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2012 Most Wired

JOYCE BECK, CEO of a 19-bed critical access hospital, is one of many executives driving her institution down the road toward meaningful use of health IT.



American Hospital Association

2012 Most Wired

BY MATTHEW WEINSTOCK | DATA BY SUZANNA HOPPSZALLERN

The road to meaningful use of health information technology is riddled with detours, potholes and yield signs. Yet the 2012 *H&HN* Most Wired Survey proves that hospitals with well-crafted and well-mapped plans can motor their way toward successful adoption.

A record number of hospitals — more than 200 — earned Most Wired status in this, the 14th annual survey, which gauges how organizations are planning for, utilizing and securing information technology across the entire enterprise. While there is a certain amount of cachet that comes with being associated with Most Wired, as with many other lists throughout health care, the survey is less about the designation and more about serving as a roadmap for how hospitals are using IT to transform their organizations. Perhaps the most significant development over the past couple of years is the greater strategic role IT and IT departments now play in hospitals and health systems.

Given the dramatic changes taking place in health care, and the ever-increasing importance of data, IT systems must be more than just plug-and-play toys; they need to be high-powered analytical tools that can deliver real-time, actionable data to clinicians and executives alike.

"It's probably been in the last 24 months that we've seen the conversations become more strategic," says Rose Higgins, vice president of payer and provider solutions at McKesson, an information technology firm and sponsor of the *H&HN* Most Wired Survey. "Organizations are having conversations

around their strategic imperatives for the next three to five years: What kind of organization do they want to be and how can they sustain that in the long run? People are very focused on IT's laying the groundwork and foundation."

▶ Driving toward value

So much of the focus on information technology over the past year or two has been on clinical applications — computerized provider order entry, clinical decision support, health information exchange and more — and the potential to improve patient safety and create greater efficiencies. That's in large part due to the federal government's push to digitize health care and to regulations governing meaningful use. But officials at Most Wired hospitals note that their emphasis goes beyond what's prescribed by those mandates. "It's not just about meeting the letter of the law. It's about meeting our definition of meaningful use," says Timothy Sullivan, M.D., a family practice physician at Thayer County Health Services, a rural health system in Hebron, Neb. Sullivan championed IT adoption at the 19-bed critical access hospital and its clinics.

While that definition varies from organization to organization, it almost always includes a focus on value and data. The dramatic shift to a value-driven delivery system, where reimbursement is much more aligned to quality measures and outcomes, demands that IT systems are used to promote evidence-based care and, at the same time, provide executives with a holistic view the organization's operations. Health IT

Pioneering spirit drives rural hospital

Rural Nebraska isn't the first place you'd expect to find a hospital on the cutting edge of the digital revolution. Yet in the southeast corner of the state sits a pioneer user of health IT. Joyce Beck, CEO of Thayer County Health Services, in March 2010 became one of the first patients to have a medical record sent over the Nationwide Health Information Network.

Her medical records were transmitted from her home base of Hebron, Neb., to a doctor 1,600 miles away in Healdsburg, Calif., and back again. "It's the coolest," says Beck. "It is the way we need to deliver health care in the United States."

Beyond the cool factor, TCHS, which has a service area of roughly 5,000 people, is at the forefront of utilizing IT to reduce errors and deliver better patient care. But it wasn't always that way. "We were using a legacy system and paper charts, and everybody was griping about how nothing worked well," says Timothy Sullivan, M.D., a family practice physician at TCHS. "Joyce said, 'Why don't you go find something better?'"

So he did. After attending a conference of family medicine practitioners, Sullivan came back to Hebron singing the praises of electronic health records. In 2008, TCHS was awarded a \$1.6 million federal grant to implement electronic records within 18 months. That was in addition to \$25,000 TCHS had received from the hospital's foundation and guild.

For Beck, going digital always has been about one thing — patient safety. Working with the University of Nebraska, TCHS discovered that in the first quarter of 2004 there were 48 medication errors. "That lit my fire," she says.

Armed with the new financial resources, TCHS charged ahead with implementing its EHR and related technologies. Medication errors plummeted to around six per quarter. Previously, the hospital's medication reconciliation rate was around 23 percent; it now stands at 100 percent for physicians who e-prescribe.

That's not to say that everything is perfect. As with most rural areas, bandwidth is a major concern. Beck says there are also limitations as to what the available software can do. "I always dream bigger than what we can get out of the programs," she says.

Sullivan wishes the technology was more intuitive and user friendly, but he can't imagine going back. "We do have increased patient safety," he says. "It will work even better once people realize that we need physicians on the ground floor designing these systems."

TCHS is on its second technology partner, having started with HMS and recently spending \$1.4 million to transition to CPSI. ●

Joyce Beck

A classic-car enthusiast, Beck has driven her 19-bed critical access hospital in rural Nebraska to become a leader in the use of health IT and improve patient safety.

is “fundamental” to the success of a value-driven system, says Tara Jones, vice president of acute care services and chief information officer at Vanguard Health Systems, headquartered in Nashville, Tenn.

“Until recently, we’ve been in the era of getting data into our HIT platforms,” says Joe Boyce, M.D., chief medical information officer at Heartland Health, St. Joseph, Mo. “Now, the fun part of getting knowledge and wisdom out — evidence-based care, actionable alerts, patient engagement, population health management dashboards and real-time decision support at the point of care — is taking center stage. The conversations are changing from ‘Why are you making me do this?’ to ‘Can it do that?’”

Setting the standard

The accompanying charts show areas in which the Most Wired are excelling in their use of IT for operational efficiency, patient safety and patient satisfaction, along with significant advances in security protocols. Although the year-over-year data show gains in areas such as CPOE and medication management, it does not mean that everything is on a glide path. There are still significant hurdles, especially in relation to some core meaningful use criteria. Hospitals continue to struggle to record patient demographics as structured data, the same for problem lists. That is a major reason several organizations failed to achieve Most Wired status this year.

Chantal Worzala, director of policy for the American

Hospital Association, says the survey also points to a need for providers, vendors and regulators to come to terms on standards. “Learning to use standards is an underappreciated aspect of getting to meaningful use,” she says.

Standards are instrumental not just to ensure that electronic health records act in a predictable way, but also, ultimately, for the seamless exchange of data between providers. “It is all about the information flow that is going to support more informed, more logical and better care,” Worzala says.

Faces of Most Wired

Overall, Worzala says, the Most Wired data show hospitals and health systems are moving in the right direction. “I look at the Most Wired to see where leading organizations are taking the field,” she adds. In particular, she’s encouraged by the growing use of remote monitoring for disease management and telemedicine. These are examples of the benefits that can be achieved when there is linkage to providers from outside the care setting.

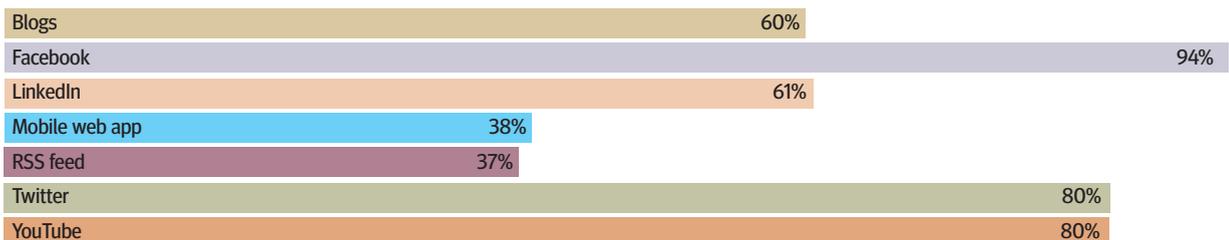
What follows are profiles of three Most Wired organizations that are themselves on the leading edge. Each has a vastly different background and story. One, a critical access hospital in Nebraska, made patient safety the driving force behind its rapid adoption of IT. At a public health system in Atlanta, the IT department is finally viewed as a strategic partner across the organization. And an independent hospital, nestled in the mountains of Southern California with two other competitors, proves that working with physicians can lead to big things. ●



Engaging the patient through social media

Hospitals are leveraging new communication channels such as social media that offer engaging and supportive programs to enhance the patient experience. Nearly half of Most Wired hospitals use social media for crisis communications compared with one-third of total respondents. More than 25 percent of Most Wired hospitals offer care management messages and chats with physicians. “By developing consumer personalized medicine tools such as our patient portal and utilizing social media, we can create better outcomes through personalization and support for adherence, says John Doulis, M.D., assistant vice chancellor, health affairs, and chief operating officer of the Informatics Center, Vanderbilt University Medical Center, Nashville. “This also supports efforts to reduce readmissions and increase patient satisfaction for patients who are members of the digital generation.”

Which social media outlets are Most Wired hospitals and health systems using?



Source: Hospitals & Health Networks' Most Wired Survey, 2012

Healing wounds and gaining credibility

Three months into her job as senior vice president and CIO at Grady Memorial Hospital, Deborah Cancilla wondered if she had walked into a death trap.

It was 2008 and Grady, one of the largest public hospitals in the United States, was hemorrhaging money. Technology investments weren't even an afterthought. Clinicians were overwhelmed by work and underwhelmed by the level of IT support.

"They had to go through 14 different systems, along with a paper record, to get a complete picture of what was happening to the patient," Cancilla recalls. "The phone system was vintage 1980. We had no ability to troubleshoot problems. Worst of all, the IT department was wounded. It didn't have the training, knowledge or tools to have credibility within the organization."

Later that year, a coalition of state and community leaders threw a lifeline by creating a nonprofit corporation to run the hospital. The Grady Memorial Hospital Corp. board went on to raise \$325 million in philanthropic money. While those funds were earmarked for a variety of projects, one of the first major undertakings was to build a strong IT foundation, including a \$19 million network overhaul.

Simultaneously, hospital leaders were ready to wade into the application waters. After selecting Epic, the hospital embarked on an 18-month journey to deploy clinical and financial systems. But before the full implementation could happen, Cancilla had one last change to make, and this was maybe the toughest. She turned over nearly 85 percent of the IT staff. She also found a group of physician leaders to champion the digital migration.

Since the go-live in November 2010, there have been ups and downs. Cancilla says that there are challenges getting universal use of order sets. However, 100 percent of orders are done via CPOE.

There's a tangible financial benefit as well. "We have much better information and revenue cycle processes," says John Hauptert, who joined Grady as CEO in 2011, noting that collections across all payers have nearly doubled since the pre-Epic days.

And, Grady is working with other major health systems in the market — all but one of which is on Epic — to share health information, including creating some disease-specific exchanges.

"We are taking a leadership role in population health," Hauptert says.

Hauptert and Cancilla say that IT has earned its way to becoming a trusted business partner to drive change. "IT is seen as one of the leading support services in the hospital," Hauptert says. ●

Deborah Cancilla John Hauptert

A strong leadership team has helped the IT department at Grady Memorial Hospital become a true strategic partner, says CEO Hauptert.

2012 Most Wired

Abington (Pa.) Health www.amh.org/abingtonhealth	2	790	Crittenton Hospital Medical Center Rochester, Mich. www.crittenton.com	1	290
Acadia Hospital Bangor, Maine www.acadiahospital.org	1	76	Crozer-Keystone Health System Springfield, Pa. www.crozer.org	5	1,000
Advocate Health Care Oak Brook, Ill. www.advocatehealth.com	12	4,273	Deaconess Health System Newburgh, Ind. www.deaconess.com	4	493
Alamance Regional Medical Center Burlington, N.C. www.armc.com	1	238	Denver Health and Hospital Authority www.denverhealth.org	1	500
Aleda E. Lutz VA Medical Center Saginaw, Mich. www.saginaw.va.gov	1	108	Detroit Medical Center www.dmc.org	8	2,000
Alfred I. duPont Hospital for Children Wilmington, Del. www.nemours.org	1	175	Doctors Hospital Columbus, Ohio www.ohiohealth.com/doctors	1	191
Altru Health System Grand Forks, N.D. www.altru.org	1	288	Dublin (Ohio) Methodist Hospital www.ohiohealth.com/dublinmethodist	1	94
AnMed Health Anderson, S.C. www.anmedhealth.org	1	412	Eastern Maine Medical Center Bangor www.emmc.org	1	385
Ann & Robert H. Lurie Children's Hospital Chicago www.luriechildrens.org	1	244	Eisenhower Medical Center Rancho Mirage, Calif. www.emc.org	1	350
Amot Ogden Medical Center Elmira, N.Y. www.amothealth.org	1	256	Elliot Health System Manchester, N.H. www.elliotohospital.org	1	232
Atlantic Health System Morristown, N.J. www.atlantichealth.org	3	1,310	Emory Healthcare Atlanta www.emoryhealthcare.org	4	1,310
Aurora Health Care Milwaukee www.aurorahealthcare.org	15	1,200	Exeter (N.H.) Health Resources www.exeterhospital.com	1	100
Avera Health Sioux Falls, S.D. www.avera.org	29	1,685	FirstHealth of the Carolinas Pinehurst, N.C. www.firsthealth.org	3	582
Banner Health Phoenix www.bannerhealth.com	23	4,829	Fisher-Titus Medical Center Norwalk, Ohio www.fisher-titus.org	1	99
Baptist Health South Florida Coral Gables www.baptisthealth.net	6	1,480	Fletcher Allen Health Care Burlington, Vt. www.fletcherallen.org	3	450
Battle Creek (Mich.) VA Medical Center www.battlecreek.va.gov	1	269	Florida Hospital Orlando www.floridahospital.com	1	2,247
Baystate Health Springfield, Mass. www.baystatehealth.org	3	780	Fort Madison (Iowa) Community Hospital www.fmchosp.com	1	50
Beaufort (S.C.) Memorial Hospital www.bmhsc.org	1	197	Franklin Memorial Hospital Farmington, Maine www.fchn.org	1	45
Beaumont Health System Royal Oak, Mich. www.beaumont.edu	3	1,726	Geisinger Health System Danville, Pa. www.geisinger.org	3	536
Beckley (W.Va.) VA Medical Center www.beckley.va.gov	1	40	Genesis Health System Davenport, Iowa www.genesishealth.com	3	537
Berkshire Health Systems Pittsfield, Mass. www.berkshirehealthsystems.org	2	327	Grady Memorial Hospital Atlanta www.gradyhealth.org	1	660
Beth Israel Deaconess Medical Center Boston www.bidmc.org	1	550	Grand View Hospital Sellersville, Pa. www.gvh.org	1	202
Bon Secours Richmond (Va.) Health System www.bonsecours.com	4	872	Greenville (S.C.) Hospital System University Medical Center www.ghs.org	5	1,268
Bothwell Regional Health Center Sedalia, Mo. www.brhc.org	1	140	Gritman Medical Center Moscow, Idaho www.gritman.org	1	25
Bronson Battle Creek (Mich.) www.bronsonbattlecreek.com	1	211	Gundersen Lutheran La Crosse, Wis. www.gundluth.org	1	259
Brooke Army Medical Center Fort Sam Houston, Texas www.bamc.amedd.army.mil	1	425	Hackensack (N.J.) University Medical Center www.hackensackumc.org	1	775
Cancer Treatment Centers of America Schaumburg, Ill. www.cancercenter.com	4	350	Hallmark Health System Melrose, Mass. www.hallmarkhealth.org	2	155
Carilion Clinic Roanoke, Va. www.carilionclinic.org	8	770	Hampton (Va.) VA Medical Center www.hampton.va.gov	1	394
Carle Urbana, Ill. www.carle.org	1	325	Harris County Hospital District Houston www.hchdonline.com	3	815
Carolinas HealthCare System Charlotte, N.C. www.carolinashealthcare.org	15	2,717	Hartford (Conn.) Hospital www.harhosp.org	1	750
Centra Lynchburg, Va. www.centrahealth.com	3	625	HCA Nashville, Tenn. www.hcahealthcare.com	163	41,594
CentraState Healthcare System Freehold, N.J. www.centrastate.com	1	282	HealthAlliance Hospitals Leominster, Mass. www.healthalliance.com	1	110
Charles George VA Medical Center Asheville, N.C. www.asheville.va.gov	1	280	HealthPartners Bloomington, Minn. www.healthpartners.com	4	600
Children's Hospital Boston www.childrenshospital.org	1	398	Henry County Health Center Mount Pleasant, Iowa www.hchc.org	1	25
Children's Medical Center Dallas www.childrens.com	2	447	Hunter Holmes McGuire VA Medical Center Richmond, Va. www.richmond.va.gov	1	300
Christ Hospital Cincinnati www.thechristhospital.com	1	511	Hunterdon Healthcare System Flemington, N.J. www.hunterdonhealthcare.org	1	178
Cincinnati Children's Hospital Medical Center www.cincinnatichildrens.org	1	523	Indiana University Health Indianapolis http://iuhealth.org	9	1,830
Citizens Memorial Hospital Bolivar, Mo. www.citizensmemorial.com	1	76	Inova Health System Falls Church, Va. www.inova.org	5	1,753
Columbia Memorial Hospital Astoria, Ore. www.columbiamemorial.org	1	25	Intermountain Healthcare Salt Lake City www.intermountainhealthcare.org	26	2,499
Community Health Network Indianapolis www.ecommunity.com	4	783	Iowa Health System Des Moines www.ihs.org	14	2,498
Concord (N.H.) Hospital www.concordhospital.org	1	238	John D. Dingell VA Medical Center Detroit www.detroit.va.gov	1	108
Continuum Health Partners New York City www.wehealy.org	4	2,257	Kane (Pa.) Community Hospital www.kanehosp.com	1	32

● Number of hospitals ● Number of beds

David Perez

“My answer on return on investment is: If we keep our patients safer, if we save one life by using technology, there is a return on investment.”

Building an IT oasis in the California desert

David Perez knew that it was time to get on the bus, literally. The chief information officer and his fellow executives from Eisenhower Medical Center in the mid-2000s had determined that they wanted the Rancho Mirage, Calif., institution to be a leader in adopting information technology. So they went on a tour of institutions that already had started down that road.

“We learned that it would not be easy,” Perez says. “We learned that there were pros and cons to every system. The most important thing we learned, though, was that this had to be something that the whole executive team supported and wanted to do.”

Eisenhower’s path to going fully digital actually started a few years earlier when in 2002 core information systems such as scheduling, registration and billing were being replaced with an enterprisewide solution. Clinical systems were next in line.

After selecting McKesson as its technology partner in 2006, EMC moved swiftly to deploy the new electronic health record. The medical center has spent \$63 million on its IT rollout, including replacing those core nonclinical information systems.

One of the biggest challenges EMC faces is getting physicians to come along, especially since 90 percent of them are independent. And, there are two competing facilities in the area. Most of the physicians have privileges at all three institutions.

“The other two hospitals were lagging behind, which was going to make mandating use of the EHR and CPOE tough for us, because they weren’t going to do that,” Perez says. “We made it mandatory — with a lowercase ‘m.’” Physicians were encouraged to use the system, but were not penalized for failing to do so. Instead, EMC’s chief medical information officer worked — and still works — to get them on board. According to EMC’s Most Wired Survey, 96 percent of physician orders — inpatient and emergency department — are done electronically.

Connecting with patients is also a big part of EMC’s strategy. In 2010, a service linking patients and clinicians launched. More than 210 physicians and 9,500 patients have signed up. Patients can get an e-consult, request a prescription refill or an appointment, receive lab results and more. Patients with chronic diseases can enter self-test results online. They also can update clinicians on compliance with medication therapies via a secure email.

Sustaining progress is one of Perez’s biggest challenges. “You have to dedicate resources and time,” he says. “You don’t want to be penny-wise and pound-foolish.”

2012 Most Wired

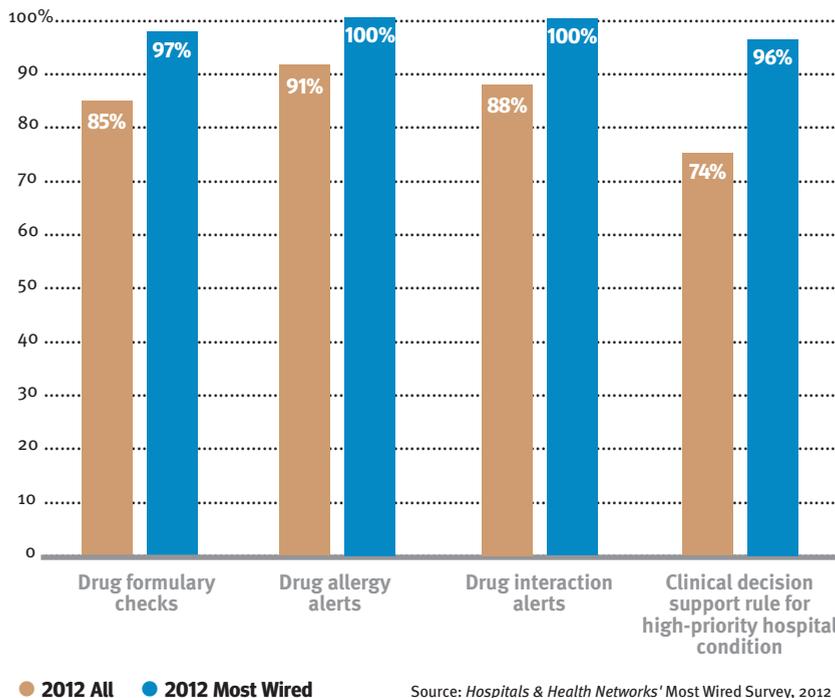
King's Daughters Medical Center Ashland, Ky. www.kdmc.com	1	465	Oklahoma Heart Hospital South Campus Oklahoma City www.okheart.com	1	46
Lafayette (La.) General Medical Center http://lafayettegeneral.com	4	344	OSF Healthcare System Peoria, Ill. www.osfhealthcare.org	7	1,249
Lake Chelan Community Hospital Chelan, Wash. http://lakechelancommunityhospital.com	1	25	Othello (Wash.) Community Hospital www.othellocommunityhospital.org	1	25
Lawrence (Kan.) Memorial Hospital www.lmh.com	1	125	Our Lady of Bellefonte Hospital Ashland, Ky. www.olbh.com	1	184
Lehigh Valley Health Network Allentown, Pa. www.lvh.org	3	918	Palmetto Health Columbia, S.C. www.palmettohealth.org	2	1,138
Lincoln Hospital & North Basin Medical Clinics Davenport, Wash. www.lincolnhospital.org	1	25	Peninsula Regional Medical Center Salisbury, Md. www.peninsula.org	1	360
Lowell (Mass.) General Hospital www.lowellgeneral.org	1	217	Piedmont Fayette Hospital Fayetteville, Ga. www.piedmontfayette.org	1	157
Loyola University Medical Center Maywood, Ill. www.loyolamedicine.org	1	511	Piedmont Hospital Atlanta www.piedmonthospital.org	1	529
Madigan Army Medical Center Tacoma, Wash. www.mamc.med.army.mil	1	232	PinnacleHealth Harrisburg, Pa. www.pinnaclehealth.org	2	591
Maimonides Medical Center Brooklyn, N.Y. www.maimonidesmed.org	1	711	Poudre Valley Health System Fort Collins, Colo. http://www.pvhs.org	2	364
Main Line Health Bryn Mawr, Pa. www.mainlinehealth.org	5	1,264	Providence Holy Family Hospital Spokane, Wash. www.holy-family.org	1	272
Maine Medical Center Portland www.mmc.org	1	637	Providence Mount Carmel Hospital Colville, Wash. www.mtcarmelhospital.org	1	25
Martin Health System Stuart, Fla. www.martinhealth.org	2	366	Providence Sacred Heart Medical Center & Children's Hospital Spokane, Wash. www.shmc.org	1	645
Mason General Hospital Shelton, Wash. www.masongeneral.com	1	25	Providence St. Joseph's Hospital Chewelah, Wash. www.sjhospital.org	1	25
Massena (N.Y.) Memorial Hospital www.massenahospital.org	1	50	Pullman (Wash.) Regional Hospital www.pullmanregional.org	1	25
Mayo Clinic Rochester, Minn. www.mayoclinic.org	2	1,244	Rady Children's Hospital - San Diego www.rchsd.org	1	370
MedCentral - Mansfield (Ohio) Hospital www.medcentral.org	1	299	Richard L. Roudebush Veterans Affairs Medical Center Indianapolis www.indianapolis.va.gov	1	184
MedCentral - Shelby (Ohio) Hospital www.medcentral.org	1	25	Riverside Health System Newport News, Va. www.riversideonline.com	5	933
Medical University of South Carolina Charleston www.musc.edu	4	709	Robert Wood Johnson University Hospital New Brunswick, N.J. www.rwjh.edu	1	610
MedStar Health Columbia, Md. www.medstarhealth.net	9	2,889	Rush Oak Park (Ill.) Hospital http://www.roph.org	1	117
Memorial Healthcare Owosso, Mich. www.memorialhealthcare.org	1	100	Rush University Medical Center Chicago www.rush.edu	1	650
Memorial Healthcare System Hollywood, Fla. www.mhs.net	6	1,776	Saint Francis Care Hartford, Conn. www.stfranciscares.org	1	595
Memorial Hermann Houston www.memorialhermann.org	11	3,514	Saint Joseph Regional Medical Center Mishawaka, Ind. www.sjmed.com	2	350
Memorial Sloan-Kettering Cancer Center New York City www.mskcc.org	1	470	Saint Peter's Healthcare System New Brunswick, N.J. www.saintpetershcs.com	1	478
Mercy Health Chesterfield, Mo. www.mercy.net	31	4,041	Saint Vincent Hospital Worcester, Mass. www.stvincentshospital.com	1	250
Mercy Medical Center Cedar Rapids, Iowa www.mercycare.org	1	341	Salem (Va.) VA Medical Center www.salem.va.gov	1	252
Meridian Health Neptune, N.J. www.meridianhealth.com	5	1,771	Samaritan Healthcare Moses Lake, Wash. www.samaritanhealthcare.com	1	48
Meriter Hospital Madison, Wis. www.meriter.com	1	318	San Francisco VA Medical Center www.sanfrancisco.va.gov	1	255
Methodist Health System Dallas www.methodisthealthsystem.org	4	1,185	Sarah Bush Lincoln Health System Mattoon, Ill. www.sarahbush.org	1	128
Methodist Medical Center of Illinois Peoria www.mymethodist.net	1	353	Sentara Healthcare Norfolk, Va. www.sentara.com	8	1,931
Metro Health Wyoming, Mich. http://metrohealth.net	1	208	Sharp HealthCare San Diego www.sharp.com	4	1,760
Middlesex Hospital Middletown, Conn. http://middlesexhospital.org	1	185	South Shore Hospital South Weymouth, Mass. www.southshorehospital.org	1	318
MidState Medical Center Meriden, Conn. www.midstatemedical.org	1	144	Spooner (Wis.) Health System www.spoonerhealthsystem.com	1	25
Ministry Health Care - St. Clare's Hospital Weston, Wis. http://ministryhealth.org	1	110	St. Clair Hospital Pittsburgh www.stclair.org	1	329
Mission Hospital Asheville, N.C. www.missionhospitals.org	1	765	St. Joseph's Healthcare System Paterson, N.J. www.stjosephshealth.org	2	900
Montefiore New York City www.montefiore.org	4	1,491	St. Joseph's Hospital Health Center Syracuse, N.Y. www.sjhsyr.org	1	431
Mountain States Health Alliance Johnson City, Tenn. www.msha.com	13	1,468	St. Luke's Rehabilitation Institute Spokane, Wash. www.stlukesrehab.org	1	101
MultiCare Health System Tacoma, Wash. www.multicare.org	4	893	St. Vincent's - Birmingham (Ala.) www.stvhs.com	1	340
Nationwide Children's Hospital Columbus, Ohio www.nationwidechildrens.org	1	394	Stanford (Calif.) Hospital and Clinics www.stanfordhospital.org	1	452
NCH Healthcare System Naples, Fla. www.nchmd.org	2	715	Stony Brook (N.Y.) University Medical Center www.stonybrookmedicine.edu	1	597
Nemaha County Hospital Auburn, Neb. www.nchnet.org	1	20	Summa Health System Akron, Ohio www.summahealth.org	2	552
North Mississippi Health Services Tupelo www.nmhs.net	6	882	Texas Health Resources Arlington www.texashealth.org	13	3,800
North Shore University Hospital Manhasset, N.Y. www.northshorelij.com	1	865	ThedaCare Appleton, Wis. www.thedacare.org	5	375
Northeast Georgia Medical Center Gainesville www.nghs.com	1	818	Tri-State Memorial Hospital Clarkston, Wash. www.tristatehospital.org	1	25
Northern Michigan Regional Hospital Petoskey www.northernhealth.org	1	178	TriHealth Cincinnati www.trihealth.com	2	1,018
NorthShore University HealthSystem Evanston, Ill. www.northshore.org	4	857	Truman Medical Centers Kansas City, Mo. www.trumed.org	2	380
Northwest Community Hospital Arlington Heights, Ill. www.nch.org	1	410	Tucson (Ariz.) Medical Center https://www.tmc.az.com	1	600
Northwestern Memorial Hospital Chicago www.nmhs.org	1	894	Union Hospital Terre Haute, Ind. www.myunionhospital.org	1	350
Ohio State University Wexner Medical Center Columbus www.medicalcenter.osu.edu	5	1,350	Union Hospital Clinton (Ind.) www.myunionhospital.org	1	25
Oklahoma Heart Hospital Oklahoma City www.okheart.com	1	99	Unity Health Center Shawnee, Okla. www.unityhealthcenter.com	1	109

● Number of hospitals ● Number of beds

Bringing value to the delivery of patient care

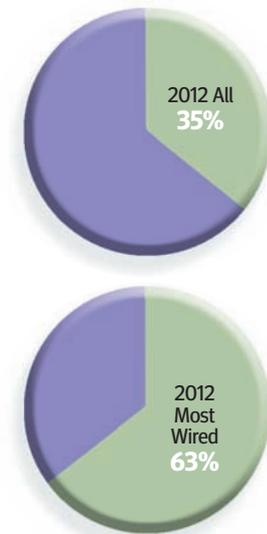
Creating a better patient experience through improved communication, to prevent complications and shorten wait times, has value. High-performing hospitals are hardwiring best practices to improve outcomes and quality of service. Access to real-time clinical information reduces errors and eliminates duplication. Checking drug interactions and drug allergies when medications are ordered is a major step in cutting medication errors; the Most Wired group has fully implemented this clinical decision support system. Nearly two-thirds of the Most Wired hospitals have implemented a compliance-driven alert system for government-required quality measures compared with slightly more than one-third of all responding hospitals.

What type of clinical decision support tools do you have?



Do you have a CMS compliance-driven alert system?

The percentage of respondents that use an automated review of CMS key indicators to provide compliance alerts



CPOE utilization among Most Wired hospitals

CPOE utilization results in lower costs and improved quality of care. At Children's Medical Center Dallas, all medication, lab and radiology orders are entered utilizing the CPOE system for 100 percent of patients admitted to the hospital's inpatient and emergency departments. "This reduces duplicate orders and unnecessary tests, which reduces cost of care," says Pamela Arora, vice president and CIO. "The CPOE tests for common serious prescribing errors and automatically sends synchronized alerts to the physician, nurse and pharmacist workflow."

Medication orders

Patients with at least one medication in their medication list have at least one medication ordered using CPOE.

More than 30% of unique patients



More than 60% of unique patients



Lab orders

Patients with at least one lab order have at least one lab order entered using CPOE.

More than 60% of unique patients



Radiology orders

Patients with at least one radiology order have at least one radiology order entered using CPOE.

More than 60% of unique patients



Source: Hospitals & Health Networks' Most Wired Survey, 2012

2012 Most Wired

University Health System San Antonio www.universityhealthsystem.com	1	498	VA Region 3, Office of Information Technology Ann Arbor, Mich. www.visn11.va.gov	18	12,691
University of Alabama at Birmingham Hospital www.uabmedicine.org	1	1,157	VA Sierra Pacific Network (VISN 21) Mare Island, Calif. www.visn21.va.gov	7	1,586
University of California Davis Health System Sacramento www.ucdmc.ucdavis.edu	1	613	Valley Hospital Ridgewood, N.J. www.valleyhealth.com	1	450
University of California, San Diego Health System http://health.ucsd.edu	2	586	Vanderbilt University Medical Center Nashville, Tenn. www.mc.vanderbilt.edu	3	903
University of Illinois Hospital & Health Sciences System Chicago http://hospital.lillinois.edu	1	491	Veterans In Partnership (VISN 11) Healthcare Network Ann Arbor, Mich. www.visn11.va.gov	8	1,820
University of Iowa Hospitals and Clinics Iowa City www.uihealthcare.org	3	729	Vidant Health Greenville, N.C. https://www.vidanthealth.com	9	1,385
University of Kansas Hospital Kansas City www.kumed.com	1	620	Virginia Mason Medical Center Seattle, Wash. www.virginiamason.org	1	336
University of Missouri Health Care Columbia www.muhealth.org	4	491	Washington, D.C. VA Medical Center www.washingtondc.va.gov	1	326
University of New Mexico Hospitals Albuquerque http://hospitals.unm.edu	5	630	West Virginia University Hospitals Morgantown www.wvuhealthcare.com	1	531
University of Pittsburgh Medical Center www.upmc.com	20	4,500	White River Junction (Vt.) VA Medical Center www.whiteriver.va.gov	1	60
University of Virginia Medical Center Charlottesville www.healthsystem.virginia.edu	1	570	Whitman Hospital and Medical Center Colfax, Wash. www.whitmanhospital.com	1	25
University of Wisconsin Hospital and Clinics Madison www.uwhealth.org	2	476	William W. Backus Hospital Norwich, Conn. www.backushospital.org	1	213
UT Southwestern Medical Center Dallas www.utsouthwestern.edu	2	370	Winthrop-University Hospital Mineola, N.Y. www.winthrop.org	1	590
UWHP Watertown (Wis.) Regional Medical Center www.uwphpwatertown.com	1	55	Womack Army Medical Center Fort Bragg, N.C. www.wamc.amedd.army.mil	1	140
VA Northeast Region 4 Albany, N.Y. www.va.gov	33	9,548	Yale New Haven (Conn.) Health System www.ynhhs.org	3	1,515
VA Palo Alto (Calif.) Health Care System www.paloalto.va.gov	3	900			

● Number of hospitals ● Number of beds



The Most Wired – Small and Rural

Ashe Memorial Hospital | Jefferson, N.C. | www.ashehospital.org
 Broadlawns Medical Center | Des Moines, Iowa | www.broadlawns.org
 Carson City (Mich.) Hospital | www.carsoncityhospital.com
 Coulee Medical Center | Grand Coulee, Wash. | www.cmccares.org
 Evergreen (Ala.) Medical Center | www.evergreenmedical.org
 Kewanee (Ill.) Hospital | www.kewaneehospital.com
 Kishwaukee Community Hospital | DeKalb, Ill. | www.kishhospital.org
 Magnolia Regional Health Center | Corinth, Miss. | www.mrhcc.org
 Marshall County Hospital | Benton, Ky. | www.marshallcountyhospital.org
 Mid-Valley Hospital | Omak, Wash. | www.mvhealth.org
 Naval Hospital Lemoore (Calif.) | www.med.navy.mil/sites/nhlem
 New London (N.H.) Hospital | www.newlondonhospital.org
 Newport (Wash.) Hospital and Health Services | www.phd1.org
 Opelousas (La.) General Health System | www.opelousasgeneral.com
 Osceola (Wis.) Medical Center | www.osceolamedicalcenter.com
 Pocono Medical Center | East Stroudsburg, Pa. | www.pmchealthsystem.org
 Ralph H. Johnson VA Medical Center | Charleston, S.C. | www.charleston.va.gov
 Samaritan Regional Health System | Ashland, Ohio | www.samaritanhospital.org
 Southampton (N.Y.) Hospital | www.southamptonhospital.org
 Stone County Medical Center | Mountain View, Ark. | www.whiteriverhealthsystem.com
 Sunnyside (Wash.) Community Hospital | www.sunnysidehospital.com
 Syringa Hospital & Clinics | Grangeville, Idaho | www.syringahospital.org
 Thayer County Health Services | Hebron, Neb. | www.thayercountyhealth.com
 U.S. Air Force Hospital | Langley AFB, Va. | www.jble.af.mil
 Washington County Hospital & Nursing Home | Chatham, Ala. | www.wchnh.org



The Most Improved

Allegiance Health | Jackson, Mich. | www.allegiancehealth.org
 Care New England Health System | Providence, R.I. | www.carenewengland.org
 Chester County Hospital | West Chester, Pa. | www.cchosp.com
 Cook Children's Medical Center | Fort Worth, Texas | www.cookchildrens.org
 CoxHealth | Springfield, Mo. | www.coxhealth.com
 Guthrie Health | Sayre, Pa. | www.guthrie.org
 Heartland Health | Saint Joseph, Mo. | www.heartland-health.com
 Kaiser Permanente | Oakland, Calif. | www.kp.org
 Mary Greeley Medical Center | Ames, Iowa | www.mgmc.org
 Methodist Hospital System | Houston | www.methodisthealth.com
 Munson Medical Center | Traverse City, Mich. | www.munsonhealthcare.org
 New York Presbyterian Hospital | New York City | www.nyp.org
 Norman (Okla.) Regional Health System | www.normanregional.com
 North Kansas City (Mo.) Hospital | www.nkch.org
 Robert Wood Johnson University Hospital at Hamilton (N.J.) | www.rwjhamilton.org
 Saint Vincent Health Center | Erie, Pa. | www.saintvincenthealth.com
 Sanford USD Medical Center | Sioux Falls, S.D. | www.sanfordhealth.org
 St. Elizabeth Hospital | Enumclaw, Wash. | www.fhshealth.org/stelizabeth
 Stormont-Vail HealthCare | Topeka, Kan. | www.stormontvail.org
 Susquehanna Health | Williamsport, Pa. | www.susquehannahealth.org
 SwedishAmerican Health System | Rockford, Ill. | www.swedishamerican.org
 Tanner Medical Center | Carrollton, Ga. | www.tanner.org
 Thomas Jefferson University Hospitals | Philadelphia | www.jeffersonhospital.org
 Trinitas Regional Medical Center | Elizabeth, N.J. | www.trinitashospital.org
 Trinity Health | Minot, N.D. | www.trinityhealth.org

Protecting patient privacy and data

Most Wired hospitals are more prepared than their counterparts for security breaches and employ more advanced security tools to protect patient data. Ninety-three percent of Most Wired hospitals employ intrusion detection systems compared with 77 percent of the total respondents. “Half of risk mitigation is knowing what is going on in your enterprise,” says Mac McMillan, CEO, CynergisTek Inc., and former chair of a Healthcare Information and Management Systems Society’s security working group. “Most Wired hospitals are implementing more sophisticated IT security architectures and are better informed.” Many organizations still do not perform risk analyses and penetration testing on a regular basis. “What it tells us is that we still have relatively immature risk management for the most part in the industry,” McMillan says.

The systematic buildup of information security capabilities took five years at Atlantic Health System, Morristown, N.J. “Starting with a regular auditing and assessment program, we established a vulnerability baseline,” says Linda Reed, vice president and CIO. “We layered upon that intrusion detection, device encryption, mobile media encryption, PHI detection, password and access parameters, cyber liability insurance, and annual staff education requirements. While tools are important, they only do half the job. The other half is people and instilling a sense of awareness, vigilance and importance in protecting personal health information.”

Annual testing and risk assessments

Risk analysis to identify compliance gaps & security vulnerabilities



Penetration testing to identify security vulnerabilities



Wireless security assessment



Public Internet uses/social media risk assessment



Source: Hospitals & Health Networks' Most Wired Survey, 2012

Security measures hospitals use for authorized users

	2012 All	2012 Most Wired
Access control (biometrics, key cards, smart cards)	85%	94%
Data loss prevention	58	70
Identity management	54	67
Intrusion detection systems	77	93
Physical security incident management	64	85
PKI/digital signature systems	50	69
Privacy audit systems	68	82
Security incident event management	66	81
Single sign-on	62	76
Two-factor authentication	54	71

Source: Hospitals & Health Networks' Most Wired Survey, 2012

The 2012 Innovator Awards



The 2012 Innovator Awards **Winners**

Avera | Sioux Falls, S.D. | www.avera.org
Program: eEmergency

Cullman (Ala.) Regional Medical Center | www.crmhospital.com
Program: Surgery Tracking Board Initiative

UPMC Mercy | Pittsburgh | www.upmc.com/locations/hospitals/mercy
Program: Innovative Use of Smart Phones in the Clinical Setting

The 2012 Innovator Awards **Finalists**

Lehigh Valley Health Network | Allentown, Pa. | www.lvh.org
Program: Digital Pens for Emergency Care at the Raceway

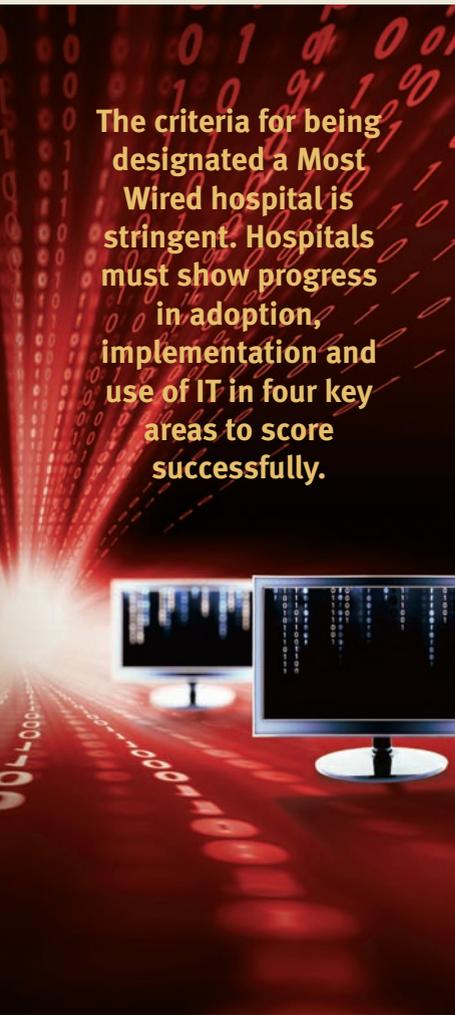
Texas Health Resources | Arlington | www.texashealth.org
Program: Using Technology to Reduce Catheter-Associated Urinary Tract Infections

University of Utah Health Care | Salt Lake City | <http://healthcare.utah.edu/hospital>
Program: Electronic Health Records Bridge

| BY SUZANNA HOPPSZALLERN |

How can **YOU** become one of Health Care's Most Wired?

For the 14th year, *H&HN* has named the Most Wired Hospitals and Health Systems based on the Most Wired Survey. The 2012 survey results build on the analytic structure that was implemented in 2010 after two years of redesign. The methodology sets specific requirements in each of four focus areas. If any of these requirements are not met, the organization does not achieve the Most Wired designation. Thus, an organization may have many advanced capabilities, yet not achieve Most Wired status. The four focus areas are:



The criteria for being designated a Most Wired hospital is stringent. Hospitals must show progress in adoption, implementation and use of IT in four key areas to score successfully.

1 | Infrastructure

- Identity management, access controls and audit capabilities
- Data recovery plan testing and disaster recovery restoration capabilities within 72 hours
- Security technology safeguards, including encryption for laptops
- Regular risk analysis, security assessments and penetration testing
- Wireless networks for clinical applications, accessible by clinicians and staff

2 | Business and Administrative Management

- Expanded use of electronic payer transactions
- Automation of revenue-cycle processes
- Partially automated management systems for supply chain and use of bar code technology
- Patient flow automation
- Human resource management and training systems
- Enterprise decision support and business intelligence

3 | Clinical Quality and Safety (inpatient/outpatient hospital)

- Patient demographics, vital signs and status, and documentation recorded as structured data
- Routine use of electronic health record and clinical information systems by nurses, pharmacists and physicians
- Physician access to clinical pathways/order sets and medical image review across care settings
- Clinical decision support enabled for drug allergy alerts and drug interaction alerts
- Digital clinical imaging/PACS in hospital and clinic
- CPOE for medication orders
- Point-of-care medication administration systems and automated medication management
- Electronic recording of quality data
- Electronic recording of infection control data

4 | Clinical Integration (ambulatory/physician/patient/community)

- Physician-office EMR connectivity for clinical documentation and viewing results
- Physician office e-prescribing
- Online health information for patient education
- Interoperability of applications within hospital

This year, 662 hospitals and health systems completed the survey, representing 1,570 hospitals, roughly 27 percent of all U.S. hospitals. Even with additional requirements, the number of hospitals and health systems designated as Most Wired increased to 215 organizations. *H&HN* uses the same criteria to name the 25 Most Improved and the 25 Most Wired—Small and Rural.

From a set of separately submitted essays, a panel of hospital and information technology leaders identifies noteworthy IT projects and names the Innovator Award winners and finalists. IT projects are evaluated on achievement of business objective, creativity and uniqueness of concept, scope of solution and impact on the organization.

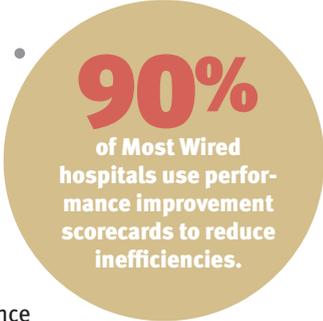
The 2012 Most Wired Survey was made possible by the generous support of McKesson, AT&T, CareTech Solutions and in cooperation with CHIME, the AHA and *H&HN*.

Characteristics of high-performing organizations

When physicians and nurses use technology to deliver patient care, real-time visibility into how well those systems are working is critical. "If physicians experience slow systems or unavailable networks, patient care can be jeopardized," says Pat Milostan, chief operating officer, CareTech Solutions, Troy, Mich., an IT services company for hospitals.

Seventy-five percent of Most Wired hospitals monitor the performance of their applications and infrastructure proactively to resolve IT issues before they negatively affect end-user experience compared with 58 percent of all responding hospitals. Milostan notes that this gap is a telltale sign of an IT environment that is very reactive, responding to many crises instead of proactively getting ahead of the issues. The percentage of Most Wired hospitals using executive dashboards to manage infrastructure performance was lower than expected at 67 percent.

Ninety percent of Most Wired hospitals and 73 percent of all surveyed hospitals use performance improvement scorecards to reduce inefficiencies. To safely provide the right level of care and optimize patient flow, 74 percent of Most Wired hospitals and 57 percent of all surveyed hospitals use automated patient flow systems. "The only way a health system will meet the Triple Aim [of better patient care, better population health and lower costs] is to have robust information technology solutions," says Heath Bell, CIO and vice president of revenue cycle, KishHealth System, DeKalb, Ill.



Monitoring IT performance

	2012 All	2012 Most Wired
Use tools to monitor if infrastructure components are up or down	96%	99%
Use tools to monitor the end-user experience	58	75
Use automated tools to escalate problems to highly skilled technicians (Level 2 or 3) based on category and type	72	86
Analyze issues to determine root-cause analysis as a means to put fixes in place to avoid recurrences	84	95
Use executive dashboard to manage infrastructure by exceptions/anomalies	51	67

Monitoring hospital/health system performance

	2012 All	2012 Most Wired
Patient logistics management includes patient status, orders pending, critical lab results and room availability	57%	74%
Workforce management tool (productivity and cost trends)	72	90
Performance improvement scorecards	73	90
Real-time, Web-based operational budget vs. expense monitoring, financial modeling and budget forecasting	53	72

Source: *Hospitals & Health Networks'* Most Wired Survey, 2012

The 2012 Most Wired Team

H&HN appreciates the efforts and support of the many individuals who contributed to the success of the Most Wired Survey and the research and analysis that go into the results article. The following is a partial list of the many individuals who contributed to the 2012 H&HN Most Wired Survey.

HEALTH FORUM STAFF: Haydn Bush, Linda Bendixen, Mark Colucci, Jeff DeGuilio, Susan Edge-Gumbel, Suzanna Hoppszallern,* Clisby Jackson, Danny Jackson, Kim Jackson, Jane Jeffries, Bob Kehoe, Peter Kralovec, Chuck Lazar, Barbara Novosel, Jennifer Pagan, Steve Reczynski, Lee Ann Jarousse, Bill Santamour, John Santore, Christy Thomas, Sandy Rebitzer, Christy Remedios,* Lisa Schulte, Jerry Stoeckigt, Leslie Vloedman, Matthew Weinstock, Marty Weitzel, Tanisha Woodson-Shelby

MCKESSON STAFF: Randy Hyun,** Joey Nord, Lisa St. Vrain, Leslie White

OTHER SPONSOR STAFF: Jim Giordano,** CareTech Solutions; Adena Handly,** AT&T

2012 MOST WIRED SURVEY DEVELOPMENT ADVISERS: George Arges, senior director, health data management group, American Hospital Association, Chicago; Allana Cummings,* CIO, Northeast Georgia Health System, Gainesville; Pamela McNutt,* senior vice president and CIO, Methodist

Health System, Dallas; David Muntz,* principal deputy national coordinator, Office of the National Coordinator for Health IT, Health & Human Services, Washington, D.C., and former senior vice president and CIO, Baylor Health Care System, Dallas; Patricia Skarulis,* vice president and CIO, Memorial Sloan-Kettering Cancer Center, New York City; Jim Veline,* senior vice president and CIO, Avera Health, Sioux Falls, S.D.; Chantal Worzala, director of policy, AHA, Washington, D.C.

INNOVATOR AWARD JUDGES: Jim Albin, senior vice president and CIO, St. Luke's Episcopal Health System, Houston; George Arges, AHA, Chicago; Maureen Belley, CIO, Lowell (Mass.) General Hospital; Russ Branzell, CEO, Poudre Valley Medical Group, and former CIO, Poudre Valley Health System, Fort Collins, Colo.; Kermit Moore, COO, Nemaha County Hospital, Auburn, Neb.; Christy Remedios, executive director, data and coding development, Health Forum, Chicago; Guy Rivers, CFO and CIO, Columbia Memorial Hospital, Astoria, Ore.; Bill Spooner, senior vice president and CIO, Sharp HealthCare, San Diego; Jennifer Towne, program manager, Health Research & Educational Trust, Chicago; Tim Zoph, senior vice president, administration and CIO, Northwestern Memorial Hospital, Chicago

*Members of the Most Wired Advisory Board
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