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Suppl. Table 1: Behavioral Health Measure Descriptions (Online Supplement)

Measure	Denominator	Numerator	Exclusions	Telemedicine Inclusion
Follow-Up After Hospitalization for Mental Illness	Members 6 years of age and older who were hospitalized for treatment of mental illness.	• 30-day Follow-Up. Discharges for which the member received follow-up within 30 days of discharge. • 7-day Follow-Up. Discharges for which the member received follow-up within 7 days of discharge.	All nonacute inpatient stays	Added video conferencing in the numerators
Follow-Up Care for Children Prescribed ADHD Medication	Children 6–12 years of age who were newly prescribed ADHD medication.	• Initiation Phase. Members who had an outpatient, intensive outpatient or partial hospitalization follow-up visit with a practitioner with prescribing authority within 30 days after the index prescription start date (IPSD). • Continuation and Maintenance Phase. Members with a prescription dispensed for ADHD medication, who remained on the medication for at least 210 days and who, in addition to the visit in the Initiation Phase, had at least two follow-up visits with a practitioner within 270 days after the Initiation Phase ended.	Acute inpatient encounter with a principal mental health diagnosis Acute inpatient encounter with a principal diagnosis of chemical dependency	Added video conferencing in the numerators
Antidepressant Medication Management	Members 18 years of age and older who were treated with antidepressant medication and had a diagnosis of major depression.	• Initiation Phase. Members who had at least 84 days of continuous treatment with antidepressant medication beginning on the index prescription start date (IPSD) through 114 days after the IPSD. • Continuation Phase. Members who had at least 180 days of continuous treatment with antidepressant medication beginning on the IPSD through 231 days after the IPSD.	Members who did not have a diagnosis of major depression in an inpatient, outpatient, ED, intensive outpatient, or partial hospitalization setting during the 60 days prior to the IPSD and 60 days after the IPSD	Added video conferencing and telephone call to the denominator
Initiation and Engagement of Alcohol and Other Drug Dependence Treatment	Members 13 years of age and older with a new episode of AOD during the first 10 and ½ months of the measurement year.	• Initiation of AOD Treatment. The percentage of members who initiate treatment through an inpatient AOD admission, outpatient visit, intensive outpatient encounter or partial hospitalization within 14 days of the index episode start date. • Engagement of AOD Treatment. The percentage of members who initiated treatment and who had two or more additional services with a diagnosis of AOD within 30 days of the initiation visit.	Members who had an AOD diagnosis within 60 days before the index episode start date	Added video conferencing, telephone, and online assessment to the denominator and numerators
Use of First-Line	Children and adolescents 1–17	Members who had documentation of psychosocial	Members for whom first line	Added video conferencing to

Measure	Denominator	Numerator	Exclusions	Telemedicine Inclusion
Psychosocial Care for Children and Adolescents on Antipsychotics	years of age who had a new prescription for an antipsychotic medication.	care in the 121-day period from 90 days prior to the IPSD through 30 days after the IPSD.	antipsychotics medications may be clinically appropriate (diagnosis of schizophrenia, bipolar disorder or other psychotic disorders)	the denominator and exclusion
Mental Health Utilization	All members	Members who received the following mental health services during the measurement year: • Any service. • Inpatient. • Intensive outpatient or partial hospitalization. • Outpatient or ED.	None	Add video conferencing to the numerator
Identification of Alcohol and Other Drug Services	All members	Members who received the following chemical dependency services during the measurement year: • Any service. • Inpatient. • Intensive outpatient or partial hospitalization. • Outpatient or ED.	None	Added video conferencing, telephone, and online assessment to the numerator

Suppl. Table 2: Characteristics and Key Findings of Studies on Telemedicine Services for Behavioral Health Conditions (Online Supplement)

Study	Country	Population	Study Design	Patient Condition	Telemedicine Modalities	Key Findings
Diagnosis of Behavioral Health Conditions Via Telemedicine						
Hubley, et al., 2016	United States	Children & Adults	Systematic literature review	ADHD, depression, psychosis	Video conferencing	Telemedicine assessments made via video conferencing are comparable to face-to-face in terms of reliability.
Elford, et al., 2000	Canada	Children & Adolescents	Randomized controlled trial	ADHD, schizophrenia, bipolar disorder	Video conferencing	Diagnosis made during video conferencing visits were 96% as effective as diagnosis during face-to-face visits.
Diamond & Bloch, 2010	United States	Children & Adolescents	Systematic literature review	ADHD	Video conferencing	Diagnosis of ADHD via video conferencing was not different from in-person diagnosis.
Wells, et al., 1998	United States	Children & Adults	Randomized controlled trial	Depression	Telephone calls	There was no statistical difference between the depression diagnostic results for patients receiving visits via telephone calls or in person.
Menon et al., 2001	England	Children & Adults	Experimental study	Depression	Video conferencing	Results were similar for patients who were diagnosed with depression in person compared to patients diagnosed via video conferencing.
Ruskin, et al., 1998	United States	Children & Adults	Randomized controlled trial	Depression, bipolar disorder, substance dependence	Video conferencing	The reliability of depression, bipolar disorder, and drug dependence diagnosis was the same for in-person care and video conferencing telemedicine modality.
Hilty, et al., 2013	Americas, Asia & Eastern Europe	Children & Adolescents	Systematic literature review	Schizophrenia, bipolar, and other psychotic disorders	Video conferencing	Telemedicine was effective in diagnosing children and adolescents with schizophrenia, bipolar disorder, and other psychotic disorders.
Stain, et al., 2011	Sweden	Children & Adolescents	Experimental study	Schizophrenia and bipolar disorder	Video conferencing	This study showed no difference between diagnosing young adults (aged 14–30) with schizophrenia and bipolar disorders in person or through video conferencing visits.
Myers, et al., 2004	United States	Children & Adults	Program evaluation	Mood & anxiety disorders, psychotic disorders, ADHD and disruptive behavior disorder	Video conferencing	Video conferencing services were found to be as effective as in-person visits for diagnosing various psychiatric disorders in children.

Study	Country	Population	Study Design	Patient Condition	Telemedicine Modalities	Key Findings
Rhode, Lewinsohn & Seely, 1997	United States	Adults	Program evaluation	Substance use disorder	Telephone calls	Telephone call assessments were found feasible in effectively diagnosing substance use disorders, when compared with in-person visits.
Yellowlees, et al., 2010	United States	Adults	Program evaluation	Substance use disorder	Online assessment	Online web portals provided an effective platform for diagnosing substance use disorders.
Treatment of Behavioral Health Conditions via Telemedicine						
Palmer, et al., 2010	United States	Children & Adolescents	Systematic literature review	ADHD	Video conferencing	Telemedicine modalities are readily accessible models for delivering timely therapeutic care for patients with ADHD.
McGrath, et al., 2011	Australia	Children	Randomized controlled trial	ADHD	Telephone calls	Telephone-based therapeutic services decreased symptoms of ADHD compared to no care.
Myers, et al., 2015	United States	Children & Adolescents	Randomized controlled trial	ADHD	Video conferencing	Children treated by psychiatrists using video conferencing modality showed more positive improvements than children treated in person in primary care.
Garcia-Lizana, et al., 2010	US, Canada & Spain	Children & Adults	Systematic literature review	Depression	Video conferencing, telephone calls	Video conferencing and telephone calls are as effective as in-person care in treating patients with depression.
Leach & Christensen, 2006	United States	Children & Adults	Systematic literature review	Depression	Telephone calls	Antidepressant medication adherence was higher for patients monitored via telephone calls than for patients monitored with in-person visits.
Richards & Richardson, 2009	United States	Children & Adults	Systematic literature review	Depression	Web-based	Web-based psychological care was found to be more effective than in-person care in treating clinical depression.
Fortney, et al., 2015	United States	Children & Adults	Randomized controlled trial	Depression	Telephone calls	Telephone call follow-ups facilitated by nurses improved adherence to antidepressant medications compared with in-person follow-up care.
Hunkeler et al., 2000	United States	Children & Adults	Randomized controlled trial	Depression	Telephone calls	Telephone calls improved depression symptoms and patient satisfaction compared with an in-person visit.
Moreno, et al., 2012	Netherlands	Children & Adults	Randomized controlled trial	Depression	Video conferencing	Patients in a video conferencing treatment group showed reduced depressive symptoms and better quality of life than patients in an in-person treatment group.

Study	Country	Population	Study Design	Patient Condition	Telemedicine Modalities	Key Findings
Simon, et al., 2004	United States	Children & Adults	Randomized controlled trial	Depression	Telephone calls	The use of telephone visits for treatment monitoring had higher patient satisfaction ratings than for patients in in-person care.
Nelson, et al., 2003	United States	Children & Adolescents	Randomized controlled trial	Schizophrenia	Video conferencing	The study found that in comparison to in-person care, cognitive behavioral therapy delivered via video conferencing reduced symptoms for childhood psychotic disorders like schizophrenia.
Myers, et al., 2007	United States	Children & Adolescents	Program evaluation	Mood & anxiety disorders, ADHD, developmental disorders	Video conferencing	Video conferencing services were found to be as effective as in-person visits for treating various psychiatric disorders, in children and adolescents aged 2–21 years.
Gros, et al., 2013	United States	Children & Adults	Systematic literature review	Mood & anxiety disorders, tobacco use disorder, illicit drug abuse	Video conferencing	Video conferencing modality was as effective as in-person care in treating patients with mental health conditions.
Buckley, et al., 2012	Australia	Children & Adults	Pre-and post-study	Mood & anxiety disorders, bipolar, schizophrenia, personality disorders, developmental disorders	Video conferencing	The study found that video conferencing visits increased the ability to treat and manage mental health patients, reducing rates of admission to central hospital psychiatric units.
Godleski, et al., 2012	United States	Children & Adults	Pre-and post-study	Posttraumatic stress disorder, substance use disorder	Video conferencing	The study found that video conferencing visits increased adherence to treatments and reduced hospitalization.
Backhaus, et al., 2012	United States	Adults	Systematic literature review	Substance use disorder	Video conferencing	Video conferencing was as effective as in-person care in initiating and monitoring treatment for patients with substance use disorders.
Donoghue et al., 2014	United States	Adults	Systematic literature review	Substance use disorder	Asynchronous (web-based)	At 3 months, significant mean difference in grams of ethanol consumed per week for the group that received web-based treatment and the control group that had face-to-face visits.
Young, 2012	United States	Adults	Systematic literature review	Substance use disorder	Video conferencing, telephone calls, online assessment	Telephone calls, online monitoring, and video conferencing modalities are effective in treating persons with substance use disorders.
Blankers, et al., 2011	United States	Adults	Randomized controlled trial	Substance use disorder	Online assessment	Participants in an online therapy group showed reduced rates of alcohol consumption in comparison to in-person therapy or self-help

Study	Country	Population	Study Design	Patient Condition	Telemedicine Modalities	Key Findings
						groups.
Campbell, et al., 2014	Wales	Adults	Randomized controlled trial	Substance use disorder	Online assessment	Participants in an online treatment group had lower dropout rates and higher abstinence from substance use than participants in face-to-face care.
Reutsch, et al., 2012	United States	Adults	Randomized controlled trial	Substance use disorder	Telephone calls	Telephone support program improved compliance with medication-assisted treatment for substance use disorder in comparison with in-person care.