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PATIENT SAFETY NETWORK

Primary Care and Patient Safety: Opportunities at the Interface

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Introduction

The Agency for Healthcare Research and Quality (AHRQ) recognizes that revitalizing the nation's primary care system is foundational to achieving high-quality, safe, accessible, efficient healthcare for all Americans.[1,2] AHRQ defines high-quality primary care as "the provision of whole-person, integrated, accessible, and equitable healthcare by interprofessional teams who are accountable for addressing the majority of an individual's health and wellness needs across settings and through sustained relationships with patients, families, and communities."[3] Setting a definition for primary care, and other important concepts in the essay, allows readers to build a common understanding about their structure, which provides a basis for exploration of their convergence. AHRQ, as one of the lead federal agencies in primary care research, funds research to understand how to implement this vision of primary care throughout the nation.

A strong body of evidence demonstrates that primary care can improve a patient's overall health status.[4] By providing a usual source of care, clinicians can help prevent, diagnose, and manage a wide range of patient conditions. Primary care can address acute problems, diagnose and manage chronic illness, deliver primary and secondary prevention, and provide trusted medical advice to improve health and well-being.

What makes primary care different from most other specialties is its role in coordinating and integrating a patient's care across the healthcare system. Through primary care, patients can develop a long-standing

relationship with their clinician and receive whole-person, comprehensive care. This relationship can enhance communication, manage clinical information, facilitate transitions in care, and engage patients and their families in care. The nature of relationship-based care provides the opportunity to potentially identify many, if not all, of patients' determinants of health, from the health services themselves to the social and environmental factors that affect their health.

AHRQ is the lead federal agency for patient safety research. AHRQ's broad definition of patient safety includes "prevention of diagnostic errors, medical errors, injury or other preventable harm to a patient during the process of healthcare, and reduction of risk of unnecessary harm associated with healthcare." In addition to its role in managing most common patient conditions, primary care can prevent harms such as diagnostic delays, medication-related safety events, and avoidable hospital admissions and readmissions.[5,6] Primary care, like other predominantly outpatient-based specialties, is vulnerable to safety issues in the ambulatory care setting. There is an opportunity to begin looking more closely at the alignment between the functions of primary care and patient safety as a component of quality care and at AHRQ's approach to addressing both.

Primary Care, Quality of Care, and Patient Safety

Primary care plays an important role in avoiding and mitigating common safety issues such as diagnostic delays and errors; medication-related safety events; inadequate communication, including problems with care transitions or reporting and follow-up of laboratory and other diagnostic tests; unnecessary tests or procedures; and lack of access to care. For example, primary care providers can improve diagnostic safety through the use of relationship-based principles, e.g., promoting enhanced caring and listening. Strategies such as judicious application of technology, like clinical decision support tools, can be employed to reduce inappropriate medication use. Primary care practices can consider using systems engineering methods or lean workflow redesigns to improve communication processes and performance.

Quality healthcare is defined by the Institute of Medicine as the delivery of safe, effective, patient-centered, timely, efficient, and equitable care.[7] These six aims of quality are interdependent, and they share underlying drivers to achieve high-quality care. When one or more aims are not met, these interdependencies can also create negative outcomes. For example, if a patient receives the correct medications for a particular condition (effectiveness aim met), but they stop taking the medications because of side effects (patient-centered aim not met), their health may then be negatively affected (safety aim not met). A patient safety event can be the furthest downstream outcome of a series of events that starts with the intention of providing effective care. When optimally delivered, primary care, in its role of providing integrated and accessible healthcare services, can address each of the healthcare quality aims. Examining the functions and goals of primary care illustrates how they relate to these healthcare quality aims.

The functions of primary care have been described as the "4C's": first point of **contact** (access to care), **continuity** (long-term healing relationships, providing longitudinal care), **comprehensiveness** (whole-person care), and **coordination** (tracking all of a patient's health issues across various settings).[8] Others have since added **patient-centeredness** and **cost-effectiveness**, among others, to the 4C's, describing 7C's,[9] 9C's,[10] or even 10C's.[11] These models all identify functions that ultimately lead to improved access, equity, and quality care, at a lower cost for patients—similar to the six quality aims outlined by the Institute

of Medicine—and all of the models have distinct implications for patient safety. (See table 1.)

Table 1. Functions of primary care, how they map to the six aims of quality, and the potential impact on patient safety

Editor's note: This table is adapted from the "Six Aims of Quality Healthcare" framework, as cited in *Crossing the Quality Chasm: A New Health System for the 21st Century*).[7] The reader may notice duplicative criteria under some elements of the framework. This duplication is purposefully intended by the authors, because multiple factors that influence quality healthcare may affect patient outcomes.

Six Aims of Quality Healthcare (as cited in *Crossing the Quality Chasm: A New Health System for the 21st Century and reflected on the AHRQ website*)[7,12]	**Functions of Primary Care That Meet the Six Aims of Quality Healthcare**	**Ultimate Potential Implicat Quality Healthcare Aim Is**
"Healthcare Should Be Safe" – Avoiding harm to patients from the care that is intended to help them.	• Patient-clinician communication • Coordination across settings of care • Continuity of care • Access to care	• Inadequate communic transitions between ca clinical information, ar have the potential to l *(Editor's note: Although acce been considered a patient sa piece feel strongly that acce healthcare-related issues, ul safety.)*
Healthcare Should Be Effective – Providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit (avoiding underuse, overuse, and misuse)	• Comprehensiveness and ethical allocation of resources in systems with finite resources • Evidence-based or evidence-informed care, avoidance of low-value care	• Ineffective allocation o "harm" to the affordab delayed or avoided ca as a result[13]; use of e avoid "toxic cascades" reducing exposure to unnecessary procedu

Healthcare Should Be Patient-Centered – Providing care that is respectful of and responsive to individual patient preferences, needs, and values, and ensuring that patient values guide all clinical decisions.	• Patient and family engagement • Use of shared decision making • Providing most patients' healthcare needs (comprehensiveness) and providing whole-person care • Understanding how determinants of health such as social and environmental factors may impact patients' health outcomes, and helping address inequities in health attributable to such determinants	• Lack of patient and fa accounting for patient addressing health ine factors can lead to av patient does not feel c disagreement with tre values, preferences, a considered.
Healthcare Should Be Timely – Facilitating access to care; reducing waits and harmful delays for those who receive and those who give care	• Providing effective access, ensuring care is available when needed • Serving as the first point of contact for health concerns and as a facilitator to access other parts of the healthcare system (first contact) • Expanded access by implementing evening and weekend hours • Implementing telehealth services	• Lack of access to and in care may lead to av potentially provider an
Healthcare Should Be Efficient – Avoiding waste, including waste of equipment, supplies, ideas, and energy. Avoiding misuse of scarce workforce and other resources as well as missed opportunity costs.	• Recognizing the limits imposed by the costs of care and avoiding care that provides low or no value (cost-effectiveness) • Engaging in value-based care	• Inefficient care deliver providers to see highe overhead costs, decre patients and potentiall errors, lapses, and mi • "Ghost networks"[15] of not providing care or u harder for patients to f delays in care.

Healthcare Should Be Equitable – Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, or socioeconomic status	• Working with patients to help them overcome barriers to equitable care, such as access and social and environmental factors that may impact health outcomes; for example, facilitating transportation to appointments	• Issues such as lack of lead to missed care or with lower health litera experience medicatio

A Closer Focus on Access and its Impact on Patient Safety

In addition to enhancing diagnostic safety, preventing medication-related patient safety events, and thoughtful design of care processes, primary care helps ensure patients can access care when needed to prevent harm. Ideally, primary care is the patient's first contact with the healthcare system for health concerns or health maintenance activities. This encounter establishes a relationship from which the other functions can occur (i.e., continuity of care). Access is often affected by elements that are frequently beyond the control of the provider, including insurance status and geographic location.[16,17] Some of the rising demand for emergent and urgent care services can be attributed to access barriers to primary care, and to the fact that many of the patients seen in emergency departments could be treated in alternative, and more optimal, healthcare settings.[18,19] Although patients may get appropriate short-term care for their chronic conditions (or ambulatory-sensitive conditions) in these alternative settings, care can quickly become disjointed, making continuity difficult to achieve and leading to patient safety events like diagnostic delays and medication-related harms.

There are three components to improving access to comprehensive, quality healthcare services: adequacy of insurance coverage, availability of health services, and timeliness of care. The remainder of the discussion focuses on interventions that target the availability of health services and timeliness of care components, both of which align with the functions of primary care. For this discussion, the term "health services" includes providing a usual and ongoing source of care to the patient and providing comprehensive services in the context of the community and family.[20] Timeliness is the ability to provide care at the right time, reducing delays and potential harms caused by those delays.

Primary Care Workforce Innovations to Expand Access

In the context of primary care provider shortages, especially in rural and underserved communities, increasing access can be achieved by increasing and sustaining the primary care workforce, expanding the use of team-based care, liberalizing the scope of practice for advanced-practice nurses and physician assistants, and incorporating community health workers who are embedded in primary care clinics within communities that have low rates of primary care access. The deployment of health support staff directly within the community—typically staff who are embedded within the community—can help address individual barriers to primary care access and strengthen care. By working directly with patients, community health workers can establish customized, patient-centered solutions. These solutions may include initial

screenings for symptoms of chronic health conditions, such as high blood pressure, or education about the benefits of preventive services, such as vaccinations and wellness visits.[21,22]

Integration of Primary Care Into Community Programs

Another approach is the incorporation of primary care services into existing health-related programs that serve populations with access challenges. For example, behavioral health programs that address substance misuse and mental health conditions might also be equipped to provide primary care. Conversely, an alternative model integrates behavioral health services into primary care practices while primary care providers prescribe medications for patients with substance use disorders. Research has found that integrating these services improves mental health outcomes and increases use of preventive services among patient populations.[23]

Increased Use of Telehealth Services

Increased use of telehealth services to reduce some of the barriers to primary care represents a third possible approach, which has been reinforced by the COVID?19 pandemic. In particular, use of telehealth services can eliminate the need for travel to a primary care facility, and may benefit individuals with access barriers such as caring for a child or elderly relative at home. However, there are challenges associated with comprehensive access to telehealth services. To avoid introducing new patient safety issues, care must be taken to understand which visits can safely be conducted via telehealth.[24] Communication and relationship building with patients, both critical functions of safe primary care, may also be more difficult via telehealth.[25] Technical considerations, such as the availability of broadband internet service, access to a computer or smart device, and technology use among older adults may limit the effectiveness of this approach for some patients and may exacerbate disparities.[26]

Health Equity and Access to Healthcare

Determinants of health that exist outside the influence of providers often play a more prominent role in safe, high-quality care than the health services themselves. In her seminal work, Dr. Barbara Starfield described this phenomenon, which is supported by recent research[27]: “The health of individuals or populations is predestined by genetic structure heavily modified by the social and physical environment, by behaviors that are culturally or socially determined, and by the nature of the healthcare provided.”[28] For example, take a patient who has hypertension that is controlled and who has good access to care and to medications: The patient’s health is maintained and overall quality of care is achieved in this context. In contrast, consider a patient with hypertension who lacks access to care or to medications: The patient’s health is in jeopardy, and there is high potential for resultant harm in this context. For patients to have equitable access to healthcare and avoid harms, we must make equity determinants of health just as important and integrated into patient care as we do the health services themselves.

Access to care is a cornerstone of high-quality, equitable primary care.[29] Researchers believe that inequity in access to primary care is one reason for inequity in health outcomes between people who are White, people who are Black, and other minorities. As far back as the Heckler Report,[30] data has indicated that preventable, manageable health conditions (e.g., diabetes, hypertension) make up the majority of deaths among minority racial and ethnic groups.[31]

Identifying the areas in which primary care has the most impact—for example, access—and then developing targeted programs and interventions to address the needs in these areas can lead to improved care. It can also foster efficiencies with provider resources—most importantly, providers' time. Given its role in leading both patient safety and primary care research, AHRQ is ideally situated to continue to support research at the interface of primary care and patient safety to ensure broader access, higher quality, and safe primary care.

AHRQ Resources That Support Safety in Primary Care

- Guide to Improving Patient Safety in Primary Care Settings by Engaging Patients and Families
- Toolkit for Engaging Patients to Improve Diagnostic Safety
- Reducing Diagnostic Errors in Primary Care Pediatrics Toolkit
- Toolkit to Engage High-Risk Patients in Safe Transitions Across Ambulatory Settings
- Primary Care-Based Efforts to Reduce Potentially Preventable Readmissions
- Six Building Blocks: A Team-Based Approach to Improving Opioid Management in Primary Care
- TeamSTEPPS for Office-Based Care Version

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