



### *IT Services for Biomedical Research, Health Sciences, and Healthcare*

Synectics has provided IT services in direct support of significant Health IT investments for more than 15 years. Synectics’ expertise supporting health-related research and statistics includes data collection, management, and analysis; data strategy and decision making; Web-based data dissemination for public and private access; Web-based survey design, collection, and analysis; statistical analysis; and reporting and publication support. We provide computer programming support for sophisticated statistical analysis and microsimulation modeling of very large, multi-year, multi-source, multi-user databases of health, education, and demographic data.

Through our work supporting a substance abuse and mental health agency, we have established decades-long working relationships with physicians, clinicians, medical researchers, State and local health services agencies, and treatment providers. We understand both the imperatives and the challenges involved in designing and operating IT solutions in health sciences, healthcare, and research. The imperatives stem from the clear need to take best advantage of modern IT to help reduce the costs and improve the quality of every aspect of health services. The challenges derive primarily from the need to plan and implement solutions that meet broad goals for interoperability while ensuring the privacy of individual medical information.

The table below cites our Health IT capabilities under our CIO-SP3 SB contract.

Requirement	Team Experience and Qualifications
<b>Health Sciences Computational Services</b>	Personnel developed a bioinformatics database and algorithms to parse, filter, and analyze Serial Analysis of Gene Expression reference sequences and related data to identify novel candidate genes.
<b>Health Communication Support Services and Enhancements to Facilitate Integration and Data Exchange at the Federal, State, and Local Level</b>	Collect, manage, analyze, improve, and implement Web-based dissemination of the drug and alcohol information that forms the primary source of national data on substance abuse treatment. We support the National Survey of Substance Abuse Treatment Services, Treatment Episode Data Set, and Inventory of Substance Abuse Treatment Services.
	Provided designs and plans for the use of emerging technologies in support of the International Cancer Information Center information dissemination programs.
	Monitor and support the State Epidemiological Outcomes Workgroups. Provide reporting requirements and templates, review State reports, and provide training and technical assistance. Aid States to integrate and distribute substance abuse prevention and treatment data to enhance prevention practices. Over the contract period have awarded contracts to 45 of the 60 States, territories, and jurisdictions.
	Aid in answering substance abuse and mental health policy questions, assessing existing datasets, and establishing benchmarks for National Outcome Measures. These data are crucial to initiative to set performance targets for State and federally funded programs for substance abuse and mental health prevention, early intervention, and treatment services.
	Created and support a Web-based credential verification system for physicians to inform the government of their intent to use Buprenorphine in the treatment of opioid addiction. Support the Drug Addiction Treatment Act of 2000 Waiver Processing and Support program, which promotes the quality and availability of community-based substance abuse treatment services for individuals and families.



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<b>Integration of Health Systems Across Federal Agencies and Public and Private Healthcare Systems</b>	Designed, built, and operate an innovative, large-scale administrative management enterprise system that supports a nationwide social services program that encompasses the provision of basic healthcare. It was designed to identify grantee performance to better aid the government in supporting its mission to prepare children for school by providing readiness services for education, health, and nutrition to enrolled children and families.
	Developed a retrieval-only interface for the Index of the National Parasite Collection and made it available on the Internet for U.S. and international reference/research.
<b>Enhancement of Health IT Legacy Systems</b>	Managed the modernization and enhancement of Health IT systems through several generations of technology refreshments.
<b>Automation of Administrative and Clinical Processes</b>	Supported agencies in planning and procuring HIPAA-compliant administrative management systems.
	Developed and maintain the Buprenorphine Waiver Notification System to process waiver applications submitted by physicians throughout the country desiring to provide office-based medication-assisted opioid treatment.
<b>Scientific Computing Services</b>	Personnel developed a human mitochondrial-related gene database.
	Personnel directly supported the Laboratory of Clinical Genomics and the Section on Developmental Genomics by providing advanced statistical programming, database, and reporting support.
	Personnel implemented BI reporting and a custom Web Intelligence interface to provide medical doctors with analysis capabilities across questionnaire data, lab/surgical results, imaging, and genetic indicators.
	Formulated statistical analysis reports for presentation to the Data Safety Monitoring Committee.
<b>IT Clinical Support Services</b>	Personnel managed and directed the effort to centralize the clinical trial, biospecimen, and bioinformatics data for efficient data collection, storage, and data mining.
	Personnel performed the clinical trial database consolidation and migration that successfully extracted, transformed, and loaded 10 million patient records and protocol-related data from various sources/protocols.
	Personnel supported the development and implementation of standard operating policies for the enrollment of new clinical trials into the enterprise system. Our personnel managed the day-to-day clinical trial operations that included protocol investigation, legacy data review, process flow creation, testing, data migration, data entry, and datamart and datawarehouse development.
	Personnel designed dimensional model datamarts which significantly enhanced reporting and statistical analysis of clinical data.
	Personnel led the first successful integration of an enterprise system with clinical research data to provide clinical investigators unprecedented access to patient chemistry, hematology, and immunology laboratory data.
<b>IT Service Management</b>	Operate a nationwide drug abuse and mental health incidence surveillance and sentinel system.
	Provided project management assistance and support for the Center for Bioinformatics.



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<b>Standards Development for Health IT Services</b>	Provided project management support to federal leadership in developing a federal health architecture to promote a national interoperable health IT infrastructure to exchange electronic health information.
<b>Activities Supporting Socially Responsible Programs Promoting the Health, Safety, and Welfare of All Individuals</b>	Created and support a centralized grants office that issued \$60 billion in grants for socially responsible programs, ensuring better health and welfare for American children and families. Ten-year grant volume exceeds \$500 billion for programs such as temporary assistance for needy families, foster care, family assistance, runaway and homeless youth, and myriad other programs.
	Created and support data collection forms for over 75 socially responsible programs such as survivors of torture and responsible fatherhood to ensure the health and well-being of the populations served.
	Implemented a statistical survey to quantify mentor-mentee relationships for children in the mentoring children of prisoners program. Measuring the effectiveness of the relationships over time aids in implementing improvements that promote better relationships to ensure positive mental health.
	For 12 years, provided computer programming, applications, and infrastructure support for federal efforts to treat mental illnesses by promoting mental health through supporting the national reporting program. Provided computer analyses for data reporting and dissemination, database management, data conversion, data cleaning, programming, analyses, statistical methodology, and filling ad-hoc requests for outside researchers. Analyzed data and contributed to chapters of the biennial publication <i>Mental Health, United States</i> . Ran data and produced tables for the <i>Admissions and Resident Patients</i> reports, based on the 1995 through 2005 Survey of Mental Health Organizations and General Hospital Mental Health Services.
	Provided analysis and a written report for data collected by the Henry M. Jackson Foundation in a condom use survey conducted among military personnel. The primary objective was to understand better how design features might increase condom acceptance and reduce failure rates.
<b>Quality of Life and Mental Health Support</b>	Provided analytic support for the data center surveys to collate personnel, manpower, training, financial, and other data for the Department of Defense. This work included development of longitudinal databases, review of survey results, preparation of a questionnaire, and development of an overall evaluation plan and final report.