MENTAL AND BEHAVIORAL HEALTH IN BROOME COUNTY:

A NEED ASSESSMENT STUDY

A Project Paper

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Field of Global Development

By

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ABSTRACT

The goal of this study was to provide Cornerstone with recommendations that would assist with their planned expansion of mental and behavioral health service delivery within the county.

The research and analytical methodology used was a literature review, background research, survey of healthcare providers about their perceptions of mental and behavioral health in the county, and semi-structured interviews with prominent Broome County mental health organizations.

The findings from the study concluded that all of Broome County is considered to be underserved in rural areas, there is a provider workforce shortage causing long waitlist times for appointments, there exist significant transportation barriers affecting access to care, and patients have difficulty navigating the healthcare system, many consumers are not aware of the existing service options, and other organizations lack knowledge Cornerstone's available service options.

The proposed recommendations include: (1) Increase the number of mental health providers, both prescribing providers and other providers; (2) Incorporate mobile medicine and tele mental health into care delivery; (3) Capture at-risk patients during primary care visits; (4) Increase advertising and outreach efforts; (5) Create of a referral network with other Broome County providers and organizations.

BIOGRAPHICAL SKETCH

Tariq Nawab is a graduate of Professional master's in International Development from the department of Global Development at Cornell University. He obtained his first master's in Government and Public Policy from department of Contemporary Studies National Defence University Islamabad Pakistan. He obtained his bachelor's degree from Middlesex University London, United Kingdom in the field Business Information Systems with Information Technology (major) and Information Technology (minor). He has more than ten years' experience in the fields of project management, monitoring & evaluation and operations. Prior to his studies at Cornell university, he worked with the NGO Community Awareness Raising & Advocacy Ventures Around Needs (CARAVAN) on different EU, DFID, USAID and The Asia Foundation funded projects.

I would like to dedicate this study to my great late father Amir Nawab Khan Daulat Khel, to my great mother Zainaba Bibi, to my beloved wife Hafsa Tariq, to my beautiful daughters, Hila Khan and Mahzala Khan and to my sweet son Omar Nawab Khan.

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I would like to express my gratitude to my supervisor Prof. John R. Mathiason for his continuous support and immense knowledge. This study could not have been done without his support.

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Introduction

In 2018, New York State (NYS) approved its Prevention Agenda for 2019-2024. The Prevention Agenda is meant to serve as the state's health improvement plan and has a vision for NYS to be the "healthiest state in the nation for people of all ages," by promoting health equity and reducing health disparities (NYS Department of Health, 2019). The Prevention Agenda has determined five priority areas with specific action plans, developed collaboratively with input from stakeholders from across the state. One of the five priority areas is to Promote Well-Being and Prevent Mental Health and Substance Use Disorders (NYS Prevention Agenda, 2019).

When compared to NYS statistics, Broome County, New York has several community health status areas that perform worse than NYS averages, particularly in the area of mental health. Based on the NYS Expanded Behavioral Risk Factor System (BRFSS), 11.6% of Broome County adults reported 14 or more days with poor mental health per month—higher than that of NYS at 11.1% (Broome County Department of Health, 2017). Other health status measures also indicate that Broome County has worse outcomes than state averages; the 2018 NYS Community Health Indicator Reports (CHIRS) report the suicide mortality rate per 100,000 people as 11.9 in Broome County, as compared to 8.4 in NYS. A 2019 community needs assessment conducted focus groups and surveys with community residents, who noted increased access to mental health was the number one need to address in Broome County (RMS Healthcare, 2019).

Given the obvious need for improved mental and behavioral health service delivery in Broome County, this report seeks to gain a more comprehensive understanding of the current treatment landscape while simultaneously identifying existing gaps in, and barriers to care. This in turn, will inform Cornerstone Family Healthcare not only how to most effectively expand their services, but how to modify their current model of care to increase access to residents across Broome County.

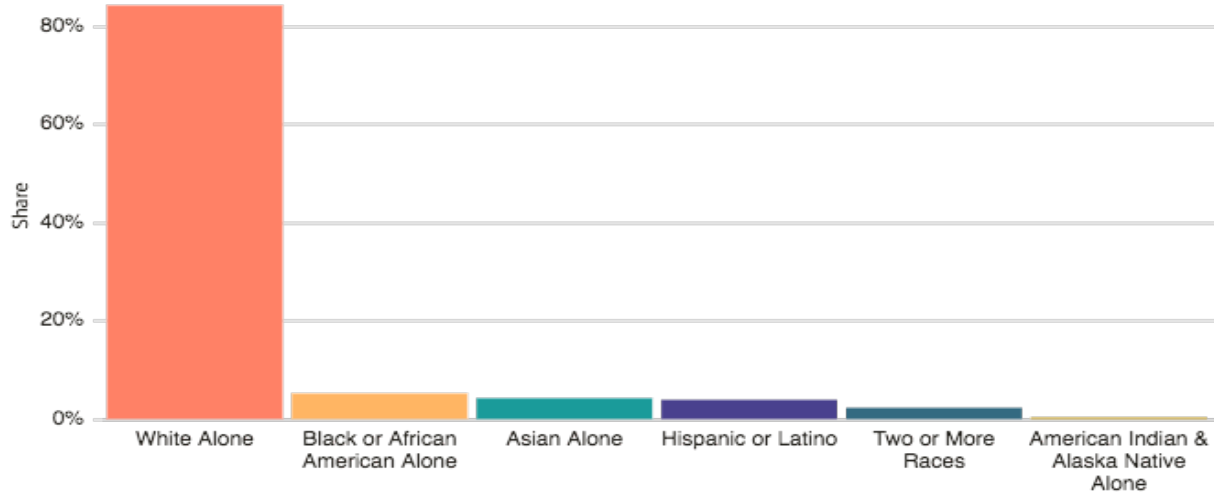
Literature Review

A review of the literature was conducted to gain better insight into the current mental and behavioral health landscape of Broome County, NY. A more comprehensive understanding serves to inform Cornerstone Family Healthcare on how to most effectively future expand services, and address gaps in care. Areas investigated include: a general overview of Broome County, NY (including mental and behavioral health data), barriers to care, existing mental and behavioral health services options, modes of mental health service delivery by other FQHCs.

Broome County Demographic Characteristics

Broome county is located in the Southern Tier of New York State, covering 284.23 square miles of area. The population of Broome County is 193,639, a number that is in continuous decline at an approximate annual rate of 0.9%. Based on population density, the New York Department of Health (NY DOH) classifies 11 towns of Broome County as rural areas, which comprise 24% of the county's population (U.S. Census, 2017). In regard to race and ethnicity, Broome County is predominantly White. According to the US Census (2017), Asians and Hispanics are the fastest growing ethnic groups, at the growing rate of approximately 2.7%. Data USA reports that 97% of Broome County residents are United States citizens.

Figure 1. Population by Ethnicity



Data source: DataUSA via U.S. Census Bureau

Age Distribution

In Broome County, the largest group of residents fall into the age range of 55-64 years old, making up 14% of the population (RMS Healthcare, 2019). Overall, the population is distributed fairly equally into the different age groups.

Figure 2. Population by Age

Population Age - Broome County

Age	2000 Census		2010 Census		2017B Estimate		2022 Projection		2017B to 2022 Variance
0 to 4	11,310	6%	10,480	5%	9,990	5%	9,994	5%	0.0%
5 to 14	26,930	13%	22,468	11%	21,207	11%	20,602	11%	-2.9%
15 to 19	15,234	8%	15,726	8%	15,226	8%	14,388	7%	-5.5%
20 to 24	14,433	7%	17,950	9%	19,754	10%	18,516	10%	-6.3%
25 to 34	22,565	11%	22,984	11%	22,068	11%	23,416	12%	6.1%
35 to 44	31,385	16%	22,211	11%	19,559	10%	19,750	10%	1.0%
45 to 54	26,963	13%	30,736	15%	25,412	13%	22,212	11%	-12.6%
55 to 64	18,680	9%	25,201	13%	26,998	14%	26,626	14%	-1.4%
65 to 74	16,368	8%	15,668	8%	18,103	9%	20,785	11%	14.8%
75 to 84	12,175	6%	11,539	6%	10,940	6%	12,373	6%	13.1%
85+	4,485	2%	5,637	3%	5,841	3%	6,158	3%	5.4%

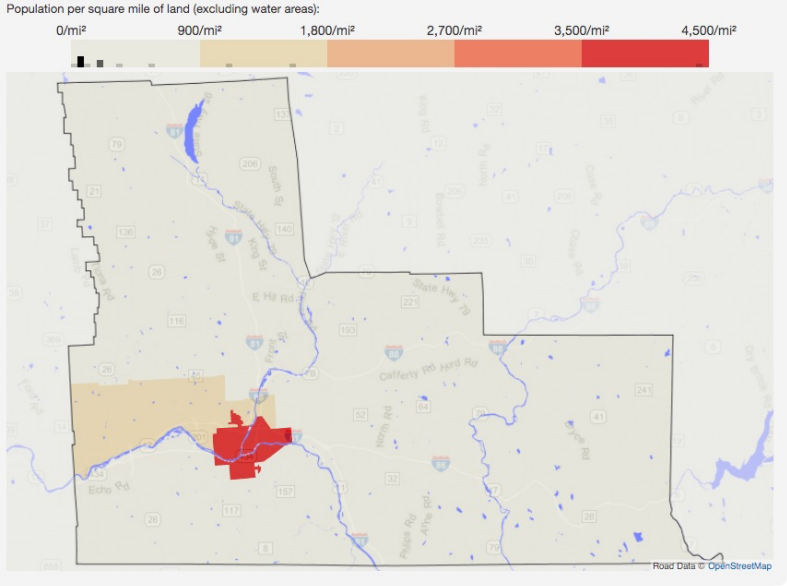
*Data collected from eSite Analytics

Source: 2019-2020 Ascension Lourdes CHNA Report

Geographic Distribution

According to Statistical Atlas (2018), the population of Broome County is most densely populated in the Binghamton area (shown in red in Figure 2). Approximately 24% of the population of Broome County currently live in the city of Binghamton (Statistical Atlas, 2018).

Figure 3. Broome County Population Density



Source: Statistical Atlas Map of Population Density.

Health Insurance Status

Though Broome County has seen an increase in insured individuals since the implementation of the Affordable Care Act (ACA), 5.5% of people less than 65 years of age remain uninsured, for an estimate of 10,600 people (Broome County Department of Health, 2017). According to the Broome County CHA, individuals are less likely to be insured if they are Black or African American, are unemployed or worked less than part time, have lower levels of education, or earn less than $25,000 per year (Broome County Department of Health, 2017). Multiple sources note that those

uninsured are more difficult to account for, and that rates might be higher than those documented by the U.S. Census Bureau (RMS Healthcare, 2019 & Broome County Department of Health, 2017).

Those who lack insurance are less likely to receive preventative care and are thus more likely to be hospitalized for preventable conditions, placing a financial burden on both the healthcare system as well as patients and families (Broome County Department of Health, 2017).

Transportation

The predominant method of transportation in Broome County is driving alone, a method used by 80.4% of the population, followed by carpooling (8.36%), and walking (3.91%) (U.S. Census, 2017). Since all mental and behavioral health service centers are located in urbanized areas and privately-owned vehicles are the primary means of transportation, those who live in rural areas experience greater difficulties accessing healthcare services. According to the U.S. Census (2017), 5.01% of households in Broome County have zero vehicles available, 22.5% of households have one vehicle available, 43% of the households have two vehicles available, 19.3% of households have three vehicles available, 7.38% of the households have four vehicles, and 2.82% of the households have five or more vehicles (U.S. Census, 2017).

Public Transportation in rural areas is limited in Broome County. According to the Broome County CHA, most public transportation in rural areas is considered to be “on-demand,” which is cost-prohibitive for low-income individuals in need of care. The CHA also comments that inclement weather conditions in the winter create an obstacle for service delivery and access to care (Broome County Department of Health, 2017).

Main Industries and Education

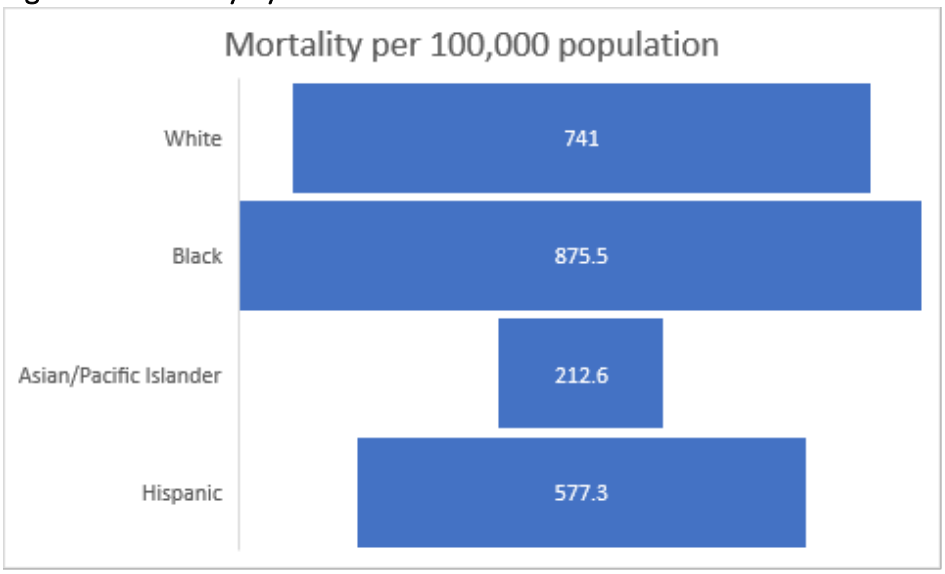
The leading industries in Broome county are healthcare and care assistance (17.2% of employment), followed by educational services (13.6%) and retail (12.8%). Due to the lack of high-profit industry, the median household income is $49,064 which is lower than the United States median household income of $60,336 (U.S Census, 2017). As of 2017, U.S. Census data reports that 90.4% of Broome County residents have earned a high-school diploma or higher (U.S. Census, 2017).

Income and Health Disparities

Income levels appear to positively correlate with health conditions. The median household income for Whites is $50,207 annually which is more than double that of both Black and Hispanic households at $22,680 and $24,463, respectively. The median household income for Asian and Pacific Islanders is $39,837 annually, which is also significantly lower than that of White households. Regarding the percentage of families below the federal poverty line (FPL), Blacks and Hispanics have the highest poverty rate (32.7% and 32.6% respectively), while Whites and Asian/Pacific Islanders demonstrate lower rates, at 9.4% and 13.8% respectively (New York State Department of Health, 2018). The 2019-2020 Lourdes Ascension Community Health Needs Assessment (CHNA) notes that 11.2% of families in Broome County are currently living below the federal poverty line, which is a slight decrease from the prior CHNA. The rate of children living below the FLP is currently 20% (RMS Healthcare, 2019).

New York State Department of Health (2017) notes disparities in mortality rates among different racial and ethnic groups in Broome County, demonstrated in Figure 3.

Figure 4. Mortality by race



Data source: NYS Department of Health

Another health disparity indicator is the premature death rate, defined as the percentage of all deaths of persons among persons aged less than 75 (NYS Department of Health, 2019). The premature death rate for Whites (36.8%) is documented at half that of Blacks and Hispanics (69.1% and 66.2% respectively). The percentage of premature deaths in Broome County has been steadily increasing since from a rate of 37.5% in 2007 to a rate of 39.7% deaths in 2016 ("New York State Community Health Indicator Reports (CHIRS)," n.d.).

Overview of Mental and Behavioral Health Landscape in Broome County

Under the purview of the New York State Department of Health, NYS has created a health improvement plan known as the Prevention Agenda 2019-2024. The vision of the Prevention Agenda is for NYS to be the "healthiest state in the nation for people of all ages," by promoting health equity and reducing health disparities (NYS Department of Health, 2019). The Prevention Agenda has determined five priority areas with specific action plans, developed collaboratively with input from more than 100 organizations from across the state. Included in the Prevention

Agenda is the priority: Promote Well-Being and Prevent Mental Health and Substance Use Disorders (NYS Prevention Agenda, 2019). Though substance abuse disorders and the opioid epidemic have been impactful components of Broome County's overall health, this report will focus on mental and behavioral health (Goals 2.4 – 2.6, Figure 4).

Figure 5. Prevention Agenda Priority Area

Priority Area: Promote Well-Being and Prevent Mental and Substance Use Disorders	**Focus Area 1: Promote Well Being**
	Goal 1.1: Strengthen opportunities to build well-being and resilience across the lifespan
	Goal 1.2: Facilitate supportive environments that promote respect and dignity for people of all ages
	Focus Area 2: Prevent Mental and Substance Use Disorders
	Goal 2.1: Prevent underage drinking and excessive alcohol consumption by adults
	Goal 2.2: Prevent opioid and other substance misuse and deaths
	Goal 2.3: Prevent and address adverse childhood experiences (ACEs)
	Goal 2.4: Reduce the prevalence of major depressive disorders
	Goal 2.5: Prevent suicides
	Goal 2.6: Reduce the mortality gap between those living with serious mental illness and the general population

Data source: NYS Department of Health

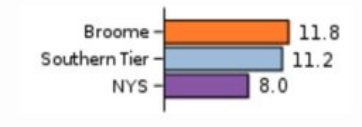
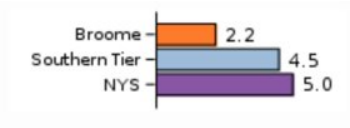
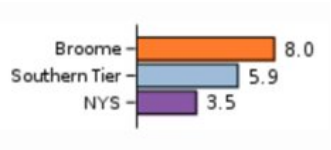
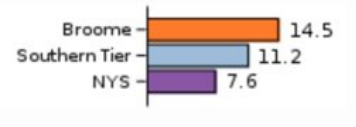
The 2016-2018 Broome County Community Health Assessment (CHA) also addressed the importance of prioritizing mental and behavioral healthcare needs of the community. Since the last priority setting phase, the most recent CHA noted significant changes within NYS healthcare system, primarily driven by NYS Medicaid redesign and reform. This endeavor, known as the Delivery System Reform Incentive Program (DSRIP), intends to reconfigure the current financing and delivery of healthcare in NYS by reinvesting in Medicaid and federal savings. The primary goal of the reform is to reduce preventable hospital use by 25% over five years (Prevention Agenda 2019-2024). Though this reform has not redefined the aforementioned priority areas, the Broome County CHA notes that it has influenced the development of new intervention strategies intended to influence mental health as a priority, while simultaneously aligning with the transformation of the NYS healthcare system (Broome County Department of Health, 2017).

The NYS Office of Mental Health (OMH) Southern Tier DSRIP Region Needs Assessment reported that the Southern Tier region has the highest rate of potentially avoidable emergency room visits in all DSRIP regions, for both mental health and chronic conditions. The authors comment that the high rates of hospital utilization suggest a need for more outpatient services (NYS Office of Mental Health, 2016).

Based on the 2013-2014 the NYS Expanded Behavioral Risk Factor System (BRFSS), 11.6% of Broome County adults reported 14 or more days with poor mental health per month—higher for both NYS at 11.1%, and the Southern Tier Region at 10.6% (Broome County Department of Health, 2017).

Several other health status measures indicate that Broome County has worse outcomes than NYS and other counties in the Southern Tier. 2018 Vital Statistics data via the NYS Community Health Indicator Reports (CHIRS) report the suicide mortality rate per 100,000 people as 11.9 in Broome County, 11.7 in the Southern Tier, and 8.4 in NYS. The suicide mortality rate per 100,000 people aged 15-19 years old was lower in Broome County at 2.2 per 100,000 people, when compared to 4.5 for the Southern Tier, and 4.0 for NYS overall. The self-inflicted injury hospitalization rate per 10,000 people was 7.3 in Broome County, 5.6 in the Southern Tier, and 3.5 in NYS. Alarmingly, the rate of self-inflicted injury hospitalization rate for ages 15-19 was nearly double that of adults; in Broome County the rate was 14.5 per 10,000, which was higher than both the Southern Tier and NYS with rates of 11.2 and 7.6, respectively (NYS Community Health Indicator Reports, 2019).

Figure 6. Suicide Mortality and Self-inflicted Injury Hospitalization Rates

Suicide mortality rate/100,000 people	
Suicide mortality rate/100,000 people aged 15-10 years old	
Self-inflicted injury hospitalization rate per 10,000 people	
Self-inflicted injury hospitalization rate per 10,000 people aged 15-19 years old	

Source:2014-2016 NYS Community Health Indicator Reports

Mental and Behavioral Health Diagnoses

The 2016 Southern Tier DSRIP Needs Assessment notes depressive disorders (24%), schizophrenia spectrum and other psychotic disorders (18%), and bipolar and related disorders (16%) are the most prevalent behavioral health diagnoses for those served in the public mental health system. The report also states that among all DSRIP regions, the Southern Tier has the second highest percentages of patients treated for anxiety disorders (10%) and trauma, stress or adjustment disorders (15%).

Figure 7. Southern Tier Region: Behavioral Health Diagnoses Among Those Served in the NYS Public Mental Health System

Age Group	Percentage of Patients Served by Diagnostic Category								
	Anxiety Disorder	Bipolar and related Disorders	Depressive Disorders	Disruptive Impulse Conduct Disorder	Neurodevelop-mental Disorders	Schizophrenia Spectrum & other Psychotic Disorders	Trauma Stress or Adjustment	Not a Mental Illness	With a Co-Occuring Disorder
Under 21	11	9	21	9	22	2	24	3	2
21-64	10	19	25	1	1	24	12	2	25
65+	8	14	30	0	0	34	3	1	11
Total Average	**10**	**16**	**24**	**3**	**7**	**18**	**15**	**2**	**18**

Data is from the NYS Office of Mental Health 2015 Patient Characteristics Survey. Data retrieved April 28, 2016.

Due to NYS Prevention Agenda's goal of reducing preventable hospital admissions, it is worth noting the leading mental health diagnoses for inpatient hospital admissions. By county, inpatient hospital admissions ranged from a high of 6,832 in Broome County to a low of 542 in Delaware (n=6302 from 2012 data) by mental health diagnoses. Depressive disorders were responsible for the largest number of inpatient admissions among Southern Tier counties and were highest in Broome (n=3036). Across counties, admissions were also highest in Broome County for all other diagnoses.

Figure 8. Southern Tier Region: Number of Medicaid Inpatient Hospital Admissions by Mental Health Diagnoses

County	Bi-Polar Disorder	Depressive Disorders	Schizophrenia	Chronic Stress and Anxiety Diagnoses	Post Traumatic Stress Disorder	Other Mental Health Diagnoses	Total Number of MH Admissions
	Number of Admissions						
Broome	778	3,036	888	885	189	1,056	6,832
Chenango	60	470	110	159	19	109	927
Delaware	0	296	78	127	0	41	542
Tioga	76	427	82	150	15	112	862
Tompkins	123	771	237	217	48	410	1,806
Totals	**1,037**	**5,000**	**1,395**	**1,538**	**271**	**1,728**	**10,969**

Data is from the NYS Department of Health Medicaid Chronic Conditions and Inpatient Admissions data base, 2012 data. Retrieved May 4, 2016 from https://health.data.ny.gov/ Health/Medicaid-Chronic-Conditions-Inpatient-Admissions-a/2yck-xisk#Export

Overview of Mental Healthcare Providers in Broome County

According to 2018 data from County Health Rankings and Roadmaps, there are 373 mental health providers in Broome County. The mental health provider population ratio is 193:100,000 people, and or one provider for every 520 people. By contrast, the overall ratio in NYS is 1:370, or one provider for every 370 people (Mental Health Providers, 2019). The providers considered in this ratio were identified through the Center for Medicare and Medicaid Services (CMS) National Provider Identification (NPI) numbers. As of 2015, the ratios also include marriage and family therapists (Mental Health Providers, 2019).

Though the data is slightly older, Figure 9 illustrates a distribution of licensed mental health professionals by county in the Southern Tier. The NYS OMH notes that because of the maldistribution of licensed mental health professionals, the entire region of the Southern Tier is

federally designated as a health professional shortage area Broome County is considered to be a whole county mental health professional shortage area (NYS Office of Mental Health, 2016).

Figure 9. Southern Tier Region: Licensed Mental Health Professionals

County	US Census ACS 2010-2014 Est. Population	Psychiatrists	Psychologists	LCSWs	LMSWs	Mental Health Counseling	Nurse Practitioner - Psychiatry	*Other	Total	Per 10,000
Broome	200,183	33	76	257	261	20	18	18	683	34
Chenango	50,651	0	4	43	33	3	1	3	87	17
Delaware	47,930	0	7	35	23	5	3	5	78	16
Tioga	51,151	4	6	59	47	8	4	6	134	26
Tompkins	101,305	21	62	189	151	22	8	24	477	47
Totals	**451,221**	**58**	**155**	**583**	**515**	**58**	**34**	**56**	**1,459**	**32**

Data for psychiatrists is from the American Board of Psychiatry and Neurology, Inc. and was retrieved from https://application.abpn.com/verifycert/verifycert.asp on July 15, 2014. Data for all other professions is as of June 2, 2014 and was provided by the Office of the Professions at the New York State Education Department. *Other category includes marriage and family therapists, psychoanalysts, and creative arts therapists.

In a survey distributed to 850 Broome County community residents, the Lourdes CNHA ranked mental health services as the greatest healthcare need in Broome County, and the healthcare service that most comes to mind as “not easily available” within the county (see Figure 10). In a series of focus groups for the same needs’ assessment, participants also ranked mental health as the number one need to address in Broome County (RMS Healthcare, 2019).

Figure 10.

Q12e: Which healthcare services come to mind that are not easily available in the Broome County area? n850; Open Ended; Coded		
Top 10	n	%
Mental health services	157	20%
Specialty care	97	14%
N/A	44	3%
Unknown	44	3%
Cancer care	40	3%
Dental care	36	3%
Quality services	33	3%
Addiction and drug abuse services	29	3%
Pediatric services	27	2%
Dermatology	26	2%

Data Source: 2019 -2020 Lourdes-Ascension Community Health Needs Assessment

Mental and behavioral healthcare services are available to Broome County residents by the following organizations: Lourdes Center for Mental Health & Lourdes Youth Services (Lourdes), United Health Services Hospitals (UHS), Mental Health Association of the Southern Tier (MHAST), Catholic Charities of Broome County, Children's Home of Wyoming Conference, Greater Binghamton Health Center, The Family and Children's Society (FCS), Binghamton VA Clinic, Fairview Recovery Services (FRS), Dr. Garabed A. Fattal Community Free Clinic (Free Clinic), The Addiction Center of Broome County, and The Binghamton University Psychological Clinic.

The aforementioned organizations work with the Broome County Mental Health Department (BCMHD) to facilitate mental hygiene service delivery. According to the 2019 Broome County Budget, the Broome County Mental Health Department (BCMHD) oversees $26 million system of care (p. 234). The BCMHD coordinates services among organizations to include diagnosis and treatment of mental and behavioral health conditions, alcohol and substance abuse treatment,

counseling, peer support, homecare, and mentoring and group programs. The BCMHD also operates Broome County Single Point of Access (SPOA) program as part of an NYS OMH initiative to expand community based mental health systems ("Single Point of Access," n.d.). SPOA tracks system enrollment, referrals, and connects patients with mental illness to appropriate case management, treatment, and other mental health services.

Nearly all mental and behavioral health care providers are located in the city of Binghamton, making services less accessible for Broome County residents who reside in rural and suburban areas. Only Lourdes and FCS have services outside of Binghamton; Lourdes has family health centers in the towns of Vestal, Endicott, and Whitney Point where they provide counseling services, and FCS has a second site in Johnson City.

Our Lady of Lourdes Memorial Hospital System is one of the two major health systems serving Broome County. In regard to mental health, Lourdes operates the Lourdes Center for Mental Health & Lourdes Youth Services (located in Binghamton), which provides outpatient mental health treatment services to children and adults. Their services include psychosocial and psychiatric assessment and treatment, psychotherapy for individuals as well as to families and groups, and medication management. Their staff includes board-certified psychiatrists, nurse practitioners, and licensed clinical social workers. Lourdes offers financial assistance intended to help low-income patients fully or partially cover the costs of outpatient mental healthcare. Because of their hospital affiliation, Lourdes also offers inpatient mental healthcare and psychiatric services. The Lourdes system also administers programs such as Juvenile Justice, Student Assistance, and Alcohol & Drug Education Prevention Team, which has served more than

7000 students with counseling, prevention, substance use disorder, and with other services (BCMHD Annual Report, 2018).

The other primary healthcare system in Broome County is UHS, a non-profit healthcare system that operates two acute care hospitals, one residential facility, and outpatient primary care locations. UHS offers both inpatient and outpatient mental and behavioral health programs for adults, which can encompass treatment for substance abuse disorders and various mental health concerns. They also offer individual and group therapy sessions, medication management, and crisis services. UHS's HOME Program aimed to serve seniors, who are unable or unwilling to access mental health services. The program provides counseling, in-home mental health assessment, and referrals to other services, and have served 72 seniors and made 270 home visits in 2018 (BCMHD Annual Report, 2018).

Greater Binghamton Health Center's services include a range of outpatient and inpatient services for adults and children above 5 years old. Their inpatient care includes treatments based on a holistic care model such as an admission, intensive, intermediate treatment services, geropsychiatric services, and three inpatient treatment malls. They also have transitional living and residence programs.

Though some providers in Broome County appear to offer services at discounted rate, the Dr. Garabed A. Fattal Community Free Clinic has incorporated into their mission a goal to provide preventative, acute, and primary care services to the uninsured adults of NYS Southern Tier, free of charge. Sponsored by the College of Medicine of SUNY Upstate Medical University, the Free clinic is staffed by UHS medical residents and retried provider volunteers. The Community Free Clinic, however, has limited hours and is currently open from Thursdays from 4:30 p.m. - 7:30 p.m.

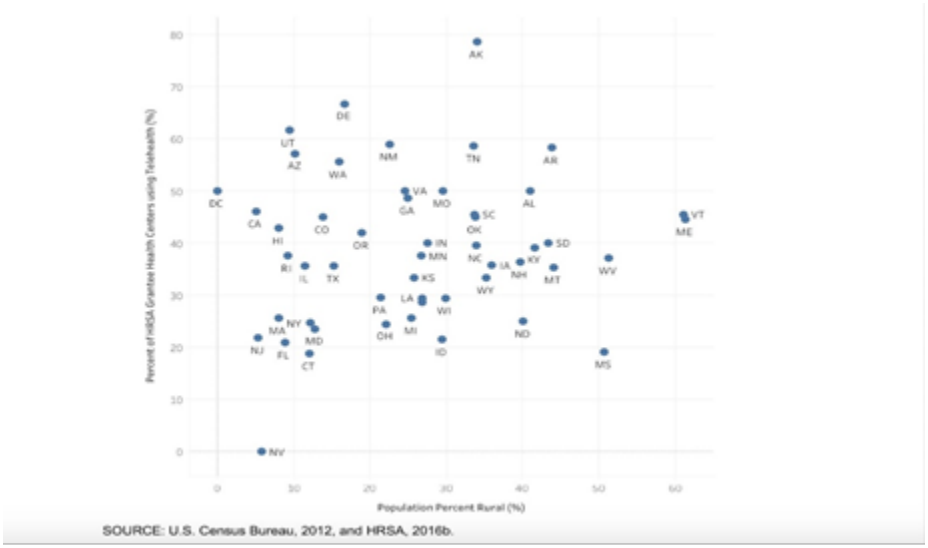
("Clinic location & hours," n.d.). The 2016-2016 Broome County CHA notes that although the Free Clinic sees patients for primary and preventative care, approximately one third of their patients experience depression (or another mental health issue) and are on a psychotropic medication (Broome County Department of Health, 2017).

How other FQHCs are Implementing Mental and Behavioral Health

Federally Qualified Health Centers (FQHC) in the United States are providing care to approximately 28 million people annually. The community health centers are funded by section 330 of the Public Health Service Act. According to the National Association of Community Health Centers, 49% of people served by FQHCs are covered by a Medicaid insurance plan. Of FQHCs in the United States, 40% are located in rural communities. One of the main challenges FQHCs currently face is a workforce shortage (National Association of Community Health Centers, 2018b). By adopting new delivery models and innovative methods, FQHCs can manage the issue of shortage of workforce (Mehrotra et al., 2016).

It was reported by Health Resources and Services Administration (HRSA) that telehealth is one of the innovative healthcare delivery systems used in rural areas by 40% of community health centers. The use of telehealth by FQHCs varies from state to state, though its utilization has demonstrated an upward trend among FQHC healthcare delivery systems. As the use of telehealth by community centers and FQHCs is increasing, it must be ensured to increase access to the underserved population and overuse must be prevented and cost must be controlled. The use of telehealth used by FQHCs by state is shown below (RAND Corporation, 2019).

Figure 11. State Variation in Telehealth Uptake by Health Centers in 2016



SOURCE: U.S. Census Bureau, 2012, and HRSA, 2016b.

Data and Methodology

Primary and secondary sources of data were used to inform the need for expanded mental and behavioral health services in Broome County. Data collection and analysis were informed by the following themes and research questions:

1. Gaps in mental and behavioral health services in Broome County
    - Who are the existing providers, what services do they provide, and who has access to those services?
    - Which subsets of the population exhibit the greatest need for behavioral and mental health services?
    - What are the primary barriers and limitations to a) providing and b) accessing care?
2. How might additional services be implemented by Cornerstone to address gaps in care?
3. What additional models of service should Cornerstone consider?

To best inform these questions, data was collected using the following methodologies: (a) a literature review investigating the current mental and behavioral health landscape in Broome County; (b) secondary data sources including federal, state, county, and departmental publications; (c) interviews with prominent mental and behavioral organizations to uncover common themes in service delivery and; (d) a survey distributed to providers in Broome County aiming to better understand their perceptions on access and barriers to care.

Data collection methods:

(a) Literature Review

A literature review was conducted with a focus on the mental and behavioral healthcare landscape of Broome County, as well as models of care implemented by other FQHCs (outside of Broome County). The literature review examined: the general state of mental and behavioral health in Broome County, population demographics and socioeconomic status, barriers to accessing care, and alternatives to care delivery (e.g., mobile medicine/tele mental health). The literature review will serve to inform Cornerstone Family Healthcare on how to most effectively expand services and how-to best address gaps in care.

(b) Secondary Data Sources

State and Federal: US Census Bureau American Community Survey, NYS Vital Statistics, NYS Prevention Agenda Dashboard, NYS Expanded Behavioral Risk Factor Surveillance System (eBRFSS), and NYS Community Health Indicators Reports (CHIRS).

Local Agency Reports: Broome County Community Health Assessment Report Update 2016-2018, Broome County Mental Health Department Annual Report 2018, 2020 Mental Hygiene Executive Summary, DSRIP (Care Compass Network) Community Health Needs Assessment, Chapter 9, and 2019-2020 Lourdes-Ascension Community Health Needs Assessment Report.

(c) Stakeholder Interviews

Stakeholder interviews with mental and behavioral health program directors, managers and administrators in Broome County were conducted through semi-structured interviews. The interviews aimed to gather more comprehensive information about available mental healthcare

services in the county, differences between organizations, providers' perspectives on gaps in care, and professional opinions regarding service expansion in Broome County. The interviews also served to inform organizational perspectives on the county's current mental health state, common mental health issues/diagnoses, existing barriers to care, and to identify underserved populations.

(d) Survey of providers

A survey (in the format of a GoogleForm) was distributed via the Care Compass Network to providers (e.g., family medicine and primary care physicians, psychiatrists, mid-level providers, nurses, counselors, etc.) seeking to better understand existing barriers, challenges and limitations to providing care in Broome County. Quantifiable provider opinions helped to determine the best way to formulate recommendations for improved mental/behavioral healthcare service delivery to underserved areas within the county.

Survey questions were derived from key takeaways from interviews and recurring themes identified in the literature review. The survey asked the respondents to provide some basic information, such as practice or organization affiliation, and the respondent's title. The survey consisted of ten total questions -- four multiple choice questions, four linear scale questions (e.g., below or above average), and one open-ended question. The one open-ended question intended to provide qualitative information about which parts of Broome County respondents perceived to be most underserved.

Through the data collection and analysis process, it was aimed to identify knowledge gaps relevant to current mental and behavioral healthcare service delivery in Broome County. Given Cornerstone's intention to expand services in the near future, the results of this research is

intended to help identify where new service implementation is most needed, and what types of interventions are best suited for the residents of Broome County.

Stakeholder Interview Findings

Stakeholder interviews with mental and behavioral health program directors, managers, and administrators in Broome County were conducted through semi-structured interviews. The interviews aimed to gather more comprehensive information about available mental healthcare services in the county, differences between organizations, providers' perspectives on gaps in care, and professional opinions regarding service expansion in Broome County. The interviews also served to inform organizational perspectives on the county's current mental health state, common mental health issues/diagnoses, existing barriers to care, and to identify underserved populations.

Mental Health Association of the Southern Tier (MHAST)

Overview

MHAST provides advocacy services, prevention programs, information, and resource referrals. MHAST has 43 employees who operate multiple programs within Broome County.

Rural BEAR, brings equal access and care coordination to families residing in the rural communities of the county who have a child experiencing emotional and behavioral difficulties. It provides crisis intervention, counseling, transportation, home visits, support, advocacy, and education. Rural BEAR served 18 families for an average duration of 9 months during the 2018 year. Compeer, a peer support program, served 72 people in 2018, and Compeer Youth Mentoring, served 41 youth who received a number of social, emotional, and behavioral benefits. Family Peer Support services supported 102 families and 90 additional youth in 2018.

This program aimed to share a unique set of skills and experiences with families whose children have emotional, behavioral, and mental health needs.

MHAST also operates Crisis Respite home, a service that offers 24/7 respite to eligible participants. This program is dedicated to providing a comfortable place for those experiencing a mental health or emotional crisis to stay and receive support as they address their crisis. In 2018, the peer-run short-term Crisis Respite Center served 59 guests.

The Mobile Crisis Team serves individuals experiencing a behavioral health crisis. They responded to 351 crisis calls in 2018, and successfully de-escalated and stabilized individuals with no need for hospitalization in 68% of those cases. The Sunrise Wellness Center is a peer-run program promoting recovery for individuals 18 and over who have a mental health diagnosis (Mental Health Association of the Southern Tier, 2018).

Given MHAST's integral role in mental and behavioral healthcare in Broome County, an interview was conducted to better understand the needs of the community, to gain more insight about the organization's services, and to identify barriers and other issues pertaining to mental healthcare. The interview was conducted with Keith Leahey, Executive Director of MHAST.

Interview Questions

1. What are the primarily patient demographics of MHAST?
2. What does a person need to receive your services?
3. How patients become engaged with your services, and what is the patient retention rate?
4. Which services have a high volume of patients and long waitlists?

5. In your opinion, how much patients have a general sense of awareness that mental health care is available to them in the county?

Interview Summary

Mr. Leahey discussed programs that they provide and barriers in the mental health landscape of the county, including unavailability of services in rural areas. MHAST programs involve patients from five to seventy years old from all areas of Broome County, though most patients are from Binghamton. The organization provides services such as peer support and mentoring, including the residential program Our House, which is operated by peers. Mr. Leahey stated that some of the programs have a waitlist, especially around the holidays.

Since MHAST does not have clinicians, they typically refer patients with serious mental illness to organizations and hospitals such as the Catholic Charities SPOA, Greater Binghamton Health Center, and UHS. Patients with a chronic health condition, who are referred, are typically insured by a Medicaid insurance.

One of the main concerns Mr. Leahey discussed was a low retention rate of patients; it is difficult to engage patients in long-term treatment since providers often have difficulty reaching patients after they are referred or establish care. Due to this recurring issue, he discussed the role of a care coordinator who attempts to follow up with patients. Another barrier to accessing mental health services Mr. Leahey discussed is patients' ability to navigate available services; many people do not know about existing programs and providers.

Key Takeaways

- Patients experience difficulties navigating mental health services in the county.
- Low rates of patient retention and poor continuity of care.
- Emphasis on the role of care coordinator and medication management to follow up with patients.

Necessity of distribution of information through partnering with Care Compass Network.

Catholic Charities of Broome County

Overview

Catholic Charities provides a wide range of outpatient and residential mental health services for children and adults. The Assertive Community Treatment (ACT) Team provides outpatient services for adults with a serious mental illness who have had difficulty remaining or engaging with other levels of care. The program includes services of psychiatrists, counselors, crisis intervention, and integrated dual-diagnosis treatment, etc. In 2018, 79 people were engaged with the program.

The Flex Team treats children with serious emotional disturbances. Children & Youth Mentally Ill Chemically Addicted (MICA) Intensive Home Services enhances services to run away and homeless children and youth with mental health and substance use disorder needs through a full-time home-based crisis intervention worker. In the Four Seasons Club, adult patients with severe mental illness can receive psychiatric rehabilitation services. Children and Youth Crisis Sitters/Respite is a service that provides crisis relief management to children with serious emotional disturbances and their families.

An interview with Catholic Charities helped to gain more information about the organization's services, common mental health diagnosis, and gaps in care. The semi-structured interview was conducted with Fran Hall, Residential Director of Catholic Charities of Broome County.

Interview Questions

1. What are the patient demographics primarily served by Catholic Charities?
2. What are some of the most common mental health issues that Catholic Charities treats?
3. What kind of requirements (e.g., insurance) does a patient needs to receive your services?
4. What barriers to mental health care exist in within the county?
5. Are there areas of unmet need or people who are underserved?

Interview Summary

Catholic Charities provides services to approximately two thousand people a year, from children to seniors, including home care. Patients predominantly have Medicaid as their form of insurance. Ms. Hall stated that the most commonly treated mental health diagnosis among children is serious emotional disturbance, whereas among adults Catholic Charities most commonly treats a combination of depressive disorders, anxiety, bipolar disorder, schizoaffective disorder, and schizophrenia. Their providers include licensed social workers, psychiatrists, psychiatric nurse practitioners, nurse care managers, and peer support specialists.

Clients come typically via referrals (versus self-referral), and often without a documented mental health diagnosis, including referrals from the Cornerstone Clinic in Binghamton. In addition to mental health issues, many patients also have a concurring substance use disorder.

Ms. Hall noted a poor awareness of available services in the community, particularly for patients who are looking to engage in care without a referral. She also expressed that many people in the community do not know about the services provided by Cornerstone Family Healthcare, or its location.

Catholic Charities provides lower cost monthly bus passes for people that use public transportation, though she commented that Medicaid services have been decreasing the amount of cab vouchers they are willing to disburse, which patients favor overusing public transportation.

Key Takeaways

- The organization has a high volume of patients and long wait times to make an appointment or be admitted to the inpatient treatment programs.
- Clients typically come through referrals.
- Broome County experiences a shortage of psychiatrists and care coordinators.
- Additional outpatient mental health crisis center and peer-to-peer operated crisis hotline would reduce volume overload.
- There are limited care options for people with developmental disabilities since they require providers with specific training.
- There is a stigma associated with accessing mental health care in Broome County, though the integration of peer support specialists is changing perceptions about accessing care.
- People in Broome County in need of mental and behavioral health services lack awareness about existing service options.

Family and Children's Society

Overview

Family and Children's Society (FCS) has sites in Binghamton and Johnson City which provide an array of counseling and support services. Counseling services are available for families, children, and adults. Specialized mental health programs are provided for victims of sexual abuse and elderly persons. In conjunction with the Broome County Mental Health Department, FCS operates school-based mental health programs, outreach worker and non-Medicaid care coordination programs.

Interview questions

1. What are the patient demographics you are primarily serving?
2. What are some of the most common mental health issues you treat?
3. What kind of requirements (e.g., insurance, status) a patient needs to utilize organization's services?
4. Are there areas of unmet need/people who are underserved in the county?
5. What is the best way to access/provide services to underserved populations?

Interview Summary

An interview was conducted with Zachary Rankin, Clinical Director of FCS. The organization has 19 employees, including full time clinic staff and psychiatric providers. The most common diagnoses treated and managed at FCS are, chronic psychiatric disorders, schizophrenia, major depressive disorder with psychotic features, bipolar disorder, and post-traumatic stress disorders related

physical, sexual, and emotional traumas. Patients are generally self-referrals and have Medicaid primary or a managed Medicaid insurance plan, though FCS also receive referrals through primary care providers, schools, hospitals, and criminal justice institutions.

Patients are accepted regardless of their ability to pay, and FCS will work closely with patients and families to ensure access to treatment. Mr. Rankin reported a high volume of patients, though could not give exact numbers at the time of the interview. Generally, making an appointment with a psychiatrist may take a month or longer depending on the urgency of the diagnosis, though FCS also has walk-in hours.

Mr. Rankin noted several major barriers to care in Broome County. One of the most significant is a shortage of psychiatrists; he discussed that many people struggle to establish consistent psychiatric care and medication management at an outpatient level, especially those who have met their therapy goals, but need continued medication management that their PCPs cannot provide. Mr. Rankin also commented that many patients with persistent mental illness would benefit from a multidisciplinary care team, such as the aforementioned ACT at Catholic Charities. Other significant barriers include a low retention rate of patients with mental health issues, difficulties with transportation in rural areas, and lack of knowledge regarding existing resources.

Key Takeaways

- There is a high need for psychiatric services and medication management in Broome County.
- Providers experience difficulties establishing long-term care with patients.

- Many patients receiving care from FCS have insurance but may receive care without insurance.
- There is a high volume of patients who experience transportation issues.
- There is a shortage of psychiatric providers who are able to manage medication surveillance and treatment plans.

Fairview Recovery Services (FRS)

Overview

FRS provides programs to support individuals recovering from substance use disorders. Their programs include medication assisted treatment (MAT), counseling, recreation therapy, and mental health services. Fairview's programs include the Addiction Stabilization Center, Community Residences (Fairview Halfway House and Merrick House), and others.

An interview was conducted with Heather Orner, Director of Residential and Clinical Supervision. During the interview next questions were asked:

1. What kind of requirements a patient needs to utilize organization's services?
2. Are there areas of unmet need or people who are underserved in the county?
3. What is the best way to provide services to underserved populations?

Ms. Orner discussed how although the primary focus of FRS is the treatment of substance abuse disorders, their patients can simultaneously receive co-treatment for mental and behavioral health disorders. Because they do not have any mental health providers on staff, they refer patients for counselling depending on availability. If a patient needs psychiatric medication

management, they typically see their primary care provider. Most FRS patients have a Medicaid managed care plan, though some are self-pay.

Key Takeaways

- Difficulty establishing continuity regarding medication maintenance programs, for both MAT and psychiatric medications.

Lack of awareness among the community of available mental health services and substance abuse disorder services secondary to patient difficulty in understanding different levels of care.

Stakeholder Survey Findings

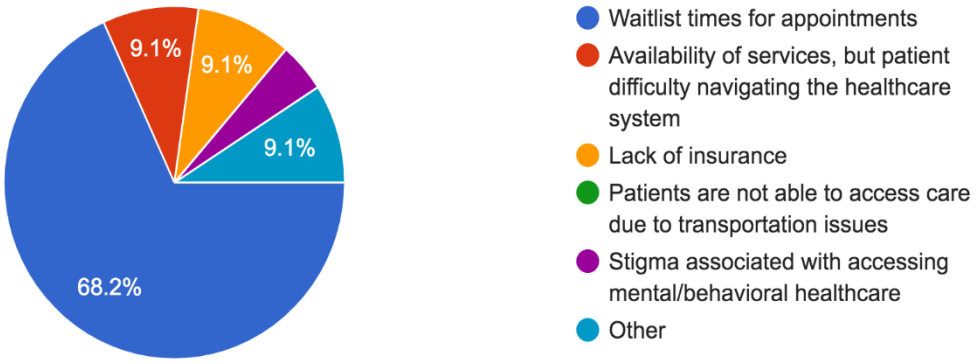
Based on information gathered from literature review and interviews, a survey was designed to evaluate Broome County provider perspectives on gaps in care within the county. The survey was expected to provide quantifiable data regarding mental/behavioral health related issues explored in other facets of the report and lend insights previously unconsidered.

Currently, twenty-two surveys have been completed by providers from twelve different organizations in Broome County, including: Binghamton University MSW, Broome County Mental Health Department, Catholic Charities of Broome County, Collaborative Care, Early Intervention, Family Enrichment Network, Hello Health, Hillside Children's Center, Johnson City School District, Lourdes Ascension, Palliative Medicine, and Rural Health Network of SCNY. Among the respondents, 50% were in administrative positions of their organizations, 50% were non-prescribing providers, and none were prescribing providers (e.g., physician, nurse practitioner or physician assistant).

Survey results demonstrated that all survey respondents perceived Broome County to be underserved. Geographically speaking, 54% of the respondents indicated that rural areas, such as Harpursville, Maine, and Whitney Point, are underserved. In addition, 23% of the respondents indicated that children and youth are underserved.

In terms of the greatest obstacles for providing mental and behavioral services, 68.2% of the respondents indicated that long waitlist times for appointments are prohibitive to people in need (As shown in Figure 11).

Figure 12. What do you perceive to be the greatest limitation to providing mental/behavioral healthcare to anyone who needs it in Broome County?

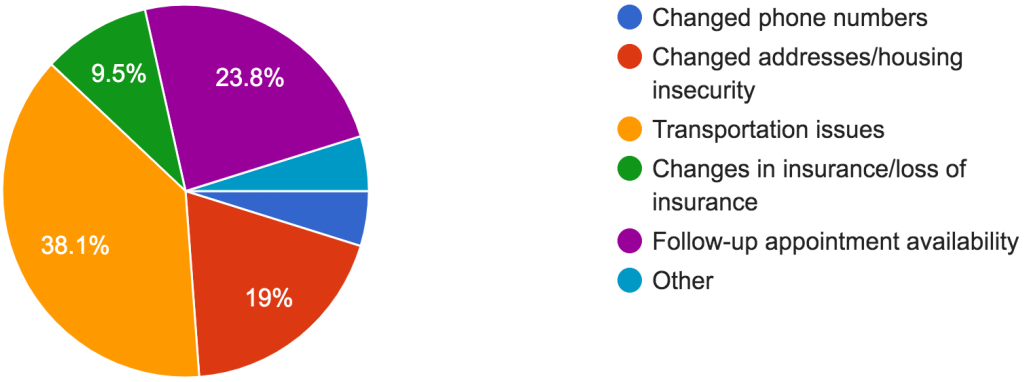


Specifically, when asked about the estimated percentage of needs met in the county, respondents indicated an average percentage of 38%. Thus, the data implies that approximately 60% of the needs for mental and behavioral health services could be potentially reached by the expansion of Cornerstone in Broome County.

Difficulty retaining patients was a recurring theme the consulting team identified from interviews, and the survey results supported this finding. The average reported retention rate is 47% with a median of 30%, indicating that at least half of the patients fail to engage in long-term treatment with their providers.

Furthermore, the question regarding limitations to retaining patients indicated that the most significant obstacle is transportation, with 38.1% of the respondents choosing this option (As shown in Figure 12).

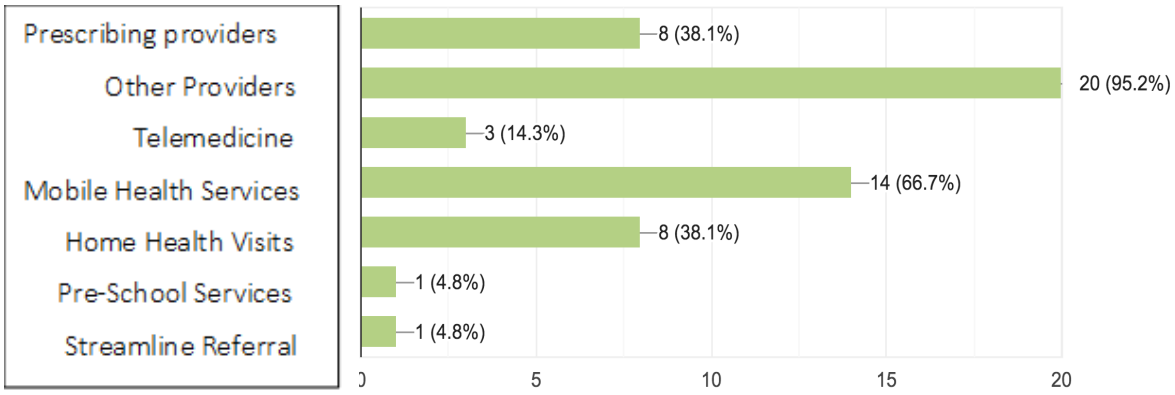
Figure 13. What do you think is the greatest limitation for retaining patients?



The survey also indicated a shortage of psychiatrists in Broome County. On a scale of 1 to 10, respondents reported an average of 9.1 and a median of 9 as the difficulty with referring a client to a psychiatrist. Respondents also reported that 43% of the referred clients do not have a documented diagnosis.

As for potential methods to improve the availability of mental and behavioral services in Broome County, 95.2% of the respondents said that an increase in the number of non-prescribing providers is necessary. However, it should be noted that the current results do not reflect the opinions of any prescribing providers, which may add bias to this response. Nevertheless, the data implies a significant lack of auxiliary providers. Additionally, 66.7% of the respondents said that mobile health services are helpful to covering more needs in the county (As shown in Figure 13).

Figure 14. In your opinion, what would be the best way to improve availability to mental/behavioral healthcare services to underserved areas within Broome County?



At the conclusion of the survey, respondents were asked an open-ended question about the parts of Broome County they perceived to be the most underserved. The results indicated that rural areas were the most common concern, with 39% of respondents mentioning this issue. The second most common concern was services for children and youth (age under 18 years old), with 22% of respondents indicating this issue. Other answers included minority groups such as trauma survivors and African Americans. In addition, there was also mention of the lack of long-term services and availability of follow-up appointments.

Recommendations

Recommendations were formulated based on gaps in care identified from three primary sources (literature review, interviews, and a survey). The literature review served to identify barriers to care as documented by New York State and Broome County data, as well as publications from local departments and healthcare organizations. The semi-structured interviews with local mental and behavioral health organizations assisted in identifying recurring themes within the community. Lastly, the online survey was able to provide data regarding mental and behavioral health providers' (e.g., psychiatrists, social workers, therapists, counsellors, etc.) perspectives on the limitations to providing care in Broome County.

Each recommendation is structured based on an identified and data-reinforced barrier to care and aims to assist Cornerstone in their decision-making processes as they expand mental and behavioral health services. Though some recommendations might not be feasible in the immediate future, they are meant as potential ideas that could be incorporated in the long-term.

Barrier to Care # 1: Long waitlist times and mental and behavioral health provider workforce shortage

Recommendation # 1: Increase the number of mental health providers, both prescribing providers and "other" providers

Broome County has a lower mental health provider to population ratio (1:520) than New York State (1:370) (Mental Health Providers, 2019). The providers described in this statistic are not

limited to those with prescriptive authority, but anyone (including marriage and family therapists) who provide mental healthcare in some capacity (Mental Health Providers, 2019). In 2009, Broome County was designated a Mental Health Professional Shortage Area (HPSA) by the Health Resources and Service Administration (HRSA) and has maintained that designation through the present day (HPSA Find, 2019).

Survey responses indicated that the "best way to improve availability to mental/behavioral healthcare services to underserved areas," would be to increase the number of "other" providers hired (e.g., counsellors, therapists, care coordinators, social workers, etc.) as opposed to exclusively hiring prescribing providers (e.g., physicians, nurse practitioners, physician assistants). Not only will addressing the workforce shortage increase access to care, but it has the potential to decrease reliance on emergency services for non-emergent care as targeted by the DSRIP goal of reducing hospitalizations from preventable conditions.

Barrier to Care # 2: Transportation and lack of access to services in rural communities

Recommendation # 2: Incorporate mobile medicine and tele mental health into care delivery

A review of practices employed by other FQHCs revealed telemedicine as a promising method for efficient means of service delivery. Because the main challenge faced by many FQHCs is a workforce shortage, telemedicine can improve the efficiency of provider utilization while also alleviating transportation barriers (Fortney et al., 2013). A comprehensive review of tele mental

health[1] by Hilty et al. (2013) concluded that tele mental health services are "unquestionably effective," for diagnosis and assessment across many populations, and in disorders in many settings. The authors also note high levels of patient satisfaction using tele mental health as opposed to in-person visits. Though Mehrota et al. (2017) indicate an improvement in care when integrating tele mental health into practice, its "use alone did not appear to greatly expand the number of rural beneficiaries who received mental health care." The authors comment that the predominant mechanism for engaging in tele mental healthcare may be via an established local mental health provider, who would facilitate complementary and supplementary care with telehealth. According to their respective websites, neither the UHS or Lourdes healthcare systems offer tele mental health services for mental and behavioral health.

The most frequently mentioned barrier in regard to implementation for tele mental health services across the literature were issues related to reimbursement. A study by Mehrota et al. (2017) examining the use of mental health telemedicine among rural Medicare beneficiaries with mental illness noted that states with a "pro-tele mental health regulatory environment had significantly higher rates of tele mental health use than those that did not." The state of New York currently has a composite grade "B"[2] in comparison with other states, indicating fewer reimbursement restrictions and insurance of coverage parity with most insurance plans (Capistrant & Thomas, 2016). This summer, amendments to NYS OMH regulations expanded the types of professionals who are eligible to provide tele mental health services to include:

[1] Provision of mental health assessment and treatment using telemedicine.

[2] On an A - F scale, with a composite score of A indicating the fewest restrictions on coverage and adequate reimbursement.

psychologists, licensed social workers, mental health counselors, marriage and family therapists, creative arts therapists and psychoanalysts. Another notable component of the expanded regulations is the elimination of the requirement that tele mental health practitioners be physically located at a site that participates in Medicaid. Amendments to the regulation lend more flexibility to recipients, who can now be located at their place of residence, or at a temporary location within or outside NYS ("New York expands telemedicine regulations," 2019).

Potentially limiting factors when considering implementation include lack of broadband internet across Broome County, certain patient demographics' discomfort with technology, privacy and confidentiality violations, cultural and language nuances, and housing instability.

Refer to Appendix B regarding efficacy of tele mental health.

Barrier to Care #3: Difficulty navigating the healthcare system/health literacy

Recommendation #3: Capture at-risk patients during primary care visits

In her article "Primary Care is an Untapped Resource for Depression Screening," Lanese (2018) notes that depression screening is part of only about 1.4% adult ambulatory care visits nationwide. The U.S. Preventive Service Task Force recommends that primary care providers screen for depression at visits using a validated tool called the Patient Health Questionnaire 9 (PHQ-9) ("Final recommendation statement: depression in adults" n.d.). The PHQ-9 can be administered in several ways, including through customizable smartphone apps, tablets, or on paper. Therefore, a patient

could take the assessment as they are waiting for an appointment, or it could be sent to them to take on their phone (via a patient portal) prior to their appointment. Those who screen positive could immediately be offered referral services in-house by a Cornerstone provider, or a follow-up visit via tele mental health. As primary care providers, Cornerstone is in a unique position to capture patients early in their illness trajectory.

Another factor affecting engagement in care is a person's health literacy capacity, or the skills needed to realize their potential in health situations ("What is health literacy?" 2019). The Agency for Healthcare Research and Quality (AHRQ) notes that "health literacy affects a patient's ability to access health care services, understand health-related information, and partner with clinicians in making health care decisions" ("Health Literacy Universal Precautions Toolkit, 2nd Edition," n.d.). Collaborating with patients to help them recognize their mental health needs is essential for increased access.

Barrier to Care # 4: Lack of consumer awareness regarding existing options

Recommendation #4: Increase advertising and outreach efforts

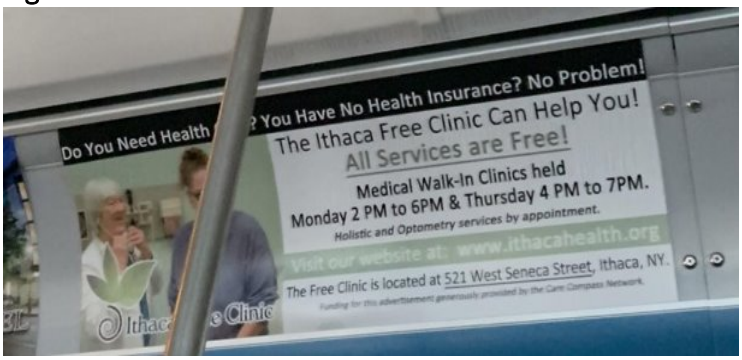
More than 85% of survey respondents said that it was "very difficult" to refer a patient to a psychiatrist, and 62.5% of respondents noted waitlist times for appointments to be the greatest limitation in accessing care. When conducting interviews, "Cornerstone Family Healthcare" was not known to two of four interviewee groups. This combined knowledge bears several recommendations that could (a) increase consumer awareness of Cornerstone's service

availability; and (b) increase other organization's awareness of Cornerstone's upcoming mental/behavioral health expansion plans.

Advertising

Cornerstone could consider advertising and outreach through several methods. The first method could be through posters on public transportation, providing awareness of the myriad of services offered by Cornerstone, and reminding patients that insurance coverage is not a requisite for care provision. The Ithaca Health Alliance/Ithaca Free Clinic regularly advertises on public transport in Ithaca, as seen in Figure 15.

Figure 15. Ithaca Free Clinic Advertisement on TCAT Bus.



Second, Cornerstone could create media (e.g., posters, pamphlets, video) for their waiting room and office delineating services they offer. This would also be a good opportunity to inform current patients of their intention to integrate tele mental health and mobile health into practice, as well as educate patients about the services that will be offered at their new site. Another consideration could be to advertise services via social media—in a focus group conducted for the 2019-2020 Lourdes Community Needs Assessment, respondents were asked about their thoughts regarding the "best way" to make Broome County residents aware of available healthcare services in the area, specifically services such a new physician joining a practice, expansion of office hours, or a

new type of specialty care being offered. The primary response was different forms of advertising: traditional (television and mail), social media (Facebook), and an email newsletter. The second most common response suggested was though an internet forum for consumers that provides ratings, reviews, and available provider services (RMS Healthcare, 2019). In a survey of 850 respondents, the internet was ranked as the second most common source for health-related information (n=164) (RMS Healthcare, 2019).

When asked about the most frustrating factors for accessing healthcare, respondents from the aforementioned focus group responded with transportation to care, cost, and availability of physicians accepting their health insurance (RMS Healthcare, 2019). Cornerstone could address any of these barriers with targeted marketing to better reach this community demographic.

Lastly, The Dr. Garabed A. Fattal Community Free Clinic is currently the only other clinic accepting patients without insurance and their hours are limited to Thursday evenings. It would likely benefit both patients and the Free Clinic if Cornerstone were to advertise at the Broome County Health Department, as well as establish a referral system for patients who cannot be accommodated at the Free Clinic. The Free Clinic services are currently available as first come, first served, and providers are limited in the number of patients they can see per session.

Outreach

Another outreach approach for Cornerstone to consider would be integration of a peer support services (PSS). Peer support is a well-documented, evidence-based approach for supplementing

mental and behavioral healthcare. The U.S. Department of Health and Human Services (HHS) defines peer support as a "mutual form of shared interactions in which participants seek to use their personal experience to both help others and gain additional reinforcements for their own life circumstances" (U.S. Department of Health and Human Services, 2015). Typically, peer support is delivered in an individual or group format, by peers who have received training and certification (U.S. Department of Health and Human Services, 2015). PPS can be incorporated into treatment plans in a variety of ways, including recovery plan development, patient education about a variety of topics, coping skill modelling, crisis support, connections to social supports and services, and facilitation of support groups. In NYS, most peer support services can be billed through Medicaid Managed Care (MMC) and services are reimbursable (NYC Department of Mental Health and Mental Hygiene, n.d.).

Multiple benefits have been documented systems that have used PPS. A 2015 report issued by HHS was able to demonstrate that the use of PPS lowers the overall cost of mental healthcare service delivery by reducing the rate of re-hospitalization and use of inpatient services (U.S. Department of Health and Human Services, 2015). Mental Health for America notes in a 2018 report that their research on integration of PPS has shown that "peer support improves quality of life, increases and improves engagement with services, and increases whole health and self-management" ("Evidence for peer support," 2018). There are many models and programmatic differences of peer support networks -- Cornerstone would have to evaluate which model would be most feasible to incorporate into practice.

Barrier # 5: Lack of other organization's knowledge of Cornerstone's service options

Recommendation #5: Creation of a referral network with other Broome County providers and organizations.

Cornerstone already has a relationship with providers who participate in the Care Compass Network but could consider reaching out to other organizations in Broome County and inform them of their mental and behavioral health expansion plans. An expanded referral network could not only facilitate better coordination of care for specialty areas (i.e., services for families and children), but improve the coordination of services across systems. Given the documented prevalence of long waitlist times as a barrier to care, it would alleviate some of the burden on other providers to know that Cornerstone is accepting new patients and plans to on-board a physician who can make mental and behavioral health diagnoses.

Greater than 30% of survey respondents indicated that patients were referred without a documented mental or behavioral health diagnosis, making it more difficult to implement effective treatment plans. Some organizations do not have a provider who is able to establish a diagnosis, causing greater lapses in time from symptom to treatment, and patients being lost to care. Improved communication with among providers and organizations could also increase referrals to Cornerstone for patients who would be good candidates for tele mental healthcare services.

Conclusion

This needs assessment was able to confirm suspected barriers to care within the Broome County mental and behavioral health treatment landscape. As this study concluded, determinants of health greatly impact the overall health of a community; identifying and formulating a plan to address these gaps in care is crucial to improving and sustaining the health of the Broome County community. A more comprehensive understanding of Broome County's greatest areas of need helps inform Cornerstone how to prioritize specific interventions, while simultaneously bearing in mind the goals of the NYS Prevention Agenda.

From the available data, the report was able to conclude that no other mental or behavioral health organization in Broome County is currently using tele mental health interventions. Given their expansion plans and desire to adopt innovative care models, Cornerstone is uniquely poised to create positive changes in the mental and behavioral health arena. Partnering with the community by increasing access to some of the county's most marginalized residents has great potential to improve the overall quality of life for Broome County residents.

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Appendix A: Survey Questions

1. In your opinion, what would be the best way to improve availability to mental/behavioral healthcare services to underserved areas within Broome County? (Select two)
    a. Increase the number of prescribing providers (physicians, NPs, PAs)
    b. Increase the number of other providers (counsellors, social workers, case managers, therapists, peer-to-peer support staff, etc)
    c. Increase use of telemedicine
    d. Increase use of mobile health services
    e. Increase availability of home health visits

2. Do you see access to care in Broome County as above average or below average in relation to other upstate areas? (Ranking, 1 – 10 scale)

3. Do you find that it's easier for patients to obtain appointments for counseling or medication management? (Ranking, 1 – 10 scale)

4. In your opinion, how difficult is it to refer a client to a psychiatrist? (Ranking, 1 – 10 scale, with one indicating very easy and 10 indicating very hard)

5. When patients are referred to you, how often do they have a documented mental health diagnosis that they have been receiving care for? (Ranking, 1 – 10 scale, with one indicating very often and 10 indicating not at all often)

6. What do you perceive to be the greatest limitation to providing mental/behavioral healthcare to anyone who needs it in Broome County? Please select from dropdown menu.
    a. Waitlist times for appointments
    b. Availability of services, but patient difficulty navigating the healthcare system
    c. Lack of insurance
    d. Patients are not able to access care due to transportation issues
    e. Stigma associated with accessing mental/behavioral healthcare
    f. Other

7. In your experience, what is the patient retention rate once care has been established?

8. What do you think is the greatest limitation for retaining patients? Please select from dropdown menu.
    a. Changed phone numbers
    b. Changed addresses/housing insecurity
    c. Transportation issues
    d. Changes in insurance/loss of insurance
    e. Follow-up appointment availability
    f. Other
9. As a provider, what is your best estimate of the percentage of mental and behavioral healthcare needs currently being met in Broome County? Select closest percentage range from dropdown menu.

What parts of Broome County do you think are most underserved? (Open ended)

Appendix B: Table of Evidence—Mental Health & Telemedicine

Article/Reference	Study Type and Patients	Study Objective)	Study Results	Influence of Evidence
Mehrotra, A., Huskamp, H. A., Souza, J., Uscher-Pines, L., Rose, S., Landon, B. E., Busch, A. B. (2017). Rapid growth in mental health telemedicine use among rural Medicare beneficiaries, wide variation across states. *Health Affairs*, *36*(5), 909–917.https://doi.org/10.1377/hlthaff.2016.1461	Study population consisted of rural beneficiaries with a diagnosis of any mental illness or serious mental illness. Used 2004–14 Medicare Part B claims for a 20 percent sample of fee-for-service Medicare beneficiaries. Estimated a multivariable logistic regression model to determine what beneficiary characteristics were associated with telemental health use in 2014, the most recent year for which data were available. The unit of analysis was the patient, and the outcome was whether the patient had a telemental health visit in 2014.	To understand trends in and recent use of telemedicine for mental health care, also known as telemental health.	The number of telemental health visits grew on average 45.1 percent annually, and by 2014 there were 5.3 and 11.8 telemental health visits per 100 rural beneficiaries with any mental illness or serious mental illness, respectively. Notable variation across states: In 2014 nine had more than 25 visits/100 beneficiaries with serious mental illness, while four states and D.C. had none. (NYS had between 10-20 visits/100 beneficiaries). Compared to other beneficiaries with mental illness, beneficiaries who received a telemental health visit were more likely to be younger than 65, be eligible for Medicare because of disability, and live in a relatively poor community. Found that a relatively small fraction (less than 15 percent) of rural telemental health recipients received mental health specialty care only via telemental health. States with a telemedicine parity law and a pro-telemental health regulatory environment had significantly higher rates of telemental health use than those that did not.	Influences on practice: This study suggests telemental health appears to be complementing and supplementing in-person care. While this may improve the care these patients receive, telemental health use does not appear to be greatly expanding the number of rural beneficiaries who receive any mental health specialty care. The predominant mechanism for obtaining telemental health care may be via an established local mental health provider. Many people might be unable to access telemental health care because they do not receive any in-person care. Further information needed: This study only used Medicare encounters (based on disability and end-stage renal disease), so no Medicaid telemental health visits were captured. Future research should explore how access could be expanded to those who do not receive any mental health specialty care.

Article/Reference	Study Type and Patients	Study Objective)	Study Results	Influence of Evidence
Schubert, N., Backman, P., Bhatla, R., & Corace, K. (2019). Telepsychiatry and patient–provider concordance. *Canadian Journal of Rural Medicine*, *24*(3), 75. https://doi.org/10.4103/CJRM.CJRM_9_18	Tele psychiatric consultations were given by providers based on an urban tertiary academic health Centre to patients located in rural primary care clinics in Ontario, Canada. Patient and provider questionnaires summarized using Bennett's coefficient.	Aims of this study were to assess and compare patient and provider satisfaction and perceptions of access to care with telepsychiatry	Patients (n = 110) and providers (n = 10) were both highly satisfied with telepsychiatry and both believed that telepsychiatry provided patients with better access to care. Paired patient and provider survey results demonstrated a high level of concordance between patients and provider responses	Influences on practice: Concordance between patient and provider satisfaction may contribute to adherence and positive treatment outcomes. These results provide support for the use of telepsychiatry consultations to improve patient access to psychiatric care in rural regions Further information needed: study limited to Canadian context, and only one center.
Fortney, J. C., Pyne, J. M., Mouden, S. B., Mittal, D., Hudson, T. J., Schroeder, G. W., Rost, K. M. (2013). Practice-based versus telemedicine-based collaborative care for depression in rural federally qualified health centers: A pragmatic randomized comparative effectiveness trial. *American Journal of Psychiatry*, *170*(4), 414–425. https://doi.org/10.1176/appi.ajp.2012.12050696	Multi-site randomized pragmatic comparative effectiveness trial. From 2007- 2009, patients at five FQHCs serving medically underserved populations (in Arkansas, Mississippi Delta region and the Ozark Highlands) were screened for depression, and 364 patients who screened positive were enrolled and followed for 18 months. Those assigned to practice-based collaborative care received evidence-based care from an on-site primary care provider and a nurse care manager. Those assigned to telemedicine-based collaborative care received evidence-based care from an on-site primary care provider and an off-site team: a nurse care manager, pharmacist by telephone, and a psychologist and a psychiatrist via videoconferencing.	Objective of this was to compare the outcomes of patients assigned to practice-based and telemedicine-based collaborative care. The primary clinical outcome measures were treatment response, remission, and change in depression severity.	Significant group main effects were observed for both response (odds ratio=7.74, 95% CI=3.94–15.20) and remission (odds ratio=12.69, 95% CI=4.81–33.46), and a significant overall group-by-time interaction effect was observed for depression severity on the Hopkins Symptom Checklist, with greater reductions in severity over time for patients in the telemedicine-based group. Improvements in outcomes appeared to be attributable to higher fidelity to the collaborative care evidence base in the telemedicine-based group. Group differences in outcomes are not likely to be attributable to either pharmacotherapy or psychotherapy, the authors hypothesized that patients assigned to telemedicine- based collaborative care were more likely to engage in self-management activities, such as physical, rewarding, and social activities (p. 423).	Influences on practice: Contracting with an off-site telemedicine-based collaborative care team can yield better outcomes than implementing practice-based collaborative care with locally available staff. Further information needed: Inherent limitation of this pragmatic trial is that the results are not conclusive with respect to identifying treatment mechanisms.

Article/Reference	Study Type and Patients	Study Objective)	Study Results	Influence of Evidence
Hilty, D. M., Ferrer, D. C., Parish, M. B., Johnston, B., Callahan, E. J., & Yellowlees, P. M. (2013). The effectiveness of telemental health: A 2013 review. *Telemedicine and E-Health*, *19*(6), 444–454. https://doi.org/10.1089/tmj.2013.0075	The effectiveness of any new technology is typically measured in order to determine whether it successfully achieves equal or superior objectives over what is currently offered. Research in telemental health—in this article mainly referring to telepsychiatry and psychological services—has advanced rapidly since 2003, and a new effectiveness review is needed.	The authors reviewed the published literature to synthesize information on what is and what is not effective related to telemental health.	Telemental health is effective for diagnosis and assessment across many populations (adult, child, geriatric, and ethnic) and for disorders in many settings (emergency, home health) and appears to be comparable to in-person care. In addition, this review has identified new models of care (i.e., collaborative care, asynchronous, mobile) with equally positive outcomes.	Influences on practice: Telemental health is effective and increases access to care. Further information needed: Future directions suggest the need for more research on service models, specific disorders, the issues relevant to culture and language, and cost.