On this page in the last issue, we erroneously stated the year of Dr. Will’s address to Rush University Medical Center (1910). We regret the error.
When I first came to Mayo Clinic in 1985, I was quite impressed by the infrastructure available, including the latest medical and information technology systems. There is no way I could have predicted the advances in technology we would have access to today.

Electronic medical records enable physicians at various locations to consult with one another in real time. A Mayo Health System provider can use AskMayoExpert via a computer or mobile device to learn whether a patient with newly diagnosed lung cancer is a potential candidate for surgery. While the patient will be referred to specialists for ongoing care, the primary care physician has immediate access to Mayo-vetted, condition-specific practice expertise to inform the patient. It’s the next best thing to having a specialist in the next room, and it’s a significant step in having Mayo expertise here, there and everywhere.

Similarly, having secure access to patient-specific information regardless of location is a significant time-saver. When I am on hospital service, I use our new EMR app on an iPad or iPhone to review patients’ electronic medical records. Being able to do this without need of a computer saves considerable time, which means more face-to-face time with patients.

Mayo is continuously adopting new technologies to enhance patient care outcomes, safety and efficiency while ensuring appropriate security measures are taken. I think you will be surprised to learn how far along Mayo is in technology use. I like to think Drs. Will and Charlie would have eagerly embraced these technology applications as we continue to share Mayo Clinic’s knowledge and expertise with people around the world.

Eric Edell, M.D.
Secretary-Treasurer
Mayo Clinic Alumni Association
REACHING BEYOND

How Mayo Clinic is using technology in its continuing evolution

John Noseworthy, M.D., president and CEO of Mayo Clinic, says that how Mayo reaches beyond its walls to serve people — in their homes, their workplaces and their communities — will be key to its future.

“It is increasingly important that we find ways to reach out to those people who may not be able to come to a Mayo Clinic campus. We see about 500,000 people a year on our campuses, but many more than that would like to see us,” says Dr. Noseworthy. “New technology, new business relationships and affiliations, and new ways of working together will help us get there.”

Increasingly, Mayo Clinic is harnessing the powers of technology to spread knowledge, empower patients, develop relationships with other providers, and increase efficiency and effectiveness.

Some ideas for how to use technology to enhance Mayo’s mission come from physicians. Others come from divisions, departments or work groups. Whatever their origin, new ideas are discussed by physician-led practice groups. The ideas that are developed into pilot projects are measured and improved before consideration for enterprise-wide implementation.

Those who regard new technology with skepticism should consider that in 1935, William J. Mayo, M.D., told his staff, “If we’re satisfied, we’re lost.” He said medicine and Mayo Clinic must constantly move forward to continue to be relevant to patients.

“Mayo Clinic is arguably the most trusted name in health care — a brand known the world over, but we must continue to evolve,” says Dr. Noseworthy.

The pages that follow describe some of the ways Mayo Clinic is employing technology to facilitate this evolution.

It is increasingly important that we find ways to reach out to those people who may not be able to come to a Mayo Clinic campus.

John Noseworthy, M.D. | President and CEO | Mayo Clinic
A century ago, the Mayo brothers traveled the world to spread their medical knowledge, gain new information, and connect with medical professionals and patients. Today, Mayo Clinic is involved with social media — a 21st century version of the same concept.

Social media — YouTube, Facebook, Twitter, podcasts and blogs — can reach a worldwide audience with much less travel.

“Social media is about sharing information and experiences, building relationships and strengthening ties,” says Lee Aase, director, Mayo Clinic Center for Social Media. “Through electronic and Internet tools, we can reach people where they habitually seek information, not make them search for our information or leave it to chance that they will encounter Mayo Clinic in their daily lives.

“Mayo Clinic is geographically challenged, with 5 percent of patients who come to Rochester traveling from 500 or more miles away. The more we reach out to individuals, communities and organizations around the world, the more it will help fulfill our goal to spread what we know about health and health care far and wide.

Social media is the modern day version of word of mouth or sharing information over the back fence — using new tools to do old things.”

Victor Montori, M.D., medical director for the Mayo Clinic Center for Social Media and a consultant in the Division of Endocrinology, says Mayo Clinic is involved in social media, in part, to increase transparency in health care. “Through social media, we engage proactively in sharing what we know, including opinions about what is not in patients’ best interests, and responding to the community’s input,” says Dr. Montori. “In this bidirectional communication, we can identify and meet patients’ evolving needs. Feedback from the global community of patients is valuable, whether they ever enter the doors of a Mayo facility or not. We are an authentic voice, providing information patients can trust.”
Mayo Clinic offers training and guidance for its physicians and staff members about appropriate use of social media. “Our stance is that it is appropriate to share general information about topics via social media,” says Dr. Montori. “But specific relationships should occur in accordance with Mayo’s practice guidelines.”

Mayo also is using social media to improve communication among its 56,000 employees, including videos featuring John Noseworthy, M.D., president and CEO, discussing aspects of Mayo Clinic’s strategic plan. Internal blogs stimulate discussions about the strategic plan, and feature new employees introducing themselves and discussing why they joined Mayo Clinic.

Mayo Clinic is the most popular medical provider channel on YouTube, a popular video-sharing website. Mayo’s YouTube channel features more than 1,000 patient stories and physician interviews.

In 2009, Ruben Mesa, M.D., a consultant in the Division of Hematology at Mayo Clinic in Arizona, posted a 10-minute YouTube video about myelofibrosis. The video, which has received more than 6,000 views, resulted in 50 out-of-state patients scheduling appointments at Mayo Clinic in Arizona to determine if they had this disease of the blood and bone marrow and, if so, establish a course of treatment.

In 2006, Richard Berger, M.D., Ph.D., a consultant in the Division of Orthopedic Surgery at Mayo Clinic in Rochester, performed surgery on Jayson Werth, a professional baseball player. Werth, an outfielder formerly with the Los Angeles Dodgers, had injured his wrist a year before when he was hit by a pitch. He’d had chronic pain and was considering life without baseball if he could not get to the root of the injury. The surgery to repair an ulnotriquetral (UT) split tear was successful, and Werth was signed by the Philadelphia Phillies. Since then, he has signed with the Washington Nationals.

Mayo Clinic posted a YouTube video of Werth talking about his injury and the help he received at Mayo Clinic,
A video Ruben Mesa, M.D., posted on Mayo Clinic’s YouTube channel in 2009 received more than 6,000 views and resulted in 50 patient appointments. Mayo Clinic’s YouTube channel is the most popular medical provider channel on the video-sharing website.

which led to a story in USA Today. Mayo and USA Today held a Twitter chat the day the article appeared, giving readers a chance to ask questions of Dr. Berger. A woman from Washington, D.C., who had wrist pain for five years participated in the chat and came to Mayo Clinic for the same surgery. In the first half of 2010, Dr. Berger performed more procedures to repair UT split tears than he did in the entire previous year. He also referred interested patients to former residents and fellows who trained with him and are skilled at this procedure.

In another use of YouTube, Mayo Clinic has developed a pilot project to introduce patients to their physician before their first office visit. Patients are e-mailed a link to a YouTube video, which features the physician talking about his or her experience, approach to patient care and common problems the physician treats. The project aims at getting patients to think in advance about what they would like to accomplish in their first visit and to establish a rapport with the physician. Mayo is planning a study to measure whether “meeting” the physician beforehand affects patient satisfaction and outcomes.

Mayo Clinic has more than 34,000 followers on Facebook, which features posts from patients, discussion topics, and audio and video podcasts.

Aase says that when people use their own names and post comments their “friends” can see, they tend to act responsibly. That said, not all posts are positive. “If you filter out negative comments, people notice and become cynical about your commitment to transparency,” he says. “When negative comments occur, it provides the organization with an opportunity for service recovery — to turn a dissatisfied customer into a satisfied one.”

Mayo Clinic’s posts on Twitter link to patient stories and job postings, promote online physician discussions about diseases and conditions via Mayo’s Medical Edge Weekend radio call-in show, and provide physician commentary about health and medical topics in the news. Mayo Clinic has more than 100,000 Twitter followers.

“We use Twitter to gather questions for Medical Edge Weekend,” says Aase. “One Saturday, questions came from Indonesia, Australia and North Carolina. A year before, without Twitter, questions came from Rochester, Zumbrota and Mazeppa, Minn. The potential reach with social media is incomparable.”

Mayo Clinic posts five- to 20-minute audio segments, with physicians’ insights about various health topics for individuals who subscribe to automatic delivery to portable media players or computers.

Mayo Clinic has 12 general blogs for people interested in information about or support for specific health and medical topics, from Alzheimer’s disease to sexual health. Bloggers can post comments and exchange messages with Mayo experts and others. Mayo also has these blogs:

- A news blog (newsblog.mayoclinic.org) for media, patients and consumers interested in learning more about stories in the news.
- The Mayo Clinic Health Policy Center blog (healthpolicyblog.mayoclinic.org) for news and conversation about health care reform efforts.
Mayo Clinic is ahead of the curve in social media. So far ahead, in fact, that other health care organizations around the world are seeking guidance from Mayo Clinic.

“Other organizations hold Mayo up as a reason their institutions should get involved with social media: ‘Look, Mayo is doing this so it must be OK. We should do it, too,’” says Lee Aase, director, Mayo Clinic Center for Social Media. “They also recognize that we have been through the initial phases of the learning curve and have success with social media, and they ask us to help them. We are in a position to lead the social media revolution in health care, spread knowledge and encourage collaboration among providers, and contribute to the health and well-being of people everywhere.”

Mayo Clinic developed a Center for Social Media to spur broader and deeper engagement in social media by hospitals, medical professionals and patients. The center aims to improve health literacy, health care delivery and population health worldwide. This includes Mayo’s physicians, researchers and staff who increasingly use social media to provide in-depth information and connect in more comprehensive ways.

Through the Center for Social Media, Mayo Clinic provides training for health care employees, consulting and coaching for organizations that want to engage in social media activities, information resources, and conferences and events. Services are available at Mayo Clinic and on site at organizations’ locations. Using the internal training it developed for its own departments, Mayo will provide organizations with the tools and knowledge necessary to develop and run a successful social media presence.

“Typically, health care is slow to adopt new things,” says Aase. “With the Center for Social Media, we can help accelerate that pattern for the benefit of everyone involved.”

**Network within the Center**

Within the Center for Social Media is the Social Media Health Network. This newly formed group of international members is dedicated to using social media to promote health, improve health care and fight disease. Member organizations will serve as a force for learning how to apply social media tools effectively in the health context and developing best practices.

Charter members include:

- Bon Secours Health System, Marriottsville, Md.
- Inova Health System, Falls Church, Va.
- Mission Health System, Asheville, N.C.
- Radboud University Nijmegen Medical Centre, Nijmegen, Netherlands
- Swedish Health Services, Seattle, Wash.

Since the network was announced in September 2010, membership has grown to more than 20 organizations.

“The Social Media Health Network will be active on the Internet but will be much more than a website [socialmediahealthnetwork.org],” says Aase. “The network will foster real relationships among health-related organizations and with patients, and those will be cultivated through a mix of online and real-world connections.”
MOBILE, EASIER, FASTER ACCESS TO MAYO INFORMATION

iPhone application

Mayo Clinic physicians on rounds no longer have to bob back and forth between the hallway and patient rooms to access the electronic medical record (EMR) at computer stations, logging on and off each time. Or go to a telephone afterward to dictate notes about the visits. Now, physicians can spend more time in patient rooms, checking the EMR from mobile devices — Apple’s iPhone, iPad or iPod Touch. Clinical notes can be dictated directly into the iPhone for incorporation into the EMR.

When physicians are off-campus and patients call into the office with emergencies, physicians can access the EMR from an Apple mobile device. By simply touching the screen, physicians can call patients with recommendations.

We developed this application because physicians, in a satisfaction survey, said they wanted mobile, easier and faster access to Mayo information. All indications are that we have achieved that.

Mike Harper, M.D. | Executive Dean for Practice | Mayo Clinic
Other recently introduced Mayo Clinic iPhone applications include:

**Quarterly Mobile**
All staff have access to Mayo Clinic’s *Quarterly Directory* application, which includes a search function; recently called settings; and one-touch calling, paging, texting and e-mailing.

**AskMayoExpert**
All staff have access to this online point-of-care, just-in-time clinical tool designed for primary care providers. It offers Mayo-vetted clinical information about conditions and their treatment, and contact information for Mayo experts.

Sure, these conveniences benefit physicians. More importantly, they represent administrative efficiencies, eliminate distractions and permit greater focus on patient care.

“Mayo’s development of its own iPhone application facilitates information availability to staff anytime, anyplace,” says Mike Harper, M.D., executive dean for Practice. “This supports our overall strategic plan, which emphasizes that Mayo’s reach needs to be beyond the doors of Mayo Clinic. Our physicians who were involved in the pilot project of the iPhone application said this is the easiest way to access the EMR ever offered and one of the best things Mayo has done to enhance electronic systems for clinical practice.

“We developed this application because physicians, in a satisfaction survey, said they wanted mobile, easier and faster access to Mayo information. All indications are that we have achieved that.”

Within the first several weeks after introduction, 1,000 physician iPhone users had downloaded the application and more than 700 had become active users.

The iPhone application allows physicians to securely view the EMR, saving from 10 to 60 minutes per day on hospital rounds, according to physician reports. It was introduced to all three Mayo Clinic campuses between August and November 2010, and downloaded via Mayo Clinic’s internal “app store” to personally owned devices that meet Mayo-approved specifications for security and technical standards.

Physicians can view one week’s worth of documents and reports, laboratory test results, medication information, vitals signs and fluids, and patient data. Older information is available on the desktop application. In development are a radiology image viewer and enhanced viewing capability for the iPad.
VIRTUAL WORLD POSSIBILITIES ON MAYO CLINIC ISLAND

Second Life

Imagine a presentation, education or training session that is more engaging for the brain than traditional formats:

- A patient who has had knee replacement surgery points a webcam at his leg. From his home, he performs movements to measure his range of motion, while he and his provider watch this activity through his avatar — a customizable figure — in a Second Life environment, a virtual world accessible via the Internet.
- A pulmonary medicine resident learns how to perform bronchoscopy in Second Life by making her avatar move instruments equipped with sensors.
- Pregnant patients interact in a virtual world and receive lifestyle coaching and support from providers and other patients.

Mayo Clinic, working closely with its Center for Innovation, is exploring opportunities such as these to enhance patient care, education and training with virtual worlds and, specifically, with a product called Second Life. Currently, 20 million people around the world have accounts in Second Life.

“Technology is moving toward interactivity and three-dimensional modeling, so we are determining the best value to enhance Mayo’s education, research and patient mission,” says Brian Kaihoi, online experience developer, Mayo Clinic Center for Innovation. “We said the same thing at the dawn of the Internet. Surely, no one today would suggest we abandon the Internet. Similarly, we explore the implications of other technologies as they emerge.”

In March 2010, Paul Limburg, M.D., a consultant in the departments of Gastroenterology and Hepatology and Preventive, Occupational, and Aerospace Medicine, presented Mayo’s first lecture in the Mayo Clinic Conference Center in Second Life. The lecture took place on Mayo Clinic Island, Mayo’s space in this virtual universe. Dr. Limburg’s avatar, a digital character created to move and interact with others in this environment but using his real voice, described tools and tips to prevent colorectal cancer. Dr. Limburg’s verbal presentation was supported by slides visible to participants on their computer screens. Dr. Limburg interacted by answering questions about cases. The audience in the amphitheater included characters that represented other providers in the United States and Europe and patients with an interest in the topic.

Providers who are interested in presenting in Second Life work with the Center for Innovation to coordinate presentations.
In a virtual world presentation, you can have nondisruptive conversations with others, ask questions and make comments by entering text or with voice as appropriate. The presenter ... can adapt the presentation along the way to make it more engaging.

Paul Limburg, M.D. | Departments of Gastroenterology and Hepatology and Preventive, Occupational, and Aerospace Medicine Consultant | Mayo Clinic

They can create avatars, or staff members will create them on their behalf. Second Life presentations can be done anywhere with a computer and a network connection. Providers wear a headset, watch a computer screen and advance their slides with a mouse. A handful of staff members assist by directing participants about what to do, organizing incoming questions for the presenter and providing technical assistance.

“In a traditional online presentation, people often get bored after a few minutes,” says Dr. Limburg. “In a face-to-face presentation, they usually do not talk because it can be disruptive, communication is usually one way and you have to look at a screen to see the visuals. In a virtual world presentation, you can have nondisruptive conversations with others, ask questions and make comments by entering text or with voice as appropriate. The presenter sees all this and can adapt the presentation along the way to make it more engaging. This was a very satisfying experience for me and very effective for those in the audience.”

“People who haven’t been involved with a virtual world have difficulty imagining why anyone would,” says Kaihoi. “Those involved enjoy learning and socializing in a more interactive way. Additionally, providing information in a virtual world allows people who can’t come to a Mayo Clinic location to be involved in the lecture, presentation or support group session — overcoming the barriers of distance.

“Mayo Clinic has a history of experimenting, learning and exploring new ways for health care to be experienced. Seeing what might be applicable to our mission in a virtual environment has required only a minimal investment and is a logical extension of what we already do with our websites. This is the type of cutting-edge research and experimentation you would expect Mayo Clinic to be engaged with.”

What is Second Life?

Second Life is a virtual world environment produced by Linden Lab, Inc. Virtual world environments are online, three-dimensional spaces where multiple users interact with each other. Visiting a website is a solo experience. Virtual world visits are interactive.

How can I look at Mayo Clinic Island in Second Life?
Second Life and other virtual worlds require you to download free software on your computer and create an account. After you have done this, you can search for Mayo Clinic in Second Life.

What is an avatar?
This is your visual representation in a virtual world. You create an avatar when you create your account. You can select a standard avatar or customize it.

Is my identity revealed to others in Second Life?
When you create your account, you provide basic information. However, you decide whether to reveal this information when you interact in Second Life. Some activities you may register for will require you to reveal this information.

How can I learn about Mayo Clinic offerings in Second Life?
You can subscribe to a Mayo Clinic mailing list in Second Life. You also may hear about offerings via social media, such as Twitter and blogs.

At one time, Mayo Clinic was small enough that every physician knew every other physician. That was a convenient arrangement when consultations were necessary. Today, however, with 3,700 physicians and scientists across three Mayo Clinic campuses and 70 Mayo Health System locations, it is next to impossible to know everyone, and the expert to consult may be on another campus.

AskMayoExpert connects Mayo physicians by bringing the best of what Mayo knows to the entire team. This online provider-to-provider resource, introduced in 2007, supplies Mayo-vetted medical knowledge and expert contact information at the point of care. AskMayoExpert is accessible via any computer on any campus or any Apple mobile operating system — iPhone, iPad and iPod Touch — that meets Mayo-approved specifications for security and technical standards.

“There has been an explosion of medical literature, and it’s impossible for an individual physician to process all of it,” says Jane Shellum, administrator, Education Administrative Services. “Ask MayoExpert boils down that information to what the physician needs to know at the point of care. This effort to harness Mayo’s collective knowledge and expertise is an institutional priority and is designed to enhance patient care.”

It really fit the point-of-care, just-in-time format that we need in practice. AskMayoExpert helps me incorporate the expertise of others at Mayo into my practice.

Joseph Furst, M.D. | Family Medicine Consultant, Employee and Community Health | Mayo Clinic
AskMayoExpert boils down that information to what the physician needs to know at the point of care. This effort to harness Mayo's collective knowledge and expertise is an institutional priority and is designed to enhance patient care.

Jane Shillum | Administrator, Education Administrative Services | Mayo Clinic

The philosophy behind AskMayoExpert aligns with the well-known viewpoint of William J. Mayo, M.D., as expressed in his 1910 remarks to the graduating class of Rush Medical College in Chicago:

“As we in medicine grow in learning we more justly appreciate our dependence on each other. The sum total of medical knowledge is now so great and wide spreading that it would be futile for any one man … to assume that he has even a working knowledge of any part of the whole … The best interest of the patient is the only interest to be considered, and in order that the sick may have the benefit of advancing knowledge, union of forces is necessary … It has become necessary to develop medicine as a cooperative science; the clinician, the specialist, and the laboratory workers uniting for the good of the patient, each assisting in elucidation of the problem at hand, and each dependent upon the other for support.”

Joseph Furst, M.D., a family medicine consultant in Employee and Community Health at Mayo Clinic in Rochester, uses AskMayoExpert to enhance the care he provides. “For conditions I see less frequently, it’s difficult to keep current with treatment goals,” he says. “I first used AskMayoExpert to look for the iron/ferritin targets in hereditary hemochromatosis. I was pleasantly surprised to see the information plainly presented and not buried in pages of text. It really fit the point-of-care, just-in-time format that we need in practice. AskMayoExpert helps me incorporate the expertise of others at Mayo into my practice.”

About AskMayoExpert

- Concisely answers essential clinical questions about conditions and their treatment.
- Provides important facts about clinical topics — 700 to date, including content from 21 departments or divisions.
- Includes a list of Mayo experts on each topic for users to contact with additional questions.
- Directly links physicians to other resources, including Mayo library materials, Mayo Authors Database and patient education materials.
- Is used by both primary care providers and specialists with questions outside of their specialty areas.
- Is easy to access and use. With the iPhone application, providers can call, page or text an expert colleague by touching the screen.
- Is reviewed and approved by at least three board-certified specialists in the area of practice, and content is updated at least once a year to maintain relevancy and accuracy.
- Is continually improving with provider use and feedback.

Future state

In 2011, AskMayoExpert content will be integrated into the electronic medical record to make information even easier to access during patient visits.

Also planned for 2011 is content related to Mayo’s new Care Process Models, agreed-upon standards of care or treatment algorithms for every Mayo location.

Financial support from patients and alumni has assisted in the development of AskMayoExpert; future gifts will help expand the program.
BUILDING THE HEALTHIEST COMMUNITY

Employee and Community Health uses technology to make health recommendations, reduce visits and improve responsiveness

Mayo Clinic in Rochester wants to have the healthiest work force and community in America. To accomplish this tall order, Mayo’s Employee and Community Health (ECH) developed information and knowledge management systems to improve patient care and outcomes. ECH serves employees, their dependents and area residents.

“Our EMR [electronic medical record] contains a great deal of information, which — if extracted and rules and guidelines are applied — can be of significant benefit to providers and patients,” says Rajeev Chaudhry, M.D., physician leader for Mayo Clinic’s Health Information Management System efforts, Employee and Community Health.

Doug Parks, administrator for ECH and Information and Knowledge Management Systems, says Mayo Clinic is involved in helping define the best primary care model and demonstrating how new models of care improve health outcomes. “We are oriented toward thinking about different ways to provide health care, including using technology to improve efficiency and effectiveness,” says Parks.

“Eventually, we will be judged by how many patients we don’t see versus how many we see face to face.”

Among the developments Employee and Community Health has implemented to enhance care are the Generic Disease Management System, population management services, eConsults and patient online services, including eVisits. “The EMR is the crucial link in all of these services,”

Our EMR [electronic medical record] contains a great deal of information, which — if extracted and rules and guidelines are applied — can be of significant benefit to providers and patients.

Rajeev Chaudhry, M.D. | Physician Leader, Mayo Clinic’s Health Information Management System | Employee and Community Health
Not only has GDMS created more consistent standardized care, but it also has generated time savings during the office visit. A provider satisfaction survey revealed that GDMS saved providers five minutes per patient visit and saved nurses three minutes per visit. Providers indicated they use that extra time to provide patient care, including education. Preventive services rates and chronic disease management quality metrics have improved significantly since GDMS was introduced.

Approximately 2,500 staff members have used GDMS regularly — in approximately 300,000 patient visits per year.

**Generic Disease Management System (GDMS)**
*Introduced January 2008*

This point-of-care decision support tool suggests age- and sex-specific preventive services and chronic disease management care recommendations for adult and pediatric patients.

For every patient visit, the software program generates a summary culled from real-time data in the EMR and Mayo Clinic databases. Clinical decision support tools based on guidelines approved by the Clinical Practice Committee are applied, and the result is recommended actions for the patient. This helps disseminate Mayo Clinic’s core processes in a standardized manner to improve and individualize care delivery for every patient. The primary care provider doesn’t have to search through the medical record to advise the patient, and the patient leaves with a copy of care recommendations and care plans for the preventive services and chronic conditions management.

**Population management services**
*Introduced July 2009*

The model of proactive population management for preventive services and chronic conditions is supported by Microsoft’s Amalga software. Amalga centralizes digital information into

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*We are oriented toward thinking about different ways to provide health care, including using technology to improve efficiency and effectiveness.*

Doug Parks | Administrator, ECH and Information and Knowledge Management Systems | Mayo Clinic
a single, continually updated repository that is available for analysis and data sharing. Pulling data from Mayo Clinic’s EMR and other Mayo databases, Amalga provides an advanced registry for preventive and chronic conditions with real-time data — labs, vitals, tests and appointments. For example, a care manager can access information about all patients who have diabetes to determine whose condition is well controlled and who is due for services.

**eConsult**
*Introduced January 2009 in collaboration with Mayo Clinic’s Center for Innovation*
A patient who sees a primary care provider for a condition that requires a consultation with a specialist but not a face-to-face encounter may be able to have an eConsult. After the patient agrees to this provider-to-provider consultation, the primary care provider schedules it on the specialist’s calendar. The specialist reviews the primary care provider’s notes and the patient’s EMR and sends a report back to the initial provider, who contacts the patient with the recommendation. eConsults save time for the patient and the specialist, and enable the primary care provider to coordinate the patient’s care. In approximately 10 percent of cases, the specialist decides the patient should be seen face to face.

To date, 3,500 eConsults have been conducted on the Mayo Clinic Rochester campus.

**Patient online services**
*Introduced December 2009*
Through MayoClinic.org, a patient can create an account and access portions of the EMR, including checking test results, immunizations, medications and allergy records; checking billing and insurance information; and requesting appointments and eVisits. To date, 70,000 patients use patient online services.

“ECH is working to provide patient online access to additional areas of the EMR, including clinical notes, preventive recommendations, dismissal summaries and radiology reports,” says Sidna Tulledge-Scheitel, M.D., chair, Mayo Clinic Global Products and Services (GPS) and a consultant in Primary Care Internal Medicine.

An innovative online service is the eVisit. To request an eVisit, an individual must be an existing Mayo Clinic patient and a Minnesota resident. The patient selects a provider’s name from a list of providers seen in the past, verifies medications and allergies, types the symptoms and answers questions. This encounter produces an electronic message for the provider, who reviews the information and decides if the patient can be treated with an eVisit. In some cases, the provider contacts the patient electronically with additional questions. If the patient can be treated with an eVisit, the provider makes recommendations to the patient and, in some cases, orders a prescription. eVisits are completed within 24 hours — usually within the same day. eVisits are billed to the patient and usually are covered by private health insurance. The information included in the electronic communications is integrated into the clinical notes in the EMR, without any dictation required.

The most common eVisit ailments are sinusitis, cough, ear infection, depression, urinary tract infection and back pain. From April to October 2010, ECH physicians completed 400 eVisits.

“eVisits are part of Mayo’s efforts to provide services that patients want and to reduce costs,” says Karen Ytterberg, M.D., leader for patient online services for ECH practice and a consultant in Pediatrics and Community Pediatric and Adolescent Medicine. “eVisits can make practice more efficient by addressing more routine health issues faster, and reserving face-to-face visits for more complex issues. We don’t want our connection to patients to end when they leave...
eVisits can make practice more efficient by addressing more routine health issues faster, and reserving face-to-face visits for more complex issues. We don’t want our connection to patients to end when they leave our facilities.

Karen Ytterberg, M.D. | Leader for Patient Online Services, ECH practice | Consultant, Pediatrics and Community Pediatric and Adolescent Medicine

Employee Community Health (ECH) includes:

- 110 physicians
- 350 allied health staff
- 4 practices — Family Medicine, Pediatrics, Internal Medicine and Integrative Behavioral Health
- 6 practice locations
- 135,000 patients — 65,000 Mayo Clinic Rochester employees and their dependents and 70,000 area residents
- 3 Mayo Express Care locations, including one on the Rochester downtown campus for employees only

Efficient, effective, patient-centered health care in the future will include eVisits.

Mayo Clinic is measuring the effectiveness of eVisits. In a pilot project, eVisits met patients’ needs 85 percent of the time and substituted for office visits 40 percent of the time.

Call volumes to ECH providers have decreased since eVisits were introduced.

In addition to eVisits, patients have the option of sending an electronic message to their providers. As opposed to an eVisit, which is appropriate when a patient has a specific symptom, an electronic message is appropriate for a general question, such as what dosage of ibuprofen to give to a toddler. Patients are not charged for electronic messages. Often, these messages can be answered by nurses or other members of the provider’s care team.

Currently, patients can send electronic messages to Employee and Community Health providers. Mayo Clinic in Rochester is working to expand the electronic messages provider list to include specialists.

Mayo Clinic in Florida introduced patient online services, including electronic messages to providers, in July 2010. The Florida Medical Board is reviewing whether to allow eVisits.

Mayo Clinic in Arizona and Mayo Health System are considering patient online services.

our facilities. Handling routine problems in this way also can prevent them from becoming bigger problems later.”

“Some providers worry that eVisits may be too impersonal. But patients have indicated they want this option,” says Eric Manley, product manager for patient online services. “Efficient, effective, patient-centered health care in the future will include eVisits.”

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Mayo Clinic in Arizona and Mayo Health System are considering patient online services.
Mayo Medical School students receive Alumni Merit Scholarship

Each year, one or two Mayo Medical School students receive the Alumni Merit Scholarship from the Mayo Clinic Alumni Association. This monetary scholarship, established in 1999, is open to all students, is not based on need and remains with recipients during their four-year term.

Recipients of the 2010–2011 scholarships are Kei Yoshimatsu and Kirk Wyatt.

Kei Yoshimatsu, Class of 2014
Hometown: Los Angeles
Undergraduate: University of California, Los Angeles

Why did you choose Mayo Medical School?
Mayo has a unique, patient-centered philosophy. No other medical school I interviewed at came close to Mayo Clinic in prioritizing patient care over everything else.

What is unique about you?
I was born in Sydney, went to elementary school in Tokyo and grew up in Los Angeles. I think I carry an international, multicultural perspective. I have taught English in rural Thailand and worked on a cervical cancer screening program in Nicaragua. I worked with a bone marrow donor recruitment organization that supported minority leukemia patients in Los Angeles. With my medical degree, I would love to work overseas and help deliver the most basic care to those in need.

Kirk Wyatt, Class of 2014
Undergraduate: Grand Valley State University, Allendale, Mich.

Why did you choose Mayo Medical School?
Students at Mayo are treated as colleagues and members of a team. The culture provides an atmosphere that cultivates collaboration and active learning. Students feel like part of a larger family.

What is unique about you?
Several years ago, I was overweight as a result of poor diet choices and lack of physical activity. I decided to make a change in my lifestyle for my personal well-being. I changed my diet and began running. I weight 75 pounds less than I did at my heaviest. My quest for wellness serves as a source of strength for me. I try to encourage others who want to make changes in their lives.

Dawn Milliner, M.D., named first chief medical information officer

Dawn Milliner, M.D., has been named chief medical information officer for Mayo Clinic. She will provide physician leadership to help the institution advance information and knowledge management systems that support excellence in patient care, research and education.

In this newly created position, Dr. Milliner will report to the Mayo president and CEO and will be a member of the Mayo Clinic management team. She will work in partnership with Abdul Bengali, chief information officer.

“Dr. Milliner has a critical role in standardizing practices across Mayo Clinic by leading the development of information and knowledge management strategy and implementation, and working with other Mayo leaders.
Board of Trustees honors new named professors

The Mayo Clinic Board of Trustees honored four new Mayo Clinic named professors at its quarterly meeting in November.

Robert D. Brown Jr., M.D.
Department of Neurology
Mayo Clinic Rochester
John T. and Lillian Mathews
Professor of Neuroscience

Claude Deschamps, M.D.
Department of Surgery
Mayo Clinic Rochester
Joseph I. and Barbara Ashkins
Professor of Surgery

Gregory Cascino, M.D.
Division of Epilepsy
Department of Neurology
Mayo Clinic Rochester
Whitney MacMillan Jr.,
Professor of Neuroscience

Robert Smallridge, M.D.
Division of Endocrinology
Department of Internal Medicine
Mayo Clinic Florida
Alfred D. and Audrey M. Petersen
Professorship in Cancer Research

to make the best use of information to improve our operational performance,” says Mike Harper, M.D., executive dean for Practice and professor of neurology at Mayo Clinic in Rochester.

Dr. Milliner, who joined the Mayo Clinic staff in 1983, is a consultant in Pediatric Nephrology & Hypertension and is a professor of medicine and pediatrics. Her leadership positions have included chair, Pediatric Nephrology; medical director, Mayo Eugenio Litta Children’s Hospital; chair, Rochester Clinic Practice Committee; and chair, Mayo Clinic Clinical Practice Committee.
## Obituaries

<table>
<thead>
<tr>
<th>Name</th>
<th>Graduation Year(s)</th>
<th>Died Date</th>
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<tbody>
<tr>
<td>Richard Botham, M.D.</td>
<td>(S ’57)</td>
<td>Nov. 18, 2010</td>
</tr>
<tr>
<td>Blaine Claypool, M.D.</td>
<td>(I ’60)</td>
<td>June 20, 2010</td>
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<tr>
<td>Guillermo Cremer, M.D.</td>
<td>(I ’69)</td>
<td>Aug. 24, 2010</td>
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<tr>
<td>Brown Dobyns, M.D., Ph.D.</td>
<td>(S ’46)</td>
<td>Oct. 22, 2010</td>
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<tr>
<td>Laurie Ellingson-Foley, M.D.</td>
<td>(P 2010)</td>
<td>Sept. 27, 2010</td>
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<tr>
<td>Oliver Hunt, Jr., M.D.</td>
<td>(S ’58, TS ’60)</td>
<td>Sept. 15, 2010</td>
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<tr>
<td>Byron McLaughlin, M.D.</td>
<td>(S ’50)</td>
<td>Sept. 11, 2010</td>
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<tr>
<td>Peter McLean, M.D.</td>
<td>(U ’68)</td>
<td>Sept. 8, 2010</td>
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<tr>
<td>Joachim Opitz, M.D.</td>
<td>(I ’61, PMR ’63)</td>
<td>Aug. 28, 2010</td>
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<tr>
<td>Ernesto Saldias, M.D.</td>
<td>(PMR ’52)</td>
<td>Oct. 19, 2010</td>
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<tr>
<td>Gunnar Stickler, M.D.</td>
<td>(PD ’56)</td>
<td>Nov. 4, 2010</td>
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<tr>
<td>John Washington, M.D.</td>
<td>(M ’68)</td>
<td>Sept. 5, 2010</td>
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<tr>
<td>Frank Whitesell Jr., M.D.</td>
<td>(S ’51)</td>
<td>Aug. 30, 2010</td>
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Complete obituaries and the Update section, with alumni and staff news, are available on the Mayo Clinic Alumni Association website, mayo.edu/alumni.
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Alumni Center
507-284-2317
Karen Herman, director
507-538-0162
Email: mayoalumni@mayo.edu
Website: http://www.mayo.edu

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mayomedicaltransport.com

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