

# Characteristics of the Rural Behavioral Health Workforce: A Survey of Medicaid/Medicare Reimbursed Providers

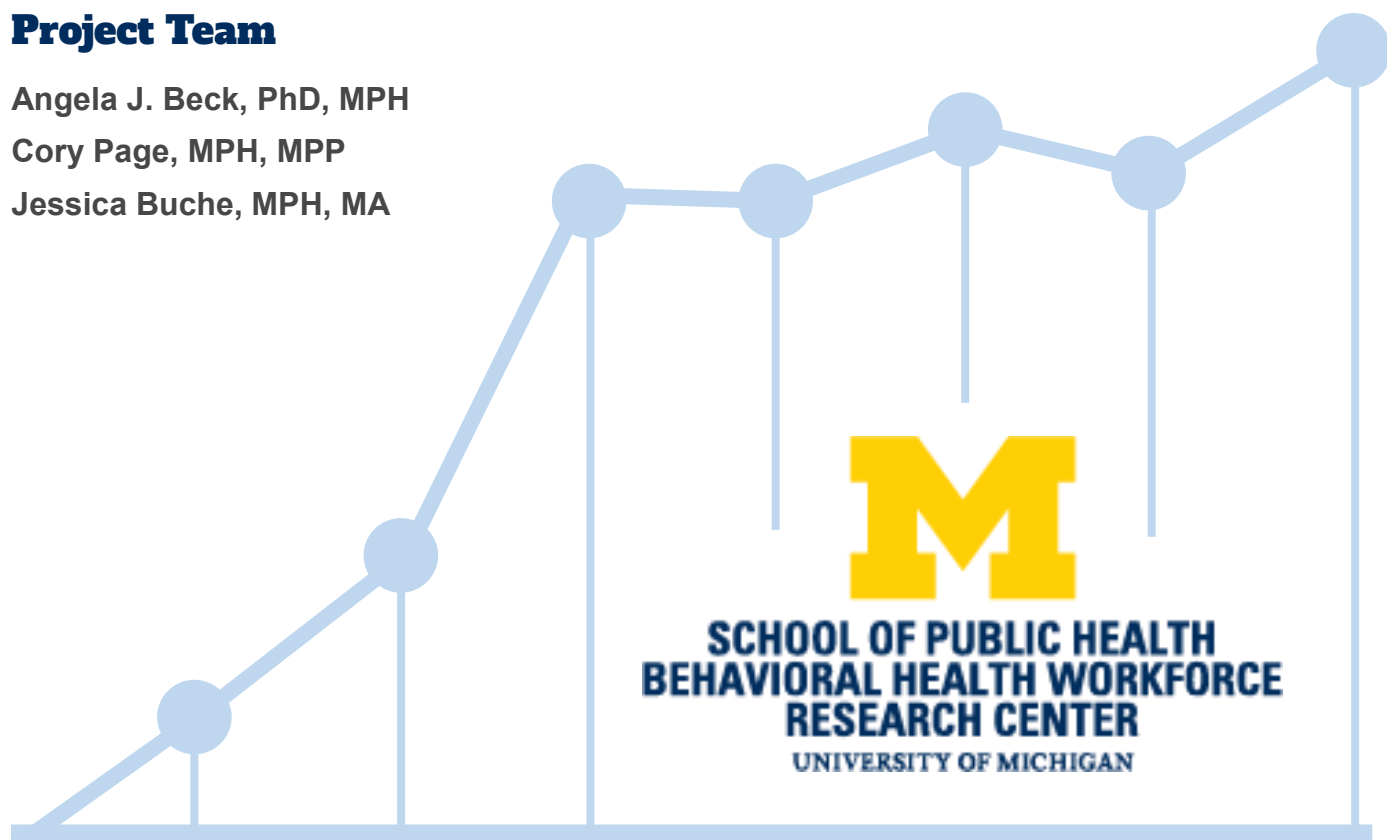
**October 2018**

## Project Team

Angela J. Beck, PhD, MPH

Cory Page, MPH, MPP

Jessica Buche, MPH, MA



### **ACKNOWLEDGEMENTS**

This work is funded by the Substance Abuse and Mental Health Service Administration (SAMHSA) and the Health Resources & Services Administration (HRSA) through HRSA Cooperative Agreement U81HP29300. This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by SAMHSA, HRSA, U.S. Department of Health and Human Services, or the U.S. Government.

### **SUGGESTED CITATION**

University of Michigan Behavioral Health Workforce Research Center. Characteristics of the Rural Behavioral Health Workforce: A Survey of Medicaid/Medicare Reimbursed Providers. Ann Arbor, MI: UMSPH; 2018.

# Table of Contents

<b>Key Findings</b> .....	4
<b>Background</b> .....	4
<b>Methods</b> .....	4
<b>Results</b> .....	5
Services Provided and Accessibility .....	5
Workforce Characteristics .....	7
Workforce Development Initiatives .....	11
Organizational Strategies for Care Provision .....	11
Organizational Information .....	12
<b>Conclusions</b> .....	13
<b>Policy Implications</b> .....	14
<b>References</b> .....	15

# Key Findings

Researchers at the Behavioral Health Workforce Research Center (BHWRC) sent an online survey to 454 rural behavioral health provider organizations. Of the 35 organizations (7.7%) of the organizations that finished the survey, most were community mental health organizations (n=21, 60.0%) or non-profit organizations (n=10, 28.6%). The average organization had about 115 employees of which support staff, behavioral health specialists, case managers, and mental health counselors made up the largest employee categories. The three highest priorities for new hires were occupational therapists, pharmacists, and nurse practitioners, while the lowest were administrators, managers, and non-masters addiction counselors. These organizations showed signs of not fully integrating behavioral health and primary care services. Policy recommendations include funding more integrated care sites, empowering physician assistants and nurse practitioners to work to their full education/training, and developing rural America's telehealth infrastructure.

# Background

Twenty percent of adults experience a behavioral health disorder every year in the United States.<sup>1</sup> Certain subpopulations of the country, deemed “vulnerable populations” by the Health Resources and Services Administration,<sup>2</sup> are at higher risk for health disparity based on their “race, ethnicity, socioeconomic status, geography, age, disability status, or other risk factors associated with sex and gender”.<sup>2</sup> Rural residents are one such geography-based vulnerable population<sup>3, 4</sup> with issues of access, mental health disorders, and substance abuse ranking among its top three health priorities, according to the Healthy People 2020 survey.<sup>5</sup>

Sixty million people, roughly 19% of the US population, live in rural areas, and these areas cover 97% of the country.<sup>6</sup> Compared to urban populations, rural populations tend to have fewer persons with college degrees, have higher likelihood of military service, have higher proportion of Native American representation, and tend to be older.<sup>7, 8</sup> These attributes are all well-documented risk factors for behavioral health disparities.<sup>3</sup> As such, rural residents have higher rates of depression, substance use disorder, and suicide than urban counterparts.<sup>9, 10</sup> Further, rural patients tend to have higher need-for-care thresholds, leading them to present more serious symptoms, enter care later, and require more intensive treatment.<sup>9</sup>

Due to their sparse population densities, rural areas are most affected by behavioral health provider maldistribution. HRSA designated 5,035 mental health provider shortage areas (HPSAs) in the United States, with 3,013 (59.8%) of those located in rural and partially rural areas.<sup>11</sup> These shortages result in a dearth of care for people in need, which becomes more severe the more rural an area is.<sup>9, 12</sup> The rate of psychiatrists per 100,000 people in non-metropolitan areas is a third of the rate in metropolitan areas, with 65% of rural counties lacking a psychiatrist entirely.<sup>13</sup> This disparity in provider supply relative to the population persists across psychologists, psychiatric nurse practitioners, social workers, and mental health counselors as well.<sup>14</sup> Counselors and social workers comprise most of the rural behavioral health workforce, but 13% of rural counties have no behavioral health providers compared to 3% of urban counties.<sup>13</sup>

Rural behavioral health professionals experience barriers beyond just their workforce shortage. They report practicing outside of their scope of practice to address need, trouble retaining patients, trouble with patients refusing treatment, and burnout.<sup>12, 15</sup> As for clients, they frequently lack community resources for counseling or detoxification, do not have time to see specialists, and lack public transportation.<sup>15, 16</sup> Integrating primary and behavioral health provider settings is one way to address issues of access,<sup>9</sup> but administrative challenges of implementing integrated care in small, tight-knit communities include provider role confusion, maintaining confidentiality, and offering generalist care when patient needs might be best addressed in a specialty setting.<sup>17</sup>

This study aims to better characterize the workforce in rural areas, the services they are providing, the organizations they practice within, and the barriers these organizations face in providing care.

# Methods

In 2015-16, the Behavioral Health Workforce Research Center (BHWRC) conducted a pilot study, which surveyed behavioral health organizations affiliated with Southwest Michigan Behavioral Health (SWMBH).

These organizations included community mental health and substance use treatment facilities in Barry, Berrien, Calhoun, Cass, Kalamazoo, St. Joseph, and Van Buren counties. These counties reflect a mix of urban and rural communities; Branch and St. Joseph counties are designated as rural counties and Barry, Branch, Cass, St. Joseph, and Van Buren counties are designated as Medically Underserved Areas (MUAs). Further, Van Buren, Berrien, St. Joseph, Barry, and Branch counties are designated mental Health Professional Shortage Areas (HPSAs).

Literature review findings and existing workforce questionnaires for study populations in other occupations informed the online Qualtrics™ survey. The survey covered the following themes:

- Behavioral health needs of the population and services currently provided
- Cultural and linguistic competencies of the existing workforce
- Workforce development initiatives
- Factors impacting worker recruitment and retention

The BHWRC expanded the pilot survey to include a national sample of behavioral health organizations in 2017-18. The National Council for Behavioral Health (National Council) aided the BHWRC in securing a national, rural survey population. The Centers for Medicare and Medicaid Services (CMS) released a preliminary Durable Medical Equipment, Prosthetics, Orthotics and Supplies (DMEPOS) file containing ZIP codes that CMS deemed as 'rural' in Quarter 4 of 2015.<sup>18</sup> The National Council compared the DMEPOS file with ZIP codes of its 2,900 behavioral health member organizations. This resulted in 454 unique rural behavioral health organizations identified as the study population.

The National Council sent emails to the main organizational contact for the 454 rural member organizations, inviting them to participate in the survey. Three National Council team members also drafted a script for telephone and email follow-up with non-responding organizations. Approximately 300 phone calls were made to boost participation. Descriptive statistics of survey responses are presented in this report.

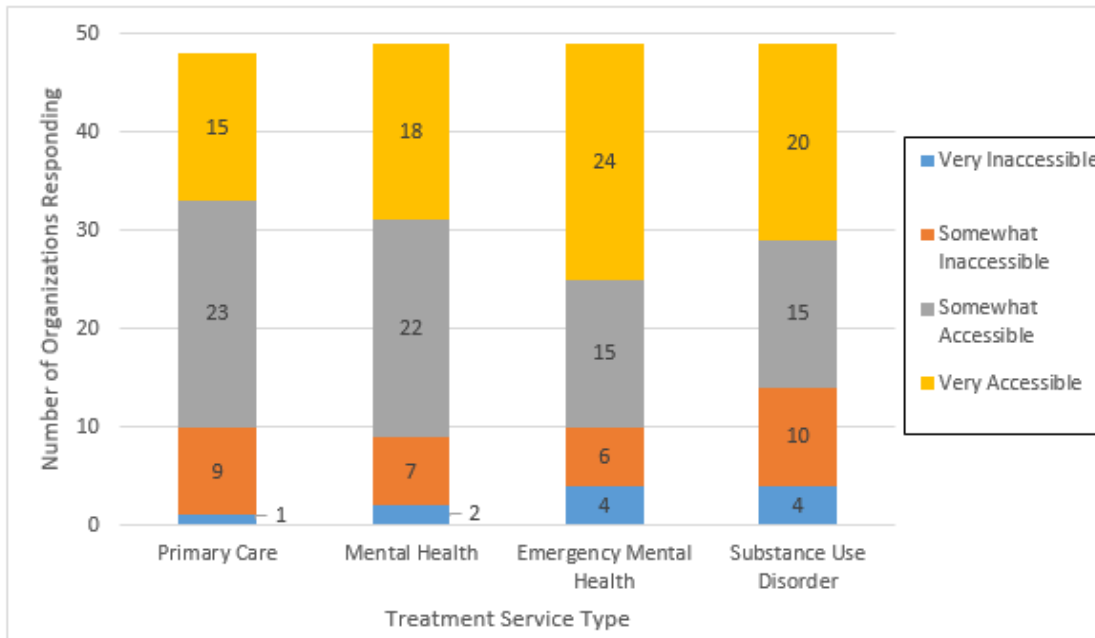
## Results

### Services Provided and Accessibility

Fifty-seven organizations engaged with the instrument (12.6%), with 35 finishing the entire survey (7.7%). All 57 responses were included in the analysis, and percentages were calculated for all answers to show item non-response. The primary focus for services in 82.0% of these organizations was behavioral health only (n=41), compared to 12.0% in both primary care and behavioral health services (n=6), and 6.0% in primary care only (n=3). The majority of responding organizations were currently offering some form of integrated care, whether they had already fully integrated their services (n=8, 16.3%), had implemented some integrated services but have more planned (n=15, 30.6%), or were partnered with other organizations to offer integrated care services (n=9, 18.4%).

For the communities that the organizations were serving, access to substance use disorder services and emergency mental health services were less prominent than access to primary care services and general mental health services (Figure 1). Of the 44 organization who responded to the question, 29 (67.4%) reported that their organization engages in patient-centered medical homes, 31 (72.1%) reported their organization engages in Accountable Care Organizations, and 27 (62.8%) reported their organization engages in partnerships with the local, county, and/or state public health department(s) on population health initiatives.

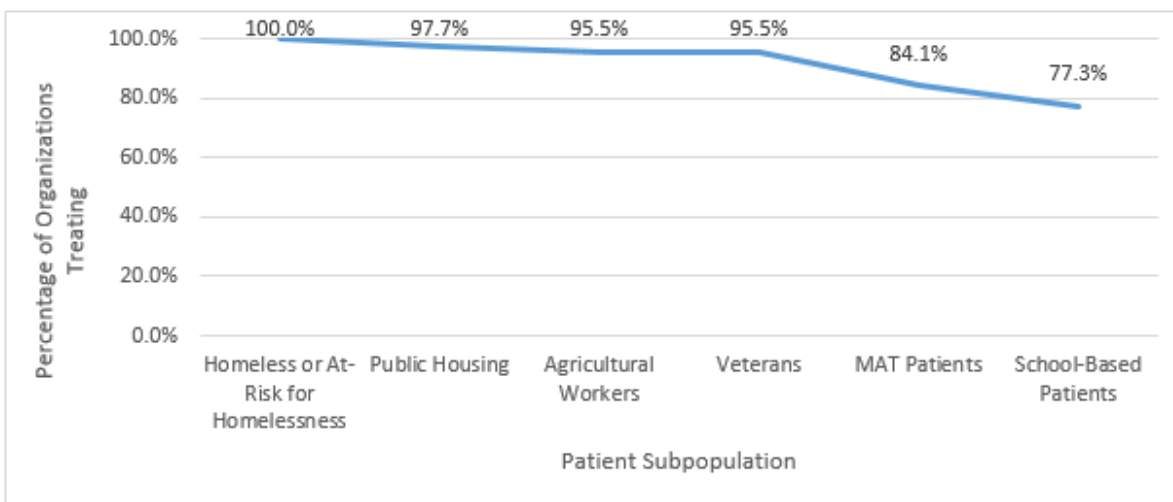
**Figure 1.** Service Community's Access to Various Treatment Services



Regarding payment mixes, 100% of respondents currently accepted and provided mental health/SUD services for new Medicaid patients (n=44), 93% currently accepted and provided mental health/SUD services for under-insured patients (n=41), and 93% currently accepted and provided mental health/SUD services for uninsured patients (n=41).

All responding organizations reported treating patients who were at risk of homelessness or who were currently homeless (n=44), but the amount of organizations who treated veterans, patients in public housing, and other vulnerable subpopulations varied (Figure 2). Charity care was generally important to responding organizations with 34 either agreeing or strongly agreeing that it was a component of their organization's mission (77.3%) compared to 10 disagreeing (22.7%).

**Figure 2.** Organizations Treating Vulnerable Subpopulations



MAT, Medication-Assisted Treatment

The majority of respondents either agreed or strongly agreed that their organization provides behavioral health care services that otherwise would be unavailable to their community (n=42, 95.5%), and adjusts fees based on patients' ability to pay (n=42, 95.5%). However, the majority either disagreed or strongly disagreed that their organization provided primary health care services that would otherwise be unavailable to their community (n=38, 86.4%)

Organizations were given a list of 18 health conditions, and were asked to select all the conditions they provided prevention and/or treatment services for (Table 1). The most commonly treated condition was depression (n=40, 93%), followed by substance use disorder, post-traumatic stress disorder, and attention deficit hyperactivity disorder (n=39, 90.7%, for all).

**Table 1:** Health Conditions Treated by Surveyed Organizations (n=43)

Name of Condition	Number of Organizations Providing Prevention or Treatment Services for Condition
Depression	40
Substance Use Disorder (Alcohol)	39
Substance Use Disorder (Drugs)	39
Post-Traumatic Stress Disorder (PTSD)	39
Attention Deficit Hyperactivity Disorder (ADHD)	39
Anxiety and Panic Disorders	38
Bipolar Disorder	38
Schizophrenia	36
Aging-related grief and loss	30
Intellectual and developmental disability	25
Tobacco cessation	22
Obesity	11
Diabetes	9
Asthma	8
Sleep disorders	8
Heart disease/hypertension	8
Chronic pain	6
Chronic lung disease/Chronic Obstructive Pulmonary Disease (COPD)	5

### Workforce Characteristics

Respondents had an average of 143.5 part-time and full-time staff within their organization (n=42, Min=0, Max=1000, S.D.=210.4), and an average of 115.4 FTEs (n=42, Min=0, Max=610, S.D.=173.9). On average, each organization had 1 volunteer (n=42, Min=0, Max=11, S.D. =2.3).

The five most common occupations found across these organizations, by average FTE, were support staff (26.2), behavioral health specialists (13.7), case managers (12.7), master’s level mental health counselors (10.3), and “other” (8.8) (Tables 2-5). “Behavioral health specialists” were not strictly defined by the survey. Based on patterns within respondents’ answers, these specialists were interpreted to include behavioral health occupations not listed by the survey and/or any behavioral health employees for whom the respondent did not know their specific credential. The five least common occupations, by average FTE, were pharmacists (0.03), primary care physicians (0.1), occupational therapists (0.1), physician assistants (0.4), and community health workers (0.4).

**Table 2: Organizations’ Full-Time Equivalent Medical Occupational Mixes, Graduate Level**

	Psychiatrist	Primary Care Physician	Pharmacist	Advanced Practice Nurse Practitioner	Physician Assistant
n	36	36	36	36	36
Min	0	0	0	0	0
Max	6	2	1	4	5
Mean	0.7	0.1	0.03	1.04	0.4
Median	0	0	1	0.5	0
S.D.	1.2	0.4	0.2	1.3	1.2

**Table 3: Organizations’ Full Time Equivalent Counseling Occupational Mixes, Graduate Level**

	Mental Health Counselor, Master’s Level	Marriage and Family Therapist	Clinical Social Worker	Addiction Counselor, Master’s Level	Behavioral Health Specialist	Psychologist
n	36	36	36	35	36	36
Min	0	0	0	0	0	0
Max	78	8	46	10	349	5
Mean	10.3	0.7	4.9	2.4	13.7	0.5
Median	3	0	2	2	0	0
S.D.	16.5	1.5	8.9	2.6	59	1.4

**Table 4. Organizations’ Full Time Equivalent Nursing and Rehabilitative Occupational Mixes**

	Occupational Therapist	Psychiatric Rehabilitation Practitioner	Vocational Rehabilitation Counselor	Registered Nurse	Licensed Practical/Vocational Nurses	Mental Health Counselor, Non-Master’s Level	Addiction Counselor, Non-Master’s Level
n	36	36	36	36	36	36	36
Min	0	0	0	0	0	0	0
Max	3	30	36	30	30	30	10
Mean	0.1	1.5	1.3	2.6	2.1	1.9	1.7
Median	0	0	0	0.5	0	0	0
S.D.	0.5	7.7	7.0	6.6	6.1	5.5	2.8



**Table 5:** Organizations' Full Time Equivalent Non-Clinical Occupational Mixes

	Administrator/ Manager	Case Manager	Peer Support Specialist	Community Health Worker	Support Staff	Other
n	36	36	36	36	36	36
Min	0	0	0	0	0	0
Max	40	139	76	6	327	85
Mean	7.5	12.7	6.5	0.4	26.2	8.8
Median	5	3.5	1	0	7	0.3
S.D.	8.6	31.6	17.5	1.4	61.9	19.2

Included in “other” were a diverse array of occupational categories, from clerical support staff and diagnostic technicians, to drivers, maintenance, prevention specialists, and crisis response workers. Sociologists were not included, as no organization had hired one.

From the above tables, any occupational category with a non-zero median suggests that at least half the sample organizations hired that occupation. That list includes support staff, administrators/managers, case managers, master’s level mental health counselors, master’s level addiction counselors, clinical social workers, pharmacists, advanced practice registered nurses, registered nurses, and “other.”

If organizations had sufficient funds to meet all behavioral health workforce needs, their highest hiring priorities were reportedly occupational therapists (92.3% “higher priority”) and pharmacists (87.5% “higher priority”), while their lowest hiring priorities were administrators/managers (18.7% “higher priority”) and non-master’s level addiction counselors (47.6% “higher priority”) (Table 6).

**Table 6:** Ten Highest and Lowest Organizational Hiring Priorities

Highest Priority for Hiring	Lowest Priority for Hiring
Occupational Therapist, 92.3%	Case Manager, 57.6%
Pharmacist, 87.5%	Psychologist, 57.1%
Advanced Practice Nurse Practitioner, 83.9%	Psychiatric Rehabilitation Practitioner, 57.1%
Community Health Worker, 82.4%	Licensed Practical/Vocational Nurse, 55.0%
Psychiatrist, 82.1%	Peer Support Specialist, 54.8%
Sociologist, 80.0%	Primary Care Physician, 53.3%
Clinical Social Worker, 75.8%	Social Worker, 50.0%
Mental Health Counselor, Master’s level, 72.7%	Other, 50.0%
Mental Health Counselor, Non-Master, 72.2%	Addiction Counselor, Non-Master, 47.6%
Support Staff, 71.9%	Administrator/Manager, 18.7%

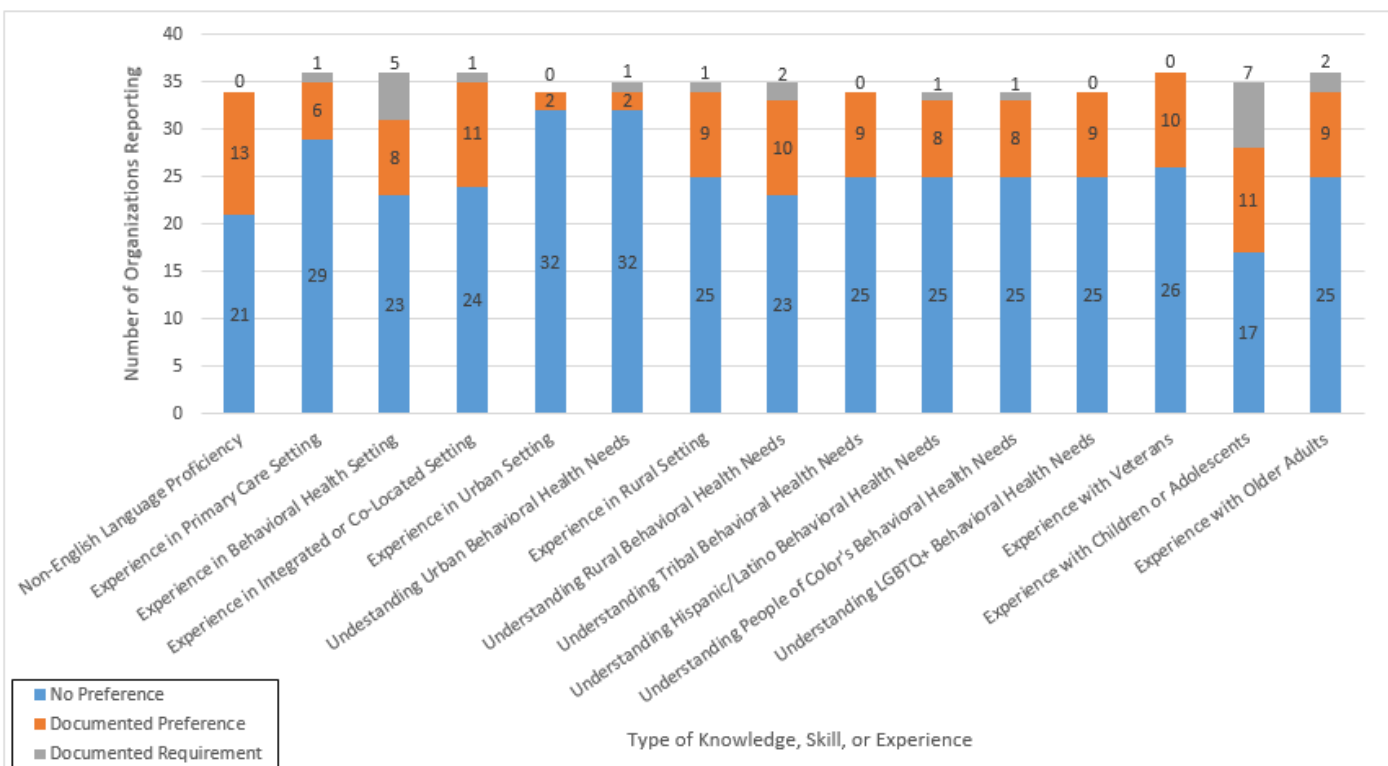
75% of respondent organizations (n=27) were currently seeking to fill a vacancy to provide behavioral health services to patients. The greatest number of vacancies were for clinical social workers (n=18, 66.7%), followed by master’s level mental health counselors (n=16), and psychiatrists (n=11, 40.7%).

The most prominent barriers to organizations trying to fill vacant behavioral health provider positions include non-competitive salary compared to other organizations/health care systems (n=28, 77.8%) and applicants not having required licensure or certification (n=23, 63.9%). Other barriers included prohibitive cost of living near the organization and insufficient applicant experience.

The most commonly used incentives for filling vacant positions were assisting the applicant to pursue licensure, such as with free clinical supervision (n=27, 75% of organizations offered incentive), offering affordable health insurance as a benefit (n=25, 69.4%), offering flexible work hours (n=22, 61.1%), and serving as a site eligible for student loan forgiveness (n=21, 58.3%).

The survey also inquired about organizations’ preferences in the knowledge, skills, and experience of their applicants that could pertain to the treatment of vulnerable populations. Each item could be marked as “no preference,” meaning the organization had no preference in the applicant having or not having it, “documented preference,” meaning the organization openly values it, possibly including it in their mission statement, or “documented requirement,” meaning applicants must possess that knowledge, skill, or experience in order to enter the organization. The majority of respondents either had no preference about the traits in question or a documented preference about the traits (Figure 3).

**Figure 3.** Organizations’ Preferred Knowledge, Skills, and Experience in Applicants

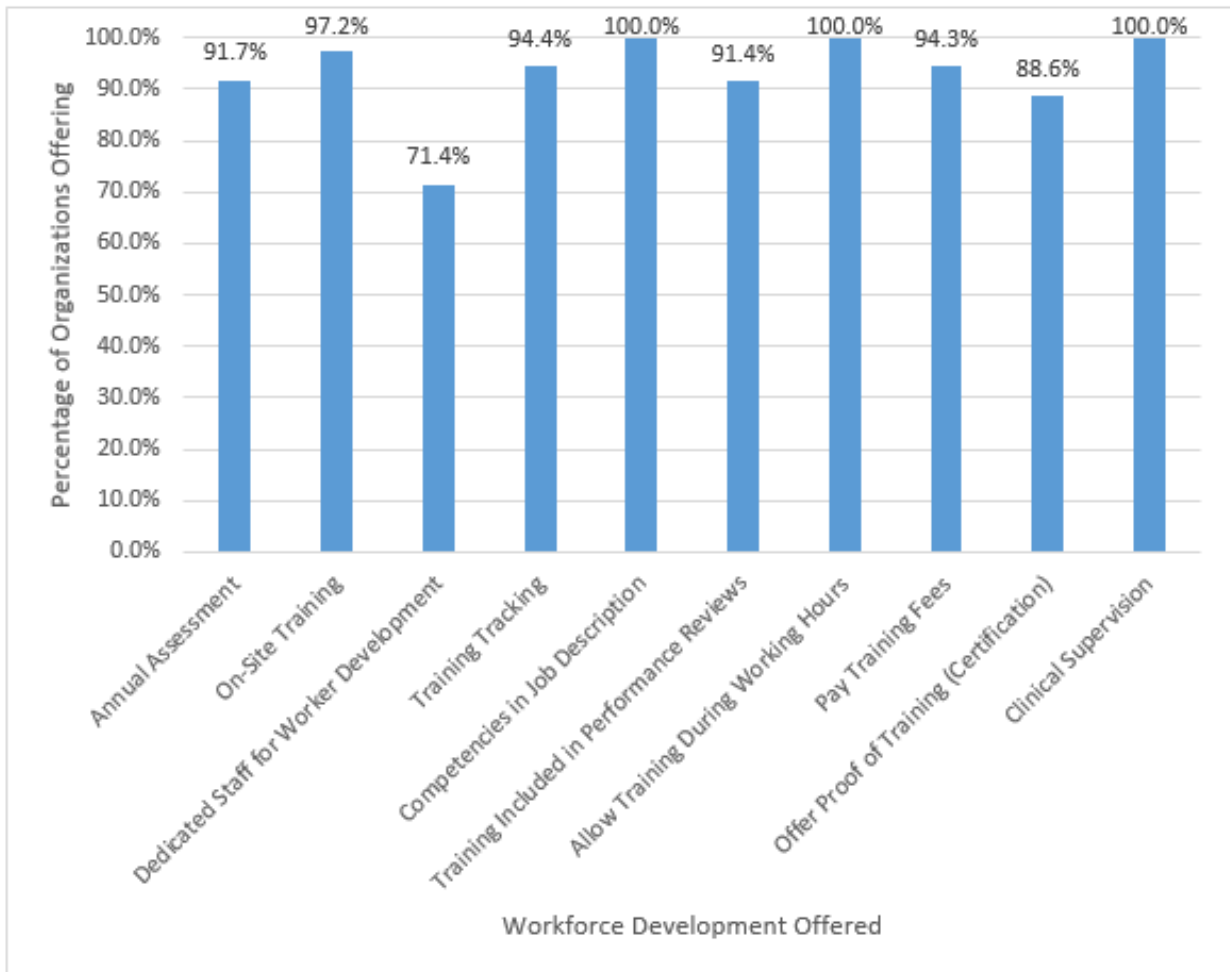


Most organizations did not require a specific type of knowledge, skill, or experience in their applicants, with few exceptions. Experience with the service population, namely children/adolescents (n=7) and older adults (n=2), and experience working within a specific setting, namely a behavioral health setting (n=5), primary care setting (n=1), integrated care setting (n=1), or rural setting (n=1), were the items most likely to be required of applicants.

## Workforce Development Initiatives

Once hired, behavioral health providers are regularly assessed by their organization and can be offered continuing training. When asked about what kind of assessment and training services they offer, all organizations allowed providers to use their working hours to participate in continuing training, included competencies in job descriptions, and provided clinical supervision (Figure 4).

**Figure 4.** Workforce Development Offered by Organizations (n=36)



Organizations reported on which knowledge/skill areas they wanted to improve in their staff through additional training, and identified cultural competency (n=30, 83.3%), behavioral health assessments (n=28, 77.8%), and technical training/electronic health record training (n=23, 63.9%) most often.

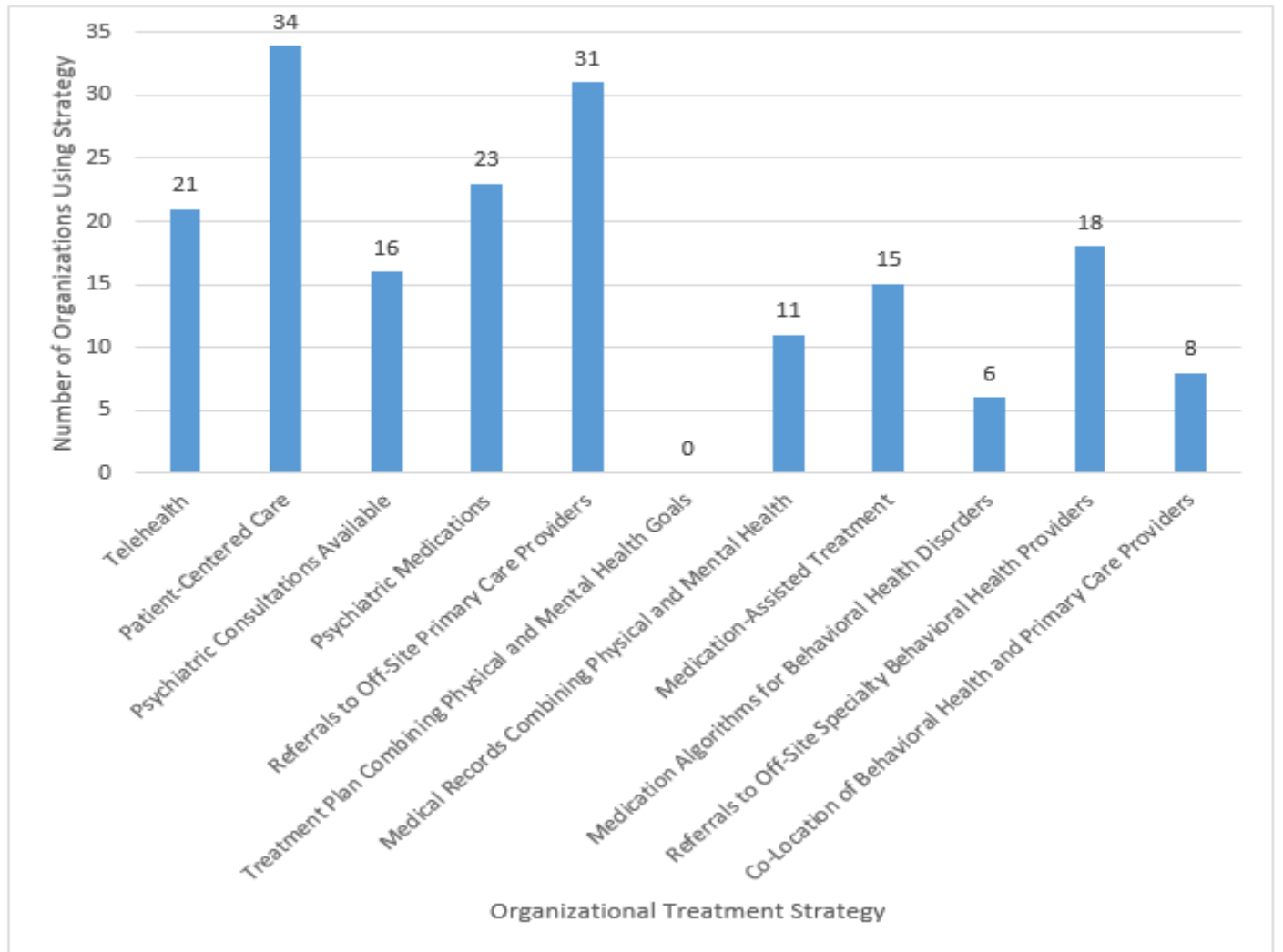
Promoting cultural and/or linguistic competency at responding organizations took many forms. The most prominent strategies were to adhere to principles of Trauma-Informed Care (n=30, 83.3%), provide formal training on cultural competency (n=28, 77.8%), and make materials available in the language of the people and community served (n=26, 72.2%).

## Organizational Strategies for Care Provision

Organizations varied in the modalities of behavioral health services they offered. While they almost all offered patient-centered care (n=34, 94.4%), less than two-thirds offered telehealth services (n=21, 58.3%),

and none offered a single treatment plan combining physical and mental health goals (Figure 5).

**Figure 5.** Organizations' Behavioral Health Treatment Strategies (n=36)



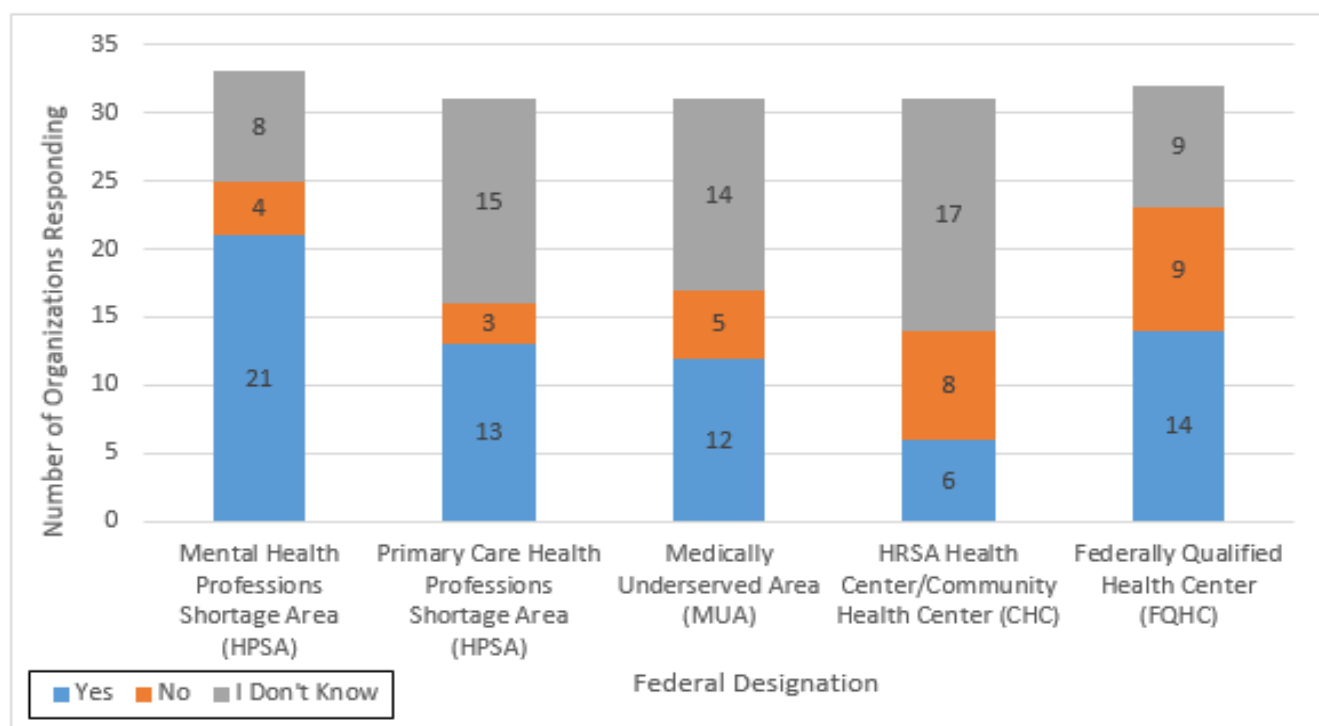
The survey asked organizations to identify the clinical barriers and workforce barriers they face to providing services. The most prominently reported clinical barriers were providers' lack of training in evidence-based behavioral health treatments (n=11, 30.6%) and providers' limited training in mental health and substance use disorder (n=10, 27.8%). The most prominently reported workforce barriers were having too few clinicians to provider behavioral health services (n=22, 61.1%), information-sharing obstacles between primary and behavioral health care providers (n=21, 58.3%), and physical separation between primary and behavioral health care providers (n=12, 33.3%).

### Organizational Information

The majority of people filling out the survey were executive leadership at their organization (n=28, 75.7%) or human resources personnel (n=5, 12.5%). These organizations were predominately community mental health agencies (n=21, 60.0%) and non-profit organizations (n=10, 28.6%). The median organization served between 500 and 2,499 patients a year, in a community of between 20,000 and 49,999 residents.

Most responding organizations served in mental health HPSAs, although many respondents did not know which federal designations their community or organization qualified for (Figure 6).

**Figure 6.** Federal Designation for Respondents' Communities and Organizations



## Conclusions

Of the 454 rural behavioral health organizations surveyed, 57 accessed the survey (12.6%) and 35 finished it (7.7%). Most of the people filling out the surveys were executive leadership (n=28, 75.5%) or human resources personnel (n=5, 12.5%). The organizations were typically either community mental health agencies (n=21, 60.0%) or non-profit organizations (n=10, 28.6%). They tended to operate in mental health HPSAs (n=21, 63.6%), and offer only behavioral health services (n=41, 82.0%) as opposed to behavioral health and primary care services. Despite this, 65.3% were currently engaging in some form of integrated care. The median organization served between 500 and 2,499 patients a year, and a community of between 20,000 and 49,999 residents.

All organizations accepted new Medicaid patients for behavioral health services, and almost all (93%) accepted underinsured or uninsured patients, as well. The average organization had about 115 employees, and the most common occupations of those employees were support staff (26.2), behavioral health specialists (13.7), case managers (12.7), and mental health counselors (10.3). Administrators, managers, and non-master's addiction counselors had the least amount of priority in terms of new hires, while occupational therapists, pharmacists, and advanced practice nurse practitioners had the most.

Non-competitive salaries (n=28, 77.8%) and applicants not having required licensure or certification (n=23, 63.9%) were the primary barriers to meeting workforce needs. To counter these barriers, organizations routinely offered free clinical supervision (n=27, 75%), affordable health insurance as a benefit (n=25, 69.4%), and flexible work hours (n=22, 61.1%). It was uncommon for organizations to have a documented preference in an applicant's skills, knowledge, and prior experience regarding vulnerable populations, and rarer still to have requirements around these items. The most common ways organizations developed their

workers was through clinical supervision, including professional competencies in their job descriptions, and allowing providers to use their work hours for continuing education or training.

Almost all organizations offered patient-centered care (34) and referrals to off-site primary care providers (31), but few had co-located behavioral health and primary care providers (8) or medication algorithms for behavioral health disorders (6). None had treatment plans with both physical and behavioral health goals. Workforce barriers to providing behavioral health services were cited more often than clinical barriers. The most prominent clinical barrier was providers' lack of training in evidence-based practices (n=11), and the most prominent workforce barrier was having too few clinicians on staff (n=22).

## Policy Implications

Integrated care collaboration between physicians and behavioral health specialists, through strategies such as collocation of providers and role expansion of primary care providers, is a potential solution for alleviating the behavioral health professional shortage in rural areas.<sup>9, 19</sup> For example, if a service setting were fully integrated, in the same visit a rural patient could see a generalist for their concerns and be connected with a behavioral health provider should a behavioral health disorder be detected. According to the survey, although 82.0% of respondents only offered behavioral health services at their organization, 65.3% were engaged with integrated care in some capacity. Furthermore, locating both types of providers at the same location could reduce stigma for patients, which is a frequently-cited barrier to seeking behavioral health care.<sup>15</sup>

Since integrated care is associated with better behavioral health outcomes and reduced cost/medical utilization rates in rural areas,<sup>20</sup> integrated care systems could make use of the shared savings mechanisms established by Section 3022 of the Affordable Care Act (ACA).<sup>21</sup> States, meanwhile, could implement Medicaid Health Home plans through Section 2703 of the ACA, which call for “whole-person” treatment of Medicaid/Medicare patients with 2 or more chronic conditions.<sup>22</sup> CMS offers states 90% enhanced funding for Health Home sites, and these sites can be geographically determined – meaning states have the flexibility to distinguish specifically rural areas in high need as Medicaid Health Home sites.<sup>23</sup> Given that all of the responding organizations to the survey were taking new Medicaid patients for behavioral health treatment, increasing state utilization of Health Homes could increase rural patient access to integrated care.

Additional methods for supplementing the behavioral health workforce in rural areas include employment of physician assistants (PAs) in psychiatric settings.<sup>24</sup> While all PAs are formally trained in general medicine, approximately 1.4% specialize in psychiatry by working with a licensed psychiatrist.<sup>25</sup> PAs are also more likely to practice in rural areas than other primary care providers.<sup>26</sup> Since responding organizations, on average, hired less than 1 full-time psychiatrist, hiring PAs could bolster the amount of psychiatric services the organizations could offer at a fraction of the price of hiring another psychiatrist. However, this is dependent on the state's scope of practice policies. If PAs in the state are restricted in a way that they cannot practice to the full extent of their training and education, and are instead restricted to be more dependent on direct physician supervision, then the potential benefit they offer organizations is reduced.<sup>26,</sup>

27

Similarly, adjusting nurse practitioner (NP) regulations to allow the growing NP workforce in rural areas to work to the full extent of their education and training could also increase rural access to behavioral health services.<sup>28</sup> According to the survey, advanced practice nurse practitioners were highly prioritized for hiring in rural behavioral health organizations. This is possibly due to the fact that some states allow them to practice medicine, diagnose, and prescribe without physician oversight.<sup>29</sup> While some states restrict the amount of independence NPs have in their practice, research suggests that increased independence among NPs is not associated with any change in patient outcomes, but is associated with improved provider supply, healthcare access, and quality of care.<sup>30</sup> As such, states could consider adjusting regulations on nurse practitioners in order to incentivize them to take more independent roles in rural health.

Lastly, in rural service settings without any behavioral health providers, telehealth and telepsychiatry could help increase access to behavioral health services.<sup>31-33</sup> According to the survey, 60.0% of responding organizations offered telehealth services (n=21), suggesting that the technology and practice is being more

widely adopted. Funding for implementing broadband technology and establishing telehealth services in rural areas can be obtained through the Federal Communications Commission's Healthcare Connect Fund, which directs up to \$400 million annually to areas of the country in acute need for telehealth services.<sup>34</sup>

## References

1. National Alliance on Mental Illness. Mental health by the numbers. 2018. <https://www.nami.org/learn-more/mental-health-by-the-numbers>. Accessed June 5, 2018.
2. Health Resources & Services Administration. BHW glossary terms and definitions. BHW.HRSA.gov. <https://bhw.hrsa.gov/sites/default/files/bhw/grants/bhw-glossary.pdf>. Published 2018. Accessed October 10, 2018.
3. Joszt L. 5 vulnerable populations in healthcare. *Am J Manag Care*. <https://www.ajmc.com/newsroom/5-vulnerable-populations-in-healthcare>. Published July 20, 2018. Accessed October 10, 2018.
4. Health Resources & Services Administration. Office of Health Equality. HRSA.gov. <https://www.hrsa.gov/about/organization/bureaus/ohe/index.html>. Updated March 2018. Accessed October 10, 2018.
5. Bolin JN, Bellamy HR, Ferdinand AO, Vuong AM, Kash BA, Schulze A, Helduser JW. Rural Healthy People 2020: New decade, same challenges. *J Rural Health*. 2015;31(3):326-333. <https://doi.org/10.1111/jrh.12116>. Accessed October 10, 2018.
6. United States Census Bureau. One in five Americans live in rural areas. *Census.gov*. <https://www.census.gov/library/stories/2017/08/rural-america.html>. Published August 9, 2017. Revised September 18, 2018. Accessed October 10, 2018.
7. Rural Health Information Hub. Rural healthcare workforce. *RuralHealthInfo.org*. <https://www.ruralhealthinfo.org/topics/health-care-workforce>. Revised July 19, 2018. Accessed October 10, 2018.
8. United States Census Bureau. New census data show difference between urban and rural populations. *Census.gov*. <https://www.census.gov/newsroom/press-releases/2016/cb16-210.html>. Published December 8, 2018. Accessed October 10, 2018.
9. Smalley KB, Yancey CT, Warren JC, Naufel K, Ryan R, Pugh JL. Rural mental health and psychological treatment: A review for practitioners. *Journal of Clinical Psychology: In Session*. 2010;66(5):479-489. <https://doi.org/10.1002/jclp.20688>. Accessed June 10, 2018.
10. Fontanella CA, Hiance-Steelesmith DL, Phillips GS, et al. Widening rural-urban disparities in youth suicides, United States, 1996-2010. *JAMA Pediatr*. 2015;169(5):466-473. <https://doi.org/10.1001/jamapediatrics.2014.3561>. Accessed October 10, 2018.
11. Health Resources & Services Administration. Fourth quarter of fiscal year 2018 designated HPSA quarterly summary. HRSA.gov. [https://ersrs.hrsa.gov/ReportServer?/HGDDW\\_Reports/BCD\\_HPSA/BCD\\_HPSA\\_SCR50\\_Qtr\\_Smry\\_HTML&rc:Toolbar=false](https://ersrs.hrsa.gov/ReportServer?/HGDDW_Reports/BCD_HPSA/BCD_HPSA_SCR50_Qtr_Smry_HTML&rc:Toolbar=false). Published September 30, 2018. Accessed October 10, 2018.
12. Cooper S, Valleley RJ, Polaha J, Begeny J, Evans JH. Running out of time: Physician management of behavioral health concerns in rural pediatric primary care. *Pediatrics*. 2006;118(1):e132-e138. <https://doi.org/10.1542/peds.2005-2612>. Accessed June 10, 2018.
13. Larson EH, Patterson DG, Garberson LA, Andrilla CHA. Supply and distribution of the behavioral health workforce in rural America. *WWAMI Rural Health Research Center*. [http://depts.washington.edu/fammed/rhrc/wp-content/uploads/sites/4/2016/09/RHRC\\_DB160\\_Larson.pdf](http://depts.washington.edu/fammed/rhrc/wp-content/uploads/sites/4/2016/09/RHRC_DB160_Larson.pdf). Accessed June 12, 2018.
14. Andrilla CHA, Patterson DG, Garberson LA, Coulthard C, Larson EH. Geographic variation in the supply of selected behavioral health providers. *Am J Prev Med*. 2018;54(6S3):S199-S207. <https://doi.org/10.1016/j.amepre.2018.01.004>. Accessed October 10, 2018.
15. Gerlach LB, Mavandadi S, Maust DT, Streim JE, Oslin DW. Improving access to collaborative behavioral health care for rural-dwelling older adults. *Psychiatric Services*. 2017;69(1):117-120. <https://doi.org/10.1176/appi.ps.201700026>. Accessed June 8, 2018.
16. Douthit N, Kiv S, Dwolatzky T, Biswas S. Exposing some important barriers to health care access in the rural USA. *Public Health*. 2015;129(6):611-620. <https://doi.org/10.1016/j.puhe.2015.04.001>. Accessed October 10, 2018.
17. Mullin D & Stenger S. Ethical matters in rural integrated primary care settings. *Families, Systems, and Health*. 2013;31(1):69-74. <https://doi.org/10.1037/a0031860>. Accessed June 12, 2018.
18. Centers for Medicare & Medicaid Services. Details for title: DME\_Rural Zip and Formats. *CMS.gov*. <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/DMEPOSFeeSched/DMEPOS-Fee-Schedule-Items/DME-Rural-Zip-and-Formats.html>. Published 2016. Accessed October 10, 2018.
19. Thomas K, Ellis AR, Konrad TR, Holzer CE, Morrissey JP. County-level estimates of mental health professional shortage in the United States. *Psychiatric Services*. 2009;60(10):1323-1327. <https://doi.org/10.1176/ps.2009.60.10.1323>. Accessed June 12, 2018.
20. County Health Rankings & Roadmaps. Behavioral health primary care integration. *CountyHealthRankings.org*. <http://www.countyhealthrankings.org/take-action-to-improve-health/what-works-for-health/policies/behavioral-health-primary-care-integration>. Revised May 14, 2018. Accessed October 10, 2018.
21. Centers for Medicare & Medicaid Services. Shared savings program statutes & regulations. *CMS.gov*. <https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/sharedsavingsprogram/program-statutes-and-regulations.html>. Revised October 17, 2018. Accessed October 18, 2018.
22. Mental Health America. Position statement 13: Integration of mental and general health care. *MentalHealthAmerica.net*. <http://www.mentalhealthamerica.net/positions/integrated-care>. Published June 13, 2018. Accessed October 10, 2018.
23. Health homes. *Medicaid.gov*. <https://www.medicaid.gov/medicaid/ltss/health-homes/index.html>. Accessed October 18, 2018.
24. American Academy of Physician Assistants. Physician assistants in psychiatry. *Specialty Practice: PAs in Psychiatry*. 2010. [https://www.aapa.org/wp-content/uploads/2016/12/SP\\_PAs\\_Psychiatry.pdf](https://www.aapa.org/wp-content/uploads/2016/12/SP_PAs_Psychiatry.pdf). Accessed June 4, 2018.
25. National Commission on Certification of Physician Assistants. 2017 specialty report. *NCCPA.net*.
26. National Rural Health Association. Physician assistants: Modernize laws to improve rural access. *RuralHealthWeb.org*. [https://www.ruralhealthweb.org/NRHA/media/Emerge\\_NRHA/Advocacy/Policy%20documents/04-09-18-NRHA-Policy-Physician-Assistants-Modernize-Laws-to-Improve-Rural-Access.pdf](https://www.ruralhealthweb.org/NRHA/media/Emerge_NRHA/Advocacy/Policy%20documents/04-09-18-NRHA-Policy-Physician-Assistants-Modernize-Laws-to-Improve-Rural-Access.pdf). Published April

9, 2018. Accessed October 10, 2018.

27. American Academy of Physician Assistants. PAs in rural locations ready to meet primary care needs. AAPA.org. <https://www.aapa.org/news-central/2018/06/pas-rural-locations-ready-meet-primary-care-needs/>. Published June 12, 2018. Accessed October 10, 2018.
28. National Conference of State Legislatures. Meeting the primary care needs of rural America: Examining the role of non-physician providers. NCSL.org. <http://www.ncsl.org/research/health/meeting-the-primary-care-needs-of-rural-america.aspx>. Accessed October 10, 2018.
29. Barnes H, Richards MR, McHugh MD, Martsof G. Rural and nonrural primary care physician practices increasingly rely on nurse practitioners. *Health Aff.* 2018; 37(6):908-914. <https://doi.org/10.1377/hlthaff.2017.1158>. Accessed October 10, 2018.
30. Ortiz J, Hofler R, Bushy A, Lin Y, Khanijahani A, Bitney A. Impact of nurse practitioner practice regulations on rural population health outcomes. *Healthcare.* June 2018;6(2):65. <https://doi.org/10.3390/healthcare6020065>. Accessed October 10, 2018.
31. National Council for Behavioral Health's Medical Director Institute. The psychiatric shortage: causes and solutions. 2017. [https://www.thenationalcouncil.org/wp-content/uploads/2017/03/Psychiatric-Shortage\\_National-Council-.pdf](https://www.thenationalcouncil.org/wp-content/uploads/2017/03/Psychiatric-Shortage_National-Council-.pdf). Accessed June 4, 2018.
32. Fortney JC, Pyne JM, Mouden SB, et al. Practice-based versus telemedicine-based collaborative care for depression in rural Federally Qualified Health Centers: A pragmatic randomized comparative effectiveness trial. *Am J Psychiatry.* 2013;170:414-425. <https://doi.org/10.1176/appi.ajp.2012.12050696>. Accessed October 10, 2018.
33. Benavides-Vaello S, Strode A, Sheeran BC. Using technology in the delivery of mental health and substance abuse treatment in rural communities: A review. *J Behav Health Serv Res.* 2013;40(1):11-120. <https://doi.org/10.1007/s11414-012-9299-6>. Accessed October 10, 2018.
34. Center for Connected Health Policy. FCC national telecommunications & broadband plan. CCHPCA.org. <http://www.cchpca.org/fcc-national-telecommunications-broadband-plan>. Accessed October 10, 2018.