

## **HIT AND HSR FOR ACTIONABLE KNOWLEDGE: DESCRIPTION OF PARTNERING HEALTH SYSTEMS**

### **PARTNER: Veterans Health Administration**

#### History, Structure, and Size

Begun as a nationwide system of rehabilitation hospitals after World War II, the Veterans Health Administration (VHA) currently operates as an integrated health delivery system divided into 21 Veterans Integrated Service Networks (VISNs). The VHA operates with an annual medical-care budget of \$47 billion (FY2009). It has a staff of 239,000 personnel at a total of 1,400 facilities including hospitals, clinics, nursing homes, domiciliaries, and counseling centers. The VHA is the Nation's largest provider of graduate medical education and a significant contributor to medical research.

#### HIT Systems

The VA maintains its own Computerized Patient Record System (CPRS) within the Veterans Health Information Systems and Technology Architecture (VistA). VistA grew out of a decentralized hospital-based computer system in the 1980s and also supports commercial off-the-shelf software that can be used with existing and future technologies.

VistA is a rich, automated environment that is fundamental to operations at VA healthcare facilities. The primary focus is on supporting the activities of direct patient care. The system stores and manages nearly comprehensive information on all persons treated at VA facilities. Among the few remaining paper-based data sources are selected nursing flow sheets, anesthesia flow sheets, and ophthalmology notes. VistA also handles administrative, financial, and infrastructure-related data.

Data are stored locally and centrally. Most clinical data reside only in the 129 local VistAs. These data are gradually being migrated to 4 Regional Data Processing Centers. A limited set of data elements are collected from all VA facilities and maintained at the Automated Information Technology Center (AITC) in the Health Data Repository. In addition to production data centers, the VHA maintains scores of clinical data repositories to support business intelligence functions and research.

#### Organization of Research Functions

The VHA has four research services: Biomedical, Clinical Science, Health Services and Rehabilitation. Health Services Research and Development (HSR&D) alone funds more than 300 projects each year and most depend on data from VistA.

Nationally available data repositories such as the National Patient Care Database (NPCD) and VHA Decision Support System (DSS) are extracted on a routine basis and custom data extracts from VistA may be made for research purposes. Knowledge of the specific standards used and possible data values in VistA is required for the researcher to be able to request data and interpret the information returned.

### Applications of HIT

A new program, the VA Informatics and Computing Infrastructure (VINCI), is creating an integrated suite of databases from national data that hold particular interest for researchers. Traditionally researchers have been constrained to using structured data elements. New tools and computing power available in the secure, virtual environment of VINCI are allowing researchers to make use of the wealth of information stored throughout the medical record as text in reports, patient history and notes. VINCI will host national data and provide tools for annotation and natural language processing that will allow researchers to extract much more information from the system than was possible before VINCI.

Future plans for health information at the VA include the increased use of standard coding systems and accommodation of new data such as images, results from clinical procedures and genomic data.