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By Alice Hm Chen, Margot B. Kushel, Kevin Grumbach, and Hal F. Yee Jr.

PRACTICE PROFILE
A Safety-Net System Gains Efficiencies Through 'eReferrals' To Specialists

PRACTICE San Francisco's public safety-net system.

WHO AND WHERE At one end, primary care clinicians practicing in five hospital-based, eleven community-based, and ten independent nonprofit community clinics in San Francisco. At the other end, specialist clinicians at San Francisco General Hospital, which provides more than 500,000 outpatient visits annually.

CORE INNOVATIONS A new consultation request process, called eReferral, is integrated into the hospital's electronic health record. Clinician-reviewers screen requests to evaluate urgency, choice of specialties, whether sufficient workup information is provided, and whether a specialist needs to see the patient or can guide the primary care clinician through the eReferral system.

KEY RESULTS Wait times for nonurgent visits declined in seven of eight medical specialty clinics by up to 90 percent during the first six months of use. Expedited visits accounted for up to a third of all visits in some specialties. The percentage of referrals deemed inappropriate by medical and surgical specialists was cut by more than half.

CHALLENGES Access to a common electronic health record and participation by specialists who are salaried, and thus not financially dependent on generating visits, were critical to this program's success—but neither is generally an option in most practice settings. Success also depends on how well reviewers interact with primary care clinicians. The majority of primary care clinicians reported that eReferral improved patient care, but those with poorer access to the electronic health record found it more time-consuming than the previous paper-based system.

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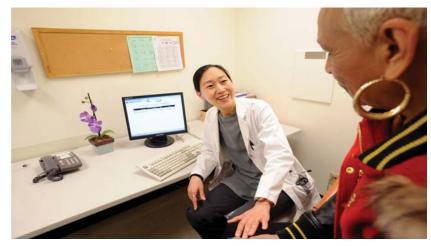
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Access to specialists is a common barrier for primary care clinicians trying to deliver high-quality, coordinated care, especially when their patients are poor or uninsured. To offer the standard of care demanded by the patient-centered medical home model, clinicians must be able to tap into a "medical neighborhood" of specialists and hospitals to obtain timely consultations, diagnostic services, and needed treatments. Such a network requires seamless exchange of information, as well as consultants willing to collaborate with the patient's primary clinician in decision making.

There is much variation among primary care clinicians in whether and when to refer patients for specialty care. Communication between the primary care clinician and the consultant is frequently unsatisfactory in both directions. Most referrals in the United States continue to be

Dr. Alice Chen of San Francisco General Hospital consults with a patient.

made by telephone, fax, or paper. In a recent six-country survey of patients with chronic illnesses, U.S. patients were most likely to report that when they received care from multiple physicians, test results or medical records were not available at the time of their appointments.

San Francisco General Hospital serves as the principal source of specialty care in the city's safety-net system, receiving referrals from a diverse network of twenty-six city-funded and independent primary care clinics. The hospital provides more than 500,000 outpatient visits annually, about 29 percent of which are specialty visits. Besides caring for most of the city's 73,000 uninsured residents, it also serves many Medicaid and Medicare beneficiaries. Specialists at the hospital are salaried faculty of the University of California, San Francisco (UCSF). They are paid for their clinical work under an agreement between the university and the government of San Francisco, which provides a fixed annual budget for comprehensive physician services.

Online Referrals

In an effort to reduce wait times for specialty appointments, UCSF and San Francisco General Hospital developed and launched eReferral, a Web-based electronic referral system integrated into the hospital's electronic health record. To request a consultation, a primary care clinician initiates an electronic referral form, entering relevant history and physical examination findings in a free-text field. Key identifying information on the patient and referring clinician is entered automatically. Pertinent clinical information is also electronically appended.

Each referral request is screened by a clinician reviewer—a faculty physician if the request goes to a medical clinic, a nurse practitioner if the

request is directed to a surgical clinic. If the reason for the referral is unclear, the reviewer may seek clarification via the program; if the problem could be better addressed by a different specialty, the request is redirected. Reviewers sort referrals into four categories: those that can be managed by the referring clinician with guidance from the specialist, without the patient's needing to be seen; those requiring additional diagnostic workup or history before a specialty appointment is made; routine referrals that can wait for the next available appointment; and urgent cases requiring an expedited appointment.

When a patient is seen, the specialist clinician can use the electronic health record to access the eReferral form, which includes all exchanges between the referring clinician and the specialist reviewer. Twenty-eight specialty clinics and diagnostic services at San Francisco General Hospital currently use eReferral.

Improvements

For clinics that had been plagued by long wait times, implementation of eReferral resulted in dramatic improvements. For example, in rheumatology, the median wait time for a nonurgent appointment initially dropped from 126 days to 29 days. Several factors contributed to the change, including the fact that some requests were managed without the need for appointments and some were redirected to other clinics. Patients seen by specialists were also less likely to require follow-up appointments than under the old referral system, because they had received a more extensive previsit workup. Surveys of specialists conducted before and after the rollout of eReferral suggested that the new system helped clarify the reasons for referrals. The number of encounters in which specialists were unsure of the reason for consultation declined by almost 50 percent in medical specialty clinics, and by almost 75 percent in surgical specialty clinics.

Among primary care clinicians surveyed, 72 percent reported that eReferral improved care, 71 percent said that it provided important guidance for previsit evaluation, and 89 percent said that it made tracking referrals easier for them. However, 42 percent found the eReferral process more time-consuming than the former paper-based referral system. These clinicians were largely based at the independent community health centers, which have inconsistent access to the hospital electronic health record because of site-specific technical and computer access issues.

The eReferral system is designed to foster an electronic dialogue between primary care clini-

Fully integrated health care delivery systems would be well situated to adopt a system like eReferral.

cians and specialist reviewers, preceding and sometimes replacing a patient's visit to a specialty clinic. This dialogue functions as an educational tool, allowing primary clinicians to obtain an electronic "curbside consultation" and often enabling them to manage the patient's problem themselves, with guidance via eReferral from the specialist reviewer—thus reinforcing the centrality of the medical home. Rapid uptake was possible only because the new system was integrated into a shared electronic health record.

Specialists at San Francisco General Hospital are salaried faculty physicians of UCSF, and their income does not depend on the number of patients they see in clinics. Although clinic visits by Medicaid or Medicare patients generate fee-for-service revenue, more than a third of the hospital's outpatients are uninsured. Specialists are invested in making eReferral work because it permits more efficient use of limited specialist capacity in the resource-strained environment of a public hospital. Specialist reviewers who evaluate eReferral requests for consultations are compensated for a portion of their time, regardless of the patient's insurance status. Reviewers serve to standardize care across patients and provide guidance tailored to specific patients; they have no financial incentive either to promote or to discourage specialty referrals.

Spreading Innovation

How generalizable is the experience of eReferral in San Francisco? This model demonstrates the potential for using tailored, evidence-based specialty recommendations to minimize overuse and misuse of specialty services, decrease duplication and fragmentation of care, and reduce costs by eliminating unnecessary and premature specialty visits. Its success at San Francisco General Hospital depended on common access to the hospital's existing electronic health record and on financial incentives that were not completely wedded to clinic productivity.

Fully integrated health care delivery systems would be well situated to adopt a system like eReferral, given their relative financial flexibility and incentives to manage care globally. In fact, some Veterans Affairs Medical Centers and Kaiser Permanente Medical Centers in California are using a similar approach to specialty referrals. In California, Orange County and Los Angeles County have developed referral programs modeled on eReferral.

For Medicare, use of a system like eReferral could address some of the variations in care documented over the past two decades. For Medicaid patients who often have limited choice and long wait times for specialty care, eReferral could improve access to specialists' expertise. ∎