Introduction
This brief focuses on two potential strategies to improve management and treatment of mental health outcomes in rural populations. Both address potential barriers to access for mental health care in rural communities: telepsychiatry allows remote management and treatment by practitioners in other communities, and expansion of mental health services to non-physicians clinicians can leverage existing practitioner supply.

Burden on Society
Approximately 25% of the US adult population is reported to have a mental illness, and 50% of US adults will develop one mental illness over the course of a lifetime. Further, recent estimates about 20% of the US population (62 million people) live in rural areas. Among those individuals in rural areas, 16% to 20% are reported to struggle with mental illness, substance abuse, and medical-psychiatric comorbid conditions. Incidence rates of mental health disorders for urban and rural individuals are not significantly different, but due to differing environmental factors, experiences of mentally ill rural individuals and their families are
distinctly different from their urban counterparts.\textsuperscript{3} Specifically, research has found that rural communities have higher suicide rates as a result of mental illness than their urban counterparts.\textsuperscript{3} Mental health service provision is different in rural areas due to three primary factors: availability, accessibility, and acceptability.\textsuperscript{3} Only 9% to 11% of practicing psychiatrists in the United States are reported to work in rural areas of the country.\textsuperscript{4} Given the high incidence of national mental illness, coupled with the limited availability, accessibility, and acceptability of mental health services in rural areas, along with a worldwide shortage of psychiatrists to respond to this significant international need for service, telemedicine is an apparent option to consider.

Staller\textsuperscript{5} published a report in 2006 addressing the significant need for mental healthcare services for youth in rural areas. This report noted that despite the Surgeon General’s 2001 action plan agenda that identified a critical need for mental health care for American youths, there remained a perpetual shortage of child psychiatrists, particularly in rural areas of the country. Staller described the various successes of an innovative program in New York State, which is unique because it provides specialty certification to nurse practitioners who complete advanced training and experience. In addition to meeting a critical workforce need, the program example provided by Staller’s report illustrates how successfully and easily barriers to communication, cost, and care coordination among multiple providers can be overcome.

Options for Addressing the Issue
Telemedicine is an effective option for providing primary care providers (PCPs) with the clinical support needed to provide needed mental health services to rural or isolated patients. The following studies indicate that telepsychiatry\textsuperscript{1} can be implemented in an effective manner with little negative impact on treatment adherence or patient perceptions of physician competence. Freuh and colleagues’\textsuperscript{7} conducted a secondary analysis of data collected from a randomized controlled trial in which telepsychiatry and “same room” psychiatry were compared. The findings of their analysis found no significant difference between the two modes of psychiatric care; that is, telepsychiatry did not compromise the perceptions of physician competence, nor did it negatively impact treatment adherence. In another study, Hilty and colleagues\textsuperscript{8} pilot tested the effectiveness of providing an electronic consultation service to PCPs via telephone and e-mail. The most common consultation included advice in the areas of psychiatry,

\textsuperscript{1} For a broader overview of telemedicine, its potential for improving outcomes among rural populations, and barriers to wider implementation and use, see reference 6.
gastroenterology, and medical genetics. The authors found that PCPs had favorable experiences with the electronic consultation services and that service delivery to rural populations and clinical outcomes were enhanced by this electronic service. Indeed, the practitioner community seems to embracing mental health as the service most conducive to telemedicine services; a MedPAC analysis found that nearly two-thirds (62%) of Medicare telehealth claims in 2009 were for mental health services. MedPAC concluded that an AHRQ review showed telemedicine “was most effective for specialties that rely on verbal discourse and not necessarily physical contact, including mental health and neurology”.

Telemedicine can be a source for facilitating a collaborative model of care with non-physician mental health providers. When considering telemedicine, it is important to identify the various service providers and specialties that will provide the services on both sides of the service spectrum (e.g., frontline workers, peer advisors, other non-physician providers). In some instances, integrating non-physician providers may be a viable and strong option, but this remains an understudied area in research. Tschirch and colleagues evaluated an innovative project that developed and provided a telemedicine network for victims of domestic violence. The intervention relied on nurses who were involved in the design, implementation, and evaluation of the project. The authors concluded that the network responded to a significant need for women who previously did not have access to appropriate mental health services despite their significant need. The authors also concluded that nurses offered valuable clinical and organizational value in the promising delivery of their mental health network and mental health services overall.

Effectiveness of non-physician clinicians to manage mental health is relatively unknown. Innovative models have been developed that use non-physician practitioners to treat and manage mental health. For example, psychiatric nurse practitioners and paramedics expand the set of potential providers who can refer or manage mental disorders. Grossman et al. evaluated the potential role of psychiatric nurses in school-based clinics. There are limited studies evaluating the effectiveness of these kinds of models, however. One trial comparing practice-based and telemedicine-based collaborative care models in rural Federally Qualified Health Centers (FQHCs) found that telemedicine-based models were more effective, suggesting that the combination of telemedicine and collaborative care models may be most effective. Some models implemented in other countries may also suggest innovative models; one Australian trial found practice nurses were effective in reducing depression symptoms.
**Potential for New Information to Improve Care and Patient-Centered Outcomes Rapidly.**

**Future directions.** One area in which telemedicine has been scarcely examined has been the context of the “train-the-trainer” model that refers to training paraprofessionals to provide them with skills for mental health service provision. At a time when the healthcare system is feeling overburdened with a shortage of providers to address the increasing needs of individuals, there is growing evidence of the promising impact of models that follow a lay health advisor/peer-support framework, such as the train-the-trainer model. Telemedicine has been shown to enhance other specialties through a collaborative physician-to-physician model and also by training other clinicians with much needed mental health expertise in an effective and efficient manner with little negative impact. Knowing this, using telemedicine as a mechanism for training peers and other paraprofessionals (in a train-the-trainer model) to address mental health needs, particularly for underserved populations, is an important area to further examine. With further research to identify, implement, and measure specific telemedicine strategies, there is great promise for telemedicine to enhance existing clinical services and also additional service options, via other professionals and paraprofessionals, to respond to the increasing demand to address mental health needs.

Though the empirical body of literature focused on telemedicine and non-physician providers is limited, the published works support the integration of non-physician providers to address significant mental health needs in rural areas. Turning to non-physician providers provides a solution to a long-standing shortage of psychiatrists in rural areas, using inexpensive and available modes of telemedicine delivery (i.e., telephones) to provide an effective service delivery solution based on a collaborative model that can also improve physician and patient satisfaction, in addition to increasing the availability of providers to respond to the great need for mental health care.

**References**


