

NATIONAL INSTITUTES OF HEALTH

National Library of Medicine

Division of Specialized Information Services

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SPECIALIZED INFORMATION SERVICES

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The Division of Specialized Information Services (SIS) creates information resources and services in toxicology, environmental health, chemistry, and HIV/AIDS. SIS also has an Office of Outreach and Special Populations, which seeks to improve access to quality and accurate health information by underserved and special populations.

The Toxicology and Environmental Health Information Program (TEHIP), known originally as the Toxicology Information Program, was established 40 years ago within the National Library of Medicine in the Division of Specialized Information Services (SIS). Over the years, TEHIP has provided for the increasing need for toxicological and environmental health information by taking advantage of new computer and communication technologies to provide more rapid and effective access for a wider audience. We continue to move beyond the bounds of the physical National Library of Medicine, exploring ways to point and link users to relevant sources of toxicological and environmental health information wherever these sources may reside. Resources include chemical and environmental health databases and Web-based information resource collections. Development of HIV/AIDS information resources has been a focus of the Division for many years, and now includes several collaborative efforts in information resource development and deployment, including a focus on the information needs of other special populations. Our outreach program has continued to evolve and reach out to under-served communities through implementation of innovative information access-enabling approaches and dissemination of NLM's resources.

The SIS Web site provides a central point of access for the varied programs, activities, and services of the Division. Through this site (<http://sis.nlm.nih.gov>), users can access interactive retrieval services in toxicology and environmental health, HIV/AIDS information, and special population health information; find program descriptions and documentation; and be connected to outside related sources. Continuous refinements and additions to our Web-based systems are made to allow easy access to the wide range of information collected by this Division. Our usage has continued to increase over the past year with access to all toxicology and HIV/AIDS data free over the Internet.

In FY2007 SIS continued to balance efforts to enhance and re-engineer existing information resources with efforts to provide new services in emerging areas. We further developed various prototypes that rely on geographical information systems, innovative access and interfaces for consumers, and graphical display of data from information sources. Highlights for 2007 include the following:

Toxicology and Environmental Health Resources

The TOXNET (TOXicology Data NETwork) is a cluster of databases covering toxicology, hazardous chemicals, environmental health and related areas. These databases continue to be highly used resources, and in FY2007 customer surveys, 86% of the respondees reported that they would "return to this site" and "recommend it to others." In FY2007, enhancements to TOXNET were based on user feedback/requests and routine upgrades/additions of data and capabilities. Databases in TOXNET include:

- **LactMed** (Drugs and Lactation Database) provides information on drugs and other chemicals to which breastfeeding mothers may be exposed. It includes information on the levels of such substances in breast milk and infant blood, and the possible adverse effects in the nursing infant and includes links to other NLM databases.

- **HSDB®** (Hazardous Substances Data Bank), a peer-reviewed database focusing on the toxicology of over 5,000 potentially hazardous chemicals. This flagship database was enhanced with records on radiological compounds during FY2007.
- **IRIS** (Integrated Risk Information System), a database from the U.S. Environmental Protection Agency (EPA) containing carcinogenic and non-carcinogenic health risk information on over 540 chemicals.
- **ITER** (International Toxicity Estimates for Risk), a database containing data in support of human health risk assessments. It is compiled by Toxicology Excellence for Risk Assessment (TERA) and contains over 560 chemical records.
- **CCRIS** (Chemical Carcinogenesis Research Information System), a scientifically evaluated and fully referenced data bank, developed by the National Cancer Institute (NCI) and now maintained by SIS, with over 9,000 chemical records with carcinogenicity, mutagenicity, tumor promotion, and tumor inhibition test results.
- **GENE-TOX** (Genetic Toxicology), a toxicology database created by the U.S. Environmental Protection Agency (EPA) containing genetic toxicology test results on over 3,000 chemicals.
- **TOXLINE**, a bibliographic database providing comprehensive coverage of the biochemical, pharmacological, physiological, and toxicological effects of drugs and other chemicals from 1965 to the present. TOXLINE contains over 3.5 million citations, almost all with abstracts and/or index terms and CAS Registry Numbers.
- **DART/ETIC** (Development and Reproductive Toxicology/Environmental Teratology Information Center), a bibliographic database covering literature on reproductive and developmental toxicology.
- **Toxics Release Inventory** (TRI), a series of databases that describe the releases of toxic chemicals into the environment annually for the 1987-2005 reporting years.
- **ChemIDplus**, a database providing access to structure and nomenclature authority databases used for the identification of chemical substances cited in NLM databases. ChemIDplus contains over 380,000 chemical records, of which over 276,000 include chemical structures.
- **Household Products Database**, which provides information on the potential health effects of chemicals contained in more than 7,000 common household products used inside and around the home.
- **Haz-Map**, an occupational toxicology database designed primarily for health and safety professionals, but also for consumers seeking information about the health effects of exposure to chemicals and biologicals at work. It links jobs and hazardous tasks with occupational diseases and their symptoms. Added this year in collaboration with the Department of Labor were tasks and chemicals associated with work at the Department of Energy hazardous sites.
- **ALTBIB**, a bibliographic database on alternatives to the use of live vertebrates in biomedical research and testing, developed as part of NLM's participation in the Interagency Coordinating Committee to Validate Alternate Methods.

WISER (Wireless Information System for Emergency Responders) is a tool developed for use by emergency responders during hazardous materials incidents, as well as during training sessions/exercises in preparation for such events. Version 3.1 was released this year and included the addition of radiation information about radiological compounds, treatment algorithms, a dose estimator, and reference guides. Also, in collaboration with the Department of Transportation, the DOT Emergency Response Guidelines 2004 was added as an optional PDA stand-alone resource as well as integrated within WISER. Usage among first responders continued to grow with over 46,000 downloads of WISER onto PDAs (Palm and Pocket PC) and Windows-based desktop/laptops over the FY2007. Total number of WISER downloads is over 90,000. Positive accounts from users about their

application of WISER continue to be received, and staff have participated in emergency drills in which WISER was used.

REMM (Radiation Event Medical Management) is a tool developed in an interagency collaboration between SIS and the DHHS Office of the Assistant Secretary for Preparedness and Response (ASPR) and released in December 2007. REMM is a system intended for use by emergency physicians and related emergency health care providers that includes algorithm-based guidelines for evaluation and management of individuals exposed to radiation during accidental releases, use of radiological dispersion devices, and use of improvised nuclear devices. In FY 2007, the REMM system was released, following peer review by experts in the radiation domain, and changes based on user feedback.

Tox Town was enhanced with new content, in English and Spanish, in the Tox Town 'neighborhoods' of Tox Town, Tox City, Tox Farm and a U.S. Mexico Border scene. A new Port scene was added in FY2007. To promote the use of Tox Town by teachers, a teacher page was developed with sections on activities and discussion questions, interactive and illustrated resources, checklists and quizzes, career information and general resources for teachers, and the resource was demonstrated at several educational conferences.

TOXMAP, a Geographic Information System (GIS) system that uses maps of the United States to help users visually view data about chemicals released into the environment and easily connect to related environmental health information, released Version 4.0 in FY2007, featuring advanced searching and the ability to build and save custom-made regional views.

Enviro-Health Link pages continue to be useful to our users, especially the new *Dietary Supplements* page with links to many sources of relevant information and the *Pesticide Exposure* page with links to websites about the acute and chronic exposure to pesticides.

ToxSeek is a meta-search tool that enables simultaneous searching of many different information resources and databases on the World Wide Web. The ToxSeek user interface allows selection of resources from a wide range of authoritative sources in environmental health and toxicology. It provides integrated search results from the selected resources and displays related concepts to use in refining searches. Based on user feedback and focus group evaluations, work has continued on enhancements for future releases.

ToxMystery, an interactive web site for children between the ages of 7-10, was released at the end of FY2006. It provides an animated game-like interface, which includes finding potential chemical hazards in a home and includes fun sound effects. Focus groups and feedback from the targeted user community have indicated that this innovative Web site is a fun and educational experience for kids. A Spanish version was developed and released in FY 2007.

AIDS Information Services

NLM is the project manager for the multi-agency AIDSinfo service (aidsinfo.nih.gov). This service provides access to federal HIV/AIDS treatment guidelines, AIDS-related clinical trials information (through Clinicaltrials.gov), and prevention and research information. In April 2007, a Spanish language site called InfoSIDA was released.

The American Customer Satisfaction Index (ACSI) continues to be used to evaluate AIDSinfo. The 2007 score for AIDSinfo is 82, which places its ranking among the top government Web sites.

The National Library of Medicine (NLM) has continued its HIV/AIDS- related outreach efforts to community-based organizations, patient advocacy groups, faith-based organizations, departments of health, and libraries. This program provides support to design local programs for improving information access for AIDS patients and the

affected community as well as their caregivers. Emphasis is on providing information or access in a way meaningful to the target community. Projects must involve one or more of the following information access categories: information retrieval, skills development, Internet access, resource development, and document access. In FY2007 NLM made 13 awards.

Evaluation Activities

In FY2007, several SIS web products were professionally assessed via on-line surveys, focus groups, heuristic review, or usability studies. User satisfaction with TOXNET and AIDSinfo continues to be measured by the American Customer Satisfaction Index (ACSI). The new Radiation Event Medical Management (REMM) Web site conducted usability testing with 16 physicians. ToxMystery held a focus group with teachers. An expert heuristic review on usability was conducted for TOXMAP. Over the past three years, other SIS web products have also been professionally evaluated: World Library of Toxicology, ToxSeek, LactMed, Toxicology and Environmental Health home page, WISER, Tox Town, Asian American Health, Arctic Health, American Indian Health, and the Household Products Database. Feedback from these evaluation activities is used to identify improvements, new capabilities, and expanded content that would better serve SIS web users.

Outreach Initiatives

SIS outreach programs reach health professionals, public health workers and the general public especially about health issues that disproportionately impact minorities such as environmental exposures and AIDS. Highlights from FY2007 include:

- United Negro College Fund Special Programs/ NLM – HBCU Access Project, one of NLM’s major outreach projects with Historically Black Colleges and Universities, continued during the FY2007 and awarded four HBCUs small grants to develop and implement projects that help to increase the awareness and utilization of NLM resources on campuses and in their communities. The annual June workshop featured a keynote address by Dr. Robert M. Kolodner, Director, Office of the National Coordinator for Health Information Technology Department of Health and Human Services (DHHS).
- Adopt-a-School program with Woodrow Wilson Senior High School, Washington, D.C., encourages students to take an active interest in consumer health and promotes interest in science. Five Wilson students had summer internships at NLM, working in a variety of program areas. NLM also provided tours and library materials for the school.
- Consumer Health Resource Information Service (CHRIS) Project is a faith-based pilot initiative designed by the Medical Education and Outreach group (MEO) of the Oak Ridge Institute for Science and Education, Oak Ridge, Tennessee. The project, which initially involved six African American Churches in Knoxville, has been expanded to a state-wide program due to its success locally. A “Consumer Health Resource Information Service (CHRIS) Program: Guide and Tool Kit” has been developed for faith-based organizations that which to implement such a program in their communities.
- The mission of the Environmental Health Information Outreach Program (EnHIOP) is to enhance the capacity of minority serving academic institutions to reduce health disparities through the access, use and delivery of environmental health information on their campuses and in their communities. Two successful meetings were held in FY 2007 – *Advances in Science: Environmental Cardiology* held at Morehouse School of Medicine in January 2007 and the second, *Advances in Science: Indian Health and Health Disparities*, hosted by the Oglala Tribal College in South Dakota. EnHIOP meetings included representation from 14 HBCUs, three tribal colleges and three Hispanic-serving institutions.
- The Scared Root Tribal Information Fellowship provides an opportunity for representatives from American Indian tribes, Native Alaskan villages, and the Native Hawaiian community to learn about the National Library of Medicine, the National Network of Libraries of Medicine, and to use that knowledge to improve

access to health information and technology for their communities. This year's Scared Root Fellows are from the Chickasaw Nation in Ada, Oklahoma. They started their fellowship in April 2006 and in addition to their own work, will be supporting an ongoing NLM-funded Chickasaw Health Information Center (CHIC) being implemented at the Carl Albert Indian Health Facility in Ada. The two fellows from the Navajo Nation are continuing their training and project planning.

- SIS is a partner in the Refugee Health Information Network (RHIN), which is a national collaborative partnership of several state Refugee Health offices, NLM, and the Center for Public Service Communication (CPSC). RHIN is committed to providing quality multilingual, multi-cultural health information resources for patients and those who provide care to resettled refugees and asylees. A new Web site was released this fiscal year with improved access to a database of approximately 1,800 documents with almost 70 languages represented. In addition, the search system simultaneously retrieves information from several trusted sources including Ethnomed at the University of Washington, and Health Roads Media.
- Minority Health Professional Outreach includes a variety of training and outreach projects with several minority health professional organizations. NLM provides focused online training, demonstrations, presentations at the National Hispanic Medical Association, Black Nurses Association, Association of Hispanic Nurses, Student National Medical Association, and at the National and regional meetings of the National Medical Association. In addition NLM has been collaborating with the Student National Medical Association in areas such as mentoring and developing the pipeline of minority students going to biomedical careers.
- The Central American Network for Disaster and Health Information (CANDHI) is a group of health science libraries and information centers working together to enhance local health and disaster information management capacities with a goal of contributing to disaster preparedness in the region. It is a partnership between the U.S. National Library of Medicine, the Pan American Health Organization, and the United Nations International Strategy for Disaster Reduction. CANDHI consists of centers in Honduras, Nicaragua, El Salvador, Guatemala (with support from U.K. Department of International Development), and Panama and Costa Rica (with financial support from the European Community Humanitarian Office (ECHO)). The CANDHI centers enable health professionals, government agencies, and others in their countries to access vital information previously unavailable. These libraries have acquired the knowledge, skills, and resources that promote delivery of reliable information including. There are now over 12,000 full-text documents available online. During FY2007, a Web site for the overall program was developed (<http://www.candhi.org>). This Web site includes a search engine to retrieve information from all of the CANDHI center web sites and the CRID web site, including the full-text documents. In addition, the tools for digitization of the documents were improved. The CANDHI centers continue to provide critical information services to disaster managers, health care professionals and the public on disasters in their countries.

Research and Development Initiatives

To meet the mission of providing information on toxicology, environmental health, and targeted biomedical topics to the world, SIS has been developing new ways of presenting the world of hazardous chemicals in our environment to a wider audience.

The World Library of Toxicology, Chemical Safety, and Environmental Health is designed to provide a web portal to global information resources in toxicology, chemical safety, environmental health, and allied disciplines. The World Library is being designed, developed, and maintained by SIS staff, and will provide a cyberhome for an ongoing participatory project in which voluntary representatives from participating nations provide crucial input and feedback to assure credible and high-quality sources of information. The World Library has been populated with information resource sets from more than forty countries and collaborations with many other countries are in progress. With support from the Fogarty International Center, this project is scheduled to release fully developed information resources in FY 2008.

Another resource under development in FY2007 was the **Dietary Supplements Database**, a resource of comprehensive information on supplements used by U.S. consumers. Information on more than 2,000 dietary supplement brands will be available and searchable by brand name, active ingredient, or manufacturer, with links to TOXNET and PubMed searches and other authoritative government information. Following review during 2007 by other agencies with responsibilities in the area of dietary supplements, SIS will release the database in early October of 2007.

The goal of the **Public Health Law Information Project (PHLIP)** is to create in the public domain a searchable database of public health law information that will be not only a guide for non specialists (e.g., concerned citizens, attorneys, public health practitioners, academics, legislators), but also an excellent technical resource for those who are specialists in the field. In FY2007, the pilot project was continued with the state of Delaware, the Widener University School of Law, the Delaware Academy of Medicine and SIS to produce a searchable database containing statutes, regulations, and other information from Delaware that pertain to public health.

SIS is leading a NLM-wide collaborative initiative to produce a **Drug Information Portal** that will make it easier for consumers and health professionals to find drug information in the NLM and other governmental resources. The prototype uses ChemIdplus drug records for searching and resource locator selection, but operates with a user-friendly simple interface. Release is expected in early FY 2008.

During FY2007 SIS participated actively in the evaluation of disaster-related information resources across NLM in preparation for the creation of a Disaster Information Management Research Center in response to recommendations in the most recent NLM Long Range Plan. It is anticipated that this Center will operate from a new Office within SIS.

In these and other new initiatives, SIS continues to search for new ways to be responsive to user needs in acquiring and using toxicology and environmental health, HIV/AIDS, disaster information resources, and other specialized information resources.