

Special Communication

The “Medical Neighborhood”

Integrating Primary and Specialty Care for Ambulatory Patients

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As health care organizations create larger networks, better coordination of primary and specialty care is paramount. Attention has focused on strengthening primary care by creating patient-centered medical homes. The “medical neighborhood” provides a framework for structured, reciprocal relationships that integrate specialty care and extend the principles of the medical home to all practicing physicians. The foundation of the medical neighborhood is the collaborative care agreement, which outlines mutual expectations for primary care physicians and specialists as they care for patients together. These expectations include a preconsultation exchange between the referring physician and the consultant, the consultation, and subsequent comanagement of patients over time. Although independent practices can create individualized collaborative care agreements with specific specialist colleagues, large health care provider networks and accountable care organizations should have 1 agreement for all affiliated physicians. Challenges to the medical neighborhood include fee-for-service reimbursement, existing referral relationships, and building a robust electronic platform, including a referral management module. Cooperation between physicians, regardless of their specialty, and innovation in payment models and electronic platforms will all be essential if medical neighborhoods are to succeed.

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In the United States, health care providers are joining forces to create larger networks with the hope of succeeding in the marketplace. In turn, many large networks have formed accountable care organizations and share financial risk with payers, both public and private.¹ These health care systems, including the system in which we work, are now increasingly turning their attention to integrating care across their many health care providers to deliver on the promise of higher value and lower cost care. Initially, attention has focused on strengthening primary care by creating patient-centered medical homes. The goals of the patient-centered medical home include creating teams of health care providers to better care for patients, to continuously measure and improve quality, to use information technology to improve the organization of care, and to control costs.

Medical homes, however, will be limited in their impact on the redesign of care unless and until they incorporate the substantial proportion of care delivered by specialists. Unlike most other developed countries, where approximately 70% of the health care workforce is made up of primary care physicians, in the United States specialists outnumber generalists.² Specialty care accounts for considerably more health care resources than primary care.³ In our view, it is imperative to create a new system, sometimes referred to as a *medical neighborhood*, that extends the principles of the medical home to all practicing physicians. The creation of medical neighborhoods is particularly important for accountable care organizations

and large physician networks; the ability to integrate care is critical if these organizations and networks are to realize financial savings.^{4,5}

Why Create Medical Neighborhoods?

Medical neighborhoods are necessary because care is often fragmented as patients are seen by many different health care providers.⁶ A national survey found that primary care physicians and specialists perceive communication about referrals to be poor and agree that this negatively affects quality of care.⁷ The perception of poor communication is not surprising; the typical primary care physician coordinates care with more than 200 other physicians for their Medicare patients alone.⁸ Despite the extent and complexity of care coordination needed to manage these relationships, the number of referrals continues to increase.³ Multiple variables at the level of the physician, patient, and system (such as the concentration of specialists and penetration of capitation as a form of reimbursement) affect referral rates.⁹ Referrals are a critical component of modern health care, yet few systems exist to ensure that they are done in a consistent, efficient, and patient-centered way. As a result, unnecessary or misdirected referrals may increase costs or delay needed care. In addition, uncoordinated diagnostic workups may lead to repetitive, unnecessary, or inappropriate testing.¹⁰

What Is the Medical Neighborhood?

The medical neighborhood is a set of principles and expectations, supported by the requisite systems and processes, to ensure coordinated and efficient care for all patients. Unlike intensive programs that focus on coordinating individualized care for high-risk patients, the medical neighborhood provides the infrastructure that links primary care physicians, specialists, and other health care providers into a tightly coordinated team to provide care for all patients. A medical neighborhood could be defined to include hospitals, home health care, pharmacists, and the entire spectrum of health care providers. In this article, however, we limit our focus to ambulatory medical care, particularly primary care and specialist physicians.

The foundation of the medical neighborhood is the “collaborative care agreement,” a document that delineates a set of expectations for both the referring physician and the consultant when a patient’s care will span multiple health care providers.¹¹⁻¹⁴ These agreements typically focus on 3 levels of interaction between physicians (Table 1). The first level is the “preconsult exchange,” in which the need for a consultation and the necessary workup are determined, discussed, and planned by the referring physician and consultant before the patient visits the consultant. In some cases, this communication can obviate the need for a referral. The preconsult exchange benefits patients, who can avoid services such as referrals and diagnostic tests that they may not need. It benefits primary care physicians, who gain easier access to the expertise of consultants for the benefit of their patients, as well as their own learning; and it benefits specialists, who can decrease waiting times and improve access by focusing on those patients most in need of their knowledge and skills. In addition, health care systems under risk contracts benefit by avoiding the costs of unnecessary services.

The second level of interaction is the actual consultation, in which a specialist sees a patient and communicates recommendations to the patient and the referring physician. Timely visits and communication of recommendations facilitate productive referral relationships. The specific expectations will likely vary from institution to institution, but the important point is to clearly define the expectations and agree on them.

The third level of interaction is “comanagement,” in which multiple health care providers work together over time to deliver coordinated care to a patient.¹⁵ Comanagement is particularly important for Medicare beneficiaries and other patients with multiple chronic diseases.^{16,17} Comanagement is one of the least developed concepts in ambulatory practice; its importance may be recognized only when a patient’s care becomes complex and involves multiple health care providers. Formalizing a structure for comanagement through the collaborative care agreement is essential to help health care providers establish who is responsible for different aspects of care, such as prescribing medications, following up on laboratory tests, or responding to patients’ concerns. This structure should also cover situations in which specialists refer patients to other specialists—for example, when a rheumatologist refers a patient with chronic arthritis to a pain specialist. A collaborative care agreement should establish that such a new referral would not be made with-

Table 1. The Brigham and Women’s Hospital Collaborative Care Agreement

	Referring Physician	Specialist
Preconsult exchange	Clearly state clinical question Use common referral platform to communicate request Triage urgency of consult requests to the best of his or her ability	Have a single point of access Respond to requests within specified time using common referral platform
Consult	Clearly state reason for consult using common referral platform Explain to patient purpose of consult Order appropriate tests prior to consultation	Open access: have a single method for obtaining consultation that is consistent with other departments Adhere to access time frame Send consult note to referring physician within a specified number of days
Comanagement	Agree explicitly on who manages medications, monitors laboratory test results, and handles related issues Notify each other of major interventions, emergency department visits, and hospitalizations Offer urgent visits to patients within 1-2 d Send all visit notes to each other within a specified number of days, or sooner if urgent issues have arisen Confer with each other prior to ordering additional referrals related to the patient’s condition	

out prior communication and discussion with the primary care physician and other health care providers who may be involved in the patient’s care.

In 2010, the American College of Physicians¹¹ presented a foundation for the collaborative care agreement that focused on the relationship between individual practices rather than among larger networks of physicians. However, both primary care physicians and specialists are leaving private practice and joining networks of health care providers and are often employed by hospitals.¹⁸ Larger, more integrated networks of physicians who regularly share patients should have 1 broad multidisciplinary collaborative care agreement. Multiple agreements involving smaller groups of physicians could cause confusion and fragment care. A draft agreement from our institution is summarized in Table 1. The goal is a common set of principles and expectations about referral relationships that is shared by physicians in all specialties. To facilitate acceptance, we focused on key elements that we believed could be both widely accepted and properly measured.

Although data on pilot implementations of the medical neighborhood are scarce, a team at San Francisco General Hospital implemented an e-consult system that included the preconsult exchange in addition to standardized consult requests, thus incorporating 2 of 3 levels in our proposed collaborative care agreement. Communication improved and some visits were avoided through the preconsult exchange. Reductions have also been reported in wait times for appointments and inappropriate visits.¹⁹⁻²¹ At the same institution, a retrospective review of referrals to hepatologists suggested that 13% could be managed through a preconsult exchange without an in-person visit.²² At our institution, 4 primary care practices and 6 specialty departments are piloting the draft collaborative care agreement. We are piloting an electronic implementation of the preconsult exchange and working to develop an electronic portal through which all referrals are requested and tracked.

Table 2. Proposed Metrics for Evaluating the Medical Neighborhood

Category	Proposed Measure	Data Source	Comments
Referral demand	PCP referral volume/rate	Electronic referral tracking	Can measure absolute volume or rates of referral normalized for patient panel size
	"Preconsult triage" volume	Electronic preconsult requests	Preconsult triage volume should increase with integration of neighborhood model
	Leakage	Administrative claims	Medical neighborhood implementation should reduce leakage
	Referrals avoided	Electronic preconsult requests	Percentage of preconsult triage requests that are resolved without an in-person referral
Communication/ referral quality	Referral appropriateness	Referral-level specialist surveys	Implementation of "preconsult exchange" should make referrals more appropriate
	Referral preparedness		
	Comanagement perception	Referral-level PCP and specialist surveys	Measuring both PCP and specialist perceptions of management plans for the same referrals is an important measure of adequate communication
	Patient care coordination perception	Patient satisfaction surveys	Medical neighborhood should improve patient experience navigating care across settings
Access to care	Procedural yield	Administrative claims	Medical neighborhood should increase proportion of referrals resulting in procedure in the following 6-12 mo
	Time to next new patient appointment	Scheduling system	Preconsult triage can reduce demand for full consults, opening up access; improved triage of referrals to right specialists can reduce inefficiency and wasted visits
	No. of new patient consults per specialist FTE		
	Percent completed referrals	Scheduling database + electronic referral tracking	Medical neighborhood should improve no-show rate as a result of better scheduling coordination
Physician satisfaction	PCP perceived access	Physician survey	PCP perceptions are as important as actual access data because perceptions can lag service improvements and affect leakage
	PCP and specialist satisfaction	Physician survey	Overall satisfaction with referral and preconsult process

Abbreviations: FTE, full-time employee; PCP, primary care physician.

Challenges to the Medical Neighborhood

Implementing the medical neighborhood within large integrated networks or between smaller practices requires overcoming several challenges. The first challenge is reimbursement. In a system that is not based on fee-for-service practice, reimbursement would be less of a challenge. In a fee-for-service system, however, there is typically no reimbursement for preconsult exchanges or for virtually any aspect of care coordination. Preconsult exchanges may cost specialists visits and revenue; many questions can be answered without an in-person visit.²³ Just the fear of this loss of volume may make specialists wary. Resistance may vary by specialty; those specialists with long waits for visits will not lose volume. Indeed, patient access could improve. Physicians who perform procedures that are well reimbursed may benefit if a higher percentage of the patients who are referred actually need the procedures that they perform. If referrals are better coordinated, patients will benefit because they would be subject to fewer unnecessary diagnostic tests. Hospitals and practices, however, could lose revenue if they continue to be reimbursed on the basis of volume, which reinforces the benefits of simultaneous payment reform.

The proliferation of accountable care organizations may mitigate these potential financial losses if fee-for-service becomes a less dominant form of reimbursement.²⁴ Most risk-sharing contracts, however, still rely on fee-for-service billing and place only a small amount of revenue at risk for controlling costs. If fee-for-service remains an important form of physician payment, physicians and payers will have to agree on mechanisms to compensate both referring and consulting physicians for preconsult exchanges. A potential option would be

a small, per-event payment for each preconsult exchange. If a reduction in unnecessary interventions—referrals, imaging tests, and laboratory studies—can be demonstrated, the likelihood of support from payers should increase. For example, the University of California, San Francisco, is funding its preconsult exchange program through Medicaid's Delivery System Reform Incentive Program, a program to spur innovation in health care delivery. The institution applies a fee waiver from Medi-Cal, as the Medicaid program in California is known, to reimburse specialists for preconsult exchanges.

To increase the likelihood of support from payers, the medical neighborhood should be evaluated with meaningful metrics; proposed metrics are shown in Table 2. Other costs that accumulate as a result of a referral, such as imaging and laboratory tests, should also be evaluated.

A second challenge is preexisting referral relationships. Many physicians have established relationships with colleagues over years of practice. Primary care physicians exercise professional judgment and help guide their patients through an opaque health care system by referring them to specialists they trust. In addition, specialists maintain adequate patient volume by building a referral base. Any attempt to standardize the referral process is likely to fail if these existing relationships are not accounted for and respected. A functional medical neighborhood should standardize the process and expectations of how referrals are handled, not mandate to whom a patient should be referred. At the same time, in rapidly evolving integrated networks and accountable care organizations, physicians will have to collaborate with many physicians with whom they have not previously worked. Although there are likely to be a core set of physicians with long-standing referral networks in these organizations, new members should benefit from a more systematic referral process.

A third challenge is to build an electronic platform to support the medical neighborhood. Physicians should be able to identify colleagues with the expertise that their patients need; to communicate with them in safe, reliable, standardized, and secure ways; and to ensure that information flows bidirectionally in a timely and efficient manner. Smaller, less integrated practices that do not share a common electronic medical record may struggle to create standard, reliable processes. If referrals are made on the telephone or through e-mail, it is hard to ensure that key data are documented and delivered to the appropriate destination. Health care systems or other physician networks with a common electronic medical record may face fewer difficulties but still may not have all the necessary electronic tools to enable medical neighborhoods. The functionality to standardize all parts of a collaborative care agreement may not be in place.

An electronic referral management module should have 4 core functions. First, it should provide a standard means to refer a patient to a physician in any specialty that should be easier to use than the existing workflow. Second, it should facilitate preconsult com-

munications between referring physicians and specialists. Third, it should track referrals to ensure that they are promptly scheduled; the physician who initiates the referral should be notified if the referral is not scheduled or if the patient does not show up for the appointment. Fourth, the module should measure performance with appropriate metrics (Table 2). Key metrics that the module should measure include the referral rate for primary care physicians, the number of referrals avoided through preconsult exchanges, and the number of referrals that are completed and not completed.

Conclusions

In conclusion, integrating primary and specialty care for ambulatory patients through a medical neighborhood has many advantages for patient care. Many practical challenges, however, will have to be addressed. Cooperation between physicians, regardless of their specialty, and innovation in payment models and electronic platforms will all be essential if medical neighborhoods are to succeed.

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