Abstract—Rural primary health care providers are often isolated from specialists, such as behavioral health care providers. Telehealth technologies have the potential to overcome such isolation and support collaboration among providers that are not located in the same community.

Keywords—telehealth; medical home; primary care; behavioral health care; rural medicine.

I. INTRODUCTION

The Patient Centered Medical Home (PCMH) is an approach to providing comprehensive health care for children, youth and adults [1]. The approach is based on coordination of services across all elements of the broader health care system, including primary and specialty care, hospitals, home health care, and community services. Such coordination is particularly critical during transitions between sites of care, such as when patients are being discharged from the hospital.

This approach holds promise as a way to improve health care in America by transforming how primary care is organized and delivered [2]. The medical home could meet most of a patient’s physical and mental health care needs, including prevention and wellness, acute care, and chronic care. However, providing coordinated care requires collaboration among a team of care providers. This team might include physicians, advanced practice nurses, physician assistants, nurses, pharmacists, nutritionists, social workers, and educators.

While applicable in a variety of health care environments, the medical home model is particularly important in coordinating primary and behavioral health care. In this environment, collaboration among primary and behavioral health care providers takes place through a “triangular model for medicine” [3] that extends the traditional practitioner-patient “dyad” to include a specialist or other collaborator(s) to support the primary care provider. This approach has been shown to be an effective strategy for improving the quality of care for individuals with common behavioral health disorders. Studies of collaborative care consistently report improvement in medical care, quality of care, and outcomes as well as cost savings or offsets in reduced travel and hospital admissions [4]. A 2005 Institute of Medicine report cited by Russell [5] concluded that the “only way to achieve true quality (and equality) in the health care system is to integrate primary care with mental health care and substance abuse service.”

Integrating primary and behavioral health has been recognized as having significant potential to prevent behavioral health issues from becoming severe by providing more opportunities for clinicians to recognize and treat them. The United States Preventive Services Task Force has recommended screening adults in clinical practices for a number of behavioral health conditions. However, such screenings are recommended in facilities “that have systems in place to assure accurate diagnosis, effective treatment, and follow up” [6]. As noted in [7], one of the key issues in such systems is proximity of the providers. Those who share both office space and patient records become “natural” collaborators and are likely to interact frequently as part of the care continuum. Even if the providers have separate facilities but are located in the same community, collaboration can occur and the access to behavioral health care is improved. Unfortunately,
physical or even community co-location of behavioral and primary care practitioners is extremely rare in rural areas because of the dearth of behavioral health providers.

II. SUPPORT FOR COLLABORATION IN HEALTH CARE WITH TELEHEALTH

Telehealth (or telemedicine) – the use of medical information exchanged from one site to another via electronic communications to improve patients’ health status [8] – holds particular promise in addressing this problem. The AHRQ “Health IT Portfolio” [9] cites the value of telehealth in regions “where physician-to-patient ratios are inadequate or where there are not enough medical specialists available to meet the population’s needs.” Larson et al. [10] list a number of issues in rural health care where telehealth can provide a solution.

- The disparity between rural and urban health care availability “results in large part from the difficulty in creating, supporting and maintaining an adequate and appropriately trained rural health care workforce” (p. 5). Telehealth can bridge this gap by providing access to more health care services for rural residents.
- “Health policy makers who want to ensure better access to care for rural residents must find ways to improve the supply and distribution of providers willing to practice in rural settings” (p. 5). Telehealth can redeploy resources virtually. Health care professionals who prefer an urban lifestyle can still serve rural populations through a telehealth link.
- “[R]ural populations are often older, sicker, and less educated than urban populations” (p. 6). Telehealth can bring geriatric care and education to both patients and providers at rural sites.
- “Despite major attempts by federal and state policymakers, and educational institutions to address rural provider shortages over three decades, both the shortage and misdistribution of providers still exists” (p. 7). Telehealth can address distribution problems.
- Medical specialists “tend to settle in cities, and the more specialized the physician the greater this trend. The smaller and more remote the rural place, the more likely that only the family physician will be practicing there. Despite federal and state programs to encourage physicians to practice as generalists, the share who do has not meaningfully changed since 1980” (p. 8). Telehealth can bring specialty care to rural settings.

Other studies [11,12,13,14,15,16,17,18] have underscored the potential of telehealth technology to decrease the disparity between rural and urban healthcare access, reduce medical errors, and lessen the impact of healthcare provider shortages. It has also been found to reduce travel time and associated costs for rural residents [19], address issues of privacy and stigma for patients and caregivers in rural communities [20], provide a means of clinical supervision in rural areas where supervisors may not be available [21], and increase access to specialty care in Native American and other isolated communities [22].

With respect to behavioral health care, several recent studies have demonstrated that telehealth technology can facilitate collaborative care to patients without onsite specialists (e.g., [23]). Collaboration in this case may be accomplished in a variety of ways, including:

- **Direct intervention with the patient by a distant specialist.** For example, when a patient presents to a primary care provider with clear symptoms of severe substance abuse, depression, or other behavioral health issues, the primary care provider arranges a telehealth consultation with a behavioral health provider for more intensive counseling and, if required, medication. Not only does this provide better care for the patient and eliminate the need for his/her travel, it allows the primary care provider to avoid making decisions for which she/he may not be trained.
- **Consultation between a primary care and behavioral health provider.** In many locations in Wyoming, the lack of local psychiatrists or advanced psychiatric nurse practitioners means that primary care providers are frequently the only source of prescriptive authority in a community. Non-prescribing behavioral health providers such as social workers or psychologists may recognize the need for medications to support their clients, and therefore must work with a primary care provider. If access to a trained primary care provider is not locally available, telehealth can support consultation between the two providers to provide the client with the appropriate care.
- **Education and training in diagnosis and care for behavioral health.** Supporting education among primary care providers in caring for behavioral health issues can alleviate many of the problems associated with lack of local practitioners. However, since many primary care providers do not have access to such training either locally or through travel, telehealth can be used to deliver specialized, targeted training to those providers in their local offices, hospitals, or even their homes.

III. TECHNOLOGIES SUPPORTING TELEHEALTH-BASED COLLABORATION

Advances in communications and information technologies have made the implementation of telehealth-based collaborative health care much more common than would have been thought possible even ten years ago.
Among the ways in which telehealth is being used today are [24]:

- **Transmission of data or images for analysis.** Clinical information is collected digitally and then forwarded to a provider for further review. Dermatologists and radiologists commonly use this technology, as do emergency personnel.
- **Facilitation of consultations among providers and patients.** Communication between primary and specialty providers, or between a patient and a distant provider, can be conducted over the Internet using secure synchronous videoconferencing systems.
- **Remote monitoring.** Providers use digital monitoring systems to track changes in patient vital signs such as body temperature, oxygen intake, blood pressure, and heart rhythms. These systems are valuable both in monitoring chronically ill patients in their homes to detect conditions that, left unattended, could escalate into a traumatic event, or in supervising patients in intensive care units where location or lack of trained providers make having an in-house intensivist impractical.
- **Telepharmacy.** Remote, rural clinics may not be able to provide a full-scale pharmacy, but an electronic connection to a pharmacist can help patients receive both medications and advice. Vending machine-like units in the clinic can even dispense pre-formulated medications on an order from a distant pharmacist.
- **Enhanced training and provider communication.** Telehealth can enable greater communication among providers in rural or underserved areas and reduce the feelings of isolation that many such providers develop. The technology can also bring continuing education and training to places where they are not available. Access to online medical libraries and other sources of information to support evidence-based medicine is also valuable for providers in these locations.

IV. BARRIERS TO IMPLEMENTING COLLABORATION

While the technology exists to support collaboration in the medical home approach, there are several challenges to its implementation. One category of challenges relates to the delivery of collaborative care. Russell [25] outlines these challenges, which include:

- Lack of reimbursement and/or incentives for providers;
- Lack of training for primary care providers in assessing behavioral health;
- Financial constraints on patients;
- Less-than-optimal treatment of behavioral health, despite the wide availability of evidence-based therapies;
- Comorbidities with physical illness and substance abuse; and
- Lack of co-located primary and behavioral health care in rural communities.

Activities that can address these challenges include:

- Education and outreach to providers on the value of collaborative care and the associated financial incentives. Social marketing materials directed at providers and administrators can describe the improved care possible through collaboration and the various ways in which collaboration can reduce costs or generate revenue.
- Training for primary care providers on brief assessment and intervention techniques. Such training can be delivered through telehealth or other distance education technology as well as in person.
- Outreach to patients and communities on the advantages of collaborative care. Providers and/or administrators can work with their community’s leaders and residents to encourage those needing help to seek it locally.
- Establishment of communication and referral patterns among primary and behavioral health care providers. Sharing of information such as contacts and schedules will facilitate collaboration among the participating sites.
- Support for telehealth as the foundation for collaboration where co-location is not feasible.

The second category of challenges relates to the more general problem of convincing providers and patients to adopt collaborative behavioral health care. Among these challenges are:

- Lack of understanding of the value of behavioral health care services;
- Lack of technical support for collaboration;
- Concerns over the effects of collaborative care on practice workflow;
- Reluctance to allocate the additional time needed to administer brief assessments and interventions; and
- Infrequent and ineffective communication among primary and behavioral health care practitioners.

Ways in which these challenges could be addressed include:

- Use of peers (champions) to support the integration of behavioral health into primary care practice;
- Regularly scheduled webinars that provide locally developed content for providers on topics such as cost savings, improved quality of life, etc. related to collaborative care;
- Creation of online tools for more efficient collaborative care, including electronic assessment tools, information sharing centers, and scheduling;
- Development and distribution of operating manuals, practice guidelines, etc.;
Sharing of outcomes and best practices; and
tracking of utilization and outcomes to demonstrate the value of collaborative care.

Russell [26] outlines a number of ways in which the Affordable Care Act could support activities that address both challenges, including financial incentives for practitioners in shortage areas, mental health education and training grants, extension programs for providers on evidence-based therapies, and development of the medical home for Medicaid beneficiaries.

V. CONCLUSION

The increasing emphasis on medical homes has made the need for integrated, collaborative care critical for the future of health care. Such collaboration has the potential to significantly reduce costs, improve quality, and increase efficacy in the health care environment. Telehealth technologies that support collaboration exist and are being employed in a variety of settings—particularly in the collaboration among primary and behavioral health care providers—but challenges remain to wider implementation of collaborative care. Efforts need to be stepped up to encourage the adoption of telehealth-based collaboration and its integration into a seamless system of care.

BIOGRAPHY

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REFERENCES


[26] Ibid.