Fallon Clinic takes patient care to the next level

New infrastructure speeds access to patient information, while minimizing risk

Fallon Clinic, a 77-year-old multi-specialty medical group in central Massachusetts that serves about 200,000 active patients annually, has long been known for its high clinical standards. So when it decided to split away from the HMO with which it had been affiliated, it viewed the move as an opportunity to also implement new capabilities to further raise its standards of care.

"We are a physician group. Our business is providing healthcare to our patients," says Edward Nazzaro, the clinic's Chief Information Officer. "We've always had a strong reputation for clinical quality. But the business of doing medicine is changing, so we've asked ourselves: 'How we can advance that quality even further?'"

Computerizing processes and putting records online

To further advance the quality of patient care, Fallon decided to strategically utilize the latest IT technology. This would automate and integrate processes, enabling the clinic to digitize and consolidate patient information into single records, thereby making patient information more accessible to doctors, pharmacists and patients themselves. "We recognized that technology is the key to achieving our broader clinical goals," says Nazzaro.

Fallon also recognized that its existing mainframe systems did not deliver the performance, flexibility and availability required.

"Once you begin running your clinical processes on computers, you can't stress reliability too much," Nazzaro says. "In the event of a problem, you have to be able to fail over and recover."

Benchmarking potential partners

Fallon began planning its new infrastructure shortly after divesting from its HMO. It began by choosing strategic technology partners. Fallon selected Epic Systems for its industry-proven EpicCare® applications; this software would replace Fallon's homegrown "clinical repository" mainframe

"Once you begin running your clinical processes on computers, you can't stress reliability too much. By going digital, we've entrusted the well-being of our patients in part to our technology. In HP, we have a partner who understands how critical it is to have systems that deliver the performance and availability we require."

– Edward Nazzaro, Chief Information Officer, Fallon Clinic

application. Additionally Fallon knew it would also need a whole new data center infrastructure to deliver the performance and reliability required to support such critical applications.

"We challenged a number of vendors to help us as we planned our new platform, and HP emerged as the best choice for our hardware partner," says Nazzaro.

Fallon chose HP for a number of reasons. "HP has a very good track record running Epic. When we compared benchmark data, it became clear that HP hardware would deliver the performance we needed."

Another plus was the close working relationship between Epic and HP. "Epic was already working with HP's Intel® Itanium® 2 processor-based servers before they were commercially available," Nazzaro notes. "So we were confident that Integrity architecture was a proven platform for the application."

Designing a new infrastructure

Once Fallon had selected its vendors, it began planning the clinic's new IT infrastructure. A number of factors needed to be accommodated by the implementation plan. Some were logistical. For instance, Fallon's servers were housed in a warehouse facility. To meet more rigorous standards for data security and systems management, Fallon decided to move its operations from the old data center location to a more suitable facility near its central business offices in Worcester.

Fallon also had to upgrade its enterprise network across its 26 sites. This new, fiber-based network, Nazzaro explains, needed to go in before the data center move, so that it could be used to migrate the clinic's data.

Critical performance parameters

As the clinic planned its new architecture, it also defined critical performance parameters. One of the most important was reliability.

Together, HP and Fallon configured and implemented an architecture that could quickly fail over if needed. One HP Integrity rx7620 server with Dual-Core Intel Itanium 2 processors and HP-UX 11i was installed as an active 10-way server. The other is configured as a 6-way server with an additional four CPUs configured as Instant Capacity on Demand (iCAP) processors. Fallon set up the server cluster using HP Serviceguard software, which provides faster failover and strengthens availability. As the name suggests, the iCAP server can be brought online instantly, any time Fallon might need additional processing power; at the same time, because the clinic doesn't have to pay for capacity they don't use, it allows Fallon to more effectively manage their IT budget. Another HP Integrity rx7620 server holds an additional data repository that is used to provide enterprise reporting. The Integrity servers are dedicated to running Cache and EpicCare.

An HP 9000 rp3410 system, also running HP-UX 11i, is used to hold selected scanned images of patient charts which is integrated into Epic. A 24x7 support contract from HP provides additional assurance that hardware issues are proactively monitored and addressed before they can impact system availability. "With HP, we know we'll have immediate correction of any hardware problem."

In addition to day-to-day capacity and continuity, the clinic wanted to be sure that it had the capability to recover quickly in the event of a disaster. A fourth system, an HP Integrity rx6600 server also with Dual-Core Intel Itanium 2 processors has been installed at a remote disaster recovery site several miles from the main data center.

To run its EpicCare® application suite, Fallon and HP installed a BladeSystem infrastructure with 40 HP ProLiant BL45p G2 server blades across the clinic's main data center and disaster recovery site. These function as clients to the main Epic database.

A phased rollout

Once the new data center was set up, the team used a phased-in approach to roll out the new computerized processes and information. First, on the Integrity server cluster, the team implemented the modules that handle patient registration, scheduling, billing, and insurance claims filing and tracking. Next, it launched the software's electronic medical records (EMR) management tools. A standalone picture archive and communication system (PACS) running on an HP 9000 rp3410 server allows clinic physicians to view a patient's medical images along with other patient data from any Epic desktop.

Faster, more flexible access to patient records

Now that the infrastructure is in place, the clinic has begun to reap the rewards of faster, simpler access to patient medical records.

"We're an extremely busy clinic. The last thing our physicians need, when a patient is experiencing a pressing health issue, is to wait around for a computer," says Nazzaro.

Fallon uses Citrix to give physicians secure access to its Epic applications from any web portal. Doctors can access patient records from any clinic location, as well as review patient data from their laptops or home computers if needed.

"The excellent performance of HP servers means that our Epic applications can rapidly access and display patient data when we need it," says Nazzaro. The HP servers have been extremely reliable. There hasn't been a single server outage since the clinic began its initial test and development of the Epic applications environment.

Improving patient experience

The new infrastructure also provides the foundation for providing patients with a better overall experience. Waiting room kiosks, for instance, will soon let patients check themselves in prior to appointments. And patients can now interact with their doctors via email.

Nazzaro expects the new infrastructure to pay for itself over a three-to four-year period. Some of the payback will be realized through replacing the older mainframe and eliminating its higher maintenance costs. In addition, online records and more automated processes reduce administrative overhead.

We moved off the mainframe because our old "clinical repository" system was a home grown mainframe application. We moved to the Epic system that runs on the different platform. We could have run on a different IBM platform but we chose to stick with HP.

But the real payback, Nazzaro emphasizes, are improvements in the quality of patient care. New, automated scripting processes, for example, minimize the potential for human error by allowing drug prescriptions to be submitted electronically and ensuring that drug names and dosages are communicated accurately. The software also automatically flags potential drug allergies or interactions that physicians must consider while prescribing drugs. And post-visit summaries generated by the system help patients understand and follow their physician's instructions.

"Six Sigma-style process improvements are only now being applied to medical processes," Nazzaro notes. "But it's a direction the industry must take. With our new HP technology infrastructure and disaster-tolerant software, Fallon has the capabilities we need to make our processes more consistent, to reduce the risks of error, and to achieve a measurable impact on quality of care. It's very much in keeping with our clinic's reputation, and proves that our technology investment with HP was the right one."

FALLON CLINIC

Case Study

ITANIUM + INTEGRITY. ON AND ON AND ON.

About Fallon Clinic
Fallon Clinic is one of the largest non-profit and physician-run multi-specialty group practices in Massachusetts. By supplementing its reputation as a national leader in clinical quality with a desire to offer patients unmatched service and access, Fallon Clinic is well on its way to achieving its goal of delivering the gold standard of health care. Fallon Clinic physicians and health care professionals offer the region's most comprehensive array of primary care and specialty services, supported with cutting-edge technologies and service-oriented processes. Founded in 1929 by a team of physicians from Mayo Clinic led by Dr. John Fallon, Fallon Clinic continues to grow and thrive. Today, Fallon Clinic has over 1,700 employees and nearly 260 physicians who see more than a million patient visits a year at 30 locations. Fallon Clinic admits to all major hospitals in central Massachusetts and the surrounding area and accepts a broad range of insurance coverage, including plans from all major Massachusetts payors. To learn more, visit www.falloncliniс.org, or call 1-800-AT-FALLON.

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Website:
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Challenges:

Implement highly available enterprise practice management and electronic patient medical records applications to improve patient care and process efficiency.

Solution:

Primary application:
- Clinical practice management
- Electronic medical records applications

Primary hardware:
- Three HP Integrity rx7620 servers with Dual-Core Intel® Itanium® 2 processors
- HP Integrity rx6600 server with Dual-Core Intel® Itanium® 2 processors
- Two HP 9000 rp4400 servers
- HP 9000 rp3440 server
- HP 9000 rp3410 server
- HP BladeSystem with 40 HP BL45p G2 server blades
- HP ProLiant ML350 G5 server with Dual-Core Intel® Xeon® 5130 2 GHz processor
- Two HP ProLiant DL585 G1 servers

Primary software:
- EpicCare® application suite
- Citrix
- HP-UX 11i
- HP Serviceguard software

HP Services:
- 24x7 Proactive Support
- HP Instant Capacity on Demand (iCAP)
- HP Consulting

Results:

Approach:
Partner with HP and Epic to roll out new server infrastructure to run EpicCare application suite

IT improvements:
- Fast performance for quick access to patient records
- Zero downtime
- Improved data security
- Proactive performance monitoring
- Disaster recovery capabilities
- Reduced maintenance and management

Business benefits:
- Faster, more convenient access to patient records, including medical images
- Reduced risk of error
- More consistent processes
- Improved patient experience
- Capital investment payback in three to four years through reduced server maintenance, medical records administration, and other overhead costs

Why Intel and HP?

- Leadership and long-term association
- Robust business solutions
- Continuity, knowledge and skill

To learn more, visit www.hp.com or www.itanium-integrity.com

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