VIEWPOINT

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Care Partners and Online Patient Portals

Each year, more than 65 million people in the United States (29% to 39% of the population) provide care for a chronically ill, disabled, or elderly family member or friend.[1] Such caregivers, who help with both basic life functions and managing medical care, are critical to helping people maintain their health and remain in their communities.[2] Many chronically ill and older people also have loved ones who, distinct from caregivers, serve as "care partners." These care partners do not provide day-to-day care or serve as surrogate decision makers but do help navigate health care—facilitating communication with physicians, discussing complex issues requiring shared decision making, and assisting with challenging self-management tasks. The care partner or partners may include a spouse, parent, friend, or relative who assists with health, perhaps across geographic distance.

Health care systems today do not optimally identify or engage these individuals and frequently even push them away by creating barriers to obtaining patient information that may help in the care of their family member, often in the name of privacy and security, sometimes invoking the Health Insurance Portability and Accountability Act (HIPAA). There is potential for improving care if care partners and families can be more effectively engaged through the electronic health record (EHR); this can be accomplished without undermining patient privacy or the security of protected health information.

The United States is rapidly adopting EHRs. According to one recent estimate, 72% of office-based physicians now use EHRs, up from 48% in 2009.[3] These EHRs are typically linked to personal health records (often called patient portals), which can help patients manage their care online via e-mail messaging with clinicians, access to laboratory test results and medical histories, and online appointment and prescription refill functions. One report indicated that 20% of physician offices have "live" patient portals, and federal requirements to receive incentives for the meaningful use of health information technology stipulate that offices have at least 5% of patients using an Internet-based patient portal by 2014.[4] Implementation is far from complete, but portals soon may become a standard part of care. Patient portals have the potential to deliver substantial benefits, such as improved communication between patients and clinicians, greater access to a person's own health care information, and increased patient engagement.[5] To realize these potential benefits, both caregivers and care partners will need to be engaged—but this is not yet happening.

Patients want their care partners to engage with health systems' online portals. In one survey of 18 471 patients, 79% said they were interested in sharing their patient portal access with someone outside their health care team.[6] In 47% of cases, they wanted to share with someone who did not live with them. Many but not all patients wished to share with family members. It seems logical that patients should be able to grant access to others to view and help manage their health using their health system's online patient portal. However, patient portal access on behalf of others is not easy or even permitted in many health care systems.

Because the extent of caregiving varies for different populations, one type of patient portal access would not fit all situations. For patients who lack decision-making capacity, surrogate decision makers could be granted full access to the patient portal on their behalf. This would facilitate oversight of care and communication with the health care team for an at-risk population. Many other patients—those who depend on caregivers; those who lack the inclination or ability, because of language or literacy, to engage with technology; and children—have a care partner. If that care partner could access the portal on the patient's behalf, problems such as distance, between-visit chronic disease self-management, and the need for asynchronous modes of communication with clinicians could be addressed.

For parents or guardians managing their children's health, issues of security, autonomy, and privacy are not straightforward. Adolescents present a particularly challenging problem. Frequently, state laws govern the access and representation of adolescents with regard to special conditions (eg, sexually transmitted diseases, contraception). Although it may be challenging for software to reliably ascertain the application of multiple, sometimes contradictory state laws, innovative health systems such as Children's Hospital in Boston, Massachusetts, have implemented a policy that allows for children's portal access to transition from parent-only access to patient-only access in a tailored fashion, depending on the sensitivity of the information and the patient's age.[7]

For patients who have decision-making capacity but regularly call on care partners for input or assistance, patient portal access could be more nuanced. Some patients may be inclined to simply share with their care partners the user identification and password to their patient portal. However, this may create confusion because electronic communications from the patient or care partners to the health care team will not be distinguishable. Using distinct credentials/authentication for care partners would allow patients to determine which types of information they would like to share. For example, details of diabetes management could be shared with family members, whereas mental health treatment could be kept private. Moreover, granting separate credentials allows for periodic reauthentication and, if needed, revocation of care partner access.

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From a technical perspective, shared access to patient portals is solvable. For example, a specific permission process allows Kaiser Permanente members to grant family access to the patient portal to view information and take actions (eg, requesting refills and making appointments) but only if the family member also is a Kaiser Permanente member.

Several barriers hinder advancement in this realm. First, although the Office of the National Coordinator acknowledges the importance of caregivers and family,[8] broadly adopted standards for caregiver access to patient portals are not available. Such standards often drive the necessary technical innovations that would make sharing portals simpler from a software design perspective. Second, strong authentication ensuring both patient permission to share access and identity confirmation of the care partner would be needed, and health systems are understandably reluctant to create potential privacy breaches. However, if a health system required in-person visits to establish patient portal access for individuals, a standardized, rigorous (but practical) authentication guideline could help allay health system concerns and individual data security concerns.

Several specific steps could advance progress in this area. Health care organizations need to begin to identify approaches to routinely identify and document caregivers and care partners in their EHRs. Furthermore, the meaningful use criteria should specifically detail the need for designated caregiver access. Federal support for developing standards in this area should be provided. Federal support for research should be made available for demonstration projects to understand how to best provide access to personal health records for patients with caregivers, children and adolescents, and adults with high or complex health needs with care partners, and to assess the benefits of doing so.

While challenges exist, doing the necessary groundwork to enable care partners—not just health care proxies—to access personal health records could represent a key catalyst in enabling care coordination and delivering on the potential of technology to enhance health care and, ultimately, improve health.

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RESEARCH LETTER

ONLINE FIRST

A Comparison of Care at E-visits and Physician Office Visits for Sinusitis and Urinary Tract Infection

Internet capabilities create the opportunity for e-visits, in which physicians and patients interact virtually instead of face-to-face. In e-visits, patients log into their secure personal health record internet portal and answer a series of questions about their condition. This written information is sent to the physicians, who make a diagnosis, order necessary care, put a note in the patients' electronic medical records, and reply to the patients via the secure portal within several hours. E-visits are offered by numerous health systems and are commonly reimbursed by health plans.[1,2] They typically focus on care for acute conditions, such as minor infections.

There are several potential advantages of e-visits, including convenience and efficiency (avoiding travel and time) and lower costs.[3] Furthermore, e-visits can be provided by the patient's primary care physician instead of a physician at an emergency department or urgent care center. The main concerns about e-visits center on quality issues: whether physicians can make accurate diagnoses without a face-to-face interview or physical examination,[4] whether the use of tests and follow-up visits is appropriate, and whether antibiotics might be overprescribed.

To our knowledge, no studies have characterized the differences between e-visits and office visits. To fill this knowledge gap, we compared the care at e-visits and office visits for 2 conditions: sinusitis and urinary tract infection (UTI).

Methods. We studied all e-visits and office visits at 4 primary care practices within the University of Pittsburgh Medical Center Health System, Pittsburgh, Pennsylvania. These practices were the first to offer e-visits, but they are now offered at all primary care office locations. The practices have a total of 63 internal medicine and family practice physicians. We identified all office visits and e-visits for sinusitis and UTI at these practices between January 1, 2010, and May 1, 2011. Structured data were obtained directly from the electronic medical records (EpicCare).

Results. Of the 5165 visits for sinusitis, 465 (9%) were e-visits. Of the 2954 visits for UTI, 99 were e-visits (3%).

Physicians were less likely to order a UTI-relevant test at an e-visit (8% e-visits vs 51% office visits; $P < .01$) (**Table**). Few sinusitis-relevant tests were ordered for either type of visit. For each condition, there was no difference in how many patients had a follow-up visit either for that condition or for any other reason (Table).

Physicians were more likely to prescribe an antibiotic at an e-visit for either condition. The antibiotic prescribed at either type of visit was equally likely to be guideline recommended. We looked at possible explanations for the lower office visit antibiotic rate (Table). Among UTI office visits, the antibiotic prescribing rate was 32% when a urinalysis or urine culture was not ordered compared with 61% when a urinalysis or urine culture was ordered.

During e-visits for both conditions, physicians were less likely to order preventive care. Among patients with an e-visit for either condition, we tracked where they received care for any subsequent visits. Among e-visit patients, there were 147 subsequent episodes of sinusitis or UTI. Among these episodes, 73 (50%) were e-visits.

Conclusions. Our findings refute some concerns about e-visits but support others. The fraction of patients with any follow-up was similar. Follow-up rates are a rough proxy for misdiagnosis or treatment failure and the lack of difference will therefore be reassuring to patients and physicians. Among e-visit users, half will use an e-visit when they have a subsequent illness in the next year. Patients appear generally satisfied with e-visits.

On the other hand, antibiotic prescribing rates were higher at e-visits, particularly for UTIs. When physicians cannot directly examine the patient, physicians may use a "conservative" approach and order antibiotics. The high antibiotic prescribing rate for sinusitis for both e-visits and office visits is also a concern given the unclear benefit of antibiotic therapy for sinusitis.[5]

Our data support the idea that e-visits could lower health care spending. While we did not directly measure costs, we can roughly estimate costs using Medicare reimbursement data and prior studies.[6,7] If we focus on UTI visits, the lower reimbursement for the e-visits ($40 e-visit vs $69 office visit [CPT 99213]) and the lower rate of testing ($11 urine culture) at e-visits outweigh the increase in prescriptions ($17 average prescription). In total, the estimated cost of UTI visits was $74 for e-visits compared with $93 for office visits.

There are several key limitations of our analyses. Our analyses are based on diagnosis codes and not on the patient's presenting symptoms. We captured only follow-up visits, and future studies should prospectively follow up outcomes such as resolution of symptoms. We do not compare phone care for these conditions, which is commonly provided in primary care. Our results high-

Table. Comparison of Care at E-visits and Office Visits for Sinusitis and Urinary Tract Infection (UTI)

Variable	Sinusitis, No. (%)			UTI, No. (%)		
	E-visit (n = 475)	Office Visit (n = 4690)	P Value	E-visit (n = 99)	Office Visit (n = 2855)	P Value
Provider at visit						
Patient's designated PCP	194 (39)	2154 (42)	.04	40 (40)	1833 (64)	<.001
Follow-up						
Follow-up visit in following 3 weeks for same condition	26 (5)	224 (5)	.43	7 (7)	204 (7)	.98
Follow-up phone call or e-mail in following 3 weeks for the same condition	1 (0.2)	32 (1)	.23	4 (4)	129 (5)	.82
Orders for tests or consultations for condition						
Any relevant test for that condition[a]	0	40 (1)	.04	8 (8)	1501 (51)	<.001
Sinus x-ray film or CT	0	14 (0.3)	.23	NA	NA	NA
Urine culture	NA	NA	NA	7 (7)	893 (31)	<.001
Antibiotic prescribing						
Any oral antibiotic prescribed	471 (99)	4408 (94)	<.001	98 (99)	1407 (49)	<.001
Antibiotic prescribed for 5 days or less (among those with prescription)[b]	NA	NA	NA	40 (41)	434 (31)	.04
Antibiotic prescribed was guideline recommended or patient allergic to one of the guideline antibiotics (among those prescribed an antibiotic)[c]	331 (70)	3120 (67)	.83	98 (100)	1299 (92)	.07
Preventive and chronic disease care ordered at visit[d]						
Preventive care	1 (0)	155 (3)	<.001	0	214 (7)	.005
Chronic disease test (eg, hemoglobin A_{1c})	0	168 (4)	<.001	1 (1)	190 (7)	.02

Abbreviations: CT, computed tomogram; NA, not applicable; PCP, primary care provider.

[a] For sinusitis visits, we defined relevant tests or orders as a sinus CT, facial or sinus x-ray film, and referral to otolaryngology. For UTI visits, we defined relevant tests as a urinalysis, urine culture, or referral to urology.

[b] Limited to UTI visits, as optimal antibiotic duration for sinusitis is uncertain. The denominator for this measures of care is those visits at which an antibiotic was prescribed. Sinusitis e-visits (n = 471) and office visits (n = 4567); UTI e-visits (n = 98) and office visits (n = 1299).

[c] The guideline-recommended antibiotics for sinusitis were amoxicillin or trimethoprim-sulfamethoxazole, and for UTI they were fluoroquinolone, trimethoprim-sulfamethoxazole, or nitrofurantoin. The denominator for this measures of care is those visits at which an antibiotic was prescribed. Sinusitis e-visits (n = 471) and office visits (n = 4567); UTI e-visits (n = 98) and office visits (n = 1299).

[d] The following tests or services are related to preventive care (mammography; colonoscopy; fecal occult blood test; any type of immunization, including influenza; and lipid panel) and chronic illness care (hemoglobin A_{1c}, fasting glucose, lipid panel, thyroid-stimulating hormone, triiodothyronine/thyroxine, blood pressure check, referral retinopathy testing, and spirometry).

light key differences between office visits and e-visits and emphasize the need to assess the clinical impact of e-visits as their popularity grows.

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Websites That Offer Care Over the Internet
Is There an Access Quality Tradeoff?

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Although health care is one of the largest industries in the United States, 73% of US residents who are ill have difficulty obtaining nonemergency care on nights, weekends, and holidays.[1] The shortage of accessible primary care drives overuse of emergency departments for nonurgent conditions.

Commercial e-visit websites—companies without bricks-and-mortar clinics that use the Internet to connect patients to clinicians whom they never meet in person—may address the need for accessible, convenient care. These websites vary in cost and structure (**Table** and eTable 1 in the Supplement), but all provide a novel alternative to traditional care for low-acuity conditions such as bronchitis and urinary tract infections (UTIs). They offer convenience not only to patients but to clinicians. Most offer flexible hours, free malpractice insurance, and the opportunity to gain supplemental income for telephone and e-mail services that are often unreimbursed at traditional practices.

New York Times and *Wall Street Journal* articles have reported that e-visit companies are attracting venture capital and that employers are seeking ways to reduce premiums and medical absenteeism. Like retail clinics, e-visit companies may be at the forefront of a "convenience revolution" in low-acuity care.[2] A recent case study of Virtuwell, an online clinic associated with HealthPartners' bricks-and-mortar network, demonstrates the potential for online care to be cost-effective and guideline driven.[3] However, the rapid proliferation of standalone e-visit websites has created a diversity of practices with unexamined consequences for patients and physicians. In particular, some aspects of the care provided at some websites may have unintended effects on use, diagnostic accuracy, or continuity.

Use

The pressure to satisfy customers in a timed virtual appointment with limited access to follow-up may drive e-visit clinicians to underuse diagnostic procedures and reach unjustified conclusions (or write unnecessary prescriptions). A study comparing e-visits with office visits found that e-visits had significantly higher antibiotic prescribing rates for UTIs, with less confirmatory testing.[4] Visitors to Ezdoctorsrx.com select products from a "Catalog of Online Prescriptions" with the assurance that "[i]f you do not qualify for a prescription, your visit is FREE." Furthermore, many sites partner with laboratory and imaging companies to offer products, such as an annual "Comprehensive Wellness Profile," that include far more testing than recommended by the US Preventive Services Task Force. One site sells nutritional supplements with the tagline, "Doctors not only recommend our products to their patients, *THEY take them as well.*"

Table. Characteristics of e-Visit Websites That Provide Online Care for Simple Conditions

Consult Type	Illustrative Examples[a]
Real-time communication	
Phone, video, or instant messaging	MDLIVE.com: "Speak to a Doctor Now! 24/7/365 Anytime Anywhere." A physician in a commercial asks a mother to tug on her son's earlobe and diagnoses swimmer's ear
Asynchronous communication	
e-Mail or guided survey	Zipnosis.com: customers select their suspected diagnosis from a list, answer branching survey questions, and receive a treatment plan by e-mail from a clinician
Payment structure	
Pay-per-visit	NowClinic.com: $45 for a 10-minute appointment; extra for a 3-minute extension
Monthly plan	CallTheDoc.com: $19.95 per month for the entire household
Insurance benefit	
Employer or insurance company	ConsultADr.com: benefit package "proven to lower medical costs by as much as 25%."
Physician selection	
Pick from a list	AmericanWell.com: Select provider based on photo, qualifications, and customer rating
Assigned	Teladoc.com: "You cannot request a particular doctor." Teladoc "is not a means of establishing an exclusive relationship with one of our doctors."
Supplementary services	
Prescriptions typically exclude controlled or lifestyle drugs (eg, sildenafil)	CallTheDoc.com: "Yes, You Can Get Prescriptions By Phone. It's Easy, Fast, and Available Nationwide." "AmeriDoc Prescription Card" offers 25%-40% savings on >300 drugs ConsultADr.com: Partners with pharmacies to offer mail-order prescriptions
Testing and laboratory test	
Home blood testing	AmeriDoc.com: "Simply call to request your desired lab screening and the kit will be shipped to your home."
Annual screening	InteractiveMD.com: $282 "Annual Adult Wellness Testing" at a LabCorp location
Diagnostic imaging	MDAligne.com: "Save money on MRI, CT Scan, and Ultrasound" via NextImage Direct
Quality assurance	
Patient satisfaction	AmeriDoc.com: "97% Patient Satisfaction. 98% Physician Satisfaction. 91% Patient Issues Resolved. 0 Malpractice Claims."
Standard of care	
Internal review	MDLIVE.com: selected consultations are "reviewed by our internal medical board."
Practice protocols	MDLIVE.com: clinicians receive "Telehealth specialized training in talking with and diagnosing patients over the phone and online video, while adhering to strict clinical protocols."

[a] See eTable 2 for URLs of examples (in the Supplement).

Diagnostic Accuracy

A confluence of practices by e-visit companies may increase the risk of misdiagnosis. E-visit patients are typically asked to select a suspected diagnosis, and presenting clinicians with suspected diagnoses has been shown to reduce their capacity to identify alternative diagnoses.[5] Additionally, sites like MeMD "treat only one medical concern per consult," which could discourage patients from discussing symptoms they believe are unrelated. Practices such as charging for extra time in 3-minute increments could create time pressure, which can lead clinicians to ask fewer questions and identify fewer problems.[6] Will a clinician who knows the patient is paying in time blocks, who is given a suggestion that the illness is minor, and who cannot perform an in-person physical examination be as likely to diagnose an unusual case? Even if the suspicion arises, will unfamiliarity with local practitioners be a barrier to referral?

Although specific training for e-visits might help, some websites attract clinicians by highlighting how little is required. One assures clinicians that "training takes approximately one hour," whereas others require no training. Moreover, some websites' legal disclaimers place responsibility for ensuring quality on the patient. One asserts, "[T]his website is not meant to provide medical care or advice." Another requires patients to hold the website harmless for claims "relating to the qualifications of the providers."

Continuity of Care

Although most health system reform emphasizes continuity of care, stand-alone e-visit websites are a step in the opposite direction. Most websites do not allow patients to request repeat visits with a particular physician, and one asserts that its service "does not constitute a physician-patient relationship." Patients are held responsible for communication with primary care practitioners, although some websites facilitate this by generating e-visit records. A recent study of retail clinics—which, like e-visit companies, offer stand-alone visits for low-acuity conditions—found that patients subsequently had less first-contact care and less continuity with primary care practicioners.[7]

The Future

Although practices by some companies raise concerns, commercial e-visits address a market demand for convenience and are likely to become increasingly common. The key is to identify voluntary or regulatory methods of addressing the issues.

Some companies are taking voluntary steps to ensure quality. The American Telemedicine Association is developing practice guidelines, and the use of protocols may reduce rates of inappropriate prescribing.[3] Some offer follow-up calls or criteria directing patients to emergency departments. MeMD recruits bricks-and-mortar referral partners, and other sites have formed partnerships with established brands, such as Cigna, which have a rationale to ensure quality of care. Although some companies are taking these steps, more uniform transparency about care and referral protocols would be helpful.

Alternatively, sites' performance could be addressed through regulation. Standards for physician training could be adapted to the e-visit setting. Public reporting of outcomes and cost could be mandated. Creating a consumer-dominated regulator, which could compile information on e-visit websites' performance, may improve outcomes.

What can physicians do? Those who work with e-visit websites could request training and proctoring in telemedicine or obtain a certification from educational organizations that have been accredited by the American Telemedicine Association. Clinicians could ask website administrators about clinical protocols and quality assurance programs. When seeing patients, they could remind themselves of the potential effect of prior diagnostic suggestions on clinical reasoning.

Primary care practitioners may want to monitor their panels for evidence that patients are using e-visits. They may face a choice: increase the ease with which patients can access their practices or accept that their patients may seek care online. Primary care practitioners may find themselves discussing the recommendations of online physicians with patients and trying to get in touch with those physicians to talk about a patient or clarify e-visit records.

Advancing technology is creating new options for patients. How beneficial these options are will depend on the response of e-visit websites, policymakers, and clinicians to the challenges and opportunities presented.

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