HIGH–PERFORMANCE HEALTHCARE INFORMATICS NETWORKS

Ubiquitous Ethernet Networks Enable the Latest Applications for Healthcare Research and Decision Support

The adaption of Electronic Medical Records (EMR) within the healthcare industry has enabled medical staff and healthcare professionals to reduce the number of medical errors and increase patient safety throughout the world.

One of the results of the rapid adoption of EMR systems is the availability of patient data that is now being stored electronically in data bases across the healthcare ecosystem. Healthcare informatics applications that combine software, hardware, and services, are emerging to access the de-identified data from these disparate data bases in order to provide decision support for evidence based medicine and improve hospital operational efficiencies.

This data can now be mined to study treatment protocols and their resulting patient outcomes; public safety agencies to identify health risks and pharmaceutical companies to enhance their drug research.

The possibilities for Healthcare Informatics solutions are many and a secure, reliable and scalable network and communications infrastructure can impact their success.

ETHERNET-ENABLED INFORMATICS

The power of interlinked stores of data within the medical industry provides the ability to make better decisions based on more information about the patient delivered at the point of care. Medical providers have created and implemented numerous EMR/EHR, PACS, telemedicine, and other data-intensive applications. As the challenges in connecting these various databases from multiple vendors are addressed through the ARRA sponsored Meaningful Use initiatives, the need for a network infrastructure to share the data within the ecosystem becomes a higher priority.

Today's Wide Area Networks (WANs) have introduced Metro Ethernet into mainstream use, putting healthcare informatics networks merely a click away. The ubiquity of Metro Ethernet allows healthcare professionals to interconnect data pools and storage networks from anywhere onto a single network and deliver the information to multiple locations, where it can be disseminated and recombined into useable information for researchers and medical professionals. The flexibility of Comcast's Ethernet Business Services allows any of the medical facilities using the data to scale the bandwidth required to utilize the informatics systems without fears of overprovisioning or capacity limitations.
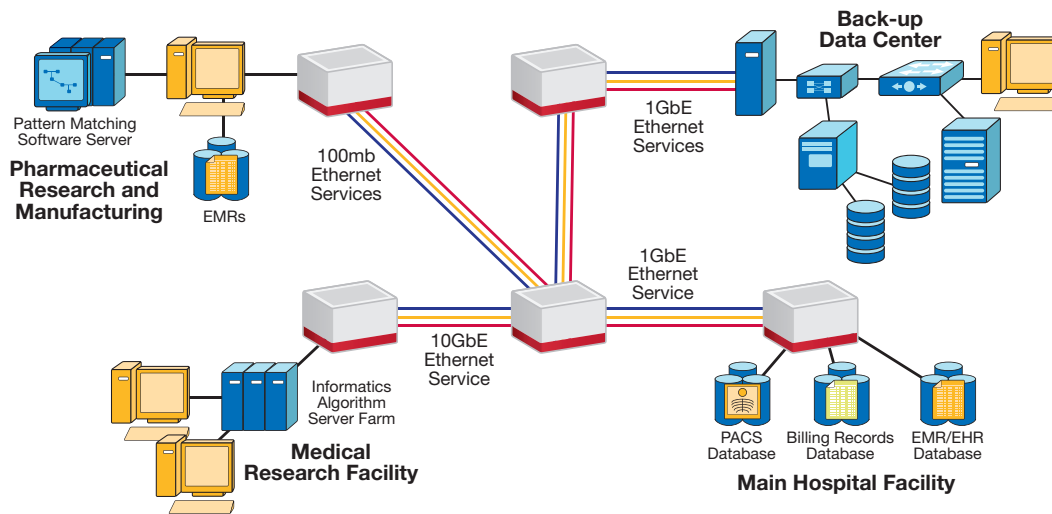

KEY APPLICATIONS DRIVING IMPROVED HEALTHCARE:

INFORMATICS

> **Allows faster discovery**
> Turns data into information to support evidence based medicine

> **Improves care**
> Real-time access and delivery of information at the POC

> **Lowers costs**
> Uses one network to support ANY application or protocol

COMCAST
BUSINESS

Figure 1: Healthcare Informatics Network

COMCAST'S METRO ETHERNET SERVICE

Comcast's Metro Ethernet service delivers the scalable bandwidth and ubiquity necessary to move large data stores within the same healthcare providers' data centers or servers, and allows network-intensive computer algorithms and server-based software to run at its peak performance levels.

In the scenario illustrated in Figure 1, numerous applications, including PACS and EMR, contribute data to an onsite storage disk and create large stores of patient data. A Comcast Ethernet service is used to first create a high-speed link to the hospital's off-site disaster recovery location. Next, an affiliated medical research facility can be securely and privately connected to the main hospital facility and the Storage Area Network (SAN). The research facility accesses the data and uses a server-based healthcare informatics software package to mine the data for decision support for treatment protocols as well as operational efficiencies like supply chain management and resource scheduling.

In another location, an affiliated pharmaceutical research and manufacturing firm connects into the same secure, private Comcast Metro Ethernet service. Through the service, the firm accesses the de-identified data the medical facility has compiled, and uses the information to analyze the correlation between symptoms, medicines and outcomes. Using that information, they can increase the scope of their trials for drug development as well as measure the effectiveness of current drugs.

The Comcast Metro Ethernet service allows all the interconnected medical professionals to share information in real time, facilitating better decision-making regarding how to treat patients and deliver the care.

Healthcare Informatics relies on taking mountains of data and breaking them down into pebbles of useful information. A high-speed network interconnecting the healthcare ecosystem is a critical element in enabling the access to de-identified data needed for effective informatics initiatives. Comcast's Metro Ethernet Service provides all the required elements for such a network, including speed, flexibility, security, and appropriate costs to make Informatics a reality for any organization.