Network Performance:
The Essential Ingredient to Ensure an Effective EHR implementation

Executive Summary:

Software performance, speed, and reliability has become a major issue as healthcare organizations roll out critical clinical applications like Computerized Provider Order Entry (CPOE), Outcomes Measurement tools, Clinical Decision Support (CDS), and Office of the National Coordinator (ONC) Certified Electronic Health Record (EHR) applications. To ensure success, healthcare professionals must have the right management tools necessary to ensure the network's performance exceeds physician needs. . Traditional performance management tools are complicated, expensive, time consuming and tell you nothing about the network outside the four walls of the individual healthcare organizations. The industry needs a tool designed to make the management of client's network and their EHR applications easy to remotely monitor to ensure high software availability and real-time monitoring visibility. There is an ever increasing need for a simple solution to solve the visibility problem by providing network insight in both directions through localized and third-party networks – from datacenters to remote clinics and hospital sites, and everything in between. The industry is searching for Network Performance Management technology that proactively troubleshoots network performance problems, continuously monitors in real-time against service level agreements, and assesses network readiness for rolling out new electronic healthcare applications and services. The purpose of this white paper is to discuss connectivity issues and solutions via case studies and to introduce the concept of "**network connectivity assurance."**

The Situation:

During the past three years, over 50,000 physicians have purchased a new Electronic Health Record (EHR) product for their medical practices. Once implemented, the EHR vendors have claimed that the average medical practice will achieve a quick return on investment. However over the past five years, most medical practices have not realized the majority of the cost savings that were promised by the various EHR vendors. One reason for the failure can be directly contributed to ***inconsistent software connectivity***.

Physicians have realized that if the software product is not operating effectively when they are seeing a patient, the physician loses trust in the software, the vendor, and their own staff. When this occurs we find Physicians longing for the "old days" when a physician could just flip from one page to another in a paper record. To eliminate this kind of "day-dreaming" it is up to the industry to adopt tools designed to pre-asses the network prior to an EHR deployment; proactively monitor network connectivity and for to provide a simple and inexpensive methodology for **"network connectivity assurance.** So how wide-spread is connectivity issues? Let's start by looking at EHR trends over the past ten years.

As shown on Figure 1, the 2010 CDC/NCHS national Ambulatory Care Survey projects that almost 50% of physicians have already purchased some type of EHR product, but only around 10% are using the product as a fully functional EHR product. Around 25% of physician practices are using an EHR as a basic input system. This means that 15% of all providers have purchased an EHR and are NOT using the product at all. Part of the reason is usability, identified slowdown in patient care, and many of these systems have crashed over time and data was lost. When this occurs, physicians lose trust in the EHR solution. A recent survey conduct by AC Group included 1,243 physicians, showed that 72% of the physician had indicated that they had experienced unacceptable software product downtimes and/or the EHR product was too slow during specific times of the day, affecting the physician's ability to treat their patients in a quality manner. In 28% of the cases, physicians stated that appointments were cancelled because the EHR was not operating effectively, creating financial losses for the practice.

Case Studies:

The white paper highlight two case studies where dealing with physician dissatisfaction with their software speed and reliability because of connectivity issues. In fact, five practices were so unhappy with their ONC Certified PM/EHR software product and they were seeking a complete refund. It became very clear that the problem was not with the software product, but something else. After four months of investigation, we determined that the actual problem was with the network, not the software.

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To assist our team in measuring network performance we turn to AppNeta (http://www.appneta.com). AppNeta is revolutionizing network performance management with a cloud-based network performance solution that offers tightly integrated path-based SLA and performance validation, active hosted-application performance monitoring, in-depth netflow/traffic analysis and 100% remote packet capture for distributed networks. AppNeta's PathView Cloud service provides us with end-to-end performance visibility into any device across any network, out to remote sites or 3rd party networks. With this insight we finally understand the way patient data travels across the complex distributed infrastructure in real-time. We plugged in the AppNeta microAppliance and immediately began seeing visual reports of network performance and enabling us to quickly pinpoint *exactly* when and where the network was slow and why it was occurring. Whether it was a bandwidth issue or an application performance problem such as jitter, latency or data loss, PathView Cloud gave us this insight and we could remediate the issue quickly and efficiently.
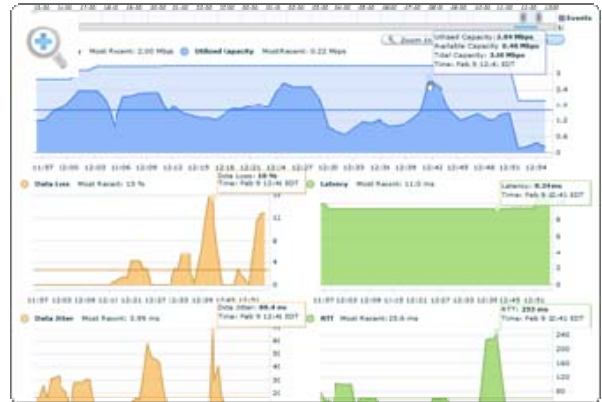
With the appropriate performance data, we were able to pinpointed the network performance issues and within three days all five of the practices that were previously experiencing software performance issues were once again happy with their overall selection of their EHR vendor, the hosting company, and with their internal staff.

Summary:

Functionality advancements and deployment of EHR application will require more consistent and high-speed band-width over for the next five years. However, without **"network connectivity assurance",** the EHR deployment failure rate will continue to remain high. EHR vendors must assist their healthcare clients by providing inexpensive, easy to use, and simple to deploy solutions so that network performance can be measured in real time. We believe all EHR vendors should offer to deploy solutions like AppNeta's PathView Cloud service so they can assure their healthcare clients that speed and performance will not be an issue. In fact, organizations that have deployed AppNeta's solution have experience the following performance improvements:

- **74% reduction in network issues.**

- **57% reduction in network speed issues.**

- **68% reduction in the amount of time it took to resolve a network issue.**

We encourage all EHR vendors to evaluate this type of simple and inexpensive solution so they can quickly and affordably mitigate performance issues and avoid the software performance similar problems to those of our five clients in Southern California. To access the research paper, go to http://www.acgroup.org/

More about the Author:

Mr. Mark Anderson, CEO of AC Group, Inc. is one of the nation's premier IT research futurists dedicated to health care. He is one of the leading national speakers on healthcare and physician practices and has spoken at more than 850 conferences and meetings since 2000. He has spent the last 39+ years focusing on Healthcare – not just technology questions, but strategic, policy, and organizational considerations. For the past eleven years, Mr. Anderson has spent the majority of time in the evaluation, selection, and ranking of vendors in the PM/EHR healthcare marketplace and during those eleven years has published a semi-annual report on the Digital Medical Office of the Future. His EHR evaluation decision tool has been used by more than 25,000 physicians since 2002.