

Medical Information Centre of Tartu University Clinics as a portal to knowledge

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Medical Information Centre of Tartu University Clinics

In the fast changing information society, we are all faced with ever new challenges. The main activity of the Medical Information Centre of Tartu University Clinics is provision of the Estonian medical community with specialist information using forms of servicing. At the same time, the Medical Information Centre can not envisage its activity separately from the development plan of Tartu University Clinics and health reform of Estonia as designed for 2001-2015.

One of the major tasks of Estonian medicine in the nearest years is regulation of the existing hospital network. In 1993, all Tartu-based hospitals were joined under the largest medicine complex of the country, Tartu University Clinics. In December of the same year a centre of medical information was established within the Clinics.

The reason for placing emphasis on electronic information is not only the efficiency of its application but also the fact that in short time such information has become accessible to a wide range of users in Estonia.

Estonia has given much attention to the development of information and communication technology. The starting point in the early 90s was a virtual nil. However, today the country has attained the level of developed European countries and even surpassed some of them in several areas (Internet, including Internet banks, mobile communication, etc.). In the year 2000 there were 28.4 Internet hosts per 1000 inhabitants in Estonia (in 1990, 2.4 hosts). Concerning this indicator, Estonia occupied the 19th place among the countries of the world, surpassing not only all East and Central European countries but also, for example, Italy, France, Germany and the United Kingdom.¹

This progress is also reflected in the development of the Clinics: in 1994 there were 50 computers, at the end of 2001 already 850 computers which were all connected to the network. The membership of the staff at present is around 3300 among whom 600 are physicians.

Aims

The aim of the paper is to give an overview of the opportunities the use of which has rendered the continuously updated website of the Medical Information Centre an efficient tool for offering information recourses and services to its target groups.

The object of the investigation is the user of the services of the Medical Information Centre as the consumer of information and the generator of scientific information.

Information users

The number of the information users of the Medical Information Centre has increased steadily: 238 in 1996, 2113 in 1999, 3992 in 2002.

At the same time, the target groups of information users have remained the same. The most numerous group is formed of the teaching physicians of the Tartu University Clinics (about one-third of the users) and students of all levels of the Tartu University Faculty of Medicine (forming also about one-third of the users). The remaining third is made up of nurses, information specialists, librarians and others.

Among the information users of the Medical Information Centre from outside the Clinics are doctors, nurses and other staff members from 74 institutions across Estonia. The largest institutions are the North-Estonian Regional Hospital in Tallinn, the East Tallinn Hospital and Pärnu Hospital.

Use of information resources

A very important factor which determines acquisition of information resources for the Clinics is the frequency of using information resources.

The Medical Information Centre follows regularly the use of the OVID databases Medline, Core Biomedical Collection, Biomedical Collection II - IV and Evidence Based Medicine. This activity is based on the database of the users of the information resources of the medical Information Centre as well as on a statistical program appended to Medline which allows to establish the time spent by each user for working with databases. For example, in 2001, OVID databases were used on 18 349 occasions during a total of 7855 hours. So the average length of one session of use is 25 minutes. Taking into account that university lecturers and students have vacations in July - August, during which period the databases are practically not used, the average number of sessions per day is about 60 and the length of time is 26 hours.

Data on the use of information resources by different structural units of the Clinics are brought out regularly. Such data can be used, for example, in allotment of resources for education. Among the 17 clinics belonging to the TU Clinics the most active information users are the Children`s Clinic (440 hours per year) and the Clinic of Internal Medicine (418 hours per year). Among the largest users from outside the Clinics I would like to point out the North-Estonian Regional Hospital and the Estonian Seamen`s Hospital in Tallinn, Tallinn Children`s Hospital and Pärnu Hospital.

We have also studied which databases are preferred. Medical professionals prefer full text databases (Core Biomedical Collection, Biomedical Collection II and IV). With practising physicians popular is MicroMedex Health Care Information System. In the first quarter of 2002 Estonian physicians had for the first time the possibility to work with the new disease-oriented database DiseaseDex which attracted great interest.

User investigations

The TU Medical Information Centre has functioned for nine years. During this period of time it has conducted three investigations aimed at finding out the needs and satisfaction of its

information users. Another goal was to improve the results of the work of the Centre. The last investigation of information users was carried out in March 2002.

The questionnaire applied in 2002 also included a question about the informativeness and design of the homepage of the Centre. It is pleasant to acknowledge that most respondents (73%) were satisfied both with the presented information and the design of the homepage.

E-library

The keyword of the future activity of the Tartu University Medical Information Centre is electronic library (e-library). We started with the project of the e-library in December 2001 and by the present time we have worked out the structure of the e-library and have developed a search system for the library books on paper carriers.

While in the 80s doctors found answers to their questions mostly in special handbooks, then now they have at their disposal different databases and Internet information resources.

The e-library is needed by the doctor mostly as it allows prompt access, via his desktop computer, to the latest information concerning specification of diagnosis, prescription of treatment methods and medicines, etc. The system will be operated so that the doctor can establish connection to the e-library and to the information contained in it directly from the patient record.

In the e-library, information is divided into three major areas/sections. The first area/section comprises three databases: books belonging to the Clinics, free journals and books in the Internet and guidelines. The section is governed by a common search system which allows integrated search in all three databases simultaneously, or work with each database separately. The search system is constantly improved and updated. Inclusion of new data takes place once a month. It is planned to add to this section the database of the medical literature by Estonian medical scientists, which until now forms a separate database with its own search system.

Another section is formed of the OVID databases (Medline, Core Biomedical Collection, Biomedical Collection II - IV, Evidence Based medicine) plus Biomedical Links. The section is used via the Internet.

The third section consists of the information resources which can be used only within the Intranet of the Clinics. Here belong four databases of MicroMedex Health Care Information System (PoisIndex, DrugDex, EmergIndex, Care Note Instruction), StatRef Medical Reference, electronic manuals and reference books (for example, at present there exist direct links with the databases EBSCO, Science Direct, Current Contents and Springer Link, accessible to Estonian medical professionals in the Internet).

As the project of the e-library is only at the initial stage, it requires constant check-up and improvement.

Education of the information user

Education of the information user is among the most important aspects in developing and changing information society. In the context of the Medical Information Centre, the education of the information user consists primarily in the introducing and teaching of the software programs of databases.

The staff members of the Medical Information Centre conduct continuing education in the area of medical informatics for the staff of the Clinics as well as for the staff of other hospitals in Estonia. Emphasis is placed on the introduction of information resources in the Internet and software programs of databases. Education blocks have different lengths from three to 30 hours depending on the user's needs. Education has also been provided outside Tartu (in Tallinn and Pärnu). Training in medical information has been attended by about 700 persons.

The continuing self-education of information specialists also plays an important role. The staff of the medical Information Centre has regularly taken part in education courses organised by EAHIL and NAMHI, including the education courses *Transfer of Knowledge* for workers of Baltic medical centres and libraries, organised on the initiative of the Nordic colleagues in Kaunas. The materials of these courses have been translated into Estonian and included in the homepage of the Medical Information Centre so that all those interested can study such topics as PubMed, Evidence Based Medicine, Evidence Based Health Care, Information Resources on the Internet, Reference Manager and the Cochraine Library.

Bibliometric analysis

The medical Information Centre has also performed a bibliometric analysis of the publications by the Estonian medical scientists.² It should be noted that in the 90s took place a reorientation concerning the journals where the Estonian medical scientists publish their papers. For example, the number of titles by Estonian medical scientists, published in the journal of Medline, increased almost fourfold (from 32 to 123) in the period 1993 - 2000.

Still faster has been progress in cooperation with medical scientists from other countries. When in 1994 joint publications accounted for one-sixth of the total number of publications, then among the papers published in 1998 already half were completed in cooperation with foreign scientists. Cooperation has been the most intensive with Finnish and Swedish medical scientists (85% of joint publications).

Also, it deserves to be mentioned that over 45% of the titles by Estonian medical scientists have been published in journals whose impact factor is higher than 2.

Conclusion

The number of information users is increasing from year to year; there exists a growing need for new information resources; the fast pace of life brings about the need to receive the latest specialist information promptly at one's own desktop; education for acquiring new software programs is in greater demand than in 1999.

The mission of the Tartu University Clinics is to guarantee the continuity and development of Estonian medicine via high quality integrated treatment, teaching and research activity. Since Tartu University Clinics represent a flagship of Estonia, it plays a significant role in Estonian health system generally.

The portal of the Medical Information Centre, offering a wide range of resources and services, can be visited at the following address:

<http://www.kliinikum.ee/infokeskus>

References

- ¹ United Nations Human Development Report 2002 <<http://www.undp.org/hdr2002/>>
- ² Saarniit K. Publications of Estonian medical scientists in the databases Medline and Current Contents. Eesti Arst 2000; 3: 133-137 (in estonian)