

## Dell Customer Stories: Enabling the future of healthcare

October 2015



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### Solutions:

- High-Performance Computing
- Infrastructure Consulting
- Storage
- Data Center Networking



## Saving more lives through high-performance computing

TGen

The geneticists and bioinformaticians at the Translational Genomics Research Institute (TGen) are more than just researchers—they're the unsung heroes of countless families.

These researchers strive to help more people survive diseases such as neuroblastoma, a deadly cancer typically afflicting children. They do so by developing a custom chemotherapy treatment that targets a patient's diseased cells and minimizes damage to healthy tissue.

Country: United States

Website: [www.tgen.org](http://www.tgen.org)



Because the treatments depend on fast analysis of patient genome sequencing, TGen strives to maintain a high-performance computing (HPC) cluster that delivers the server performance, storage capacity, network bandwidth and availability that researchers need. “Our staff includes some of the top people working on cutting-edge genetic and bioinformatics research,” says James Lowey, vice president of technology at TGen. “We have an obligation to ensure that our employees always have access to the best possible IT equipment and infrastructure.”

#### A research infrastructure pushed to its limits

Although TGen had deployed an HPC cluster based on the Dell Genomic Data Analysis Platform, that cluster was pushed to its limits by increasingly complex workloads,

“To get that kind of industry-leading power in that small of a footprint is huge.”

weekly additions of new software and fast-growing patient volumes. That sometimes made it difficult for researchers to get available nodes, and they often waited days to move data from storage to nodes due to network bottlenecks. Also, with data from a single genome






measuring up to 4 terabytes, sequencing a patient’s genome took about two weeks, with additional analysis for custom treatments taking at least seven days.

Because positive patient outcomes often correlate directly with the amount of data that researchers can analyze and the speed of analysis, TGen needed a more scalable cluster that it could optimize to boost performance.

#### Scaling an HPC cluster in days instead of weeks

After evaluating various technologies, TGen chose to scale its cluster with Dell servers, storage and networking equipment. “I’m not aware of any other solution on the market that’s like the Dell Genomic Data Analysis Platform,” Lowey says. “It’s optimized for genomic workflows out of the box, and within a few days, you can install, configure and launch it into production. Other HPC systems generally take weeks or months to get everything up and running.”

To increase compute capacity, TGen added 32 Dell PowerEdge M420 server blades with Intel® Xeon® processors to an existing Dell PowerEdge M1000e

   Installed, configured and launched HPC cluster in days



chassis. “We get 512 cores in 10U with Dell PowerEdge M420 servers,” says Lowey. “To get that kind of industry-leading power in that small of a footprint is huge.” TGen also deployed six Dell PowerVault MD3460 arrays and scaled its existing Terascale storage to hold 1 petabyte rather than 215 terabytes. This dense solution, which is faster than the previous storage solution by 12 gigabits per second, will help the company keep pace with 100 percent year-to-year data growth.

### Accelerating performance with two networks

To minimize network bottlenecks, TGen segregated traffic between two separate networks. An Ethernet network facilitates cluster component communication, which features Dell Networking S4810 switches at the top of the rack. An InfiniBand® fibre network, based on four Mellanox® SX6036 FDR switches, supports all other traffic including connections between TGen offices and its data center.

To design and deploy its new technologies, IT personnel collaborated with Dell Infrastructure Consulting Services. “Once the Dell consultants were done, all our people had to do was manage the final configuration so our researchers could start using the cluster to crunch genomic data as soon as possible,” says Lowey.

### Maintaining high availability and supporting 100 percent annual data growth

IT personnel minimize downtime by remotely managing servers via the integrated Dell Remote Access Controller (iDRAC) with Lifecycle Controller. “With iDRAC in Dell PowerEdge servers, we can manage servers, troubleshoot issues and hard-reset nodes from virtually anywhere, including my living room. So we save quite a bit of time and we’re able to maintain 99 percent availability, systemwide,” Lowey says.

### Developing custom treatments at least one week faster

TGen researchers have the compute resources they need with the larger, faster HPC cluster. “Recently, for the first time ever, our

researchers logged 1 million CPU hours on our Dell HPC cluster — significantly increasing the amount and speed of research,” says Lowey. The result? Researchers can now develop custom treatments at least one week faster. They have reduced the time needed for genetic sequencing from 14 days to 10 days and accelerated the analytical processes that facilitate custom treatments from 7 days to 4 hours.

### Improving the quality of life for more children

Every hour, a child is diagnosed with cancer. TGen can now help more children survive, and improve the outcomes for people battling other diseases. “Having this dedicated HPC resource enables us to really dig down into the intricacies and the complexities of the human genome and have a very positive impact on pediatric oncology as well as other projects,” says Lowey. “So today, we help save more lives because researchers spend less time waiting for HPC resources.”



Reduced genetic sequencing time from 14 days to 10

Accelerated analytical processes that facilitate custom treatments from 7 days to 4 hours



Have questions about this solution? ▶

Learn more about this solution. ▶





Solutions:

- Application Virtualization
- Networking
- Storage
- Client Solutions



# Improving senior care with secure IT

## Elmcroft Senior Living

When four senior care services organizations merged to become Elmcroft Senior Living in 2006, the new firm’s IT employees had their work cut out for them. “We had four separate everything—data centers, networks, billing systems and ways of doing things,” says Ray Sands, the senior technical analyst for the Kentucky-based organization, which now operates 102 senior communities across 19 states.

Country: United States  
Website: [www.elmcroftseniorliving.com](http://www.elmcroftseniorliving.com)



Elmcroft also needed to deploy an electronic medical records (EMR) system, which was difficult due to inadequate infrastructure. "If you don't have strong internet connectivity, or the necessary wireless network, you really can't do EMR," says Sands.

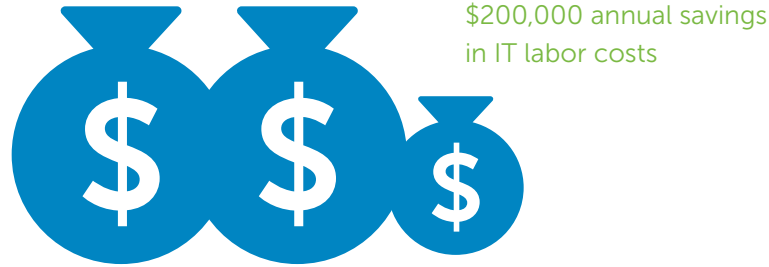
"We had a Cisco infrastructure with stacked switches that were always overwhelmed... We replaced them with a single Dell Networking C300 chassis-based switch."

Additionally, the organization must comply with Medicare's maze of rules and regulations, as well as comply with the Health Insurance Portability and Accountability Act (HIPAA) and Health Information Technology for Economic and Clinical Health (HITECH) Act.

To address all of these challenges, Elmcroft decided to implement a new consolidated IT infrastructure.

#### A complete, cost-effective enterprise solution

When Elmcroft first began evaluating vendors, it found that Dell offered the right mix of technologies. "At the time we thought of Dell as just your basic PC, laptop and server provider," Sands says. "But the more we researched Dell, the more we realized how many solutions Dell had for us in its enterprise portfolio."



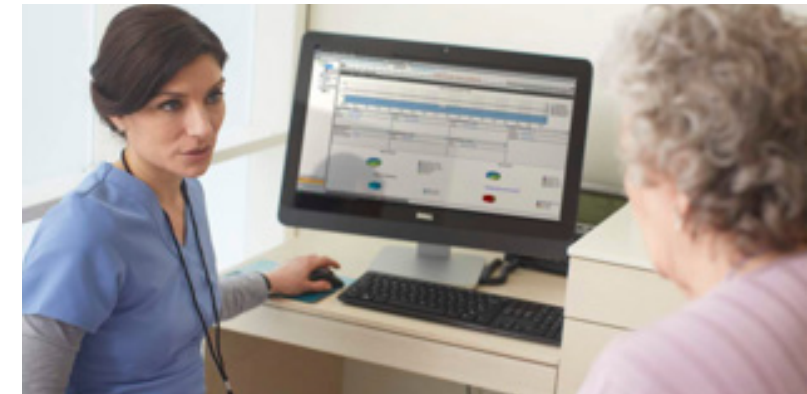
Dell support was another advantage. "The engineers are fantastic," says Sands. "They'll help you plan and design something down to the last detail, so you know exactly what you're doing, and you're not buying something that fails to fulfill the purpose you purchased it for." In assessing other vendors, Sands also noticed that Dell offered the most value.

#### Building a common infrastructure for future growth

After choosing Dell, Elmcroft created a new centralized data center at its Louisville headquarters, deploying a Dell EqualLogic SAN array, a Dell PowerVault array, and a Dell Compellent SC220 flash-optimized array with 200GB and 400GB of populated SLC solid state drives. The SC220 enclosure has 90 percent less latency and requires 84 percent less space than traditional disk storage. Of the 35TB of storage that it now has, Elmcroft Senior Living is using only half, so the IT team is well on its way to getting the company ready for future growth.

#### Creating faster processing speeds with Dell servers and networking switches

For processing power, Elmcroft deployed Dell PowerEdge rack and blade servers, with a move toward more blade servers using the Dell PowerEdge M1000e blade chassis. Connecting all of Elmcroft Senior Living's facilities with its data center is a Layer-3 10GbE backbone network. The organization also implemented Dell Networking 5500 and 6200 Series switches at the company's remote sites, as well as Dell Networking S25, S50 GbE, and S4810 GbE switches and C300 chassis-based switches at the data center. "Before, we had a Cisco infrastructure with stacked switches that were always overwhelmed and saturated," says Sands. "So we replaced them with a single Dell Networking C300 chassis-based switch and found that our internal latency virtually disappeared."



### Supporting the needs of medical staff, patients, residents and guests

The Elmcroft IT environment now supports corporate and medical staff, as well as patients, residents and guests. Depending on their roles and requirements, staff members are assigned either Dell OptiPlex desktop PCs or Dell Latitude laptops, all backed with Dell ProSupport. For patching, security, and updating, Elmcroft uses the Dell KACE K1000 and K2000 systems management and deployment appliances.

### Centrally managed WiFi to support HIPAA compliance

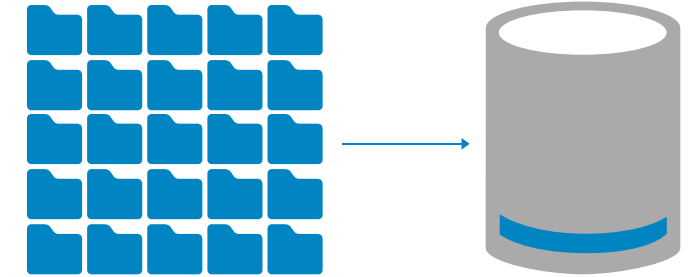
Elmcroft's IT department also deployed more than 300 centrally managed Dell W-Series instant access points across all facilities and the organization's headquarters. With these capabilities, IT can run separate clinical, business and public wireless networks at each location for different user types. "This enables us to maintain the security we must have for HIPAA," says Sands.

### Moving toward the EMR of tomorrow, from the data center to the bedside

Elmcroft now has the right solution in place to build a comprehensive and regulations-compliant EMR system. And the organization is seeing significant cost savings. "In all, our company is saving \$200,000 a year in IT labor costs through the greater efficiency enabled by Dell's

integrated end-to-end solutions," says Sands. "And we are saving another 25 to 50 percent each time we buy new Dell equipment when compared with the competition."

To extend the system's reach to patients' bedsides, Elmcroft deployed 100 Dell point-of-care solutions, featuring cordless, wireless carts that use a Dell OptiPlex 7010 PC with touchscreens to give medical personnel secure and private access to a patient's records. The Dell carts enable nurses to save time and reduce errors by doing all the patient's charting at bedside, instead of at the nurse's station.



Storage solution with 90 percent less latency and using 84 percent less space

50 percent reduction in equipment costs



The carts also give the medical staff new analytical capabilities and insights. "The software will help us see trends even before symptoms occur, so we can intervene much sooner than we might otherwise," says Sands. "This can really help us proactively improve and protect the health of our residents. Ultimately, that's what healthcare technology is all about."

Have questions about this solution? ▶

Learn more about this solution. ▶







### Solutions:

- Cloud Client-Computing
- Servers
- Storage



## Empowering caregivers and patients with a critical EHR solution

### University Health System

The 3,500 health professionals at Louisiana’s University Health System could not do their jobs without the organization’s Epic electronic health records (EHR) system. “Our Epic system is a critical part of our care, and our physicians, nurses and other clinical staff depend on it to get a full view of our patients’ health,” says Marcus Hobgood, CIO, University Health System. “Basically, it supports our entire business, so it has to be rock solid. It needs to have high uptime and stability.”

Country: United States

Website: [www.uhsystem.com](http://www.uhsystem.com)



But ensuring that stability was going to be a major challenge when University Health System transformed from a public institution to a private organization, serving as the clinical partner and hospital for the LSU Health Shreveport School of Medicine. “We basically had nine months to create a complete new version of our clinical systems, all the while maintaining the same IT environment we had been managing for the state,” says Hobgood. University Health System also needed technology that was easy to support. “Our previous infrastructure was an IBM-based infrastructure at the end of its life, and we wanted to move to open-source operating systems such as Red Hat,” says Greg Blanchard, executive director of information systems, University Health System.

“Our total cost of ownership for our Epic infrastructure has been reduced by 40 percent with the Dell technologies ... Now, we can do more cutting-edge projects and initiatives, all for the benefit of the patients.”

### Supporting critical clinical system with a new Dell infrastructure

Having previously deployed a Dell Compellent array, Dell PowerEdge servers and Dell Wyse thin clients, the organization again chose Dell technologies. “We were very pleased with the Compellent array and the service we got from Dell,” says Blanchard. “We also wanted to move to all-flash storage, and the new Compellent offered that.”

University Health System implemented Dell PowerEdge R920 servers with Intel® Xeon® processor E5 family, as well as a new Dell Compellent SC8000 array, which provides all-flash storage capabilities.

University Health System also chose to work with a Dell Services team with Epic system consulting expertise. As part of this process, University Health System engaged Dell DRIVE+ (Dell, Red Hat, Intel, VMware on Epic), an initiative offering open source support for Epic software that includes testing and training at a Dell Center of Excellence located near the Epic headquarters.

### Serving patients faster

With its new Epic infrastructure, University Health System can help clinicians deliver faster care to patients. “Clinicians can access the system several seconds faster now, and that increases productivity,” says Hobgood.

The organization’s IT team also benefits from the infrastructure’s performance. “When we did our first maintenance window on the new system, we reduced the scheduled downtime by 67 percent,” Hobgood says. “At the end of the day, that’s what we’re looking for — no issues — because Epic is such a critical system for us.”

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Accessing critical EHR system  
several seconds faster



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### Investing more in innovation

With the efficiencies it is getting from its new Epic infrastructure, the organization can invest more resources into innovative services for patients. “By reducing the complexity of operations on the back end with the Dell solution, we have more time and money to invest in patient-focused innovation on the front end,” says Hobgood.





The organization has also been able to significantly lower operating costs. “Our total cost of ownership for our Epic infrastructure has been reduced by 40 percent with the Dell technologies,” says Hobgood. “That’s huge for us, because we have a very tight budget. Now, we can do more cutting-edge projects and initiatives, all for the benefit of the patients.”



Investing more in innovative services by boosting efficiency and cutting costs by 40 percent

#### Migrating critical Epic system in four months

University Health System was able to set up its new Epic infrastructure and migrate its database to the new system well ahead of the deadline. “We were able to order, procure, install, and configure the technology and go live on our new version of the Epic system in four months, with no impact to existing end users,” Blanchard says. “We would not have been able to do that without the Dell Services team collaborating with us.”

Empowering patients to participate in their own health



#### Supporting a strategy to make Louisiana healthier

University Health System will also be using its new IT environment as a platform to empower patients. “We will use this technology to collect data from people at home and make that available to them so they can be more active in their health,” says Hobgood. “Eventually, that will lead to better health outcomes, which is really exciting to think about.”

Have questions about this solution?



Learn more about this solution.





Solutions:

- Business Process Outsourcing

# Meeting the compliance challenge

## Beth Israel Deaconess Hospital-Plymouth

Like all U.S. hospitals, Massachusetts-based Beth Israel Deaconess Hospital-Plymouth (BID-Plymouth) needed to prepare for the 2015 transition to ICD-10 — the newest International Classification of Diseases and a coding system for diagnosis of and procedures for treating those diseases. The ICD-10 code set, originally slated for 2014, will have more than 151,600 codes, compared with 18,360 in ICD-9.

Country: United States  
Website: [www.bidmc.org](http://www.bidmc.org)



BID-Plymouth, a 155-bed, acute care community hospital, has good reason to be in compliance with ICD-10.

"If we're not ready to use the new ICD-10 code sets by the deadline, payers will not accept the ICD-9 codes and we won't be reimbursed for our services," says Amy Bowman, RHIA, director of health information services at BID-Plymouth.

### Tackling massive ICD-10 project with help from Dell healthcare

BID-Plymouth reached out to the Dell Healthcare Management Consulting Practice Group, which provided project management, subject matter experts and IT specialists to assist with the changes needed to successfully prepare BID-Plymouth for ICD-10. The changes included current-state workflow processes and systems inventories that contained ICD-9 codes including applications, interfaces, data extracts, reports and forms.



Ensuring compliance with ICD-10 and minimizing financial risk

As the first step in the process, Dell and BID-Plymouth worked together to set up a governing structure bringing together personnel from different departments. The Dell team also helped BID-Plymouth establish an ICD-10 testing environment, setting up the tables of the codes and loading of the ICD-10 codes. The testing scenarios were modified for ICD-10 specificity, and new scenarios were created to ensure the top Diagnosis and Procedure codes were tested. The test patients were entered into the clinical system and coded in ICD-10, and then claims were sent for acceptance by the hospital's top-five payers. "The testing is a key part of the project, and it was a truly collaborative approach with us and Dell," Bowman says.



"If we don't get ICD-10 compliance right, it is a revenue show-stopper for the organization. We know we'll be ready, because of the steps we've put in place with the Dell team."

Additionally, "Dell reached out to all our software vendors to determine whether or not they would be ready for ICD-10," Bowman states. As part of this phase of the project, Dell helped the hospital prepare its MEDITECH environment to get it ready for ICD-10. BID-Plymouth planned to use the additional time before the 2015 deadline to dual code and continue to test the workflow and financial impact that ICD-10 will have on the organization.

### Ensuring compliance and minimizing financial risk

BID-Plymouth is confident it will be ready when ICD-10 goes into effect in 2015. "We will definitely be prepared for ICD-10, and the guidance and overall expertise we received from Dell are a big reason," Bowman says. By being ready for ICD-10, BID-Plymouth will also minimize its financial risk. "If we don't get ICD-10 compliance right, it is a revenue show-stopper for the organization. We know we'll be ready, because of the steps we've put in place with the Dell team," says Bowman.

Helping coders avoid a 30-percent productivity drop



### Helping coders be more productive

“Given the complexity of ICD-10, it’s estimated that hospitals will see a 30 percent drop in productivity,” Bowman says. To minimize that, BID-Plymouth coders have completed an aggressive training program. BID-Plymouth will also continue advanced training and utilize the testing environment to ensure the coders are comfortable using ICD-10 codes. “Our goal is to minimize the impact of ICD-10 on the coders’ productivity, and we think we’ll be able to accomplish that because of the work we’ve done with Dell,” says Bowman.

### Making clinical documentation more specific

The organization also improved its clinical documentation in advance of ICD-10, providing the level of specificity that will be required once the standard becomes official. “We updated our queries, with more specific questions for providers to answer about patient treatment and diagnoses, which prompt them to enter more information so the severity of illnesses is meticulously documented. That’s something we had to do, because we know how much more specific the ICD-10 codes will be,” says Bowman.



For BID-Plymouth, collaborating with the Dell Healthcare Management Consulting Practice Group proved to be invaluable. “Working with Dell and their understanding of the magnitude of the ICD-10 project have greatly eased our concerns,” says Bowman. “Dell has the breadth and depth of knowledge and the content experts to bring us where we need to be.”

Have questions about this solution? ▶

Learn more about this solution. ▶





Solutions:

- Data Center Virtualization



## Making the mission possible

### Boston Medical Center

Boston Medical Center (BMC) is laser-focused on its mission — providing exceptional care, without exception. That mission permeates the entire organization, inspiring more than 2,840 physicians, residents, fellows and nurses who work at the 482-bed academic medical center. As these caregivers live out that mission, they depend on fast, reliable and affordable IT tools to help them better serve patients and save money to fund low-cost care options for those who need them. These factors all came into play when BMC decided to enhance its electronic health record (EHR) system.

Country: United States

Website: [www.bmc.org](http://www.bmc.org)



### Gaining a high-performance medical records system

What began as a manual process for keeping track of patient information became somewhat automated over time, but systems were disparate and patients often ended up with multiple, disconnected records. “We needed to make it simpler and faster for our clinicians to get a complete picture of patient history and status,” says Peter Misticawi, director of technology at BMC.

“We’re always being asked to do more with less and the Dell DRIVE solution lets us do that and more. It enables us to ‘grow more with less,’ with a platform that can carry us into the future.”

After a detailed review process, BMC selected Dell x86 servers with Intel® Xeon® processors as part of the DRIVE solution, a technology initiative that includes Dell, Red Hat, Intel and VMware for Epic. BMC already had its business applications deployed on the Dell platform and had virtualized 90 percent of the server environment, so the ability to leverage that expertise and maintain a stable environment was compelling.



Misticawi says, “Before we make any technical decisions, we like to get all of the parties at the table, so we brought the alliance partners in to validate. Being able to extend existing relationships and also go in the direction of Linux on Intel — an affordable high-performance combination that we recognize as leading-edge — was a huge advantage. This analysis gave us confidence that this was the right platform to choose and would give us the best path forward.”

### Saving time and money and getting comprehensive support

In addition to helping BMC build on in-house expertise and experience, having the same hardware for business applications and the EHR system offers additional benefits. “Having one hardware vendor, Dell, gives us a ‘single pane of glass view’ into our entire hardware environment, which definitely saves time and





money,” says Misticawi. “It simplifies deployment and management, and it lowers our total cost of ownership.”

The BMC IT department knows from previous experience that Dell is committed to the center’s success. “I don’t know of any other vendor that has the skill set to help you in areas that aren’t even in their direct purview,” states Misticawi. “Our entire Dell support team, those focused on Epic and those who are hardware experts, are proactive in offering products and processes that will help us get the most from the entire solution.”



Provides a high-performing, reliable platform for EHR system

### Growing more with less and becoming future-ready

Using its new solution, BMC is better-equipped for the future. “We’re always being asked to do more with less and the Dell DRIVE solution lets us do that and more,” adds Misticawi. “It enables us to ‘grow more with less,’ with a platform that can carry us into the future. The scalability, the low cost of support and maintenance for our Dell servers, plus ongoing innovation, all put us in a strong position to retain and attract top medical talent, and to better serve our growing number of patients. We can also add more capabilities and features to support more departments over time.”



Helps attract top medical talent and better serve the growing patient base



Have questions about this solution? ▶

Learn more about this solution. ▶



Solutions:

- Data Protection & Encryption



## Optimal care for patients and their data

### FastMed Urgent Care

Every day, patients can go to a FastMed clinic for walk-in urgent care, general family practice appointments, and specialty services such as physical exams, suturing and drug testing. FastMed is the sixth-largest urgent care network in the U.S., with 86 clinics in Arizona and North Carolina combined, and it is adding 20 percent more clinics each year.

Country: United States

Website: [www.fastmed.com](http://www.fastmed.com)



Because all patient-related data must be protected from unauthorized access according to Health Insurance Portability and Accountability Act (HIPAA) regulations, FastMed shields devices at clinics — including servers, storage, desktops and tablets — by using firewalls and anti-virus software. IT personnel also encrypt patient files using the built-in capability of the electronic medical record (EMR) system. “We take security very seriously and protecting patient data is one of our top priorities,” says Wayne Dale, application security engineer at FastMed.

### Updating encryption solution in 1.5 days

To add another layer of protection, FastMed had been encrypting disks on stationary and portable devices with Dell Data Protection | Encryption (DDP | E). FastMed decided to upgrade to DDP | Enterprise Edition 8.1, which offers the highest level of FIPS 140-2 protection commercially available for system disks and storage devices. FastMed engaged DDP | E Client Services to help with the upgrade. “Upgrading devices to the new release of DDP | E took a day and half including installation, testing, auditing and switchover,” says Dale.

Eventually, FastMed will encrypt 650 endpoints with DDP | E including desktops, notebooks, and tablets.

### Giving clinicians fast, easy access to patient data and minimizing risk

Clinicians can now get to the applications and data that they need faster than ever before. “We are getting fewer calls about performance issues since we’ve upgraded to DDP | E,” says Dale. In addition, IT personnel took advantage of the interoperability between DDP | E and Microsoft Active Directory, enabling IT to define access privileges based on user profiles, data and groups within the organization. As a result, when employees log on to a workstation or tablet at a clinic, they only have to enter one user name and password to use the device and access the applications and data.



Upgrades to new disk-level protection solution in 1.5 days

“While we have a myriad of security tools to safeguard our systems and data, Dell Data Protection | Encryption is at the forefront of that strategy. It’s both the first and last line of defense for our data at rest.”

FastMed also uses DDP | E to help close critical security gaps, protect company and client information on removable media, and protect the usage of device ports. Paul Chabot, chief information officer at FastMed, says, “While we have a myriad of security tools to safeguard our systems and data, DDP | E is at the forefront of that strategy. It’s both the first and last line of defense for our data at rest.”

#### Cuts new device encryption time in half

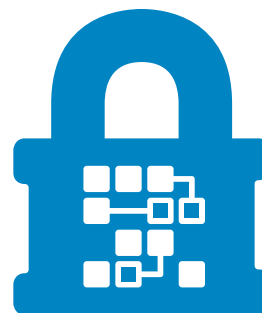
FastMed engineers can now encrypt a disk using an automated script rather than having to manually manage each step of the installation and configuration processes. “We used to spend up to one hour encrypting a new device,” says Dale. “With DDP | E, it takes us 5 to 30 minutes.”

With DDP | E, IT personnel also get the tools they need to simplify and streamline other processes. Dale explains, “Reporting is a piece of cake with Dell Compliance Reporter. It takes me less than 10 minutes to generate a report.”

#### Avoids regulatory fines and eases IT security concerns

While other medical clinics have recently had to pay huge fines related to data breaches, FastMed is confident its data is protected. “Having DDP | E is fantastic because we know that any file that’s on the disk or thumb drive is protected — even those in the downloads folder,” says Dale. “The solution just runs and does what it’s supposed to do, so I don’t have to worry about it.”

Avoids costly HIPAA fines and keeps patient data safe



Cuts new device encryption time from one hour to less than 30 minutes



If a theft occurs, IT personnel can quickly collect and provide detailed information to auditors to prove that while hardware was lost, data was not. “Plenty of people pull their hair out over security solutions, worrying about what could happen,” says Dale. “That’s not the case here. DDP | E is easy to use, and we know that it’s effective.”

Have questions about this solution? ▶

Learn more about this solution. ▶





## Solutions:

- Business Process Outsourcing Services



## Improving agility and cutting costs

### HealthMarkets

For many years, health insurer HealthMarkets sold and underwrote health insurance policies for individuals, with deductibles often for a specific illness or injury, rather than for a 12-month calendar year. Because each policy was highly customized, HealthMarkets could not automate a large portion of its claims processing. “Due to the nature of our benefit structure and low auto-adjudication rate, most claims required manual review to make a benefit determination,” says Denise Cotter, vice president of operations at the company.

Country: United States

Website: [www.healthmarkets.com](http://www.healthmarkets.com)



Because HealthMarkets operates in multiple states that have varying Prompt Payment regulations, delays in processing were not an option. Rather than sizing its workforce to support peak workflow volumes, the organization decided to keep its employee headcount flat and engage a third-party vendor for help.

“We consistently received excellent service from Dell. At peak times, Dell Services processed up to 90,000 claims per month, and they helped us lower our claims processing costs by 40 percent.”

#### Finding a solution for managing unpredictable workflow spikes

HealthMarkets evaluated numerous third-party vendors, but ultimately chose Dell Services because it provided excellent value and convenience. “We initially had Dell Services help manage insurance claims, and our engagement just grew from there,” says Cotter.



During the first few months of the arrangement, HealthMarkets had Dell manage claims for up to \$5,000 in only certain states. “Dell Services quickly earned our trust so we raised the threshold values for claims they could process based on their experience and quality reviews,” says Cotter. Eventually Dell Services took care of claims in all states for up to 144,000 members.

#### Automating processes to boost efficiency

To help lower costs for HealthMarkets and improve the quality of the services it delivers, Dell Services used Six Sigma reviews and other analytical methods to automate some workflows. For example, Dell Services automated processes that identify duplicate claims. Additional automations verify the accuracy of payments by comparing claims with states’ insurance mandates as well as numerous aspects of members’ policies including exclusions, limitations and riders.



Cut claims-processing costs by 40 percent

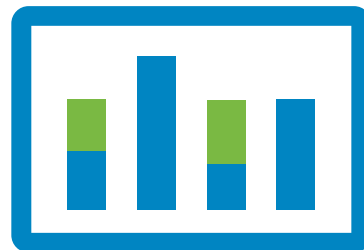
### Cutting claims processing costs by 40 percent, reducing call-center expenses by 57 percent

HealthMarkets reduced costs by working with Dell Services to train staff in using a complex claims processing system. "Once our new team gained confidence in our system and polices, we consistently received excellent service from Dell," says Cotter. "At peak times, Dell Services processed up to 90,000 claims per month, and they helped us lower our claims processing costs by 40 percent."



Reduced cost of answering 40,000 monthly provider calls by 57 percent

Eased management of unpredictable workflow spikes



HealthMarkets also engaged a Dell Services team to manage up to 40,000 calls each month from doctors' offices and hospitals. "At this point, we didn't even look at another vendor to help us with provider calls because we were happy with Dell Services," Cotter explains. By outsourcing provider calls, HealthMarkets reduced its call-center expenses by more than half. Cotter says, "We lowered the costs of managing calls from providers by 57 percent using Dell Services for business process outsourcing. The Dell team consistently meets and exceeds the established service-level agreements."

In addition to the measurable cost savings achieved by working with Dell Services, HealthMarkets has realized intangible benefits. Cotter says, "Whenever I needed more help, I just called Dell Services and they took care of my request, so I spent less time interviewing and hiring. What's been really nice though, and I can't stress this enough, is that the individuals we've worked with at Dell Services are responsive to our needs and try to partner with us to help improve our business."

Have questions about this solution? ▶

Learn more about this solution. ▶





## Solutions:

- Information Management



# Using better data to make better devices

## Instrumentation Laboratory

Data is everything to Instrumentation Laboratory, a market leader in diagnostic instruments for critical care and hemostasis. The company strives to enable its research and development (R&D) scientists and engineers to easily access and analyze the wealth of test data it collects, as well as efficiently monitor its manufacturing processes and supply chains.

Country: United States

Website: [www.instrumentationlaboratory.com](http://www.instrumentationlaboratory.com)





But the company sought more sophisticated analysis tools to develop its complex products. “We collect millions of records of data, most of which is stored in SQL Server databases,” says John Young, business analyst for Instrumentation Laboratory. “We needed an analytics platform that would enable our R&D teams to quickly access that data and troubleshoot any problems. Plus, because there are so many factors in play, we also needed a platform that could intelligently monitor the test data and alert us to emerging issues automatically.”

### Implementing an analytics solution that is easy to deploy and use

After evaluating other analytics tools, the company chose the Dell Statistica software solution. “Choosing Statistica was an easy decision,” recalls Young. “With Statistica, I was able to quickly build a wide range of analysis configurations on top of our data for use by analysts enterprise-wide.”

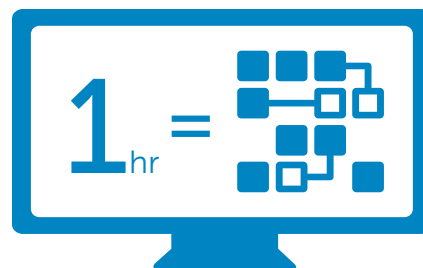
Statistica proved to be easy to deploy. “With Statistica, I can connect to our data, create an analysis and publish it within an hour — even though I’m not a great programmer,” says Young.

“Scrapping a single batch of cards would cost us hundreds of thousands of dollars. Statistica helps us quickly figure out what went wrong and fix it so we can avoid those costs.”

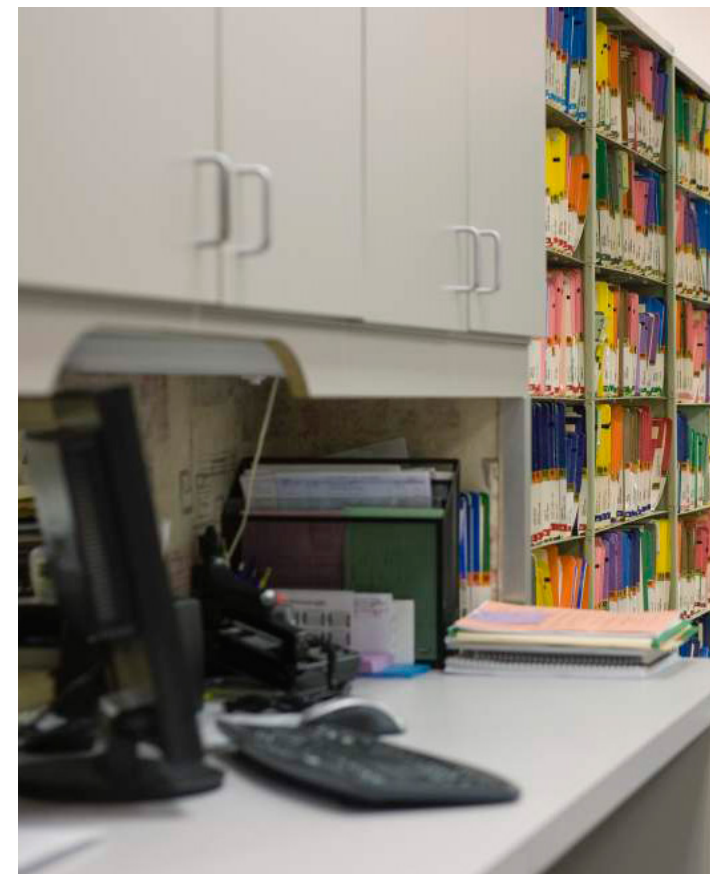
### Saving hundreds of thousands of dollars with fast, effective analysis

Using Statistica, analysts across the enterprise now have easy access to both the data and the analyses they need to enable innovation and quality at Instrumentation Laboratory. In fact, Statistica’s quick, effective analysis is saving the company hundreds of thousands of dollars. “During cartridge manufacturing, we occasionally experience problems, such as an inaccuracy in a chemical formulation that goes on one of the sensors,” Young notes. “Scrapping a single batch of cards would cost us hundreds of thousands of dollars. Statistica helps us quickly figure out what went wrong and fix it so we can avoid those costs.”

Statistica also runs a variety of analyses automatically for the company, helping to ensure that nothing is missed and issues are identified quickly. “If there is an issue, the system automatically emails the appropriate people or logs the violations to a database,” says Young.



Creating and publishing data analysis tools in one hour



### Ensuring compliance and consistency

Statistica also helps ensure compliance with FDA regulations for quality and consistency. “Because we manufacture medical devices, we’re regulated by the FDA,” explains Young. “Statistica helps us perform the statistical validations required by the FDA — for example, we can easily demonstrate that two batches of product made using different chemicals are statistically the same.” And Statistica’s automated alerting helps Instrumentation Laboratory comply with other regulations. “We’re required by the FDA to have established escalation procedures based on statistical evaluation of our data,” explains Young. “If we did not have Statistica, implementing those escalation procedures would have required custom coding.”

Saving hundreds of thousands of dollars through fast analysis and automated alerting



Creating standardized analysis configurations in Statistica that can be used across the enterprise helps ensure consistency and quality at Instrumentation Laboratory. “With Statistica, we can ensure that all the scientists across the enterprise are performing the analyses in the same way, so we get consistent results,” says Young.

### Helping engineers and scientists focus on innovation

Statistica is also enabling the company’s engineers and scientists to focus more on innovation and less on routine matters. “Statistica’s proactive alerting saves engineers a lot of time because they don’t have to remember to check various factors, such as glucose slope, all the time. Just that one test would take half a day,” notes Young.

Going forward, Instrumentation Laboratory is excited about the possibilities of Statistica. “Using Statistica, you can discover all sorts of insights about your data that you might not otherwise be able

Ensuring regulatory compliance and product consistency



to find,” says Young. “There might be hidden pockets of money out there that you’re just not seeing because you’re not analyzing your data to the extent you could. Using the tool, we’ve discovered some interesting things in our data that have saved us a tremendous amount of money, and we look forward to finding even more.”

Have questions about this solution? ▶

Learn more about this solution. ▶





### Solutions:

- Digital Business Services
- Client Solutions



## Faster, better disaster response through social media

### American Red Cross

Every year, floods, mudslides, tornadoes, earthquakes, hurricanes and other disasters ravage the U.S. and often leave people homeless and without food and water. That's where the American Red Cross comes in. Founded in 1881, the American Red Cross gives relief to, and serves as a communication link between, members of the nation's armed forces and their families while also providing national and international disaster relief and mitigation. Based in Washington, D.C., the American Red Cross has more than 25,000 employees and operates through a U.S. network of nearly 500 local chapters and more than 340,000 volunteers.

Country: United States

Website: [www.redcross.org](http://www.redcross.org)



### Discovering social media's impact

To engage the public in conversations about the American Red Cross, the organization began using social media in the mid-2000s, blogging and monitoring various social websites. But in 2010, when an earthquake devastated Haiti, the organization discovered that social media could be used in more powerful ways, such as for fundraising. After launching its first-ever giving campaign using mobile phone texting, its plea for donations was retweeted 3.2 million times in 48 hours, and the campaign raised more than \$32 million.



### Scaling social media capabilities with help from Dell

In response, the organization realized it needed more robust technology and infrastructure to monitor and respond effectively to the massive amounts of incoming social data during a disaster. For guidance, the organization turned to Dell, a long-time corporate benefactor and established leader in social media and digital marketing.

After working closely with consultants from the Dell Social Media and Digital Marketing Services team, the American Red Cross opened its first national Digital Operations Center as a social media command center. Located within its Disaster Operations Center at its Washington, D.C., headquarters, the facility can be in the middle of the action when disasters strike.

Known by staff members as the “the DigiDOC,” the command center has served as the template for additional facilities in Texas and California, designed and built with Dell’s financial support and modeled after Dell’s own Social Media Listening Command Center. “The relationship between the Red Cross and Dell has been critical in helping the Red Cross use social media to carry out its disaster response mission,” says Suzy DeFrancis, chief public affairs officer for the American Red Cross.

### Listening nationally, responding locally

Each DigiDOC features multiple large monitor screens powered by three Dell OptiPlex desktop computers, with Dell ProSupport Plus to ensure uptime and availability. The monitors display different data visualizations of relevant public conversations that are happening in

“The relationship between the Red Cross and Dell has been critical in helping the Red Cross use social media to carry out its disaster response mission.”

The organization also realized that people were using social media both to relay eyewitness accounts of the disaster and to broadcast pleas for help.



Driving 400,000 app downloads that put vital hurricane information in people's hands





Adjusting disaster relief services based on analysis of more than 2 million posts

real time on the social web. Social engagement team members in each DigiDOC monitor the stream of conversations and compile and publish regular reports that keep management apprised of sentiments and trends.

#### Driving 400,000 hurricane app downloads

The expanded and more sophisticated social media capabilities have improved the response of the American Red Cross. “Before Superstorm Sandy made landfall several years ago, our DigiDOC social team distributed information urging people to download our free Red Cross Hurricane app,” says Debbie Immel, regional chief development officer, American Red Cross. This drove more than 400,000 downloads of this app and put vital preparedness information right in the palm of people’s hands.”

#### Adjusting relief services based on analysis of more than 2 million posts

After the storm hit, the DigiDOC in Washington, D.C., monitored postings to its social media channels and identified specific areas where help was needed. That information was quickly relayed to government and Red Cross relief workers on the scene to get aid there faster than it might have otherwise. “After the storm, we collected and analyzed more than 2 million public social media posts, and then made significant adjustments in our services based on what we learned,” she says.

Responding faster to those in need



#### Digital Volunteers across the U.S.

Dell social media and digital marketing consultants also helped scale its social media team beyond the Red Cross staff through 150 Digital Volunteers. “We came to learn that different people feel comfortable engaging in different ways online, so we have to train to their specific needs,” says Wendy Harman, director of information management and situational awareness for the American Red Cross. “Dell helped us understand that.”

Have questions about this solution? ▶

Learn more about this solution. ▶





Solutions:

- Digital Business Services



# Taking a community's vital signs — with social media

## Spectrum Health

As the social media strategist at Spectrum Health, West Michigan's largest healthcare provider, Michael Yoder has seen up close how social media's role in healthcare has changed. "Social media in healthcare has changed in recent years from a provider's focus to centering more on engaging patients and their loved ones and helping them get the information they need," Yoder explains. "People today expect to get information when they want it, how they want it and where they want it. So we need to be where they're having these conversations and be available when and where they want to talk to us."

Country: United States  
Website: [www.spectrumhealth.org](http://www.spectrumhealth.org)



“Our much-enhanced social media reporting capabilities save us at least 20 hours a week for other work, thanks to the Dell Social Media Services team.”

#### The need for better social monitoring and reporting

Giving people information they need when they want it was a tall order for the two-person Spectrum social media team, even with help from social media “ambassadors” spread across Spectrum Health’s public relations, patient relations, marketing and other functions. Yoder had been using another social monitoring product, but that product was not well-supported. “We needed a better approach to monitoring and reporting,” he says. “So we met with Dell and a couple of other providers. Our due diligence included a visit to Dell’s Social Media Listening Command Center, where I was impressed with what they’ve done and are doing in social media. Clearly, Dell is on the leading edge in using social media most effectively. Its competitors we evaluated didn’t compare.”



Enables faster response to crisis situations



After a thorough discovery phase — learning all it could about Spectrum Health, its stakeholders, and its social media history and requirements — Dell recommended deployment of a powerful but easy-to-use social monitoring and reporting platform.

### Social intelligence leads to better insights

“With this platform,” Yoder says, “we can tap into the conversations, understand what the trends are in our wide range of healthcare topics and concerns, and learn what conversations we should be participating in.”

Yoder says he could have deployed Dell’s recommended analytics platform on his own, but it would have taken him at least two months longer given all his other responsibilities. “We were able to accelerate our adoption and return on investment in our new social monitoring and reporting platform with Dell’s expertise and experience in helping us deploy it,” he explains. “Plus, Dell’s ongoing support is especially important to us.”

With the new social analytics platform Dell Social Media and Digital Marketing Services helped Yoder deploy, he can now better monitor social conversations, especially during spikes in volume caused by concerns like Ebola, vaccines or even activist issues. “For example, an activist

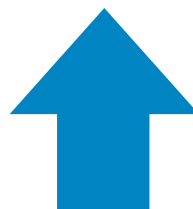
issue lit up our channels recently, mostly from the West Coast and overseas, and threatened to become a major PR concern,” he says. “We were alerted almost immediately, Dell gave us a full report in half a day, and we were able to contain it by day’s end.”

### New capabilities save 20 hours a week

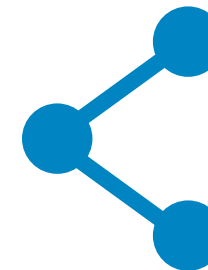
With analytics and reporting as critical underpinnings of Spectrum Health’s social intelligence, Yoder uses his analytics data and Dell’s help to publish a monthly social care report. He distributes it across his internal social media federation and to his director, who includes relevant parts in reports to executive management. “Our much-enhanced social media reporting capabilities save us at least 20 hours a week for other work, thanks to the Dell Social Media Services team,” Yoder says. “In all, we now handle chores that would require a full-time analyst.”



Frees 20 hours a week to focus on new initiatives



Helps the social media team avoid the need to hire a full-time analyst



That “other work” includes two new Instagram channels that Yoder was able to set up and manage. “We’re now more accessible and responsive to our customers than ever with Dell as our social media partner,” he says, “And that’s what they want — to know that there’s a person on the other side of the screen on their PCs, tablets or smartphones.”

Have questions about this solution? ▶

Learn more about this solution. ▶







Solutions:

- High-Performance Computing
- Infrastructure Consulting
- Storage
- Data Center Networking



# Transforming the operating room through big data analytics

## University of Iowa Hospitals and Clinics

University of Iowa Hospitals and Clinics is one of the most highly regarded medical facilities in the United States. Almost 300 of the organization’s 1,400 physicians have been named “Best Doctors in America” in nationwide physician surveys, and it was the state’s first-ever recipient of the Magnet Award for Nursing Excellence as well as the 2014 recipient of the Magnet Prize.

Country: United States  
Website: [www.uihealthcare.org](http://www.uihealthcare.org)



Anticipating which patients are at risk for surgical site infections before they occur



UI Hospitals and Clinics also ranks as one of the nation's "most wired" hospitals for its level of IT adoption, which gives clinicians the opportunity to take advantage of the insights that big data can provide. "Our group is trying to personalize healthcare through the use of predictive analytics, allowing us to achieve effective, timely and appropriate healthcare for every patient who comes through the door," explains Dr. John Cromwell, director of the division of gastrointestinal, minimally invasive and bariatric surgery at the University of Iowa Hospitals and Clinics.

To do that, the team needed a predictive model that captured the complexity and dynamic nature of patient care in an operating room. Specifically, the team needed

"Big data and predictive analytics are transforming outcomes at virtually every point in patient care."



to have a flexible, advanced analytics platform that encompassed the entire analytics lifecycle, from data aggregation and preparation to model development and finally to model deployment and monitoring.

#### The right data in the right place at the right time

To meet its needs, UI Hospitals and Clinics implemented a new solution based on the Dell Statistica big data analytics solution.

The first step was to connect to the disparate enterprise systems and bring the data into a common data set with embedded analytical tools. "A small group of people can now deliver predictive analytics. It simplifies the deployment, execution, sharing of models and analysis of the data — all in one package," explains Jose Maria Monestina, senior application developer at UI Hospitals and Clinics. "You can store the data model in a server and then reuse it. You can share the data models among different persons within your research group." Part of that deployment is the power of mobility. "You are not bound to a specific PC or a server," he says. "And you can run those models using a mobile application or a web browser and access the results."



### Transforming outcomes and reducing costs

As a result of the new predictive analytics solution, the surgical team can now do more than just analyze disparate data (EMRs, registry and patient satisfaction data). The team can also merge it with live patient data in the operating room to make data-driven decisions about individual treatment. “Big data and predictive analytics are transforming outcomes at virtually every point in patient care,” says Cromwell. “We see so many other areas where this could be useful, including drug delivery, population health, managing patient flow and every other aspect of medicine that allows us to deliver high-quality healthcare.”



Reducing surgical site infections by 58 percent

The new solution is also helping the team cut costs. Monestina says, “This process has allowed us to deliver predictive analytics in a real-time environment to improve healthcare and reduce costs.”

### Reducing surgical site infections by 58 percent

Running predictive models directly in the software tool, Dr. Cromwell can anticipate which patients are at risk for surgical site infections before they occur, and he can provide preventive care — in real time. The analytics tool also enables the team to store predictions in its database for future analysis and to aid in follow-up patient care. “Using these tools and other methods, we’ve been able to reduce surgical site infections by about 58 percent,” he says. “That’s a revolutionary concept in gastrointestinal surgery.”

Transforming patient outcomes and lowering costs



According to Cromwell, the ability to predict patient infection risks also enhances “the precision in the decision-making that we use for surgery.” The impact on patient care, he says, is “really incredible.”

Have questions about this solution?



Learn more about this solution.

