

National Library of Medicine



Communications experts at the National Institutes of Health (NIH) 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), www.nlm.nih.gov.

Yesterday

- The NLM, with the world's largest collection of literature related to the health sciences, has its roots in the 19th century. It began as the library of the Surgeon General of the Army in 1836, and later became the Armed Forces Medical Library. In 1956, Senators John Kennedy and Lister Hill sponsored legislation that would transform the Armed Forces Medical Library into the National Library of Medicine. 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 in Washington to a new building that was dedicated on the NIH campus in 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 (www.nnlm.gov). 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. In 1988, the National Center for Biotechnology Information was established at the NLM as a national resource for

molecular biology information (<http://www.ncbi.nlm.nih.gov/>).

- The 1993 NIH Revitalization Act created a National Information Center on Health Services Research and Health Care Technology (NICHSR) at NLM to promote access to information on health services research, clinical practice guidelines, and health care technology (<http://www.nlm.nih.gov/nichsr/>).

Today

- Today NLM plays an important role in biomedical research – receiving, storing, disseminating, and connecting published research results with biological, biochemical, genomic, and clinical research data from around the world.
- 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 20 million records dating from 1948 to the present (<http://www.ncbi.nlm.nih.gov/pubmed/>). It is searched several million times each day by people around the world.
- PubMed/MEDLINE is joined by dozens of other Web-based information services. The list includes databases providing information on clinical trials, toxicology, genetic sequences, and other topics of special interest to researchers. There is a comprehensive list of all NLM resources at www.nlm.nih.gov/databases.
- Equally important, with consumer-friendly resources such as MedlinePlus (<http://www.nlm.nih.gov/medlineplus/>) and NIHSeniorHealth.gov, NLM provides timely, accurate, and understandable information to help patients, their families, and the public play a more active role in managing their health and health care.

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 Human Project* — This project is built around 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 and have already been shared with more than 2,000 individuals and institutions in some 50 countries. They are being used in a wide range of educational, diagnostic, treatment planning, virtual reality, artistic, and industrial applications.
- *PubMedCentral (PMC)* — This Web-based repository of biomedical journal literature provides free, unrestricted access to the full-text of articles. Currently, PMC contains more than 2 million full-text articles. Additions come from newly published material as well as from digitizing older material previously available only in printed form.
- *Disaster Information* — The Disaster Information Management Research Center facilitates access to disaster information, promotes effective use of libraries and disaster information specialists for disaster management, and supports initiatives to ensure uninterrupted access to critical health information resources when disasters occur.
- *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. Exhibitions are visited daily by the public, including groups of students from elementary through graduate school. Online versions with supplemental materials are also created, with creative lesson plans for teachers. Many NLM exhibitions (on topics as diverse as Charles Darwin, Harry Potter, Frankenstein, and America's women physicians) have an afterlife, too—they tour throughout the U.S. thanks to agreements with the American Library Association and the National Endowment for the Humanities.
- *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.

Health Information Technology and Standards – NLM researchers are engaged in developing Next Generation electronic health records (EHRs) with advanced decision support capabilities to facilitate patient-centered care, clinical research, and public health. As the central coordinating body for clinical terminology standards within the Department of Health and Human Services, NLM supports nationwide implementation of an interoperable health information technology infrastructure.

Tomorrow

- 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, so as 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.

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