



## HEALTHCARE

- **CLIENT**  
Gordon Memorial Hospital
- **CHALLENGE**  
Replace a badly aging infrastructure with one that can support an electronic health record (EHR) solution and address the hospital's other IT needs—to provide better care to patients, enhance staff efficiency, and lower IT costs
- **SOLUTION**  
Vblock System 300 running the MEDITECH 6.0 EHR solution and several dozen other vital hospital applications
- **RESULTS**  
Dramatically reduced costs to install, operate, refresh, and power—plus a smaller IT staffing requirement—will produce substantial savings over 10 years

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# VBLOCK SYSTEMS PROVIDES GORDON MEMORIAL HOSPITAL A HEALTHY WAY TO DEPLOY EHR, IMPROVE PATIENT CARE, AND REDUCE COSTS

## **SAVINGS ON SERVICES, SUPPORT, HARDWARE REFRESHES, STAFFING, AND MORE ADD UP TO HUNDREDS OF THOUSANDS OF DOLLARS IN BENEFITS**

Gordon Memorial Hospital is a small, 25-bed facility located in Gordon, Nebraska—population 1,612. The hospital provides inpatient care to residents of two Nebraska counties and a portion of South Dakota, as well as outpatient services at an attached walk-in clinic and an off-site clinic in nearby Rushville.

When Tyler Fisher joined Gordon Memorial as Chief Information Officer (CIO) in 2011, the hospital's entire IT infrastructure ran off a single server. Even with the addition of two servers, this was not only inadequate for the hospital's existing needs, but it also wouldn't support sweeping initiatives such as electronic health records (EHR), which enables electronic access to a patient's medical history.

To capitalize on federal incentives available to Gordon Memorial as a Critical Access Hospital (CAH), help improve patient care, and reduce IT costs, Fisher conducted a detailed review of technology solutions and selected the MEDITECH 6.0 EHR software running on Vblock™ Systems from VCE.





## The Challenge

IT infrastructure was a key focus almost from the day Fisher arrived at Gordon Memorial. His predecessor had begun an upgrade of the hospital's IT network in conjunction with the installation of a new telephone system. It seemed unlikely that the hospital's pre-2005 servers and operating system software could improve network performance or responsiveness without additional enhancements.

With EHR and other planned initiatives on the horizon, a major upgrade of the hospital's IT infrastructure was required. Fortunately, because of Gordon Memorial's classification as a CAH under 1997 federal legislation, the hospital would be reimbursed for a large part of what would otherwise have been cost-prohibitive technology improvements.

### Evaluating EHRs

After comparing a number of software providers' solutions, Gordon Memorial selected MEDITECH for its EHR solution. At the time, MEDITECH 6.0 software was certified to run on hardware from one of only two different vendors, and both of those hardware vendors sold a traditional solution that required one physical server for each application, and used outdated tape drives for backup and recovery.

"I thought, 'Why would I want to invest a significant amount of money in racks full of servers and tape drives, and rely on a 72-tape library for backup?'" said Fisher. "I also questioned spending all that money just to run our EHR, when for the same amount or less I could get a virtualized solution that would run other applications as well."

Fortunately, Fisher and the hospital's CFO had recently been introduced to VCE Vblock Systems when it was demonstrated at an executive technology briefing at EMC.

While Gordon Memorial's CEO worked diligently to arrange the financing required for the purchase, Fisher worked closely with MEDITECH to add Vblock Systems as an approved platform for its latest software release, MEDITECH 6.0.

### The Solution

In late 2012, Gordon Memorial purchased a Vblock System 300 EX through VCE partner, Alexander Open Systems (AOS). The pre-designed, pre-integrated Vblock System arrived within approximately four weeks as scheduled, and AOS was able to stand up the infrastructure in only a day and a half. The hospital also purchased EMC Data Domain and EMC Networker software with DD Boost to optimize and accelerate the backup and deduplication process—so it could maintain a near-real-time copy of its data at its Rushville clinic 15 miles away.

## REDUCED SERVICES, SUPPORT, AND STAFFING REQUIREMENTS WITH THE VBLOCK SYSTEM

	VCE Vblock System	Vendor B	Vendor C
<b>Installation and implementation</b>	VB	1,000% of VB	696% of VB
<b>Support costs after year 3</b>	VB	299% of VB	159% of VB
<b>IT staffing requirements</b>	4 FTE	5 FTE	5 FTE

Next, MEDITECH engaged systems integrator, Lumenate (formerly ICI)—a Boston area technical consulting firm that specializes in enabling and securing virtualized enterprises—to spend approximately one week configuring the infrastructure to get it ready to run the MEDITECH solution.

Shortly after the new IT infrastructure was installed, Gordon Memorial began to migrate most of its other applications to the virtualized environment running on the Vblock System. This included:

- Domain name server
- Microsoft Exchange server
- Microsoft SharePoint server
- DrFirst e-prescribing
- Pharmacy med-dispensing server
- 3M coding solution used to translate ICD-9 codes for billing
- Craneware revenue integrity solutions for optimum pricing and reimbursement
- Meaningful Use reporting software
- Time-and-attendance system
- Virtual Desktop Infrastructure (VDI)

Gordon Memorial is currently running almost the entire hospital on 227 virtual machines (VMs) on a single Vblock System. This includes a hospital-wide VDI solution supporting approximately 150 clients for the clinic team and administrative staff. The MEDITECH EHR solution also requires approximately 40 VMs of its own, and the rest are servers used by the hospital to run the rest of its systems.

### Expanding Storage Capacity on the Fly

Although the hospital had purchased four separate blades for VDI and its other clinical and administrative applications (apart from EHR), before the EHR was online, all the hospital's applications cohabitated for a time on the same host cluster, using the same storage. MEDITECH requires a separate host cluster and dedicated storage, so when the EHR solution was added to the platform, Gordon Memorial realized they needed to install those additional blades and expand its storage.

The hospital's IT team was able to upgrade from the existing EMC VNX 5300 storage array to a VNX 5500 and install Gordon Memorial's unused blades in one day—moving all of the hospital's VMs while the applications remained live.

“The Vblock System made the migration so seamless that our staff had no idea they were moving from one host cluster and set of storage to another,” Fisher remarked. “Everything happened so quickly that perhaps for one mouse click, the system might not have responded. But that was it.”

### The Results

Fisher and his team chose Vblock Systems because of its superior functionality—the advanced converged infrastructure would be able to deliver the extraordinary efficiency and agility of virtualization to enable Gordon Memorial to meet patient requirements in today's uncertain healthcare environment. In addition, it offered a state-of-the-art backup solution essential for protecting EHR data, without the inconvenience of handling and storing tapes.

To cost-justify the investment and help earn the hospital board's favor, Fisher prepared a detailed 10-year total cost of ownership (TCO) analysis that compared Vblock Systems to its two closest competitors.

The initial cost of the Vblock System hardware for the EHR solution was three percent higher than Vendor B and approximately 48 percent higher than Vendor C. However, by virtually any other measure Vblock Systems was dramatically superior—delivering a better TCO than the other finalists. These benefits included:

- **Services**—Installation and implementation was as little as 10 percent of the cost of installation of the other vendors' systems
- **Support**—Annual costs for single-call support from VCE were 35 percent to 66 percent less
- **Hardware refreshes**—Estimated to be \$152,000 less for Vblock Systems over 10 years
- **Point-of-care devices**—Upgrade of thin clients used in Vblock Systems VDI solution are projected to be \$24,000 less than with traditional workstations
- **Energy savings**—Up to \$38,000 saved over 10 years due to thin clients
- **Staffing**—The simplified operations and management of Vblock Systems will allow the IT team to remain at 4 FTEs, rather than expanding to 5 FTEs as required by the other solutions
- **Bottom line**—With an estimated \$695,000 in savings beyond the initial cost of Vblock Systems hardware, the hospital's 10-year TCO is expected to be substantially less with VCE

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**Simplified Management and No Downtime**

Gordon Memorial also benefits from the ease of management of Vblock Systems, elimination of downtime, and highly responsive support. With the other two solutions, the IT team would have had to operate and manage 40 physical servers—a time-consuming task. VMware vSphere provides essential insight into the hospital’s IT capacity and performance—making it easy to manage and provision compute, network, and storage resources and maintain high availability and full security.

Fisher said that beyond vSphere, he and his staff only need to “touch the Vblock System components once a month or so.” This results in significant savings in time and effort.

Since the Vblock System began running most of the hospital’s applications in 2013, there have been no major issues or unexpected downtime, and support from VCE has been responsive and proactive. Gordon Memorial has just one number to call, as opposed to calling the six different vendors included in some proposals.

“Our interaction with VCE regarding support has been great,” Fisher noted. “Their customer advocate stays in constant touch with us and anticipates our needs before they arise.”

**Realistic Revenue Potential**

Gordon Memorial is also beginning to explore the possibility of leveraging excess virtualized capacity to act as a service provider for other local medical institutions. Even running the hospital’s ambitious VDI and EHR solutions, Gordon Memorial has surplus CPU, RAM, and storage capacity.

Although the hospital is small and isolated, it’s a member of the Rural Nebraska Healthcare Network. Nine hospitals are connected by a recently installed, high-speed fiber optic network.

“We’re investigating whether other hospitals within the network that don’t have a virtualized infrastructure might be interested in accessing our virtualized solutions as a service,” said Fisher. “We’ve got the platform to handle it and we can easily expand the infrastructure if needed. So, I think, thanks to our Vblock System, we may be able to capitalize on some revenue-generating possibilities soon.”

**ADDITIONAL COST SAVINGS AND PROFIT POTENTIAL**

	VCE Vblock System	Vendor B	Vendor C	Vblock Savings
<b>Projected 10-year hardware refresh costs</b>	\$80,000	\$232,000	N/A	\$152,000
<b>Upgrade costs for point-of-care devices</b>	\$56,000	\$80,000	\$80,000	\$24,000
<b>Reduced energy costs due to thin clients with Vblock Systems VDI</b>	– \$38,000	No savings	No savings	\$38,000

