

## NIST Focuses Attention on Clinical Informatics and Healthcare IT Standards

The National Institute of Standards and Technology (NIST) has conducted several workshops and other information gathering activities that have identified several key strategic opportunities in healthcare information technology (HIT) for NIST: clinical informatics; bioinformatics; medical devices; pharmaceuticals; biosurveillance; and enterprise modeling. **The results were published in a NIST report released in 2005.**<sup>1</sup> This report addresses the first area, clinical informatics, as being of prime interest to NIST and focuses on roles that are suitable for NIST. The report presents three aspects of clinical informatics of most immediate interest to NIST's Information Technology (ITL) and Manufacturing Engineering Laboratories (MEL): • electronic medical records, approaches and standards for the integration and interchange of health information; • vocabularies, controlled collections of concepts that cover medical knowledge for particular purposes; and • evidence-based medicine (EBM), applying up-to-date healthcare knowledge by filtering and disseminating it in a way that integrates into clinical experience and patient values. The report then presents an initial set of components needed to realize an interoperable framework for clinical informatics: systems engineering for clarifying the meaning of information; semantic languages for expressing information with increased precision and expressiveness; model-driven architecture for translating semantically developed system specifications into multiple technologies; and interoperability and conformance testing to help ensure that standards-based solutions provide the necessary infrastructure and seamless information integration across applications within and between homogenous healthcare organizations. A number of potential roles that NIST's ITL and MEL could play in the area of clinical informatics are also identified. **For more information or a copy of this report, please go to: [www.nist.gov/msidlibrary/doc/nistir7263.pdf](http://www.nist.gov/msidlibrary/doc/nistir7263.pdf) .**

**NIST believes that** standards are vital to healthcare systems and the deployment of information technologies for healthcare. The range of healthcare standards runs a wide gamut and span several tiers of the healthcare industry. There is a real need for formal and informal coordination of these efforts to leverage the synergy of the various efforts, to harmonize vocabularies, to enable interoperability, and to promote consistent testing and certification programs across and within organizations. NIST is collaborating with industry, standards organizations, consortia, and government agencies to build tools and prototypes to advance the adoption of IT within healthcare systems. In particular, NIST is:

- Collaborating with HL7 to help ensure that HL7 messaging and EHR systems' conformance can be defined and measured at an appropriate level.
- Developing tools and prototypes to promote consistent definitions and artifact reuse and facilitate interoperability for healthcare systems.
- Collaborating with HIMSS Integrating the Healthcare Enterprise Project to develop a profile, Cross Enterprise Document Sharing, that will help ensure clinical document discovery and retrieval.
- Collaborating with healthcare informatics-related SDOs, consortia, and others to develop metadata and tools that will fully describe their organizations and activities so that further collaboration and coalescence can happen among the healthcare community.
- Actively participating in the ANSI **Health Information Technology Standards Panel (HITSP)** ~~Health Informatics Standards Board (HISB)~~, HL7, HIMSS, American Telemedicine Association (ATA), **HIBCC**, and the Federal Health Architecture's Consolidated Health Informatics committee to pursue these efforts.

The creation of a healthy healthcare information infrastructure in the US depends on all parties involved; consumers, providers, researchers and insurers having systems, tools, and information that are complete, correct, secure and interoperable. The basis for achieving this rests with the availability of healthcare information standards that are complete and testable.

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<sup>1</sup> Bock, C, Carnahan, L., Fenves, Steven, Gruninger, Michael, Kashyap, V., Lide, B., Nell, James , Raman, R., Sriram, R.D. , *Healthcare Strategic Focus Area: Clinical Informatics*, NISTIR 7263, (2005).

The efforts of NIST/~~ITL~~ can help move these standards, ~~and~~ their implementation and acceptance forward.<sup>2</sup> For more information about NIST's work in health information technology, please visit our website: [www.nist.gov/ehealth](http://www.nist.gov/ehealth).

**NIST is pleased to have the opportunity to collaborate in several of the important initiatives of the [Office of the National Coordinator](#) (within the US Department of Health and Human Services) to promote electronic health records and a nationwide health information network. To support these collaborative efforts, NIST has created an oversight office, headed by Betti Joyce Lide. For questions regarding NIST's work in this area, please feel free to contact her at [bettijoyce.lide@nist.gov](mailto:bettijoyce.lide@nist.gov).**

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<sup>2</sup> <http://xw2k.sdct.itl.nist.gov/carnahan/website/generate.asp?tech=index>