BETTER
Connections,

BETTER
Outcomes

COMCAST
BUSINESS

Meeting today's (and tomorrow's) healthcare demands

The days of spending hours waiting at the doctor's office could become the exception as organizations forge new ways to make healthcare more convenient. Technologies that support telemedicine, secure access to electronic medical records and on-demand multimedia content, can reduce time and expenses while raising productivity and outreach.

First, though, medical communities must have the IT ecosystem to support a higher level of connectivity and build multimedia content libraries. There are a number of vendors that specialize in one or the other. Far fewer can provide both.

As one of those "all-in-one" providers, Comcast is partnering with healthcare organizations through a range of projects so patients, providers and payers can connect with high-quality content and with each other, anytime and anywhere. We're leveraging the resources and assets of Comcast Connected Health, Comcast Cable, Comcast NBCUniversal and Comcast Business to provide hospitals with the capabilities to better engage consumers in their care plans. Working with partners like Kaiser Permanente and Oregon's Cascadia Behavioral Healthcare, we're showing how this approach creates better health outcomes.

We know how to produce excellent content and serve as the conduit to place important patient information in the right hands. We help healthcare organizations deliver the on-demand service consumers now expect.

Patients, on average, are said to remember only 20 percent of what they are told during a doctor's office visit. That has to change. And it is. The information in this e-book is just the first step in moving your organization in the right direction.

Sam Schwartz
Chief Business Development Officer
Comcast Cable

> "**Comcast is partnering with healthcare organizations through a range of projects so patients, providers and payers can connect with high-quality content and with each other, anytime and anywhere.**"
>
> *Sam Schwartz*
> *Chief Business*
> *Development Officer*
> *Comcast Cable*

Comcast Connected Health
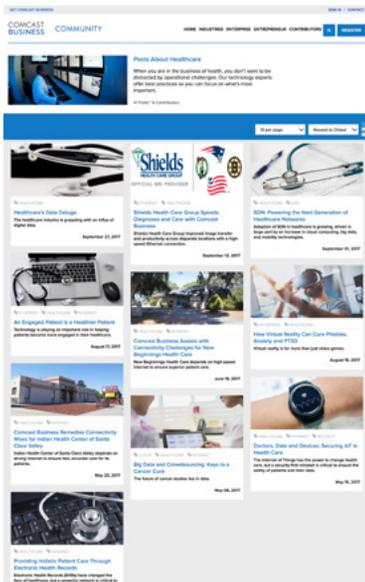
Visit the Comcast Business Community

Arming healthcare providers with the tools they need

Connected health and digitized health help hospitals lower the cost of care, operate efficiently and meet quality outcomes. That's why providers are investing in technologies that remove patients' location, mobility and transportation barriers. Healthcare becomes more convenient for providers, too, allowing their clinicians to serve more patients and relay lab results or monitor treatment plans using web portals, mobile apps and telemedicine. Remote-monitoring devices and state-of-the-art video sharing also allow doctors to diagnose from a distance.

All of these advances, however, require sophisticated data and voice networking solutions built on scalable, secure networks across a distributed enterprise. That's why hospitals need to "future-proof" their IT infrastructure, so providers can handle the traffic and terabytes of data circulating throughout their systems.

Among the main tools needed to connect patients to health services, information and resources to manage their healthcare more effectively are:

- **Custom Content**: Visually appealing healthcare videos, e-newsletters and other custom content, delivered across chosen communications channels, allowing patients and their caregivers to learn about both an illness and prescribed treatment.

- **Connectivity:** Network scalability and reliability are crucial to accommodating new applications, and high-performance bandwidth is allowing easy, secure retrieval of electronic medical records (EMRs).

"Every organization in the healthcare ecosystem can stand to improve connectivity amongst themselves and with each other," said Regan Yeldell, senior director of vertical segments at Comcast Business. "Healthcare organizations that may have been stymied in the past from a funding or location perspective can now, with the right technology, have equal opportunities in the competitive healthcare playing field."

> **"***Every organization in the healthcare ecosystem can stand to improve connectivity amongst themselves and with each other.***"**
>
> **Regan Yeldell**
> *Senior Director of Vertical Segments Comcast Business*

Comcast Resource Library

Customizing products for patients

We are moving to an on-demand world for everything the consumer could want or need, and healthcare is no exception. From video consults for homebound caregivers to mobile apps for parents with crowded calendars, everyone now wants more options to connect with their providers and health plans.

Technology is the engine behind this healthcare phenomenon, driving down operational costs while improving patient-provider interactions. Full-service video management and custom-content management, as well as readily available distribution channels, will become increasingly important.
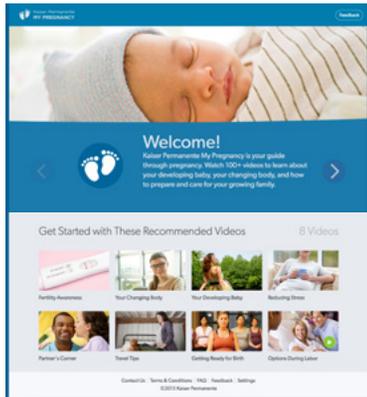
"We're seeing providers who understand that the more connectivity and more platforms to reach patients, the better they are able to serve those patients," said Marc Siry, vice president of strategic development at Comcast.

One example is My Pregnancy, an app that allows maternity patients and their families to follow their baby's development from conception to a newborn's first days. Conceived through a partnership with Kaiser Permanente, patients can access more than 120 videos offering expert advice from Kaiser Permanente clinicians through a website that is open to the public. "We brought to bear all of the assets Comcast can offer in terms of technology services to create an immersive, content-driven educational experience around maternity," Siry said.

The My Pregnancy website can be customized so video selections align with an expectant mother's pregnancy timeline. It also provides sound medical advice from a single trusted source, reducing the confusion or anxiety that can come from online searches that call up conflicting information. "This is making doctors' treatment regimens more effective and patients are staying more engaged in their care," Siry said.

Visit Video Library

> **We brought to bear all of the assets Comcast can offer in terms of technology services to create an immersive, content-driven educational experience around maternity."**
>
> **Marc Siry**
> *Vice President of Strategic Development Comcast*

About Comcast Connected Health:
Comcast Connected Health's Initiative provides healthcare organizations with customized solutions designed to enhance patient outcomes — from content development and engagement to fast, reliable connectivity and connected devices. It leverages the resources and assets of Comcast NBCUniversal and Comcast Business — giving providers and partners the technology tools and health content they need to thrive in today's healthcare ecosystem.

An Engaged Patient is a Healthier Patient

*Doctors, Data and Devices: Securing IoT in Health Care*

Make room for big data

The maturation of EHRs, combined with census data and historical records, is allowing healthcare organizations to develop algorithms to find people most at risk for a disease or hospital readmission. The earlier these patients can be found, the sooner proactive measures can be taken or more hospitalizations avoided.

Big data analytics, and particularly predictive analytics, are gaining traction in medical communities. Hospitals can save more lives when big data analytics is done well. That also means these systems need reliable, scalable networks to securely manage the massive amount of computation and data processing required. They also require powerful patient-to-provider connectivity, as the infographic, "Population health initiatives require powerful patient-to-provider connections," shows.
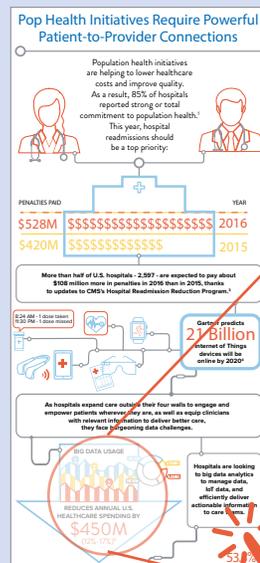
Pop Health Initiatives Require Powerful Patient-to-Provider Connections Infographic

BIG DATA USAGE

REDUCES ANNUAL U.S. HEALTHCARE SPENDING BY

$450M

(12%-17%)[5]
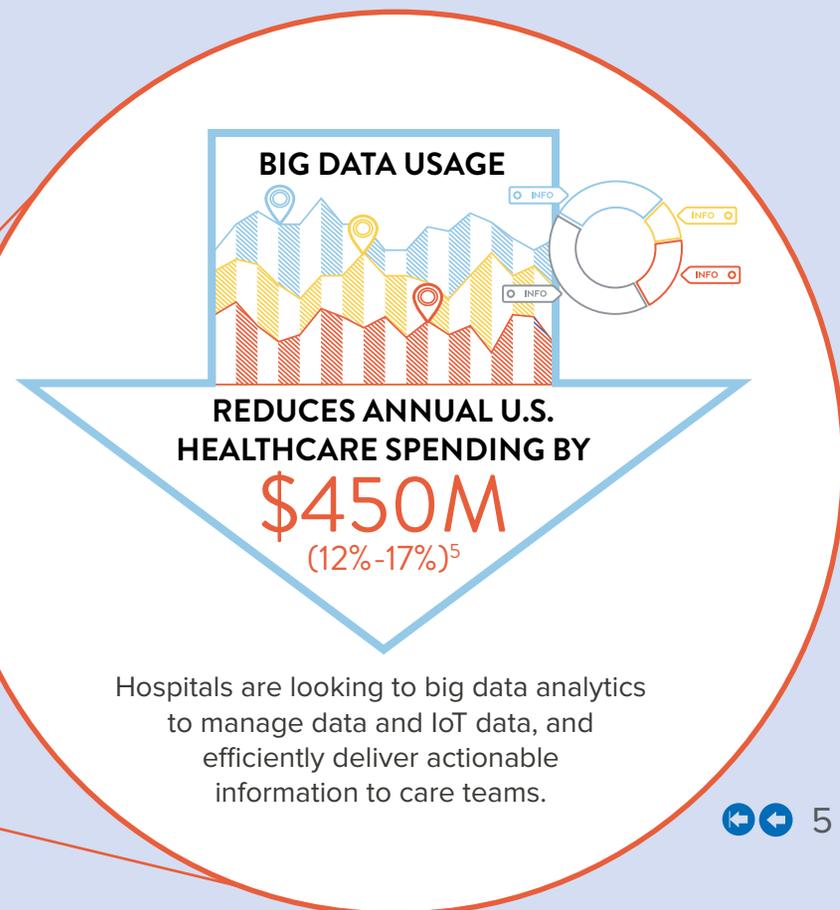
Hospitals are looking to big data analytics to manage data and IoT data, and efficiently deliver actionable information to care teams.

Enabling better patient care through data sharing

Healthcare's Data Deluge Infographic

Mobile apps not only improve clinicians' productivity, but they also enhance the patient experience – making it easier for patients to connect with their providers and caregivers using today's mobile and data-sharing technologies. In addition to remotely managing room functions, they can open apps that connect them with friends and family, entertain as a form of pain distraction or read up on treatment options.

Clinicians, too, are no longer tethered to stationary workstations and can now engage patients in more meaningful conversations at the bedside, with tablet or laptop in hand. They also can access videos showing how to use new equipment or search for health information online.

To accommodate this increased data sharing, healthcare organizations must have the network infrastructure to facilitate wireless data exchanges in a manner that is fast, scalable and secure. Enterprise-grade Ethernet provides the needed network reliability to meet both current and anticipated data, voice and video traffic demands while meeting healthcare security and privacy regulations. In doing so, clinicians can fully leverage new digital health tools and devices, including telemedicine and other patient outreach initiatives.

Leveraging predictive analytics in healthcare

The promise of mobile medicine is vast. To fully realize that potential, though, takes the right platforms residing on a robust IT infrastructure.

As healthcare organizations big and small expand their services and take in more patients, issues like network reliability and connectivity move to the forefront. Here are just a few providers that worked with a chosen partner to prevent system slowdowns that can impact the quality of care.

The Cascadia story: A WANderful broadband rollout

Each year, Cascadia Behavioral Healthcare, one of the largest nonprofit healthcare providers in Oregon, helps 15,000 children, families and adults get through some of life's most difficult issues — addiction, homelessness and mental illness. But Cascadia leadership found itself wrestling with its own difficult issue: a costly constellation of internet and network service providers serving more than 75 locations and 900 employees. Latency issues led to system slowdowns and interoperability problems that impeded daily operations and prevented locations from collaborating on cases. In addition to transmission speeds as low as 5 Mbps, there were multiple billings and myriad service agreements to manage.

Working with chosen partner Comcast Business, Cascadia's network services were consolidated under one provider. Comcast Business installed an Ethernet Network Service with up to 100 Mbps of capacity to connect to Cascadia's 10 largest sites. Comcast Business also created a new corporate WAN. Immediately after the rollout, employees experienced performance improvements and the ability to share and collaborate over a secure, enterprise-wide network. They also could safely access EMRs between locations without downtime.

Read more.

Improving reliability for radiologists at Shields Health Care Group

MRI files are huge, easily running from 200 MBs to a gigabyte — each. Uploading, downloading or transferring these files can slow down radiologists' workflows. Such inefficiencies were a concern at the multi-site Shields Health Care Group, which annually performs approximately 40 percent of all MRIs in Massachusetts. Simultaneously, Shields' locations expansion and online patient portal were further taxing an already strained network.

To boost connectivity at its facilities, Shields turned to Comcast Business to double bandwidth and reduce costs, beginning with installing Ethernet and Business Internet services across its 36 locations. By expanding network traffic capacity with fast-speed Ethernet at its 20 busiest locations, and installing an Ethernet Dedicated Internet line to Shields' main data center, radiologists can now more quickly send, store and access all files, including MRIs. This includes at new locations as the healthcare group continues to grow.

Read more.

Improving patient facetime at New Beginnings Family Wellness Practice

Monterey, California-based New Beginnings is a family-run chiropractic practice that averages 130 visits weekly and 30 appointments each day. It's a hectic daily schedule for a small practice that relies, in part, on a provider quickly accessing EMRs stored off-site. Any delays in retrieving these records can slow down an already packed patient schedule.

To make sure each patient gets maximum facetime with his or her provider, New Beginnings turned to Comcast Business to install a 25 Mbps internet connection to speed up medical records retrieval. The additional capacity also improved patient intake, electronic billings, appointment reminders and

general email communications – all for a lower monthly rate and faster service than previously. Scheduling appointments and talking to New Beginnings staff also are easier after the practice upgraded to Business VoiceEdge, a cloud-based voice and unified communications system. Additionally, thanks to adding Comcast Business TV, waiting room patients have more options to learn and be entertained by viewing messages and local television programming.

Read more.

> "*Managing so many different systems was a constant headache for us.*"
>
> **Brandon Gatke**
> *CIO and Director of Operations*
> *Cascadia Behavioral Health*

Technology solutions built for healthcare

Many healthcare organizations now realize they must upgrade legacy systems in order to stay competitive. That may involve re-architecting networks to easily accommodate on-demand EMRs and video conferencing. Or, it may mean leveraging cloud solutions and buying enough bandwidth for rich multimedia experiences and big data analytics. They also need security provisions to be put in place to protect patient data.

It's a tall order, but companies like Comcast, with deep roots in broadband media and technology, are uniquely qualified to fulfill it using enterprise-level business solutions and entertainment excellence. Comcast's Connected Health Initiative brings together the technology and content to improve healthcare and patient outcomes, whether it's through providing high-quality video messaging to facilitate telemedicine or educational health content to reduce hospital readmissions. Comcast has the expertise and knowledge to support better, more advanced patient care.

Technology helps healthcare organizations lower the cost of care, meet quality outcomes and operate more efficiently as an organization. At the same time, these technologies elevate patient engagement and provide a more satisfactory patient experience.

"Consumers are already used to accessing entertainment, news and services on myriad devices at the time and place of their choosing," said Comcast VP of Strategic Development Marc Siry. "It's now clear they are demanding the same of their healthcare providers."

> *We're seeing providers who understand that the more connectivity and more platforms to reach patients, the better they are able to serve those patients."*
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> **Marc Siry**
> *Vice President of Strategic Development Comcast*

COMCAST BUSINESS

About Comcast Business:

Comcast Business is a trusted provider of advanced data and voice networking solutions to help healthcare organizations operate more efficiently and serve clients better. Healthcare companies can rely on Comcast Business for scalable, secure network services, so employees can access information and applications across a distributed healthcare ecosystem to support better patient outcomes.