Tennessee

Office for Information Resources

Tennessee eHealth Exchange Zone:
The Nation's First Statewide Health Information Network

Cross-Boundary Collaboration and Partnerships

NASCIO Recognition Award Nomination

Executive Summary

In 2002, Governor Bredesen pledged to build a statewide health information infrastructure. This has come to fruition in the form of the Tennessee eHealth Exchange Zone. Tennessee began this effort with the formation of the eHealth Advisory Council to guide initiatives, ensure interoperability, and facilitate the definition of uniform standards. This has resulted in unprecedented collaboration among competitive healthcare stakeholders to establish the framework of trust that is the foundation for the state's health information exchange. This broad-based collaboration spans public, private and non-profit sectors, and geographic regions.

Tennessee was able to leverage its existing technological infrastructure to make a quick start on the implementation of the Tennessee eHealth network. The eHealth network is the physical communications backbone for the eHealth Exchange Zone and is built on the state's existing private, high-speed, MPLS network - TNII (Tennessee Information Infrastructure). This private infrastructure is available in all of Tennessee's 95 counties and represents the nation's first statewide eHealth network. The eHealth network has the potential to connect to every healthcare provider in the state to enable the sharing of eHealth information, applications and TeleHealth services. This infrastructure and associated services constitute the **Tennessee eHealth Exchange Zone**.

With guidance from the Council, the eHealth Exchange Zone is working to:

♦ Interconnect clinicians and providers for sharing of eHealth information

♦ Ensure appropriate security and privacy as required by state and federal law

♦ Ensure interoperability among all healthcare stakeholders

♦ Minimize redundant or duplicative services among stakeholders

♦ Define and implement policies and procedures to ensure proper use of medical data

♦ Ensure public trust through appropriate safeguards and transparency

Tennessee has established some of the most promising eHealth projects in the nation and is accomplishing leading edge changes in the health information technology sector.

Description of the Business Problem and Solution

The Problem – Identifying Healthcare Issues in Tennessee
Despite significant improvements in the delivery of medical care, Tennessee still ranks 47th in the nation in overall health status. The state also leads the nation in number of prescriptions per capita; Tennesseans receive an average of 17.3 prescriptions per person per year – fully 1.5 times the national average. Healthcare costs have risen at an average rate of 9.2% annually since 1980, placing Tennessee at .6% above the national average. Medicaid expenditures are currently over $7 billion and although hospital expenditures are the bulk of the costs, the rising cost of prescription drugs causes the greatest concern, accounting for 15.1% of Tennessee's healthcare budget.

As healthcare costs continue to increase and more Americans are going without health insurance, hospitals and physician practices are experiencing a steady rise in uncollectible debt and charity care – a sum that is now more than $550,000,000 per year for Tennessee hospitals. Providing specialized healthcare to disadvantaged or isolated populations throughout the state is an additional healthcare challenge in Tennessee. There is a lack of specialists and adequate hospitals or hospitals that have specialized equipment in most rural areas.

The Solution – Creating Initiatives to Improve Healthcare
Providing improved healthcare to all citizens of Tennessee, while maintaining, or lowering the state's healthcare expenditures is a goal set by Governor Phil Bredesen. In 2002, the governor pledged to build a statewide health information infrastructure with the goal of providing improved healthcare to Tennesseans. Since then the state has moved forward quickly. In April 2006, Governor Bredesen created the eHealth Advisory Council to coordinate eHealth initiatives across the state with a common goal: the successful development and implementation of electronic medical records (EMRs). The Council guides ongoing initiatives in Tennessee to ensure interoperability, facilitate the definition of uniform standards, eliminate duplication of effort and reduce competition for resources.

Since 2006, the Council has laid out the following step-by-step plan to accelerate the use of high-impact technology that delivers the correct information to inform treatment at the point of care:
- Develop a framework for trust and collaboration
- Establish the eHealth network as a foundation for future programs
- Implement electronic prescribing (ePrescribing) initiatives
- Implement TeleHealth initiatives
- Implement electronic health records for all Tennesseans

After the establishment of the eHealth network, the Council focused on increasing the number of medications delivered through ePrescribing, the process of a physician sending a prescription electronically directly to the pharmacist via a secure network. Utilization of ePrescribing increases the quality of care by reducing errors in medication or dosage prescribed. It also has the potential to increase compliance with insurance formularies and thus, cut costs.

In 2006, Tennessee had 211 ePrescribers, which grew to 782 by the end of 2007. As of the end of the first quarter of 2008, the number of ePrescribers had already increased to 973.

Tennessee's goal for 2008 is 1564. By reaching that goal, the state should more than double the number of prescriptions issued via ePrescriptions, making Tennessee a leader nationally among ePrescribing states. The state achieved this mark by increasing the number of physicians connected to the Exchange Zone through the use of a one-time, state-funded grant program known as the Physician Connectivity Grants.

The state's TeleHealth initiative currently includes over 50 sites providing a wide variety of services. These include clinical ophthalmology, children's psychology, nurses' training and other specialized health services such as pediatrics, dermatology and OB/GYN. This initiative has already brought improved healthcare services to over 100,000 patients in rural and underserved areas.
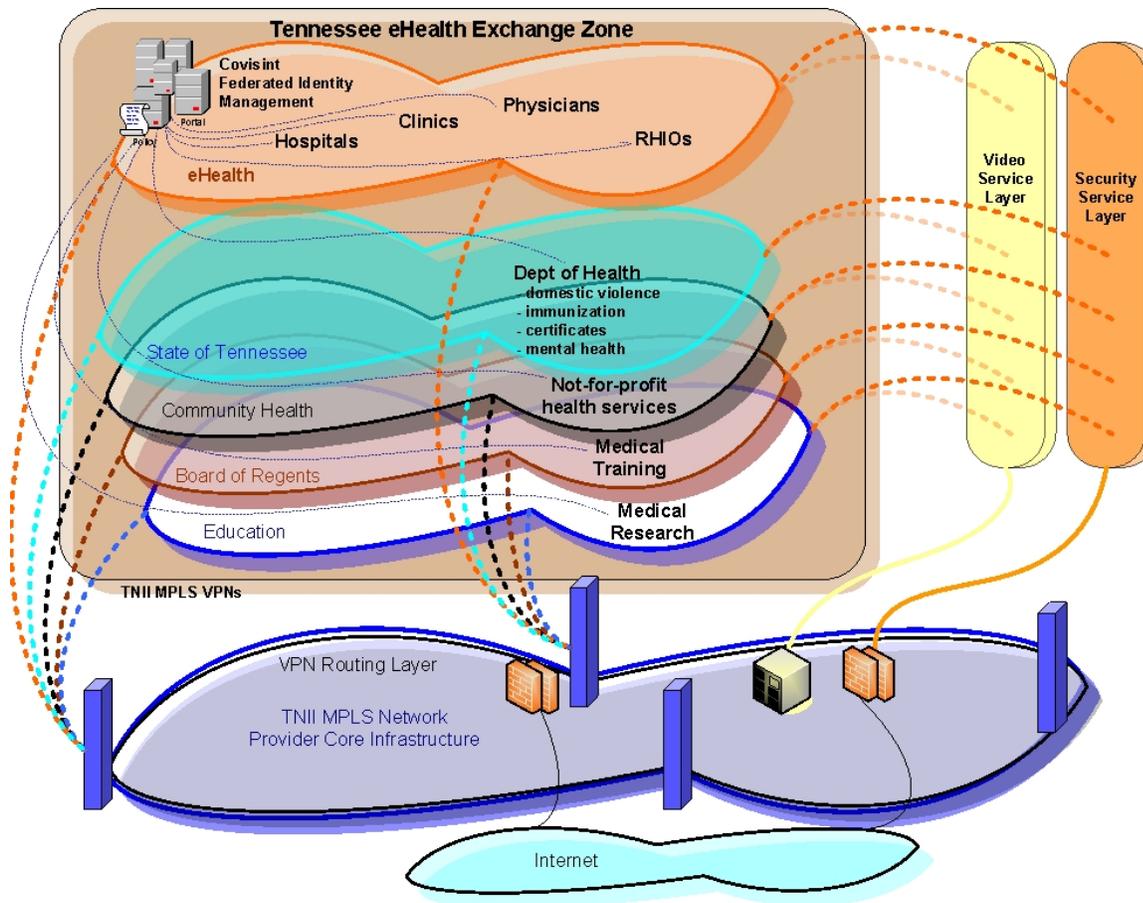
While the ultimate goal to establish electronic medical records for all Tennesseans lies ahead, the eHealth Exchange Zone currently provides diagnosis, treatment, history and medication records for over 2.2 million Tennesseans. These records are available to all practitioners subscribing to the Exchange Zone. The state continues to build upon current successes both by connecting more healthcare providers as well as offering an increasing number of eHealth applications and clinical data.

The Role of State Government
The state's primary role in this solution is to create an environment where collaboration and interoperability are possible and to facilitate and accelerate progress. Just as the state supports the infrastructure that makes interstate travel available and determines who is "licensed" to be on the road, it needs to facilitate the necessary infrastructure for advancement in health information technology and the rules for appropriate use.

To execute the vision of providing secure access and information sharing across the healthcare community in a reliable, user friendly, and secure way, Tennessee state government, AT&T and Covisint partnered to deliver a secure Tennessee eHealth Exchange Zone to collaborate across all health information sharing initiatives throughout the state. This was accomplished by leveraging the state's current managed services network, the Tennessee Information Infrastructure (TNII). Already located in Tennessee's 95 counties, the network was designed to provide a cost-effective means for each county, city, and municipality to access services from state and local governments such as education, healthcare, and public safety.

A core component of the eHealth Exchange Zone is the "Trusted Identity Broker" provided by Covisint. This is a solution for managing the federation of user identities across security domains. This unique, single, digital identity for each user to access cross-organizational information results in both ease of use for caregivers and cost reductions in user administration. In this way, the Tennessee eHealth Exchange Zone extends privacy statewide to encompass healthcare organizations, physicians, educators, state-based services, and eventually, the users of healthcare.

Tennessee eHealth Exchange Zone

(diagram labels: Covisint Federated Identity Management, Portal, Policy, eHealth, Clinics, Physicians, Hospitals, RHIOs, State of Tennessee, Dept of Health — domestic violence, immunization, certificates, mental health, Not-for-profit health services, Community Health, Medical Training, Board of Regents, Medical Research, Education, TNII MPLS VPNs, Video Service Layer, Security Service Layer, VPN Routing Layer, TNII MPLS Network Provider Core Infrastructure, Internet)

Significance to the Improvement of the Operation of Government

The adoption of health information technology and the exchange of health information have significantly improved the quality, efficiency, safety and access to healthcare in Tennessee. But Tennessee itself has also benefitted considerably from the eHealth initiatives. As a health insurer, the state has seen cost savings through the increased use of generic drugs and formulary compliance and reduced duplicate lab testing. Additionally, ePrescribing efforts have helped in early detection of fraud and abuse. By delivering telemedicine applications for remote diagnostics and consulting, the state has improved healthcare in its rural areas.

State government is offering public health services data in the exchange. The Departments of Health, Mental Health and Developmental Disabilities, and Corrections are all working internally to develop agency-appropriate plans to participate in the health information exchange.

Additionally, the Department of Health will begin making licensure renewal and the immunization registry more readily available, and over time will add tools like the disease registries and the low birth weight registry. As many as 50 different Department of Health applications are currently being evaluated for integration. There is an added functionality within the Exchange Zone which integrates these and other information resources for ease of use by medical practitioners.

The eHealth effort has been especially important for TennCare (Tennessee Medicaid) and its clients. TennCare clients more frequently cycle among public assistance, private coverage and being uninsured than individuals who are privately insured. TennCare clients are also less likely to have a medical home with a complete medical record and so providers more often lack a full view of TennCare clients' medical histories. Therefore, providers need access to real-time information about eligibility as well as the clinical information that is available in an electronic health record.

Benefits of the Project

Tennessee recognizes that a statewide infrastructure to exchange health information electronically will improve the quality and reduce the cost of healthcare in Tennessee by:

- ♦ Ensuring health information is available at the point of care for all patients
- ♦ Reducing medical errors to improve patient safety
- ♦ Avoiding duplicative medical procedures
- ♦ Improving coordination of care between hospitals, physicians, and other healthcare professionals
- ♦ Establishing standards for data interoperability
- ♦ Furthering healthcare research
- ♦ Enhancing the business environment for both small and large employers and reducing state expenditures by controlling healthcare costs
- ♦ Ensuring broadband availability to all healthcare stakeholders

The Exchange Zone
The Exchange Zone is built on the private and secure, high-speed, broadband network already available in every Tennessee county through the Tennessee Information Infrastructure (TNII). Currently this network is being utilized for all state business including prisons, health departments, local governments and more. Tennessee allows healthcare providers to access this network at state negotiated rates and service level guarantees. The network has been modified especially to address the special need for data security for health information by adding HIPAA-compliant authentication for network users. The Exchange Zone has the potential to connect every healthcare provider in the state so that they can view patient health records that span changes in insurance plans, employers, and clinicians. This resource cannot help but offer clinicians better information for decisions about how to treat a patient for current ailments and help avoid preventable errors and conditions.

ePrescribing
As noted earlier, Tennessee leads the nation in prescriptions per capita; the average Tennessean uses 1.5 times as many prescription drugs in a year than the average American. The ePrescribing capability offers healthcare providers the opportunity to review medication history at the point of care. This inevitably leads to fewer adverse drug events, and it offers meaningful improvements

in the quality and cost of care, reducing errors, helping ensure formulary compliance, and is a valuable tool in attacking abuse and fraud.

ePrescribing provides benefits to all stakeholders:
Patients
♦ Improves safety and convenience
♦ Saves costs due to formulary compliance
Healthcare Providers (clinicians, hospitals, pharmacists)
♦ Reduces time-consuming administrative issues and unnecessary re-adjudication efforts and costs
♦ Optimizes therapeutic and economical drug selection
Healthcare Payers (employers, health plans, third party payers)
♦ Achieving safer outcomes and reduced adverse events and medication errors
♦ Improved formulary compliance and utilization of cost-effective drugs
Policy Makers (state and federal agencies, community-based health information exchange collaboratives)
♦ Provides industry standards that reduce time, resources and confusion
♦ Improves efficiency and reduces costs of healthcare delivery

TeleHealth
These services are bringing specialty care to rural areas and underserved populations who often have difficulty getting specialty services. To date, 51 sites have completed their installations making specialty care more available to approximately 100,000 patients. Specialties available through the TeleHealth network include pediatrics, dermatology and a pilot program for OB/GYN and cardiology. Additional specialties available through the University of Tennessee Health Science Center TeleHealth program include behavioral health, dentistry, developmental disabilities, ENT, endocrinology, gastroenterology, hematology, infectious disease, neurology, nutrition, pulmonology, transplant care, oncology, orthopedics, and urology.

Without a doubt, TeleHealth provides increased quality of care by providing on-line medical libraries, research, and training to providers, reducing duplicative testing, and giving physicians access to more complete clinical information about each patient they treat.

Next Steps
In 2008-2009, Tennessee will move toward the integration of claims and clinical data along with lab results and imaging. The end result is to equip healthcare providers with a complete health record at the point of care for each patient that includes both clinical and administrative data.

In addition, Tennessee's ePrescribing application has the potential to quickly and significantly help broad categories of citizens with enhanced drug safety and better cost management through increased utilization of generics and improved formulary compliance.