National Institutes of Health

Fact Sheet *National Library of Medicine*

Communications experts at the National Institutes of Health provide a series of invaluable information resources for scientists, medical professionals, and the public. Many of these resources, available freely on the World Wide Web, are the work of staff of NIH's National Library of Medicine (NLM).

Yesterday

- The NLM, with the world's largest collection of literature related to the health sciences, has its roots in the 19th century. In 2006 the institution celebrates its 50th Anniversary as the National Library of Medicine. In 1956, Senators John Kennedy and Lister Hill sponsored legislation that transferred what was the Armed Forces Medical Library to the U.S. Department of Health, Education, and Welfare. President Eisenhower signed the National Library of Medicine Act on August 3, 1956.
- The collection was moved from its old quarters on the Washington Mall into a new building that was dedicated on the Bethesda campus and opened to the public in 1962. Three years later, in 1965, the U.S. Congress passed the Medical Library Assistance Act, which gave a grant authority to the Library and also authorized the creation of what is today called the National Network of Libraries of Medicine. The Library officially became part of the NIH family of institutes and centers in 1968.
- Just three years later, in 1971, NLM created an online database, MEDLINE, and made it available to medical librarians who did literature searching for scientists, health professionals, and librarians throughout the nation. MEDLINE was the first successful marriage of a large reference database with a national telecommunications network. This was the beginning of the end for the time-honored tradition of combing through printed reference works to find out what scientists had published in journals. The Library had an important role in that process, since it had been issuing the massive *Index Medicus* since 1879. The last volume of that monthly bibliography came off the presses in 2004.

Today

- Today, the Web makes it possible for millions around the globe to easily and freely search the medical literature. PubMed/MEDLINE (as the database is now called) has more than 16 million records dating from the 1950s to the present. It is searched several million times each *day* by people around the world.
- PubMed/MEDLINE was subsequently joined by dozens of other Web-based information services. The fact sheet "A Wealth of Health Resources Online" has descriptions of some of the most important of these — including databases with listings of clinical trials, toxicology information, genetic sequences, and health information for the public. There is a list of all NLM databases at www.nlm.nih.gov/databases.

As a national institution, the NLM has many programs that fall outside the traditional role of a library as a collector of published works. To note just a few of these:

- *Visible Humans* — This program consists of two large data sets, one male and one female, of anatomical MRI, CT, and photographic cryosection images. These data sets are available through a free license agreement to 2,000 individuals and institutions in some 50 countries where they are being used in a wide range of educational, diagnostic, treatment planning, virtual reality, artistic, and industrial applications. The Visible Human Web site is one of the most popular of all NLM's Web offerings.
- *PubMedCentral (PMC)* — This Web-based repository of biomedical journal literature provides free, unrestricted access to the full-text of articles. Currently, PMC contains nearly 680,000 full-text articles. Additions come from newly published material as well as from digitizing back issues previously only available in printed form.

- *Exhibitions* — The outstanding historical resources of the NLM are the basis of major exhibitions that are both fascinating in themselves and educational at many levels. Exhibits are visited daily by the public, including groups of students from elementary through graduate school. Many NLM exhibitions have an afterlife—they tour throughout the U.S. under an agreement with the American Library Association.
- *Influenza Genome Analysis* — NLM scientists are using the tools of genomic sequencing and analysis to learn more about the influenza virus. Initial work reveals the process of influenza viral evolution to be complex, and further progress depends on the collection of more extensive datasets and the further integration of new sequence data with other biological information. As the data accumulate and the analyses progress, the discoveries made will ultimately lead to better prediction of large-scale flu outbreaks, more effective vaccine design, and the saving of many human lives.

The Future

- Today's biomedical research is resulting in an explosion in the volume of genomic data. NLM is committed to providing scientists with the resources and tools they need to explore this data as fully as possible in order to be able to translate it into advances in human health. Computational biology and bioinformatics are key components of 21st century medical research.
- Advances in medical knowledge are useful only to the extent they may eventually have application in advancing human health. The NLM is thus working to ensure that this knowledge benefits the American public by developing innovative information resources and methods of access. This is one promising avenue to improving health literacy and reducing the disparities in health between population groups in America.