Concurrent session 8A

Books and medicine in history II

Chair

P. Casseyre

Health education in its historic perspectives: the Norwegian doctor as a promotor of health

Lizzie Knarberg Hansen

The Nordic countries support the World Health Organization's goal "Health for all by the year 2000", the Regional Committee in Copenhagen adopting the 82-point "Target Document" in September 1984, selecting 38 targets for Europe (1).

However, health problems in developed countries are different from those in the countries of the Third World. In the latter, drastic measures are required in the struggle against disease and in reducing the impact of malnutrition and poverty, while in our country, Norway, where many people reach the age of 70, there are other objectives. But, during the 1700's and 1800's, Norway, and in fact all Europe, had similar problems to those with which the Third World Countries have to strive today in matters concerning disease and population. Infant mortality was high at that time but has fallen dramatically during the past 200 years and communicable diseases such as tuberculosis, ty - phoid fever and cholera have been conquered (2).

Several factors have contributed to this, e.g. a better economy and with this, improved hygiene and nutrition, as well as an expanded health service. However, health information has, without doubt, also been a contributory factor, because this information has given the population an improved knowledge of medicine and, as a result, a motive for changing habits and outlook in health matters. We shall now take a look at health information in Norway in five different periods, from about the year 1000 and up to the present day.

In the first period, from about 1000 to 1700, we had popular medicine - not to be confused with folk medicine - with its origins in the medicine taught in the European universities. This was based on "health books", often copied, herbals and pamphlets about a specific disease, e.g. plague. There was also advice on dieting and a healthy life. The best known of these publications is the "Health Poem" from the school of Saler - no, near Naples. The most recent translation in Norwegian was in 1933 with illustrations by a well-known artist (3).

The second period comprises that from the mid 1700's and to the early 1800's, encompassing the "Enlightenment", with its emphasis on nature, reason and order, in the Nordic countries. The economic background of this period was the wealth of the nation, and health information therefore concentrated on the offensive against the high infant mortality rate. The State needed strong healthy young men for its army and navy and in the important industries, which in Norway were iron founding, glassworking and mining.

Johan Clemens Tode, a Dano-Norwegian medical professor in Copenhagen, was active at this time. He was borne in 1736 in northern Germany and died in 1806. He founded several periodicals devoted to health care and health education, similar to many others found in Europe at that time (4). His first periodical came out in 1778, using a German journal as its model (5). His aim was philantropic, to amuse as well as to instruct his readers. He emphasized the importance of entertainment in health education and hence took as his motto that of La Fontaine, "Diversité c'est ma dévise". His teaching was, among other things, directed against children's diseases, in accordance with contemporary attitudes.

Experience had shown that breastfed children had a relatively low mortality rate (6). Tode appealed to the idea of "motherlove" to persuade mothers to nurse their children, by maintaining that the child nursed by its own mother will always love

that mother deeply, the love effortlessly absorbed with the milk being more deeply-rooted and longer-lasting than that love which is merely learned by habit and instruction. He continued by stating that the great love conceived by a child for the mother through suckling will also outweigh all the inconveniences which otherwise accompany childbearing. But he also used stronger shock tactics, such as when he issued the dire warning that women who could suckle their children but did not do so would be exposed to all kinds of illnesses and therefore be in very great danger.

In this way, he, like so many of his contemporaries, tried to place the responsibility for the high infant mortality rate on mothers and give them a guilty conscience. Woman's guilty conscience has, in part, its origins in the health information given out during the "Enlightenment". Some historians consider that "mother-love" neither is nor was in fact a natural, inborn phenomenon but was invented by men during the "Enlightenment" because it was in keeping with the economic and moral principles of the time (7). At any rate, Tode's health periodicals had a wide readership. In fact, the foremost men of the time who subscribed to these periodicals lent them out as from a public library.

The third period is the so-called "sanitation period", the time when epidemics of typhoid fever and cholera rampaged, and where clean water and the removal of "filth" were used as weapons. As a result of, among other things, the struggle against these epidemics, communal selfgovernment in health matters was assured from the basic law passed in 1860 (8). The chairman of the local boards of health should now be the district public health doctor which meant that the doctor not only needed the skills of a healer but also those of a teacher. Doctor Ove Guldberg Hoegh, born in 1814, is a physician to be mentioned from this period. After several years as a local district doctor in North Norway he took an interest in the disease leprosy which at this time was widespread in the coastal districts of western Norway. In order to give information about the importance of cleanliness and nourishing food in prevention of leprosy and other communicable diseases Doctor Hoegh founded a popular medical periodical "Health for the People" (9). There he also wrote articles on the body's structure and function,e.g. he described the circulatory system, in order to get people to understand that the common custom of bloodletting was injurious. He wrote with a popular, easy style on a wide variety of sub - jects connected with health and disease. His aim was to help his readers live a better, healthier life, in other words he wished to alter that which in modern times is referred to as "Lifestyle". There was a moralising tone in his writing, common to the period, but the most characteristic note in his health information was his positiveness - he did not say "Do not do this", but instead said "It is better to do it this way".

Doctor Hoegh travelled a great deal in northern and western districts and on these journeys met the local doctors and the inhabitants. He encouraged the doctors to hold lectures on hygiene for the inhabitants. These lectures were well attended even though the area was thinly populated and people had to travel a long way to attend the lectures, and this direct verbal contact with the local inhabitants was probably most effective. Doctor Hoegh died in 1863, only 49 years old, of typhoid fever, one of the diseases he sought to eradicate.

In the fourth period, comprising about 1880 to the mid 1900's, many of the now widely known bacteria were discovered, and the medical profession now learned how to fight the enemy by

destroying the intruder and breaking the chain of infection, and later the antibiotics were found. There was also a population explosion from the mid 1800's, the death rate declining and more children growing to maturity. The larger numbers of young children led to more, larger epidemics of children's diseases, e.g. scarlet fever and diphtheria (10). The health information of this time is therefore characterized by information on the struggle against the communicable diseases and how one should in fact ward off infection and strengthen the body's resistance to it. This applied in particular to such diseases as tuberculosis, for which there was no specific treatment. At the same time, increasing industrialization accentuated many social problems. Naturally there were several physicians who took up the role of health educator, but I shall mention only one of them, Oscar Egede Nissen. He was born in Tromsoe, a city in northern Norway, in 1843 but he later settled in the capital city, then called Kristiania, now Oslo. He was an active campaigner in a number of socio-political matterts e.g. working conditions for factory workers, women's suffrage and abstinence from alcohol. In 1886 he became editor of a health journal founded by Adventists and which still exists (11). Doctor Nissen observed closely the strides taken in the field of medicine and distributed his health information in a modern, simple style. He considered that health education should begin at an early age, from childhood, and that most of our diseases are our own fault, because of an unhealthy lifestyle. In Norway it is cold in the winter, but Doctor Nissen encouraged mothers to wrap up their children in warm clothing and take them out into the sunshine in spite of the cold. This was not at all common, children born in the authumn or winter usually came out into the sunshine in late spring. This resulted in such diseases as "The English disease", also named rickets, because rickets is caused by lack of Vitamin-D and Vitamin-D is formed in the skin by sunlight. In order to fight tuberculosis, the most serious and widespread disease at this time, Nissen encouraged people to break the unpleasant habit of spitting on the floor by explaining that this spread disease. In the same way he showed that cleanliness in the home and in preparation of food could hinder the spread of this devasting disease.

In his positive interest in social hygiene Doctor Nissen took up the struggle against prostitution, being opposed in particular to the compulsory police examination of prostitutes. This examination had gradually been introduced in most European countries in an attempt to restrict the venereal disease, Syphilis (12). Englishwomen were in the forefront in the struggle against this examination and they had many supporters in Norway, where the examination law was abolished in 1886. Doctor Nissen's health information was popular. The circulation of the journal increased by several thousand during the years he was editor and he reached all classes of the population with his health education.

Today the panorama of illness has changed yet again in that we in Norway now have a high proportion of older people as well as the "diseases of civilization, also called the non-communicable diseases, found in most developed countries. Health information must be arranged so that the population itself takes an active part. The term "self-care" has been launched. Individual information and personal contact, as we saw advocated by Doctor Hoegh in the mid-1800's can be important here. The doctor of today can take the patient's own needs as a starting point and so can give concrete advice. Here informative publications describing common diseases will be a good help in "self-care"(13). Such a combination of individual and written information has

much to be said for it and medical libraries can take an active part in making the literature avalilable.

We can learn from the examples I have named that good health information can and should be built on a scientific basis and that it can be positive and not necessarily boring. Society should also make it easy for one to change one's lifestyle in a suitable direction. It does not help one's motivation if society puts up too many hindrances (14). The Norwegian law against smoking in public places which came into force in July 1988 is a good example of one of the measures taken by the authorities.

Today the health service's expenditure is threatening to burst all bounds. The authorities would like a population which can take responsibility for its own health. Our minister of health and social affairs has stated that there are thousands of people in hospital because of smoking, alcohol, faulty diet and too little exercise. It is thought that such damage could be prevented through health information and that the community's expenditure on the health services could be reduced. We see here how health information both now and in the past has followed the wishes of the authorities.

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CONSERVATION ET VALORISATION DU PATRIMOINE : L'APPORT DU FILM-VIDEO

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Le Patrimoine conservé dans les bibliothèques créées par les anciennes Ecoles de Médecine est souvent prestigieux. Il n'est pas rare de trouver dans les bibliothèques médicales, livres précieux, estampes, éditions rares et même peintures, sculptures, monnaies, médailles et autres objets de collection qui feraient la gloire des musées traditionnels.
Montpellier n'échappe pas à cette règle et nous nous honorons de conserver une belle collection de manuscrits enluminés, un fonds superbe d'incunables et d'éditions rares et illustrées de toutes disciplines. Mais nous conservons aussi les archives de l'Ecole de Médecine depuis sa fondation et notamment les registres d'immatriculation et de délibérations rédigés de la main même des étudiants et des maîtres de l'Ecole.
Plus étonnante est la présence à Montpellier d'une grande collection de dessins de maîtres légués par un généreux amateur d'art et confiés à la Bibliothèque.
Toutes ces richesses patrimoniales procurent certes plaisir et fierté aux bibliothécaires mais entraînent pour eux des charges contradictoires de conservation et de communication et valorisation.
Face aux nombreuses demandes de reproduction photographiques, la bibliothèque a certes constitué progressivement une filmothèque en noir et blanc et une diapothèque en couleurs des fonds précieux : microfilmage systématique des manuscrits, des dessins et d'une partie des archives.
Les manipulations dues aux exigences des photographes sont ainsi limitées et les clichés sont ultérieurement dupliqués à la demande.
Des expositions sont fréquemment organisées dans les conditions de protection habituelles, mais le risque le plus grand que couraient ces collections était lié à l'arrivée inopinée de visiteurs de marque, de passage dans la ville et à qui l'on souhaite montrer quelques documents prestigieux. La tradition montpelliéraine fut longtemps, hélas, de sortir précipitamment quelques beaux manuscrits et d'ouvrir un registre d'archives à une page célèbre (autographes de F. RABELAIS ou de NOSTRADAMUS par exemple !)
Certes, les visiteurs étaient ravis mais cette dépense d'énergie n'était peut-être pas totalement justifiée et surtout la protection des documents précieux en souffre.
C'est pourquoi nous avons été tentés par les possibilités qu'offre le film-vidéo.

EXPERIENCE MONTPELLIERAINE

Nous avons réalisé en 1988, 3 films vidéo VHS chacun évoquant les richesses de la Bibliothèque.
Le premier est consacré aux manuscrits. En dix minutes, apparaissent 9 manuscrits du VIII^{e} au XVe siècle ; une cinquantaine de pages enluminées sont feuilletées (ce que les expositions ne permettent pas) lentement avec gros plans sur certains détails.
Le deuxième a été consacré aux dessins de maîtres de la Collection ATGER. Là encore une cinquantaine d'oeuvres a été sélectionnée et le film permet de montrer la vue d'ensemble de chaque dessin mais aussi

de promener le spectateur à travers le dessin en insistant sur un détail technique, un trait, tout comme le conservateur le fait par la parole lors d'une visite commentée et guidée. Là, c'est l'oeil qui est guidé par la caméra et non sollicité par la parole du conférencier.
Le troisième film est consacré aux gravures extraites des livres conservés à la Bibliothèque. Il s'agissait pour nous d'évoquer quelques grandes tendances de l'histoire de la médecine à Montpellier à partir des planches de certains ouvrages. 14 livres ont été retenus et là encore on a pu feuilleter les ouvrages et permettre la comparaison entre diverses gravures, même à l'intérieur d'un même livre. Ces 3 films ont délibérement été choisis de courte durée (autour de 10 minutes) et presque pas accompagnés de commentaires. Un fond musical est enregistré pour chacun d'entre eux.
Ce parti-pris : peu ou pas de texte, place à l'image bercée par le son, a été lié à l'usage premier que nous voulions faire de nos films : les projeter en milieu ouvert, au grand public, quelle que soit sa connaissance de l'histoire de la Médecin ou de l'art de l'enluminure. Cela pouvait être plaisir de la vue et de l'oreille pour le profane ou moyen pratique pour l'initié de voir ce qui d'habitude lui est difficile ou impossible : feuilleter un manuscrit ou un album de dessins.
A l'expérience je dois dire que cela présente quelques inconvénients et que notre public habituel - étrangement - est friand d'explications et de commentaires. Par conséquent, pour les films ultérieurs, nous diminuerons la part du silence et de la musique et nous augmenterons celle du commentaire.
Sinon l'expérience s'est révélée tout à fait positive. Elle nécessite peu de matériel et la plupart des bibliothèques et musées sont déjà équipés ou peuvent l'être (téléviseur - magnétoscope). Les cassettes sont aisément transportable : elles se dupliquent sans problème et on peut donc satisfaire autant les besoins naturels des collectivités que ceux des particuliers. Nous avons déjà fourni à ces deux catégories des doubles de nos cassettes, "décentralisation commode du patrimoine."
L'expérience n'est pas très onéreuse. Rien à voir avec les vidéodisques : si la bibliothèque peut fournir un maximum de travail préalable, seuls sont à rétribuer les frais de l'équipe de tournage, le montage, la fabrication de la bande-son et éventuellement la duplication de la cassettte-mère.
Les avantages sur le diaporama sont évidents : souplesse dans le défilé des images, rythmes différents (et non enchaînement monotone et séquentiel) offerts à l'oeil, jeux du montage et de la prise de vue : fondus-enchaînés, travelling,... gros plans et balayages, superpositions d'images,... etc,...

REALISATION D'UN FILM-VIDEO

Quelles sont les étapes à prévoir pour la réalisation d'un film-vidéo ? D'abord déterminer sérieusement le public auquel sera destiné ce film. C'est assez délicat. C'est plus facile lorsque une personne a l'habitude ou l'exclusivité d'organiser les visites-guidées et les expositions et donc a une intime connaissance des désirs et de la réceptabilité du public. Si le public est trop divers (tranches d'âges - connaissance - goûts - temps d'attention disponible) il faut cibler un type de public et s'y tenir pour le film. Une fois le public analysé, il

faut préciser le but recherché par la réalisation du film. Est-ce supprimer des expositions temporaires rapides ? est-ce faire connaître à l'extérieur des richesses ignorées ? est-ce préserver des oeuvres célèbres mais déjà trop "regardées" pour leur bien (enluminures - dessins ou aquarelles, pages d'archives médiévale), est-ce une introduction "alléchante" à un parcours obligé et rituel ?
Une fois public et but déterminés, il faudra repérer les oeuvres disponibles et faire une sélection, en pensant bien sûr que l'on ne prépare pas une exposition (statique - horizontale ou verticale et entourée de notices explicatives) mais des documents qui seront filmés - (problèmes de taille, de couleurs, de possibilités de déplacements de la caméra, etc,...)
Ensuite vient le scénario - indispensable - fabriqué si possible par le bibliothécaire en collaboration avec le réalisateur. Sinon un intermédiaire supplémentaire sera à prévoir - le scénariste. Un scénario sommaire qui ne tiendrait pas compte des possibilités mais aussi des contraintes du cinéma ferait perdre la majeure partie de l'intérêt de la réalisation.
Le tournage (encombrant et délicat dans nos locaux habituels) et le montage laisseront aussi une marge de liberté, d'improvisation aux réalisateurs et permettront d'utiliser leur expérience de la vidéo.
La fabrication de la bande son, qui vient ultérieurement, est encore l'occasion d'adapter à une réalisation les souhaits des utilisateurs.
Le texte - lu de préférence par un professionnel - pourra être rédigé par le bibliothécaire au vu du film déjà tourné et monté. il y a là une possibilité riche d'intervention et de modification du texte préalablement rédigé au moment du scénario et tenant compte cette fois du rythme du film.

CONCLUSION

Avec 8 mois de recul, je peux déjà analyser certaines faiblesses de nos films : pas assez de commentaires ; trop longue durée (autour de 12') - pour notre public 8' serait préférable - et surtout plus de temps et d'imagination consacrée au scénario. Pressés par le temps, nous avons sélectionné des objets à filmer alors qu'il faut imaginer ce que l'on veut "donner à voir". Reste que l'expérience a été très positive. Plusieurs milliers de gens ont déjà vu nos films : les expositions "sauvages" ont pratiquement cessé. Le grand public a bien réagi à notre initiative. Forts de nos faiblesses, nous espérons réaliser bientôt d'autres films de meilleure qualité qui permettront de mettre en valeur et de faire connaître notre Patrimoine tout en continuant à le préserver pour les générations futures.

ENGLISH MEDICINE IN THE 17th CENTURY AS IT APPEARS TROUGH THE LITERATURE OF PUTTI FOUNDATION

V. EVANGELISTI, P. NINI, A. VIGANO

BIBLIOTECA ISTITUTO ORTOPEDICO RIZZOLI

Before beginning this report I feel that must mention that the study was supposed to have been presented by the Director of the Library, Dr. Violetta Evangelisti, who, it is sad to say, very recently passed away, leaving behind the memory of her incessant activity for the improvement of the Library's services.

The subject of this paper was of particular interest to Dr. Evangelisti. Not only was it the subject of her graduation thesis, but it was also the topic of an in-depth study that she had been working on for some time. It is our task to collect and elaborate on the material diligently gathered by Dr. Evangelisti.

In order to be able to speak about the bibliographic sources of the Putti Donation, it might be best to provide some historical information.

The Putti Donation was left to the Institute by Vittorio Putti, who directed the Rizzoli Institute for 28 years. An excellent surgeon, Prof. Putti spent his life in operating rooms and among his precious books purchased from the most famous of antique dealers the world over.

A minutious collector, he was not satisfied with the possession of rare volumes, rather he hunted for editions containing the observations and notes of previous owners.

Considered to be one of the most beautiful private collections in the History of Medicine, not for the quantity but for the qualityof the volumes contained, the Donation is a gold-mine for historians in this field.

If from a certain point of view the Renaissance may be considered a period of intense progress, for medicine it was a period of transition.

The genius of men like Vesalio, Fracastoro, Paracelso. Paré and others illuminated it for posterity, but not for their contemporaries,who continued to adapt to a Galenism which was by then inadequate and rich with witchcraft, astrology and conformism. And in the seventeenth century, although new figures were affirmed in the strictly scientific field, there was only a certain amount of improvement from a medical point of view.

Despite the fact that they achieved important scientific discoveries, even the most eminent scientists of that time could in a practical sense do very little. The truth was that science was still not of help to the physicians. It was not of help for him to know that blood circulated, because he did not know how blood functioned in the body. A more in-depth

knowledge of anatomy was of use to surgeons, but not the physicians; there was no connection between anatomy and disease.

Physicians were confused. The entire structure on which they had based themselves was now turned against them. Galenus' theories were less and less acceptable. But scientists provided nothing to substitute what they had taken away. They agreed in saying that the past was important, but they began to base their deductions on accurate observations and on experimentation. (1)

Among researchers, this new conception of Science gave rise to the need for a unified Academy. A new type of University was formed, destined not to house students where each teacher imparted his lessons from a chair, but to gather ideas and collaboration that eventually become of international importance.

It is during this century that relationships between countries intensified, and that the results of discoveries were exchanged. (2)

An example is that found in the "Giornale dei Letterati" (3) in which medical texts were also reviewed, and of which the Putti Library possesses bound volumes from 1668 to 1678. The volume dated 1675 includes a critique of "Pharmaceutice rationalis sive Diatriba de operationibus Medicamentorum in humano corpore" by Thomas Willis (4). that of 1671a review of "Methodus curandi febres proprijs observationibus superstructa" by Thomas Sydenham (5), and in the volume dated 1677, the contents of "Observationes medicae circa morborum acutorum historiam et curationem" by Thomas Sydenham is described (6).

For the seventeenth century we will take into account only English medicine with its most representative physicians.

Among these, the most important and the one who gave the most to English medicine is William Harvey. He was born in Folkestone in 1578 and studied first in Cambridge and then in Padua, where he was a student of Fabrizio d'Acquapendente.

The discovery of blood circulation did not belong, however, to the genius of a single man, nor to a single epoch, but it matured through the centuries. Galenus started along a path, taken by Vesalio, Serveto, Colombo, Cesalpino, and Fabrizio d'Acquapendente, and finally by Harvey (7).

Harvey's greatest merit is not so much that of having been the first to discover blood circulation but to have tried out his affirmations with a series of scientific demonstrations which constituted the departure point for experimental physiology (8).

In fact, another link in the study of circulation was completed by Marcello Malpighi's discovery in 1661 of the existence of capillary vessels (9).

Harvey's studies and experiments continued for almost 20 years, until the year 1628.

when he published in Germany the "Exercitatio Anatomica de motu cordis et Sanguinis in animalibus" totally revolutionizing the Galenic conception which was still at the basis of University teachings, and provoking ferocious opposition among his contemporaries (10).

The innovation of Harvey's discovery was that for the first time a great physiological problem was being dealt with experimentally by a man having a modern scientific mind, and who allowed the natural conclusion of his observations to be drawn.

An era when physicians were satisfied with "listening" was being substituted by one when they preferred "seeing". The Putti Library possesses Harvey's edition of "Exercitationes anatomicae de motu cordis et sanguinis circulatione" dated 1660 and two copies of "Exercitationes de generatione animalium" dated 1651 and 1666, as well as the third edition of "De motu cordis et sanguinis anatomica exercitatio" dated 1643. This is a twelve-part volume, of modest appearance, but of great rarity which contains two fine copper etchings, acquired by Putti in 1928 from the antique dealer Lier in Florence for 3.150, a considerable sum at that time.

Another eminent figure during that period was that of the anatomist Francis Glisson (1597-1677). A student of Harvey, his name is associated with the anatomy and physiology of the liver. He was the first English physician to do a complete study of a specific disease from an anatomical and clinical point of view in his "Tractatus de Rachitide" published in 1650.

The innovation lies in having placed side by side all of the data relative to the disease that he was studying: he did not allude to the name or the number of his patients, but the accuracy of his observations shows us that each case was carefully studied (12). Glisson's method, in which all of the cases related to a specific pathologic condition were grouped together in order to draw a conclusion, was not however adopted by all of the physicians in the seventeenth century.

The Putti Donation contains two editions of his "De Rachitide sive morbus puerili, on dated 1660 and the other 1682.

Another exponent of the seventeenth century was Thomas Willis(1621-1675). His "Cerebri anatome" (1664) was the most complete and most accurate account of the nervous system ever before to have been published. He was the first among modern physicians to study the origin of nerves: with numerous observations he demonstrated that the brain and its nerves are the source of sensitivity and mobility. It was Willis who imagined the difference between the function of the brain and that of the cerebellum (13).

He is also attributed a better qualitative examination of urine and the discovery of sugar in the urine of a diabetic, thus establishing the basic principle between diabetes mellitus

and insipid diabetes (14). Although his scientific production contained a vast number of case studies, it demonstrated that he only had a general vision of disease, and very often his studies contained more hypotheses than accurate observations as he wrote from memory and not based on daily annotations (15).

The Library possesses his 1676 edition of "Opera " made up of four volumes, containing the portrait of the author and thirtythree tables etched in copper.

In this century England may boast the birth of the most illustrious clinician, known as the "English Hippocrates", Thomas Sydenham (1624-1689), a scientist of world fame.

What Hippocrates did for medicine in the sixth century b.c., Sydenham did for that of the seventeenth century.

He gave medicine its current form, he made it a discipline to which experimental science and mathematics could contribute.

Sydenham was a practical physician. Despite the fact that he was a scientist, he neither experimented nor did mathematics, rather he wrote and described. He treated practical medicine in the same way that Vesalio dealt with anatomy.

His life as a scholar of medicine differed from that of his contemporaries, as the historical events of the period led him to battle more than once, not as a physician but. as a soldier (16). Thus, during his oft-interrupted career, he did not have the chance to study the science of his times, to study Vesalio's anatomy, to ponder Harvey's discoveries, and to discuss Descarte's theories (17).

He was above all a practical man, a soldier turned physician, and he dealt with the problem of medicine with an open mind.

He was the first physician to elaborate a complete and accurate treatise of scarlet fever and measles. He described smallpox, malaria, dysentery. His most important study was on the description of gout, a disease by which he was affected, as well (18).

His work gave order and a system to medical practice where up until then there had been confusion, as physicians were limited to describing diseases separately. The great practical triumphs of modern medicine were then achiewed from the times of Sydenham on (19).

Sydenham is represented in the Putti Donation with two studies: "Praxis medica experimentalis sive opuscula universa" dated 1695 and "Opera Omnia" dated 1723, with a portrait of the author etched in copper.

The Putti Donation does not include first editions of the four authors considered due to the fact that as they were important exponents of the period in question, their studies only relatively interested the"Orthopaedist" Putti. Clearly, his bibliographic research was aimed more at themes inherent to the locomotor apparatus and related topics.

It is our privilege to preserve for posterity the immense patrimony left by him.

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Concurrent session 8B

Computer applications in specialized libraries

Chair

S. Henin

AUTOMATIC MEDICOLEGAL INFORMATION SYSTEM

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The Automatic Medicolegal Information System /further AMIS/ is one of three subsystems of the International Scientific Medical Information System of the member countries of the Council for Mutual Economic Assistance called MEDINFORM. Its implementation was assigned to the Institute of Scientific Health Information /ISHI/ in Bratislava in 1980. The project and experimentation works were carried out in 1982-1985, in following two years a pilot operation was launched. Since 1988 the AMIS works in the routine operation mode and has been systematically innovated and improved.

In this paper I would like to concentrate on the general characterization of the conception of the system, on its organizational construction, functions and means of its setting up.

The AMIS can be defined as a system of collection, transmission, storage, processing and accessibility of data on health legislation and related documents, and as a system of data about the working of the system itself. The objective of the AMIS is to secure the information process in the whole field of health law. The system shall provide relevent scientific and directive health legislation information for the fulfilment of policy, management, law, research and economy targets of the CMEA bodies, as well as for the tasks of political, state, research, health and social establishments, universities and similar organizations of the participating countries in the above system.

In the process of the information coverage of health law the AMIS aims to contribute:

1/ to the rationalization and efficiency of the formation of health legislation;
2/ to the propagation and improvement of juristic consciousness of health service workers and of the public in general;
3/ to the quicker and better application of legal provisions;
4/ to the intensification and expension of the information interaction of the personnel working in the field of health legislation of the CMEA countries.

In addition to these basic requirements for the function of the system there are other determining and limiting factors relating to the specifics of the information health legislation system which had to be considered in the project.
Among them are:

1/ The subject variety and complexity of health law, it interdigitation with many other fields of social phenomena, variety of relations and activities.
The health law with its subject of study and regulative function intervenes in many spheres of science and human activities and in social, economic and political life. With reference to the information system the multidimensional external health legislation relations influence the structure of the information input and the structure of its environment.

2/ Special and heterogenous forms of documentation of health legislation and the existence of a special communication language.
The documentation form of theoretical and methodological information on health law is analogous to other social and medical sciences. The directive aspect of the health legislation is, however, marked by a specific, formalized manifestation in the form of regulations. These have certain established and prescribed formal features resulting in the specialities of language presentation. In relation to the information system these factors influence technologic and linguistic means.

3/ A close coherence of health law with social and economic formation and with the legal system of a given country has a limiting influence on the territorial expansion of the information and imposes a significant communication limitation within the country.
In relation to the information system this factor exerts influence on the structure of the information output.

4/ The information process in health law is interrelated with cognitive as well as with directive and management processes.
In relation to the information system this factor influences the depth of data representation of the semantic content of documents and the form of the information output.

The AMIS works on a cooperative basis with special national bodies of the participating countries in the Medinform system. They are Bulgaria, Czechoslovakia, Hungary, GDR, Poland, Cuba and the USSR. The special national bodies of the above countries are responsible for the collection, selection and the information processing of national production of health legislation documents, for the formulation of the information inquiry for their own users, for the distribution of the information output from the Institute of Scientific Health Information, and for the collection and accessibility of primary information documents. The ISHI is responsible for the solution of methodology problems and for the operation of the system. It secures the input and output information processing, the data base formation, the information output exchange, the formation of central microfiche holdings and for the cooperation with boundary information systems. The tasks of the above special national bodies in the framework of the AMIS are laid down in the working plans and bilateral agreements with the ISHI. The conception and innovation intentions of the ISHI as well as operation problems are discussed and solved at the sessions of Medinform specialists for health legislation information problems and at the consultation meetings of respective experts. The inner organizational structure of the AMIS is already settled, each its element has a precise, limited function and task.

Characterization of basic parameters of the AMIS

The input information of the AMIS can be characterized from the viewpoint of thematic, typological and provenance structure, from the viewpoint of quantity and time factor. The thematic take of the AMIS is limited by the Medinform rubricator and by the rubricator for legal aspects in medicine and health service. The documents processed in the AMIS can be divided into four thematic blocks. The first one consists of the documents orientated on health legislation. These documents constitute the core of the document base. The second thematic group is represented by the documents orientated on medicine and health service implying health legislation information. The third thematic block consists of documents concentrated on law and

its different subjects with information relating and applicable to health services and medicine. The fourth group of documents is heterogenous and comprises documents on different scientific and professional fields with direct or indirect relation to legal aspects in medicine and health service. For the concrete thematic profile of the AMIS bibliometric methods are used. A further aid for the profile of the AMIS document base is provided by the "General and Special Selection Criteria" elaborated in the base body of health legislation information for the promotion of a uniform approach to the selection of information units submitted to the system.

From the viewpoint of typological characters the AMIS document base can be divided into two groups. The first consists of official documents containing directive information. The official documents are divided into those containing legal provisions, byelaws, adjudications, judicial standpoints and political documents. The second group comprises unofficial documents which are carriers of scientific health legislation information. Non-periodical and serial documents belong here, too.

The provenance and language structure of the AMIS correlates with the countries participating in the system.

The time factors of the AMIS profile can be specified from the viewpoint of time limitation of the origin and formation of the base and from the viewpoint of efficient retrospection delimitation. The AMIS includes documents issued after January 1st 1986. The constitution and basic health service act data are being processed in retrospect.

The AMIS has been built up as a documentographic information system with some features of factual information system. The basic information output of the system is the bibliographic "Index medico iuridicus" which will be issued in separate Slovak, Russian and English versions from 1989. Other information services provided by the system are current and ad hoc literature search and supply of primary document copies. The AMIS program system enables ad hoc responses to thematic inquiries, inquiries relating to topical relevance, validity of legal documents, responses to inquiries on the interrelation of legal

provisions /derogations, modifications, amendments, abrogations/, inquiries about primary sources of secondary legal provisions and others. The languages of all participating countries are used in the AMIS. Russian and English serve as working languages. At present the file of information retrieval languages consists of the Medinform rubricator and of the rubricator for legal aspects in medicine and health service. For the indexing of documents we use freely formed keywords at the present. From 1990 the AMIS will use the "Medical Subject Heading" thesaurus and the state-and-law terminology dictionary of the MISON-system.

Among the main tasks of the AMIS innovation are the improvement of the information analysis, the semantic expression of the information content of documents, the formation of a more operative system for the accessibility of primary documents, the promotion of cooperation with the World Health Organization in the given field, the increased use of the information output of the system and the change-over to the on-line technology for the accessibility of information.

The AMIS as a medium providing the information process in health services and in health legislation is functionally linked:
1/ with the cognitive process in health law
2/ with the directive process in health services
3/ with the management process in health services

These functional relations influence the structure of the information input and output and the depth of the semantic analysis of text data differently. At the present stage of the AMIS operation these functions are performed in different degrees.

The information tasks of the AMIS in the process of acquaintance with health law consists primarily in the transformation of data about knowledge generated in theoretical, methodological and gnoseological fields of health law and in the general theory subjects of law. The information output of the system in these functional relations is directed to the users working in research, theoretical and educational spheres. The inquiry of the users' needs have shown that for the fulfilment of the AMIS functions in the cognitive process a surface semantic analysis of documents and the data transformation into documentary in-

formation are sufficient. The knowledge intermediation in the cognitive process assumes the use of information systems from other fields, above all from social sciences, as well as from medicine and health service.

The application of the AMIS in the directive process requires a transformation of data about health legislation and related regulations, about legal provisions and official documents, as well as of data about the present state and development of social relations in the regulated field, i.e. in medicine and health services. The users from this sector are above all lawyers in legislative bodies. In order to meet their information needs a deep semantic text analysis of legal provisions /the information reproduction of a part of legal text/ and the information of factographic character are necessary. Beside the retrieval function the AMIS could provide an analytical function as well, i.e. the search of gaps, discrepancies and redundancies in the legal order. The fulfilment of these functions assumes, however, an expert information system.

The third field of the functional operation of the AMIS is the management sphere of the health-service sector, where it serves for the application of regulations in the field of interrelation between the society and health services, between the health establishments and their workers, between the health establishments and their patients, between health-service workers and patients. The demands made upon the AMIS are differentiated according to the management level and the type of regulated relations. In general we can say that the fulfilment of the AMIS functions demands operative, directed, reliable and up-to-date information dealing primarily with legal provisions. The protection of the required information quality in this field assumes factual information, provision of a full text of the information source and information from different subjects of law. The supply of complex health legislation information for the management spheres of health services requires an integrated information system of typological and thematic comprehension.

COMPUTERIZING A FORENSIC MEDICINE LIBRARY

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The aim of this document is to present a software program adopted by the Institute of Forensic and Insurance Medicine of the University of Rome 'La Sapienza'.
The library of this Institute which consists of about 23,000 volumes has to answer different types of queries, since the users are rather heterogenous (doctors, lawyers, students, insurance companies, researchers or simply curious people interested in this subject).
Forensic medicine is a specialized and extremely peculiar branch of medicine which represents a joint point between medical and juridical sciences.
In fact if we keep in mind the fundamental Gèrin's concept which states that man (considered as an individual with complicated development phases, from birth to death, as well as part of a community) is what really concerns Legal and Medical Sciences, either directly or indirectly, we may conclude that the vast medical-legal interests involve different and vast fields of medical knowledge and civil, penal, insurance, canon, sanitary and social security laws and even economics and philosophy.
The present catalogue, arranged by subject and containing about 180,000 index cards, was comprehensive and exhaustive, but it took a long time to consult.
So, it was felt that a quicker method for acquiring information, through suitable technical tools, was needed.
As regards a computerized file, an autonomous mechanized system has been chosen, taking all due care to be objective (this is fundamental in Forensic Medicine).
A "thesaurus" of about 2,500 items, selected on this basis, has been adopted. This was utilized previously in the card-catalogue, but now it has been enlarged and adapted to the new information procedures for a quicker search of the documents.
The choice of the input key-words was made after careful, conceptual organization on the basis of documents which were most in demand by users, and also considering the experience acquired since 1924, the year in which this library was founded.
Following this continous and constant operative/functional test, it was decided to subdivide the key-words into two branches: the first for general subjects, while the second concerns specialist topics. A clear example can be given by the word "abortion" which, if analyzed in all its medico-legal aspects includes more than twenty entries as well as the subject "Work Medicine" having more than twenty-six entries.
These keys are available both on paper, for external users who need our services, and online for PC users under the operative function of "help".

Such keys are up-dated for each new entry while this procedure is performed weekly for the whole library file.
The maximum limit offered by our processing system, called MEDLEG, is 8,000,000 records for each file used by the program. We consider that this is more than sufficient for our needs.
In order to facilitate the operator's duty, all functions calling up the procedure to perform the programs have been included in an appropriate menu. So that, the user has only to enter the number corresponding to the function required.
Less time is needed for stroke, errors are almost impossible (because of a program autocontrol device on some types of "input fields") and responses are rapid.
On the basis of these last three characteristics, the software is able to perform searches in real time on all the card-fields and it is able to provide replies to queries made on 14 different entries, at the same time.
Thus, records, as regards "inquiry" can be scanned and examined under different profiles according to the user's needs.
Everything is carried out through interactive modality and binary search: the only exceptions are maintainence programs which are carried out using batch procedures.
We would like to point out that binary search is a particular type of technique which allows us to search for specific data as a whole or in part.
This characteristic shortens the time needed to answer user queries.
However, the personnel operating in our Data Processing Centre would like to exploit all the processing characteristics to the full.
Therefore, the binary search is performed on contigous labour files containing alphabetically ordered records in which only a field three bytes long is present (the access key to the corresponding records is on the master file).
Substantially, the computer does not load in its memory all the records with high number of bytes, but only records three bytes long, on which there are two pointers: the first searches the first character which corresponds to the query and is positioned on the file, while the second goes beyond the end of the file itself and automatically performs divisions on the file which, in this case, are the dichotomies, until it meets the next character requested.
At this precise point, the bytes range included between the first and the second pointer are compared and transformed into corresponding records which, in turn, are loaded on the PC's memory and presented as the output requested by the operator.
This software generation gives almost immediate answers in spite of the remarkable length of records and file.
The executive and managerial activities of the library may be carried out on up to 28 workstations at the same time: this limit has been imposed not by the program but by the hardware configuration because other sectors of the activities of this Institute must also be managed by the MEDLEG system.
The MEDLEG system is a processor located inside this Institute and it is able to work both in complete autonomy and in conjunction with other systems and

users.
This service which started operation in February 1987, aims to cover the various institutional activities inherent in Forensic Medicine, and to be precise: Forensic Pathology, Casualty Ward, laboratory analysis (chemical, toxicological, hematological, histological and ballistics), Work Medicine and the various scientific activities of each individual professortship as well as the Library.
To this end, the preparation of some telecommunication lines is under way so as to offer users additional services that we consider essential for a complete library service.
Thus, the following Institutions interested are: the Supreme Court (Corte Suprema di Cassazione), the Scientific Calculation Centre (Centro Interdipartimentale di Calcolo) of the University of Rome 'La Sapienza', and ITAPAC, so as to have access to other national and international databases. The aim is to offer our services to other medico-legal institutes.
This is a free service and it is offered to all those interested and as long as the rules and the operational methods of the structure are respected.

What we have just presented is an unique nationwide Medical Legal experience.
We hope that it will not remain unique and that it will not be bound to a rigid executive structure which would impede up-dating or change.
We have thus created a database which is able to meet current information requirements using clear language.
We have tried to reconcile the legal problems arising from documents with the medico-legal information requirements of the public.

AN ITALIAN DOCUMENTATION CENTER FOR ALZHEIMER'S DISEASE

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In February 1988 a special biomedical documentation center was opened in Florence (Italy). This center is specialized for the documentation pertaining to Alzheimer's disease in all its aspects. The present paper will illlustrate the reasons why the center was set up, the way it works and will describe the audience to which the activities of the center are directed.

Why was the center founded?

Alzheimer's disease is a progressive degenerative disorder of the human brain also known as senile dementia. It is today a virtually intractable disorder. Epidemiology surveys together with population statistics indicate that the medical problem of Alzheimer's disease is going to increase dramatically over the coming ten years. In all of the western countries the proportion of the elderly in the population is progressively increasing. It is the elderly in the population which are the primary risk group for development of Alzheimer's disease. In Italy alone its expected prevalence by the year 2000 will be roughly 40% over present prevalence (Rocca and Amaducci, 1984).

These considerations on Alzheimer's disease have very important implications for health care, socioeconomics and neuroscience research. In the latter field, increasing efforts are being dedicated to a better understanding of the epidemiology of the disorder, and the possibilities of

identifying risk factors for the disease. There is no clear knowledge of the mechanisms of the disease and much experimental research is being done in order the clarify its etiopathogenesis and pathophysiology. Diagnosing and measuring the progress of the disease is of primary medical importance. Possible new pharmacological treatment possibilities are to be explored. In the context of these research needs an Italian research center was founded three years ago under the name SMID (Studio Multicentrico Italiano sulla Demenza). This is a collaborative research center of 9 Italian Neurology Institutes. It develops many research activities in collaboration with researchers of the Italian National Research Council (CNR), of the National Institutes of Health (NIH of the USA). It is involved in research projects with Eurage (EEC) and the World Health Organization. This center has already contributed important research results regarding the epidemiology and risk factors for Alzheimer's disease (Amaducci et al, 1986).

Part of the activities of the center is dedicated to seminars with Italian medical doctors in order to improve the knowledge of Alzheimer's disease, its socioeconomic impacts and to supply information on the medical handling of patients.

There is a long tradition in Italy regarding neuroscience research in the field of Alzheimer's disease. It is not widely known that after Alois Alzheimer's first description of the disease (Alzheimer, 1907), significant contributions to the initial knowledge of the disease were made by Italian researchers (Bonfiglio, 1908; Perusini, 1911).

The documentation center was founded in the above context as a support for ongoing research activities in this field.

How does the center work?

The center is organized as a modern library open to the public. It has several collections in its holdings. In line with the tradition of neuroscience research in Italy, there is a historical collection of about 700 texts (the D'Ormea collection) in which many aspects of Italian contributions to research in the field of neuropysychiatry are documented. The major accent is on the modern library with holdings of about 200 texts and 20 subscriptions, all of which mainly concerned with Alzheimer's disease. This library is of course very young, since the center was opened in 1988, but is constantly growing through new acquisitions. The center also supplies literature searching services using online access to the major databases in the medical field (Medline, SciSearch, EMbase).

An important part of the holdings is constituted by socalled grey literature, i.e. items which are not regularly indexed in the international medical literature databases. Through its varied research contacts, the SMID center has access to many sources of unclassified information in the form of reports, manuscripts, meeting proceedings, etc. Important research results very often are first available in these forms, long before publication in official journals. The availability of this material led to the objective of creating a single database containing references both obtained from the regular international databases and entered locally pertaining to "grey" local items. This database, called DEMLINE, is now being created. Its logistics are as follows:

- quarterly download from Medline (database of the National Library of Medicine, Bethesda. USA) on the terms:

* senile dementia;
* presenile dementia;
* Alzheimer's disease.

In this way some 9000 titles on these subjects have been downloaded.

- the download is entered in the information retrieval system of a collaboratoring pharmaceutical company (in IBM Stairs on IBM 3090 mainframe).
- the SMID center has an online access to the database, by way of which it enters the additional items, available locally, using its own standards for classifying the items for information retrieval.

This work is currently in progress. The working objective is to have within 1989 a dedicated database on Alzheimer's disease in which all available information, also from non-bibliographic sources, is classified. No online connections to the DEMLINE database are possible today, but may be planned in the future.

For whom does the center do its activities?

The services of the center are made available free of charge to the researchers of the collaborating neurology institutes. Very often there is an international audience, due to the international research contacts of SMID. Due to the direct contacts with the medical faculty of the Florence University, medical students frequently use the library. Medical doctors and specialists from outside SMID may use the services of the center, on which they have been informed by the mailing of a folder. There is furthermore a collaboration with the Italian Alzheimer Association (AIMA), a layman organization intended for patients and their relatives, which results in seminars, meetings with researchers, and the use of layman-directed explanatory booklets. This material, also comprising audiovisual productions, are prepared in direct collaboration with the documentation center.

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Concurrent session 8C

Union catalogues

Chair

R. Sievänen-Allen

UNION CATALOGUE OF BIOMEDICAL SERIALS IN LIBRARIES IN THE ROME AREA: WHY A SECOND EDITION ?

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INTRODUCTION AND REASONS FOR A CHOICE

At a distance of two years from the realization of the "Union catalogue of biomedical serials in libraries in the Rome area", we are now presenting the second edition of a publication which has aroused so much interest and success that a new edition is considered essential. The first edition was principally intended to fulfil the information needs of the scientific community of Rome and successively those of the rest of Italy. This point of view was supported also on the occasion of the official presentation of the Union catalogue at the Italian National Research Council (CNR) in January 1987 with the partecipation of the president of CNR L. Rossi Bernardi, the director of the Institute for Studies on Research and Scientific Documentation (ISRDS) P. Bisogno and A. Vinay, then director of the Central Institute for the Union Catalogue (ICCU). While underlining the value of the undertaking, A. Vinay expressed the hope for an expansion to a national level, the possibility of its availability online and its future conversion to the National Library Service (SBN). The distribution of the catalogue nationwide has evoked an extremely positive and significant response among the users; a sign of this is, in fact, the increase in the number of loans: as an example we can take the situation at the Library of the Istituto Superiore di Sanità (ISS) - the Italian National Institute of Health - for the years 1986-1988 (Fig.1).

Fig.1 - LIBRARY STATISTICS FOR ISS

SERVICES	1985	1986	1987	1988 (I SEM.)
Loans				
Internal	65.000	70.000	80.000	40.000
External	15.000	20.000	30.000	35.000
Bibliographic information	50.000	60.000	80.000	45.000
Photocopies of journal articles	500.000	700.000	900.000	480.000

The increasing demand for bibliographic information has necessitated a continuous and attentive analysis of the users' new needs, almost inspired by the appearance of this tool. A union catalogue, which should consist in a "coherent and controlled integration of the holdings of the single libraries whose catalogues, although remaining physically separate, form a conceptually unified whole" (1) has, of course, as its primary purpose the retrieval of the document. It has been interesting to note that the biomedical catalogue, although created at a local level, covers with its more than 10.000 titles almost 90% of the national holdings (2). This fact certainly not only justifies the slight increase in the number of titles (500) items in this second edition, but accounts for the exponential increase in requests for loans and information locally as well as nationally.
A third effect, equally important, is that users are requesting longer library opening hours. A last gratifying achievement is the greater and more confident contact between data bases and libraries, an interaction that is essential to good management of scientific information.
The present undertaking represents another step forward, as much as , in addition to document retrieval, it also provides the retrieval of the conceptual information of the document through the classification of the serials. Furthermore, in this edition the bibliographic description is enriched by information on corporate bodies and by a general updating. It was preferred to postpone for the time being a national union catalogue in favour of this local edition for the following reasons:

1) the field of biomedicine is almost completely covered;
2) the response of the users has been satisfactory;
3) the particular structure necessary for coordination at a national level is not yet fully operational;
4) further developments of the National Library Service are expected.

The new edition required initially an evaluation of the working methods, which in its turn made necessary an updating of the rules in use.
The coordinating team in Rome - ISRDS, ISS, the Sacred Heart Catholic University/Medicine and Surgery Faculty "Agostino Gemelli" (UCSC) -started with a revision of the cataloguing rules, particularly in regard to corporate bodies which now for the first time have been standardized in the central file of the ISRDS. The group had to supervise the collection and to check the data that were uncomplete and not uniform. This problem has arisen from the great diversity of the situations and people who participated in data collection; a difficulty which is very common in the activity of shared cataloguing. In addition, the frequent problems arising from the bibliographic controversial descriptions of some titles and the very short deadlines (necessary to avoid disruptions in the central file maintenance) for the delivery of the revised data, made life difficult for the team. It had to operate not only as a methodological, but also as a technical and a practical support to be able to extract in time the biomedical subfile on the basis of which the present catalogue was realized.

STRUCTURE OF THE CATALOGUE

The description of the bibliographic units, based on the UNI norm 6392, is characterized by the criterion of the essentiality while still ensuring the coverage of the principal areas, as can be seen by the scheme concerning the list of categories (Fig.2).

Fig.2 - LIST OF CATEGORIES

Category	Specifications
1/1	RPn;L11,12,13,14,15 (Identification number; language code)
11G	Pn (Formerly)
11P	Pn (Continued by)
11O	Pn (Translation of)
11X	Pn (Supplement to)
11Y	Pn, Pn...(Has as supplement/s)
11F	Pn, Pn...(Merger of)
11S	Pn, Pn...(Split into)
11T	Pn, Pn...(Existing translation/s)
12n	yyyy-yyyy;Pn,Pn... (References
13n	yyyy-yyyy;Pn,Pn... valid for
14n	yyyy-yyyy;Pn,Pn... a lapse of time)
2	UDC1; UDC2;...
3C	Corporate body
4T	Proper title; parallel title/s
4C	Corporate body (printable)
4S	Subtitle
4NZ	Notes (not codified)
5I	yyyy-yyyy; Place of publication
5N	ISSN; Country of publication
6H	PRbbb; Holdings
6L	PRbbb; Incomplete holdings
71	PRbbb; Classification as location
72	PRbbb; Location
73	PRbbb; Accession number/acquisition type
74	PRbbb; Local notes
75	PRbbb; Subjects
ARN	Cross reference (from)
ARE	Cross reference (to)

It excludes, in fact, information which, although useful, might overload the structure of a union catalogue. For example in cases where the bibliographic description was overloaded by too many notes, the area of the notes has been simplified by greatly reducing the number of data to relatively few and precise groupings. When areas usually used in bibliographic descriptions do not appear in this catalogue, it means that the input system does not provide that specific field. An example of this, the lack of a specific area for

dates and volumes, which, by agreement, had to be put in the area of publication date.
Apart from possible blanks one may say that, except for some small deviations, the catalogue essentially conforms to the basic requisites for a union catalogue (3).
As far as the punctuation is concerned, the system prescribed by ISBD (S) was not yet available. The separation of the areas follows the structure of the Regole Italiane di Catalogazione per Autori (RICA) by means of the conventional system of punctuation.
An important asset of this edition is the index of corporate bodies linked to the publication. Their presence contributes to a better identification of the serials. It was considered on the basis of purely practical criteria more up-to-date to chose the most recent denomination of the institution within the limits of what is possible and verifiable.
The control of the bibliographic units and the updating process resulted in the production of more than 3.000 input items. This served to improve the features of this catalogue, making it an even more precise and up-to-date bibliographic tool.
The most important new aspect of this catalogue concerns the retrieval of conceptual information through its systematic arrangement based on the Universal Decimal Classification (UDC). The adoption of the UDC was motivated by a practice already operational in the ISRDS file.
The edition of the UDC used as a general point of reference has recently been published by the ISRDS (4). In addition, it was necessary to refer to the full Italian edition of the classes pertaining to those entries which required indexing in depth. It was not always easy to find correspondence between the concepts and the UDC class numbers due to the variety of the former and the inadequacy of the latter. This was the case above all in the new biomedical fields like the neurosciences and biotechnology, to cite only a few examples. Class numbers have thus been used which may not fully express the conceptual contents or, in other cases, it was necessary to resort to personal and, if you like, debatable combinations of class numbers. At any rate, allowing for the inevitable insufficiencies, proper to a collective work, it seems to us that the proposed systematic framework provides a satisfactory guide search by subject.
The selected fields of interest are aimed at an approach as wide as possible to those areas which concern public health and quality of life, also through the promotion of environmental health at all levels: detection and control of pollution levels, environmental protection and prevention and control of toxicological risk factors. It should not appear too heterodox to have included also the area of psychology, if we do not want to ignore the importance of psychosocial and behavioural factors in the fields of mental health and the neurosciences. Essentially then, on the basis of the goal of the World Health Organization "health for all by the year 2000", we included the areas relevant to human health and development excluding other field which do not have a direct bearing on human health.
The alphabetic subject index, structured on the basis of direct order citation, allows easy information retrieval with the use of natural language terminology.

EVALUATION, EFFECTS, PROSPECTS

The production of a union catalogue inevitably brings pressure towards a coordinated availability of documents, once that the premises exist for the

development of a system of utilization suitable to various needs. The necessity has thus arisen to evaluate the consequences of the appearance of the first edition. The ISS in collaboration with ISRDS and the UCSC have elaborated a questionnaire in order to collect objective data for an "audit". The form was distributed by mail to the 72 biomedical libraries in the Rome area.

Starting from the hypothesis that the standards established by the working team responded to the needs of the users of the catalogue, it was attempted to evaluate the degree to which the catalogue had stuck to the principle of usefulness, for which it had been predisposed, and to deduce any possible new features which might improve the existing services. The number of answers, not completely satisfactory as a percentage, showed once more the complexity of the situation of biomedical libraries in Italy, often subject to a complicated system of internal bureaucracy which characterizes in particular the administration of the Local Health Units (USL), but which is present also in other public administrations. Furthermore, the diversification and sometimes overlapping of contradictory answers within the area of libraries of the same type underlines the necessity for an improvement in internal organization in order to offer services which do not mainly depend on the good will of the librarian. In the present situation, the librarian actually sometimes works at the limits of his/her resources. In front of a tool like a union catalogue, which considered as an information service may furnish the user with things he never knew he wanted, the librarian tends to offer services which sometimes may not be contemplated: all this fits in with the picture of the worthy "constant good will" of the biomedical librarian.

Our questionnaire intended to collect data for a study of the efficiency and the quality of the services offered to users. The data collected underline the separation between the university libraries, which are very numerous but with comparatively few holdings and a specific kind of user, and the others which include libraries that are diversified as to type and users, and of much superior dimensions as far as the holdings are concerned. From a total of 72 libraries (59 university, 13 others) 44 answers were received. From a comparison of the data on the summarizing table it can be seen that:

1) access to the university libraries is prevalently free (74,20%) but is oriented towards a specific kind of user;
2) access to the others is allowed with a letter of presentation (76%);
3) local availability of the document is guaranteed in almost all cases;
4) the possibility to make photocopies is limited to about 50% of the university libraries while almost total in the others;
5) photocopies are free in over 50% of the other libraries while bureaucratic requirements impose charges in a high percentage of university libraries.

The first conclusion emerging from the data is that the biomedical libraries in Rome appear divided in two rather homogeneous groups as regards services being offered: university libraries (59) and others (13). The formed showed little interest in the initiative (only 49% of the university libraries returned the questionnaire), offer fewer services but give freer access. The others, on the whole, offer more services and form a basis for future cooperation as has already been seen. On the other hand, the collections present in the university libraries may be more subject-oriented and can, therefore, be important for specific research fields. The data collected on the type of services offered will be entered into the central file and, thus, in the national biomedical file (BIOMARC) in order to orient the user from the beginning in the choice of that library which offers the best guarantee for document retrieval.

It has, therefore, been planned to locate in the central file, with proper

pointers, those libraries that belong to homogeneous groupings according to the services offered. This criterion of identification of the more service-oriented libraries could be an essential tool for even wider projects which extend beyond the national frontiers.

PERSPECTIVES

Since it can undoubtedly be affirmed that the first edition of this union catalogue has had a positive impact on the biomedical scientific community as can be seen by the increased demand for document availability, we might expect that further developments of this useful bibliographic tool will promote a greater and more efficient use of bibliographic resources on the part of scientific institutions and health services. With a more extended and coordinated coverage of the territory it would be possible to make the catalogue the principal tool for research activities and medical practice, and for fulfilling the goals of the National Health Service (SSN).
If the premises for an agreement between the partners will be realized in order to guarantee coordinated document availability, good intermediate results will be obtaioned within a relatively short time. To achieve common goals several factors are obviously necessary such as the consolidation of an efficient organizational structure of the working group and the optimization of the library services. It is indispensable that an important bibliographic data base like the one present in the ISRDS file should be converted, after the necessary adaptations, into the SBN for a wider and more organic use of a data base, which already allows retrieval of a good level of bibliographic description.
A study group recently created within the SBN to realize the conversion of the file has started to work on the analysis of the problem and a solution is hoped for in the not too distant future.
Shortly we will have an online connection which will offer all the participating libraries the possibility to search in the central file, of which the biomedical catalogue is a subfile.
As far as other collateral, but not less interesting, aspects of the catalogue are concerned, it is possible that there will be further studies to analize the growth of certain sectors and the local distribution of titles.

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Union catalogue of the Coordinadora de Documentació Biomèdica

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We present the collective catalogue of the Coordinadora de Documentació Biomèdica, containig the periodical publications available in 51 Catalan biomedical libraries. This catalogue was started in 1983 and it is anticipated the it will be updated at the beginning of June.

This catalogue is structured as a data base with the aid of BASIS software and contains some 15,000 titles. The structure of the base, the updating process and its methodological aspects are described. The means of circulating the catalogue and for whom it is mainly destined will be mentioned.

Mention will also be made of the suitability of using the potential of this base for improving the exchange of information libraries, that in principle would be based on the following points:

- a study of publications available and those needed to complete the collections
- try to obtain the complete collections of Spanish journals and more specifically those published in Catalonia
- try create a joint policy to purchase publications
- to distribute the duplicate copies among its members

In this work it is also exposed a project to set up an administrative centre for obtaining documents referring to both, the exchange with other areas of the country and abroad, and the distribution of demands amoung ourselves.

A SUPPORT FOR DATABASE USERS: A LIST OF SERIALS INDEXED BY NLM FOR MEDLARS AVAILABLE IN ROME BIOMEDICAL LIBRARIES

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INTRODUCTION

The Documentation Service of National Institute of Health (Istituto Superiore di Sanità - ISS) is the Italian Medlars National Reference Centre since 1978. The National Centre has two main institutional tasks:

1) to give an opportune and exhaustive answer to the information needs so as to work out all the scientific and technical matters pertaining to the ISS and to other institutions sharing the similar activities in the research domain;

2) to promote and support remote biomedical research centres with training courses, supporting them with instructions for a correct use of the Medlars system.

The possibility of knowing in advance which serials indexed by the NLM for online users are available in Rome biomedical libraries represents a useful and practical tool to achieve both the institutional tasks.

The above mentioned list, which is the outcome of a close cooperation between the Library and the Documentation Service of ISS, cannot be set aside from the National Periodicals Collective File (Archivio Collettivo Nazionale dei periodici - ACNP) set up by the Institute for Studies on Research and Scientific Documentation/National Research Council (Istituto di Studi per la ricerca e la documentazione scientifica Consiglio Nazionale delle ricerche -ISRDS/CNR) which has produced a list collecting the serials held by the biomedical libraries in Rome area.

The ISRDS list with which NLM list had to be compared, is extended only to the Rome area; therefore the relevance of the work itself seems to be limited. We expect, anyway, to expand progressively to more extensive areas. That can be possible as soon as other district or national authorities programs will carry out further collective catalogues, whose merging is the condition we are looking forward to get the very latest information about the Italian position on biomedical serials and libraries.

Anyway this list represents an interesting "pilot experience" in this field; it is moreover computerized so that, if needed, it can be extended or updated without excessive stress. The publication of a list of serials, even if on a local basis, has

been motivated by the unquestionable need of offering Medlars users a useful tool which can help in the obligate passage from the bibliographic citation, more or less integrated by additional informations, to the real publication, that is to the entire article and its whole text, pictures, tables, bibliography and so on.
A strict cooperation between the documentation centre and the library is needed, since both these work units represent two faces of the same process of information retrieval; as a matter of fact, the bibliographic citation itself has only an indicative value but the primary publication is difficult to find out without the help of the computerized data bases.
With the only purpose of providing the user with some practical advices for information retrieval, we wish to point out the names of some institutions that provide distribution services of documents, either through direct transmission of papers via video-display units (telefax), either through online ordering of photocopies (which will be eventually mailed).

British Library Document Supply Centre (United Kingdom)
Centre Nationale de la Recherche Scientifique (France)
Tecknische Information Bibliothek (Federal Republic of Germany)
Library Utrecht (Netherlands) and so on.

The list of NLM used for the comparison was the "List of Serials Indexed for Online Users" and not the "List of Journal Indexed in Index Medicus", as our work is primarily intended for the users of MEDLARS online data bases. Our choice was motivated by the fact that the list for online users comprehends also those publications included in specific bibliographies such as "Index to Dental Literature", "International Nursing Index" "Hospital Literature Index" in addition to all the journals considered by Index Medicus. Moreover, this expanded list also includes particular journals indexed by specific databases such as "Health Planning and Administration" (HEALTH) and "POPLINE", in addition to all serials indexed by Medline and its Backfiles. We obviously decided to follow criteria used by NLM "List of Serials Indexed for Online Users" to describe serials (full title, abbreviated title, city of publication, ISSN). These criteria are the same adopted by NLM in its bibliographic database SERLINE which considers serials and conferences, periodical proceedings ordered or received by the Library by a cataloguing point of view.

METHODOLOGY

The titles of 6681 serials indexed by NLM and of about 14.000 serials included in the ISRDS list have been compared; serials common to both lists have been memorized on a PC (AT IBM) in order to carry out a product having the following characteristics:

Abbreviated title, deduced from the NLM category TA = Title Abbreviation, as it appears also in the MEDLARS bibliographic citation field SO=Source. We wish to remember that in order to conform to the American National Standard for Information Science-Abbreviation of Titles of Publications, 1985 (ANSI Z395-1985)-NLM has been introducing

space variations to titles with geographical names.
These variations have been introduced since the beginning of 1988 so that all title abbreviations will be corrected on SERLINE and either on the "List of Serials Indexed for Online Users 1989" and in the "List of Journals Indexed in Index Medicus 1989".
Publication dates: they could be different in the two lists (ISRDS and NLM) when the document refers to literature covering a space of time which does not match the publication year. In this case we preferred to mention the dates appearing in ISRDS list in order to avoid inconsistencies between the year of birth and the holding of each library.
City of publication. In this field, since a different interpretation of criteria in choosing cities has produced some differences in the two lists, we preferred the city of publication indicated in the NLM list in order to allow user to identify clearly the title of the journal. City of publication (according to NLM) is based on the location of the following, in order of choice:
1) major publisher;
2) minor publisher with distinctive imprint;
3) official sponsoring body (e.g. academy, society, institution);
4) editorial office of the official sponsoring body;
5) business office of the sponsoring body;
6) printer.
The standard rule UNI 6392, adopted by the National Periodicals Collective File (ACNP) for its data input, has been used to describe bibliographic data of the biomedical catalogue. Different cities of publication, if occurring during the same period of time, are separated by a dash, otherwise they are separated by a comma.
ISSN: it is particularly interesting since, as everybody knows, it uniquely identifies a serial title. It is assigned by the appropriate national centre of the International Serials Data System and consists of a seven digit number and an eighth check digit. The ISRDS list does not report such identifier which therefore has been recovered by NLM list; in case this list was lacking with that number, it has been taken either from the Serial itself, if owned by ISS library, or from the ISSN microfiches file owned by ISRDS/CNR.
The ISSN number is used to limit a search strategy to articles published in a particular journal.
Serial bibliographic history: it includes any kind of vertical or horizontal connection and some notes, if needed.
Holdings of the libraries cited in the ISRDS list. The numbers identifying those libraries are the same existing in the ISDRS/CNR file. It was essential to keep that numbering so as to retrieve the same libraries cited in the new biomedical serials catalogue (updated to 1988) already presented during this session. At this point we should specify that technical difficulties did not allow us to use the ISRDS list updated 1988 as we planned at the beginning of the work. This would have certainly meant an improvement in our work since it would have avoided the obsolescence of the list just produced. In fact the NLM list at the beginning

of the work of comparison was not yet available in its 1988 edition, and the ISRDS list was not yet updated to 1988.

CONCLUSION

This work represents anyway a first important step towards the resolution of practical problems in information retrieval. An update of this work will be done and will be repeated as it happens for every work representing a continuous tool kept up with the evolution of techniques. Therefore, we thank ISRDS together with all libraries which support the realization of the National Periodicals Collective File (ACNP) managed by ISRDS/CNR for the utilization of biomedical data stored in it.

CZECHOSLOVAK BIOMEDICAL JOURNALS IN THE SCIENCE CITATION INDEX

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In its 1986 volumes, the Science Citation Index /SCI/ covered 26 journals published in Czechoslovak Socialist Republic /CSSR/. From among them 9 biomedical journals have been included in this study, their list being in Table 1. In addition to them, more than 50 other biomedical journals not covered by SCI are being published in CSSR.

The aim of the study is the appraisal of the information supply to Czechoslovak authors by means of the analysis of their citing practices. A large number of studies on citing practices has been published /1/. Most of them present empirical data with various interpretations , the others concern problems of citing motivations and theoretical problems /2-7/.

Many detailed statistical data concerning each journal covered by SCI can be found annually in the Journal Citation Reports /JCR/ volumes of SCI, among them data characterizing the citing practices applied in each journal. The most important citing indicators from SCI-JCR are

a/ the mean number of references to periodicals in the original /non-review/ articles in individual journals /as an indicator of the quantity of relevant information sources available to the authors/,

b/ the chronological distribution of references to all or selected periodicals which, to a certain extent, can numerically be expressed by the citing half-life or/and other lower quantiles /as indicators of the speed of relevant information supply/.

Basic indicators of citing practices of authors in 9 biomedical journals published in CSSR and covered by SCI 1986 are shown in Table 1. To enable the evaluation of the data it is useful to compare them with analogous data of other appropriately selected journals. Two groups of comparative journals have been used /Table 2/:

Table 1. Basic indicators of citing practices of authors in biomedical journals published in CSSR and covered by SCI 1986

Rank	Journal Title	1	2	3	4	5	6	7
1	Acta Virol	75	1299	17,3	7,1	5,1	6,6	0,433
2	Activ Nerv Sup	130	795	6,1	6,7	3,7	5,6	0,297
3	Endocrin Exp	37	985	26,6	8,5	3,4	>10,0	0,420
4	Folia Biol /Prague/	43	931	21,6	5,8	3,4	6,8	0,633
5	Folia Microb	53	944	17,8	9,5	4,6	>10,0	0,397
6	Folia Parasit	62	947	15,2	>10,0	5,5	>10,0	0,226
7	Gen Physiol Bioph	65	1385	21,3	7,8	3,3	9,4	0,716
8	Neoplasma	79	1755	22,2	7,6	3,9	8,3	0,364
9	Physiol Bohem	58	1130	19,4	8,5	4,7	>10,0	0,398
	Total	602	10171	16,9	8,0	4,0	8,5	0,410

Columns:

1 number of original/non-review/articles
2 number of references to periodicals in original articles
3 mean number of references to periodicals per original article
4 half-life of references to all periodicals
5 half-life of self-citations of the journal
6 half-life of references to 3 most cited periodicals published in other countries than the citing journal
7 impact factor

A/ 9 journals most cited in each of the journals published in CSSR /they represent the closest couplings of compared journals/,

B/ 9 primary journals with the highest impact factors in the respective categories of journals /they represent the mainstream journals in respective biomedical disciplines/.

Table 2. Comparative journals with impact factors in SCI 1986

Group A			Group B		
Virology	USA	3,307	J Virol	USA	4,430
EEG Clin Neur	NETH	1,704	J Neurosci Res	USA	22,616
Endocrinology	USA	4,120	Diabetes	USA	4,392
P NAS USA	USA	9,166	Dev Biol	USA	3,629
J Bacter	USA	3,071	Antimicr Ag Ch	USA	3,514
J Parasit	USA	0,783	Mol Bioch Parasit	NETH	2,641
Bioch Bioph Acta	NETH	2,739	Biophys J	USA	5,080
Cancer Res	USA	4,058	Cancer Res	USA	4,058
J Biol Chem	USA	6,315	J Gen Physiol	USA	6,240

The results of comparison are summarized in Table 3 that indicates especially that

a/ the articles in journals published in CSSR contain on the average only about one half of the number of references to periodicals in comparison with mainstream comparative journals of the same disciplines,

b/ the references to periodicals contained in journals published in CSSR are about half a year older than references in comparative journals,

c/ the largest difference in the time lag applies to references to periodicals published in other countries than the citing journals /it suggests bigger communication barriers/,

d/ the difference in the time lag does not apply to the self-citations of respective journals /it indicates the least communication barriers detectable in SCI-JCR where self-citations of authors with no barriers are not distinguishable/.

The validity of the results may be influenced by some external factors, especially in the case of the chronological distribution

Table 3. Results of comparison of citing practices of authors in journals published in CSSR with both groups of comparative journals /SCI 1986/

	Journals CSSR	Comparative group A	B
Mean number of references to periodicals in original articles /references per article/	16,9	31,9	30,5
Difference		15,0	13,6
Relative value of the difference		47,0%	44,6%
Half-life of references to all periodicals /years/	8,0	5,3	5,3
Difference		2,7	2,7
Relative value of the difference		50,9%	50,9%
Half-life of self-citations of the journals /years/	4,0	4,8	4,3
Difference		-0,8	-0,3
Relative value of the difference		-16,7%	-7,0%
Half-life of references to 3 most cited journals published in other countries /years/	8,5	5,4	5,4
Difference		3,1	3,1
Relative value of the difference		57,4%	57,4%

of references. To answer this problem additional inquiries have been performed.

The mean publication lag /the period between manuscript receipt and printed publication date/ in 7 biomedical journals published in CSSR in 1986 with printed dates of manuscript receipt was 13,0 months /median 12 months/. A random study in 7 comparative journals has revealed a mean publication lag of 8,6 months /median 8 months/, the difference being about 4 months /50%/.

Publication and delivery irregularities can be assessed by the percentage of items from the previous year in the current volume of SCI. In SCI 1986 33% of articles in journals published in CSSR in 1985 have been found. This implies additional 4 months delay in the SCI data concerning these journals in comparison with journals having no 1985 items in SCI 1986.

The combined publication lag of 8 months /0,7 year/ reduces the citing half-life difference between journals published in CSSR and comparative journals to 2,0 years. The differences in information supply are to be blamed for this.

The main reasons for differences in the citing practices of authors contributing to journals published in CSSR as compared with authors of papers in comparative journals may be:

a/ Inadequate resources /budgets, premises, technical equipment, and staff/ of biomedical libraries and information systems for operative full-range satisfying of users´needs.

b/ Editors of journals published in CSSR do not demand consistently from authors to adhere to quantitative citing standards and practices applied in mainstream journals in respective biomedical disciplines and thus do not motivate them enough to get over the information barriers.

Improvement of citing practices is admittedly not an end in itself, as itis a mere indicator of information available to authors. A desirable redistribution of resources allocated for science in favour of information supply seems to be well-founded, since no research supplied inadequately with relevant and up-to-date information can be truly effective.

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DO YOU PUBLISH "TO BE READ ?" DO YOU COLLABORATE "TO BE QUOTED ?"

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Modern studies on science have, in a way, abandoned the epistemologic and sociopolitical approaches. Nowadays, those who study scientific activity use economic models much more frequently to understand the characteristics of such activity.

On the basis of the scientific production of the members of the Zaragoza Medical Faculty from 1981-1985 we attempted to analyze the use of these works by other scientists. For example, we asked ourselves if actually those authors with more published works are those most quoted; or if, on the contrary, there are authors in some specific areas, who in spite of their low productivity, manage to have a strong impact on the international scientific community.

Within this same approach we asked ourselves about a more novel matter: the relationship between collaboration and impact. The last studies by D.J.de Solla Price indicate that collaboration in the field of scientific activity depends directly on factors outside the control of the co-authors. The main argument used by the abovementioned author dealt with the economic endowment, faithfully demonstrating that, in those areas where there was more economic stagnation there couldn't be a strategy in order to achieve one of the main objectives of scientists: to be read, or better, to be quoted. Therefore, we studied whether those articles with a larger number of authors, are those that on the average also obtain a greater number of quotes, since we suspect that the contrary might be true. In other words, that those authors who believe that they have a better chance of being quoted, might restrict their collaboration in those works, while on the other hand, would be more generous in contributing to those in which the possibility of being quoted is more remote.

THE COLLABORATIVE GROUP: A NEW AUTHORSHIP IN SCIENTIFIC LITERATURE

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Introduction

Even only a rapid glance at the literature over the last few years confirms that the time has come to build a firm framework on which to tackle clinically important questions. The increasing numbers of collaborative studies on important matters suggests that the scientific community is becoming more closely oriented to public health problems as a whole. For example extrapolating basic information, or single-patient-related findings to the general population (1) large multicentre studies (and from these random clinical trials) are essential to avoid the perils of false interpretations arising in small populations or in single and specific clinical situations (2). As a consequence, multiple authorship reflecting the work of a research-oriented groups representing not only "an inevitable consequence of the increasing complexity of biomedical research" (3), but a scientific methodological need.

We set up the present study to illustrate the frequency of the "collaborative group" as a recurrent "author" in the recent literature. Computer search has increased enormously over the last few years (4). Today it is an essential instrument in biomedical research. However researchers find it increasingly difficult to keep abreast of the literature and findings because of the vast amount. We have analyzed how multicentre studies are processed in bibliographic databases, and consequently what type of information they provide.

Methods

A systematic hand search of four journals (Lancet, British Medical Journal, JAMA, New England Journal of Medicine) over five years, 1983-1987, of multicentre studies with at least four centres directly involved, identified 396 papers (Figure 1). As a total of 110 papers had been published by Lancet alone, including the first semester of 1988 too, we chose this journal's material as representative.

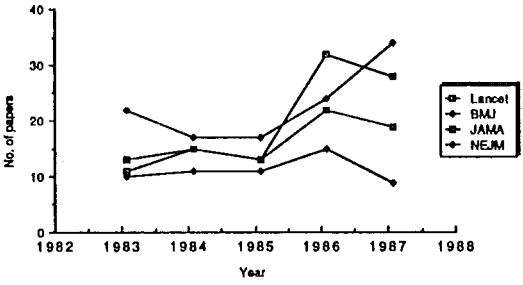

Figure 1. Multicentre studies in four journals over 1983-1987

Thus, a detailed analysis (number of participating centres; number of countries, hospitals and patients; type and topic of the study) was made on the random clinical trials (RCT). A total of 51 papers were identified and the manual search was then compared with the findings provided by the MEDLINE database of the National Library of Medicine, Bethesda, Maryland. The complete record of each paper was extracted from the MEDLINE database and the indexing criteria were evaluated with particular reference to MeSH terms, to free terms utilized and the authorship. For descriptors a comparison between MEDLINE and EMBASE (Excerpta Medica database) was also made.

Results and Discussion

Of 51 identified RCT articles, 14 (27%) concerned the cardiovascular field, 5 of them myocardial infarction and streptokinase therapy; 12 (24%) oncology, 6 of them breast cancer and 4 leukemias; 5 (10%) vaccines; 3 (6%) renal failure; 3 (6%) cerebrovascular diseases. The remaining 14 (27%) papers, each dealt with different topics. Twenty-five countries took part in the 51 multicentre studies, 18 of which (36%) were international studies involving at least two countries. Although four studies were considered twice because different steps of the work at different times were reported in Lancet, the countries appearing most often were: United Kingdom participating in 16 papers (31%); West Germany 13 (25%); Belgium and Italy 10 (20%); Netherlands and Sweden 9 (18%); France 8 (16%); Finland, Switzerland, and USA 6 (12%). This overall picture suggests the "European feeling" of the journal.

The number of hospitals involved and the size of populations enrolled are shown in Figure 2. Only a minority of studies involved fewer than 10 hospitals and 100 patients.

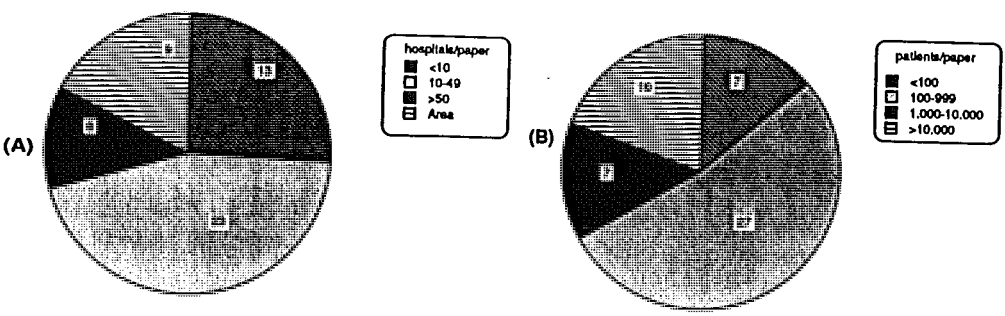

Figure 2. Distribution of partecipating hospitals (A) and size of population (B) of multicentre studies in Lancet from January 1983 to June 1988

MeSH descriptors

Medical Subject Headings-Annotated Alphabetic and Tree Structures both well known as MeSH (5) is the official thesaurus used by the National Library of Medicine for the MEDLINE database.

An important evaluation tool for the search is extraction of the MeSH headings used for indexing each citation. The descriptors also help to identify terms that did not occur to the planners of the online search and may suggest other search strategies. All terms are assigned by professional indexers. With this aim we printed out the full records for each of our 51 selected articles. The purpose was to verify wether terms were consistently assigned to articles which have the same goal.

Poynard and Conn (6) wrote a very interesting article on the comparing a hand search on RCT in liver disease with online retrieval. This paper has recently been re-evaluated and partially criticized by Bernstein (7), and Hewitt et al. (8). On the basis of the list of MeSH terms found for our 51 articles, we chose as common denominators the same seven headings proposed by them: clinical trials, random allocation, comparative study, prospective study, evaluation studies, double blind methods, drug evaluation. All seven headings had entered the MeSH list before 1983. The results are shown in Table 1. One article did not list any of the seven terms.

TABLE 1 - MEDLINE - MeSH TERMS

Clinical trials	48
Random allocation	50
Comparative study	21
Double blind methods	20
Prospective study	9
Evaluation studies	2
Drug evaluation	0

To complete our study we consulted EMBASE as well. Starting with 1988 EMBASE changed its indexing policy for articles in their database so it was difficult the judge their consistency. Nevertheless EMBASE Plus was more precise than the old base whose results were sometimes astonishing. One article was inserted without any indexing at all.

Title and abstracts words

Despite the usefulness of checked vocabulary, it is not always the only or the best way to search. As we have seen in this study and in another some months ago (9), indexers, good as they are, do vary in how they index articles. It is always advisable to use title and abstracts words in online searching.

We considered "random$" and "multicentre or multicenter" appearing in either the title or abstract of our selected articles.

"Random$" appeared 12 times in the title, 42 in the abstract. There was no mention of randomization in the other seven articles.

Multicenter/multicentre appeared 8 times in the title field and 14 time in abstracts. No mention in the other 32 articles.

An online search was made for the period 1983-June 1988 using the following strategy: Random allocation and clinical trials (as MeSH terms) and Lancet. Then we added the term "multicenter or multicentre" as text words, used in either the abstract or title. We obtained 21 articles. Two of them were not considered since they were "Letters". The other 19 were all among the 51 articles retrieved by us in the hand search.

The search for Lancet and random$ and multicentre or multicenter (all as text words) turned up 23 articles. One was published after the period of chosen, two were "Letters" and one was not a RCT. The word randomization appeared by pure chance in the abstract. The other 19 were the ones resulting from the previous search (Table 2)

TABLE 2 - D-S/MEDL/MEDLINE 1983 - NOVEMBER 1988

QN	DOCS	SEARCH TERMS
1	31	LANCET.SO. AND (MULTICENTRE OR MULTICENTER)
2	23	1 AND RANDOM$

QN	DOCS	SEARCH TERMS
1	446	RANDOM-ALLOCATION AND LANCET.SO.
2	730	CLINICAL-TRIALS AND LANCET.SO.
3	409	1 AND 2
4	21	3 AND (MULTICENTRE OR MULTICENTER)

Titles and abstracts are taken directly from the journals in both the databases and reflect the bias of the author and the journal's editorial boards. A word of emphasis is called for here on the need for accuracy in assigning title words and abstract. It would be a good idea to draw to both authors' and editors' attention to the importance of a concise and precise title in retrieving online information. In the abstracts they should insert all the concepts inherent to their works if possible using uniform terminology. Probably closer cooperation between documentalists and editors could focus activity better on titling and abstracting papers.

Authorship

It is becoming a widespread practice, in multicentre clinical trials, organizers to publish the results under the name of the investigating Group (or its abbreviation), listing coordinators and participants people at the end of the article. The name of the group or its abbreviation usually remains the same throughout a trial but often the people participating in the study change during the various phases. It is thus important to be able to retrieve these groups' names (or their abbreviations) using bibliographic databases. Thirty-one of the selected articles (61%) had a group name or abbreaviation but only 22 were mentioned in the title field. Not one of the participants was mentioned in the author's field. It would be interesting to suggest that database producers create a new searchable field for groups.

Conclusions

The increasing growth of multicentre studies over the last years is a reality. The epidemiological approach involving large populations of patients and large groups of researchers, is a new area in all medical disciplines. Researchers and those involved at all levels of literature utilization must start to take account of this. How papers by collaborative groups are processed is an area for further improvement by documentalists and editors with a view to easier and more effective dissemination knowledge.

Acknowledgements

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POSTER EXHIBITS

1. Library rearrangement at Centro Studi di Storia della Psichiatria e dell'Emarginazione Sociale (Provincia di Bologna).
   C. BARBIERI, L. CAVAZZA, R. IORI, T. SARTO

2. Local Health Authorities Medical Libraries and librarians in Sardinia.
   A.P.BOY, S. DERIU, G. MURRU

3. The National Research Council Central Library's development in biomedical science..
   A.M.CAMPANILE, A.FAZIO

4. The National Research Council as biomedical information producer: biomedical publications and reports of CNR and its bodies in the last years.
   S.FUSILLI, B. SEBASTIANI

5. New technology in library services for users in sparsely populated areas in Norway.
   K. HALLDAL

6. The biomedical library and its user: how to improve both.
   L.LOCCHE

7. The first months of management of an online retrieval service: problems, experiences and prospects.
   G.MAMMI

8. Biomedical information "down-under". Meeting the information needs of a medical research community: the Walter and Eliza Hall Institute of Medical Research, Melbourne, Australia.
   J.M.MARSHALL

9. Italian Society of Tropical Medicine Documentation Centre
   A.PESCI, I.PARDEON, F.VICHI, E.MISSONI

10. International cooperation: twinning between European and African health science libraries.
    WORLD HEALTH ORGANIZATION. PROGRAMME FOR HEALTH LITERATURE SERVICES

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