



Newport Hospital
A Lifespan Partner



Newport Hospital

At the Forefront of EMR Adoption

Case Study

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SIEMENS



A Magnet Hospital

In 2009, Newport Hospital was redesignated as a Magnet hospital by the American Nurses Credentialing Center (ANCC), an affiliate of the American Nurses Association. A Magnet hospital is one where nursing delivers excellent patient outcomes, where nurses have a high level of job satisfaction, and where there is a low staff nurse turnover rate and appropriate grievance resolution.

At a Glance

Newport Hospital is a private not-for-profit community hospital situated 30 miles south of Providence, R.I. Founded by Newporters in 1873, it has evolved from humble beginnings as a 12-bed cottage on donated land into a 129-bed facility — with prestigious Magnet and Baby-Friendly designations — fueled by state-of-the-art information technology (IT) systems.

In the mid 1990s, Newport was a profitable, independent hospital, and like most facilities, was largely reliant on manual workflows and processes for patient care. In 1997, Newport joined Lifespan, Rhode Island's first health system, and immediately began developing a 10-year plan that would gradually introduce new IT systems into the hospital — and would forever change its delivery of care.

The transformation at the end of the first 10 years was nothing short of amazing — the hospital went from not having email to boasting one of the most sophisticated electronic medical record (EMR) systems in the country. In 2008, Newport Hospital achieved Stage 6 on the HIMSS Analytics™ EMR Adoption Model — at the time, one of only six healthcare facilities nationwide to reach this status. Today, Newport is well on its way to achieving the pinnacle of the HIMSS model, Stage 7, and is developing its vision and plan to continue as a leader in healthcare IT for the next 10 years.





EMR Adoption ModelSM

		2007 Final	2008 Final	2009 Q1
Stage 7	Medical record fully electronic, HCO able to contribute CCD as by-product of EMR, Data warehousing in use	0.0%	0.3%	0.3%
Stage 6	Physician documentation (structured templates), full CDSS (variance & compliance), full R-PACS	0.3%	0.5%	0.8%
Stage 5	Closed-loop medication administration	1.9%	2.5%	3.6%
Stage 4	CPOE, CDSS (clinical protocols)	2.2%	2.5%	2.8%
Stage 3	Clinical documentation (flow sheets), CDSS (error checking), PACS available outside Radiology	25.1%	35.7%	37.0%
Stage 2	Clinical Data Repository, Controlled Medical Vocabulary, Clinical Decision Support, may have document imaging	37.2%	31.4%	32.1%
Stage 1	Ancillaries – Laboratory, Radiology, Pharmacy – All Installed	14.0%	11.5%	9.0%
Stage 0	All Three Ancillaries Not Installed	19.3%	15.6%	14.5%

Source: Data from 2009 HIMSS Analytics database, N = 5073/5166/5170, ©2009 HIMSS Analytics

Vital Stats

Name	Newport Hospital
Location	Newport, RI
Licensed beds	129
Employees	918
Affiliated physicians	280
Patient discharges	5,608
Outpatient visits	53,529
Year established	1873



Challenge

The challenges facing today's healthcare industry are immense and include patient safety and quality mandates, economic pressures, and an ever-changing world of insurance and regulation requirements. Emerging from the confusion, however, is a general industry consensus that the majority of these issues can be minimized, in part, through the adoption of IT systems.

To facilitate this transition, the Healthcare Information and Management Systems Society (HIMSS) established a seven-stage hierarchy for IT implementation and achievement called the HIMSS Analytics EMR Adoption Model. In ascending order, each of the seven stages marks a new IT milestone on a journey toward Stage 7. This final stage represents a fully electronic medical record (EMR) being used in a healthcare system that enables the sharing of information among caregivers across the continuum of care — whether onsite or remote. This final stage must also incorporate the use of data for business intelligence functions to enable continual improvement of the healthcare delivery process.

It was early 2008 when Newport Hospital, a 129-bed, private, non-profit community hospital south of Providence, R.I., received notice that it had achieved Stage 6 — one stage shy of the summit — in the HIMSS Analytics EMR Adoption Model. Moreover, at the time, it was one of only six healthcare facilities in the country to reach this milestone.

This was quite an impressive feat considering the leadership at Newport Hospital was not aware of the EMR Adoption Model, nor had it taken steps to nominate itself. Even after contacting HIMSS to verify the achievement and learning that its larger parent health system, Lifespan, was responsible for the nomination, Newport staff and leadership found the news rather unbelievable.

How did Newport Hospital overcome the challenges that small, community hospitals typically face when trying to keep pace with their larger, academic counterparts? What did Newport do to become a trailblazer on the road toward truly integrated, electronic healthcare delivery? How was the hospital able to debunk the myth that bigger is better when it comes to EMR adoption? This is what Newport leadership — and the greater healthcare community — started to analyze.

“The ROI for me is seeing the benefits of a closed-loop system and knowing that you’re measurably reducing the likelihood of patient harm. We couldn’t afford not to do it.”

Arthur Sampson
President and CEO, Newport Hospital



Solution

Newport Hospital’s road to Stage 6 was given direction by a well-defined facility plan and driven by a steadfast commitment from its leadership — both at Newport and Lifespan.

In 1997, Newport was a profitable hospital, but — like nearly all healthcare facilities at the time — was largely paper-based with manual processes. The Internet revolution, however, was gaining steam and leadership at the hospital could see that developing a plan to incorporate IT would be a critical component to future success.

“I have a hard time remembering what IT was like back then. I only remember that we didn’t have any. We didn’t even have email,” says Newport president and CEO Arthur J. Sampson. “We knew something had to be done and were in the process of wiring the entire facility, but that was the extent of our efforts when we joined Lifespan.”

Newport was financially capable of funding the IT initiative, but it realized the opportunity being presented in sharing cost, vision, and resources with Lifespan.

“Newport was thinking about the future. Although we already had lab, radiology, and pharmacy systems, they were standalone units and we needed to fully integrate our information,” says Sampson. “Lifespan had a similar vision and was further along with its integration plan.”

Patient Safety Drives the Decision

The decision to join Lifespan and embark on such an ambitious, 10-year IT journey was an easy one, because at its root was the desire to provide the highest quality patient care possible for the residents of Newport County, R.I.

This is not to say the first few years were easy. Sampson remembers being concerned about the expense of the initiative — with relatively little return to the hospital. “In truth, if a healthcare provider doesn’t want to do it, there are hundreds of reasons why it shouldn’t,” says Sampson. “IT initiatives take a strong commitment from senior leadership to see them through.”

The turning point for Sampson was the realization that the biggest return for Newport was the patient safety connection. “The ROI for me is seeing the benefits of a system that supports our closed-loop process and knowing that you’re measurably reducing the likelihood of patient harm,” says Sampson. “We couldn’t afford not to do it.”



Implementation

From the beginning, Newport established clear goals of continually improving safety, minimizing errors, and prioritizing IT implementations. After three years of retrofitting the facility — elevators, plumbing, electrical switches, and boilers — it moved to IT systems. The first order of business was implementing the foundation for its electronic nervous system — the Siemens INVISION® Clinicals health information system.

Setting priorities and defining the sequence of IT implementations at Newport is a collective effort. The hospital makes its own recommendations through its Clinical Informatics Council (CIC) — a team of clinicians that represent the perspective of each department. The recommendations are then advanced to a larger Lifespan committee — the Information Services Steering and Strategy Council (ISSSC), which comprises senior executives and liaisons from each facility within the health system. ISSSC is responsible for creating a priority list and building an annual tactical plan, which includes sequencing, timeline, and resource allocation for each project.

Tackling the most difficult components first, Newport implemented Computerized Physician Order Entry (CPOE) in 2003. The CPOE rollout started in the intensive care unit (ICU), which had the most variables to consider — but offered a more manageable, limited-scope deployment area. Within the first year, 90 percent of all physicians in the ICU were actively using the system.

“The ultimate goal is to have a seamless flow of information, across the entire system,” says Todd Cipriani, vice president of Professional and Support Services at Newport, and a member of the ISSSC. “We’re not going to implement a system at Newport and two years later deploy something different at another hospital. The system-wide, team approach helps ensure a consistent direction.”

The initial success of CPOE — or Provider Order Management (POM), as it is known at Newport — was paramount in generating buy-in from clinicians, building confidence in the greater vision of Newport leadership, and energizing the staff for the next round of IT implementations that were planned for the next five years.



Getting Creative in Radiology

Newport Hospital was quick to think outside the box and seek creative ways to extend the benefits of Med Administration Check™¹ to new areas of the hospital — becoming one of the first hospitals in the country to use the solution in a radiology department.

Patient safety was the primary driver and there were two specific concerns that led to the seemingly unusual deployment:

1. The complete patient history was not available when contrast agents were administered.
2. Contrasts were being administered, but the information did not reach the floor, introducing the possibility for error when distributing medications that require a 48-hour hold after a contrast is administered.

According to the Newport Diagnostic Imaging Department, by implementing Med Administration Check in radiology, contrasts are treated like any other medication — requiring bar codes and scanning — and the concerns were mitigated.

Although the Med Administration Check solution is unique, Newport's radiology department has always been a trendsetter. Newport was the first Lifespan facility to implement a picture archiving and communications system (PACS), which is so sophisticated today that it enables radiologists to work outside the confines of the hospital. What's next? Radiology set the goal of becoming completely paperless for all diagnostic imaging within one year. This is a patient care initiative. Achieving this goal sets the stage for untethering radiologists from their location. This capability enables sub-specialization, so that the most qualified, available radiologist from across the health system can be assigned a case, no matter where that radiologist is physically located.

¹ Newport Hospital implemented Siemens Pharmacy and Med Administration Check™



“Doctors can follow patients’ progress from the office online, by looking at orders and nurses’ notes. That gives them a really good idea of what’s going on.”

Terry McWilliams, MD
Vice President of Medical Affairs, Newport Hospital

Results

“The road to an EMR and Stage 6 was not an easy one. It was very hard for the doctors, the nurses — for everybody,” says Bart Grimes, RPh, director of Pharmacy at Newport. “But it is all worth it when you end the process better off than when you started.”

This is certainly true for Newport Hospital. With a clear mission to leverage integrated IT systems to enhance patient safety and introduce efficiencies across the entire facility, Newport has realized significant improvements:*

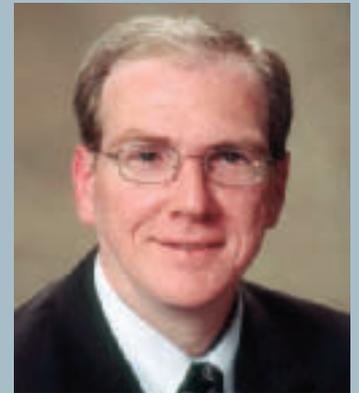
- **Support for Newport patient safety initiatives:** Support for a closed-loop medication use process helped reduce the number of actual medication administration errors by more than 50 percent. In the last year, over 40 percent of the remaining errors occurred in areas of the hospital that had not implemented Med Administration Check or where the solution was implemented, but not used.
- **Better documentation and metrics:** Med Administration Check enables more efficient tracking of near misses and documentation errors. Newport administers, on average, 42,000 medication doses per month, with only 25 near misses registered. The system also reported 45 documentation errors per month.
- **Faster access to results:** Turnaround times for images have been reduced from more than 24 hours to under 2 hours — and all studies are available electronically.

- **Enhanced responsibilities:** The medication order-to-administration cycle was 45 minutes. Today, the same process takes less than three minutes. “We’re no longer practicing distributive pharmacy,” says Grimes. “We are practicing consultative pharmacy and actively participating in patient care.”
- **Increased efficiencies:** “We can now access information online and have a clear view of what’s going on with the patient,” says Terry McWilliams, MD, vice president of Medical Affairs at Newport. “Rather than flipping through records trying to find data, sorted and organized clinical information is at our fingertips.”
- **Improved cash flow:** Accounts Receivable days (A/R days) were reduced from more than 70 to 36.
- **Enhanced retention and recruitment:** There hasn’t been a vacancy in nursing for years and there is often a waiting list. In pharmacy, Grimes adds, “Having a closed-loop medication management process helps with recruiting new staff and retaining employees. Young professionals come out of school and really love this technology. As for retention, I have a very low turnover rate — even during good economic times.”
- **Widespread adoption:** More than 90 percent of all inpatient medication orders by physicians at Newport are completed using CPOE (not including those that can’t be ordered through the system, such as intravenous adriamycin).

* Data on file.

“From the onset of the IT initiative, leadership here at Newport and Lifespan had a vision that technology was crucially important to our future. We believed in the power of IT.”

Todd Cipriani
Vice President of Professional and Support Services, Newport Hospital



Strong Leadership Enhances a Vision

So how is a 129-bed community hospital like Newport able to tout this list of accomplishments? Aspects of this initiative couldn't have been done without its connection to Lifespan, but this level of success can only be achieved by looking within the organization itself.

When senior management at Newport was asked to identify staff characteristics that enabled the Stage 6 rating, it almost unanimously agreed on two: strong leadership and culture.

“From the onset of the IT initiative, leadership here at Newport and Lifespan had a vision that technology was crucially important to our future. We believed in the power of IT,” says Cipriani. “Despite the cost and the tremendous effort, this belief helped us push through short-term setbacks and feel confident we would get to the other side.”

Culture Pushes IT Forward

“Newport has a unique culture,” says Cathy Duquette, PhD, RN, CPHQ, CNAA-BC, vice president of Nursing and Patient Care Services. “We work together to do what's best for our patients. Whatever it takes, our staff is always willing to step up — and that eagerness and environment are pivotal to our success.”

In fact, Newport Hospital is the go-to facility within the Lifespan health system for all new technology implementations. “One would assume in a big healthcare group that the large academic center would drive the IT initiative, but Newport has a unique culture that embraces new technologies and enables it to be a leader,” says Nancy Barrett, vice president of Information Services at Lifespan.

More importantly, its culture is forward thinking. Despite being a national leader in IT adoption, Newport is constantly seeking ways for improvement. “We're never done,” says McWilliams. “Our focus is always on doing the right thing. And when you have an entire culture and group that seeks to do the right thing, it keeps Newport moving forward.”



“We get emails back from former residents that say they never realized how good our system was until they got somewhere that didn’t have it. That is a matter of very great pride.”

Reid Coleman, MD
Medical Informatics Officer, Lifespan Health Systems

Conclusion and Lessons Learned

Newport Hospital is among the top 1 percent of all healthcare facilities in the country in the adoption and utilization of IT systems as a means of improving patient care. Its efforts, however, are not complete. Currently at Stage 6 on the HIMSS Analytics EMR Adoption Model, Newport has its sights set on moving up the ranks to Stage 7.

Although no two facilities or plans are identical, there are lessons learned that are universal. Newport’s 10-year journey to its leadership position is no different. Senior management offered three tips for other facilities aspiring to achieve true IT integration:

1. Involve the right people from the onset

Hire a point person — a clinical informatics professional — to lead the charge and ensure that representatives from each discipline are involved at every stage of the initiative. This will help with adoption, as well as diversifying the range of input (this means including critics).

2. Find strong IT partners

This is a continuous process completed over many years. Engage vendors and plan and develop a relationship. Newport Hospital chose Siemens Healthcare as one of its long-term partners.

“Siemens offered a solution that truly integrated our facility and enabled all of our systems — Siemens and non-Siemens — to work together to advance our goals,” says Sampson.

3. Have a strong resolve

This is a difficult transition and there will be setbacks and opposition to next-generation healthcare — some staff might even leave the organization. Stay the course. No one said it would be easy, but the end result is worth the effort and any temporary inconvenience.

The Next 10 Years

So what’s next for Newport? The specifics are still being planned, but the next 10-year agenda includes working with the Genome Project, embracing personalized medicine, and — in the immediate future — migrating its health information system to the next-generation solution.

“We get emails and letters back from former residents that say they never realized how good our system was until they got somewhere that didn’t have it,” says Reid Coleman, MD, medical informatics officer at Lifespan, who was instrumental in developing the overarching IT initiative across the Lifespan health system. “That’s a matter of great pride for us.”

“IT initiatives are much like the stock market. If you’ve got the short-term view, you’re going to have rides and get discouraged. Without a long-term view, you’re really wasting your time,” says Cipriani. “Most importantly, you need vision and leadership that really believes that IT is critical to the future success of your organization.”

Timing is Everything

Newport Hospital's road to Stage 6 had many milestones. The following are some of the highlights:

1995

- Decided to use one information system for Lifespan and its partners

1996

- Developed its IT plan and redesigned the IS department
- Started building the technical infrastructure
- Focused on a master patient index across all partners

1997

- Joined Lifespan
- Selected and implemented Siemens INVISION Clinicals as its foundation health information system
- Completed integration across clinical, financial, and administrative systems

1999

- Launched LifeLinks, a web-based viewer into the clinical repository
- Expanded LifeLinks to include other data — EKG tracings, pharmacy medication lists integrated with Micromedex, operative notes, discharge summaries, history and physicals, knowledge bases, PACS images, email, and many other clinical resources

2000

- Added a contract management module to the standard patient financial services system
- Implemented its first executive dashboard
- Incorporated laboratory robotics
- Deployed a wireless infrastructure — the first step toward a CPOE implementation
- Rolled out handhelds or tablet PCs for physicians
- Deployed wireless nursing cart systems
- Implemented PACS

2003

- Implemented CPOE
- Implemented Med Administration Check to integrate with CPOE and close the medication administration process

2005/2006

- Began its Health Information Management (eHIM) deployment
- Implemented a PACS
- Started using portions of the Electronic Medical Record to manage the clinical information flow
- Selected an ambulatory care information system



Six Tactics to Achieving Stage 6

- 1. Develop a well-defined and documented IT plan — supported by an organizational mindset of “We can’t afford not to advance our IT systems.”**
- 2. Maintain an unwavering commitment to the project, despite setbacks or resistance.**
- 3. Establish a committee from all disciplines that meets regularly to monitor existing activity and prioritize implementation projects.**
- 4. Have faith in your staff to take ownership of projects — otherwise, buy-in and support will diminish over time.**
- 5. Select the appropriate people to be involved with each project from the onset — helping ensure that all concerns are acknowledged and addressed.**
- 6. Develop a long-term relationship with a strong IT partner that will help shape the vision and offer the technology and implementation expertise to see it through.**

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