

OPTIMIZING **HEALTHCARE SITES** FOR BETTER OUTCOMES



The healthcare experience today is much different from years past. Single offices with one or two doctors have been replaced in large part by medical practices with multiple doctors offering multiple services in multiple locations. A practitioner today may offer services in a clinic, office, urgent care center, in-patient facility and hospital, for example.

With such an extensive reach, healthcare providers rely heavily on technology to be able to access patient data at all properties, communicate easily and effectively between locations and update treatment and billing information in real time. Technology is helping these environments work more efficiently and improve interaction between all parts of the healthcare experience—patients, providers and payers—to ensure constant and timely flow of information.

Understanding that each location plays an important role in the overall healthcare experience—and therefore requires a level playing field in terms of technology—is critical for success in today's multi-office, multi-location healthcare environment. Having an infrastructure that spans all locations can help eliminate information bottlenecks that can get in the way of effective health care for both patients and providers and provides opportunities for improving service in both the front office and the back office.

WHAT'S DRIVING OPTIMIZATION

There are a number of factors driving the need for healthcare organizations to optimize their networks. Factors such as disparate locations, security and convenience necessitate networks that advance, not hinder, healthcare directives and foster better communication between practitioner, patient and payer.

Disparate Locations

Rising medical costs, increasing populations and greater demands by payers (both private and public) to do more with less have forced many healthcare practitioners to consolidate and form larger, more cost-effective practices or join existing medical groups. These larger, consolidated practices have evolved into “one-stop shops” for diagnosis and treatment, housing general practitioners and specialists alike, as well as urgent care centers, pharmacies, physical therapy facilities and even surgical centers.

Many of these medical centers are spread out over multiple buildings on a single campus, and a growing number have multiple locations where all or some of their services are offered. For example, a medical group may run a network of urgent care centers with in-house pharmacies or may have satellite clinics spread out across a particular region.

Regardless of where a patient receives service, it's critical that patient's information is available to those who need it. Practitioners need access to the patient's health history to provide appropriate treatment, while the administrative office needs access to the patient's insurance information to bill the appropriate carrier and amount. The pharmacy, meanwhile, needs information regarding any allergies to medications the patient may have and what other medications the patient may be taking, as well as insurance information.

An optimized network at each location not only will ensure the right information is available to the right people, it also helps facilitate faster and more accurate diagnosis and treatment. What's more, billing can be done with greater accuracy, as the right agencies are billed the right amount—and more quickly. And pharmacies won't have to contact the healthcare provider for important information before filling patient prescriptions.

Security

With a constant flow of information comes the need for extensive security to protect sensitive data and applications on the network. Beyond ensuring compliance with privacy regulations such as HIPAA, security is paramount to safeguarding information from prying eyes and data breaches, which can be very costly to organizations and patients alike.

One recent study pegged the cost of healthcare data breaches at \$380 per record—more than 2.5 times the global average of \$141 per record across all industries.¹ One of the largest data breaches in history was 2015's attack on Anthem, which affected 78.8 million people and ended up costing the company more than \$115 million.²

Organizations, therefore, must take measures to ensure their information is secure. Security is a critical element of an optimized network, securing data from all sources and all points on the network from headquarters to satellite offices and beyond, such as web-based interactions.

Convenience

Convenience, too, is another driver of branch office optimization, as changing patient attitudes and behaviors are forcing many healthcare providers to adjust their business practices to adopt a more patient-centric approach. Time and money are central to patients' changing attitudes and behaviors—they no longer want to be held hostage in a waiting room reading outdated magazines waiting for their appointment, nor do they want to pay exorbitant fees to see their practitioner.

Healthcare facilities are responding in myriad ways, implementing and integrating technology to make the waiting room experience less tedious. Most offices today have televisions with health-related programming, and a growing number are installing self-service kiosks where

patients can check in for appointments, set future appointments, update insurance data and even download information on health-related topics such as weight loss or heart health. Still more have implemented in-office Wi-Fi so those waiting can surf the web or get some work done.

As wearable devices have become ubiquitous, more practitioners are harnessing their power to deliver important biometric data for a more complete patient health picture. Using wearable devices, patients are able to skip the doctor's office and instead "push" their health data to their healthcare provider.

Telemedicine, too, is another way for patients to avoid the waiting room. Instead, they can simply log on to connect with a provider, who can diagnose and prescribe treatment for basic ailments such as skin conditions or allergy relief. Practitioners,

too, are using telemedicine to collaborate on diagnoses and treatments with other practitioners in all corners of the world, sharing patient information including health history, x-rays, MRI images and more electronically.

For patients who have to visit the facility, a number of healthcare facilities now send automated appointment reminders via text. This service can benefit both patients and administrators, who are freed from having to call patients manually, which is time-consuming at best and a drag on productivity.

Working Better, Faster

Streamlining processes through automation and integration and other ways of working better, faster, can help healthcare facilities save thousands or even millions of dollars per year. Such savings can come from reduced labor costs, lower infrastructure overhead and even revenue that might be lost as the result of miscoded diagnoses or procedures on insurance forms. Machine learning can take automation beyond simple "set it and forget it" tasks to, for example, automatically document and bill an insurance provider based on practitioner notes in a patient's electronic health record (EHR) or automatically send an order for certain supplies or medication to the patient's pharmacy of choice.

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In certain environments, machine learning could suggest treatment options for certain patient ailments based on parameters such as the patient's age, weight and previous health history. This would free overscheduled or overburdened practitioners to focus on more difficult diagnoses or on community healthcare initiatives such as diabetes control.

New Technology Adoption

Utilizing new technologies on the back end of a network, such as containers and APIs, can better enable adoption of new technologies to benefit the front end of the network, such as automation and machine learning. These not only help improve the agility of an organization by streamlining certain processes and activities, they also help improve the ability of an organization by enabling the adoption of other technologies.

Such adoption is essential in today's healthcare environment, where an increasing number of applications and devices are becoming part of the network. APIs are helping applications and services connect and interact with other programs and platforms designed to help practitioners and administrators provide a high-quality patient experience, whether it's the ability for patients to sign a document electronically or the ability for physicians to access data from a patient's Apple Health app.

As other technologies become part of the healthcare ecosystem, they, too, will be focused on creating new opportunities for better patient care while increasing productivity and decreasing costs.

EXAMPLES OF OPTIMIZATION IN HEALTHCARE LOCATIONS

Understanding the importance of network optimization in every location is key to managing the flow of information effectively and providing excellent patient care. Here are a few examples of organizations that have made network optimization a key part of their business strategy at every location:

CVS Health

Drugstore chain CVS has optimized the networks of its many locations including its in-store MinuteClinic locations.³ The company has focused a large effort on improving the prescription process more convenient for customers and has implemented technologies to help, including automated text messages that remind customers when prescriptions are ready for pickup and when it's time to refill a prescription. Text messages also are used to inform customers of other services it offers, such as vaccinations or blood-glucose testing.

CVS' text messaging technology also uses geotargeting, so the company can warn certain patients in advance of a storm so they can fill their prescriptions ahead of time.

In addition, CVS has added a software tool that helps patients with multiple prescriptions synchronize their refills to reduce the number of visits to pick up prescriptions.

CVS also is looking to expand telehealth services within its MinuteClinics in an effort to reach more remote patients.

Kaiser Permanente

Kaiser Permanente also is focusing much of its technology efforts on improving patient care, including improving communication between patient and doctor. In 2017, the organization added a “Chat with the Doctor” online platform that enables its members to chat directly with a doctor to discuss medical issues. The chat app complements the organization’s My Health Manager app, through which members can schedule appointments, receive text reminders about upcoming appointments, order prescription refills by mail and view a map of medical facilities near them.

The company prides itself on its technology as a catalyst for healthcare innovation. In fact, more than half—61 percent—of patients had “visits” with a health provider via mobile interaction in 2016, according to the company. Visits comprised such things as text messages between patient and provider or accessing their medical records or test results.⁴

DIRECT ETHERNET CONNECTIONS TO THE CLOUD PROVIDE RELIABILITY AND ENSURE SECURITY AND INTEGRITY OF BUSINESS-CRITICAL DATA, FOR STORAGE AND ANALYTICS.

DNA Processing for Criminal Cases

Research and clinical labs also can benefit from network optimization. One bioinformation company is translating DNA from crimes both in the United States and internationally and matching it against criminal cases to pinpoint offenders. It uses high-bandwidth applications not only to perform the analysis but also to communicate with law enforcement agencies, attorneys and other groups in need of the company’s knowledge and expertise.

The company relies on the internet to accomplish the majority of its tasks and utilizes the cloud for a number of its applications. As such, the company has been able to minimize the amount of manual processes and paperwork that traditionally has been a part of the DNA analysis process. When company representatives appear in court to discuss its findings, they now access their information via a tablet rather than carry around a paper-filled 3-inch binder. The result has been a reduction in both manual labor costs (no more printing, collating and filling the binders) and operational costs (less paper is used).

TECHNOLOGY TO OPTIMIZE HEALTHCARE LOCATIONS

Healthcare providers need technology that will enable them to provide superior patient care experience while operating at peak efficiency. Wired and wireless connectivity, robust voice and data solutions and data center and cloud connectivity are the elements of a robust yet flexible and agile network.

As facilities continue to evolve to meet a changing healthcare landscape, a modern IT infrastructure is necessary in providing the right connections. Healthcare facilities increasingly are relying on technologies such as advanced, cloud-based voice services that interoperate with productivity apps and enable practitioners to move around a location, switching seamlessly from desk phone to mobile device without losing connectivity. In addition, direct Ethernet connections to the cloud provide reliability and ensure security and integrity of business-critical data, for storage and analytics.

In building the network for disparate yet connected locations, organizations should consider an environment that includes both on-premises and cloud, and networking technologies such as SD-WAN and high-speed broadband to better manage business applications across all locations. And networking components such as WiFi and unified communications can ensure everyone involved can interact and transact using their preferred method of communication.

Working with a network service provider can help ease the burden associated with building and maintaining a network capable of handling the bandwidth-intensive needs of various technologies today and in the future. By working with a third-party network services provider, organizations can leverage virtual and physical private Ethernet connectivity to assure there are no gaps in network performance and availability for critical applications at any location. They also can receive all or some of their most critical connectivity functions as a managed service, including managed connectivity, WiFi, security, voice and business continuity, among others.

CONCLUSION

Technology has changed the healthcare landscape for the better, enabling healthcare providers to provide a healthcare experience well beyond the office visit. Healthcare facilities, therefore, must ensure all their locations are optimized with the tools and technologies to increase their overall productivity while providing superior service to their patients.

1 Elizabeth Snell, "Healthcare Data Breach Costs Highest for 7th Straight Year," Health IT Security, June 20, 2017 <https://healthitsecurity.com/news/healthcare-data-breach-costs-highest-for-7th-straight-year>

2 "Anthem to Pay Record \$115M to Settle Lawsuits Over Data Breach," NBCNews, June 23, 2017 <https://www.nbcnews.com/news/us-news/anthem-pay-record-115m-settle-lawsuits-over-data-breach-n776246>

3 Gienna Shaw, "CIO Stephen J. Gold: 3 ways CVS Health uses technology to improve medication adherence, customer service," FierceHealthcare, May 19, 2017 <https://www.fiercehealthcare.com/analytics/cio-stephen-j-gold-3-ways-cvs-health-uses-technology-to-improve-medication-adherence>

4 Clifton Leaf, "Where High-Tech Meets High-Touch," Fortune, Sept. 27, 2017 <http://fortune.com/2017/09/27/kaiser-permanente-ceo-health-tech/>