit's goals and resources. A complex range of multidisciplinary data, sources and technologies could be useful to meet the variety of requests and different levels of documentation needed by the company's strategic structure. Finally, how can one keep up with the permanent revolution in information production and technical support methods? Superior performance and sustained competitive edge are considered closely linked to an organization's ability to ingest and exploit state-of-the-art information technology. Nevertheless the cost-effective ratio of the new product must be carefully evaluated in relation to the critical mass of documents and information that a company uses and produces, the departments that may benefit from technical innovations, and the real

problem the new product might solve. New products are appearing at such a rate on the information market that this point calls for continuous updating and re-assessment by the information specialist. This report explains the background from which our BDC started, our rationale for choosing the course we have taken, the achievements and the challenges this project involves.

The BDC described is the information unit at the headquarters of an Italian medium-sized research-based pharmaceutical company that, after operating mainly on home territory for 82 years has now broadened its organisation to work on a fully multinational basis.

#### Users profile, background and products

The stimulus for setting up a BDC came from the corporate scientific department which has the greatest awareness of continuous innovative change and has the skill to apply new concepts in biology and medicine that may be therapeutically exploitable in the company's coherent research and development policy. Top management too realizes that accurate information gives a distinct competitive edge and improves research quality: they need documented data, comparisons, methods, profiles, information and opinions to provide reliable contexts and make decision making something more than guess-work. The Zambon Group BDC's original task was to build up such informative support through bibliographic searches and to collect the literature concerning the company's products so the information they contain could be re-used for future projects. The information specialist was left free to design and operate all systems necessary to achieve this informative support. The utility of accurate searches was rapidly appreciated by the other departments involved in a variety of biomedical projects. The users are staff who produce and read scientific reports, attend and help to organize international simposia and generally set and develop the scientific life of the company.

Shortly after the BDC was set up, stable relationships were established with the department dealing with post-marketing surveillance (PMS) of company products who needed the papers published on adverse reactions of particular classes of drugs, and with the toxicology laboratories. Monitoring of secondary and adverse effects of drugs reported in the literature represents about 2% of the total PMS reports that are sent to the FDA (5,6). Studying the toxicity of new chemical entities and monitoring of unintended or unwanted drug reactions and interactions experimentally and clinically is an important economic dimension of a medical problem for the company (7). This has become rapidly one of the BDC's institutional tasks. Zambon Group devotes 14% of its sales to research and development. The company has about 300 persons engaged in the management and development of research projects; one third of these researchers are physicians with a Ph.D. in medical or natural sciences. About 60 researchers use the BDC services; 80% of them are at company headquarters (80%) and 20% at subsidiaries. Among these, 90% are regular and 10% occasional users of the BDC. The composition of regular users is: top management, 32%; corporate management, 23%; operative scientific staff, 35%. The 10% of occasional users are mostly operative scientific staff.

The information specialist has an institutional mission and must maintain a competitive position. He must plan everything to fit the users of the BDC. If the profile of the end-user is, as in our case, that of persons needing intensive, accurate and up-to date information, the documentation specialist has to locate the sources of the appropriate information that

may be of primary importance for current awareness and for retrospective search, for targeted projects and in the therapeutic areas in which the company specialises. He must be familiar with the stages of the scientific publication cycle and the various parallel publications in which the information may appear (proceedings, technical reports, reviews, textbooks, company communications). From its beginning, the expected use of bibliographic searches was not simply a means to make available informal reviews in which a few explicit criteria or main descriptors were enough for assessing major literature. The results expected are normally obtained by a methodical approach: the bibliographic research must be pertinent and complete according to standards used to judge the scientific validity, usefulness and applicability of data retrieved. The goal is to retrieve studies that are methodologically superior or comparative. The documentalist must systematically analyze main concepts and secondary information received and study all the different aspects that may be useful as alternative entry points in fields such as pharmacology, toxicology and clinical studies. These may be analogies between drug mechanisms of action, references that may bring the scientific question up to its latest stage of development, different indexing approaches and limitations of thesauri, different levels of up-dating of databases, sources of abstracts of important international symposia. When existing data is old or scant, or results from local experience are controversial, researchers need broad, up-to-date information on specific topics in order to quantify probabilities and utility in the light of the most recent published results to preserve the logic of the decision process and to make optimal use of whatever data is available. Bearing in mind that bibliographic researches, SDI and literature monitoring were all exclusively for internal use, retrieval had to utilize strategies, formulations and databases that depending on the research field and the aims of the information request, would give really cost-effective results. This meant results that were the least costly by were also most effective not only in terms of monetary cost. When the nature of the question called for it, the strategy's criteria must aim for additional benefit worth the additional cost. These results have been achieved by close collaboration between the documentalist and the researcher who is aware that all the information at his disposal will be of value for the retrieval of deeper, related data later. This approach involves a differentiated use of available information resources and has generally led to qualitatively good outputs. The percentage of bibliographic researches not correctly requested (mostly aiming at too wide a subject without clear limits, details or exclusions) has been of 0.02%, and it is all attributable to the occasional users. The percentage of use of the most important databases are reported in table 1. These figures refer to 1987 and are representative of the normal use of the BDC during its six years of experience.

It is difficult, as we said earlier, to define the value of information but we use three indirect methods: a) a questionnaire seeking the information user's own assessment of the benefits of information acquisition through bibliographic researches (8), b) the trend of development of the service whose bibliographic research requests have doubled every three years; c) the projects in which the BDC has participated during its six years of experience (table 2). In these cases the scientific quality of the data retrieved and supplied are coupled with practical benefits.

Since the end-users are both researchers and managers who need a continuous flow of news a current "awareness" bulletin was issued on the topics of main interest, to aid their updating and creativity at an

Table 1. Main databases and the percentage of total connection time during 1987 by Zambon Group Biomedical Documentation Centre.

Base	Percentage of total connection time
Medline	32
ISI Databases	17
Biological Abstracts	13
Chemical Abstracts	13
Excerpta Medica	7
Scrip Online	5
Pharmaprojects	4.4
Sed-Base, Pharmaline, de Haen, Diogenes	0.7
Biobusiness, Current Biotechnology Abs.	0.7
Other	7.2

Table 2. Topics tackled by the Zambon Group Biomedical Documentation Centre.

Topic	Department requesting
-New product development	Research and Development
-New indications for old drugs	
-Drug evaluation (preclinical and clinical)	
-Laboratory test methods	
-Clinical pharmacology methods	
-Pharmaco-epidemiology methods	
-New pharmaceutical formulations or new drug delivery systems	Production
-Selection of published literature and internal reports	Regulatory Affairs
-Adverse drug reactions alerting and reporting (for drugs, excipients, substances belonging to the same classes)	
-Drug interactions alerting and reporting	
-Evaluation of new chemical entities	International marketing
-New therapeutic indications for marketed drugs	
-New indications of efficacy/safety of products already on the market	
-Innovative approach to drug delivery systems to reduce costs of hospital drug administration	
-The status of development of compounds with particular activity	
-Products under development by other companies	
-Licensing opportunities	

organizational level. The bulletin was rich enough to report abstracts of publications from journals and magazines in order to encourage browsing, to give serendipitous information, and sometimes a stimulus to creativity by providing the user with what is pertinent even though it may seem irrelevant to certain themes. A special section of the bulletin called "Annotated papers" is published whenever researchers submit comments on papers of particular interest for the company to the scientific department. The BDC plays a large part in the drawing up of correct bibliographic reference lists for papers to be submitted for publication. Industry has always to protect its internal data from competition, but an increasing number of papers is published in international journals and many abstracts are presented at scientific meetings.

Finally, depending on the profile of the regular users, their kind of requests and the size of the organizational structure, the information specialist must define his level of action as regards two points: the archive of product literature and the dissemination of new information. In the case of Zambon, it was decided to aim primarily at high quality dissemination of information, i.e. continuous literature monitoring, bibliographic researches, quarterly alerts, annotated papers, SDIs. The BDC's archive serves as a central archive collecting point for all papers of interest mentioned by the in-house bulletin to all departments. They are indexed (using Index Medicus' Thesaurus), archived and managed by a relatively easy to use software, dBase III, with electronic cards in which only essential keywords, significant data and important free terms are reported. At this stage of the Centre's development it was decided to limit the work of the BDC staff to these essential points. A more complex classification system of the literature calls for a different organizational structure and would probably duplicate the archives researchers build up for themselves on the job, coding the same information for future developments. During these years the software system has proved to be an extremely cheap and useful tool for generating bibliographic lists and selective sub-units using either Boolean logic or character string search facilities. About 15,000 documents are managed by our in-house electronic database. Electronic bibliographic up-dates produced by the BDC on the literature dealing with substances in development or products on the market are regularly distributed on floppy discs to all headquarters departments and to the subsidiaries on request. This dissemination system has produced a sort of local area network among BDC users.

### Conclusion

A biomedical documentation centre is an essential part of the information management network of any research institution. However a BDC in industry has characteristic that are partly very different and partly similar to teaching and research organisations, reflecting their different research goals (9). There are also differences and similarities among the information services of pharmaceutical companies themselves depending on their size and at what level they are located (headquarters or subsidiaries) since eachone has a different user profile and management problems. However the value of their products can usually measured similarly by the feed-back between the information unit and its users. That feed-back gives a picture of the needs, studies in progress, projects to be developed and the stage of advancement of information products themselves, as seen by scientists continuously seeking for the information

that a high-technology industry such as pharmaceuticals needs. This mixture of information comes back to the BDC as a key to giving the most appropriate support while at the same time providing a constant challenge for the documentalist.

#### Summary

The term Biomedical Documentation Centre (BDC) means different things to the different departments of a pharmaceutical firm. Broadly it represents a reference point for obtaining documented biomedical data to meet the information needs of individual departments in the development of internal projects and external relationships. In the headquarters of an Italian medium-sized multinational pharmaceutical firm with subsidiaries all over the world, the BDC must monitor, classify and disseminate the scientific literature for the topics of specific interest to the Company. It must provide the answers to product-, clinically-, innovative- and competitive intelligence-oriented information requests from the corporate scientific, medical, research and development, and marketing departments and from the subsidiaries. The information specialist in charge of the organization and development of the BDC must focus its goals and the resources available, realistically estimating the complexity of data, sources and technologies from different disciplines needed to meet the variety of requests for documentation at different levels within the Company. This report explains the rationale dictating how the Zambon Group BDC was established, its outlines, achievements to date and the challenge this project involves.

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TRASFORMARE DATI IN INFORMAZIONI: ANALISI DELLA DISTRIBUZIONE  
DEI FARMACI ITALIANI NELLA COMUNITÀ EUROPEA, SULLA BASE DEI  
DATI TRATTI DA PHARMAPROJECTS.

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L'obiettivo finale di qualsiasi ricerca di informazione e' pervenire a dei risultati conoscitivi caratterizzati da significativita' per il richiedente. Cio' si verifica molto raramente al primo stadio dell'indagine, cioe' al momento del reperimento delle informazioni pertinenti.

Infatti, come primo risultato di una ricerca di informazioni, si ottengono di solito dei dati, non delle informazioni.

I dati sono la materia prima grezza dell'informazione, la oggettiva rappresentazione della realta', mentre le informazioni sono il risultato della interpretazione dei dati da parte di uno specifico individuo, che intende utilizzarle per scopi precisi.

Inoltre, anche se i dati reperiti sono pertinenti, ossia rispondono ai requisiti previsti dalla domanda, essi si rivestono di un contenuto diverso a seconda del soggetto che li interpreta e, in conseguenza di cio'e del contesto in cui vengono calati, acquisiscono maggiore o minore significativita'.

Tutto questo significa che i dati, per diventare informazioni, devono essere resi leggibili e interpretabili, ossia occorre trattarli, manipolarli perche' si dispongano a comporre un insieme leggibile e interpretabile.

Questa seconda fase della ricerca di informazioni e' importante tanto quanto la prima, anzi e' proprio in questa fase che si manifesta la capacita' di rivestire i dati, acquisiti come materia prima a prezzo di mercato, con maggiore o minore valore aggiunto.

L'esempio qui riportato si riferisce ad una indagine effettuata su Pharmaprojects, relativa alla distribuzione dei farmaci italiani nella Comunita' Europea negli anni '80.

Vengono illustrati i sistemi e le procedure adottate per condurre, sulla base dei dati ottenuti online, una serie di analisi statistiche intese a comporre un quadro di insieme significativo.

L'obiettivo posto era di collocare l'Industria Farmaceutica Italiana nel panorama europeo, nell'arco di anni 1977-1987, e di valutare la distribuzione dei farmaci italiani in quest'area.

Le domande sottintese a questo obiettivo erano molte, alcune semplici altre complesse, ma la banca dati che poteva rispondere ad esse, in parte con dati gia' definitivi, in parte con materiale da rielaborare era una sola: Pharmaprojects.

Come e' noto, Pharmaprojects, prodotto da V&O Publications Ltd., Richmond, Surrey, UK, fornisce notizie sui prodotti farmaceutici in corso di ricerca e sviluppo, seguendoli dai primi studi farmacologici fino al loro lancio in tutti i principali mercati internazionali.

Le informazioni sono organizzate in schede per sostanza, e per ciascuna di esse viene fornito il nome generico, i nomi commerciali, il nome chimico, il numero di registro del Chemical Abstracts, il nome e la nazionalità dell'Azienda che l'ha originata e delle licenziatarie, il suo stadio di sviluppo in 28 nazioni, descrittori della sua attività terapeutica, notizie salienti a suo riguardo corredate da indicazioni bibliografiche dove opportuno.

Ogni evoluzione nello sviluppo della sostanza porta ad un aggiornamento della scheda relativa, fino alla sua eliminazione dal file in caso o di interruzione del suo iter di sviluppo o di raggiungimento dell'introduzione su tutti i maggiori mercati internazionali.

Con tali dati era pertanto possibile conoscere l'andamento dell'introduzione sul mercato di nuove sostanze farmaceutiche nei vari mercati europei nell'arco di anni da considerare, paragonarlo con quanto accaduto in Italia nello stesso periodo, analizzare la provenienza delle nuove sostanze messe sul mercato in Italia e la distribuzione delle molecole di origine italiana nei vari Paesi europei.

Come premessa è necessario effettuare una considerazione.

La valutazione della crescita dell'offerta di farmaci sul mercato può partire da due punti di vista: considerare le nuove sostanze presenti sul mercato, ossia le nuove molecole (NCE, New Chemical Entities), oppure considerare i nuovi prodotti, ossia i nuovi marchi, i nuovi dosaggi, le nuove forme farmaceutiche ecc. di molecole già presenti sul mercato.

La mia indagine verteva sull'andamento del mercato italiano nei confronti di quello europeo sulla base dell'analisi delle NCE.

È necessario, inoltre, intendersi sul significato di NCE quando queste vengono considerate tali a livello europeo (o comunque internazionale) e quando, invece, si considerano a livello nazionale: una NCE a livello europeo significa che quella molecola è comparsa per la prima volta in Europa, in uno o più Paesi; una NCE a livello nazionale significa che quella molecola è nuova per quel Paese, ma può essere già presente su altri mercati, per cui può non essere una NCE a livello europeo.

L'analisi da effettuare prendeva in considerazione sia le NCE delle varie Nazioni della Comunità Europea, sia il confronto con le NCE considerate nuove per la CEE nel suo insieme.

Come prima cosa è stato necessario dettagliare l'obiettivo in una serie di domande, il più possibile semplici, da sottoporre alla banca dati, suddividendole in due gruppi: quelle per le quali le risposte ottenute sarebbero state già di per sé sufficienti e quelle per le quali i dati ottenuti avrebbero avuto necessità di ulteriore elaborazione.

Per ogni domanda è stata poi, ovviamente, preparata la strategia di indagine più idonea sia per ottenere i risultati definitivi, sia per disporre del materiale da rielaborare in seguito.

Ogni strategia è stata memorizzata per essere inoltrata automaticamente, riga per riga, alla banca dati.

I risultati ottenuti sono stati tutti memorizzati, per essere successivamente controllati e caricati, in parte manualmente, in parte automaticamente, in LOTUS.

Cio' e' stato necessario sia per ottenere con opportune elaborazioni i dati mancanti, sia per produrre tabelle e grafici facilmente leggibili.

I dati testuali (nome generico delle sostanze) sono stati caricati automaticamente in LOTUS, dopo che, per rendere possibile questa procedura, erano stati opportunamente riformattati usando HEADFORM (Head Computers Ltd, Oxted, Surrey, UK).

Le domande in cui era stato dettagliato il tema erano le seguenti:

1- Quante sono le NCE (sostanze, non marchi) introdotte globalmente nella CEE nel periodo 1977-1987?

2- Quante sono le NCE, per Paese e per anno, entrate in commercio nella Comunita' Europea dal 1977 al 1987?

3- Quante sono le NCE entrate in commercio in Italia negli anni 77-87?

4- Quali sono i Paesi di origine delle NCE entrate sul mercato italiano dal 1977 al 1987, e qual'e' l'incidenza di ogni Paese?

5- Quante delle NCE per la CEE del periodo 1977- 1987 sono state originate in Italia?

6- Quali sono?

7- In quali Paesi della CEE sono state messe sul mercato, quante per ogni Paese e quando?

8- Quante e quali NCE originate in Italia sono commercializzate solo nel nostro Paese?

9- Quante e quali NCE originate in Italia non sono commercializzate nel nostro Paese?

10- Qual'e' la distribuzione per classi terapeutiche delle NCE di origine italiana?

11- Qual'e' la distribuzione per classi terapeutiche delle NCE entrate in commercio in Italia nel periodo 1977-1987, e confronto con le NCE di origine italiana.

Esaminando le domande cosi' formulate e conoscendo i pregi ed i limiti delle interrogazioni di Pharmaprojects, si e' potuto dedurre che le risposte ottenute alle domande relative a 'quante' NCE europee o nazionali sarebbero state in gran parte gia' definitive, richiedendo al massimo solo qualche ricalcolo con LOTUS, oltre ad una presentazione in tabelle o in grafici che ne rendesse agevole la lettura, (domande n.1,2,3,5,6,8,9).

Per quanto, invece, riguardava la distribuzione delle NCE italiane o l'incidenza di NCE di origine straniera sul mercato italiano o le NCE italiane presenti solo sul nostro mercato, in tutti questi casi l'interrogazione online di Pharmaprojects non avrebbe potuto, o non avrebbe potuto in modo agevole, dare risposta, pur essendo i dati in proposito contenuti nei records della banca dati.

Si decideva, pertanto, di ricorrere al downloading dei records relativi alle NCE italiane e di effettuare un successivo caricamento su LOTUS, in parte automatico, in parte manuale, dei dati utili in essi contenuti e sottoporli alle elaborazioni

opportune per ottenerne le risposte ed il tipo di presentazione desiderato, (domande n.4,7,10,11).

Si riporta di seguito la strategia di ricerca memorizzata e lanciata con un comando di uploading tramite il software di comunicazione Headline (Head Computers Ltd).

Sono riferiti anche i risultati ottenuti per ogni passo di ricerca.

QN	DOCS SEARCH TERMS
1	577 (77 78 79 80 81 82 83 84 85 86 87).CN.
2	177 ITALY WITH 1
3	143 FRANCE WITH 1
4	114 BELGIUM WITH 1
5	87 NETHERLANDS WITH 1
6	223 WEST ADJ GERMANY WITH 1
7	131 UK WITH 1
8	76 IRELAND WITH 1
9	102 DENMARK WITH 1
10	121 SPAIN WITH 1
11	112 PORTUGAL WITH 1
12	69 GREECE WITH 1
13	433 2 3 4 5 6 7 8 9 10 11 12
14	278 ORIGINATOR WITH ITALY.CO.
15	283 ORIGINATOR WITH FRANCE.CO.
16	13 ORIGINATOR WITH BELGIUM.CO.
17	38 ORIGINATOR WITH NETHERLANDS.CO.
18	380 ORIGINATOR WITH GERMANY.CO.
19	284 ORIGINATOR WITH UK.CO.
20	102 ORIGINATOR WITH IRELAND.CO.
21	53 ORIGINATOR WITH DENMARK.CO.
22	62 ORIGINATOR WITH SPAIN.CO.
23	0 ORIGINATOR WITH PORTUGAL.CO.
24	0 ORIGINATOR WITH GREECE.CO.
25	65 14 AND 13
26	56 15 AND 13
27	3 16 AND 13
28	4 17 AND 13
29	53 18 AND 13
30	27 19 AND 13
31	2 20 AND 13
32	11 21 AND 13
33	10 22 AND 13
34	0 23 AND 13
35	0 24 AND 13
36	231 25 26 27 28 29 30 31 32 33 34 35
37	64 25 AND ITALY.CN.
38	50 25 AND FRANCE.CN.
39	49 25 AND BELGIUM.CN.
40	47 25 AND NETHERLANDS.CN.
41	54 25 AND WEST ADJ GERMANY.CN.
42	52 25 AND UK.CN.
43	36 25 AND IRELAND.CN.
44	42 25 AND DENMARK.CN.
45	58 25 AND SPAIN.CN.
46	54 25 AND PORTUGAL.CN.
47	44 25 AND GREECE.CN.

48 2 37 NOT (38 39 40 41 42 43 44 45 46 47)  
 49 53 2 AND 14  
 50 19 2 AND 15  
 51 0 2 AND 16  
 52 1 2 AND 17  
 53 19 2 AND 18  
 54 7 2 AND 19  
 55 1 2 AND 20  
 56 0 2 AND 21  
 57 1 2 AND 22  
 58 0 2 AND 23  
 59 0 2 AND 24  
 60 25 ITALY WITH 87.CN.  
 61 17 60 NOT 25  
 62 53 25 AND 2  
 63 7 25 AND 3  
 64 8 25 AND 4  
 65 3 25 AND 5  
 66 14 25 AND 6  
 67 6 25 AND 7  
 68 4 25 AND 8  
 69 3 25 AND 9  
 70 11 25 AND 10  
 71 13 25 AND 11  
 72 4 25 AND 12  
 73 37 62 NOT (63 64 65 66 67 68 69 70 71 72)  
 74 1 25 NOT 2  
 75 1 25 NOT 37  
 76 2 74 OR 75

Esaminiamo quali sono i dati che, tramite la strategia applicata, sono stati ottenuti da Pharmaprojects come risposta immediata, e verificiamo a quali domande rispondono.

QN 1 = 577 sono le NCE lanciate nel mondo nell'arco di anni 1977-1987

QN 2 = 177 sono le NCE lanciate in Italia nello stesso periodo

QN 13 = 433 sono le NCE lanciate in ambito CEE nello stesso periodo

QN 25 = 65 sono le NCE originate in Italia lanciate in ambito CEE nello stesso periodo

QN 36 = 231 sono le NCE lanciate in ambito CEE sempre nello stesso periodo ed originate nell'ambito di uno dei Paesi Comunitari

QN 37 = 64 sono le NCE originate in Italia e sviluppate anche in Italia nel periodo di tempo considerato.

QN 38-47 : sono le NCE originate in Italia e sviluppate in un Paese CEE sempre nello stesso periodo

QN 48 = 2 sono le NCE sviluppate solo in Italia tra i Paesi CEE, negli anni considerati

QN 49 = 53 sono le NCE lanciate in Italia tra il 1977-1987 ed originate in Italia

QN 50-59 = sono le NCE lanciate in Italia in questi anni ed originate nei vari Paesi CEE

QN 60 = 25 sono le NCE lanciate in Italia nel 1987

QN 61 = 17 sono le NCE lanciate in Italia nel 1987 non di origine italiana

QN 63 = 53 conferma il numero delle NCE di origine italiana lanciate in Italia nel periodo 1977-1987

QN 63-63 : sono le NCE di origine italiana lanciate nei vari Paesi CEE negli anni considerati

QN 74 = 37 sono le NCE di origine italiana lanciate per ora solo in Italia tra i Paesi CEE, nel periodo 77-87

QN 75 = 1 NCE di origine italiana non ancora lanciata in Italia

QN 76 = 1 NCE di origine italiana non ancora sviluppata in Italia

QN 77 = 2 NCE di origine italiana non presenti sul mercato italiano.

Con questi dati, che in parte già rispondono ad alcune delle domande, e con il listato dei 65 records ottenuti come risposta al passo di ricerca n.25, che rappresentano le NCE originate in Italia e lanciate in ambito CEE negli anni 1977-1987, e' stato possibile ottenere risposte per tutti i quesiti proposti.

I dati quantitativi ed alcuni elementi testuali significativi sono stati caricati in LOTUS e trattati in modo opportuno per generare le informazioni ancora mancanti o per presentare quelle già rintracciate in modo facilmente leggibile.

Risultati.

1- Quante sono le NCE (sostanze, non marchi) introdotte globalmente nella CEE nel periodo 1977-1987?

RISPOSTA: 433

2- Quante sono le NCE, per Paese e per anno, entrate in commercio nella Comunita' Europea dal 1977 al 1987?

RISPOSTA: Tab. n.1, 1 bis; Graf. n.1, 1.bis

3- Quante sono le NCE entrate in commercio in Italia negli anni 77-87? RISPOSTA: 177

4- Quali sono i Paesi di origine delle NCE entrate sul mercato italiano dal 1977 al 1987, e qual'e' l'incidenza di ogni Paese? RISPOSTA: Tab. n.2; Graf. n.2

5- Quante delle NCE per la CEE del periodo 1977- 1987 sono state originate in Italia? RISPOSTA: 65

6- Quali sono? RISPOSTA: Tab.n.4

7- In quali Paesi della CEE sono state messe sul mercato, quante per ogni Paese e quando? RISPOSTA: Tab. n.3, 4; Graf. n.3, 3bis

8- Quante e quali NCE originate in Italia sono commercializzate al momento solo nel nostro Paese?

RISPOSTA: 37 Tab. n.4

9- Quante e quali NCE originate in Italia non sono al momento commercializzate nel nostro Paese?

RISPOSTA: 2 Tab. n.4

10- Qual'e' la distribuzione per classi terapeutiche delle NCE di origine Italiana? RISPOSTA: Tab. n.5

11- Qual'e' la distribuzione per classi terapeutiche delle NCE entrate in commercio in Italia nel periodo 1977-1987, e confronto con le NCE di origine italiana. RISPOSTA: Tab.n.5

Le tabelle ed i grafici verranno proiettati nel corso della presentazione del lavoro.

Si ringrazia Pharmaprojects per la concessione dell'uso del banca dati e della presentazione dei risultati.

Concurrent session 7D

User education

Chair

J. F. Steiger

**EFFECTIVE USER EDUCATION****Fiona Mackay PICKEN****Regional Librarian, North West Thames Regional  
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User Education is defined as active or passive techniques whereby users (i.e. readers) are enabled to find what they need, find it more easily and more speedily. Passive methods involve signs, notices and written guides: active or verbal techniques can range from seemingly casual question and answer sessions to formal lectures as part of the curriculum. Effective techniques are drawn from many other walks of life, from exhibitions, supermarkets, to studies of the learning process leading to effective presentations.

**Effective user education**

What is this 'user education' and do we need it?

If we define it as methods or techniques whereby users, or readers, in our libraries find what they need, find it more quickly and find it more easily, it can be seen as an essential part of any librarian's activity. Any part of the process of helping readers to help themselves can be regarded as educative, be it passive through signs, notices or guides, or active involving the librarian in person. This latter can range from informal questions and answers to giving full blown lectures.

Thus, "Where is the British Medical Journal kept please?" "Do you want the current one or a previous issue?" "Oh, the current one, please". "We keep all the current issues of journals over here [Going there] - they are in alphabetical order. In those boxes below [pointing] are the immediate non-current ones, and over near that wall [indicating] are the back runs, also kept in alphabetical order of title. All right?" "Lovely, thanks." "Oh, and you see that list/folder/VDU over there? That tells you what other journals we have. Here is a short guide which tells you all that but just ask if you can't find anything you want." In the two minutes that



has taken, the user gained a considerable amount of information which would have taken much longer to acquire through signs or notices. The fact that the reader asks for one of the most common journals in a British medical library immediately identified him/her as someone who is not familiar with this particular library, hence the mini-tour which will save a great deal of time and energy in future on the part of both the reader and the librarian. It also demonstrates the library was a welcoming place which was interested in its users. Had the question been "Do you know where this weeks British Medical Journal is?", a completely different answer would have been made, such as "It should be in the current rack. Is there a gap there?" It is therefore as important to educate the library staff on how to help/educate readers as the readers themselves - but that is a whole conference in itself .....

The word appropriate could be added to effective, and this is what this presentation is really about. It is not about planning detailed programmes: it is not what to put into a guide to the library: nor is it how to make signs for a library. It is on what has been found to be effective in other spheres of life and draws heavily on the skills of other professions and occupations.<sup>1</sup>

It goes without saying that users and user groups in any given library have to be differentiated and their varied wants identified. Level is very appropriate and a different approach is obvious if school leavers and research professors are among the clients for the same library. However, that too is yet another whole conference theme, so on to effective communication generally, passive and personal or verbal.

#### Passive user education

This consists of signs and notices, guides and instructions. Colour is very important. Some colours are urgent and attention getting. Accident and Emergency signs in hospitals are usually red. No entry signs in roads are in red. Why not sign your quick reference section, CD-ROM, "article of the week", "Today" section of your notice board by codifying it in red. You are educating your reader to immediacy and impact. All signs relating to books could be in green and journals blue for example. Current journals could be blue with a red border. Often the reader will not be conscious of this colour-link but studies have shown colour coding to be effective, starting early in its use with very small children.

The signs themselves. Hanging signs are effective as in supermarkets. Alphabetic lists are easily produced on computers now and many graphics programmes enable the production of large clear location notices to be put near the entrance. If you educate the users to help themselves in matters of routine, you and they will have more time to deal with the more complex questions which cannot be simplified graphically.

Written guides are more complex but examples of their layout and contents can be derived from, say, a recent exhibition you attended; what your customs and duty free allowances are; how to fill in your tax form; a theatre programme. It will be note that some of these examples come into the "How not to" category. This is an equally valuable technique and noting the bad as well as the good prevents falling into many traps.

Verbal information reinforced with a printed version is an especially effective combination. Research has shown the highest recall rate when verbal information is followed by printed instructions. This brings us onto verbal learning so a look now at lecturing, as a brief glance has already been made at the informal verbal educational approach.

### Active user education

The lecture called "How to use a library" usually induces a sinking feeling in both the lecturer and lectured, the eyes of all parties glazing over, so it is vital to make an attractive "package" and present what you have to say in an entertaining, clear, stimulating but appropriate way. Humour retains attention, but jokiness in the wrong place can be very harmful. A change of pace, method, tone, can retain or revive flagging interest. Note taking, though, can diminish beneficial effects<sup>2,5</sup> except when handouts have gaps to be filled in by the audience. Audience participation can bring about renewed interest too.

There is an consensus that 25 minutes is the maximum attention span to be expected in a lecture.<sup>6 & 7</sup> It is also absolutely proven that maximum concentration occurs at the beginning of a lecture, declines continuously but about five minutes before the end jerks up again<sup>8</sup> By this fact, your speaker could have been sitting down for the last five minutes reading a book, as none of you will remember what has been said during that time. From now on though as there is only five minutes to go, everyone will have renewed concentration so, put the vital really important thing into a formal lecture at the beginning and repeat and reinforce it at the end. Beware though of attention-seeking visuals that simply do that. They can irritate rather than stimulate. If one gives the same lecture regularly though it is worth creating some really interesting slides even though they might take quite a lot of trouble to create. Overlays, interactive overhead projector slides, the white/blackboard all have their place, can all rouse a numbed audience as does the odd cartoon.

A final chilling fact though. Research has produced the following result. When asked what percentage of recall they would assign to different elements in a lecture the following emerged:-

	%
Content	10
Tone	35
Empathy	55

If you think back to a lecture you heard, say, two months or a year ago, it is almost certain you can remember who gave the lecture and what your impression was of the physical appearance of the lecturer; you will also remember tone and manner of presentation, whether there were slides and whether they were any good; it is also certain you will remember very little of what they actually said.

The question now is, how does this presentation fare? Perhaps if we return to findings presented earlier, which give high recall for verbal information reinforced by printed back-up, would a re-read of the proceedings alter perceptions and give 33%, 33% and 33% and 1% for luck?

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**THE LEVEL OF KNOWLEDGE OF MEDICAL DOCUMENTATION AND THE DEGREE OF  
USAGE OF THE LIBRARY SERVICES ON THE PART OF MEDICAL RESIDENTS**

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## INTRODUCTION

The Spanish Medical Schools in general, have not, so far, included the teaching of Medical Documentation as one of their objectives. Our impression, obtained from daily contact with the medical Residents, (M.R) in the Library, is that their training in this field is sadly lacking.

With the aim of finding out the level of knowledge in Medical Documentation held by M.R. in their training period in our hospitals, we have carried out an anonymous survey among these doctors, which has permit us to organize courses for the training of Library users with respond to real needs laid down by them. In this survey we did 24 questions about knowledge in Medical Documentation, and needs of the Library Services. The results of the survey have allowed us to investigate the degree of usage of the Library Services.

This survey was conducted among the doctors in training period, selected at random from three National Health hospitals in Spanish communities of: Cantabria (National Hospital "Marqués de Valdecilla" in Santander), The Basque Country ("Hospital de Cruces" in Bilbao), and Andalucia ("Hospital Virgen del Rocio" in Sevilla).

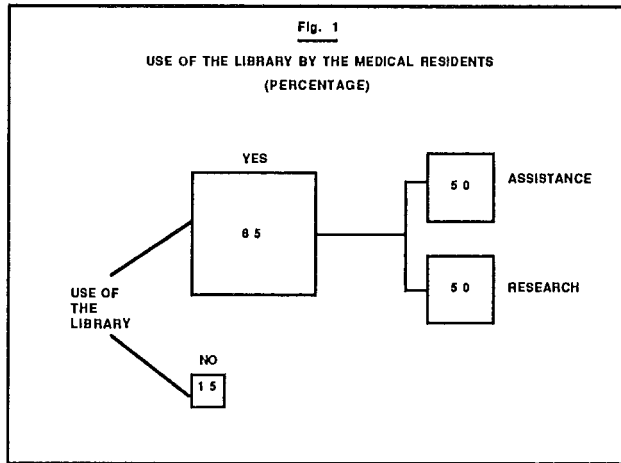
These hospitals carry out under and post-graduate training, each being equipped with a 1000-bed capacity, and considered among those of the highest level in both assistance and research aims.

## RESULTS

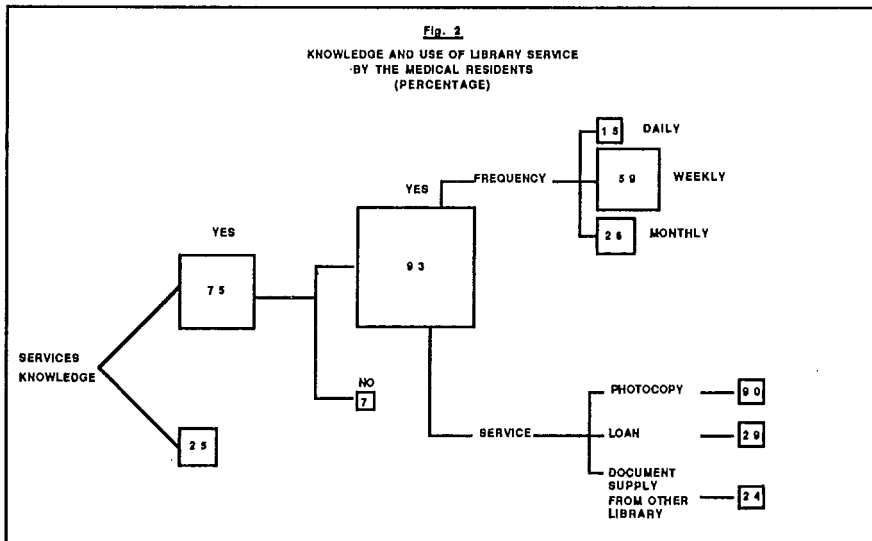
In table I, the distribution of the doctors interviewed in the hospitals in Santander, Bilbao, and Sevilla is shown. The average period of post-graduate training was 2.25 years in Santander, 2.43 in Bilbao, and 3.06 in Sevilla. The overall average being 2.5. Only 10 of those doctors interviewed (i.e. 12%) had previously taken a course in Medical Documentation.

DISTRIBUTION OF THE MEDICAL RESIDENTS						
TABLE I						
		SANTANDER H. VALDECILLA	BILBAO H. CRUCES	SEVILLA H. V. DEL ROCIO	TOTAL	%
M. RESIDENTS	I	13	5	-	18	23
"	II	6	10	6	22	28
"	III	5	2	7	16	21
"	IV	2	5	6	13	16
"	V	4	1	-	5	6
OTHERS		2	3	-	5	6
<b>TOTAL</b>		<b>32</b>	<b>26</b>	<b>19</b>	<b>77</b>	<b>100</b>

As is shown in Fig.1 the majority of the M.R. use the library, doing so equally for purposes of assistance as for research.



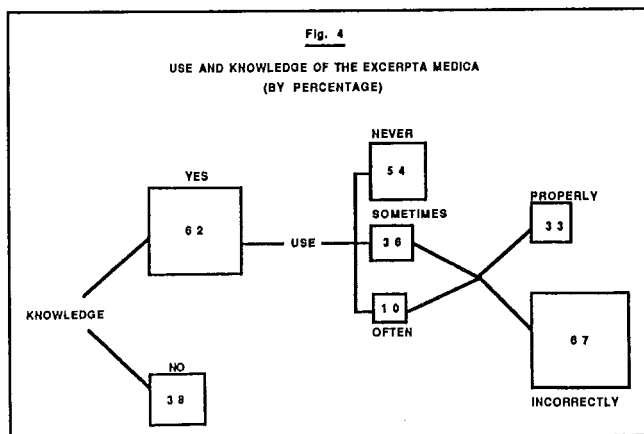
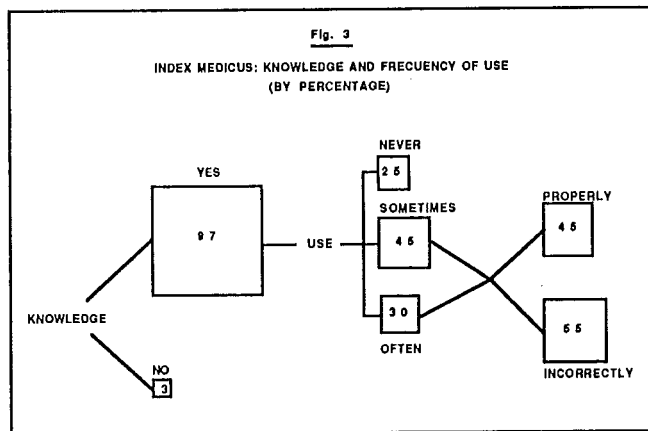
Only 3/4 of the M.R. (Fig.2) are familiar with the services the library offers them, using mainly, the Reproduction Services. The greater part of the M.R. use the services on a weekly frequency.

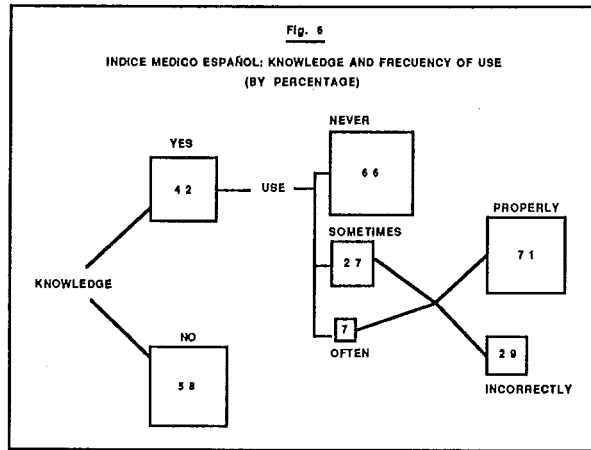
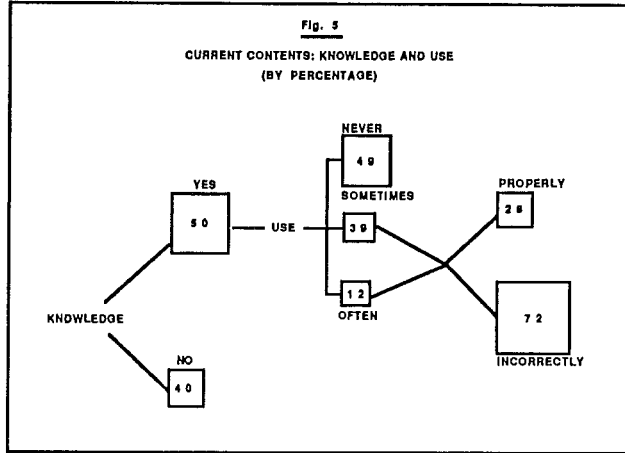


Only a minority of those interviewed admitted knowing what the ISSN is, (7%), or what the ISBN is (7%), and the difference between Primary and Secondary Literature, (20%).

Fifty six per cent of those interviewed know of the existence of Library Catalogues, although only 36% used them.

The knowledge and use of the different Medical Repertories which the library provides is shown in figures 3, 4, 5, and 6. The Index Medicus (Fig. 3) is known of by the majority, and 3/4 of the M.R. used it. Approximately half of the M.R. knew of the existence of the Excerpta Medica, the Current Contents and the Indice Médico Español, however. Only 50% of those knowing of these Repertories use them. To the question of whether they make good use of the Repertories, the majority gave a negative answer.





Fifty nine per cent of the M.R. interviewed carried out Bibliographic Retrieval. Twenty four per cent gather information from library records, although only 36% of the M.R. believe they do so correctly.

Thirty four per cent knew of the existence of the On-Line Information Retrieval, but only 8% have ever used it.

## DISCUSSION

The results obtained through the present survey in three National Health Services Hospitals, show a low level on the part of the M.R. in their training period in Medical Information and Documentation and reflect a lack of basic knowledge of the subject.

The low degree of usage of the library services as well as the majority of the Bibliographic Repertories available, is an outstanding point. Bearing in mind that we are dealing with three hospitals with the highest assistance and research standards in the country, it is to be feared that the situation in medium-level hospitals may be even worse.

These results should motivate us to carry out training courses for users among the M.R. from the Library. Both in the "Hospital de Cruces" (Bilbao) and in the "Marqués de Valdecilla" Hospital (Santander) are at this moment laying on these courses, and are going to do so soon in the "Virgen del Rocío" Hospital, Sevilla.

These training courses at post-graduate level are very interesting but insufficient in our opinion. The American Association of Medical Colleges (1-2) have informed of the necessity for the Medical Libraries in co-operation with the Medical Faculties, who should take charge of the Medical Student training in the field of Biomedical Information and Documentation (3-4).

The Universities' Council of the Spanish Ministry of Education and Science has elaborated a Technical Report (5) relating to the current process of reform in University Teaching, for the structuring of the general principles belonging to the qualification of Graduate in Medicine and Surgery. This report establishes that a Medical Student must be initiated in a scientific way in the use of bibliographic sources and the general techniques of Documentation.

With respect to the main-line matrices covered in the aforementioned report, they include Introduction to Medicine, Scientific Methodology, specifying in this principal material the techniques of bibliographical, documental investigation, information, documentation and diffusion of the results in the Health Sciences. It seems obvious to us that those responsible for giving these courses must be the Medical School lecturers in collaboration with the Medical Librarians.

The knowledge related to Health Sciences occupies a large volume of Scientific Information in an overall context. We, Librarians, have an inescapable responsibility and we must collaborate in the provision of the Health Service personnel with the access to this information in a satisfactory manner.

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## PROGRAMME FOR INFORMATION USERS' EDUCATION

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We put a special emphasis on the education of the users of scientific information, as the well-grounded users, according to us, are a very important prerequisite to the effective realisation of the information process. We assume that the two parties involved in this bilateral process - the information service and the information user - have to be in full accord with respect to the semantic coverage of the information demand, the sources of information, the means and ways of information retrieval and provision, the forms of the final product. The ideal partner of the information service is the knowledgeable user, who due to his "information culture", i.e. to a certain degree of information knowledge, is able to formulate correctly his demand and to be satisfied with an adequate response. The most common issue is the organization of courses of different duration, predominately short-term courses, for the users at their place of employment, without discontinuing their duties. The syllabus covers three basic subject scopes: 1) principal sources (primary and secondary) of scientific medical information, automated information systems and databases - information request (or profile) formulation and keywords, patent and manufacturing information; 2) analytico-synthetic processing of information, drawing up bibliographical descriptions, annotations, abstracts and surveys; 3) patterns of information services - retrospective service and selective dissemination of information, comprehensive (complex) information service. The lecturers - a team of specialists from the information service - present the material in different methodological forms: seminars, practical training, demonstrations. The courses are specialized according to the occupational line of the students: for health managers, general practitioners within the primary health care system, specialists (e.g. cardiologists, neurologists, etc.) in practice, research workers. The comparative study of the information process before and after the users education has revealed a closer contact between the user and the service, higher precision of the demands, higher relevance of the provided information and a marked rationalization of the information process evoking satisfaction in both the parties involved - the information user and the staff of the information service, after the end of the courses.