IT innovation is built on a robust infrastructure

MOST WIRED 2003

For the nation's 100 Most Wired hospitals and health systems, technology isn't the point. A commitment to patient safety, clinical quality and customer service—that's what gets these CIOs jazzed up for work. Providing clinical tools for doctors and nurses. Providing management tools for executives and staff. The depth and breadth of projects that these organizations are tackling is matched only by the commitment and energy of the CIOs and their teams.

But there's an irony that comes with the dedication to clinical excellence and process improvement. To provide technology-based tools, the infrastructure must be robust and solid. Infrastructure, say CIOs for the nation's top tech hospitals, in the basis of all technology strategy. While these organizations are on the cutting edge of innovation, they're also taking care of the basics, building a foundation for long-term technology success.

This is the fifth year that Hospitals & Health Networks has conducted the Most Wired Survey and Benchmarking Study, teaming with McKesson Information Solutions and HIMSS to poll the nation's hospitals on their use of IT to address the key goals of safety and quality, customer service, business processes, work force and disaster readiness. Based on the results of this eight-page survey, H&H names the nation's 100 Most Wired hospitals and health systems.

In addition, H&H recognizes innovation, improvement, use of wireless technologies and technology efforts by small and rural hospitals (see foldout). This year more than 400 hospitals and health systems completed the survey, representing 1,120 hospitals (see sidebar, "About the survey").

In the last year, the Most Wired have worked to maintain their lead over other hospitals in the development and use of technology, bringing Web-enabled patient education to the bedside, linking medical monitoring equipment directly into the patient record and providing a vast array of self-care resources over their public Web sites (see sidebar, "Survey highlights"). These CIOs have become key stakeholders in issues ranging from revenue cycle management and admissions office process redesign, to medication administration and nursing work flow.

H&H asked the 100 Most Wired to identify their three priorities. Virtually every hospital has at least one clinical project in process, including picture archiving and communication systems (PACS), computerized physician order entry (CPOE), clinical decision support, targeted medication administration projects and specific departmental systems (see figure 1).

"Hospitals are making a wide variety of individual investments in clinical systems," says Barry Chakravarti, M.D., vice president, medical affairs, for McKesson Information Solutions, Alpharetta, Ga. Behind each of these initiatives is the drive to improve patient safety and quality, he says. The systems are easier to use and they're more reliable, flexible and powerful.

But ten results don't come easily. "In order to be successful with the tools, not only do you have to choose them wisely, but you have to implement them wisely," Chakravarti says, adding that the Most Wired are willing to take risks and learn because they believe that their organizations will ultimately be successful with an investment in clinical technology. "That's why you see hospitals on the Most Wired list three, four and five times," he adds.

Throughout the five years of the Most Wired survey, 25 hospitals and health systems have been on the list three years, 26 have been on the list four years and 15 have been on the list all five years. Supporting IT with infrastructure investments is a major priority for many Most Wired organizations. Memorial Health Systems, Long Beach, Calif., is upgrading its infrastructure. The goal, according to Scott Joslyn, senior vice president and CIO, is "to provide a level of capacity, reliability and redundancy that will be required for new clinical systems that are woven into the fabric of care delivery processes."

Joslyn defines the issue this way: "Any unplanned downtime or other service interruption will become unacceptable and potentially dangerous as our dependence increases dramatically on various interconnected technologies, from the point of care back to remote data centers."

The emphasis on infrastructure goes hand in hand with the top project at Memorial: "The most important project we are undertaking is a replacement of our clinical systems across our five hospitals. That project entails addressing the obvious targets of patient safety—computerized physician order entry, quality and outcomes," Joslyn says. "We also intend to tackle the complexities of multidisciplinary care planning and documentation. We expect to revamp our care processes to take full advantage of a new system."

The interdependence of clinical information technology and infrastructure is also reflected in the plans of Texas Health Resources, Dallas. "THR has embarked on an aggressive journey of clinical transformation," says David Muntz, senior vice president and CIO. "Our clinical transformation is defined as the integration of clinical and non-clinical process improvements with enabling technologies. This comprehensive set of projects—from infrastructure to real-time interactive decision support at the point of service—has improved safety and satisfaction as its primary goal."

Timothy L. Thompson, senior vice president and CIO, Palomar Health, Columbia, S.C., agrees. "We are very focused on updating the infrastructure to ensure the success of the new suite of systems," he says.

Projects include a new state-of-the-art data center, a new contract for disaster recovery services, implementing all new wireless technology to support new clinical systems, completing a new core network replacement, implementing a storage area network and developing a corporate backup strategy.

Disaster recovery is also a critical component of infrastructure development. "As we move closer to a paperless environment, our system availability requirements become more critical and disaster recovery has become a priority for our organization," says Kari Cassel, CIO, UAMS Medical Center, Little Rock, Ark. "We are in the process of rewriting our disaster recovery and business continuity plan, establishing a second data center, moving all of our critical data to mirrored storage area networks and duplicating our infrastructure where necessary."

Bayork Health Care System, Dallas, has completed a project to build a second-to-none infrastructure. Bayork's goal: provide the tools for all potential projects. "Now I don't have to say no to anything," says Bob Plinton, senior vice president and CIO. Bayork's three key projects: clinical transformation, business office consolidation and workforce management. (Read about Bayork's efforts in the Summer 2003 edition of H&H's Most Wired Magazine, available in August.)

Clinical transformation appears to be the underlying motivation of most of the Most Wired. "We are developing a clinical IS plan that will prioritize new and replacement clinical information systems that will be installed over the next four years," says Arvy Brooks, vice president and CIO, Sioux Valley Hospital, USD Medical Center, Sioux Falls, S.D.

At Hamot Medical Center, Erie, Pa., the top three goals are implementation of bedside medication administration, implementation of a physician order entry system and integrating PACS systems with the clinical information system. What one hospital calls clinical transformation another calls patient care.
For the nation's 100 Most Wired hospitals and health systems, technology isn't the point. A commitment to patient safety, clinical quality and customer service—that's what gets these CIOs jazzed up for work. Providing clinical tools for doctors and nurses. Providing management tools for executives and staff. The depth and breadth of projects that these organizations are tackling is matched only by the commitment and energy of the CIOs and their teams.

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In the last year, the Most Wired have worked to maintain their lead over other hospitals in the development and use of technology, bringing Web-enabled patient education to the bedside, linking medical monitoring equipment directly into the patient record and providing a vast array of self-care resources over their public Web sites (see sidebar, "Survey highlights"). These CIOs have become key stakeholders in issues ranging from revenue cycle management and admissions office process redesign, to medication administration and nursing workflow.

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But the results don't come easily. "In order to be successful with the tools, not only do you have to choose them wisely, but you have to implement them wisely," Chaiken says, adding that the Most Wired are willing to take risks and learn because they believe that their organizations will ultimately be successful with an investment in clinical technology. "That's why you see hospitals on the Most Wired list three, four and five times," he adds.

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"In order to be exceptional, not only does it have to be effective, but it must also be efficient," says Timothy L. Thompson, senior vice president and CIO, Palmetto Health, Columbia, S.C., adds, "We are very focused on updating the infrastructure to ensure the success of the new suite of systems," he says.

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wireless hand-held devices. "The current solution using lap-tops is too cumbersome and difficult to manage in some patient care areas, like critical care," says Raymond A. Shingleton, senior vice president and CIO. "These new devices will make this process much more user friendly."

Jim Cramer, vice president and CIO, Scottsdale (Ariz.) Healthcare, says that they are in the pilot stages of a physician-rounding product that uses a variety of personal devices including wireless equipment. The organization rolled out a physician portal earlier this year including a single sign-on to the system, census, orders and results, transcription, vital, medication profile, PAC's images and electronic signature.

The U.S. Department of Veterans Affairs, VHN-3, Bronx, N.Y., is building on its successful bar code medication administration system. "The product continues to evolve," says Charles DeSarno, CIO. "Within the past year, the functionality has been expanded to include IV medications and complex dosing formats seen in critical care areas. This led to the need to deploy additional wireless equipment." To minimize the risks associated with wireless communications, VHN-3 recently instilled additional hardware and software to increase security for encrypted wireless data.

At North Carolina Baptist Hospital, Medical Center, Winston-Salem, a CPOE pilot in cardiology resulted in a 45 percent decrease in adverse drug events. "We hope this trend continues as we are now poised to roll out CPOE hospital-wide, beginning with the medicine service this summer. Physician involvement and acceptance has been high for which we are very fortunate."

Electronic health record and revenue cycle management projects are also high on the agenda for the 2003 Most Wired, including the University of Pittsburgh Medical Center. "The electronic revenue cycle project integrates and automates patient billing processes to ensure more detailed and accurate claims processing, decreased billing cycles and improve the overall financial status across UPMC," says Beth Nairn, project manager. "The goal is to provide an integrated solution for revenue cycle, which includes scheduling, registration and billing to improve cash collections."

The lessons are clear. The CIOs at the 100 Most Wired are not satisfied with their position as technology leaders. They are learning, experimenting and pioneering both clinical and managerial IT tools. They are building the technology infrastructure. They are vital participants in work flow redesign and care process improvement. The CIOs at the nation's top tech hospitals are working to stay Most Wired.
Findings and trends from the 2003 Most Wired Survey and Benchmarking Study

Web-Enabled Patient Education at the Bedside

Hospitals routinely provide education on medical conditions, procedures and follow-up care. The nation's Most Wired hospitals and health systems are beginning to use Web-based tools to provide disease-specific education at the bedside.

With this activity in the pilot phase, 12 percent of the Most Wired have hospital-wide projects, while another 42 percent are conducting pilot projects. This compares with 3 percent of the least wired reporting hospital-wide projects and another 1 percent with pilot projects.

Many hospitals are using a combination of videos-on-demand and bedside Internet access to disease-specific Web sites and chat rooms to provide educational materials.

Other hospitals are more innovative, linking disease specific information to their care plans.

Disease Surveillance

SARS, E. coli, bioterrorism, monkeypox—the risks of undetected communicable diseases can be reduced with active disease surveillance. More than 80 percent of the nation's hospitals say they have active disease surveillance systems that track unusual trends in diagnoses and symptoms. But only about one-eighth of the nation's hospitals can track these trends using fully electronic systems (see figure 2). Most of the systems in place are used for internal quality monitoring and not disaster readiness.

The most advanced organizations typically send data from laboratory systems to a central data repository that searches for symptoms and patterns of symptoms. Even the most advanced systems are "near real time," uploading the data only periodically, ranging from every six hours to once daily. Organizations are using a wide variety of purchased and homogenized software in these efforts.

Self-Care Resources on Hospital Web Sites

Hospitals continue to use their Web sites to provide a wide variety of self-care resources for patients. Information is most common on hospital Web sites, with a focus on the diseases with high incidence and the need for active self-care, such as asthma, cancer, diabetes and heart disease. Still, there are huge gaps in service between the Most Wired and the least wired in providing even this basic service. For example, only 38 percent of the least wired use Web sites to provide information on cancer via their Web sites, compared with 99 percent of the Most Wired. That gap is typical, regardless of the disease.

Service levels are also significantly different for more interactive self-care resources. The Most Wired pioneered the ability of patients to produce disease-specific self-assessments. While these services were offered by less than 5 percent of all hospitals in 2000, as many as 19 percent provide disease-specific self-assessments today, depending on the disease. Still, the nation's Most Wired hospitals and health systems maintain a lead over other hospitals in providing disease-specific self-assessments via the Web.

- Heart disease: 45 percent of the Most Wired provide disease-specific self-assessments on their Web sites, compared with 3 percent of the least wired.
- Diabetes: 42 percent of the Most Wired, compared with 1 percent of the least wired.
- Cancer: 39 percent of the Most Wired, compared with 1 percent of the least wired.
- Asthma: 33 percent of the Most Wired, compared with none of the least wired.

In 2003, the Most Wired began to experiment with patient submission of self-test results using Internet-enabled monitoring devices for patients. In 2003, many of these projects continue to be in pilot phases.

Customer Service

Hospitals continue their drive to make key customer services available on the Web, providing the ability to preregister for services, query claims and schedule appointments.

While many continue to offer a variety of basic services, a number of organizations are using a more sophisticated approach to customer service via the Internet.

Services like preregistration and claims query also have the potential to improve the cash flow and work flow within the organization, providing value to both patients and hospitals alike.

Data Security

The nation's 100 Most Wired hospitals and health systems use a broad arsenal of security technologies to safeguard data and to maintain operations in the event of a computer outage. Virtually every hospital uses password protection and firewalls, but there are gaps in the use of encryption, off-site backup and off-site redundant computing (see figure 4).

The Most Wired are also incorporating cutting-edge technologies into their security plans: 36 percent of the Most Wired say they use biometrics, while 28 percent say they’ve incorporated smart cards into their security plans.

Planning

In a disaster, technology may not function. Cell phones, pagers, e-mail and Web sites—each may be hit by a major disruption. Yet, under certain scenarios, high-tech communication tools may function, providing an important communication support. As a result, the nation's 100 Most Wired have begun to incorporate techniques such as automated push to e-mail, voice mail and mobile devices into their disaster plans.

Smart Equipment

Hospitals have begun to connect medical equipment used to monitor a patient's condition with patient records, sending readings directly into computerized medical records. This innovation at the bedside is most common for blood glucose and cardiac function monitoring, but includes IV pumps and respirators. The nation's Most Wired hospitals and health systems are pioneering these efforts.
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SURVEY HIGHLIGHTS

Web-Enabled Patient Education at the Bedside

Hospitals routinely provide education on medical conditions, procedures and follow-up care. The nation’s Most Wired hospitals and health systems are beginning to use Web-based tools to provide disease-specific education at the bedside. Much of this activity is in the pilot stage; 12 percent of the Most Wired have hospital-wide projects, while another 42 percent are conducting pilot projects. This compares with 3 percent of the least wired reporting hospital-wide projects and another 1 percent with pilot projects.

Many hospitals are using a combination of video-on-demand and bedside Internet access to disease-specific Web sites and chat rooms to provide educational information. Other hospitals are more innovative, linking disease-specific information to their care plans.

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Service levels are also significantly different for more interactive self-care resources. The Most Wired pioneered the ability of patients to produce disease-specific self-assessments. While these services were offered by less than 2 percent of all hospitals in 2000, as many as 19 percent provide disease-specific self-assessments today, depending on the disease. Still, the nation’s Most Wired hospitals and health systems continue to lead other hospitals in providing disease-specific self-assessments via the Web.

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In 2003, the Most Wired began to experiment with patient submission of self-tests results using Internet-enabled monitoring devices for patients. In 2003, many of these projects continue to be in pilot stages.

Using Automation to Support Patient Care

With the expansion of electronic medical records, the nation’s Most Wired hospitals and health systems benefit from the use of Internet-enabled monitoring devices for patients. In 2003, the Most Wired began to experiment with patient submission of self-tests results using Internet-enabled monitoring devices for patients. In 2003, many of these projects continue to be in pilot stages.

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- Blood glucose monitor: 71 percent of the Most Wired have either pilot projects or full rollout connecting these monitors to the medical record, compared with 21 percent of the least wired.
- Cardiac function monitor: 70 percent of the Most Wired have either pilot projects or full rollout, compared with 4 percent of the least wired.
- Respirator: 38 percent of the Most Wired have either pilot projects or full rollout, compared with 3 percent of the least wired.
- IV pump: 36 percent of the Most Wired have either pilot projects or full rollout, compared with none of the least wired.

THE MOST WIRED TEAM

THE PROJECT TEAM

This project was made possible through the support of McKesson Information Solutions. The company lent members of its staff to survey development and data analysis and to publicize the effort. HIMSS assisted in promoting the project through mailings, its newsletter and its annual conference. Several HIMSS CIOs, members of the Most Wired Magazine Editorial Advisory Board and informatics experts reviewed the survey and served as judges for the Innovator Awards. Hospitals & Health Networks appreciates their efforts and support.

Hospitals & Health Networks—Aliden Solovay, Suzanne Hoppsae-ier, Jennifer Towne, Kendra A. Hopkins, Mark Harju, Kyle Anderson, Peter Kralovec, Steve Reczynski, Cbsy Jackson, Chuck Lazar, Marty Wettzeil, Patricia Mearsman
McKesson Information Solutions—Barry Chalken, M.D., Randy Spratt, Leslie White

MOST WIRED SURVEY REVIEWERS


INNOVATOR AWARD JUDGES


Thank You!

Hospitals & Health Networks extends special thanks to McKesson Information Solutions and HIMSS for their support of the 2003 Most Wired Survey and Benchmarking Study. Results of the 2003 survey may be found at:

- Our Web site at www.hhmnostwired.com
- Hospitals & Health Networks, July Cover Story—Includes winners, Most Wired priorities, disease surveillance and security technologies.
- Materials Management in Health Care, August Feature Story—Focus on IT connectivity for suppliers. In addition, a disaster preparedness article will feature information gathered from the Most Wired survey.
- HxHN’s Most Wired Magazine, Summer 2003 Feature Stories—2003 Most Wired Innovator Award winners and finalists.
- HxHN’s Most Wired Magazine, Fall 2003 Feature Stories—Wired for safety, telemedicine and the pharmaceutical supply chain.
- Health Facilities Management, September 2003 Feature Story—Focus on security issues facing the Most Wired organizations.
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WANT MORE?

Further results of the 2003 Most Wired Survey and Benchmarking Study may be found in:

Health Facilities Management, September 2003 Feature Story—Focus on security issues facing the Most Wired organizations. www.hmfn.com

Materials Management in Health Care, August 2003 Feature Story—Focus on IT connectivity for suppliers. In addition, a disaster preparedness article will feature information gathered from the Most Wired survey. www.mmaw.com

H&HN Most Wired Magazine, Summer 2003 Feature Story—2003 Most Wired Innovator Award winners and finalists. www.hhnmostwired.com

H&HN Most Wired Magazine, Fall 2003 Feature Story—Wire for safety, telemedicine and the pharmaceutical supply chain. www.hhnmostwired.com

Please check the quarterly H&HN Most Wired Magazine for in-depth analyses of the 2003 Most Wired Survey and Benchmarking Study results beginning with the Summer 2003 issue.


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George Arges, senior director, Health Data Management Group, American Hospital Association, Chicago. John Glaser, vice president, information systems, Partners HealthCare System, Boston. Brian T. Malear, Ph.D., program director of health administration, California State University Northridge. Michael McGill, Ph.D., president, McGill Associates LLC, Columbus, Ohio. Don Nielsen, M.D., senior vice president for quality leadership, American Hospital Association, Washington, D.C. Terry Povey, director, Web business development, market research and statistics, Blue Cross and Blue Shield of South Carolina, Columbia. Bruce D. Smith, vice president, chief information officer, Advocate Health Care, Oak Brook, Ill. Greg Walton, senior vice president and chief information officer, Carillon Health System, Roanoke, Va. Timothy Zoph, vice president, information services, Northwestern Memorial Hospital, Chicago.
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<th>Years as Most Wired</th>
<th>Ownership &amp; Type</th>
<th>Total No. of Active Cyber-Shielded Sites</th>
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<th>IT Employees</th>
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<tr>
<td>Meridian Healthcare, Virginia Beach, VA (<a href="http://www.meridianhealth.org">www.meridianhealth.org</a>)</td>
<td>NFP-INT</td>
<td>160</td>
<td>1.6</td>
<td>20</td>
<td>4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Medical Care Systems, Jacksonville, FL (<a href="http://www.mcspiatric.com">www.mcspiatric.com</a>)</td>
<td>NFP-INT</td>
<td>150</td>
<td>1.5</td>
<td>20</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Newport Hospital, Huntington, WV (<a href="http://www.newporthospital.com">www.newporthospital.com</a>)</td>
<td>NFP-INT</td>
<td>140</td>
<td>1.4</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Northern Surgical, Frederick, MD (<a href="http://www.northern.surgical">www.northern.surgical</a>)</td>
<td>NFP-INT</td>
<td>130</td>
<td>1.3</td>
<td>20</td>
<td>1</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Northside Hospital, Atlanta, GA (<a href="http://www.northside.com">www.northside.com</a>)</td>
<td>NFP-INT</td>
<td>120</td>
<td>1.2</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Northwood Hospital, Providence, RI (<a href="http://www.northwoodhospital.com">www.northwoodhospital.com</a>)</td>
<td>NFP-INT</td>
<td>110</td>
<td>1.1</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Northwell Health, New York, NY (<a href="http://www.northwellhealth.org">www.northwellhealth.org</a>)</td>
<td>NFP-INT</td>
<td>100</td>
<td>1.0</td>
<td>20</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>NSU Medical Center, Fort Lauderdale, FL (<a href="http://www.nsu.edu">www.nsu.edu</a>)</td>
<td>NFP-INT</td>
<td>90</td>
<td>1.0</td>
<td>20</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Northwestern Memorial Hospital, Chicago, IL (<a href="http://www.northwesternmemorial.org">www.northwesternmemorial.org</a>)</td>
<td>NFP-INT</td>
<td>80</td>
<td>1.0</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Olson Medical Imaging, Omaha, NE (<a href="http://www.olsonmedimaging.com">www.olsonmedimaging.com</a>)</td>
<td>NFP-INT</td>
<td>70</td>
<td>1.0</td>
<td>20</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Omnicare Hospice, Detroit, MI (<a href="http://www.omnicarehospice.com">www.omnicarehospice.com</a>)</td>
<td>NFP-INT</td>
<td>60</td>
<td>1.0</td>
<td>20</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Our Lady of Lourdes Medical Center, Binghamton, NY (<a href="http://www.ollmc.org">www.ollmc.org</a>)</td>
<td>NFP-INT</td>
<td>50</td>
<td>0.9</td>
<td>20</td>
<td>1</td>
<td>2</td>
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</tr>
<tr>
<td>Our Lady of Lourdes Medical Center, New Orleans, LA (<a href="http://www.ollmc.com">www.ollmc.com</a>)</td>
<td>NFP-INT</td>
<td>40</td>
<td>0.8</td>
<td>20</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Our Lady of the Angels Hospital, Chicago, IL (<a href="http://www.olwh.org">www.olwh.org</a>)</td>
<td>NFP-INT</td>
<td>30</td>
<td>0.7</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Our Lady of the Lake Regional Medical Center, Portage, MI (<a href="http://www.ollr.com">www.ollr.com</a>)</td>
<td>NFP-INT</td>
<td>20</td>
<td>0.6</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Our Lady of the Lakes Medical Center, Shreveport, LA (<a href="http://www.olomc.com">www.olomc.com</a>)</td>
<td>NFP-INT</td>
<td>10</td>
<td>0.5</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Our Lady of the Mississippi Medical Center, Tupelo, MS (<a href="http://www.olmcm.com">www.olmcm.com</a>)</td>
<td>NFP-INT</td>
<td>5</td>
<td>0.3</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Our Lady of the Rosary Medical Center, Bismarck, ND (<a href="http://www.olr.org">www.olr.org</a>)</td>
<td>NFP-INT</td>
<td>2</td>
<td>0.2</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Our Lady of the Valley Medical Center, Youngstown, OH (<a href="http://www.olvmc.org">www.olvmc.org</a>)</td>
<td>NFP-INT</td>
<td>1</td>
<td>0.1</td>
<td>20</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

**Key: NFP-INT** indicates that the organization was a Not-for-Profit institution. **IT Staff Performance** is scored on a scale from 1 to 5, with 5 being the highest performance.
Supporting IT with infrastructure investments is a major priority for many Most Wired organizations.

The nation’s 100 Most Wired use a broad arsenal of security technologies to safeguard data and to maintain proper operation and security in the event of a computer outage.

The MOST IMPROVED

- Lucentum Health Foundation, Canton, Ohio (www.lucentumhealth.org)
- Cayuga Medical Center, Ithaca, N.Y. (www.cayugamed.org)
- Conemaugh Memorial Medical Center, Johnstown, Pa. (www.conemaug.org)
- Coventry Health, Springfield, Mo. (www.coventryhealth.org)
- 2CO Health System, Tucker, Ga. (www.2cohealthcare.com)
- Premier Health and Hospitals, Denver (www.denverherald.com)
- Edward Hospital, Naperville, Ill. (www.edwardhospital.com)
- Hancock-Merrill Memorial Hospital’s Health Services, Grand Rapids, Mich. (www.mhhs.org)
- Lee Memorial Health System, Fort Myers, Fla. (www.suemr.org)
- Martin Health Systems, Stuart, Fla. (www.martinsystems.org)
- Mary Washington Hospital, Fredericksburg, Va. (www.medcenter.org)
- Miami Children’s Hospital, Miami, Fla. (www.mch.com)
- PeaceHealth System-Atlin, Alaska, Wash. (www.peacehealth.org)
- Penninsula Regional Medical Center, Salisbury, Md. (www.penninsula.org)
- Piedmont Medical Center, Atlanta (www.piedmont.org)
- Potsdam Hospital System, Herkimer, N.Y. (www.potsdamhospital.org)
- Regional Medical Center, Madison, Ky. (www.towerfoundation.org)
- Saint Vincent Health System, Erie, Pa. (www.svhealth.org)
- Skaggs Community Health Center, Branson, Mo. (www.skaggs.net)
- University Health System of Eastern Carolina, Greenville, N.C. (www.uhesca.net)
- University of Texas MD Anderson Cancer Center, Houston (www.mdanderson.org)
- UAB Medicine, Seattle (www.uwmedicine.org)
- Watertown Memorial Hospital, Watertown, Wis. (www.watertown.org)
- West Tennessee Healthcare, Jackson, Tenn. (www.wtah.com)

KEY:
- ALL RESPONDENTS: Aggregate data for the 404 hospital and health system respondents.
- MOST WIDED: Aggregate data for the 100 Most Wired.
- LEAST WIDED: Aggregate data for the 100 lowest scoring respondents.
- OWNERSHIP: HIPAA-certified for profit; 501(c)(3) investor-owned; GOV/government, federal; GHG:government, nonfederal; TYPE: independent hospital; OTRH: hospital owned by an integrated system; LINK: integrated health network or system; OPERATING BUDGET: IT operating expenses as percent of operating expenses; CAPITAL BUDGET: IT capital expenses as percent of capital expenditures. N/A: Not available.

- First time on list
- Two years on list
- Three years on list
- Four years on list
- Five years on list
-<option> Four or more years on list

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THE MOST WIRELESS

Beaufort Memorial Hospital, Beaufort, S.C. (www.cmtrec.org)
Carlton Health System, Round Rock, Tex. (www.carltonhealth.com)
Cayuga Medical Center, Ithaca, N.Y. (www.cayugamed.org)
Children’s Hospital of Philadelphia, Philadelphia (www.chop.edu)
Covenant Health, Knoxville, Tenn. (www.covenanthealth.com)
Dartmouth-Hitchcock Medical Center, Lebanon, N.H. (www.dartmouth.org)
Deaconess-Billinge Clinic, Billings, Mont. (www.deaconess.org)
Deaconess Medical Center, Springfield, Wash. (www.deaconess.org)
Denim Community Hospital, Geneva, Ill. (www.denim.org)
Detroit Medical Center, Detroit (www.dmc.org)
Good Samaritan Health Systems, Kernersville, N.C. (www.gshealth.org)
Hamot Medical Center, Erie, Pa. (www.hamot.org)
Hancock Community Hospital & Health Services, Searles, Ind. (www.hcshs.org)
Iowa Health System, Des Moines (www.iowait.org)
Jefferson Hospital, Louisville, Ky. (www.jeffersonhospital.org)
Lehigh Valley Hospital & Health Network, Allentown, Pa. (www.lvh.org)
Lifespan Providence, RI (www.lifespan.org)
Maimonides Medical Center, Brooklyn, N.Y. (www.maimonidesmed.org)
Memorial Children’s Hospital, Miami (www.mch.com)
Saint Luke’s Health System, Kansas City, Mo. (www.saintlukes.org)
St. James Hospital and Health Care Centers, Chicago-Hillside, Ill. (www.stjameshospital.org)
St. Joseph’s Hospital, Parkhurst, W.I. (www.stjosephshospital.org)
Thomas Hospital, Falmouth, Ky. (www.thomashospital.com)
Upper Chesapeake Health, Bel Air, Md. (www.ucchealth.org)
Valleymed Health System, Ridgefield, N.J. (www.valleymed.org)
Valley Hospital and Medical Center, Spokane, Wash. (www.valleyhospital.org)
Wheaton-Oswego Hospital, Oswego, Ill. (www.wheatonhospital.org)
Yale-New Haven Hospital, New Haven, Conn. (www.ynhh.org)

2003 INNOVATOR AWARDS

WINNERS

Baptist Memorial Health Care, Memphis (www.baptistmemphis.org)
Physician, which requires the hospital to collect data that the 2003 Innovator AWARD RECIPIENTS will have not been seen-from-than labs to result to fatal monitoring to HPA—will shows data in real time anywhere they have an Internet to.

CREATOR-RESEARCHER Health System, Springfield, Pa. (www.crh.org)

A creative plan is to address the radiological shortage in national-racial radiology coverage for night call and staff needs, and the resultant Electronic Pictures Archiving and Communications Systems.

Octobcr Clinic Foitn, New Orleans (www.octobcr.org)

To boost that sustainable, a Web-based application that delay the interval attracts a savings, 22 hours, a year was locally patented along the lines of all traffic control contexts.

FRAIlSTALS

CardioCare Health System, Boston (www.home.caremg.com)
Parameter communications portal that empowers patients to actively participate in their own care health through online access to physicians and reports, including the ability to track and graph health data over time.

Intermountain Health Care, Salt Lake City (www.intermountain.com)

A data warehouse system that “talks and data sites on the fly,” and then determine, where more care is not being provided and treatments change this care process for patients in need such as diabetic, asthma and congestive heart problems.

St. Joseph HealthCare, Lexington, Ky. (www.stjoe.com)

The glucose management system replaces reports to skilled professionals that hardcopy and results in reports that replace handwritten flow sheets and allows physicians to view the reports online in real time.