
At Epocrates,
we're referring a friend.
EPOCRATES
athenahealth

Helping you make confident and efficient decisions for your patients and your practice.

Now that Epocrates has combined forces with athenahealth and their Best in KLAS* EHR and practice management services, we offer more ways than ever to help you deliver the best care – and thrive doing it. To find out what we can do, together, for your practice visit **athenahealth.com/together**

---

* Practice management (1-10 physicians & 11-75 physicians); and ambulatory EHR (1-10 physicians), as reported in the 2012 Best in KLAS Awards report.

THE EHR ISSUE

PROTECT YOURSELF
Top reasons you should monitor your vendor's financial health

MU2 CHALLENGE
Examining concerns about preparedness, interoperability

STRAIGHT TALK
Why mobile technology will transform patient contact

FUTURE OF HIT
7 leaders discuss trends shaping the market

Medical Economics®

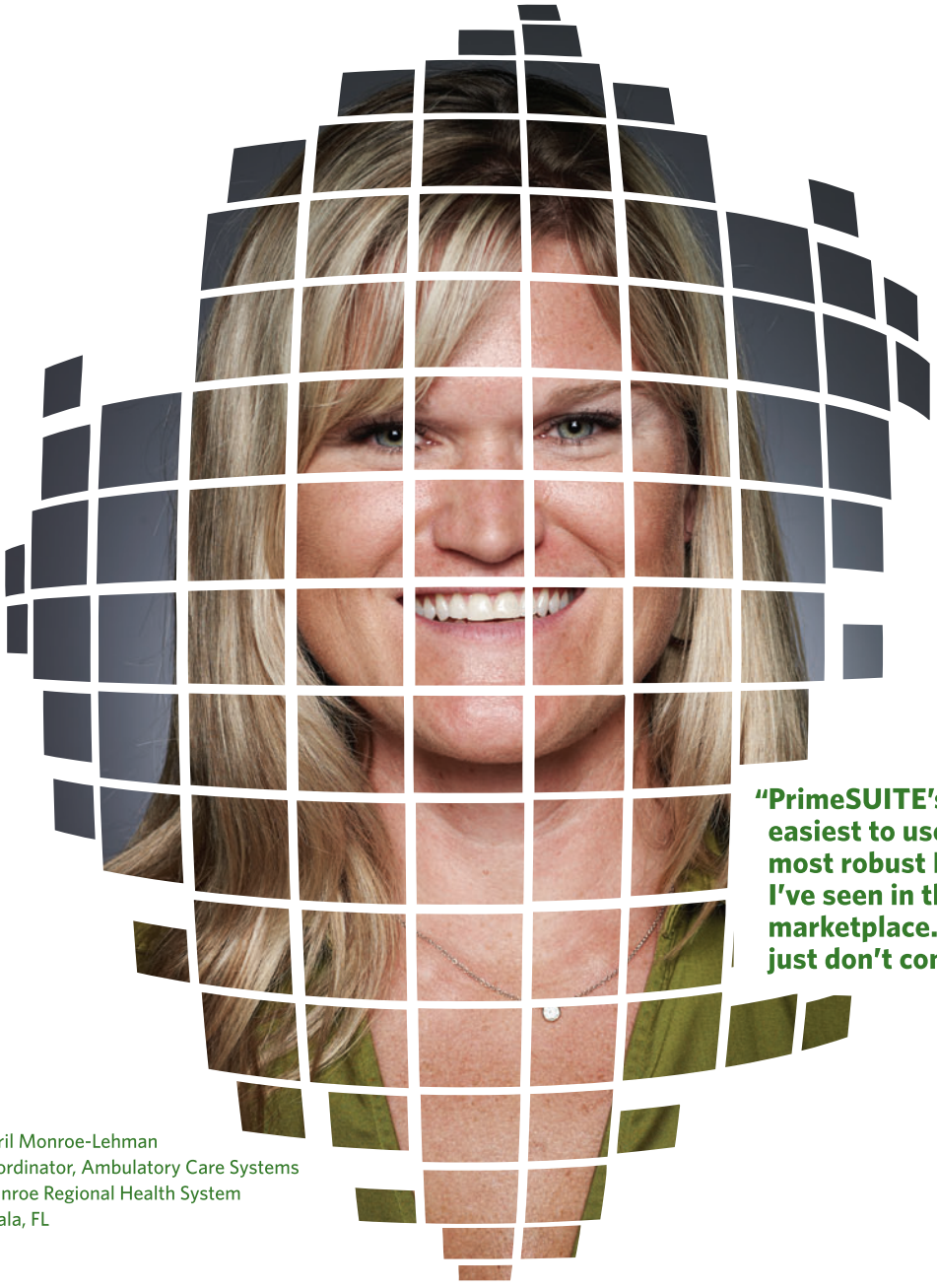
OCTOBER 25, 2013

SMARTER BUSINESS. BETTER PATIENT CARE. MedicalEconomics.com

Exclusive Report

TOP 100 EHRs

ADVANSTAR MEDICAL COMMUNICATIONS GROUP VOL. 90 NO. 20



"PrimeSUITE's the easiest to use, the most robust EHR I've seen in the marketplace. Others just don't compare."

April Monroe-Lehman
Coordinator, Ambulatory Care Systems
Munroe Regional Health System
Ocala, FL

ICD-10. PCMH. P4P. The next wave of "alphabet soup" challenges is coming. **Greenway has you covered**, with integrated information solutions that ensure you have the data flowing across your organization, *wherever* and *whenever* it's needed to deliver effective, efficient care and optimize outcomes.

From clinically driven revenue cycle management™ to unparalleled interoperability with other systems, providers and payers, the Greenway team prepares you to *survive* and *thrive* as you navigate the future of healthcare.

Learn how our *smarter solutions* help you deliver *smarter healthcare*. Call or email us today.

GREENWAY®

Smarter solutions for smarter healthcare.™

866.242.3805 • info@greenwaymedical.com

Medical Economics®

SMARTER BUSINESS. BETTER PATIENT CARE.

CONTACT US

CUSTOMER SERVICE	877-922-2022	BACK ISSUES	218-740-6477
EDITORIAL	800-225-4569	REPRINTS	877-652-5295, EXT. 121
ADVERTISING	732-596-0276	SUBSCRIPTION CORRESPONDENCE:	
CLASSIFIEDS	800-225-4569	Medical Economics, *P.O. Box 6085, Duluth, MN 55806-6085*	

Twitter Talk

Other people and organizations tweeting about issues that matter to you

AMERICAN ACADEMY OF FAMILY PHYSICIANS
@AAFP
The avg attention span of most patients = 9 sec. The key to communication? Fascinate your #patients http://bit.ly/1a86jU3 #AAFP

SHERRY REYNOLDS
@CASCADIA
#HIX challenges are result of HUGE demand + some poor coding & too many of us trying it out ourselves! pic.twitter.com/89APUwF51o #HITsm

HEALTH LEADS
@HEALTHLEADSNATL
Shifting payment models under #ACA provide financial incentives for keeping patients healthy http://ht.ly/pC4kc.

ANNALS OF INTERNAL MEDICINE
@ANNALSOFIM
The vital role of primary care: Older patients w more primary care visits less likely to die from colorectal cancer http://bit.ly/GzHNDw

HARVARD BUSINESS REVIEW
@HARVARDBIZ
Reimagining primary care: when small is beautiful http://s.hbr.org/1bWteaY

join us online

facebook.com/MedicalEconomics
twitter.com/MedEconomics

PART OF THE ModernMedicine NETWORK

Medical Economics is part of the ModernMedicine Network, a Web-based portal for health professionals offering best-in-class content and tools in a rewarding and easy-to-use environment for knowledge-sharing among members of our community.

Referenced in MedLine®

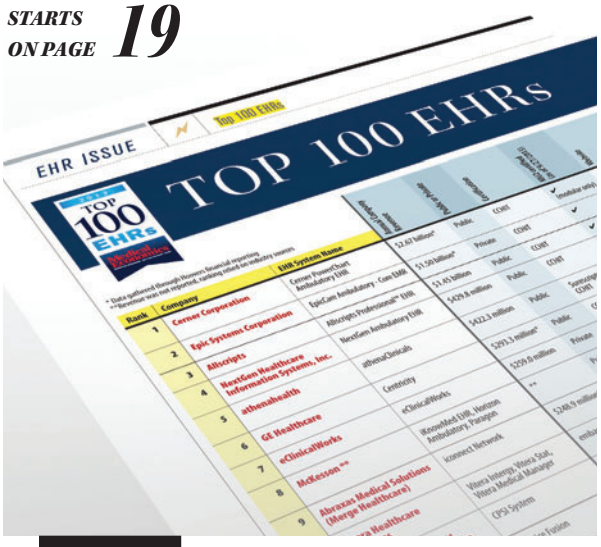
Medical Economics®
SMARTER BUSINESS. BETTER PATIENT CARE.
OCTOBER 25, 2013
Volume 90
Issue 20

IN DEPTH

Tech

TOP 100 EHR SYSTEMS

STARTS ON PAGE 19



COVER STORY | TECH

An exclusive report on the top 100 EHR systems to help physicians make better buying decisions. STARTS ON PAGE 19

- System capabilities
- Meaningful use 2
- Mobile
- Patient portals

COLUMNS

PAGE 70
PRACTICAL MATTERS

Gail Levy & Kathryn Moghadas
Picking an EHR system

PAGE 82
THE LAST WORD

Dean Sorensen
EHR training for your staff

MISSION STATEMENT

Medical Economics is the leading business resource for office-based physicians, providing the expert advice and shared experiences doctors need to successfully meet today's challenges in practice management, patient relations, malpractice, electronic health records, career, and personal finance. *Medical Economics* provides the nonclinical education doctors didn't get in medical school.

MEDICAL ECONOMICS *(USPS 337-480) (Print ISSN: 0025-7206, Digital ISSN: 2150-7155) is published semimonthly (24 times a year) by Advanstar Communications Inc., 131 W. First St., Duluth, MN 55802-2065. Subscription rates: one year $95, two years $180 in the United States & Possessions, $150 for one year in Canada and Mexico, all other countries $150 for one year. Singles copies (prepaid only): $18 in US, $22 in Canada & Mexico, and $24 in all other countries. Include $6.50 for U.S. shipping and handling. Periodicals postage paid at Duluth, MN 55806 and at additional mailing offices. Postmaster: Send address changes to Medical Economics, PO Box 6085, Duluth, MN 55806-6085. Canadian GST Number: R-124213133RT001 Publications Mail Agreement number 40612608. Return undeliverable Canadian addresses to: IMEX Global Solutions, PO Box 25542 London, ON N6C 6B2 CANADA. Printed in the USA.*

We guarantee ICD-10 and Meaningful Use.

So patients can be guaranteed your undivided attention.

ICD-10 Guarantee: We'll be ICD-10 ready or you don't pay until we are. Spend time on patients, not code compliance, knowing you're ready for the transition—and ready to thrive through it.

Meaningful Use Guarantee: You'll get paid for Stage 1 or Stage 2 with our Best in KLAS* EHR. In 2012, an industry-leading 96% of our eligible providers attested while staying focused on patient care.

athenahealth®

Cloud-based EHR, practice management and care coordination services

To learn more, visit **athenahealth.com/guaranteed**

ICD-10 Guarantee: This Guarantee covers ICD-10-CM codes and does not cover the ICD-10-PCS code set. Additional terms and conditions apply; please see your sales representative for more information. **Meaningful Use Guarantee:** If you don't receive the Federal Stimulus reimbursement dollars for the first year you qualify, we will credit you 100% of your EHR service fees for up to six months until you do. This offer applies to HITECH Act reimbursement payments only. Additional terms, conditions, and limitations apply.

† Additional terms and conditions, including qualification requirements, apply. Please visit our booth at MGMA13 for more details

* Ambulatory EHR (1-10 physicians), as reported in the 2012 Best in KLAS Awards report

ONLINE EXCLUSIVE

PATIENTS LIKE VIEWING LAB TEST RESULTS ONLINE

A new study could reassure physicians who may have been reluctant to make results of patient laboratory tests available online. Large majorities of patients surveyed in the study report positive emotions such as "satisfied," and "appreciative," after viewing their lab results online. Doctors can affect patients' responses to viewing the results by setting expectations in advance. Learn more at **MedicalEconomics.com/ACA**

ME App. DOWNLOAD FREE TODAY.
Get access to all the benefits *Medical Economics* offers at your fingertips. The *Medical Economics* app for iPad and iPhone is now available for free in the iTunes store.
MedicalEconomics.com/app

Available on the App Store

Cholesterol lowering resource center
Find the latest research and information on medication and treatment strategies.
MedicalEconomics.com/cholesterol

Top headlines now @ME*online*

#1 NPs HAPPIER IN THEIR JOBS THAN DOCTORS
But nurse practitioners are also feeling the stress of growing need for medical services Details at **MedicalEconomics.com/NPs**

#2 SENATORS SEEK MEANINGFUL USE 2 DELAY
They're worried that doctors won't be able to meet the deadlines. Learn why at **MedicalEconomics.com/MU2delay**

#3 DOCTORS EXPRESS VIEWS ON SHUTDOWN, HIES
Read your colleagues' tweets about the shutdown and health insurance exchanges at **MedicalEconomics.com/doctortweets**

PART OF THE ModernMedicine NETWORK

Medical Economics is part of the ModernMedicine Network, a Web-based portal for health professionals offering best-in-class content and tools in a rewarding and easy-to-use environment for knowledge-sharing among members of our community.

Twitter Talk

Follow us on Twitter to receive the latest news and participate in the discussion.

STAFF MOTIVATION
Here are 10 incentives to motivate the staff at your #medical practice http://ow.ly/pAbjw #primarycare

ELECTRONIC HEALTH RECORDS
Most #EHR vendors offer practice management systems and EHRs at a greatly reduced rate if you bundle them. http://ow.ly/pA7Yt

PATIENT VACCINATIONS
Zoster vaccine effective but underused in elderly http://ow.ly/pagKn #primarycare

SMOKING CESSATION
Docs, need help getting your patients to kick the smoking habit? See this article in Medical Economics. *http://bit.ly/1dLNIRF*

REIMBURSEMENTS
Patients receive comparable care, primary care physicians should be paid comparably (and better) #AAFP http://buff.ly/19YNzGv

HIPAA
#HIPAA training is critical to protecting patients and your practice http://ow.ly/pEKyd #primarycare

PRACTICE PURCHASES
Many experts agree that now is the right time for #physicians to consider buying another practice http://ow.ly/pA6vl #primarycare

join us online

facebook.com/MedicalEconomics
twitter.com/MedEconomics

Comfort.

Relief.

Use only as directed.

TYLENOL®. Effective relief from the aches and fever due to colds and flu.

This cold and flu season, count on a trusted ally to help patients feel better.
For over 50 years, TYLENOL® has been relieving aches and reducing fever from colds and flu.
Today, we're in stores everywhere, ready for the next 50.

The #1 doctor-recommended analgesic brand for colds and flu

TYLENOL®

EST-907

PAGE 82

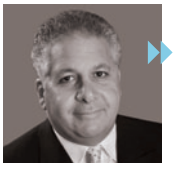
"The best way to approach your EHR software is to think of it as an ongoing process."

—Dean Sorensen, SORENSEN INFORMATICS

EDITORIAL BOARD

Mary Ann Bauman, MD
Internal Medicine
Oklahoma City, OK

Patricia J. Roy, DO
Family Medicine
Muskegon, MI



George G. Ellis Jr., MD
Internal Medicine
Youngstown, OH

Joseph E. Scherger, MD
Family Medicine
La Quinta, CA

Gregory Hood, MD
Internal Medicine
Lexington, KY

Salvatore S. Volpe, MD
Internal Medicine-Pediatrics
Staten Island, NY

Jeffrey M. Kagan, MD
Internal Medicine
Newington, CT

Richard E. Waltman, MD
Family Medicine
Tacoma, WA

Jeffrey K. Pearson, DO
Family Medicine
San Marcos, CA

Craig M. Wax, DO
Family Medicine
Mullica Hill, NJ

Elizabeth A. Pector, MD
Family Medicine
Naperville, IL

ask us

Have a question for our advisers? Email your question to **medec@advanstar.com**.

EDITORIAL CONSULTANTS

PRACTICE MANAGEMENT

Judy Bee
www.ppgconsulting.com
La Jolla, CA

Keith Borglum, CHBC
Professional Management and Marketing
Santa Rosa, CA

Kenneth Bowden, CHBC
Berkshire Professional Management
Pittsfield, MA

Michael D. Brown, CHBC
Health Care Economics Indianapolis, IN

Frank Cohen, MPA
www.frankcohengroup.com
Clearwater, FL

Virginia Martin, CMA, CPC, CHCO, CHBC
Healthcare Consulting Associates
of N.W. Ohio Inc. Waterville, OH

Rosemarie Nelson
MGMA Healthcare Consultant Syracuse, NY

Mark D. Scroggins, CPA, CHBC
Clayton L. Scroggins Associates Inc.
Cincinnati, OH

Gray Tuttle Jr., CHBC
The Rehmann Group Lansing, MI

Michael J. Wiley, CHBC
Healthcare Management
and Consulting Services Bay Shore, NY

H. Christopher Zaenger, CHBC
Z Management Group Barrington, IL

Karen Zupko
Karen Zupko & Associates Chicago, IL

TAXES & PERSONAL FINANCE

Lewis J. Altfest, CFP, CPA
Altfest Personal Wealth Management
New York City

Robert G. Baldassari, CPA
Matthews, Carter and Boyce Fairfax, VA

Todd D. Bramson, CFP
North Star Resource Group Madison, WI

Glenn S. Daily, CFP
Insurance consultant New York City

Barry Oliver, CPA, PFS
Thomas, Wirig, Doll & Co.
Capital Performance Advisors
Walnut Creek, CA

Gary H. Schatsky, JD
IFC Personal Money Managers New York City

David J. Schiller, JD
Schiller Law Associates Norristown, PA

Edward A. Slott, CPA
E. Slott & Co. Rockville Centre, NY

HEALTH LAW & MALPRACTICE

Barry B. Cepelewicz, MD, JD
Garfunkel Wild, PC Stamford, CT

John M. Fitzpatrick, JD
Wheeler Trigg Kennedy, LLP Denver, CO

Alice G. Gosfield, JD
Alice G. Gosfield and Associates
Philadelphia, PA

James Lewis Griffith Sr., JD
Fox Rothschild Philadelphia, PA

Lee J. Johnson, JD
Mount Kisco, NY

Lawrence W. Vernaglia, JD, MPH
Foley & Lardner, LLP Boston, MA

from the Trenches

> Physicians who develop good relationships with their patients have better outcomes while spending less. Where do we provide the incentives in our current system for this obvious outcome determinant? Indeed...the incentives/pressures interfere with proper therapeutic relationships.
>
> **J. Kimber Rotchford, MD, MPH**, PORT TOWNSEND, WASHINGTON

REFORM PAYMENT SYSTEMS TO INCREASE EFFICIENCY

We could readily address the shortage of physicians by increasing physician efficiency. ("Scope of practice debate," September 10, 2013). The fastest, cheapest, and easiest way to do that is to limit all administrative incentives, concerns, and liabilities of our current billing and payment systems.

I volunteer at a free medical clinic. I probably can see three to four times more patients compared to my private practice because I am not concerned about billing and documentation issues. The focus is on good patient care and documentation required for providing that care.

The other advantage would come from the greater clinical experience. Physicians who care for more patients are likely to be better-skilled and better able to get to the point quickly, and then have the time to educate and discuss preventive measures.

Physicians who develop good relationships with their patients have better outcomes while spending less. Where do we provide the incentives in our current system for this obvious outcome determinant? Indeed, one could say the incentives/pressures interfere with proper therapeutic relationships. Given the administrative concerns and liabilities involved with not crossing the T's and dotting the I's, physicians are understandably stressed.

In Washington State, if a physician makes an error repeatedly in billing or documentation in Medicaid patients they can be charged with criminal fraud. No intent needs to be established. The service provided, however necessary, cost-effective, and professional does not constitute an adequate defense. I wonder how these sorts of liabilities will influence physician readiness to see more Medicaid patients?

J. Kimber Rotchford, MD, MPH
PORT TOWNSEND, WASHINGTON

IT'S TIME FOR MOC TO END

If the new president of the American Board of Internal Medicine wants to be a game-changing advocate for the practicing physician, he should be challenged to dismantle Maintenance of Certification (MOC) and defuse all attempts to tie it to Maintenance of State Licensure (MOL). ("MOC: Debate intensifies as Medicare penalties loom," June 25, 2013.) Neither has any place in the life of practicing physicians.

We've had an effective system in place for decades, one that is the equivalent of MOC and MOL: keeping up to date through our continuing medical education and remaining in good standing to maintain state licensing. There is absolutely no need or justification for MOC/MOL and its imposed burdens.

➔ 12

> Keeping up-to-date is essential to practicing medicine, but the existing MOC process neither qualifies physicians nor protects patients. MOC's requirements have not been shown to be fair, accurate, or predictive indicators of a physician's skills or competency.
>
> **Ron Benbassat, MD,** BEVERLY HILLS, CALIFORNIA

Keeping up-to-date is essential to practicing medicine, but the existing MOC process neither qualifies physicians nor protects patients. MOC's requirements have not been shown to be fair, accurate, or predictive indicators of a physician's skills or competency. All licensed professions have continuing-education requirements, but those imposed on physicians by MOC are simply egregious.

In light of the boards' unchecked power to regulate physicians, what we propose is fair and in the best interests of our patients and our profession. Our goals remain clear:

1. **MOC should not be associated with hospital privileges.**
2. **MOC should not be associated with insurance reimbursements or network participation.**
3. **MOC should not be required for MOL.**
4. **MOC should not be mandatory.**
5. **All board certificates must be converted to lifetime status; only then will MOC be voluntary.**

If these cannot be achieved, then mass MOC noncompliance is the only rational and logical means to reclaiming control of our practices.

During these changing times of healthcare reform, our Boards sit on nearly a half-billion dollars in assets while hard-working physicians get less and less in reimbursements and many Americans remain without healthcare coverage.

Beyond restrictive rules for doctors and their own enormous salaries and fees, what do our "nonprofit" boards actually provide? They do not represent us successfully in government matters, and certainly have no understanding of practicing physicians' interests. It's time for all of us to get involved and for MOC to end.

Ron Benbassat, MD
BEVERLY HILLS, CALIFORNIA

PHYSICIANS SHOULD RETURN TO DIRECT PAY SYSTEM

Here, here to Craig Wax, DO's thoughts. ("ACA: It's not what the doctor (or voters) ordered," August 25, 2013.) Government-owned healthcare only works to the point that catastrophic injuries are covered, but for the day-to-day patients that we see, it doesn't work.

I don't understand why physicians are slow to accept how payment was made pre-1965 as viable for the business portion of practicing medicine. Patient comes in, pays for the visit, is given a receipt, and submits it for payment.

If physicians switch back to this form of payment, then we can say bye-bye to interference from payers as to how we practice. No more nonphysicians dictating which medicines, which tests, etc. Then we can get to true meaningful measures on the care of patients instead of insurance deciding.

Lawrence Voesack, MD
ODESSA, TEXAS

TELL US

medec@advanstar.com

Or mail to:
Letters Editor, Medical Economics, 24950 Country Club Boulevard, Suite 200, North Olmsted, Ohio 44070. Include your address and daytime phone number.

Letters may be edited for length and style. Unless you specify otherwise, we'll assume your letter is for publication. Submission of a letter or e-mail constitutes permission for Medical Economics, its licensees, and its assignees to use it in the journal's various print and electronic publications and in collections, revisions, and any other form of media.

JOURNAL ASKS DOCTORS TO SPEAK OUT ON ACA, SHUTDOWN

The *New England Journal of Medicine* has weighed in on the federal government shutdown and the controversy over the Affordable Care Act (ACA).

Editor-in-Chief Jeffrey M. Drazen, MD, and Executive Editor Gregory D. Curfman, MD, wrote an editorial Oct. 4 in the *Journal* urging physicians to contact Congress and tell their elected representatives their views on the ACA.

"As healthcare professionals, we are very close to the issues that have our government in shutdown," Drazen and Curfman write. "We must lead by example. The well-being of our patients depends on it. Let your representative know that you are in the health business and where you stand."

The *Journal* itself does not have an official position on whether the ACA is good or bad for the U.S. healthcare system. But Drazen and Curfman say supporting the law "makes moral and medical sense."

"All of us will need medical attention at some point in our lives," the editorial reads. "When that point comes, we should not have to worry about whether we can pay for it."

EHRS A MAJOR CAUSE OF PHYSICIAN DISSATISFACTION

Though physicians understand the benefits of electronic health record (EHR) systems, they "significantly worsen" job satisfaction based on cost, usability, lack of personal contact with patients, and interoperability, according to a recent survey. Older physicians less familiar with technology and without a data entry staff for support were among the most dissatisfied.

The survey was conducted by the RAND corporation and the American Medical Association.

"Physicians believe in the benefits of EHRs, and most do not want to go back to paper charts," said Mark Friedberg, MD, a RAND scientist and author of the study. "But at the same time, they report that electronic systems are deeply problematic in several ways. Physicians are frustrated by systems that force them to do clerical work or distract them from paying close attention to their patients."

43%
OF DOCTORS AGREE THAT EHRS SLOW THEM DOWN

Providing high-quality care was one of the biggest sources of physicians' satisfaction. Those surveyed noted that unsupportive practice leadership and payers not approving medically-neccesary treatment as obstacles in providing quality care.

The survey also cited autonomy, collegiality, work quantity, support staff, pay, liability, and health reforms as other issues affecting job satisfaction.

MEDICAL GROUP PRACTICES LUKEWARM ON ACA EXCHANGES

Most medical group practices feel neutral or unfavorable about the impact of the Affordable Care Act (ACA) on physician practices, according to a survey by the Medical Group Management Association (MGMA).

The organization found that 28.4% of the more than 1,000 physician group practices surveyed are neutral about ACA's impact, while 40.5% felt unfavorable about the law.

More than 40% of practices are still on the fence about whether they will participate in any new insurance products offered on the health insurance exchanges that started on October 1.

More than 80% of practices cite low reimbursements, the 90-day grace period provision, and an increase in collections due to high deductibles as major barriers to participating in ACA's health exchanges.

Only about 40% of practices saw the health exchanges providing a minor opportunity to provide care to underserved markets, replace charity care or reach a new market segment.

Overall, nearly 70% of physicians feel the health exchanges will have no effect on their business.

Consumers willing to switch physicians for EHR access

ALLOWING PATIENTS access to their electronic health records (EHRs) could wind up costing you business.

A recent survey from the consulting firm Accenture reveals that 41% of American consumers would be willing to change their doctor to get access to their own EHR. Just over one-third (36%) of American consumers currently have full access to their EHR, according to the survey. However, 57% of Americans report self-tracking elements of their personal health information such as physical activity, as well as health indicators such as blood pressure and weight.

Growing consumer interest in EHR access is the result of the federal government's meaningful use mandates and a growing trend towards self-care, according to Kaveh Safavi, MD, JD, managing director of Accenture's North America health business. "Just as consumers can self-manage most other aspects of their lives, they expect to take greater ownership of their medical care, and they are willing to switch to doctors who…are willing to provide access to consumer records," Safavi said in a news release.

Among the objectives physicians and practices must meet to qualify for the second round of Meaningful Use (MU2) incentives are that they provide their patients with the ability to view their health information online within 4 days of the information being available to the physician, and that at least 5% of a practice's patients access their health information online.

> "Just as consumers can self manage most other aspects of their lives, they expect to take ownership of their medical care..."
>
> –KAVEH SAFAVI, MD, JD MANAGING DIRECTOR OF ACCENTURE'S NORTH AMERICA HEALTH BUSINESS

Eighty-four percent of consumers surveyed believe that they should have full access to their medical records, but only 36% of the doctors agreed. Slightly more than a third (36%) of consumers surveyed said they now do have full access to their EHR, with 27% reporting limited access and 37% reporting no access.

The information regarding consumer attitudes towards EHRs was taken from a larger survey of 9,000 adults in nine countries Accenture surveyed in July 2013. The survey included 1,000 U.S. consumers.

PATIENT EHR ACCESS STILL LACKING

of consumers feel they should have full access to medical records

of doctors feel that patients should have full access to records

SOURCE: Accenture

Clinicians Love Amazing Charts

Here are some reasons why...

"This EHR is so easy to use, one of my nurses just said she wants to 'marry' Amazing Charts!"

– Peter Sundwall Jr., MD, Family Medicine

"A Blue Cross Blue Shield auditor said our paperless practice organized around Amazing Charts was the best she has seen."

– Nisha Chellam, MD, Internal Medicine

"Our practice loves Amazing Charts because it's easy to use in the exam room. Compared to other EHRs we tried, we can document more with fewer clicks."

– Scholastica Nwodo, NP, Family Medicine

Start your FREE trial today!

amazingcharts

amazingcharts.com/start
866-382-5932

Doctor's Bag

The latest in drugs, devices, technology, and more

TAKE HIGH-RESOLUTION IMAGES OF THE EYE WITH THE IPHONE

The Welch Allyn iExaminer system allows the PanOptic Ophthalmoscope to turn into a mobile digital imaging device allowing healthcare professionals to view and take pictures of the eye. The iExaminer adapter aligns the optical access of the Ophthalmoscope to the visual axis of the iPhone 4 or 4S camera to capture high-resolution pictures of the fundus and retinal nerve.

The PanOptic Ophthalmoscope provides easy entry into the eye as well as a wider field of view to more easily observe conditions like hypertension, diabetic retinopathy, and papilledema.

Because the Ophthalmoscope provides a 5x larger view of the fundus than a standard ophthalmoscope—and a 25° field-of-view without having to dilate the pupil—fundus imaging can happen at any time.

The iExaminer Adapter works to attach the PanOptic Ophthalmoscope to the iPhone. With the iExaminer App, providers have the ability to take fundus images right on the iPhone, store them to a patient file, send them in an email, retrieve, and print them. Free and pro versions are available in the Apple App store for iPhone 4 and 4S.

Welch Allyn | welchallyn.com/iExaminer | www.welchallyn.com

ENHANCED EMR AND PATHOLOGY LAB INTEGRATION

Modernizing Medicine, creator of the Electronic Medical Assistant (EMA)—a cloud-based, specialty-specific electronic medical record (EMR) system—and Miraca Life Sciences (MLS), a developer of subspecialty expert anatomic pathology services,will partner to develop an enhanced diagnostic data bridge. Pathologists normally analyze tissue samples with limited clinical background on patients, which can delay accurate diagnoses.

EMA dermatologists and MLS pathologists will be able to share additional diagnostic information, which can help the pathologist create a more timely, accurate analysis. The user-friendly EMA adapts to style of a practice and integrates into the workflow, saving time and increasing efficiencies.

EMA's cloud-based approach to collecting and storing patient information enables physicians to utilize the EMA Network to provide better care for their patients. The tool is available as an iPad app or on any web-enabled Mac or PC.

Modernizing Medicine, Inc. | 561-880-2998 | www.modmed.com

Miraca Life Sciences | 1.800.979.8292 | www.miracalifesciences.com

NEW BACTERIA AND ANTIBIOTIC APP

athenahealth, Inc. and Epocrates have released a new, free mobile app, "Epocrates Bugs + Drugs," to give clinicians geolocated information about bacteria types and resistance patterns, and support appropriate antibiotic prescribing.

Providers can enter their patient's location, view bacteria common to the area, and explore potential bacterial resistance patterns. The app features lists of bacteria found in urine, blood, and skin for geolocated communities across the United States.

Antibiotic drug options are organized by organism susceptibility and includes dosing and contraindication information with links to complete monographs. The app is continually updated through athenahealth's cloud-based EHR database. The app is available for iOS 7 devices in the Apple App Store.

Epocrates, Inc.
www.epocrates.com/company

athenahealth, Inc.
www.athenahealth.com

Q Do you have a favorite new product?
Tell us at www.facebook.com/MedicalEconomics

2013 TOP 100 EHRs Medical Economics

Exclusive Report

TOP 100 EHRs

Why understanding a company's financial performance today may influence purchasing decisions tomorrow

by **DANIEL R. VERDON** *Group Content Director*

THE BEST GOVERNMENT estimates are that 729 companies offer certified electronic health record (EHR) systems targeting medical providers.

Software companies operating in this space range from publically-traded companies to start-up enterprises and everything in between.

While many industry experts believe the next phase of the EHR evolution, interoperability, will unlock communication pathways between primary care and specialists, it may also facilitate consolidation of the market simply because some companies won't be able to clear the technological and regulatory ➔20

How we got our data

This *Medical Economics* project started in the summer of 2013 and concluded on October 10, 2013. Here is how the editorial team approached gathering accurate annual revenue and other data presented in this report:

1. Companies were given the opportunity to self-report their revenue figures and other data by filling out a survey provided by *Medical Economics*.

2. When EHR vendors did not fill out the survey, editors obtained revenue from interviews with company officials, annual reports, and press releases.

3. Revenue estimates were used when editors could not reach the company or if the company declined to provide information. These estimates were culled mostly from Hoovers, though some came from major business media reports.

4. If a company provided a revenue range, editors used the low end of that range.

5. Some companies provided *Medical Economics* with revenue figures for our internal deliberations only. Those are marked as "embargoed" in the list.

Information on system specification, certification, and meaningful use were obtained from the Office of the National Coordinator for Health Information Technology Certified Health IT Product List, company surveys, press releases, major business publication reports, and other publicly available data.

➔19

hurdles of the government's 2014 incentive program, conversion to the International Classification of Diseases-10th revision (ICD-10) or the development costs to make it happen.

It is clear that physicians are mostly dissatisfied with the usability and functionality of their EHR systems. In fact, a recent Black Book survey says that close to 80% of doctors surveyed say that EHR systems are not meeting their needs. Physicians are under increasing pressure to demonstrate efficiency and productivity, and therefore need these systems to offer real access to intelligence to run their medical practices, manage patient panels, and meet the economic and clinical challenges in 2014 and beyond. Future viability of these systems has become increasingly important to physicians.

While there are key surveys in the market that gauge user experience as a basis of evaluating these systems, the editors of *Medical Economics* thought it necessary to take a closer look at the financial health of companies operating in this sector, especially as new hurdles and deadlines approach in 2014 for the government's EHR Meaningful Use 2 program and even the conversion to ICD-10.

Our top 100 EHR list is sorted principally by company revenue. Industry watchers believe the next market phase will force consolidation or closure of weaker EHR companies, so monitoring the financial health of these companies takes on greater significance for physicians. Practice management experts advise that physicians should have contingency plans in place especially related to migrating patient data.

During the information gathering phase of this project, *Medical Economics* editors discovered that basic financial information about public and private HIT companies was difficult, and in some cases, impossible to obtain. Of course, our inquiries about these systems looked at many other criteria as well including Meaningful Use 2 certifications, estimates of users, system capabilities, platform, and other areas.

As part of this editorial project, we pulled together the universe of 729 complete EHR systems, using a variety of sources including the U.S. Department of Health and Human Services. From that pool, we found great disparity in the types of systems categorized as complete EHR systems. This universe was ultimately culled to 549 companies.

Surveys were sent to vendors offering complete EHR systems in the summer of 2013. By the close of the project, only 56 of the companies represented on this list responded to survey requests. Editors followed up with telephone calls, interviews, and Web searches, and employed data-gathering means through financial reporting services to come up with this top 100 list.

The challenges in gathering this information were very real. Moving beyond basic financial questions to get a sense of a system's functionality, capabilities, and platforms took legwork—a lot of it.

Our inquiries demonstrated:

- There are some excellent companies operating in this space that clearly believe in the product and services they are marketing, and make a great deal of information available on their Web sites to help physicians in this evaluation. They make it easy to find important details about the system's functionality, target, capabilities, platforms, pricing, company history, and other criteria to help evaluate these systems. The majority of health information technology (HIT) vendors, however, make it far too difficult for physicians to evaluate their products and services.

- If an HIT vendor cannot build a useful, easy-to-navigate Web site, do you think its EHR system will be any better? We have included links to our top 100 EHR list to help you in your evaluation.

- Size matters, especially during a period of rapid consolidation. With that said, some excellent smaller operations are making big waves. Just look at the list of those certified for Meaningful Use 2.

And if you find yourself shopping for an EHR system for the first time, or because you are filing for an EHR divorce, be sure to ask about the financial health of the operation, number of other providers in the system, and how the system will handle Meaningful Use 2 requirements if not already certified.

Even if you don't take advantage of the government's incentive program to use EHR technology, operability and the ability to better monitor patient populations represent the future.

ADAPTABILITY

It can mean the difference between a practice that's barely *surviving* and one that's really *thriving*.

What can you do to ensure your practice survives in the constantly changing world of EHRs? Which system can you depend upon to evolve with your needs and help your practice THRIVE?

Aprima EHR offers what you need to THRIVE.

Leverage a trusted EHR that will do more than just help you survive – one that's committed to evolving with your needs and keeping up with regulatory demands.

Fast, flexible and powerful, Aprima is among the first group of EHRs to receive complete Meaningful Use Stage 2 certification.

Today more than 95% of customers who purchased Aprima during the last 10 years still use it.

APRIMA IS MEANINGFUL USE STAGE 2 CERTIFIED

ONC Certified HIT℠

2014 EDITION
COMPLETE EHR

Aprima PRM 2014 EHR (electronic health record) and PM (practice management), version 14.0, has received Meaningful Use Stage 2 certification as a Complete EHR for use in ambulatory care settings from InfoGard (www.infogard.com), an accredited ONC-ACB certification body. This Complete EHR is 2014 Edition compliant and has been certified by an ONC-ACB in accordance with the applicable certification criteria adopted by the Secretary of Health and Human Services. This certification does not represent an endorsement by the U.S. Department of Health and Human Services or guarantee receipt of incentive payments. Certification was received on August 5, 2013.

CERTIFIED EHR VENDOR & PRODUCT INFORMATION

Vendor Name	Aprima Medical Software, Inc.
Certified EHR Name	PRM 2014
Certified EHR Version	14.0
InfoGard Certification #	IG-2999-13-0024
Certification Date	8/5/2013
Classification	Complete
Practice Setting	Ambulatory
Requirements Edition	2014
Certification Criteria	§170.314(a)(1)-(a)(15), (b)(1)-(b)(5), (b)(7)-(f)(3), (g)(2)-(g)(4)
Clinical Quality Measures	CMS2, CMS50, CMS68, CMS69, CMS75, CMS90, CMS117, CMS126, CMS136, CMS138, CMS153, CMS154, CMS155, CMS156, CMS165, CMS166
Link to Public Test Report	http://www.infogard.com/healthcare_it/ehr_testing_and_certification/ehr_certified_products
Additional SW Required (+ corresponding cert. criteria)	Microsoft Excel for 314.a14
Additional Costs	Third-party database or drug formula charge; one-time implementation fee; yearly maintenance charge

Aprima – the EHR that's here to stay.

See for yourself how Aprima can help your practice THRIVE, visit **www.aprima.com/thrive** and schedule a personal demo today.

aprima®

EHR ♦ PM ♦ RCM

To learn more about how Aprima can help your practice:

VISIT www.aprima.com/thrive
CALL 866-960-6890, option 7
EMAIL info@aprima.com

2013 TOP 100 EHRs
Medical Economics
SMARTER BUSINESS. BETTER PATIENT CARE.

TOP 100 EHRs

* Data gathered through Hoovers financial reporting
**Revenue was not reported, ranking relied on industry sources

Rank	Company	EHR System Name	Annual Company Revenue	Public or Private	Certification	MU2 certified (as of 9/27/2013)	Website
1	Cerner Corporation	Cerner PowerChart Ambulatory EHR	$2.67 billion*	Public	CCHIT	✔ (modular only)	www.cerner.com
2	Epic Systems Corporation	EpicCare Ambulatory - Core EMR	$1.50 billion*	Private	CCHIT	✔	www.epic.com
3	Allscripts	Allscripts Professional™ EHR	$1.45 billion	Public	CCHIT	✔	www.allscripts.com
4	NextGen Healthcare Information Systems, Inc.	NextGen Ambulatory EHR	$429.8 million	Public	CCHIT	✔	www.nextgen.com
5	athenahealth	athenaClinicals	$422.3 million	Public	Surescripts LLC / CCHIT	✔	www.athenahealth.com
6	GE Healthcare	Centricity	$293.3 million*	Public	CCHIT	✔	www.gehealthcare.com
7	eClinicalWorks	eClinicalWorks	$259.0 million	Private	CCHIT	✔	www.eclinicalworks.com
8	McKesson **	iKnowMed EHR, Horizon Ambulatory, Paragon	**	Public	Durmmond Group	✔ (Horizon Ambulatory)	www.mckesson.com
9	Abraxas Medical Solutions (Merge Healthcare)	iconnect Network	$248.9 million*	Public	CCHIT; Surescripts		www.merge.com
10	Vitera Healthcare Solutions	Vitera Intergy, Vitera Stat, Vitera Medical Manager	embargoed	Private	Drummond Group, Inc.	✔	www.viterahealthcare.com
11	Computer Programs and Systems, Inc. (CPSI)	CPSI System	$183.3 million*	Public	CCHIT	✔	www.cpsi.com
12	Practice Fusion	Practice Fusion	134.0 million	Private	Drummond Group		practicefusion.com
13	Greenway Medical Technologies	Greenway PrimeSUITE	$124.0 million	Public	CCHIT	✔	www.greenwaymedical.com
14	Platinum Systems Specialists, Inc.	PlatinumEMR	$100.0 million	Private	Surescripts LLC/ Drummond Group Inc / CCHIT		www.platinumemr.com
15	Optum (Picis Inc)	Optum Physician EMR Suite	$78.5 million*	Public	CCHIT		www.optuminsight.com
16	CompuGroup	CGM Clinical, CGM Enterprise EHR	$50.0 million	Public	CCHIT		www.cgmus.com
17	T-System, Inc.	T-System	$46.2 million*		CCHIT	✔ (modular only)	www.tsystem.com
18	Meditab Software, Inc.	Intelligent Medical Software (IMS) Clinical	$45.6 million*	Private	CCHIT/Surescripts		www.meditab.com

In an effort to help physicians make purchasing decisions, *Medical Economics* is unveiling an exclusive report on the top 100 electronic health record (EHR) systems to examine key metrics, including revenue, certification, whether it has meet MU2 certification requirements for complete EHRs or modules, and offer easy access to websites for more information.

* Data gathered through Hoovers financial reporting
**Revenue was not reported, ranking relied on industry sources

Rank	Company	EHR System Name	Annual Company Revenue	Public or Private	Certification	MU2 certified (as of 9/27/2013)	Website
19	**CureMD**	CureMD All-in-One EMR	$39.6 million*	Private	CCHIT, SureScripts		curemd.com
20	**Aprima Medical Software**	also Aprima PRM (PM+EHR), Aprima EHR (standalone), Aprima PM (standalone)	embargoed	Private	CCHIT, InfoGard	✔	www.aprima.com
21	**Advanced Data Systems Corps.**	MedicsDocAssistant EHR	$30.1 million*	Private	CCHIT, Drummond Group	✔	www.adsc.com
22	**E-MDs**	Solution Series, Cloud Solutions	$30.0 million	Private	Drummond Group		www.e-mds.com
23	**NexTech**	NexTech Practice	embargoed	Private	CCHIT		www.nextech.com
24	**ADP AdvancedMD**	AdvancedMD EHR	$22.8 million*	Public	CCHIT		www.advancedmd.com
25	**Kareo**	Kareo EHR	$20.0 million	Private	Drummond Group		www.kareo.com/ehr
26	**Viztek**	Opal-EHR	$20.0 million	Private	Drummond Group		www.viztek.net
27	**Compulink Business Systems**	Compulink EHR	$19.0 million*	Private	CCHIT		www.compulinkehr.com
28	**MacPractice, Inc.**	MacPractice EMR/iEDR	$15.0 million	Private	CCHIT		www.macpractice.com
29	**MedPlus (Quest Diagnostics Company)**	Care360 EHR	$14.0 million*	Public	CCHIT		www.medplus.com
30	**Microfour, Inc**	PracticeStudioX11	$12.5 million	Private	Surescripts, Drummond Group		www.practicestudio.net
31	**Henry Schein Medical Systems**	MicroMD EMR	$12.0 million	Public	Surescripts LLC / CCHIT		www.micromd.com
32	**MTBC - Medical Transcription Billing, Corp.**	ChartsPro Electronic Health Record	$12.0 million	Private	CCHIT		www.mtbc.com
33	**Practice Velocity, LLC**	VelociDoc® Urgent Care EMR	$11.8 million*	Private	CCHIT		www.practicevelocity.com
34	**ABEL Medical Software, Inc.**	ABELMed EHR-EMR/PM	$10.0 million	Private	CCHIT		www.abelmedicalsoftware.com
35	**Benchmark Systems**	Benchmark Clinical EHR	$10.0 million	Private	CCHIT		www.benchmark-systems.com

→25

ABELMed EHR-EMR/PM

We focus on the success of your Practice…

So you can focus on your Patients

Put the power of a best-in-class EHR & Practice Management solution to work for you.
Join the thousands of satisfied medical practitioners who rely on **ABELMed EHR-EMR/PM** to enhance the efficiency and profitability of their practice and for assistance in clinical decision making.

ABELMed delivers a cost-effective, complete IT solution for your practice. Top customer satisfaction, peace of mind with secure patient data, free unlimited online training, 24x7 telephone support and more…

Save time for you and your staff and improve patient care with ABELMed Portal.

Take advantage of our Risk Free Full Money Back and Data Export guarantee.
Start using ABELMed with our 6 month full money back guarantee. If for any reason you wish to return it in the first 6 months, in addition to refunding your payments in full, we will also provide the data you have entered into ABELMed in electronically readable format at no cost. Call us for details.

Visit us online to discover ABELMed's many benefits or call: 800-267-ABEL (2235)

ONC-ATCB CERTIFIED Supporting Meaningful Use 2011-2012 — Complete EHR Eligible Provider

ABELMed EHR-EMR/PM v11
ABELMed EHR-EMR/PM v12
CC-1112-621996-1*

ABEL® Medical Software Inc.

info@abelmedicalsoftware.com www.abelmedicalsoftware.com/me

surescripts certified · INTERTEK ISO 13485:2003 · FIRSTDATABANK The Knowledge Inside · Microsoft GOLD CERTIFIED Partner · Medical Economics EHR STUDY Sponsoring Vendor

* For more information visit https://www.cchit.org/show-onc-cert?certid=a055000000D3BHQAA3 and https://www.cchit.org/show-onc-cert?certid=a015000000dtYa9AAE

Quick to Implement * Easy to Use * Personalized Service

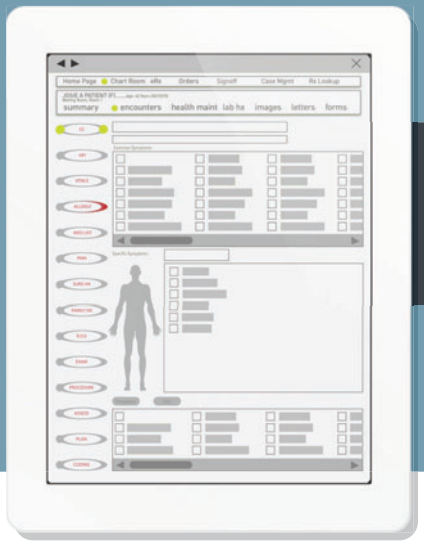
Absolutely ABEL!

* Data gathered through Hoovers financial reporting
**Revenue was not reported, ranking relied on industry sources

Rank	Company	EHR System Name	Annual Company Revenue	Public or Private	Certification	MU2 certified (as of 9/27/2013)	Website
36	**Bizmatics, Inc./ EMR Experts, Inc.**	PrognoCIS EMR	$10.0 million	Private	CCHIT		www.bizmaticsinc.com
37	**CareCloud Corporation**	CareCloud Central Practice Management EHR Software/ CareCloud Charts EHR	$10.0 million	Private	Drummond Group		www.carecloud.com/ehr/
38	**MD Logic, Inc.**	MD Logic World Wide EMR	$10.0 million	Private	Drummond Group Inc.		www.mdlogic.com
39	**Versasuite**	VersaSuite	$10.0 million	Private	CCHIT		www.versasuite.com
40	**Medical Mastermind**	Mastermind EHR	embargoed	Private	CCHIT		medicalmastermind.com
41	**Endosoft (Utech Products)**	EndoVault	$8.3 million*	Private	Drummond Group		www.endosoft.com
42	**Modernizing Medicine, Inc.**	EMA	$8.2 million*	Private	Surescripts, CCHIT		www.modmed.com
43	**HealthFusion**	MediTouch	$7.7 million	Private	Drummond Group	✔	www.healthfusion.com
44	**Integrated Systems Management**	Omni EHR	$7.7 million*	Private	CCHIT		www.omnimd.com
45	**Glenwood Systems LLC**	GlaceEMR	$7.5 million	Private	CCHIT	✔	glenwoodsystems.com
46	**Amazing Charts (Pri-Med)**	Amazing Charts	$7.2 million*	Private	CCHIT		www.amazingcharts.com
47	**Medical Informatics Engineering**	WebChart EHR	$7.0 million	Private	Surescripts LLC, Drummond Group, Inc., CCHIT		www.mieweb.com
48	**Healthwyse**	MobileWyse, FinanceWyse, OfficeWyse, CallWyse	$6.9 million*	Private	CCHIT		www.healthwyse.com
49	**Sevocity (Conceptual MindWorks, Inc.)**	Sevocity EHR	$6.9 million*	Private	CCHIT		www.sevocity.com
50	**MedSphere Systems**	Open Vista	$6.4 million*	Private	InfoGard Laboratories		www.medsphere.com
51	**MedFlow**	Medflow EHR	$6.0 million*	Private	Drummond Group	✔	medflow.com
52	**WRS Health (Waiting Room Solutions)**	Waiting Room Solutions	$6.0 million	Private	CCHIT		www.waitingroomsolutions.com
53	**Wellsoft**	Wellsoft EDIS	$6.0 million*	Private	CCHIT	✔ (modular only)	www.wellsoft.com
54	**EnSoftek, Inc.**	DrCloud EMR	$6.0 million*	Private	ISCA Labs		www.drcloudemr.com
55	**MEDITECH**	MEDITECH	$5.9 million	Private	Drummond Group	✔	meditech.com
56	**Anasazi Software Inc. (Cerner)**	Anasazi Complete EHR	$5.8 million*	Private	Drummond Group		www.anasazisoftware.com

➔28

The only name in urgent care you need to know.



9 out of 10 respondents on KLAS® said they would buy DocuTAP's EHR again.

Watch a live software demo.
Find free urgent care resources.
Get expert advice.

docutap.com/ME
888.912.8433

DocuTAP

URGENT CARE: Why on-demand healthcare is thriving.

"I want it now!" We've all heard the cautionary tale of the impatient little girl in the magical candy factory. But does the allegory's danger of impatience hold up today?

How patiently are you willing to wait when an app on your phone is sluggish? When a webpage takes 15 seconds to load? When there are 8 cars ahead of you in the drive-thru? Or 6 people in line for coffee?

Even our entertainment is now on-demand — with e-books, broadband, and DVR, what we read and watch needs to be available right now.

The line separating "convenience" and "need" is already muddled before we consider waiting for a doctor's appointment. Convenience almost always gives way to need when we're considering a matter of health.

It's no surprise, then, to watch the [recent] growth of urgent care. In 2012, urgent care clinics saw more than 160 million patient visits, and 85% of those clinics expected growth in visit volume in 2013.

In what is a comparatively new segment of healthcare, urgent care has been making its mark in the last few years, no doubt related to continued increases in patient visit numbers. The Urgent Care Association of America cites that there are over 9,000 urgent care clinics in the United States — and another one opens nearly every day.

Short answers for success

Why do new clinics open every day?

Well, the patients keep showing up. And not because they haven't tried elsewhere.

The United States is currently experiencing a massive drop-off in the number of family medicine physicians. In fact, the overall physician shortage is expected to leave the U.S. with a deficit of more than 90,000 physicians needed for the population by 2020.

Patients with no access to primary care or family physicians — and likely no other option — often turn to the emergency room. But very long waits for very expensive care leave a prime opportunity for another solution.

Carving out a space between family practice clinics and emergency rooms, urgent care clinics solve the problem of (timely) physician access at much more affordable costs than the ER. Patients can still turn to their family docs for longitudinal care and to the ERs for true emergencies, but for plenty of situations in between — from strep throat to stitches to sprained ankles — urgent care clinics can fill that need. Not only can the urgent care treat those conditions, but without a full schedule of appointments to contend with, care can often be provided very quickly.

While it's obvious they're providing a solution to the need of physician access, they're clearly proving to be good business, too.

Everyone into the pool

Urgent care clinics aren't opening at the pace they are for no reason.

With 9,000 clinics, and an expected industry revenue total of over $9 billion, the urgent care industry only expects to expand on its growth.

In UCAOA's 2012 report, 40% of respondents expected to offer new services or add new locations in 2013.

Perhaps the most telling sign of the urgent care industry's growth is the volume of recent investment into clinics. In 2010, two big moves helped to signal the shift from physician-owned clinics to corporate-owned clinics.

First, venture capital firm Sequoia Capital and private equity firm General Atlantic bought MedExpress, the third-largest chain of urgent cares in the U.S. Later that year, Humana purchased Concentra's 330 clinics for a total of $805 million.

That trend has definitely continued in the industry. Ownership of clinics by physicians and physician groups fell from 50% in 2010 to 35.4% in 2012. That coincided with an increase in the percentage of corporate-owned clinics, from 13.5% to 30.5% over the same time period.

A spate of investments into other large urgent care organizations like CareSpot, Hometown, Millennium, WellNow, Physicians Immediate Care, CareWell, FastMed, MD Now, WellStreet, and others has confirmed the trend.

Not wanting to miss out, hospitals and health systems are starting to flex some muscle in the urgent care space. And while there has been significant corporate investment into the market by venture capital and private equity groups, physicians are still seizing opportunities to open their own urgent care clinics.

Coming from family practice clinics and emergency departments, physicians continue to be lured by the prospects of setting their own hours and running their own businesses in a market that keeps growing.

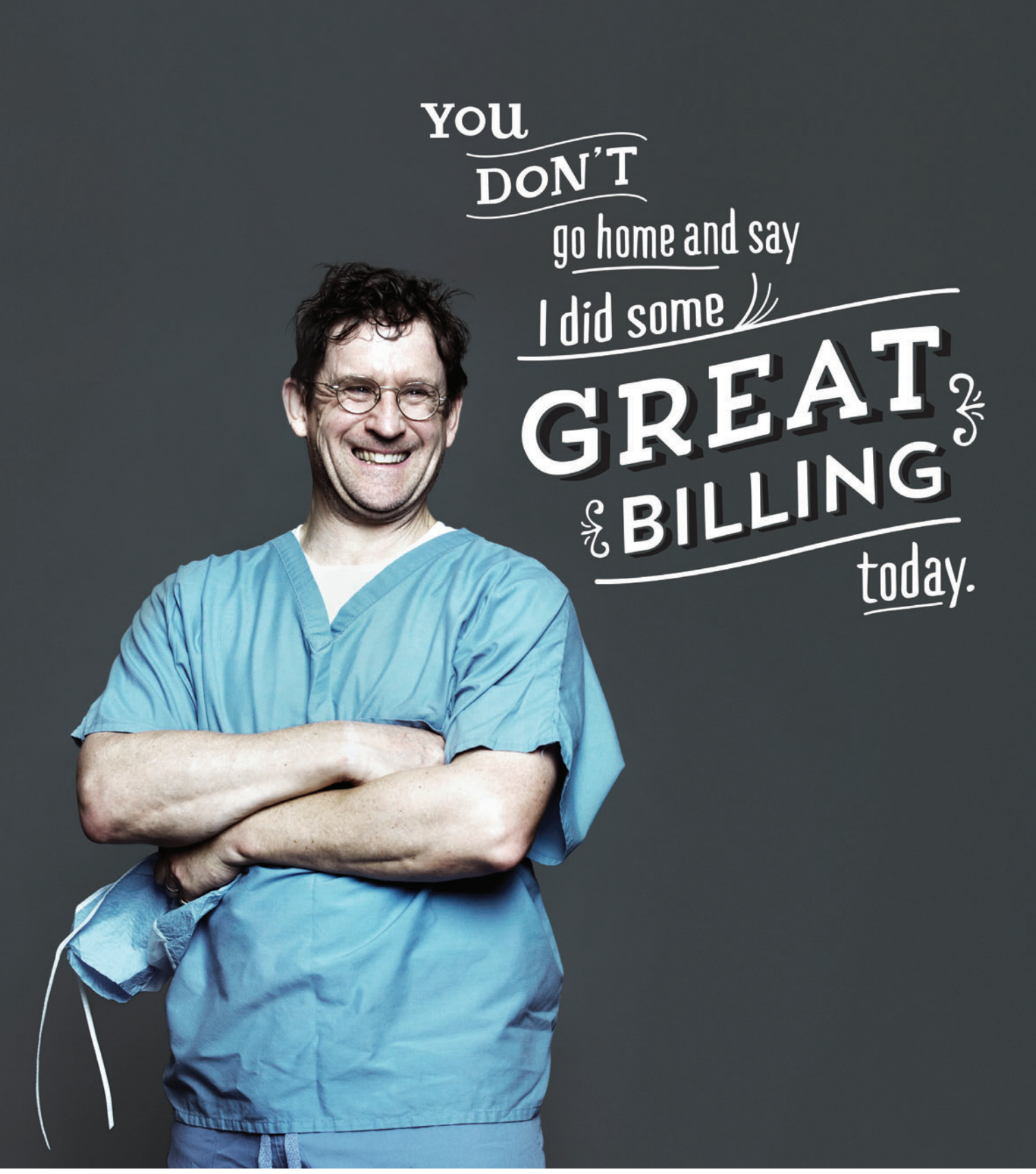
Like the patients needing urgent medical care, this is a business opportunity that's available right now, on-demand.

Darin Vander Well **is the Director of Product at DocuTAP, a leading provider of urgent care-specific software and solutions.** ***Vander Well*** **has over five years' experience in urgent care and directs the development of DocuTAP's integrated, web-based electronic health record (EHR) and Practice Management (PM) system.**

* Data gathered through Hoovers financial reporting
**Revenue was not reported, ranking relied on industry sources

Rank	Company	EHR System Name	Annual Company Revenue	Public or Private	Certification	MU2 certified (as of 9/27/2013)	Website
57	**ChartLogic, Inc.**	ChartLogic	$5.5 million*	Private	Drummond Group	✔ (modular only)	www.chartlogic.com
58	**Nuesoft Technologies**	NueMD EHR	$5.5 million*	Private	CCHIT		www.nuesoft.com
59	**Lavender & Wyatt Systems, Inc.**	Essentia EMR	$5.4 million*	Private	Drummond Group		www.lwsi.com
60	**Physician's Computer Company**	PCC EHR Pediatric Charting	$5.0 million	Private	Drummond Group		www.pcc.com
61	**WEBeDoctor, Inc.**	WEBeDoctor EMR	$5.0 million	Private	Surescripts LLC, Drummond Group, Inc.		webedoctor.com
62	**Net Health (Integritas, Inc.)**	Agility	$4.8 million*	Private	CCHIT		www.integritas.com
63	**RazorInsights**	ONE-Electronic Health Record	embargoed	Private	InfoGard Laboratories		razorinsights.com
64	**NCG Medical**	Perfect Care EHR	$4.4 million*	Private	Drummond Group		www.perfectcare.com
65	**MedInformatix, Inc.**	MedInformatix V7.5	$4.0 million*	Private	Drummond Group		www.medinformatix.com
66	**DocuTAP**	DocuTAP	$3.9 million*	Private	Drummond Group		docutap.com
67	**4Medica**	4medica iEHR	$3.7 million*	Private	CCHIT		www.4medica.com
68	**P & P Data Systems**	CIS 8 (Clinic Information Systems)	$3.3 million*	Private	SLI Global Laboratories, Inc. / ICSA Labs		www.p-pdata.com
69	**iSALUS Healthcare**	OfficeEMR	$3.0 million	Private	Drummond Group		www.isalushealthcare.com
70	**Phymedica**	Phymedica	$3.0 million*	Private	Surescripts LLC,		www.phymedica.com
71	**CentriHealth, Inc.**	CentriHealth Individual Health Record (IHR)	$2.7 million*	Private	CCHIT		www.centrihealth.com
72	**Meta Healthcare IT Solutions**	MetaCare Enterprise EHR	$2.6 million*	Public	InfoGard Laboratories		www.metacaresolutions.com
73	**Inforia, inc.**	Caregiver Desktop	embargoed	Private	Drummond Group		www.inforiainc.com
74	**Raintree Systems**	Raintree Systems version 10	$2.5 million*	Private	CCHIT		www.raintreeinc.com
75	**eHealthFiles, Inc.**	eHealthFiles	$2.1 million	Private	Drummond Group		www.ehealthfiles.com
76	**KeyMedical Software**	KeyChart EMR	embargoed	Private	CCHIT		www.keymedicalsoftware.com
77	**First Medical Solutions**	First Medical Suite and First CloudEHR	$2.0 million	Private	ICSA Labs		www.firstmedicalsolutions.com

➔30



Kareo helps you get back to your patients.

With intuitive software and services from Kareo, you can simplify your office administration, get faster, more accurate payments, and radically reduce the time you spend on paperwork. Created just for the private practice, Kareo's affordable suite of EHR, practice management, and billing solutions helps you run your practice smarter, so you can get back to what's important.
Get back to being a doctor at 866-231-2871 or kareo.com/gopractice.

kareo™
Go Practice

* Data gathered through Hoovers financial reporting
**Revenue was not reported, ranking relied on industry sources

Rank	Company	EHR System Name	Annual Company Revenue	Public or Private	Certification	MU2 certified (as of 9/27/2013)	Website
78	**Holt Systems, Inc**	eMedRec	$2.0 million	Private	Drummond Group		www.holtsystems.com
79	**NeoDeck Holdings**	NeoMed EHR 3.0	$2.0 million*	Public	CCHIT, Surescripts		neodecksoftware.com/nd-soft
80	**EncounterPro**	EncounterPRO EMR Workflow System	$1.6 million*	Private	CCHIT		encounterpro.org
81	**Spring Medical Systems, Inc.**	SpringCharts EHR	$1.5 million*	Private	InfoGard Laboratories		www.springmedical.com
82	**AdvantaChart, Inc.**	AdvantaChart EHR	$1.4 million*	Private	Drummond Group		www.advantachart.com
83	**OA Systems, Inc.**	Panacea	$1.4 million*	Private	Drummond Group		www.oasite.com
84	**Aym Technologies, LLC**	OnTarget Clinical	$1.3 million*	Private	Drummond Group		www.aymtechnologies.com
85	**Healthland**	Healthland Ambulatory EHR	$1.3 million*	Private	CCHIT		www.healthland.com
86	**Sequel Systems, Inc.**	SequelMed EHR	$1.3 million*	Private	Surescripts, Drummond Group		www.sequelmed.com
87	**Advanced Health Management Systems, LLC**	AHMS 1.1	$1.2 million*	Private	Drummond Group		www.ahms.com
88	**EPOWERdoc**	EPOWERdoc	$1.2 million*	Private	Drummond Group		www.epowerdoc.com
89	**Simplify MD, Inc.**	Simplify MD	$1.2 million*	Private	CCHIT		www.simplifymd.com
90	**EyeFormatics**	ODOS EMR	$1.0 million	Private	Drummond Group, Inc., CCHIT		emreyes.com
91	**MedNet Medical Solutions**	emr4MD	$1.0 million	Private	Durmmond Group		www.mednetmedical.com
92	**MedWorxs, LLC**	Evolution	$1.0 million	Private	Drummond Group		www.medworxs.com
93	**ReLi Med Solutions**	ReLiMed EMR	$1.0 million	Private	Drummond Group		relimedsolutions.com
94	**Grand Rounds Software, LLC**	Crib Notes	$880,000*	Private	Drummond Group, Inc.		www.cribnotes.com
95	**Agastha, Inc.**	Agastha Enterprise Healthcare Software	embargoed	Private	Drummond Group Inc.	✔	www.agastha.com
96	**Valant Medical Solutions (Behavioral Science)**	Valant Behavioral Health EHR	$790,000*	Private	InfoGard		www.valant.com
97	**Cyfluent, Inc.**	CyCHART	$400,000*	Private	CCHIT		www.cyfluent.com
98	**MD Synergy Solutions, LLC**	PRO EMR	$400,000*	Private	CCHIT		www.mdsynergy.com
99	**Acrendo Medical Software**	A.I. Med EHR	$360,000*	Private	ONC-ATCB 2011/2012/CCHIT		www.acrendo.com
100	**SOAPware, Inc.**	SOAPware Clinical Suite	$300,000*	Private	CCHIT		www.soapware.com

MacPractice integrates into your life and work.

Your practice management and clinical software should enable you to run your practice effectively and affordably with confidence. It should integrate with your lifestyle, your iPads, iPhones and Macs at home.

You wouldn't buy a PC for your home, why would you want one in your practice? With 30 years experience and 30,000 users, MacPractice's future-proof solutions provide comprehensive functionality to manage your office and patient relationships.

An experienced, dedicated MacPractice Practice Consultant is ready to visit your office to demonstrate how MacPractice works – giving you confidence to choose the most capable and powerful medical technology designed specifically for Apple devices.

Macs-imize your practice with MacPractice.
www.macpractice.com/MD | (855) 679-0033


Clipboard


Patient Check In


iEHR

MacPractice
Simplicity in practice

Register at macpractice.com TO VIEW DEMOS

2013 TOP 100 EHRs
Medical Economics

EHR capabilities

in addition to recording health information

This chart represents information submitted by companies taking part in a *Medical Economics* survey.

Company	EHR System Name	Clinical Decision Support	Scheduling & Billing Integration	ePrescribing	Laboratory Review	Patient Portal	Remote Access	Mobile Applications	Quality Measure Dashboard	Instant Messaging	HIE Exchange Compatability	Claims Reporting	Training
4Medica	**4medica iEHR**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
ABEL Medical Software, Inc.	**ABELMed EHR-EMR/PM**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Addison Health Systems, Inc.	**WritePad EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
ADP AdvancedMD	**AdvancedMD EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
AdvantaChart, Inc.	**AdvantaChart EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Agastha, Inc.	**Agastha Enterprise Healthcare Software**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Amazing Charts (Pri-Med)	**Amazing Charts**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✘	✔
athenahealth	**athenaClinicals**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
Benchmark Systems	**Benchmark Clinical**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Bizmatics, Inc./EMR Experts, Inc.	**PrognoCIS EMR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cerner Corporation	**Cerner PowerChart Ambulatory EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
ChartLogic, Inc.	**ChartLogic**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔
CompuGroup	**CGM Clinical, CGM Enterprise EHR**	✔	✔	✔	✔	✔	✔	✘	✘	✘	✔	✔	✔
Cyfluent, Inc.	**CyCHART**	✘	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔
DocuTAP	**DocuTAP**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔
eClinicalWorks*	**eClinicalWorks**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
eHealthFiles, Inc.	**eHealthFiles**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

➔34

OUR PLEDGE:
YOUR SUCCESS

Vitera's Three-Point Promise means we'll deliver technology that meets your needs today…and tomorrow. Respond quickly to support you, every time. Help you grow profitably, work smarter, and improve patient outcomes.

You have our word.

Learn how our Three-Point Promise helps your practice.
Viterahealthcare.com

Vitera
HEALTHCARE SOLUTIONS

Matthew J. Hawkins
CEO

Company	EHR System Name	Clinical Decision Support	Scheduling & Billing Integration	ePrescribing	Laboaratory Review	Patient Portal	Remote Access	Mobile Applications	Quality Measure Dashboard	Instant Messaging	HIE Exchange Compatability	Claims Reporting	Training
E-MDs	**Solution Series, Cloud Solutions**	✔	✔	✔	✔	✔	✔	✔	✘	✘	✔	✔	✔
EyeFormatics	**ODOS EMR**	✘	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
First Medical Solutions	**First Medicals Suite and First CloudEHR**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
Glenwood Systems, LLC	**GlaceEMR**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔
GloStream	**gloEMR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
gMed	**gGastro**	✔	✔	✔	✔	✔	✔	✘	✔	✘	✔	✔	✔
Grand Rounds Software, LLC	**Crib Notes**	✔	✔	✘	✔	✘	✔	✔	✘	✘	✔	✘	✔
Greenway Medical Technologies	**Greenway PrimeSUITE**	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔	✔	✔
HealthFusion	**MediTouch**	✔	✘	✔	✔	✔	✔	✔	✔			✔	✔
Hello Health	**Hello Health**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Henry Schein Medical Systems	**MicroMD EMR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Holt Systems, Inc.	**eMedRec**	✔	✘	✔	✔	✔	✔	✔	✔	✘	✔	✘	✔
iSALUS Healthcare	**OfficeEMR**	✔	✔	✔	✔	✔	✔	✔	✘	✘	✔	✔	✔
Kareo	**Kareo EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
KeyMedical Software	**KeyChart EHR**	✔	✔	✔	✔	✔	✔	✘	✘	✔	✘	✔	✔
MacPractice, Inc.	**MacPractice EMR/iEDR**	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔
McKesson Business Performance Services	**InteGreat EHR**	✔	✘	✔	✔	✔	✔	✘	✔	✘	✔	✘	✔
MD Logic, Inc.	**MD Logic World Wide EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔
MEDARC	**MEDARC-Brian**	✔	✔	✔	✘	✔	✔	✔	✔	✔	✘	✘	✔
Medical Informatics Engineering	**WebChart**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

➔36

All-in-One

EHR, Practice Management & Billing Services

CureMD™
Practice without boundaries

CureMD Healthcare is an award winning provider of health information systems and services, offering specialty EHRs, Practice Management, Patient Portal and Revenue Cycle Management to help accelerate adoption and profitability - driving outcomes and subsidy payments to maximize value and returns. Learn how your organization might benefit **1 866 643 8367 ▪ www.curemd.com**

Company	EHR System Name	Clinical Decision Support	Scheduling & Billing Integration	ePrescribing	Laboratory Review	Patient Portal	Remote Access	Mobile Applications	Quality Measure Dashboard	Instant Messaging	HIE Exchange Compatability	Claims Reporting	Training
Medical Mastermind	**Mastermind EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
MEDITECH	**Meditech**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
MedNet Medical Solutions	**emr4MD**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✘	✔	✔
MedPlus (Quest Diagnostics Company)	**Care360 EHR**	✔	✔	✔	✔	✘	✔	✔	✔	✘	✔	✔	✔
MedWorxs, LLC	**Evolution**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
Microfour, Inc.	**PracticeStudio.X11**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
NexTech	**NexTech Practice**	✔	✘	✔	✔	✔	✔	✔	✔		✔	✔	✔
NextGen Healthcare Information Systems, Inc	**NextGen Ambulatory EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
P & P Data Systems	**CIS 8 (Clinic Information Systems)**	✔	✔	✘	✔	✘	✔	✘	✔	✘	✘	✔	✔
Patient Click	**PatientClick EHR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Platinum Systems Specialists, Inc.	**PlatinumEMR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Practice Fusion	**Practice Fusion**	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✘	✔
Praxis Electronic Medical Records (Infor-Med)	**Praxis EMR/EHR**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔
RazorInsights	**ONE-Electronic Health Record**	✔	✔	✔	✔	✔	✔	✘	✔	✘	✔	✔	✔
ReLi Med Solutions	**ReLiMed EMR**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔
ScriptNetics	**Medscribbler**	✔	✔	✔	✔	✘	✔	✔	✘	✔	✘	✔	✔
Versasuite	**VersaSuite**	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔	✔	✔
Vitera Healthcare Solutions	**Vitera Intergy, Vitera Stat, Vitera Medical Manager**	✔	✔	✔	✔	✔	✔	✔	✔	✘	✔	✔	✔
Viztek	**Opal-EHR**	✔	✔	✔	✔	✔	✔	✘	✔	✘	✔	✔	✔
WEBeDoctor, Inc.	**WEBeDoctor EMR**	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

Synchronizing Healthcare

CompuGroup™ Medical

More than just software solutions.

Our PM and EHR Solutions play an integral part in the success of our many Practice, Hospital and Community Health Center customers.

We invite you to learn how you too can benefit from the advantages of our PM and EHR solutions as well as services to reach your own success goals as a CGM customer. Send an email to ceoCGMus@cgm.com or call 1-855-270-6700 to learn how our products and services can meet your specific needs.

CompuGroup Medical • 125 High Street , 8th Floor • Boston, MA 02110 • www.CGMus.com

Complete EHR systems approved for Meaningful Use 2

Company	System(s)
Advanced Data Systems	MedicsDocAssistant EHR
Agastha, Inc.	Agastha Enterprise Healthcare Software
Allscripts	Allscripts Enterprise EHR, Allscripts Professional, Sunrise Acute Care, Sunrise Ambulatory Care
AmkaiSolutions	AmkaiCharts
Aprima	PRM 2014
athenahealth	athenaclinicals
Bogardus	Oncochart
GE Healthcare	Centricity Enterprise
CPSI	CPSI System
eClinicalWorks	eClinicalWorks
Epic Systems Corporation	EpicCare Ambulatory, EpicCare Inpatient
Glenwood Systems	GlaceEMR
Greenway Medical Technologies	Greenway PrimeSUITE
HMS	Healthcare Management Systems, Inc.
McKesson	Horizon Ambulatory Care, Paragon with McKesson Quality eMeasures
MedFlow	Medflow EHR
SuccessEHS (Vitera)	MediaDent
LSS Data Systems (MEDITECH)	MPM Magic
MEDITECH	MEDITECH 6.0, 6.1
HealthFusion	MediTouch
NextGen	NextGen Ambulatory EHR, NextGen EDR, NextGen Inpatient Clinicals
Pulse	Pulse Complete EHR
Vitera	Vitera Integrity Meaningful Use Edition

Source: Office of the National Coordinator for Health Information Technology Certified Health IT Product list

66%

of office-based physicians reported they planned to apply, or already had applied, for meaningful use incentives in 2012, says the National Center For Health Statistics (NCHS).

48%

Only 48% of office-based physicians were using EHR systems in 2009, according to the NCHS.

27%

of office-based physicians who planned or already applied for MU incentives had computer systems capable of supporting core objectives of meaningful use 1.

72%

of office physicians used an electronic health record (EHR) system in 2012, according to the NCHS.

Getty Images/E+/ Alex Slobodkin

Modular EHR systems approved for Meaningful Use 2

Company	System(s)
Acuitec, Inc.	VPIMS
Allscripts	Allscripts Enterprise EHR, FollowMy Health, Professional EHR
athenahealth	athenaclinicals
BuildYourEMR	1 Connect BuildYourEMR
CareEvolution, Inc.	HIEBus
CareFusion Solutions, LLC	Pyxis Med Administration Verification
Catholic Health Initiatives	CHI Meaningful Use CoreANALYTICS
Cerner	Cerner Patient Portal and FirstNet, PowerChart, FirstNet, HealthSentry, P2 Sentinel, PathNet
ChartLogic	ChartLogic
CitiusTech, Inc.	Bi-Clinical

Company	System(s)
Computer Sciences Corporation	Viaduct
Corepoint Health	Corepoint Integration Engine
Dynamic Health IT, Inc.	ConnectEHR
EDIMS, LLC	EDIMS
Emerge Clinical Decision Solutions	Emerge Solutions
Epic Systems Corporation	Ambulatory 2014, Inpatient 2014, Beacon Oncology 2014
ExitCare, LLC	ExitCare v7.8 with Infobutton v1.0, OnCall v2.3.13.3.0
FairWarning Technologies, Inc.	FairWarning Patient Privacy Monitoring
First Insight Corporation	MaximEyes Electronic Health Records

➔40

Modular EHR systems approved for Meaningful Use 2 CONTINUED

Company	System(s)
Forerun, Inc.	EmergisoftED, Forerun ED
GE Healthcare	Centricity Enterprise, Centricity Patient Online, Centricity Perinatal
Get Real Health	InstantPHR
Greenway Medical Technologies	PrimeSUITE
HCA Information Technology & Services, Inc.	hCQM
Health Care Systems, Inc.	HCS eMR
Healthcare Management Systems, Inc.	Healthcare Management Systems, Inc., HMS EDIS, PatientLogic
HealthFusion	MediTouch
Henry Schien Practice Solutions, Inc.	Dentrix Enterpise
Hinext, LLC	Treat
Hyland Software, Inc.	OnBase, R4 ACERT Perinatal Reporting System
Iatric Systems, Inc.	Launch Integration Toolkit, Meaningful Use Manager, Public Health Immunizations, Public Health Syndromic Surveillance, Security Audit Manager
IGI Health, LLC	Orbit Patient Portal
IHM Services Company	Meaningful Use Solution
InteliChart LLC	InteliChart Patient Portal
InterSystems Corporation	HealthShare
Intuit Health	Intuit Health Patient Portal
LDM Group, LLC	LDM ConncetSys
LOGICARE Corporation	LOGICARE V8
LOISS, LTD	TRIMSNet
Massachusetts eHealth Collaborative	Quality Data Center
Mayo Clinic	CE Mayo
McKesson	Horizon, Business Insight, Enterprise, Patient Folder, Quality eMeasures for Hospitals, Radiology, RelayClinical
Medflow, Inc.	Medflow EHR
MEDHOST, Inc.	MEDHOST EDIS, PIMS
MEDITECH	MEDITECH
Medicity, Inc.	Medicity Product Suite

Company	System(s)
Medisolv, Inc.	ENCOR+
MEDSEEK	MEDSEEK Empower
Montrue Technologies, Inc.	Sparrow EDIS
Netsmart Technologies, Inc.	Avatar
NextGen Healthcare	NextGen Ambulatory EHR, NextGen EDR, NextGen Inpatient Clinicals, NextGen Patient Portal
Northwestern University	Northwestern Meaningful Use Data Warehouse Application for Eligible Providers
Objective Medical Systems	OMS EHR
Orion Health	Rhapsody Connect, Rhapsody Integration engine
Orion Healthcare Technology	AccuCare
PatientSafe Solutions	PatientTouch System
PEPID, LLC	PEPID EHR Module
RegisterPatient	IngagePatient
Sabiamed Corporation	Clinnet, ClinNext
Samsung Electronics Co., Ltd.	m-EMR 2.0
Scientific Technologies Corporation	ImmsLink
Social Solutions	ETO Impact
SRSoft	SRS EHR
SuccessEHS (Vitera)	SuccessEHS
Sunquest Information Systems, Inc.	Sunquest Laboratory
T-System Technologies, Ltd.	EV
Tenet Healthsystem Medical, Inc.	MUEDW
The Shams Group	TSG EHR Suite
True Process, Inc.	VeriScan
Truven Health Analytics	Meaningful Use Quality Manager, Unify
Vision Infonet, Inc.	MDCare EMR/PMS
Vitera Healthcare Solutions	Vitera Intergy Meaningful Use Edition
Wellsoft Corporation	Wellsoft EDIS
Zirmed	PatientNotebook

Source: Office of the National Coordinator for Health Information Technology Certified Health IT Product list

Mobile applications

Alphabetical listing of companies responding to *Medical Economics* survey.

Company	EHR System Name	Mobile Apps	Addl Cost
4Medica	4medica iEHR	✔	No
ABEL Medical Software Inc.	ABELMed EHR-EMR/PM	✔	No
Addison Health Systems Inc.	WritePad EHR	✔	No
AdvancedMD Software	AdvancedMD EHR	✔	No
AdvantaChart, Inc.	AdvantaChart EHR	✔	No
Agastha, Inc.	Agastha Enterprise Healthcare Software	✔	No
athenahealth	athenaClinicals	✔	No
Benchmark Systems	Benchmark Clinical	✔	No
Bizmatics Inc/EMR Experts Inc	PrognoCIS EMR	✔	No
Cerner Corporation	Cerner PowerChart Ambulatory EHR	✔	No
Cyfluent	CyCHART	✔	No
eClinicalWorks*	eClinicalWorks	✔	No
eHealthFiles Inc.	eHealthFiles	✔	No
E-MDs	Ekahau	✔	No
EyeFormatics	ODOS EMR	✔	No
First Medical Solutions	First Medicals Suite and First CloudEHR	✔	No
GloStream	gloEMR	✔	No

➔42

Mobile applications CONTINUED

Company	EHR System Name	Mobile Apps	Addl Cost
Grand Rounds Software, LLC	Crib Notes	✔	No
Greenway Medical Technologies	Greenway PrimeSUITE	✔	No
HealthFusion	MediTouch	✔	No
Hello Health	Hello Health	✔	No
Henry Schein Medical Systems	MicroMD EMR	✔	Yes
Holt Systems Inc	eMedRec	✔	
iSALUS Healthcare	OfficeEMR	✔	No
Kareo	Kareo EHR	✔	No
MacPractice, Inc.	MacPractice EMR/iEDR	✔	Yes
MD Logic Inc.	MD Logic World Wide EHR	✔	No
Medical Informatics Engineering	WebChart	✔	No
MEDICAL MASTERMIND	Mastermind EHR	✔	No
MEDITECH	Meditech	✔	No
MedNet Medical Solutions	emr4MD	✔	No
MedPlus (Quest Diagnostics Company)	Care360 EHR	✔	No
MedWorxs LLC	Evolution	✔	No
Microfour,Inc	PracticeStudio.X11	✔	No
Microwize Technology, Inc.	Medisoft Clinical, Lytec MD, Practice Choice, Greenway PrimeSuite	✔	No
NexTech	NexTech Practice	✔	Yes
NextGen Healthcare Information Systems Inc*	NextGen Ambulatory EHR	✔	Yes
Patient Click	PatientClick EHR	✔	No
Platinum Systems Specialists, Inc.	PlatinumEMR	✔	No
Practice Fusion	Practice Fusion	✔	No
ScriptNetics	Medscribbler	✔	Yes
Vitera Healthcare Solutions	Vitera Intergy, Vitera Stat, Vitera Medical Manager	✔	Yes
WEBeDoctor, Inc.	WEBeDoctor EMR	✔	No

91%

of physicians say they are interested in mobile EHR systems, according to Beckers.

38%

of surveyed physicians said they were "very satisfied" with their EHR system, according to the NCHS 2011 Physician Workflow survey.

Getty Images/Photodisc/Tim Kitchen

Patient portal

Alphabetical listing of companies responding to *Medical Economics*'s survey.

Company	EHR System Name	Patient Portal	Addl Cost
4Medica	4medica iEHR	✔	No
ABEL Medical Software Inc.	ABELMed EHR-EMR/PM	✔	No
Addison Health Systems Inc.	WritePad EHR	✔	No
AdvancedMD Software	AdvancedMD EHR	✔	No
AdvantaChart, Inc.	AdvantaChart EHR	✔	Yes
Agastha, Inc.	Agastha Enterprise Healthcare Software	✔	Yes
Amazing Charts	Amazing Charts	✔	Yes
athenahealth	athenaClinicals	✔	No
Benchmark Systems	Benchmark Clinical	✔	Yes
Bizmatics Inc/EMR Experts Inc	PrognoCIS EMR	✔	Yes
Cerner Corporation	Cerner PowerChart Ambulatory EHR	✔	No
ChartLogic Inc.	ChartLogic	✔	Yes
CompuGroup	CGM Clinical, CGM Enterprise EHR	✔	Yes
Cyfluent	CyCHART	✔	No
DocuTAP	DocuTAP	✔	No

➔44

Patient portal CONTINUED

Company	EHR System Name	Patient Portal	Addl Cost
eClinicalWorks*	eClinicalWorks	✔	No
eHealthFiles Inc.	eHealthFiles	✔	No
E-MDs	Solution Series, Cloud Solutions	✔	No

43%

of physicians say that Electronic Health Record systems slow them down and keep them from seeing patients, according to a RAND Corporation and American Medical Association survey.

37%

of health consumers told Accenture in a 2013 survey that they have no access to their electronic health records.

36%

of health consumers surveyed by consulting firm Accenture said they have full access to their health records electronically.

Company	EHR System Name	Patient Portal	Addl Cost
EyeFormatics	ODOS EMR	✔	No
First Medical Solutions	First Medicals Suite and First CloudEHR	✔	No
Glenwood Systems LLC	GlaceEMR	✔	No
GloStream	gloEMR	✔	Yes
gMed	gGastro	✔	Yes
HealthFusion	MediTouch	✔	No
Hello Health	Hello Health	✔	No
Henry Schein Medical Systems	MicroMD EMR	✔	Yes
Holt Systems Inc	eMedRec	✔	No
iSALUS Healthcare	OfficeEMR	✔	No
Kareo	Kareo EHR	✔	No
KeyMedical Software	KeyChart EHR	✔	Yes
MacPractice, Inc.	MacPractice EMR/iEDR	✔	Yes
McKesson Business Performance Services	InteGreat EHR	✔	Yes
MD Logic Inc.	MD Logic World Wide EHR	✔	No
MEDARC	MEDARC-Brian	✔	No
Medical Informatics Engineering	WebChart	✔	Yes
MEDICAL MASTERMIND	Mastermind EHR	✔	No
MEDITECH	Meditech	✔	No
MedNet Medical Solutions	emr4MD	✔	No
MedWorxs LLC	Evolution	✔	Yes
Microfour,Inc	PracticeStudio.X11	✔	No

Getty Images/010 Images/Paul Bradbury

Patient portal CONTINUED

Company	EHR System Name	Patient Portal	Addl Cost
Microwize Technology, Inc.	Medisoft Clinical, Lytec MD, Practice Choice, Greenway PrimeSuite	✔	Yes
NexTech	NexTech Practice	✔	Yes
NextGen Healthcare Information Systems Inc*	NextGen Ambulatory EHR	✔	Yes
Patient Click	PatientClick EHR	✔	No
Platinum Systems Specialists, Inc.	PlatinumEMR	✔	No
Practice Fusion	Practice Fusion	✔	No
Praxis Electronic Medical Records (Infor-Med)	Praxis EMR/EHR	✔	No
RazorInsights	ONE-Electronic Health Record	✔	No
ReLi Med Solutions	ReLiMed EMR	✔	Yes
Valant Medical Solutions (Behavioral Science)*	Valant Behavioral Health EHR	✔	NO
Versasuite	VersaSuite	✔	Yes
Vitera Healthcare Solutions	Vitera Intergy, Vitera Stat, Vitera Medical Manager	✔	Yes
Viztek	Opal-EHR	✔	No
WEBeDoctor, Inc.	WEBeDoctor EMR	✔	No

Consolidation, physician demand drive change in EHR industry

Government mandates, innovation, and usability are factors that will determine which EHRs will lead the industry

by **DONNA MARBURY, MS** *Content Specialist*

HIGHLIGHTS

01 EHR companies will have to move from server-based systems to cloud and web systems in order to stay competitive.

02 Experts believe that interoperability between EHRs and other healthcare systems is not likely to happen in the near future.

In the next few years, the electronic health records (EHRs) industry is likely to change rapidly, from a wide variety of choices to just a few key players. But of the hundreds of EHR systems currently on the market, how many will be at the top?

If you take a look at primary care, the number of EHR vendors is already becoming more concentrated, says Jason Mitchell, MD, director of the Center for Health Information Technology for the American Academy of Family Physicians. He predicts that there will be 20 EHR companies that will make up the majority of the market by 2018.

"Meaningful Use 2 (MU2) will be the big shakeout and by Meaningful Use 3 (MU3) there will be pretty significant consolidation," Mitchell says. "There will always be a need for boutique systems that offer free EHRs. Larger companies are still having issues wading through lots of code. Even when most of the consolidation occurs, there will always be room for the little guy. There's still room for an innovative player."

In 2007, only 17% of physicians used basic EHRs, according to the Centers for Disease Control and Prevention. Now about 70% of physicians are using one of the hundreds EHR systems currently on the market. Government incentives for EHR usage in 2009 caused a race in the healthcare information technology community to develop and market the next big EHR system.

EHR study by Kalorama says that six companies make up 58% of the EHR market. The remaining 42% represent a fractured market that many experts predict is ripe for mass consolidation.

But how will this consolidation occur? According to Kalorama, EHR market saturation is still a few years away, and the market could mushroom from $20.7 billion in 2012 to $36.7 billion in 2017.

There are major challenges within the industry—half of practice owners say they are ditching their current EHRs for new ones, while many systems still struggle with interoperability issues as MU2 deadlines approach. If the EHR market is going to shrink and become more efficient, system providers need to balance innovation with government standards and increased

specialization in physicians' technology needs.

"Patients and providers are expecting up-to-the-minute access to healthcare data and the government is interested in leveraging this data to improve patient outcomes and to encourage better communication across the healthcare spectrum," says Tim Sayed, MD, medical director of Modernizing Medicine's Electronic Medical Assistant systems for surgery and cosmetics and executive committee member of the Healthcare Information and Management Systems Society EHR Association. "EHR has moved from being a simple concept of a computer-generated text file replacing handwritten chart data to a complex ecosystem of clinical data, patient education, and patient engagement tools which will increasingly require cross-platform interoperability."

THE NEXT BIG DRIVER

Mitchell says that the end of government incentives and the beginning of penalties in 2015 won't be a big factor in the EHR industry, though MU2 standards could cause a lot of companies to bow out of the industry.

"Healthcare reform and the transformation in healthcare payment models will be the real drivers," Mitchell says. "Needing to do data analysis and the switch into value from volume metrics will be important. The payment structure is changing with patient-centered care and accountable care organizations (ACOs)."

Sayed agrees that the move into MU2 and MU3 requirements will cause many companies with older technology or small marketing budgets to decide between upgrading, merging or closing their businesses.

"Certain vendors may lack the engineering and marketing resources to compete successfully for remaining new providers and newcomers to electronic record use, particularly given the complex requirements of stage 2 and stage 3 MU implementation," Sayed says.

A big shift in the EHR industry will be from server-based systems that require hardware or software to be installed on office computers to web- and cloud-based systems that can be available in the office or on mobile devices. According to the Practice Profitability Index released in May 2013 by CareCloud and QuantiaMD, more than 40% of physicians say they will be implementing new EHR systems in 2014. Half of the physicians surveyed want to improve operational performance in billings and collection, while 31% want to improve their technology overall.

"We are already seeing legacy vendors continuing to merge or go private in order to address various functionally or business model issues," says Albert Santalo, chief executive officer of CareCloud. "On timing, that all depends but I think it's a forgone conclusion that if you are not moving to a cloud-based model it will be harder to compete as a vendor moving forward."

IS INTEROPERABILITY POSSIBLE?

Mitchell says that the industry talks a lot about interoperability, but no company has yet to deliver.

"If we can have general interoperability it will open things up more, but I don't see that happening. There's too much competition. Health systems want to keep patient information within their system—they don't want to share. That's in their business model," Mitchell says.

The industry has yet to leverage big data to predict and manage outcomes, Sayed says. "I believe that big data analytics, which allow stakeholders (the government, payers, patient advocates, competing hospital systems, accountable care organizations, etc.) to observe patterns of care and outcomes of these different patterns, will be the true vanguard of EHR technology moving forward," Sayed says.

Opportunities to help doctors with existing issues with Health Insurance Portability and Account-

ability Act (HIPAA) compliancy and communicating with payers in simpler ways are other entry points for small businesses to make an impact in the EHR industry.

"There are many opportunities to make it easier for physicians and patients to communicate in HIPAA-compliant ways, by using tools that are as easy and intuitive as the kinds of tools they are using in their personal lives," Sayed says. "Integration between EHR's and billing clearinghouses remains somewhat clunky for various systems, and comprehensive practice solutions that include marketing/customer relationship management tools, inventory management, revenue cycle analytics, and human resource business intelligence will increasingly be demanded by high performing practices and enterprise-level organizations like hospitals and ACO's."

ROOM FOR INNOVATION

Though physicians are vocalizing their needs, and the changes in the industry are being outlined, EHR systems are still behind, says Santalo. This means there is still room for a lot of innovation.

"From a technology standpoint, we are decades behind other industries. Physicians are facing pressures to adopt and use EHRs to comply with various healthcare reform efforts and demonstrate Meaningful Use. It's clear there is a growing number of providers and groups that signed up for their first EHR in haste and are now entering the market again, wiser about what they need in a clinical system. Specifically, they are looking a more modern, usable, and faster EHR," Santalo says.

What does EHR innovation look like? Devices such as Google Glass, that could display patient records on eyeglasses, is a likely leap. Wireless and wearable EHR technology will be a necessity in the next few years.

"There are huge opportunities to continue innovating in this field to achieve more transparency and portability of patient data and integration with devices like wearable monitors and mobile apps that track patient health trends and behaviors," Sayed says.

5 WAYS to Watch the Financial Health of Your EHR Vendor

1/ **Stay alert. Setting up Google Alerts that monitor your EHR company will send you any articles and industry conversations to keep you in the loop about developments, mergers, or sells, says Derek Kosiorek, CPEHR, CPHIT, principal consultant for MGMA.**

2/ **Ask the right questions. Find out how many installs and de-installs your EHR vendor has had in the last year. You can ask the company, and if they are elusive, you may be able to find data from professional and government organizations, says Peter Basch, MD, FACP, chair of ACP's Medical Informatics Committee.**

3/ **Check for development. Because the EHR industry has aggressive development cycles, Kosiorek says that your company should be sending you information about updates and developments for the next 18-24 months. If not, their lack of innovation could be a red flag.**

4/ **Follow the money. Find out how the company is funded, how successful it has been and how long it has been around," says Basch. A small company with a strong business model may be more stable than an older company struggling with older technology.**

5/ **Watch the market. Unless your EHR system in unbearable or seems to be failing rapidly, wait out the changes in the market before looking for another vendor, Kosiorek says. Many companies are making too many changes for practices to invest a lot of money right now in a new system.**

Technology stands poised to transform medicine

With the pain of implementation still fresh for many physicians, seven leaders from EHR technology companies address the future of health information technology in the United States

by **DANIEL R. VERDON,** *Group Content Director*

Technology's promise in healthcare was to reinvent, streamline, and build new efficiencies among healthcare providers. While the adoption of electronic health records (EHRs) has reached a tipping point, the next phase of its evolution may actually deliver on those promises.

But the process hasn't been without pain for many office-based practices. Why? *Medical Economics* asked seven leaders from well-recognized EHR companies to talk about the trends and the future related to technology.

Medical Economics:
Q: In what ways is technology transforming medicine?

Bush: A critical point to make is that technology, when applied in the right way, has the incredible power to swing the pendulum in healthcare back to where it belongs, with the caregiver and patient. Truly transformative health information technology does not interfere with the sanctity of the encounter between caregiver and patient, but is a smart, elegant tool that doctors don't hate, delivers and enables value, and can be loved, as technology is loved in so many aspects of our lives.

ZoBell: Essentially, if you think about it, physician/patient encounters really have not changed a lot in the last 300 years in the sense that it's a physician interacting with a patient one-on-one, eyeball-to-eyeball. I think technology is transforming medicine in two ways. It helps the physician get to a diagnosis in faster and more reliable ways, whether that's through use of better instrumentation or diagnostic advances. It's also a tool physicians can use to better understand what's

ROUNDTABLE PANELISTS

Jonathan Bush
Chairman, CEO, and president, athenahealth, Inc.

Matthew Douglass
Vice president of platform, Practice Fusion

Wyche T. Green, III
President and CEO, Greenway Medical Technologies

Girish Navani
CEO and president, eClinicalWorks

Michael Nissenbaum
President and CEO, Aprima

John Squire
Chief operating officer, Amazing Charts

Steven ZoBell
Vice president of product development, ADP AdvancedMD

See complete bios on page 52.

Go to medicaleconomics.com/ehrroundtable

Check out the full interview with these seven leaders in our exclusive roundtable discussion at medicaleconomics.com/ehrroundtable
Other topics include:
- interoperability,
- the mobile revolution,
- growth of personal health technology

> Technology, when applied in the right way, has the incredible power to swing the pendulum in healthcare back to where it belongs, with the caregiver and patient."
>
> JONATHAN BUSH, CHAIRMAN, CEO, PRESIDENT, ATHENAHEALTH

going on with their patient panels.

It gives them new ways to better understand longitudinally what's happening with individuals, populations, or even lifetime trends. It's really about data. Advances in technology are also improving access to it.

I think the future power of medicine is all about the physician and the patient. Technology is allowing that patient to really be an active participant in the conversation.

Squire: If you look at the history of medical care, this is the point in time when there's more technology involved in the clinician's life than ever before. I think a part of that has been driven by government incentives to adopt EHR/EMRs, or at least to get everybody out of the filing cabinets and into an electronic playing field. Once you've got a baseline of information captured in electronic format, then the question becomes, "Well, what can you do with that?" One of the things you can do with that, clearly, is to securely share it, exchange it, and have something that approaches a continuum of care between providers. And that's driving health information exchange.

The second thing you get is a bunch of data, which can be analyzed for trends and other metrics.

The third thing I see is the new care models that are possible because you have this electronic infrastructure. Whether you call it a Patient-Centered Medical Home or accountable-care organization, basically the ability to manage patients between acute episodes, and avoid acute episodes to keep the cost of care down and the outcomes more favorable by more consistent monitoring.

There's also a host of technologies reaching into the home. These technologies are giving physicians and patients a way to monitor these chronic conditions in a way that we never could before, and work that into a care plan that's proactively administrated by a team versus a single clinician trying to keep up with a whole host of patients.

Green: I think there has been foundational work over the last decade, and it's all been around this concept of electronification. It's the first step in making information liquid, meaning making information flow from one system to another efficiently.

We are also more able to process clinical transactions. That concept is different than processing administrative and financial transactions. If you think about a financial transaction, regardless of which language, regardless of what country, regardless of really what standard you use, you are processing something that's black and white. It's a debit or a credit in its simplest form.

In healthcare, when I talk about processing clinical transactions, we have to process much more than a yes/no answer. For example, while we have codes for every diagnosis, you still may need to document the fact that the patient's blood pressure was greatly elevated after, say, doing 25 jumping jacks and standing on one foot. In a financial transaction, the jumping jacks and standing on one foot is irrelevant. But in a clinical transaction, it's critical. Today we are able to process clinical transactions, and that's never been possible before. I think that's what's going to change the face of medicine.

Medical Economics:

Q: If you could think about the delivery of medicine in the next 5 years, how will it change? How important will technology be in helping to guide this evolution?

Douglass: If we look back 15 years ago, we had almost zero doctors using electronic medical records. We had definitely zero patients being able to access their medical records in any way other than maybe requesting a chart from their doctor.

Prior to 2008 and the American Recovery and Reinvestment Act, we were working with about 7% of doctors in the United States using electronic medical records. We had less than 1% of patients accessing their medical records online. About $20 billion was earmarked for doctors to adopt systems. That has gotten us, basically, to today where we have about 40% adoption in the United States.

Meanwhile, patients were able to access their records online a little bit more often, but I still think we haven't gotten over that hump of true impact of technology with doctors and with patients and with the data that's connecting them.

We're on the precipice. There are a lot of companies working on a lot of big ideas, and we obviously have ours, as well. I think the real power of technology within a practice and within the physi-

➔51

➔50

cian/patient experience is ahead of us; it's in the future. And hopefully, it's not too far off. That's a future that likely consists of patients being able to message with their doctors. Patients able to share data they're collecting about themselves, or home monitoring devices are collecting it about their daily lives and syndicating that information to the doctor. It's not that far off to have basic apps that patients can use powered by their medical charts.

I'm more excited now than I have ever been about the future of technology in healthcare, because it's all coming together.

Navani: Technology will change healthcare delivery. But also I think reimbursement models will create a catalyst for technology to change.

Today's health information technology is too focused on the documentation of the visit. It is changing how technology is being used for coordinating care for patients. Care planning and care management will probably be the focus, and primary care will derive significant benefits as a result of it. That change I think is pretty relevant. And in 2013 we've seen the early stages of it, whether it was the formation of accountable care organizations or Patient-Centered Medical Home initiatives.

Technology is going to impact primary care reimbursements in a positive way, as long as it can be used for managing and coordinating care.

I think in 2013 we are still amidst the transition where we now understand that our reimbursements will be tied to outcomes. I don't think we have yet changed the consumers' behavior around looking at those indicators in terms of how and where they derive their quality or care. But if you ask me, the question over the next 5 years, we're definitely moving to consumer-centered care. The patients will make decisions based on price, quality, and also convenience in terms of how and where they get their care.

Again, it will go faster than you and I expect. My gut tells me if we look back within 12, if not 18 months, we will be pleased that healthcare has moved past digitization of technology to using it as a vehicle for better decision making.

Nissenbaum: Everyone is facing heavy bets that technology is going to be the catalyst for much of the change whether you are talking about the ability to interface with more devices and more instrumentation or to interface with other applications that have information that can be shared.

> "More recently our government doubled-down on the bet that doctors need to move toward electronic medical records by including in the Affordable Care Act these provisions that start to move the United States away from a fee-for-service model and more to a pay-for-performance model."
>
> MATTHEW DOUGLASS, CO-FOUNDER, VICE PRESIDENT, PRACTICE FUSION

From my perspective, the whole idea of setting a data standard amongst the different EHRs should have been the very first item coming out of the box of CMS [the Centers for Medicare and Medicaid Services] for Meaningful Use 1 and 2. Because once you do that, you literally set a common denominator throughout our entire healthcare delivery system that people can communicate, share, and ultimately have better outcomes or better patient care.

Going forward, again with a potential reduction in the number of primary care providers, you are going to need technology to step in and fill some of the void. If you have 32 million new patients coming into the healthcare system, you are going to have to be able to train and use physician extenders in the practice and able to share information online. A patient will be able to consult with his or her physician face to face or in video conferencing, for example, and this will continue to push the evolution.

Green: We are eliminating an incredible amount of inefficiency in the system. A lot of my primary care is going to be done from a desk. I am going to interact with my providers electronically, whether it's through smart enabled survey information, working from a mobile platform, or from a video using a mobile platform. All of this will be driven by consumers in the next 5 years.

I don't know about you, but I haven't gone inside a bank in many years. Banking has become mostly digital. Most patients interact with our healthcare system around common ailments that many patients recognize or have experienced before, like allergies or sinusitis. Many of these cases, patients are looking for validation or medication refills from the provider. I think technology is going to help eliminate incredible inefficiency we have in the delivery of healthcare.

Also, today, a physician may be looking at 30 patients, and the future of medicine is the primary care provider seeing those 30 patients today, and managing 5,000 patients in his or her network. We are moving from this very transactional model to a system that better manages cases the physician hasn't seen in years.

> "I think there has been foundational work over the last decade, and it's all been around this concept of electronification. It's the first step in making information liquid, meaning making information flow from one system to another efficiently."
>
> WYCHE T. GREEN, III, PRESIDENT, CEO, GREENWAY

Squire: The idea of electronic decision support at the point of care, I think is now possible. You've got enough of a base of data. Using analytics and other tools that clinicians can be advised on what is the best course of care for a given patient, against an overall patient population, or based on evidence-based protocols that have been derived from a larger population. Now is the time when electronic tools can be used to introduce that at the point-of-care, rather than after some period of study.

I think the catch-all is mobility. We live in a Facebook era. How is this generation growing up surrounded by social media going to receive their care 5 years from now? How important will telemedicine become?

How important will social networks become to gather information and get advice?

Also, our definition of clinician is going to change dramatically. If you look at the trends in primary care—the declining numbers of primary care physicians (PCPs), the increase in patient populations, the increase in insured lives under the Affordable Care Act—clearly, somebody has to be talking to, monitoring, and educating these patients. It cannot be a PCP in every case, and that's why we are seeing the growth in different professions to help—physician assistants, nurse practitioners, and others.

The idea of going to see the guy in the white coat, face-to-face in his office is going to become less prevalent and the idea of getting advice and treatment from somebody on the other end of the line becomes more and more pragmatic.

ZoBell: Healthcare is going to be consumer-driven much more so in the future. There is no other business in the world like the healthcare businesses today. I, as a consumer, can walk in to see you as my doctor. I have no real expectations, and I am going to pay hardly any money for the visit. I have no idea what it's going to cost, what you are doing

ROUNDTABLE PANELISTS

Jonathan Bush

founded athenahealth, Inc. in 1997 and serves as its chairman, chief executive officer (CEO), and president. In 1999, Bush raised more than $10 million in funding from notable venture capital firms to support the effort. Prior to joining the company, Bush served as an emergency medical technician for the city of New Orleans, and was trained as a medic in the U.S. Army. He served as a consultant at Booz Allen Hamilton. Bush obtained a Bachelor of Arts in the College of Social Studies from Wesleyan University and an MBA from Harvard Business School.

Matthew Douglass

is co-founder and vice president of platform for Practice Fusion. He is credited with creating the SaaS technology framework that enables rapid development of the EHR's national platform, now used by more than 100,000 medical professionals. He has spoken on healthcare technology at SDForum, Health 2.0, the Massachusetts Institute of Technology, Stanford, and Microsoft events.

Wyche T. Green, III

is president and CEO of Greenway Medical Technologies. He has served in leadership roles since its founding in 1998. Green started his career in bank operations in 1994. Greenway completed a successful initial public offering on the New York Stock Exchnage in 2012. Last month the company announced a definitive agreement that would combine Greenway Medical Solutions with Vitera Healthcare Solutions.

today. Maybe in 30, 60, 90, or 120 days, I will pay you after a third-party entity pays a big chunk of it.

We don't even do that with pizza. I think it's going to change health plans, and it is moving in a way where consumers are going to care more about the cost. With technology—either apps, software or solutions—they are going to take more of an active role in ensuring their wellness or their healing. I think there are going to be many more interactions with the physician. I think there is going to be a lot more interaction with smart technological solutions integrated within their electronic health records.

I think we are going to see a physician going back to a time where they are truly guiding care, and the patient is going to be really a big part of it with their personal devices at home. We fundamentally believe private practice is really a way of allowing the physician and the patient to connect.

Bush: I do think about the delivery of medicine 5 years from now. Clearly, patient engagement and empowerment are key.

The entire quantified-self movement is gaining traction and will drive mobile technology and tracking innovations that bring together patients and make patients' health records richer. This information will flow from personal devices over the cloud to the provider. I truly believe, and it's why I come to work every day, that the cloud will be our nation's information exchange highway.

Transformative technology is monumentally important in guiding the evolution of medicine 5 years out and well beyond that. Once technology starts to integrate better, suck less, and be loved more, the delivery of medicine will change and finally, the sanctity to the exam room encounter between caregiver and patient will be returned.

➔58

> "The challenge with health IT is that it's trying to change not just the technology spectrum, but behavior. We are also asking the end user, who is actually the decision-maker, the physician, to use technology to enter data. That is very uncommon, if you look at it from most industries..."
>
> GIRISH NAVANI, CO-FOUNDER, PRESIDENT, CEO, ECLINICALWORKS

Girish Navani

co-founded eClinicalWorks in 1999 and serves as CEO and president. Prior to founding eClinicalWorks, Navani led successful information technology and business initiatives at Fidelity Investments, Teradyne, and Aspen Technology. He holds a Masters of Science in Engineering from Boston University.

Michael Nissenbaum

is president and CEO of Aprima. He joined the company in 2004 after stints at Millbrook Corp. and GE Healthcare. During his tenure as president of Millbrook, the company grew from 24 employees to more than 140 employees, supporting over 10,000 physicians in 65 specialties and sub-specialties, across the country. At GE, Nissenbaum led the commercialization of GE Healthcare–Clinical Data Services. He received an MBA from the University of Chicago and is a certified public accountant and chartered financial analyst.

John Squire

is chief operating officer for Amazing Charts. Most recently, Squire was senior director of Alliances and Cloud Strategy for Microsoft's U.S. Health and Life Sciences Business Unit. At Microsoft, Squire was responsible for the partner ecosystem, including all major EHR/EMR solutions and systems integrators. Squire has previous experience in management roles at IBM, Dassault Systemes, Formation Systems, and Interleaf. He holds a BS in Physics and Computer Science from Ursinus College and an MBA from Harvard.

Steven ZoBell

is vice president of product development for ADP AdvancedMD. ZoBell has more than 18 years of product development, software engineering, and business management experience. Prior to joining AdvancedMD, he was executive vice president and chief technology officer for inContact, Inc., a leading SaaS-based contact center software company. During the course of his career, ZoBell has been involved in the development of more than 25 critically acclaimed, award-winning, commercial software products.

"If you have 32 million new patients coming into the healthcare system, you are going to have to be able to train and use physician extenders in the practice and able to share information online."

MICHAEL NISSENBAUM, PRESIDENT AND CEO, APRIMA

Medical Economics:

Q: We are 3 years into Meaningful Use. Our government continues to incentivize and will ultimately penalize physicians for not adopting EHR systems. Why has it taken such a massive push to get physicians to adopt?

Douglass: Getting physicians to adopt EHRs is a very complex issue. I would say if you ask 100 doctors, you will get 150 answers. In my opinion, prior to the stimulus bill where doctors were bribed to adopt, there were actually disincentives set up for doctors to adopt systems. The systems that were available in 2007-2008 were largely client/server model. It was a very 20th century way of thinking about technology in a small, medium enterprise.

(While cost remains an issue for physicians trying to maintain profitable businesses even with incentives), there are also psychological components to digitizing health records. Physicians walk into their office every day and they see a wall of paper charts. It serves as a mental block for them turning it electronic.

They need to think about it as, 'Let's start with a fresh chart with every patient that I'm going to turn into a digital patient.' From a 100-page paper chart, you need two or three of those pages digitized. The important areas to convert are allergies, current medications, past medications, and current problems. And then there are the additional nice-to-haves, like previous lab results, previous vital signs, previous chart notes.

If you go back to 2007, we were at about 7% EMR adoption, but we had about 95% of doctor's offices with a billing system. So, they have electronic systems. It's not that they're against having electronic systems in their office. It's just they're against having an electronic system in their office that's not providing value to them. They need to feel that immediate value, and most EMRs don't provide that. Or they certainly didn't in '07.

More recently our government doubled-down on the bet that doctors need to move toward electronic medical records by including in the Affordable Care Act these provisions that start to move the United States away from a fee-for-service model and more to a pay-for-performance model. So you're starting to see over the next few years, 1, 2, 3% of all Medicare and Medicaid payments are going to be tied to quality measures.

We're going to increase those percentages as time progresses. To manage the quality of your patient's health, you need a clinical documentation system like an EMR to do that.

Navani: The challenge with HIT is that it's trying to change not just the technology spectrum, but behavior. We are also asking the end user, who is actually the decision-maker, the physician, to use technology to enter data. That is very uncommon, if you look at most industries. The decision-maker usually looks at the data and makes decisions, and does not get so involved with data entry. That is a hard transition to start with.

EHRs have become predominately used now, and I think the incentives have something to do with the adoption. I am not a proponent of whether it's good or bad. Moving forward, we will need to push harder for what technology can eventually deliver for better delivery of care.

Squire: CMS did a study on the adoption of technology and the correlation to clinician productivity. And in pretty much every other industry, technology adoption leads to increased productivity. In healthcare, technology adoption has actually lead to a decline in productivity. It's a small decline, but a decline. If you talk to clinicians, they'll tell you that very often they have to do their jobs twice. They have to do their job when they see the patient, and then again after the patient leaves to enter data into the system because it's too cumbersome to do while the patient's in the room.

While there are other technologies that can be employed, such as voice recognition and dictation services and things like that, at the end of the day if the technology hurts productivity you're going to get resistance to adopting it.

Bush: Because most EHRs suck and doctors tend to be very smart people. They recognize that version 1.0 of EHRs and still many EHRs that are sold and even lead the market today are not what they should be. There's a huge promise associated with going digital in healthcare, but it's not about templates and meaningful use compliance, it's about information access and an experience that

is smart, elegant, and does not distract from what matters most.

Medical Economics:
Q: Will we see more consolidation? What happens in the HIT market when the government incentives to adopt EHRs run out?

ZoBell: Many articles are predicting that within the next 2 to 3 years many physicians will be switching systems. Meaningful Use 2 and 3, with interoperability, should facilitate that it's implemented in a meaningful way so people don't feel like their data is held hostage on different systems.

The other piece that I think is going to push consolidation is that many of them were built off financial models through the private equity and venture capital world. They don't have a longevity solution aside from an exit or an initial public offering. You can only lose money for so long until it's not viable anymore.

When the incentives run out, I don't think we are going to see really much more radical change. Interoperability needs to get to the point where it actually is going to work really well and make the experience as seamless as e-mail. The banking system figured this out a long time ago, and, yes, our world is a lot different with patient health information, but interoperability is going to make it.

Even the physicians who didn't care about the incentives are going to suddenly realize, I cannot effectively run my practice and actually communicate with my colleagues (without this technology).

Green: I think the whole industry has continued to consolidate over the last several years. The real test is if you look at how many vendors are certified for MU1 and compare it to those certified for MU2. How many vendors are there? Do the math and then you will have your answer.

Bush: With or without MU2 or MU3, consolidation in the HIT space is inevitable. If you've been to the HIMSS [Healthcare Information and Management Systems Society] show lately, then you've attempted to keep track of the number of EHRs on market. There's a lot. 'Survival of the fittest' is going to be a real thing in HIT, and it's not a bad thing. If the rate of EHR adoption is sustained—and once the balance shifts to EHRs as beautiful solutions and away from 'thing I have to use and hate'—we will have forgotten about incentives or wonder why we needed them in the first place.

> "These technologies are giving physicians and patients a way to monitor these chronic conditions in a way that we never could before, and work that into a care plan that's proactively administrated by a team versus a single clinician..."
>
> JOHN SQUIRE, COO
> AMAZING CHARTS

> "There is going to be a lot more interaction with smart technological solutions integrated within their electronic health records. I think we are going to see a physician going back to a time where they are truly guiding care."
>
> STEVEN ZOBELL, VICE PRESIDENT OF PRODUCT DEVELOPMENT, ADP ADVANCEDMD

Navani: I think consolidation happens in every market, in every industry, not just technology. There is what I call the euphoric phase of any technology adoption, when a lot of new stuff comes out. And then the companies and the products that are available start establishing and gaining market share, but everyone ends up with a piece of the pie.

Then comes a time period when publicly-traded companies valuation skyrockets with the anticipation of a gold rush. Then comes the realization phase that it's going to get harder, it's going to get tougher, and the profit margins are going to have to be earned and not given. In that time period, some companies fall because they are weak, and they can't keep up. Other companies fall because their shareholders don't want them to stay in the game anymore.

We are headed for consolidation, without a doubt. It's not just going to be the smaller or the insignificant. I think you will find companies that have not built customer bases or are strongly relying on investors to fund their next generation of products having to either consolidate or merge. It happens in every industry, and it's going to happen in our industry. I wouldn't be surprised if you see some reasonably large businesses next year get acquired or merge with each other.

Nissenbaum: There were something like 1,300 stage 1 complete ambulatory certified products. As of yesterday, there were 23 products that were complete EHR ambulatory products certified for stage 2. The bar has been raised, and many of those shops that met Meaningful Use 1 do not have the resources whether its personnel, capital, the understanding to meet stage 2. If I am a physician and I am hosted, I want to make sure I have access to my medical records, so that when I do find a replacement or substitute, I have the ability to migrate the existing data to the new system. I think that's going to be a huge consideration going forward.

It's going to change the world.

Meaningful Use, stage 2: Ready or not, here it comes

Physicians can begin attesting to the program in 2014, but concerns about vendor preparedness and interoperability remain

by **JEFFREY BENDIX, MA,** *Senior editor*

HIGHLIGHTS

01 Progress towards the development of standardized transition of care documents and standards for point-to-point communication is easing concerns over meeting the transition of care objective that is part of meaningful use stage two (MU2).

02 Demonstrating how to access and use a patient portal can help practices meet the patient engagement objective in MU2.

As stage two of the meaningful use (MU) incentive program for electronic health records (EHRs) draws near, opinions are divided as to how prepared doctors and EHR vendors are to meet the program's requirements.

Some observers think that solutions to the major technical challenges to attesting to meaningful use's second phase (MU2)—mainly the inability of different EHR systems to communicate with one another—are emerging. They also say that EHR vendors will be ready with products that meet MU2's more demanding requirements.

On the other hand, the American Academy of Family Physicians (AAFP), and the American College of Physicians have written to government officials urging a delay in MU2's implementation. In September, they were joined by a group of 17 U.S. senators, who wrote to Kathleen Sebelius, secretary of the U.S. Department of Health and Human Services, requesting a 1-year extension of deadlines for providers who need more time to meet MU2's requirements.

Doctors and other eligible providers (EPs) who successfully attested to the first phase of meaningful use (MU1) in 2011 or 2012 are eligible to begin attesting to MU2 starting on January 1, 2014. In addition, 2014 is the last year in which EPs can start attesting to meaningful use so as to avoid financial penalties—or "payment adjustments," as the Center for Medicare and Medicaid Services (CMS) calls them—beginning in 2015. About 44% of EPs, or 230,000 providers, had attested to the program's first stage through May of this year, according to CMS.

"I'd say right now we're cautiously optimistic about the situation," says Robert Anthony, deputy director of health information technology initiatives and lead for policy and outreach in CMS' office of e-health standards and services.

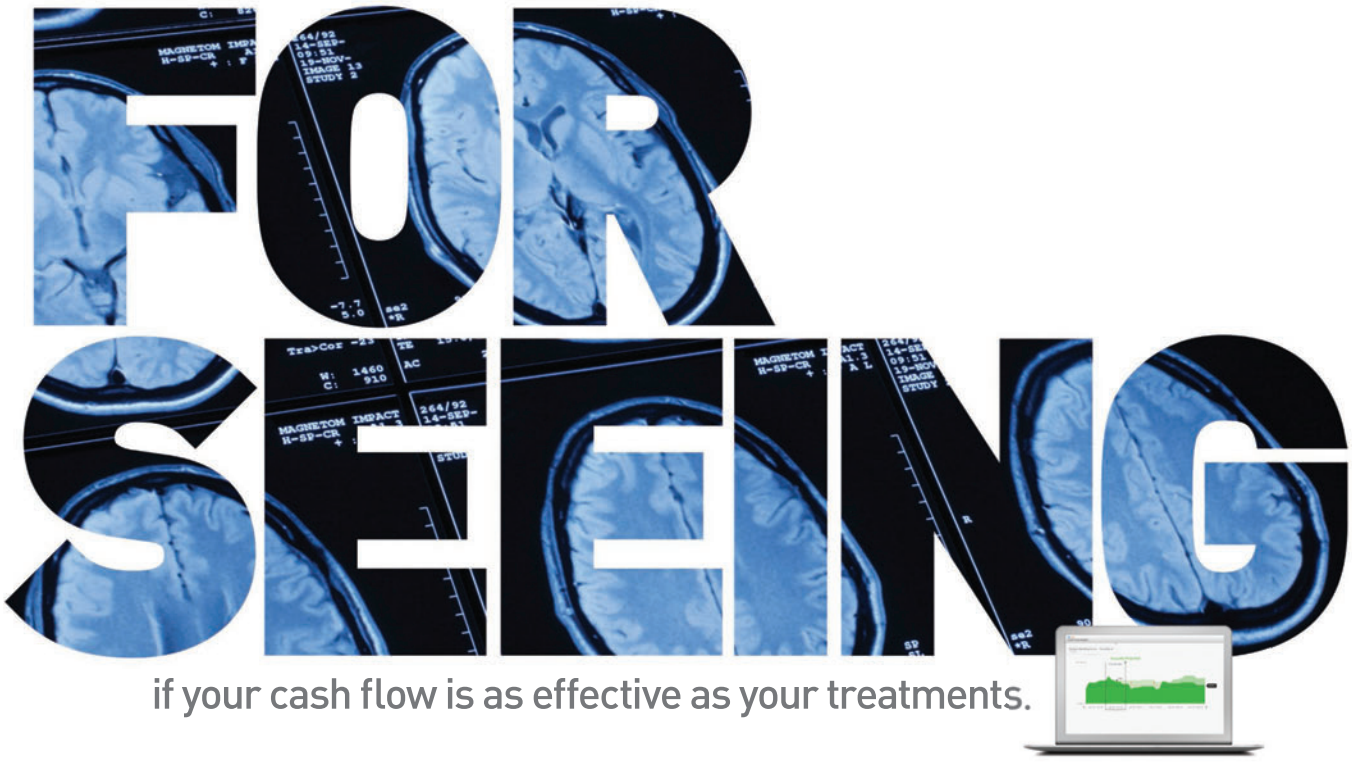
Anthony says that about 60% of EPs who have qualified for MU1 did so using EHR vendors who now have products that the government has certified as meeting the requirements for MU2. According to statistics compiled by *Medical Economics,* 22 vendors have complete EHR systems that are MU2-certified.

"We're feeling good about the number of products available," says Anthony. "The question now is to see how quickly providers are able to implement them into their workflow so they can get to stage 2 of meaningful use."

TIME PRESSURES DRAW CONCERN

Jason Mitchell, MD, director of the AAFP's Center for Health Information Technology, isn't so sure. Although AAFP agrees with the overall goals of the MU program, "the concern we have is with the timeframe, and the pressures on practices

➔62



if your cash flow is as effective as your treatments.

Cash Flow Insight℠ | for the achiever in you®

Introducing Cash Flow Insight powered by PNC CFO — a suite of user-friendly online tools that can help you understand and project your practice's cash flow, so you can turn insight into action. Try it at no cost today*. Call the Cash Flow Insight Center at ***855-762-2361***, stop by any PNC branch or go to ***pnc.com/cashflowinsight***

PNC | CFO℠
Cash Flow Options

PNC BANK

*Offer requires a PNC Business Checking account and enrollment in PNC Online Banking. Offer valid during your current statement cycle period and two additional statement cycles, which constitutes your free trial period. One free trial period per customer, based on the enrollment date of the first account you enroll in Cash Flow Insight. Your free trial period for all accounts in Cash Flow Insight ends at the same time. At the end of your free trial, you will remain enrolled in Cash Flow Insight and be charged a fee of $10/month. If you do not want to continue with Cash Flow Insight, you may opt out of the service on your Preferences page within Cash Flow Insight. Beyond the trial period, certain account types have Cash Flow Insight for no additional monthly fee, including Business Enterprise Checking, Industry Solutions Checking and Retail Businesses Checking. Cash Flow Insight and CFO: Cash Flow Options are service marks of The PNC Financial Services Group, Inc. PNC Bank, National Association. **Member FDIC**

Meaningful Use 2 core measure: summary of care

Objective

The EP who transitions their patient to another setting of care or provider of care or refers their patient to another provider of care should provide summary care record for each transition of care or referral.

Measures

EPs must satisfy both of the following measures in order to meet the objective:

MEASURE 1:

☑ The EP who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 50 percent of transitions of care and referrals.

MEASURE 2:

☑ The EP who transitions or refers their patient to another setting of care or provider of care provides a summary of care record for more than 10 percent of such transitions and referrals either (a) electronically transmitted using Certified Electronic Health Record Technology to a recipient or (b) where the recipient receives the summary of care record via exchange facilitated by an organization that is a Nationwide Health Information Network (NwHIN) Exchange participant or in a manner that is consistent with the governance mechanism the Office of the National Coordinator for Health Information Technology establishes for the NwHIN.

MEASURE 3:

An EP must satisfy one of the following criteria:

☑ Conducts one or more successful electronic exchanges of a summary of care document, as part of which is counted in "measure 2" with a recipient who has EHR technology that was developed designed by a different EHR technology developer than the sender's EHR technology certified to 45 CFR 170.314(b)(2).

☑ Conducts one or more successful tests with the CMS designated test EHR during the EHR reporting period.

Exclusion

Any EP who transfers a patient to another setting or refers a patient to another provider less than 100 times during the EHR reporting period is excluded from all three measures.

Source: Centers for Medicare and Medicaid Services

➔60

to implement the significant changes from the first to the second stage of meaningful use," he says. "It's not just turning those functions on, it's figuring out how to have them be compatible with the practice's workflow."

Moreover, Mitchell points out, even EPs who have already attested to the first stage of Meaningful Use or are planning to do so in 2014 will be required to use what the government is calling "2014-certified" software in their EHR systems by the end of 2014.

"That means everyone who's doing meaningful use has to interact with their vendor to upgrade their system, to add new features and functionalities," says Mitchell. "That's a big burden on the practices and on the vendors to be able to meet that need. We're hearing from vendors that they don't think they'll be able to pull it off."

CMS' Anthony says that as of early October he'd seen no indication of a delay in implementing MU2.

MU2'S ATTESTATION REQUIREMENTS

Successfully attesting to MU2 requires physicians to meet all of a set of 17 "core" objectives and three from a list of six "menu" objectives. Among the core objectives are three involving the electronic exchange of information:

- **providing a summary of care record for more than 50% of the patients referred to another provider or transitioned to another care setting;**
- **supplying the summary of care record electronically for more than 10% of those referrals or transitions; and**
- **conducting at least one successful electronic exchange of a summary of care with a recipient who uses a different EHR system.**

The electronic information exchange requirements caused a great deal of concern among physicians when they were first announced, because virtually all EHR systems lacked interoperability—the ability to communicate with systems made by other vendors. That concern is dissipating

somewhat due to the work of groups such as the Direct Project and Health Level 7 International (HL7).

The Direct Project has defined standards used for point-to-point communication between providers, while HL7—the global authority on standards for interoperability of health information technology—has been developing standards for a common "continuity of care document" (CCD) that all U.S. providers could use when transitioning patients to another provider or care setting. HL7 has been working with the Office of the National Coordinator for Health Information Technology (ONC) to incorporate its standards into vendor requirements for stage 2 MU certification, says Diana Warner, MS, RHIA, director of health information management practice excellence for the American Health Information Management Association.

"If all vendors use the standard, then that information should be easily shared and understood by the provider or organization receiving it," Warner says.

Robert Rowley, MD, a family practitioner, healthcare information technology consultant and blogger, and chief medical officer for GroupMD, thinks that most EHR vendors will have no choice but to adopt the standards developed by HL7 and the Direct Project. "Otherwise they'll be done in the marketplace," he says.

Another option for meeting the summary of care transmission requirement is by joining a health information exchange (HIE)—a centralized electronic repository that members can use for sending and receiving patient CCDs. But while HIEs have been growing in number and reach, not all healthcare providers have access to one.

ENCOURAGING PATIENT ENGAGEMENT

A second source of concern over meeting MU2 requirements stems from the objectives dealing with patient access to information, or "patient engagement." Doctors must provide patients with the ability to view, download, and transmit their information online within 4 days of the information being available to the doctor, and ensure that at least 5% of the practice's patients access their information online. For many doctors, especially those with a large number of elderly patients, it will require both persuading patients of the benefits of going online for their information and walking them through the process of doing so.

> "THE CONCERN WE HAVE IS... WITH THE PRESSURES ON PRACTICES TO IMPLEMENT THE SIGNIFICANT CHANGES FROM THE FIRST TO THE SECOND STAGE OF MEANINGFUL USE."
>
> —JASON MITCHELL, MD, DIRECTOR, AMERICAN ACADEMY OF FAMILY PHYSICIANS CENTER FOR HEALTH INFORMATION TECHNOLOGY

Rowley says he often uses lab tests as a hook to get patients started. "I'll remind them that if they're signed up online they can look at the results themselves (through his practice's patient portal) without having to wait for me to provide them," he says. "That's been pretty successful."

Warner recommends assigning one person in the practice the responsibility of asking patients if they know how to access the patient portal, and if the answer is no, demonstrating how to do so. "Being able to see the medications they've been prescribed and that they're taking them appropriately, and seeing the plan of care written down, may be a way to get seniors engaged," Warner says.

CMS' Anthony recommends that practices begin planning for the changes their upgraded, 2014-certified EHR systems will bring. "You don't necessarily have to be on a certified EHR to start thinking about the changes you'll have to make to your practice's workflow," he says. He adds that because several of the core objectives in stage 2 were menu objectives in stage 1, "providers should already have an idea of what those requirements are. Thinking about them now will make the transition easier."

Telemedicine's next big leap

Advocates say telemedicine will take on greater importance in care models of the future, but hurdles remain

by **CHRIS MAZZOLINI, MS** *Content Manager*

HIGHLIGHTS

01 Emerging technologies and new care models give telemedicine a chance to become a major component of the U.S. healthcare system, advocates say.

02 Varying state rules and regulations, licensing and reimbursement issues, and physician concerns remain as hurdles.

03 Seek out the expertise of physicians in your state who have already started using telemedicine.

Seth Eaton, MD, recently conducted an annual appointment with a long-time patient. They went over lab results and Eaton answered the patient's questions.

Sounds routine, like the kind of appointment a physician conducts multiple times per day. The difference is that the physician was in Maryland and the patient was in Arizona. The two connected using the power telemedicine, bridging the 2,000-mile distance with streaming video and high-speed Internet.

Eaton, a self-described "early adopter," earlier this year began integrating telemedicine appointments at his family medicine and pediatrics practice, MedPeds in Laurel, Maryland. Since March, Eaton has conducted 15 virtual appointments. He plans to unveil a faster, more "patient-friendly" telemedicine service later this month, and expects that the service will take off.

With sweeping policy changes, declining reimbursements, and new care models that favor quality over quantity, physicians like Eaton are looking for ways to find new revenue streams and move from reactive care to proactive management of their patients.

Advocates say telemedicine can play a big role in the care models of the future. But there are still hurdles when it comes to reimbursement, policy, and legal grey areas, not to mention physician and patient buy-in.

"There is a cultural expectation when I go to see my doctor," Eaton says. "He looks me in the eye, puts the stethoscope on my skin. It's a real touchy-feely experience. That's something I believe will change slowly as telemedicine becomes more technically feasible and easy to implement."

OLD CONCEPT, NEW PROMISE

Telemedicine, also known as telehealth, has been around for decades. The concept started as a way to connect rural primary care physicians (PCPs) with specialists. But telemedicine has morphed into a broader term and is now also used to describe live video appointments, real-time remote patient monitoring, storing and forwarding of diagnostic images, and mobile applications.

"Telehealth is not a distinct service, but is an enhancer and a tool for physicians," says Mario Gutierrez, executive director of the Center For Connected Health Policy. "You are getting a triple benefit of using technology to provide better healthcare and more reach."

Eaton thinks telemedicine will ultimately be successful at his practice because it will meet his patients where they want to be met. Many of Eaton's patients are working families with kids. They are busy, and stressed

out, and often can't miss work to make a doctor's appointment.

"People have lives. Let's face it: physicians practices don't really accommodate the two-workers family situation," Eaton says. "We are looking at using telemedicine to reach a number of our patients that have an unrecognized need."

Eaton uses telemedicine for follow-up appointments for diabetes and hypertension, for well-child exams and sometimes even urgent care so long as the on-call physician approves it. Other ways he wants to use it include mental health visits required for prescription refills, lactation consultations for new mothers, and virtual group visits where patients can share success stories in managing diabetes or weight issues, right from their own homes.

Once the service becomes more established, Eaton says he plans to use telemedicine for more pro-active population management. For example, he can identify all of his patients with hypertension and find those who are not controlling their blood pressure. Then he can have his staff engage with those patients using telemedicine to help get them on track.

Another way telemedicine can help is with transfer of care. Eaton plans to use virtual appointments to connect with patients who are leaving the hospital, and ensure a seamless transition of care.

Eaton sees population management and better transfer of care as key pieces to helping keep healthcare costs down while improving patient outcomes, and telemedicine can play a big role in both.

But do patients want telemedicine? Telemedicine advocacy groups, including the American Telemedicine Association (ATA), say that as the public become more dependent on using the Internet and mobile technologies in their daily lives, they will expect telemedicine services from their physicians the way they expect patient portals with online scheduling and lab results.

REIMBURSEMENT VARIES BY STATE

States will have to get on the same page when it comes to reimbursement before the benefits of telehealth can truly be realized, Neuberger said.

"The number one, two, three issues continue to be reimbursement, reimbursement, reimbursement," Neuberger says.

21 states have parity laws that require private insurers to reimburse for telemedicine visits, and 44 state Medicaid programs reimburse in some form for telemedicine, though no two state laws are alike and reimbursement policies vary wildly. Medicare reimburses for telemedicine but only for patients who live in a designated rural Health Professional Shortage Area or in a county outside of a Metropolitan Statistical Area.

Eaton says he has never had a reimbursement issue with a payer. Maryland is one of the states that have laws requiring payers to cover telemedicine.

Neal Neuberger, CISSP, executive director of the Institute for e-Health Policy, says he has been involved with telemedicine for

TELEMEDICINE LEGAL ISSUES

Telemedicine technologies can eliminate healthcare barriers, but new technologies have uncovered many legal and ethical issues that must first be addressed. The following issues were identified by the National Telehealth Policy Resource Center (NTPRC):

1 **PHYSICIAN LICENSING:**
When you can meet with a patient in cyberspace, state borders become irrelevant. Except that providers are, in most cases, limited to practicing in states where they are licensed. Each state has different licensure policies, and while some states allow interstate delivery of healthcare, others do not.

2 **MALPRACTICE LIABILITY:**
There is little precedent on what telemedicine means for malpractice liability. As telemedicine becomes more widespread, liability issues are expected to increase, according to the NTPRC.

3 **ONLINE PRESCRIBING:**
Online prescribing policies vary by state. Furthermore, "concerns are emerging over quality and practices of for-profit provider entities entering the marketplace who many be treating patients and prescribing inappropriately," the NTPRC writes.

4 **INFORMED CONSENT:**
Several states require informed consent for telemedicine services for their Medicaid services. NTPRC writes: "Requiring a prior written or verbal informed consent for any telehealth consultation and treatment misrepresents telehealth as a different form of service, rather than as a useful tool ..."

5 **CREDENTIALING AND PRIVILEGING:**
The Centers for Medicare and Medicaid Services has issued a rule on credentialing and privileging for telehealth providers but it conflicts with some state policies.

Source: National Telehealth Policy Resource Center

Does your state reimburse for telemedicine?

20 states plus the District of Columbia mandate some private insurance coverage of telemedicine (as of September 16, 2013):

- Arizona (partial)
- California
- Colorado (partial)
- D.C.
- Georgia
- Hawaii
- Kentucky
- Louisiana
- Maine
- Maryland
- Michigan
- Mississippi
- Missouri
- Montana
- New Hampshire
- New Mexico
- Oklahoma
- Oregon
- Texas
- Vermont
- Virginia

Source: American Telemedicine Association

44 states have some form of reimbursement for telemedicine live video in their Medicaid program, but each state's policies vary. The six states that DO NOT are:

- Connecticut
- Iowa
- Massachusetts
- New Hampshire
- New Jersey
- Rhode Island
- D.C.

Source: Center for Connected Health Policy

20 years and that the reimbursement issue remains unresolved. But that may be changing as new care models emerge.

"Fast forward 20 years and we are still arguing about that, but now the policy environment has changed," Neuberger says. "Now it has less to do with fee-for-service. With the movement toward accountable care and shared services, it may be changes in health policy that drive adoption quicker."

BARRIERS REMAIN

Despite the technological possibilities, barriers still remain to more widespread telemedicine use. The number of physicians who use telemedicine in their practice remains low. The Deloitte Center for Health Solutions conducted a survey of U.S. physicians last year and found that 18% of PCPs surveyed use telemedicine for follow-up or diagnostic visits.

Eaton says there are eight providers at his practice, including himself, and that he is the only one using telemedicine so far. The others, he says, have concerns, ranging from effectiveness to malpractice issues. "There is a wariness on the part of clinicians to embrace this," Eaton says.

There are legislative and licensing issues that must be resolved before telemedicine can become a major cog in the healthcare system, Gutierrez says. In July 2013, the Center for Connected Health Policy published a report that details where telehealth laws and reimbursement policies stand in all 50 states.

The problem is that no two states are alike in their laws, Gutierrez says. Some have very progressive policies that require private insurers and Medicaid to reimburse for telemedicine, while others do not.

Another major hurdle is state medical board licensing, Gutierrez says. Physicians need to be licensed in the states where they practice, and each state has different rules and regulations. This becomes a problem since state borders become irrelevant in some ways when doctors can visit with a patient across cyberspace.

"I think about telehealth in the concept of social equity," Gutierrez says. "It allows any family and individual to have equal access to care no matter where they are in the country. But we have this thing called state licensing, which does limit the practice to what those medical boards in each state allow."

IS TELEMEDICINE RIGHT FOR YOUR PRACTICE?

Physicians thinking about using telemedicine in their practice need to realize that it is a large undertaking that means re-thinking how they operate, Gutierrez says. "A physician or provider has to be willing and committed to really thinking about how health care is delivered and managed, and how data is managed," he says. "It's not something you can overlay on an existing practice. You have to re-think everything."

Neuberger says that every state has physicians who are ahead of the curve when it comes to telemedicine. Physicians should seek out their advice and expertise first.

"Start to learn about best practices, and cobble together your own programs based on your own needs, but using proven technologies and proven settings," he says. "It's getting easier and easier to pick and choose what's best for your practice. There are models out there."

From a practical standpoint, Eaton says physicians should answer a few questions first before they do anything else:

- **Do you have unscheduled time? Physicians with already full schedules may not see the income benefits of telemedicine. Eaton says he uses it to fill in unscheduled time between and after his face-to-face appointments. "If you're fully scheduled, you won't gain income," he says.**
- **Do you have patients who embrace, or can embrace, technology? Eaton says that patients have to be willing and able to take the technology leap with their physician. If most of your patients are Medicare beneficiaries, you might have a tougher time getting patient buy-in than if your patients are younger mothers and fathers. Just as important is whether your geographic area supports high-speed Internet.**
- **Are you willing to try and fail? "Not every situation is going to work, and you have to be willing to say that's not going to fly and try something else," Eaton says.**

Eaton is confident telemedicine will have a role in the emerging healthcare system. It's another step toward patient-centered care.

"Population management is about meeting patients where they are," Eaton says. "That's the game changer that telemedicine provides."

ENVISION NEW **POSSIBILITIES**

Invokana™
canagliflozin tablets

INVOKANA™ (canagliflozin) is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus.

INVOKANA™ is not recommended in patients with type 1 diabetes or for the treatment of diabetic ketoacidosis.

IMPORTANT SAFETY INFORMATION

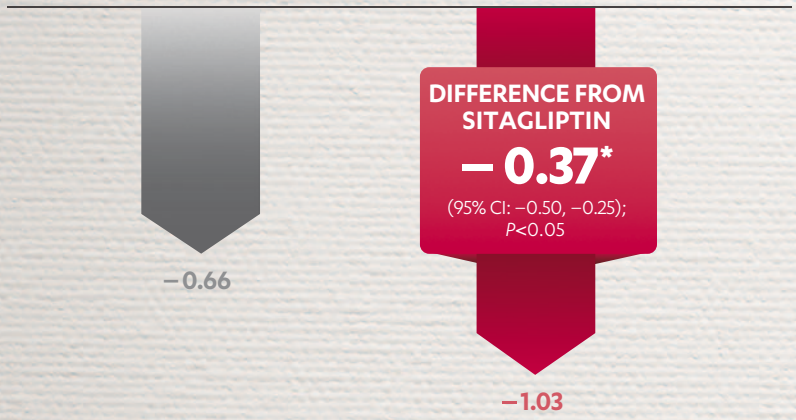
CONTRAINDICATIONS

- History of a serious hypersensitivity reaction to INVOKANA™.
- Severe renal impairment (eGFR <30 mL/min/1.73 m^2), end stage renal disease, or patients on dialysis.

Please see additional Important Safety Information and brief summary of full Prescribing Information on the following pages.

INVOKANA™ 300 mg demonstrated greater reductions in A1C vs sitagliptin 100 mg at 52 weeks...

Adjusted Mean Change in A1C From Baseline (%): INVOKANA™ 300 mg vs Sitagliptin 100 mg, Each in Combination With Metformin + a Sulfonylurea[1]



- **Sitagliptin 100 mg + metformin and a sulfonylurea** (n=378; mean baseline A1C: 8.13%)
- **INVOKANA™ 300 mg + metformin and a sulfonylurea** (n=377; mean baseline A1C: 8.12%)

Incidence of Hypoglycemia

With metformin + a sulfonylurea over 52 weeks: INVOKANA™ (canagliflozin) 300 mg: **43.2%**; sitagliptin 100 mg: **40.7%**[1]

- Insulin and insulin secretagogues are known to cause hypoglycemia. INVOKANA™ can increase the risk of hypoglycemia when combined with insulin or an insulin secretagogue[1]

Convenient Once-Daily Oral Dosing[1]

- Recommended starting dose: INVOKANA™ 100 mg
- Dose can be increased to 300 mg in patients tolerating 100 mg who have an eGFR ≥60 mL/min/1.73 m^2 and require additional glycemic control

*INVOKANA™ + metformin is considered noninferior to sitagliptin + metformin because the upper limit of the 95% confidence interval is less than the prespecified noninferiority margin of 0.3%.

IMPORTANT SAFETY INFORMATION (cont'd)

WARNINGS and PRECAUTIONS

- **Hypotension:** INVOKANA™ causes intravascular volume contraction. Symptomatic hypotension can occur after initiating INVOKANA™, particularly in patients with impaired renal function (eGFR <60 mL/min/1.73 m^2), elderly patients, and patients on either diuretics or medications that interfere with the renin-angiotensin-aldosterone system (eg, angiotensin-converting-enzyme [ACE] inhibitors, angiotensin receptor blockers [ARBs]), or patients with low systolic blood pressure. Before initiating INVOKANA™ in patients with one or more of these characteristics, volume status should be assessed and corrected. Monitor for signs and symptoms after initiating therapy.
- **Impairment in Renal Function:** INVOKANA™ increases serum creatinine and decreases eGFR. Patients with hypovolemia may be more susceptible to these changes. Renal function abnormalities can occur after initiating INVOKANA™. More frequent renal function monitoring is recommended in patients with an eGFR below 60 mL/min/1.73 m^2.
- **Hyperkalemia:** INVOKANA™ can lead to hyperkalemia. Patients with moderate renal impairment who are taking medications that interfere with potassium excretion, such as potassium-sparing diuretics, or medications that interfere with the renin-angiotensin-aldosterone system are more likely to develop hyperkalemia. Monitor serum potassium levels periodically after initiating INVOKANA™ in patients with impaired renal function and in patients predisposed to hyperkalemia due to medications or other medical conditions.

COVERED BY MORE THAN **75%** OF COMMERCIAL HEALTH PLANS[3]

...as well as greater reductions in body weight† and systolic blood pressure (SBP)†

Change in Body Weight†

Significant reductions in body weight at 52 weeks, each in combination with metformin + a sulfonylurea ($P<0.001$)[1]

»Difference from sitagliptin‡:
300 mg: **–2.8%**

Change in SBP†

Significant lowering of SBP at 52 weeks, each in combination with metformin + a sulfonylurea ($P<0.001$)[2]

»Difference from sitagliptin‡:
300 mg: **–5.9 mm Hg**

INVOKANA™ is not indicated for weight loss or as antihypertensive treatment.

†Prespecified secondary endpoint.

‡Adjusted mean.

INVOKANA™ provides SGLT2 inhibition, reducing renal glucose reabsorption and increasing urinary glucose excretion.[1]

Adverse Reactions

In 4 pooled placebo-controlled trials, the most common (≥5%) adverse reactions were female genital mycotic infection, urinary tract infection, and increased urination.[1§]

References: 1. INVOKANA™ [prescribing information]. Titusville, NJ: Janssen Pharmaceuticals, Inc.; 2013. **2.** Schernthaner G, Gross JL, Rosenstock J, et al. Canagliflozin compared with sitagliptin for patients with type 2 diabetes who do not have adequate glycemic control with metformin plus sulfonylurea: a 52-week randomized trial. *Diabetes Care*. doi:10.2337/dc12-2491. **3.** Data on file. Janssen Pharmaceuticals, Inc., Titusville, NJ. Data as of 8/9/13.

SGLT2 = sodium glucose co-transporter-2.

§Included 1 monotherapy and 3 add-on combination trials with metformin, metformin + a sulfonylurea, or metformin + pioglitazone.

Learn more at **INVOKANAhcp.com/journal**

»**Hypoglycemia With Concomitant Use With Insulin and Insulin Secretagogues:** Insulin and insulin secretagogues are known to cause hypoglycemia. INVOKANA™ can increase the risk of hypoglycemia when combined with insulin or an insulin secretagogue. Therefore, a lower dose of insulin or insulin secretagogue may be required to minimize the risk of hypoglycemia when used in combination with INVOKANA™.

»**Genital Mycotic Infections:** INVOKANA™ increases the risk of genital mycotic infections. Patients with a history of genital mycotic infections and uncircumcised males were more likely to develop genital mycotic infections. Monitor and treat appropriately.

»**Hypersensitivity Reactions:** Hypersensitivity reactions (eg, generalized urticaria), some serious, were reported with INVOKANA™ treatment; these reactions generally occurred within hours to days after initiating INVOKANA™. If hypersensitivity reactions occur, discontinue use of INVOKANA™; treat per standard of care and monitor until signs and symptoms resolve.

»**Increases in Low-Density Lipoprotein (LDL-C):** Dose-related increases in LDL-C occur with INVOKANA™. Monitor LDL-C and treat per standard of care after initiating INVOKANA™.

»**Macrovascular Outcomes:** There have been no clinical studies establishing conclusive evidence of macrovascular risk reduction with INVOKANA™ or any other antidiabetic drug.

Please see additional Important Safety Information and brief summary of full Prescribing Information on the following pages.

ENVISION NEW
POSSIBILITIES

Invokana™
canagliflozin tablets

IMPORTANT SAFETY INFORMATION (cont'd)

DRUG INTERACTIONS

- **UGT Enzyme Inducers:** Rifampin: Co-administration of canagliflozin with rifampin, a nonselective inducer of several UGT enzymes, including UGT1A9, UGT2B4, decreased canagliflozin area under the curve (AUC) by 51%. This decrease in exposure to canagliflozin may decrease efficacy. If an inducer of these UGTs (eg, rifampin, phenytoin, phenobarbital, ritonavir) must be co-administered with INVOKANA™ (canagliflozin), consider increasing the dose to 300 mg once daily if patients are currently tolerating INVOKANA™ 100 mg once daily, have an eGFR greater than 60 mL/min/1.73 m^2, and require additional glycemic control. Consider other antihyperglycemic therapy in patients with an eGFR of 45 to less than 60 mL/min/1.73 m^2 receiving concurrent therapy with a UGT inducer and requiring additional glycemic control.
- **Digoxin:** There was an increase in the area AUC and mean peak drug concentration (C_{max}) of digoxin (20% and 36%, respectively) when co-administered with INVOKANA™ 300 mg. Patients taking INVOKANA™ with concomitant digoxin should be monitored appropriately.

USE IN SPECIFIC POPULATIONS

- **Pregnancy Category C:** There are no adequate and well-controlled studies of INVOKANA™ in pregnant women. Based on results from rat studies, canagliflozin may affect renal development and maturation. In a juvenile rat study, increased kidney weights and renal pelvic and tubular dilatation were evident at ≥0.5 times clinical exposure from a 300-mg dose.

  These outcomes occurred with drug exposure during periods of animal development that correspond to the late second and third trimester of human development. During pregnancy, consider appropriate alternative therapies, especially during the second and third trimesters. INVOKANA™ should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.
- **Nursing Mothers:** It is not known if INVOKANA™ is excreted in human milk. INVOKANA™ is secreted in the milk of lactating rats, reaching levels 1.4 times higher than that in maternal plasma. Data in juvenile rats directly exposed to INVOKANA™ showed risk to the developing kidney (renal pelvic and tubular dilatations) during maturation. Since human kidney maturation occurs in utero and during the first 2 years of life when lactational exposure may occur, there may be risk to the developing human kidney. Because many drugs are excreted in human milk, and because of the potential for serious adverse reactions in nursing infants from INVOKANA™, a decision should be made whether to discontinue nursing or to discontinue INVOKANA™, taking into account the importance of the drug to the mother.
- **Pediatric Use:** Safety and effectiveness of INVOKANA™ in pediatric patients under 18 years of age have not been established.
- **Geriatric Use:** Two thousand thirty-four (2034) patients 65 years and older, and 345 patients 75 years and older were exposed to INVOKANA™ in nine clinical studies of INVOKANA™. Patients 65 years and older had a higher incidence of adverse reactions related to reduced intravascular volume with INVOKANA™ (such as hypotension, postural dizziness, orthostatic hypotension, syncope, and dehydration), particularly with the 300-mg daily dose, compared to younger patients; more prominent increase in the incidence was seen in patients who were ≥75 years of age. Smaller reductions in HbA1C with INVOKANA™ relative to placebo were seen in older (65 years and older; -0.61% with INVOKANA™ 100 mg and -0.74% with INVOKANA™ 300 mg relative to placebo) compared to younger patients (-0.72% with INVOKANA™ 100 mg and -0.87% with INVOKANA™ 300 mg relative to placebo).
- **Renal Impairment:** The efficacy and safety of INVOKANA™ were evaluated in a study that included patients with moderate renal impairment (eGFR 30 to <50 mL/min/1.73 m^2). These patients had less overall glycemic efficacy and had a higher occurrence of adverse reactions related to reduced intravascular volume, renal-related adverse reactions, and decreases in eGFR compared to patients with mild renal impairment or normal renal function (eGFR ≥60 mL/min/1.73 m^2); patients treated with INVOKANA™ 300 mg were more likely to experience increases in potassium.

  The efficacy and safety of INVOKANA™ have not been established in patients with severe renal impairment (eGFR <30 mL/min/1.73 m^2), with end-stage renal disease (ESRD), or receiving dialysis. INVOKANA™ is not expected to be effective in these patient populations.

Janssen Pharmaceuticals, Inc.

Canagliflozin is licensed from Mitsubishi Tanabe Pharma Corporation.

September 2013 K02CAN13270

» **Hepatic Impairment:** No dosage adjustment is necessary in patients with mild or moderate hepatic impairment. The use of INVOKANA™ has not been studied in patients with severe hepatic impairment and it is therefore not recommended.

OVERDOSAGE

» There were no reports of overdose during the clinical development program of INVOKANA™ (canagliflozin).

In the event of an overdose, contact the Poison Control Center. It is also reasonable to employ the usual supportive measures, eg, remove unabsorbed material from the gastrointestinal tract, employ clinical monitoring, and institute supportive treatment as dictated by the patient's clinical status. Canagliflozin was negligibly removed during a 4-hour hemodialysis session. Canagliflozin is not expected to be dialyzable by peritoneal dialysis.

ADVERSE REACTIONS

» The most common (≥5%) adverse reactions were female genital mycotic infections, urinary tract infections, and increased urination. Adverse reactions in ≥2% of patients were male genital mycotic infections, vulvovaginal pruritus, thirst, nausea, and constipation.

K02CAN13149

Please see brief summary of full Prescribing Information on the following pages.

Invokana™
canagliflozin tablets

janssen
PHARMACEUTICAL COMPANIES OF Johnson&Johnson

INVOKANA™

(canagliflozin) tablets, for oral use

Brief Summary of Prescribing Information.

INDICATIONS AND USAGE

INVOKANA™ (canagliflozin) is indicated as an adjunct to diet and exercise to improve glycemic control in adults with type 2 diabetes mellitus *[see Clinical Studies (14) in full Prescribing Information]*.

Limitation of Use: INVOKANA is not recommended in patients with type 1 diabetes mellitus or for the treatment of diabetic ketoacidosis.

CONTRAINDICATIONS

- History of a serious hypersensitivity reaction to INVOKANA *[see Warnings and Precautions]*.
- Severe renal impairment (eGFR less than 30 mL/min/1.73 m^2), end stage renal disease or patients on dialysis *[see Warnings and Precautions and Use in Specific Populations]*.

WARNINGS AND PRECAUTIONS

Hypotension: INVOKANA causes intravascular volume contraction. Symptomatic hypotension can occur after initiating INVOKANA *[see Adverse Reactions]* particularly in patients with impaired renal function (eGFR less than 60 mL/min/1.73 m^2), elderly patients, patients on either diuretics or medications that interfere with the renin-angiotensin-aldosterone system (e.g., angiotensin-converting-enzyme [ACE] inhibitors, angiotensin receptor blockers [ARBs]), or patients with low systolic blood pressure. Before initiating INVOKANA in patients with one or more of these characteristics, volume status should be assessed and corrected. Monitor for signs and symptoms after initiating therapy.

Impairment in Renal Function: INVOKANA increases serum creatinine and decreases eGFR. Patients with hypovolemia may be more susceptible to these changes. Renal function abnormalities can occur after initiating INVOKANA *[see Adverse Reactions]*. More frequent renal function monitoring is recommended in patients with an eGFR below 60 mL/min/1.73 m^2.

Hyperkalemia: INVOKANA can lead to hyperkalemia. Patients with moderate renal impairment who are taking medications that interfere with potassium excretion, such as potassium-sparing diuretics, or medications that interfere with the renin-angiotensin-aldosterone system are more likely to develop hyperkalemia *[see Adverse Reactions]*.

Monitor serum potassium levels periodically after initiating INVOKANA in patients with impaired renal function and in patients predisposed to hyperkalemia due to medications or other medical conditions.

Hypoglycemia with Concomitant Use with Insulin and Insulin Secretagogues: Insulin and insulin secretagogues are known to cause hypoglycemia. INVOKANA can increase the risk of hypoglycemia when combined with insulin or an insulin secretagogue *[see Adverse Reactions]*. Therefore, a lower dose of insulin or insulin secretagogue may be required to minimize the risk of hypoglycemia when used in combination with INVOKANA.

Genital Mycotic Infections: INVOKANA increases the risk of genital mycotic infections. Patients with a history of genital mycotic infections and uncircumcised males were more likely to develop genital mycotic infections *[see Adverse Reactions]*. Monitor and treat appropriately.

Hypersensitivity Reactions: Hypersensitivity reactions (e.g., generalized urticaria), some serious, were reported with INVOKANA treatment; these reactions generally occurred within hours to days after initiating INVOKANA. If hypersensitivity reactions occur, discontinue use of INVOKANA; treat per standard of care and monitor until signs and symptoms resolve *[see Contraindications and Adverse Reactions]*.

Increases in Low-Density Lipoprotein (LDL-C): Dose-related increases in LDL-C occur with INVOKANA *[see Adverse Reactions]*. Monitor LDL-C and treat per standard of care after initiating INVOKANA.

Macrovascular Outcomes: There have been no clinical studies establishing conclusive evidence of macrovascular risk reduction with INVOKANA or any other antidiabetic drug.

ADVERSE REACTIONS

The following important adverse reactions are described below and elsewhere in the labeling:

- Hypotension *[see Warnings and Precautions]*
- Impairment in Renal Function *[see Warnings and Precautions]*
- Hyperkalemia *[see Warnings and Precautions]*
- Hypoglycemia with Concomitant Use with Insulin and Insulin Secretagogues *[see Warnings and Precautions]*
- Genital Mycotic Infections *[see Warnings and Precautions]*
- Hypersensitivity Reactions *[see Warnings and Precautions]*
- Increases in Low-Density Lipoprotein (LDL-C) *[see Warnings and Precautions]*

Clinical Studies Experience: Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to the rates in the clinical trials of another drug and may not reflect the rates observed in clinical practice.

Pool of Placebo-Controlled Trials: The data in Table 1 is derived from four 26-week placebo-controlled trials. In one trial INVOKANA was used as monotherapy and in three trials INVOKANA was used as add-on therapy *[see Clinical Studies (14) in full Prescribing Information]*. These data reflect exposure of 1667 patients to INVOKANA and a mean duration of exposure to

INVOKANA of 24 weeks. Patients received INVOKANA 100 mg (N=833), INVOKANA 300 mg (N=834) or placebo (N=646) once daily. The mean age of the population was 56 years and 2% were older than 75 years of age. Fifty percent (50%) of the population was male and 72% were Caucasian, 12% were Asian, and 5% were Black or African American. At baseline the population had diabetes for an average of 7.3 years, had a mean HbA1C of 8.0% and 20% had established microvascular complications of diabetes. Baseline renal function was normal or mildly impaired (mean eGFR 88 mL/min/1.73 m^2).

Table 1 shows common adverse reactions associated with the use of INVOKANA. These adverse reactions were not present at baseline, occurred more commonly on INVOKANA than on placebo, and occurred in at least 2% of patients treated with either INVOKANA 100 mg or INVOKANA 300 mg.

Table 1: Adverse Reactions From Pool of Four 26–Week Placebo-Controlled Studies Reported in ≥ 2% of INVOKANA-Treated Patients*

Adverse Reaction	Placebo N=646	INVOKANA 100 mg N=833	INVOKANA 300 mg N=834
Female genital mycotic infections†	3.2%	10.4%	11.4%
Urinary tract infections‡	4.0%	5.9%	4.3%
Increased urination§	0.8%	5.3%	4.6%
Male genital mycotic infections¶	0.6%	4.2%	3.7%
Vulvovaginal pruritus	0.0%	1.6%	3.0%
Thirst#	0.2%	2.8%	2.3%
Constipation	0.9%	1.8%	2.3%
Nausea	1.5%	2.2%	2.3%

* The four placebo-controlled trials included one monotherapy trial and three add-on combination trials with metformin, metformin and sulfonylurea, or metformin and pioglitazone.

† Female genital mycotic infections include the following adverse reactions: Vulvovaginal candidiasis, Vulvovaginal mycotic infection, Vulvovaginitis, Vaginal infection, Vulvitis, and Genital infection fungal. Percentages calculated with the number of female subjects in each group as denominator: placebo (N=312), INVOKANA 100 mg (N=425), and INVOKANA 300 mg (N=430).

‡ Urinary tract infections includes the following adverse reactions: Urinary tract infection, Cystitis, Kidney infection, and Urosepsis.

§ Increased urination includes the following adverse reactions: Polyuria, Pollakiuria, Urine output increased, Micturition urgency, and Nocturia.

¶ Male genital mycotic infections include the following adverse reactions: Balanitis or Balanoposthitis, Balanitis candida, and Genital infection fungal. Percentages calculated with the number of male subjects in each group as denominator: placebo (N=334), INVOKANA 100 mg (N=408), and INVOKANA 300 mg (N=404).

Thirst includes the following adverse reactions: Thirst, Dry mouth, and Polydipsia.

Abdominal pain was also more commonly reported in patients taking INVOKANA 100 mg (1.8%), 300 mg (1.7%) than in patients taking placebo (0.8%).

Pool of Placebo- and Active-Controlled Trials: The occurrence of adverse reactions was also evaluated in a larger pool of patients participating in placebo- and active-controlled trials.

The data combined eight clinical trials *[see Clinical Studies (14) in full Prescribing Information]* and reflect exposure of 6177 patients to INVOKANA. The mean duration of exposure to INVOKANA was 38 weeks with 1832 individuals exposed to INVOKANA for greater than 50 weeks. Patients received INVOKANA 100 mg (N=3092), INVOKANA 300 mg (N=3085) or comparator (N=3262) once daily. The mean age of the population was 60 years and 5% were older than 75 years of age. Fifty-eight percent (58%) of the population was male and 73% were Caucasian, 16% were Asian, and 4% were Black or African American. At baseline, the population had diabetes for an average of 11 years, had a mean HbA1C of 8.0% and 33% had established microvascular complications of diabetes. Baseline renal function was normal or mildly impaired (mean eGFR 81 mL/min/1.73 m^2).

The types and frequency of common adverse reactions observed in the pool of eight clinical trials were consistent with those listed in Table 1. In this pool, INVOKANA was also associated with the adverse reactions of fatigue (1.7% with comparator, 2.2% with INVOKANA 100 mg, and 2.0% with INVOKANA 300 mg) and loss of strength or energy (i.e., asthenia) (0.6% with comparator, 0.7% with INVOKANA 100 mg and 1.1% with INVOKANA 300 mg).

In the pool of eight clinical trials, the incidence rate of pancreatitis (acute or chronic) was 0.9, 2.7, and 0.9 per 1000 patient-years of exposure to comparator, INVOKANA 100 mg, and INVOKANA 300 mg, respectively.

In the pool of eight clinical trials with a longer mean duration of exposure to INVOKANA (68 weeks), the incidence rate of bone fracture was 14.2, 18.7, and 17.6 per 1000 patient years of exposure to comparator, INVOKANA 100 mg, and INVOKANA 300 mg, respectively. Upper extremity fractures occurred more commonly on INVOKANA than comparator.

INVOKANA™ (canagliflozin) tablets

In the pool of eight clinical trials, hypersensitivity-related adverse reactions (including erythema, rash, pruritus, urticaria, and angioedema) occurred in 3.0%, 3.8%, and 4.2% of patients receiving comparator, INVOKANA 100 mg and INVOKANA 300 mg, respectively. Five patients experienced serious adverse reactions of hypersensitivity with INVOKANA, which included 4 patients with urticaria and 1 patient with a diffuse rash and urticaria occurring within hours of exposure to INVOKANA. Among these patients, 2 patients discontinued INVOKANA. One patient with urticaria had recurrence when INVOKANA was re-initiated.

Photosensitivity-related adverse reactions (including photosensitivity reaction, polymorphic light eruption, and sunburn) occurred in 0.1%, 0.2%, and 0.2% of patients receiving comparator, INVOKANA 100 mg, and INVOKANA 300 mg, respectively.

Other adverse reactions occurring more frequently on INVOKANA than on comparator were:

Volume Depletion-Related Adverse Reactions: INVOKANA results in an osmotic diuresis, which may lead to reductions in intravascular volume. In clinical studies, treatment with INVOKANA was associated with a dose-dependent increase in the incidence of volume depletion-related adverse reactions (e.g., hypotension, postural dizziness, orthostatic hypotension, syncope, and dehydration). An increased incidence was observed in patients on the 300 mg dose. The three factors associated with the largest increase in volume depletion-related adverse reactions were the use of loop diuretics, moderate renal impairment (eGFR 30 to less than 60 mL/min/1.73 m^2) and age 75 years and older (Table 2) *[see Dosage and Administration (2.2) in full Prescribing Information, Warnings and Precautions, and Use in Specific Populations]*.

Table 2: Proportion of Patients With at Least one Volume Depletion-Related Adverse Reactions (Pooled Results from 8 Clinical Trials)

Baseline Characteristic	Comparator Group* %	INVOKANA 100 mg %	INVOKANA 300 mg %
Overall population	1.5%	2.3%	3.4%
75 years of age and older†	2.6%	4.9%	8.7%
eGFR less than 60 mL/min/1.73 m^2†	2.5%	4.7%	8.1%
Use of loop diuretic†	4.7%	3.2%	8.8%

* Includes placebo and active-comparator groups

† Patients could have more than 1of the listed risk factors

Impairment in Renal Function: INVOKANA is associated with a dose-dependent increase in serum creatinine and a concomitant fall in estimated GFR (Table 3). Patients with moderate renal impairment at baseline had larger mean changes.

Table 3: Changes in Serum Creatinine and eGFR Associated with INVOKANA in the Pool of Four Placebo-Controlled Trials and Moderate Renal Impairment Trial

			Placebo N=646	INVOKANA 100 mg N=833	INVOKANA 300 mg N=834
Pool of Four Placebo-Controlled Trials	Baseline	Creatinine (mg/dL)	0.84	0.82	0.82
		eGFR (mL/min/1.73 m^2)	87.0	88.3	88.8
	Week 6 Change	Creatinine (mg/dL)	0.01	0.03	0.05
		eGFR (mL/min/1.73 m^2)	-1.6	-3.8	-5.0
	End of Treatment Change*	Creatinine (mg/dL)	0.01	0.02	0.03
		eGFR (mL/min/1.73 m^2)	-1.6	-2.3	-3.4
			Placebo N=90	**INVOKANA 100 mg N=90**	**INVOKANA 300 mg N=89**
Moderate Renal Impairment Trial	Baseline	Creatinine (mg/dL)	1.61	1.62	1.63
		eGFR (mL/min/1.73 m^2)	40.1	39.7	38.5
	Week 3 Change	Creatinine (mg/dL)	0.03	0.18	0.28
		eGFR (mL/min/1.73 m^2)	-0.7	-4.6	-6.2
	End of Treatment Change*	Creatinine (mg/dL)	0.07	0.16	0.18
		eGFR (mL/min/1.73 m^2)	-1.5	-3.6	-4.0

* Week 26 in mITT LOCF population

In the pool of four placebo-controlled trials where patients had normal or mildly impaired baseline renal function, the proportion of patients who experienced at least one event of significant renal function decline, defined as an eGFR below 80 mL/min/1.73 m^2 and 30% lower than baseline, was 2.1% with placebo, 2.0% with INVOKANA 100 mg, and 4.1% with INVOKANA 300 mg. At the end of treatment, 0.5% with placebo, 0.7% with INVOKANA 100 mg, and 1.4% with INVOKANA 300 mg had a significant renal function decline.

In a trial carried out in patients with moderate renal impairment with a baseline eGFR of 30 to less than 50 mL/min/1.73 m^2 (mean baseline eGFR 39 mL/min/1.73 m^2) *[see Clinical Studies (14.3) in full Prescribing Information]*, the proportion of patients who experienced at least one event of significant renal function decline, defined as an eGFR 30% lower than baseline, was 6.9% with placebo, 18% with INVOKANA 100 mg, and 22.5% with INVOKANA 300 mg. At the end of treatment, 4.6% with placebo, 3.4% with INVOKANA 100 mg, and 3.4% with INVOKANA 300 mg had a significant renal function decline.

In a pooled population of patients with moderate renal impairment (N=1085) with baseline eGFR of 30 to less than 60 mL/min/1.73 m^2 (mean baseline eGFR 48 mL/min/1.73 m^2), the overall incidence of these events was lower than in the dedicated trial but a dose-dependent increase in incident episodes of significant renal function decline compared to placebo was still observed.

Use of INVOKANA was associated with an increased incidence of renal-related adverse reactions (e.g., increased blood creatinine, decreased glomerular filtration rate, renal impairment, and acute renal failure), particularly in patients with moderate renal impairment.

In the pooled analysis of patients with moderate renal impairment, the incidence of renal-related adverse reactions was 3.7% with placebo, 8.9% with INVOKANA 100 mg, and 9.3% with INVOKANA 300 mg. Discontinuations due to renal-related adverse events occurred in 1.0% with placebo, 1.2% with INVOKANA 100 mg, and 1.6% with INVOKANA 300 mg *[see Warnings and Precautions]*.

Genital Mycotic Infections: In the pool of four placebo-controlled clinical trials, female genital mycotic infections (e.g., vulvovaginal mycotic infection, vulvovaginal candidiasis, and vulvovaginitis) occurred in 3.2%, 10.4%, and 11.4% of females treated with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively. Patients with a history of genital mycotic infections were more likely to develop genital mycotic infections on INVOKANA. Female patients who developed genital mycotic infections on INVOKANA were more likely to experience recurrence and require treatment with oral or topical antifungal agents and anti-microbial agents *[see Warnings and Precautions]*.

In the pool of four placebo-controlled clinical trials, male genital mycotic infections (e.g., candidal balanitis, balanoposthitis) occurred in 0.6%, 4.2%, and 3.7% of males treated with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively. Male genital mycotic infections occurred more commonly in uncircumcised males and in males with a prior history of balanitis or balanoposthitis. Male patients who developed genital mycotic infections on INVOKANA were more likely to experience recurrent infections (22% on INVOKANA versus none on placebo), and require treatment with oral or topical antifungal agents and anti-microbial agents than patients on comparators. In the pooled analysis of 8 controlled trials, phimosis was reported in 0.3% of uncircumcised male patients treated with INVOKANA and 0.2% required circumcision to treat the phimosis *[see Warnings and Precautions]*.

Hypoglycemia: In all clinical trials, hypoglycemia was defined as any event regardless of symptoms, where biochemical hypoglycemia was documented (any glucose value below or equal to 70 mg/dL). Severe hypoglycemia was defined as an event consistent with hypoglycemia where the patient required the assistance of another person to recover, lost consciousness, or experienced a seizure (regardless of whether biochemical documentation of a low glucose value was obtained). In individual clinical trials *[see Clinical Studies (14) in full Prescribing Information]*, episodes of hypoglycemia occurred at a higher rate when INVOKANA was co-administered with insulin or sulfonylureas (Table 4) *[see Warnings and Precautions]*.

Table 4: Incidence of Hypoglycemia* in Controlled Clinical Studies

Monotherapy (26 weeks)	**Placebo (N=192)**	**INVOKANA 100 mg (N=195)**	**INVOKANA 300 mg (N=197)**
Overall [N (%)]	5 (2.6)	7 (3.6)	6 (3.0)
In Combination with Metformin (26 weeks)	**Placebo + Metformin (N=183)**	**INVOKANA 100 mg + Metformin (N=368)**	**INVOKANA 300 mg + Metformin (N=367)**
Overall [N (%)]	3 (1.6)	16 (4.3)	17 (4.6)
Severe [N (%)]†	0 (0)	1 (0.3)	1 (0.3)
In Combination with Metformin (52 weeks)	**Glimepiride + Metformin (N=482)**	**INVOKANA 100 mg + Metformin (N=483)**	**INVOKANA 300 mg + Metformin (N=485)**
Overall [N (%)]	165 (34.2)	27 (5.6)	24 (4.9)
Severe [N (%)]†	15 (3.1)	2 (0.4)	3 (0.6)
In Combination with Sulfonylurea (18 weeks)	**Placebo + Sulfonylurea (N=69)**	**INVOKANA 100 mg + Sulfonylurea (N=74)**	**INVOKANA 300 mg + Sulfonylurea (N=72)**
Overall [N (%)]	4 (5.8)	3 (4.1)	9 (12.5)
In Combination with Metformin + Sulfonylurea (26 weeks)	**Placebo + Metformin + Sulfonylurea (N=156)**	**INVOKANA 100 mg + Metformin + Sulfonylurea (N=157)**	**INVOKANA 300 mg + Metformin + Sulfonylurea (N=156)**
Overall [N (%)]	24 (15.4)	43 (27.4)	47 (30.1)
Severe [N (%)]†	1 (0.6)	1 (0.6)	0

INVOKANA™ (canagliflozin) tablets

Table 4: Incidence of Hypoglycemia* in Controlled Clinical Studies (continued)

In Combination with Metformin + Sulfonylurea (52 weeks)	**Sitagliptin + Metformin + Sulfonylurea (N=378)**		**INVOKANA 300 mg + Metformin + Sulfonylurea (N=377)**
Overall [N (%)]	154 (40.7)		163 (43.2)
Severe [N (%)]†	13 (3.4)		15 (4.0)
In Combination with Metformin + Pioglitazone (26 weeks)	**Placebo + Metformin + Pioglitazone (N=115)**	**INVOKANA 100 mg + Metformin + Pioglitazone (N=113)**	**INVOKANA 300 mg + Metformin + Pioglitazone (N=114)**
Overall [N (%)]	3 (2.6)	3 (2.7)	6 (5.3)
In Combination with Insulin (18 weeks)	**Placebo (N=565)**	**INVOKANA 100 mg (N=566)**	**INVOKANA 300 mg (N=587)**
Overall [N (%)]	208 (36.8)	279 (49.3)	285 (48.6)
Severe [N (%)]†	14 (2.5)	10 (1.8)	16 (2.7)

* Number of patients experiencing at least one event of hypoglycemia based on either biochemically documented episodes or severe hypoglycemic events in the intent-to-treat population

† Severe episodes of hypoglycemia were defined as those where the patient required the assistance of another person to recover, lost consciousness, or experienced a seizure (regardless of whether biochemical documentation of a low glucose value was obtained)

Laboratory Tests: *Increases in Serum Potassium:* Dose-related, transient mean increases in serum potassium were observed early after initiation of INVOKANA (i.e., within 3 weeks) in a trial of patients with moderate renal impairment *[see Clinical Studies (14.3) in full Prescribing Information]*. In this trial, increases in serum potassium of greater than 5.4 mEq/L and 15% above baseline occurred in 16.1%, 12.4%, and 27.0% of patients treated with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively. More severe elevations (i.e., equal or greater than 6.5 mEq/L) occurred in 1.1%, 2.2%, and 2.2% of patients treated with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively. In patients with moderate renal impairment, increases in potassium were more commonly seen in those with elevated potassium at baseline and in those using medications that reduce potassium excretion, such as potassium-sparing diuretics, angiotensin-converting-enzyme inhibitors, and angiotensin-receptor blockers *[see Warnings and Precautions]*.

Increases in Serum Magnesium: Dose-related increases in serum magnesium were observed early after initiation of INVOKANA (within 6 weeks) and remained elevated throughout treatment. In the pool of four placebo-controlled trials, the mean change in serum magnesium levels was 8.1% and 9.3% with INVOKANA 100 mg and INVOKANA 300 mg, respectively, compared to -0.6% with placebo. In a trial of patients with moderate renal impairment *[see Clinical Studies (14.3) in full Prescribing Information]*, serum magnesium levels increased by 0.2%, 9.2%, and 14.8% with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively.

Increases in Serum Phosphate: Dose-related increases in serum phosphate levels were observed with INVOKANA. In the pool of four placebo controlled trials, the mean change in serum phosphate levels were 3.6% and 5.1% with INVOKANA 100 mg and INVOKANA 300 mg, respectively, compared to 1.5% with placebo. In a trial of patients with moderate renal impairment *[see Clinical Studies (14.3) in full Prescribing Information]*, the mean serum phosphate levels increased by 1.2%, 5.0%, and 9.3% with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively.

Increases in Low-Density Lipoprotein Cholesterol (LDL-C) and non-High-Density Lipoprotein Cholesterol (non-HDL-C): In the pool of four placebo-controlled trials, dose-related increases in LDL-C with INVOKANA were observed. Mean changes (percent changes) from baseline in LDL-C relative to placebo were 4.4 mg/dL (4.5%) and 8.2 mg/dL (8.0%) with INVOKANA 100 mg and INVOKANA 300 mg, respectively. The mean baseline LDL-C levels were 104 to 110 mg/dL across treatment groups *[see Warnings and Precautions]*.

Dose-related increases in non-HDL-C with INVOKANA were observed. Mean changes (percent changes) from baseline in non-HDL-C relative to placebo were 2.1 mg/dL (1.5%) and 5.1 mg/dL (3.6%) with INVOKANA 100 mg and 300 mg, respectively. The mean baseline non-HDL-C levels were 140 to 147 mg/dL across treatment groups.

Increases in Hemoglobin: In the pool of four placebo-controlled trials, mean changes (percent changes) from baseline in hemoglobin were -0.18 g/dL (-1.1%) with placebo, 0.47 g/dL (3.5%) with INVOKANA 100 mg, and 0.51 g/dL (3.8%) with INVOKANA 300 mg. The mean baseline hemoglobin value was approximately 14.1 g/dL across treatment groups. At the end of treatment, 0.8%, 4.0%, and 2.7% of patients treated with placebo, INVOKANA 100 mg, and INVOKANA 300 mg, respectively, had hemoglobin above the upper limit of normal.

DRUG INTERACTIONS

UGT Enzyme Inducers: Rifampin: Co-administration of canagliflozin with rifampin, a nonselective inducer of several UGT enzymes, including

UGT1A9, UGT2B4, decreased canagliflozin area under the curve (AUC) by 51%. This decrease in exposure to canagliflozin may decrease efficacy. If an inducer of these UGTs (e.g., rifampin, phenytoin, phenobarbital, ritonavir) must be co-administered with INVOKANA (canagliflozin), consider increasing the dose to 300 mg once daily if patients are currently tolerating INVOKANA 100 mg once daily, have an eGFR greater than 60 mL/min/1.73 m^2, and require additional glycemic control. Consider other antihyperglycemic therapy in patients with an eGFR of 45 to less than 60 mL/min/1.73 m^2 receiving concurrent therapy with a UGT inducer and require additional glycemic control *[see Dosage and Administration (2.3) and Clinical Pharmacology (12.3) in full Prescribing Information]*.

Digoxin: There was an increase in the area AUC and mean peak drug concentration (C_{max}) of digoxin (20% and 36%, respectively) when co-administered with INVOKANA 300 mg *[see Clinical Pharmacology (12.3) in full Prescribing Information]*. Patients taking INVOKANA with concomitant digoxin should be monitored appropriately.

USE IN SPECIFIC POPULATIONS

Pregnancy: Teratogenic Effects: Pregnancy Category C: There are no adequate and well-controlled studies of INVOKANA in pregnant women. Based on results from rat studies, canagliflozin may affect renal development and maturation. In a juvenile rat study, increased kidney weights and renal pelvic and tubular dilatation were evident at greater than or equal to 0.5 times clinical exposure from a 300 mg dose *[see Nonclinical Toxicology (13.2) in full Prescribing Information]*.

These outcomes occurred with drug exposure during periods of animal development that correspond to the late second and third trimester of human development. During pregnancy, consider appropriate alternative therapies, especially during the second and third trimesters. INVOKANA should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known if INVOKANA is excreted in human milk. INVOKANA is secreted in the milk of lactating rats reaching levels 1.4 times higher than that in maternal plasma. Data in juvenile rats directly exposed to INVOKANA showed risk to the developing kidney (renal pelvic and tubular dilatations) during maturation. Since human kidney maturation occurs *in utero* and during the first 2 years of life when lactational exposure may occur, there may be risk to the developing human kidney. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in nursing infants from INVOKANA, a decision should be made whether to discontinue nursing or to discontinue INVOKANA, taking into account the importance of the drug to the mother *[see Nonclinical Toxicology (13.2) in full Prescribing Information]*.

Pediatric Use: Safety and effectiveness of INVOKANA in pediatric patients under 18 years of age have not been established.

Geriatric Use: Two thousand thirty-four (2034) patients 65 years and older, and 345 patients 75 years and older were exposed to INVOKANA in nine clinical studies of INVOKANA *[see Clinical Studies (14.3) in full Prescribing Information]*.

Patients 65 years and older had a higher incidence of adverse reactions related to reduced intravascular volume with INVOKANA (such as hypotension, postural dizziness, orthostatic hypotension, syncope, and dehydration), particularly with the 300 mg daily dose, compared to younger patients; more prominent increase in the incidence was seen in patients who were 75 years and older *[see Dosage and Administration (2.1) in full Prescribing Information and Adverse Reactions]*. Smaller reductions in HbA1C with INVOKANA relative to placebo were seen in older (65 years and older; -0.61% with INVOKANA 100 mg and -0.74% with INVOKANA 300 mg relative to placebo) compared to younger patients (-0.72% with INVOKANA 100 mg and -0.87% with INVOKANA 300 mg relative to placebo).

Renal Impairment: The efficacy and safety of INVOKANA were evaluated in a study that included patients with moderate renal impairment (eGFR 30 to less than 50 mL/min/1.73 m^2) *[see Clinical Studies (14.3) in full Prescribing Information]*. These patients had less overall glycemic efficacy and had a higher occurrence of adverse reactions related to reduced intravascular volume, renal-related adverse reactions, and decreases in eGFR compared to patients with mild renal impairment or normal renal function (eGFR greater than or equal to 60 mL/min/1.73 m^2); patients treated with INVOKANA 300 mg were more likely to experience increases in potassium *[see Dosage and Administration (2.2) in full Prescribing Information, Warnings and Precautions, and Adverse Reactions]*.

The efficacy and safety of INVOKANA have not been established in patients with severe renal impairment (eGFR less than 30 mL/min/1.73 m^2), with ESRD, or receiving dialysis. INVOKANA is not expected to be effective in these patient populations *[see Contraindications and Clinical Pharmacology (12.3) in full Prescribing Information]*.

Hepatic Impairment: No dosage adjustment is necessary in patients with mild or moderate hepatic impairment. The use of INVOKANA has not been studied in patients with severe hepatic impairment and is therefore not recommended *[see Clinical Pharmacology (12.3) in full Prescribing Information]*.

INVOKANA™ (canagliflozin) tablets

OVERDOSAGE

There were no reports of overdose during the clinical development program of INVOKANA (canagliflozin).

In the event of an overdose, contact the Poison Control Center. It is also reasonable to employ the usual supportive measures, e.g., remove unabsorbed material from the gastrointestinal tract, employ clinical monitoring, and institute supportive treatment as dictated by the patient's clinical status. Canagliflozin was negligibly removed during a 4-hour hemodialysis session. Canagliflozin is not expected to be dialyzable by peritoneal dialysis.

PATIENT COUNSELING INFORMATION

See FDA-approved patient labeling (Medication Guide).

Instructions: Instruct patients to read the Medication Guide before starting INVOKANA (canagliflozin) therapy and to reread it each time the prescription is renewed.

Inform patients of the potential risks and benefits of INVOKANA and of alternative modes of therapy. Also inform patients about the importance of adherence to dietary instructions, regular physical activity, periodic blood glucose monitoring and HbA1C testing, recognition and management of hypoglycemia and hyperglycemia, and assessment for diabetes complications. Advise patients to seek medical advice promptly during periods of stress such as fever, trauma, infection, or surgery, as medication requirements may change.

Instruct patients to take INVOKANA only as prescribed. If a dose is missed, advise patients to take it as soon as it is remembered unless it is almost time for the next dose, in which case patients should skip the missed dose and take the medicine at the next regularly scheduled time. Advise patients not to take two doses of INVOKANA at the same time.

Inform patients that the most common adverse reactions associated with INVOKANA are genital mycotic infection, urinary tract infection, and increased urination.

Inform female patients of child bearing age that the use of INVOKANA during pregnancy has not been studied in humans, and that INVOKANA should only be used during pregnancy only if the potential benefit justifies the potential risk to the fetus. Instruct patients to report pregnancies to their physicians as soon as possible.

Inform nursing mothers to discontinue INVOKANA or nursing, taking into account the importance of drug to the mother.

Laboratory Tests: Due to its mechanism of action, patients taking INVOKANA will test positive for glucose in their urine.

Hypotension: Inform patients that symptomatic hypotension may occur with INVOKANA and advise them to contact their doctor if they experience such symptoms *[see Warnings and Precautions]*. Inform patients that dehydration may increase the risk for hypotension, and to have adequate fluid intake.

Genital Mycotic Infections in Females (e.g., Vulvovaginitis): Inform female patients that vaginal yeast infection may occur and provide them with information on the signs and symptoms of vaginal yeast infection. Advise them of treatment options and when to seek medical advice *[see Warnings and Precautions]*.

Genital Mycotic Infections in Males (e.g., Balanitis or Balanoposthitis): Inform male patients that yeast infection of penis (e.g., balanitis or balanoposthitis) may occur, especially in uncircumcised males and patients with prior history. Provide them with information on the signs and symptoms of balanitis and balanoposthitis (rash or redness of the glans or foreskin of the penis). Advise them of treatment options and when to seek medical advice *[see Warnings and Precautions]*.

Hypersensitivity Reactions: Inform patients that serious hypersensitivity reactions such as urticaria and rash have been reported with INVOKANA. Advise patients to report immediately any signs or symptoms suggesting allergic reaction or angioedema, and to take no more drug until they have consulted prescribing physicians.

Urinary Tract Infections: Inform patients of the potential for urinary tract infections. Provide them with information on the symptoms of urinary tract infections. Advise them to seek medical advice if such symptoms occur.

Active ingredient made in Belgium

Finished product manufactured by:
Janssen Ortho, LLC
Gurabo, PR 00778

Manufactured for:
Janssen Pharmaceuticals, Inc.
Titusville, NJ 08560

Licensed from Mitsubishi Tanabe Pharma Corporation

10282400

K02CAN13080B

janssen

Practicing on the go: Mobile EHRs on the rise

Mobile EHRs are bringing patient information into the cloud. Experts explain what today's mobile EHRs can and can't do.

by **DEBRA BEAULIEU**

HIGHLIGHTS

01 When switching EHR systems, physicians are demanding the systems they adopt have mobile capabilities

02 Mobile EHRs allow physicians to work from anywhere andprovide a more convenient way to show patients information.

03 At this point, most mobile EHRs are better for consuming information rather than creating it. That will come in time.

In less than a decade, the medical record has evolved dramatically, changing in physical space from occupying walls of shelving, to server rooms, to the cloud—and now even to your pocket. Although many doctors may have been hesitant to switch from paper to electronic health records (EHRs) in the first place, the appeal of accessing these records via their gadgets is nearly irresistible.

PROVIDERS WANT MOBILE

In fact, according to recent research from technology research firm Black Book Rankings, many physicians are not at the point of wanting to replace their current EHRs with products that perform better or are more suited to their needs. While going through the trouble of switching, physicians are demanding the systems they adopt have mobile capabilities.

"A mandate has been issued and progressive vendors are reacting," Doug Brown, managing partner of Black Book Research, commented in a news release. "A full 100% of practices participating in the follow-up poll [to the previous EHR-switch study] expect EHR systems that allow access to patient data wherever physicians are providing or reviewing care."

Further, the researchers found that while just 8% of office-based physicians currently use either a mobile device for electronic prescribing, accessing records, ordering tests or viewing results, 83% indicated they would adopt mobile EHR functionalities to update patient charts, check labs and order medications immediately if available to them via their current EHR.

But how close are these dreams to becoming a reality? Experts who spoke with Medical Economics explained what today's mobile EHRs can and can't do.

BETTER DECISION-MAKING FROM ANYWHERE

The foremost benefit to providers in having mobile EHR access is simply to be able to make better medical decisions when away from the office, says Joseph Kvedar, MD, founder and director of the Center for Connected Health, a division of Partners HealthCare in Massachusetts.

"So wherever that may be, one has a fiduciary to one's patients 24 hours a day, and things come up," says Kvedar, who is also a practicing dermatologist in Boston.

He recounts an example of talking to a nurse from his car about a patient who needed a medication change. Because the nurse had access to the medical record at the facility, she could relay that the patient was in kidney failure and shouldn't take the medication Kvedar originally suggested over the phone.

Health apps for physicians will face new FDA regulations

by **ALISON RITCHIE**

In recent years, the mobile application market has been flooded with medical apps that do everything from count calories to perform electrocardiography.

The Epocrates 2013 Mobile Trends Report showed that about 4 out of 5 physicians, nurse practitioners, and physician assistants are using smart phones everyday, and more than 50% of physicians use tablets daily.

But now the Food and Drug Administration (FDA) has announced that it will start regulating medical apps that physicians may be using on those devices. Its guidelines, "Mobile Medical Applications Guidance for Industry and Food and Drug Administration Staff," offer information regarding the new regulatory requirements and why they are important for app developers and patients.

"As is the case with traditional medical devices, certain mobile apps can post potential risks to public health," the document states. "Moreover, certain mobile medical apps may pose risks that are unique to the characteristics of the platform on which the mobile medical app is run. For example, the interpretation of radiological images on a mobile device could be adversely affected by the smaller screen size, lower contrast ratio, and uncontrolled ambient light of the mobile platform."

But not all medical apps will be subject to regulation. The FDA will focus on apps meant for physicians and other healthcare providers to use as diagnostic tools and to facilitate patient care.

"We have worked hard to strike the right balance, reviewing only the mobile apps that have the potential to harm consumers if they do not function properly," says Jeffrey Shuren, M.D., J.D., director of the FDA's Center for Devices and Radiological Health, in a press release.

The FDA has already approved about 40 medical apps within the last two years and approximately 100 apps total.

"If I were elsewhere [besides the car] and had all that information on my tablet, it would make me a better clinician," he says. "So having features that go into helping you make better decisions about a patient available in a mobile format is really powerful because it's going to improve quality and lower the error rate."

The lifestyle factor is powerful as well. Physicians are already early adopters of smartphones and tablets for personal use, and the ability to use them to handle everyday work occurrences is attractive, notes Derek Kosiorek, CPEHR, CPHIT, a principal with the Medical Group Management Association's Health Care Consulting Group.

"So a lot of them already have them [devices], but it's a matter of getting them interfacing with the EHRs to access them anytime they need the info," he says. "So if they get paged or called, then they would be able to pull up relevant on the mobile device quickly wherever they are."

A MORE CONVENIENT WAY TO SHOW PATIENTS INFORMATION

Another advantage of having an EHR in a handheld format is the ability to show patients images such as scans, educational diagrams or charts trending certain health metrics such as their blood pressure or weight over time. The same show and tell functionality is also possible with a laptop or desktop computer, but can happen more smoothly with a mobile device, Kvedar notes. While it may not be the primary benefit of using a mobile EHR, doctors and vendors certainly see the potential to leverage it as a tool to improve patient education and shared decisionmaking, he says.

Physicians surveyed by KLAS Enterprises about mobile health applications agreed, according to Erik Westerlind, KLAS' senior director of financial and services research. According to the company's 2012 survey of hospital chief information officers, "one of the greatest things doctors appreciated was

that they could actually go sit next to the patient and show them the image on that device so the patient would understand." Westerlind adds, "It was a way for them to connect more personally with the patient."

BE AWARE OF LIMITATIONS

It's important to keep in mind that, as of now, most mobile EHRs work best as a tool to consume information rather than to create it. While Westerlind reports that vendors are working on adding note-taking features to mobile EHRs, Kvedar says that most of the EHRs he works with are still presented in a read-only format.

"I can look at lab data, X-ray data and so forth," Kvedar says. "When we get to the point I can use it as both a data input device and a retrieval device, I think that will really improve workflow and change the footprint of the exam room."

Another potential problem to be aware of, according to Westerlind, is the possibility of some record data not being visible (or being hidden) on devices with small screens. "The biggest complaint we got [in our survey] had to do with applications not being optimized for a particular form factor," he says.

Because of the patient safety risk associated with important data being invisible to clinicians, vendors have put a lot of work into correcting the problem, he adds, though it's still a glitch to look out for.

Also keep in mind that in applications that do allow input of data, the keyboard when visible can obscure most of the screen, making devices less convenient than they may seem for this purpose.

MAKING THE MOST OF THE TOOLS

No matter what kind of mobile tools you adopt, the most important key to reaping their benefits is in training, says Kosiorek.

The biggest mistake practices make in implementing any kind of technology, he says, is to skimp on training, both financially and in terms of time. "If you're not learning how to use the tool, then you're kind of winging it and you're going to be missing the things that you could be doing," he says.

Moreover, if you've only recently adopted an EHR in your practice, get very comfortable with the basics of using it on your laptop or desktop computer before worrying about mobility, Kvedar says. "Understand that it's a second-order goal. I wouldn't base my whole strategy around it."

Practical Matters

STRATEGIES FOR PICKING THE BEST EHR SYSTEM FOR YOUR PRACTICE

by **GAIL LEVY, MA & KATHRYN MOGHADAS, RN, CLRM, CHBC, CHCC, CPC**

There are hundreds of electronic health record (EHR) systems to choose from. These strategies will help you evaluate your options and select the best EHR for the needs of your practice.

GIVEN THE DIVERSE options with EHR use, significant variations in practice operations and the complexity with achieving a fully integrated paperless work environment, it is critically important for physicians to establish a strategy prior to initiating a review of EHR systems.

Not only will this save time and avoid spending money where not needed, it will also minimize unwanted surprises.

Consider the following as a first step when identifying practice requirements: patient health information documentation at both the time of service and pre/post treatment, viewing and reporting information stored in the EHR and provider and staff utilization of the system.

Use the following tips when developing your strategy and as you evaluate the systems.

Vet the vendor

Here is what you need to find out about the EHR vendors you are considering working with:

- **Check vendor's referrals and references.**
- **What is the vendor's experience? How many installs and client types? How many providers and sites per business entity?**
- **Does the vendor have certified products for 2011 and 2014?**

Vet the system

You also need to do your homework on the specific EHR systems you are considering.

Use the following tips when researching EHR systems:

- **Identify the number of installs (business entities) and physicians and NPPs that had adopted use of the system.**
- **Break out the numbers by specialty and ownership type (private owned, hospital/ids owned).**
- **Is this an integrated EHR with a Practice Management (PM) component? or is the PM interfaced with EHR (were these two separate products that have been "married")?**
- **If considering just an EHR product, get the details on what PM products interface with the EHR and what is required (cost and process wise) to implement and maintain bi-directional integration.**
- **Number of years EHR system has been in in active use**
- **Ownership history**
- **Any mergers?**
- **Does the company own other products and if so what are they?**
- **To what extent is the EHR product the owner's primary source of business?**

See the EHR in action

Observe with as much detail as possible other practices (at least three practices, if possible) using the system.

It's important to see how the system works in the real world before purchasing it.

What about cost?

It is very difficult to predict realistic comparative cost expectations associated with the acquisition an EHR.

Factoring the software alone will not provide a realistic estimate. Practices with no existing hardware will incur the highest cost. Practices using IT equipment more than three years old and near maximum capacity are likely to spend as much as a practice with no hardware.

In general, if just an EHR is purchased, the practice may have the lowest implementation cost; However, if these practices pay for a Practice Management (PM) system integration with the EHR the total costs are likely to be close to fully integrated EHR/PM systems, though this scenario will avoid the transition to a new PM system.

You purchased an EHR system. Now what?

Once you've selected an EHR system, the work is far from over.

Here are some tips to

make sure you get the most from your systems:

1. Use the patient portal
Initiate use of patient portal as soon as possible. Document management and patient communications are two areas where practices can significantly improve operations and gain efficiency. The patient portal is almost always placed as the last step in the implementation and use plan.

2. Interoperability is key
Interoperability provides significant value with EHR use. Don't short change your investment by trying to save costs by delaying opportunities to interface with other systems that are able to provide receive and/or provide patient data.

3. Usability
When selecting a system consider the impact and usability for the provider, staff and patient. While the provider may be very significant, failure to assess impact for staff and patient may become a provider problem.

4. Pay attention to 'ease of use'
Concentrate on ease of use once the system is fully operational and providers and staff are comfortable with EHR use rather than focusing on the ease of implementation and training. EHR use will have a far greater impact on practice cost and working environment over time than during the initial implementation period.

THERE IS A LEARNING CURVE THAT ALL EMPLOYEES MUST ACCEPT. EMPLOYEES WITH TECH SKILL SETS WILL ADAPT QUICKER THAN THE EMPLOYEE WITH BASIC COMPUTER SKILLS.

5. Gather concise, focused analysis
During the system set-up/configuration phase allow provider(s) and staff time for concise, focused analysis and planning that ensures the essential basics are thought through, thoroughly. Avoid trying to tackle every detail as this may create more limitations and/or complexities than helpful.

6. Use the vendor's knowledge
Ask the vendor to show you what set-up options/configurations have been developed that are the most likely to enhance system use. That will make your job easier.

7. Change your practice, not the EHR system
Consider the implications of making practice changes rather than modifying the EHR system as in doing so, the practice may realize operational improvements, which they otherwise would not have considered.

8. Assess your needs regularly
Assess annually the need to adjust the software contract and user licenses to accommodate the changing needs of the practice with the number of employees, portability of employees or providers who might need remote access into the EHR system.

9. Will you save money?
The reason for implementation of EHR is for compliance with emerging standards of patient care documentation and delivery. Negate all claims that you will either save time or money.

10. There will be a learning curve
As with any new equipment or procedures incorporated in your practice, there is a learning curve that all employees must accept. The employee with technology skill sets will adapt quicker than the employee who has to become familiar with basic computer skills. Assessing the employee's readiness and providing initial training to those who need basic skills through local adult education classes will assist the practice in the adaptability to the new processes. ◘

Gail Levy, M.A., of The Levy Advantage, Baltimore, Maryland, and Kathryn Moghadas RN, CLRM, CHBC, CHCC, CPC, of Associated Healthcare, Orlando, Florida. Send your practice management questions to **medec@advanstar.com**.

AUTOMATED MESSAGING SERVICES

PHONETREE Search

HEALTHWAVE CONNECT™

SECURE CLOUD-BASED PATIENT REMINDERS

PHONE TEXT EMAIL

HealthWave Connect™ provides 2-way communication so your patients can easily respond back to messages, which speeds up appointment confirmations. Plus you have a complete audit trail of all communication.

Schedule a demo to learn how to assist with **meaningful use compliance.**

phonetree.com/ME13 | PhoneTree Proven. Professional. Trusted. | 877.259.0658

Search for the company name you see in each of the ads in this section for **FREE INFORMATION!**

EHR SYSTEMS

ELECTRONIC MEDICAL RECORDS/BILLING

Search for the company name you see in each of the ads in this section for **FREE INFORMATION!**

PRIMARY CARE

PRIMARY_CARE_VALUE_MEDS Search

Primary Care Value Meds

Adding Value to your Practice

GENERIC MEDICATIONS FROM YOU TO YOUR PATIENTS

Add additional revenue stream to your practice by dispensing low cost, quality generic medications in a six-month supply, to your patients during their office visit.

Low start up cost • Minimal staff burden
No insurance billing • Patient convenience

Contact Us to Learn More

www.PrimaryCareValueMeds.com
Phone: 401-475-0340
Fax: 401-305-5410

Search for the company name you see in each of the ads in this section for **FREE INFORMATION!**

FINANCIAL ADVISERS FOR DOCTORS

Those companies listed in *Medical Economics 2012 Best Financial Advisers for Doctors* display this symbol in their ads.

Medical Economics 2012 Best Financial Advisers for Doctors

★ CALIFORNIA

Thomas Wirig Doll
Barry Oliver, CPA/PFS
Walnut Creek, CA • 877-939-2500
www.twdadvisors.com

Thomas·Wirig·Doll
tax, retirement & wealth advisors

For physicians who want to align personal financial strategies with sound business practices, we provide investment, tax reduction, practice accounting and retirement plan services. With our deep industry-specific expertise and strong fiduciary commitment, we help doctors define and achieve their lifelong financial goals.

Barry Masci, CFA, CMT, CFP®
Financial Advisor
101 West Broadway, Suite 1800
San Diego, CA 92101
CA Insurance Lic. # 0A19589
800-473-1331 or barry.masci@ms.com

Morgan Stanley

As a Financial Advisor since 1982, I have the experience, knowledge and resources to help you grow and protect your wealth. Identifying risk and working to minimize its impact is crucial to my effort on your behalf. Contact me today so that we can begin planning together a better financial future for you.

★ FLORIDA

Medical Economics Magazine selected **Austin Frye, JD, MBA, CFP®** as one of the Best Financial Advisers for doctors due to his proven ability in assisting physicians throughout **South Florida in strategically planning the growth, protection and preservation of their wealth.**

Frye Financial Center specializes in guiding medical professionals throughout all phases of their careers and retirement.

Frye Financial Center
(305) 931-3200
www.fryefinancial.com

Sophisticated planning and management. Empowered clients.

Advertise today: Darlene Balzano • Healthcare Marketing Advisor
dbalzano@advanstar.com • 1.800.225.4569, ext.2779

★ MARYLAND

Jonathan Dinkins,
CPA/PFS, CIMA, AIF, CMFC

Consultative financial and investment advice from CPAs specialized in working with *healthcare professionals*. We are known for our trustworthiness of character, depth of research and understanding of financial markets, and responsiveness to our client needs.

Glass Jacobson Investment Advisors
Baltimore, DC, Northern Virginia
800-356-7666
Jon.dinkins@glassjacobsonIA.com
www.glassjacobson.com/investment

gj glass jacobson — A CPA Wealth Management Firm

★ MASSACHUSETTS

Our award winning team looks forward to helping you reach your financial goals.

BEACON FINANCIAL PLANNING, INC.

Offering comprehensive, fee-only, financial planning and investment management

Main Office
45 Bristol Drive,
Suite 101
South Easton, MA
02375

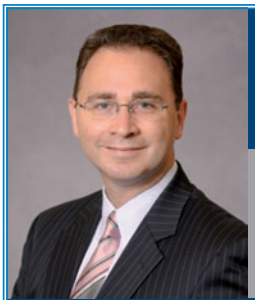
Other Offices:
Boston, MA
Wellesley, MA
Walpole, MA
Hyannis, MA
Naples, FL

Our Team (left to right):
Walter K. Herlihy, CLU®, ChFC®, CFP®
Medical Economics, Best Advisors 2010 - 2012
Dental Practice Report, Best Advisors 2011- 2013
Sabina T. Herlihy, Esq., Massachusetts
Super Lawyers 2007, 2010 - 2012
Robin Urciuoli, CPA, CFP®
Linda B. Gadkowski, CFP®
Medical Economics, Best Advisors 2004 - 2012
Dental Practice Report, Best Advisors 2011-2013
Michaela G. Herlihy, CFP®
Peter Deschenes, *Office Manager*

Fee Only

Phone: 888-230-3588 *E-mail:* Walter@Beaconfinancialplanning.com **www.Beaconfinancialplanning.com**

★ NEW JERSEY



MODERA
WEALTH MANAGEMENT

Proudly celebrating being named one of the fastest growing small businesses in 2012 by Inc. Magazine.

We are ***your*** steadfast partners: fee-only, fiduciary-always advisors. ***We*** are an independent, employee owned, nationally recognized wealth management firm. ***We*** are ***your*** financial advocates providing in-depth expertise, guidance and full transparency – always. ***We*** are a clear path forward.

Greg Plechner, CFP, ChFC, EA, Principal and Senior Wealth Manager
GregP@ModeraWealth.com • 201-768-4600 • www.ModeraWealth.com

FINANCIAL ADVISERS FOR DOCTORS

Those companies listed in *Medical Economics 2012 Best Financial Advisers for Doctors* display this symbol in their ads.

Medical Economics 2012 Best Financial Advisers for Doctors

★ NORTH CAROLINA

Matrix Wealth Advisors, Inc.

Giles Almond, CPA/PFS, CFP®, CIMA®
Charlotte, North Carolina
704-358-3322 / 800-493-3233

Matrix Wealth Advisors, Inc.
Where planning is for life.™

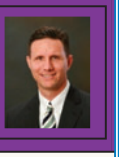
www.matrixwealth.com

Since 1990, Matrix Wealth Advisors has built a trusted reputation among physicians by providing excellent service, creative and sound portfolio strategies, and a clear direction for all aspects of clients' financial lives. Clients know they can rely on Matrix' credentialed experts for broad knowledge, depth of experience, and above all, unbiased advice. If you seek strictly fee-only individual and family wealth management, Matrix is a personal CFO you can trust.

★ TEXAS

Timothy J. McIntosh is a fee-only advisor that has been selected by *Medical Economic Magazine* as one of the top financial advisors in the country. He provides advice as a fiduciary, ensuring no conflicts of interest and a sole focus on the financial welfare of his physician clients.

- Certified Financial Planner, '97
- Master of Public Health, '95
- Master of Business Administration, '96



Serving Physicians as a Fiduciary since 1998

SAN ANTONIO & TAMPA OFFICES @ 800-805-5309 **www.sipllc.com**

PRODUCTS & SERVICES

FINANCIAL SERVICES

You don't have to wait for your capital.

Hassle-free financing in **as few as 5 days** from BHG.

Unlike traditional lenders, BHG provides quick and efficient financing exclusively to healthcare professionals. Our loan programs and funding process are designed around your needs and challenges, allowing you to get the capital you need and back to what matters most. **Experience the difference of a lender focused exclusively on the financing needs of healthcare professionals.**

BHG®

BANKERS HEALTHCARE GROUP, INC.
Financing *for* Healthcare Professionals

Call **877.688.1715** or visit **www.bhg-inc.com/ME13** for a no-cost, no-obligation loan proposal in 24 hours.

Loan amounts up to $200,000 • Will not appear on personal credit • No hard collateral required • Flexible use of funds

MEDICAL BILLING

ACCURATE MEDICAL BILLING SOLUTIONS

ACCURATE MEDICAL BILLING SOLUTIONS

- Maximize your revenue; Minimize your office expenses!
- Our team of experienced medical billers assures you expedited payments and increased profits, allowing you and your staff to grow your practice and concentrate on patient care. We service all medical practices, no matter the size.
- No more uncollected claims! Put 25 years of medical billing experience to work for you!

Contact Accurate Medical Billing Solutions today to find out how are services can help your practice thrive!

Phone: 732-730-9551 • Email: customerservice@accuratembs.com • Web: www.accuratembs.com

MARKETPLACE ADVERTISING

Call Darlene Balzano

to place your Marketplace ad

at (800) 225-4569, ext. 2779

dbalzano@advanstar.com

PRACTICE FOR SALE

NATIONAL

INTERESTED IN RUNNING YOUR OWN PRACTICE?

There are new challenges, but doctors still want to go into private practice for the same reasons:

- Provide the kind of patient care they've been trained to do
- Often earn twice the amount they can earn on salary as employee
- Have the security of owning their own businesses - no layoffs - several tax advantages
- Hours and shifts they want-vacations and benefits for themselves

Opportunities Presently Available with Gross Annual Receipts

1. Family Practice - Hattiesburg, MS - $1,000,000
2. Family Practice - Bakersfield, CA - $1,000,000
3. Family Practice - Seattle, WA - $675,000
4. Pediatrics - N.New Haven, CT - $700,000
5. Pediatrics - Houston, TX - $600,000
6. Pediatrics - Pensacola, FL- $800,000
7. ENT- Cape Cod, MA - $1,200,000
8. Ob-GYN - Jacksonville, FL - $1,500,000
9. Ob-GYN - Windam County, CT - $1,100,00
10. Pain Med / Prolotherapy - Hartford, CT - $650,000
11. Prolotherapy - Upstate, NY - $770,000 - (cash only)
12. Family Practice - MD, (1 1/2 hrs NW DC) - $675,000

For more information, please contact:
Buysellpractices.com • 631-281-2810

PRODUCTS & SERVICES

MEDICAL EQUIPMENT

RECRUITMENT

NATIONAL

RECRUITMENT

NORTH DAKOTA

Trinity Health

One of the region's premier healthcare providers.

Currently Seeking BC/BE

- Ambulatory Internal Medicine
- General Surgery
- Psychiatry
- Urology

Contact us for a complete list of openings.

Based in Minot, the trade center for Northern and Western North Dakota, Trinity Health offers the opportunity to work within a dramatically growing community that offers more than just a high quality of life.

Comprised of a network of nearly 200 physicians in hospitals, clinics and nursing homes, Trinity Health hosts a Level II Trauma Center, Critical Care Helicopter Ambulance, Rehab Center, Open Heart and Lung Program, Joint Replacement Center and Cancer Care Center.

Physicians are offered a generous guaranteed base salary. Benefits also include a health and dental plan, life and disability insurance, 401(k), 401(a), paid vacation, continuing medical education allowance and relocation assistance.

TRINITY HEALTH
Reinventing Health

www.trinityhealth.org

For immediate confidential consideration, or to learn more, please contact

Shar Grigsby
Health Center - East
20 Burdick Expressway
Minot ND 58702
Ph: (800) 598-1205, Ext 7860
Pager #0318
Email: shar.grigsby@trinityhealth.org

Know who is reading your catalog.

Introducing Advanstar's Custom Digital Solutions.

Stop spending time and money sending out expensive print catalogs and company brochures that may never be read.

Open up new markets.

Place your digital catalog on one of our trusted industry publication's websites and receive monthly impression exposure.

Go Digital Today!
Contact Your Sales Rep
1 (800) 225-4569

MARKETPLACE

Advertiser Index

* Indicates a demographic advertisement.

The Last Word

BEST PRACTICES: TRAINING YOUR STAFF TO USE YOUR NEW EHR SYSTEM

You purchased your Electronic Health Record (EHR) and now you must train, and continue to educate your staff on its use. You've probably been given an initial plan for training from you vendor, but what comes next?

THE BEST WAY to approach your software is to think of it as an ongoing process. You will, in all likelihood, have turnover or growth with new and temporary staff. The EHR itself is going to continue to change with new updates, fixes and new features. This all requires a continuing plan to make sure your staff is aware of the changes and make needed adjustments. The key element is to have a strategy that makes sense for your organization and allow time for its development and deployment.

Pick a team

Assign responsibilities to specific members of your staff so training issues are reviewed regularly. The training may have come from the vendor when you first purchased the software, but how do you know it was effective? Do you know who is using all the features intended or needed by your practice? By putting a team in place you can let them handle these questions and tasks.

Put a plan in place

Your team should list areas of concern where your software and its use need periodic review and measure effectiveness. Things to consider are bottlenecks and improvement in operational flow, functions that aren't working well with the practice, and with reporting, where you can optimize revenue, and streamline procedures. Document your plan. Be detailed on all aspects you intend on using and where training should continue. Include a communications strategy for your staff and patients.

Set up a test environment

The test environment makes sure production is not impacted while training or testing new suggestions. Consider having a test area complete with computer equipment.

Schedule regular training and testing

Once you're decided what and who should be trained, calendar these events as part of your regular work schedule. Consider input from staff on what's working, what's not, and why. Introduce new changes as the software is amended with new releases and modify process procedures.

Management Review

Decide how effective your plan and personnel are through decision reports and feedback. Control your EHR use through practice procedures, workflows and policies with needed corrections. Record and document changes as you make them. Reasons aren't often obvious in retrospect and a narrative is important. You may be doing a work-around because a software fix is expected later; once the fix is available the work-around won't make sense and should be terminated.

Get help

Many vendors offer web based and onsite training, or work with a local consultant. Check websites: HealthIT.gov and HRSA.gov have checklists and other suggestions. ◘

> "THE KEY ELEMENT IS TO HAVE A STRATEGY THAT MAKES SENSE FOR YOUR ORGANIZATION."
> —DEAN SORENSEN

Answers to readers' questions were provided by ***Dean Sorensen, MBA, CPHMS, principal consultant and chief executive officer of Sorensen Informatics in Lombard, Illinois.*** *Send your practice management questions to* ***medec@advanstar.com****.*

Medical Economics®

SMARTER BUSINESS. BETTER PATIENT CARE.

The leading business resource for physicians is now available in an app!

Introducing the Medical Economics app for

iPad and iTunes

Download it for free today at

www.MedicalEconomics.com/MedicalEconomicsApp