

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), National Library of Medicine (NLM), creates information resources and services in toxicology, environmental health, chemistry, and HIV/AIDS. SIS also has an Outreach and Special Populations Branch, which seeks to improve access to quality and accurate health information by underserved and special populations. This year a new Office for Disaster Information Management Research was established in SIS to manage the new NLM Disaster Information Management Research Center (DIMRC).

The Toxicology and Environmental Health Information Program (TEHIP), known originally as the Toxicology Information Program, was established more than 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 underserved communities through implementation of innovative information access-enabling approaches and dissemination of NLM's resources. This past year has seen the beginning of many disaster information resource activities as the new DIMRC was established.

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, special population health information, and disaster information resources; 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 FY2008, SIS continued to balance efforts to enhance and re-engineer existing information resources with efforts to provide new services in emerging areas, such as disaster information resources. 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 2008 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 FY2008 customer surveys 86% of the respondents reported that they would “return to this site” and

“recommend it to others.” In FY2008, enhancements to TOXNET were based on user feedback/requests and routine upgrades/additions of data and capabilities. Databases in TOXNET include:

- **Drugs and Lactation (LactMed)**, which 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, and is now expanding its coverage of chemical compounds of interest in monitoring potential terrorist activities.
- **IRIS (Integrated Risk Information System)**, a database from the US Environmental Protection Agency (EPA) containing carcinogenic and non-carcinogenic health risk information on over 542 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 655 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 US 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 3.57 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 1987-2006 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 290,000 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. In collaboration with the Department of Labor, tasks and chemicals associated with work at the Department of Energy hazardous sites are now included in Haz-Map.
- **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 4.1 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 during FY2007. Usage among first responders and others continued to grow with over 47,000 downloads of WISER onto PDA's (Palm and Pocket PC) and Windows-based desktop/laptops over FY2008. Total number of WISER downloads is now over 150,000.
- **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 of 2007. REMM, a system intended for use by emergency physicians and related emergency health care providers, 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 FY07, the REMM system was released, following peer review by experts in the radiation domain, and changes based on user feedback. A version of REMM for mobile platforms was released in 2008. Plans have been made to begin a similar collaborative project focusing on medical management in mass-casualty incidents involving chemicals.
- **Tox Town** was enhanced with new content (in English and Spanish) in the neighborhoods of Tox Town, Tox City, Tox Farm, Tox Port and a US Mexico Border scene. A new information resource on potential toxicity of gardens and plants was added this year. 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 4.02.01 in FY2008, featuring interface improvements and names and locations of hospital that appear when users zoom to the detailed map.
- **Enviro-Health Link** pages continue to be useful to our users, especially the *Dietary Supplements* page, with links to many sources of relevant information and the Pesticide *Exposure* page with links to Web sites 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 FY06. 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 FY2007. This year a prototype museum kiosk featuring ToxMystery was developed with the Carnegie Science Center in Pittsburgh.

## Disaster Information Management Research Center

The National Library of Medicine (NLM) has a long history of providing health information during times of disaster. Recognizing the potential for the use of libraries as major untapped resources during disasters, and responding to the current increased need for disaster health information, the *NLM Long Range Plan 2006-2016* called for the creation of a Disaster Information Management Research Center (DIMRC) to aid the nation's disaster management efforts. DIMRC is tasked with the effective collection, organization, and dissemination of health information for natural, accidental, or deliberate disasters.

In FY2008, the Office of the Disaster Information Management Research Center (ODIMRC) was formed within SIS to serve as the coordinating office for disaster health information management activities across NLM. A trans-NLM working group was established to coordinate disaster activities across NLM. ODIMRC began a number of new initiatives this fiscal year including the development of a Web site (<http://disasterinfo.nlm.nih.gov>) and joining the Bethesda Hospitals' Emergency Preparedness Partnership, along with the NIH Clinical Center, Suburban Hospital Healthcare System and the National Naval Medical Center (NNMC). NLM is coordinating the research and development initiatives of BHEPP and currently is working on eleven projects ranging from investigating a variety of back-up communication systems to the development of a family reunification system, and the use of virtual reality for training emergency personnel. In addition, NLM participates in the annual disaster drill coordinated by NNMC.

In an effort to explore ways in which librarians can help emergency personnel prepare for, respond to, and recover from disasters, ODIMRC initiated a pilot Disaster Information Specialist project with four diverse medical institutions, including military, government, university, and a community hospital library. In response to requests by other libraries to participate in the project, a Disaster Information Outreach Listserv was established and now has several hundred members exchanging comments and ideas. As part of the NNO effort to encourage libraries to develop relationships and agreements with other libraries to assist in times of disaster, the Bethesda Medical Libraries Emergency Preparedness Partnership, consisting of five medical libraries, was established.

As described under the Toxicology and Environmental Health section, NLM continued to promote and enhance several resources for emergency medical personnel, including WISER, REMM, and several Enviro-Health Link Web guides on disaster topics (Wildfires, Hurricanes, Biological and Chemical warfare agents, etc.). SIS also began investigating the development of a tool to screen for Post Traumatic Stress Disorder and Traumatic Brain Injury. In late FY2008, SIS began discussions with HHS' Assistant Secretary for Preparedness and Response on the development of a Chemical Hazard Emergency Medical Management (CHEMM) system. CHEMM would be similar to REMM and focus on the medical diagnosis and management of exposure to chemical threat agents and provide much needed guidance to medical personnel, most of whom do not have extensive training or knowledge in this subject.

## **AIDS Information Services**

NLM is the project manager for the multi-agency AIDSinfo service ([aidsinfo.nih.gov](http://aidsinfo.nih.gov)). This service provides access to federal HIV/AIDS treatment guidelines, AIDS-related clinical trials information (through [ClinicalTrials.gov](http://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 2008 score for AIDSinfo is 84, which places it among it at the top government Web sites. The ACSI was also implemented for InfoSIDA in both Spanish and English.

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 FY2008, NLM made 12 awards. The decrease was due to a lower level of available funding.

## **Evaluation Activities**

In FY2008, SIS conducted professional evaluation of a number of its Web products and outreach programs. Several of these were funded via the [NIH Evaluation Set-Aside Program](#) mechanism. These include a usability study of the Asian American Health Web portal; two focus groups with health consumers and professional users of Asian American Health Web sites; two focus groups with health consumers and professional users of American Indian Health Web site and one focus group with professional users of Refugee Health Information Network (RHIN). The set-aside mechanism was also used to fund development of a detailed evaluation plan for the NLM/UNCFSP-HBCU Access Project to promote disease prevention and wellness at Historically Black Colleges and Universities (HBCU). In FY2008, SIS also submitted to the Evaluation Branch a proposal for conducting six focus groups assessing elementary and middle school teachers' needs in locating and using Web resources for teaching environmental health. The project was approved by the Evaluation Branch in FY2008, with the allocation of 2009 resources. User satisfaction with TOXNET, AIDSinfo and InfoSIDA continued to be measured by the American Customer Satisfaction Index (ACSI) surveys. Over the past three years, other SIS Web products have also been professionally evaluated: Radiation Event Medical Management (REMM) Web site, Tox Mystery, TOXMAP, 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 FY2008 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 FY2008 and awarded 4 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 Mr. Dwayne Ashley, CEO, Thurgood Marshall College Fund, and additional presentations by Dr. Yvonne Maddox, Deputy Director, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Dr. Janine Smith, Deputy Director NIH Office of Research on Women's Health, and Dr. Sidney McNairy, Associate Director, National Center for Research Resources.

**Adopt-a-School** program with Woodrow Wilson Senior High School, Washington, DC, encourages students to take an active interest in consumer health and promotes interest in science. In addition to providing summer internship for Wilson students, this year NLM also had summer interns from Flowers High School in Prince George's County, MD.

The mission of the **Environmental Health Information Partnership (EnHIP)** 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. NLM hosted an EnHIP meeting in January 2008. The Environmental Health Information Outreach Program (EnHIOP) changed its name to the Environmental Health Information Partnership to signify a new relationship with NLM firmly based in bi-directional partnership. EnHIP also developed a strategic plan based upon NLM's new strategic plan. EnHIOP meetings included representation from 14 HBCUs, three tribal colleges and three Hispanic-serving institutions.

**Chickasaw Health Information Center (CHIC)**, a project that was initiated by the Sacred Root Tribal Information Fellows from the Chickasaw Nation, is fully operational. It is located in the Carl Albert Indian Health Facility in Ada, Oklahoma. The room has two workstations and a printer along with brochures and other NLM and CHIC materials. It is staffed full-time by a trained tribal member. In addition, the CHIC has a mobile kiosk that is moved to various clinics for use there. CHIC has developed oversized prescription pads with links to MedlinePlus topics specific for 10 different clinics in the facility. The topics were chosen by the directors of those clinics. NLM also sent staff to present a one-day program to middle and high school students in the Nation's science summer camp.

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. The partnership was expanded with the addition of the Association of Refugee Health Coordinators. A members only section of the Web site was developed to support discussion of refugee issues and to review new materials. A project carried out by an NLM Associate Fellow resulted in useful information about information needs and seeking related to new refugee populations. A RHIN symposium was held, which provided input into the further development of the site as well as in outreach to promote the site to potential users.

SIS maintains several special population Web resources in collaboration with organization that provide expertise about the particular population groups. The most recent additions to these are the Women's Health Information Resources developed with the NIH Office of Research in Women's Health. The American Indian Health Web site, Asian American Health Web site, and the Arctic Health Web site continue to be redesigned and expanded.

**Minority Health Professional and Health Information 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. NLM also worked with NMA to initiate the Information Rx project with their membership. 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.

NLM continues to reach out to minority communities and the librarians who serve them through collaborations with the American Library Association's Office of Literacy and Outreach Services. One of these projects launched the "Good Health Information @ Your Library" site to assist in introducing library staff and communities in rural areas to NLM resources, specifically MedlinePlus and Tox Town. Other presentations, also designed to introduce NLM or health resources to minority communities, were delivered at the American Library Association Annual Conference and at the Reforma National Conference, and for the first time a health track of nine programs was incorporated into the programming of the National Diversity in Libraries Conference.

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 US 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, and Panama and Costa Rica. 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 14,000 full-text documents available online. During FY2008, each center received a small amount of funding from NLM to enhance their disaster information services. Projects included development and enhancement of Web sites, development of training materials and conducting training sessions with emergency personnel, collection and digitization of local disaster documents, and upgrading equipment. During FY2008, the CANDHI Web site was updated and maintained (<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 work closely with national emergency preparedness and response agencies in their countries and provide critical information services to disaster managers, health care professionals and the public.

### **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 was initially developed by SIS staff, and has been transferred to a partnership of outside organizations working in toxicology. This will become a project in which voluntary representatives from participating nations provide crucial input and feedback to assure credible and high-quality sources of information. NLM will continue to provide funding for the next several years. The World Library was initially populated with information resources from more than forty countries and collaborations with many other countries are in progress.

Another resource under development was the **Dietary Supplements Database**, a resource of comprehensive information on supplements used by US 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.

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 FY2008, 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 led an NLM-wide collaborative initiative to produce a **Drug Information Portal** that makes it easier for consumers and health professionals to find drug information in the NLM and other governmental resources. The system uses ChemIDplus drug records for searching and resource locator selection, but operates with a user-friendly, simple interface. The portal was released in early 2008 and brought many users to resources in the area

of drug information. A pill image databases, under development in SIS, will be linked to the Drug Information Portal.

In these and other new initiatives, SIS continues to search for new ways to be responsive to user needs in acquiring and using specialized information resources on such topics as toxicology and environmental health, HIV/AIDS, disaster preparedness and response, among others.

*Further information about the programs described in this  
Administrative report is available from:*

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