REPORT FROM THE FIELD

Take Two Aspirin And Tweet Me In The Morning: How Twitter, Facebook, And Other Social Media Are Reshaping Health Care

Patients and pioneering medical practices show it can be done.

by Carleen Hawn

ABSTRACT: If you want a glimpse of what health care could look like a few years from now, consider "Hello Health," the Brooklyn-based primary care practice that is fast becoming an emblem of modern medicine. A paperless, concierge practice that eschews the limitations of insurance-based medicine, Hello Health is popular and successful, largely because of the powerful and cost-effective communication tools it employs: Web-based social media. Indeed, across the health care industry, from large hospital networks to patient support groups, new media tools like weblogs, instant messaging platforms, video chat, and social networks are reengineering the way doctors and patients interact. [Health Affairs 28, no. 2 (2009): 361–368; 10.1377/hlthaff.28.2.361]

The You want to get a glimpse of what high-tech health care could look like one day in the U.S., say hello to "Hello Health." Or better still, e-mail Dr. Jay Parkinson, 32, or one of his three clinical associates who run this small primary care medical practice out of sleek offices in Brooklyn, New York. Or even better, you can instant message (IM) or video chat with Dr. Parkinson online through Hello Health's slick Web site. It's a private and secure social network that is the core medium through which this new-age medical practice manages itself and stays in touch with its patients.

Want to know more about your Hello Health doctor? Read about the personal interests of the practice's partners on their Facebook-inspired profile pages. Dr. Devlyn

Corrigan, Hello Health's emergency medicine specialist, does a little comedy improvisation on the side. One of his favorite movies is *Cool Hand Luke*. Dr. Sean Khozin, an internist, enjoys "downtempo" jazz and mountain biking.²

Now let's say you're one of the 300 patients who've so far signed up to be part of Hello Health's practice, for a basic "enrollment" fee of \$35 a month. You've also developed a fever and wheezing that haven't gone away for several days. You could send Dr. Khozin an IM over the Hello Health network describing your symptoms and asking him for advice. A quick e-mail from Dr. Khozin would be free, but if a "cyber-visit" like this takes longer, that will be \$50 to \$100, please. If you need to come in to the office for a consultation, you're guaranteed one within twenty-four hours. For as little as

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\$150, a doctor will even come and see you at your home. Generic medications for acute problems, as well as lab tests that can be done in the clinic's offices, are free.

In effect, Hello Health is operating as a kind of "concierge" practice. Health insurers typically don't pay for "visits" over the Internet, which is just one reason the practice does not accept health insurance (although patients are free to submit bills to their insurers on their own). Opened in August 2008, Hello Health is

less than a year old, so there's no guarantee that this business model of a primary care practice will succeed. But clearly many patients and doctors alike are betting that this type of practice is the way to practice medicine. More than 300 patients have already enrolled, and demand has been so brisk that the practice opened its second of-

fice, in Manhattan's Greenwich Village, in February 2009.

A privately funded venture owned by a Canadian holding company called Myca, Hello Health is currently making money through patients' monthly and per visit office fees and by selling customized versions of its communication platform to corporate clients. Later this spring it will add a third revenue stream. The practice will open its network platform to other physicians operating at private practices or hospitals across the country. Doctors will be able to join the network for free, and then use the same scheduling and patient communication technology that Hello Health has pioneered in its Brooklyn practice. In exchange, Hello Health will collect a small percentage of their office visit fees. Hello Health will add a social networking feature to the new platform, too, so doctors can "friend" each other, add to their arsensal of referrals, or just communicate to help one another out. "Think of it as an EHR [electronic health record] linked with a social network," says Dr. Parkinson.

An 'Evangelist' For A New Model

Dr. Parkinson, who no longer actively sees patients, describes his role at Hello Health as "more like the company evangelist." One might say he is trying to do for the health care profession what Steve Jobs did for the personal computing industry throughout the 1980s and 1990s: trying to convince his peers that they can build a "better mousetrap," one that is simpler and more elegant and, above all, one that facilitates a better experience for users-if

> they would only "think different."

earshot who will listen, rehealth care, too, can be a simsicians and for patients.3

On his personal weblog, in interviews, or in conference speeches-to anyone within ally-Dr. Parkinson passionately argues his case that pler, more elegant, and more fulfilling experience for phy-

"Our profession, at its core, is fundamentally flawed relative to how today's world communicates and functions," he says. "The infrastructure of health care needs a total repair from the ground up. It needs to be Facebook-ed [and] wiki-ed."4 After all, at the heart of health care is communication between clinicians and patients, something most of U.S. health care is still conducting with the technologies of the twentieth century at best. By contrast, he says, Hello Health is using today's tools, "enabling the community of patients and doctors to communicate better."

Transformation Of Medical Practice

Although health care may be one of America's leading industries in terms of size and scope, it's been among the slowest to embrace advances in communications and information technology (IT). But along with EHRs and other IT systems, so-called social media tools are becoming a presence in health care at last—and transforming it in the process, says family physician Ted Eytan. Based in Washing-

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ton, D.C., Dr. Eytan works with the California HealthCare Foundation and serves part time as medical director for delivery systems operations improvement for the Permanente Federation, which exists to provide support to the Permanente Medical Groups across the country. He is a leading national expert in the use of technology to promote patient-centered care.5 Across the country, at large integrated systems like Kaiser Permanente or the Palo Alto (California) Medical Group, Facebook-like

physician profiles and secure e-mail messaging are increasingly the norm. Members of Kaiser's EHR, My Health Manager, can even read physician-authored blogs. Elsewhere, disease sufferers can compare care options and outcomes through social media platforms such as PatientsLikeMe; physicians

can share insights about medicine and specific cases at Sermo, an online community often called the online equivalent of a doctors' lounge.

■ Investors' reactions. Even in these beleaguered economic times, investors are taking notice. According to DowJones Venture One, which tracks venture capital investments in technology startups, nearly \$900 million was invested in software and technology services focused on health care in 2007, the latest year for which data are available.

As much as these technologies excite investors, however, they plainly trouble others. There are growing concerns about guarding the privacy of patients' health information, since social networks, by definition, facilitate communication among many parties simultaneously. In addition, social networks depend largely upon user-generated content. So as more "members" join social networks, communication channels grow exponentially more diffuse, and the possibility of spreading inaccurate or problematic information, or information that should remain private, grows right along with that. Just as the ability to collect and disseminate information quickly among large numbers of people simultaneously gives social networks their power, it renders "command and control" of that information far more challenging.

Legal issues. Already the first lawsuits have been filed against physicians whom patients accused of violating the privacy of medical information, notes attorney Robert Coffield, a West Virginia-based specialist in health care compliance and regulatory law. Others, including some physicians, worry that

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Internet-based communica-

tion can never adequately substitute for the in-person exam—and point out that standards have not yet been developed to govern this type of "care." What's more, many independent practitioners or small group practices don't appear to have the time or the money to adapt to the use of

social media. Unless and until this changes and it becomes demonstrable that modernizing physicians' practices with social media and other e-health tools is in their financial interest—the lack of protocols and insurance reimbursements will be a clear barrier to these technologies' growth.

Sorting Through The Terminology

Still, the use of social media is clearly on the rise and is likely to become an increasing fact of life for millions of Americans. According to a December 2008 survey by the Pew Internet and American Life Project, the share of adult Internet users who have a profile on an online social network has more than quadrupled in the past four years—from 8 percent in 2005 to 35 percent in 2008.6 Drs. Eytan and Parkinson and other advocates of social media in health care use a variety of social media routinely and, in the process, draw on a technological lexicon that would leave most modern-day Luddites thoroughly befuddled.

Naturally, all of them "blog" on a personal weblog, a digital diary for chronicling personal or professional experiences or for sharing news and commentary. Often embellished with digital images and music, entries are called "blog posts," which authors, or "bloggers," publish on the World Wide Web for all to see.

The savviest bloggers also use "tweets" to stay connected to friends and coworkers, in shorter bursts of communication throughout the day. A "tweet" is like a blog post, meant for consumption by many people all at once. It, too, is published on the Web—in this case, via a free service from a Silicon Valley startup called Twitter. But Twitter limits such messages to 140 characters, which is why they are also called "micro-blogs."

When these digerati aren't self-publishing via blog posts and "tweets," they are often networking with one another on social media hubs such as Facebook, LinkedIn, Plaxo, and Ning. These are professionally managed digital communities, where members congregate, often forming subcommunities, and (with varying degrees of security) mingle in cyberspace to forge new relationships; exchange ideas; or share data, photographs, and music. On Facebook, for example, "e-mail" or IMs between members are kept private, visible only to the sender and recipient. Yet each Facebook member also has a profile page that includes a "wall" where people known or even unknown to them can view messages posted by others.

From One-To-One To Many-To-Many

In these and other ways, social media such as blogs, tweets, wikis, and social networks are all about speeding up and enriching communication. They leave behind the old model of one-to-one communication—say, talking to someone over the phone—and enable communication from one to many (via a blog post or a tweet) or from many to many (as on one's Facebook wall).

Take, for example, the way information can be passed around and amplified on the Web using Twitter. At 9:27 a.m. on 17 January 2009, "Zorbeheer," an enthusiastic Belgium-based follower of Dr. Etyan's blog, posted a "tweet" to share with his own corps of Web followers. The tweet was about a previous entry on Dr. Eytan's blog, which amounted to a discourse

about the appropriate definition of "Health 2.0," a nebulous concept frequently invoked by health *digerati*. Zorbeheer's tweet looked like this:

DELI The Health 2.0 Definition: Not just the Latest, The Greatest! by Ted Eytan, MD, http://tinyurl.com/a39rsr⁷

The "tinyurl" is an active link back to Dr. Eytan's post from 13 June 2008, in which he offers this definition:

Health 2.0 is participatory healthcare. Enabled by information, software, and community that we collect or create, we the patients can be effective partners in our own healthcare, and we the people can participate in reshaping the health system itself.⁸

A 3 January 2009 "tweet" from someone using the handle "WorldMedCard" in Albany, New York, reads:

Good stuff...reading up Dr Ted Eytan...informative & insightful posts...THANKS!9

All of this may seem to have little to do with actually delivering health care, or with health, for that matter. But consider how patients, too, are increasingly turning to these technologies to manage their care. A few thousand miles away from Hello Health's offices in New York, Rachel Baumgartel is putting social media to work in managing her type 2 diabetes.

Baumgartel, 33, who lives in Boulder, Colorado, keeps a personal blog, http://www.tales ofmy30s.com, and sends "tweets" almost daily to dozens of people at a time. She may just update her contacts on what she had for breakfast, what her hemoglobin alC level is, or how much exercise she got on the elliptical equipment at the gym. In exchange, she'll frequently get return messages of encouragement from friends and other followers who are helping her stick to her arduous health regimen.

To the uninitiated, communicating with such frequency about banal details of daily life might seem wacky. But in the new media era, it is now the norm. More important, communication is increasingly understood as a critical

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way in which the chronically ill can successfully engage in self-management. In fact, Baumgartel says that using social media tools makes it possible for her to live with her disease. "Because I have people who follow me on Twitter," she says, "it means I have some kind of audience that is caring for me in the background. It's helpful if I'm having a rough day, if things are not going so well with my blood sugar. I find support there, and it keeps me in line, too."

Improving Quality Through Better Communication

Dr. Eytan and other members of the digerati observe that better and more communication via these networks will have other benefits as well. Individual patients will get better care, and individual clinicians will give it. Overall, the quality of care will im-

prove. Communication will also help those who wish to innovate in health care spread their ideas more widely and effectively. "We've got to take advantage of technology to change things," Dr. Eytan argues. "If we cannot listen to each other, we cannot continue to innovate in health care. Web 2.0"—the bundle of principles, practices, and services that make up the Internet today, as opposed to the "Web 1.0" of several years ago—"is all about listening."

Explaining further, Dr. Eytan refers to the lessons of Toyota, arguably one of the most innovative automakers worldwide and one of the world's companies most adept at communication as well. "At Toyota they say it takes 300 person-years to reinvent the car," Dr. Eytan reports. "[Toyota] knows, if you don't incorporate everyone you can't possibly do it." This is why, Dr. Eytan says, everyone at Toyota, from engineers to shop floor janitors, has a voice in operations and is expected to use it. "Toyota has a sign in their factory in Fremont, California, that reads: 'If you can take 10 seconds off this process you will save the company \$1 million.'" In other words, rather than a commandand-control model, Toyota facilitates a culture of flat communication flows, with a maximum number of original sources. The result is that Toyota's management benefits from a greater number of ideas. Toyota's culture of listening is also a culture of superior innovation.

Similarly, social media tools are one way to bring the advantages of "flatter," more democratic, and presumably more effective communication networks to health care and to im-

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prove the experiences of those either receiving or delivering it. Dr. Eytan says this pened in his own practice. Now age 40, he began his medical career in the late 1990s as a family medicine resident at Group Health Coington. He helped Group

care." health care's first EHR platforms, and eventually he began blogging to share lessons with colleagues about using the system effectively. "Once a day I would blog about what I learned the day before," he says. "It was 'we messed up' or 'we did a great job,' 'the patients like this,' or 'they don't like that.' I wrote it for anyone who would listen, and it helped me educate my

medical colleagues."

Since then Dr. Etyan has used his personal blog to promote additional lessons of the benefits of modern social media and e-health—and encourage physicians to take a leadership role in pushing for their adoption. In July 2008, following a conference of the American Board of Internal Medicine Foundation focused on patient-centered care, Eytan wrote on his blog about a presentation given by Margaret Murphy, an Irish woman whose adult son died as a result of having been misdiagnosed by a physician in Ireland's national health system. "One of the most powerful moments was Margaret Murphy sharing the story of her son Kevin's death," Dr. Eytan wrote. "[There] was discussion about Kevin's death being the result

is precisely what has hapoperative in Seattle, Wash-Health implement one of U.S. of diagnostic error. I think that's true, and I also think that if the family had access to all of his medical information from the beginning, it might have changed the diagnostic approach or caught the fatal series of errors before they happened."¹⁰

Tools To Empower Patients

Another member of the health *digerati* who preaches the e-health gospel is Dr. Daniel "Danny" Sands, director of medical informatics at Cisco Systems, the networking equipment juggernaut, and a practicing physician at Beth Israel Deaconess Medical Center in Boston, Massachusetts. Deaconess was another early EHR adopter, and Dr. Sands was instrumental in developing Deaconess's current patient portal, Patientsite.org. In 1998 Dr. Sands coauthored the first paper to establish guidelines for using electronic communication tools in clinical patient care.¹¹

Back then, "electronic communication" meant e-mail. Today, like most modern portals of its type, Patientsite.org lets patients do much more than just send and read e-mail. They can make medical appointments online, refill prescriptions, communicate directly with their physicians, and, most important, see personal test results online as soon as they are available. "So if we take a Pap smear, you have the right to see those results as soon as possible," Dr. Sands says. "These types of tools are really ultimately empowering for patients, because we're giving them what they need to care for themselves."

Risks And Downsides

■ Privacy. Of course, there are risks and potential downsides in using such communication systems for health care. The first and most obvious concern relates to patient privacy and the health care industry's need to comply with the Health Insurance Portability and Accountability Act (HIPAA) guidelines for securing personal medical data. Coffield, the attorney specializing in compliance and regulatory law, notes that HIPAA says doctors can use patient data without their consent only for three purposes: "treatment, payment,

or health care operations." HIPAA doesn't actually prevent hospitals from using public networks, if patients consent to let their physicians communicate with them over the open Internet. However, there are limits. Coffield cites the case of a physician using the pen name "Flea" who began blogging publicly about his involvement in a medical malpractice case: "The plaintiff's lawyer got tipped off [to his identity], and asked the doctor on the stand if he was 'Flea.' The doctor admitted it, and the case settled immediately." ¹²

Dr. Sands of Deaconness believes that physicians' concern over complying with HIPAA is one reason the use of social media in health care hasn't taken off even more quickly. Although a patient could give consent to have his or her medical information distributed outside the closed hospital system at Deaconess, because that information is "used to make medical decisions," HIPAA requires that Deaconess save it and archive as part of the official medical record. As a result, "Even if I'm communicating with a patient on secure e-mail [on an open network], I've got to take the extra step of copying and storing the information in the medical record," Dr. Sands says. This is cumbersome and expensive. And if Dr. Sands has 2,000 patients, it means he has to sign 2,000 consent agreements to communicate with them over, theoretically, an equal number of unique networks. On the other hand, he states, "If hospitals use our own private portals, it is all done automatically." So Kaiser and Deaconess and Geisinger Health System keep their modern EHRs "locked" behind firewalls, not because HIPAA says they have to but rather to manage their HIPAA compliance efficiently.

■ Standards of care. New legal questions are also arising from some providers' use of video and social media to transcend geographic barriers to delivering care. American Well.com, a social network for doctors and patients, recently won a contract with the State of Hawaii to provide remote video conferencing between primary care doctors in the continental United States and patients in remote areas of Hawaii. Social networks might not recognize borders or geographic bound-

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aries, but doctors are licensed state by state. A doctor in California would have to be licensed in Hawaii to serve patients there.

There are also even larger and as yet unanswered legal questions, says Coffield, such as what standards of care apply to this new ehealth environment. How little e-health is too little, and "how much is too much?" Coffield asks. "What can a doctor do over video versus in person? Will they overstate [a diagnosis], or miss something? There are no guidelines telling doctors 'this is how far you can go, but not beyond that.' What kind of liability does American Well have?" in the event a doctor in Wyoming makes a misdiagnosis by video of a Honolulu patient?

Coffield is one of a growing number of experts who think that an entirely new regulatory structure is needed to support the high-tech transformation to modern health care. "We'll have to build out a whole new interstate network of health information," he says, particularly as it applies to use of patient data and provider licensing. In short, the health sector needs a modern-day information network analogous to what the banking industry built for national—and now, global—banking via automated teller machines (ATMs).

Costs, perceived and real. Last but not least of the obstacles to more use of e-health are the perceived and real issues of cost. Doctors tend not to want to try new technologies until they know the innovations will not burden them financially. This is why the lion's share of experimentation with social networking on the provider side is only happening among clinics and hospitals that are part of large corporate organizations like Kaiser or Deaconess—in other words, where resources exist to manage the changes, or where a combination of insurance and other incentives drive toward efficiencies. Independent doctors or those in small practices typically don't have the time, money, or other incentives to make the changes.

"I've seen huge benefits of these types of communication tools for my patients, but if you ask an average doctor if they know about online communities, they'll say they don't," Dr. Sands says. "Most doctors haven't embraced Health 2.0 technologies in any significant way. They're still back in Health 1.0, stuck on the question of 'should I use e-mail with my patients?' What it boils down to is a business case for the individual physician."

But Dr. Sands believes that such a business case already exists—and that many physicians simply haven't gotten the message. Being able to communicate with patients electronically cuts down on phone calls, while other e-health technologies reduce such administrative tasks as dictation and records documentation. For example, Hello Health functions almost entirely as a paperless practice—and has no administrative staff at all, sharply reducing its operational overhead.

Happier Patients

Perhaps the most important reason physicians and other providers should be tapping into e-health and social media is that they are one route to greater patient happiness—and to a more patient-centered health care system. The experience of Hello Health patient Michael Rovner, 38, is a case in point. Rovner, a Brooklyn resident, joined Hello Health as soon as it opened, in part because the firm's offices are two blocks from his house. Prior to Hello Health, he says, "I'd gone to your typical Park Avenue, very expensive, insurance-only doctor, and I had good care." But when Rovner left his job last fall to start his own media company—he specializes in launching custom news Web sites—he suddenly found himself without health insurance. Though healthy, he couldn't find any insurer who would cover him for less than \$500 a month.

"That's when I started wondering, what am I paying for?" he says. He reasoned that in a perfect world, he might pay \$500 a month in health insurance and never go to the doctor because he wouldn't get sick. "On the other hand, I could pay \$35 a month to Hello Health, and [pay] for additional visits only if I need them," he says. It was clear which course made more sense financially, provided that he never fell catastrophically ill. "Plus, I loved the whole idea of making your own appointments online,

that you can IM with your doctor or you can video chat," Rovner says. "I figured if these guys can deliver on the promise, I can't imagine having something more convenient."

Within weeks of joining Hello Health in 2008, he says, his choice was vindicated. While in Brussels for work, Rovner suddenly got sick. His Belgian translator kindly got him an appointment at a local private clinic, but he didn't speak Flemish, and he didn't know what to ask the doctors. Fortunately, Hello Health's Dr. Khozin was "on call"—and online. With a few e-mails and text messages, Dr. Khozin told Rovner what to ask. "It was nice to have someone who knows me and speaks my language providing guidance," Rovner says. "Sean asked follow-up questions that were very pointed and direct. Now, I've had great medical care in my life with terrific doctors whose names are on the jackets of books—but I've never been able to e-mail or bang out a message to one of those doctors." By comparison, "the access with Hello Health is spectacular. When you're sick and far away from home, that can be the difference between feeling cared for or not."

In a sense, the ultimate force slowing adoption of these technologies into health care may be that "in medicine we're not generally being held accountable for our patients' happiness," says Dr. Sands of Deaconess. But he and Dr. Eytan believe that this must change and that ehealth is paving the way.

Using social media in health care "is about changing the locus of control to the patient" and altering the relationships between care givers and care receivers. In this view, patient portals, EHR platforms, blogs, video chat, and "tweets" won't merely substitute for many one-on-one encounters with providers, but will also allow for richer engagement and deeper doctor-patient relationships.

Many doctors—and, for that matter, insurers—may have to be dragged kicking and screaming into this brave new world, Dr. Eytan concedes. But, he argues, "social media technology will help patients hold our feet to the fire—which is good!" So next time you sit waiting in your doctor's office an hour past your scheduled appointment time for a minor

medical problem, or miss his phone call when he calls you with your lab results, or can't even get through the receptionist to talk to him, think about sending him a tweet on your iPhone or BlackBerry: I'm leaving u, you might write. Going to Hello Health.

NOTES

- 1. The Hello Health corporate home page is at http://www.hellohealth.com.
- 2. See https://www.hellohealth.com/main/doctors.
- 3. J. Parkinson, "The Average Health Insurance Premium Costs 84 Percent of Average Unemployment Benefits," *Jay Parkinson* + MD + MPH = Doctor in Brooklyn, 17 January 2009, http://blog.jayparkinsonmd.com/post/71l57426/the-average-health-insurance-premium-costs-84-of (accessed 28 January 2009).
- According to Wikipedia.com, a wiki is "a page or collection of Web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified markup language." See http://en.wikipedia.org/wiki/Wiki.
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