

1 Online supplement for DOI 10.1176/appi.ps.202100133

2  
3 Clinical Diagnosis Definitions

4  
5 Adjustment Disorders was determined by any of the following ICD-10CM codes:

6

F43.20	Adjustment disorder, unspecified
F43.21	Adjustment disorder with depressed mood
F43.22	Adjustment disorder with anxiety
F43.23	Adjustment disorder with mixed anxiety and depressed mood
F43.24	Adjustment disorder with disturbance of conduct
F43.25	Adjustment disorder with mixed disturbance of emotions and conduct
F43.29	Adjustment disorder with other symptoms

7  
8  
9 Anxiety was determined by either the following ICD-10CM codes or a prescription for anxiety  
10 medication (Anxiolytic Benzodiazepines)

11

F06.4	Anxiety disorder due to known physiological condition
F10.180	Alcohol abuse with alcohol-induced anxiety disorder
F10.280	Alcohol dependence with alcohol-induced anxiety disorder
F10.980	Alcohol use, unspecified with alcohol-induced anxiety disorder
F12.180	Cannabis abuse with cannabis-induced anxiety disorder
F12.280	Cannabis dependence with cannabis-induced anxiety disorder
F12.980	Cannabis use, unspecified with anxiety disorder
F13.180	Sedative, hypnotic or anxiolytic abuse with sedative, hypnotic or anxiolytic-induced anxiety disorder
F13.280	Sedative, hypnotic or anxiolytic dependence with sedative, hypnotic or anxiolytic-induced anxiety disorder
F13.980	Sedative, hypnotic or anxiolytic use, unspecified with sedative, hypnotic or anxiolytic-induced anxiety disorder
F14.180	Cocaine abuse with cocaine-induced anxiety disorder
F14.280	Cocaine dependence with cocaine-induced anxiety disorder
F14.980	Cocaine use, unspecified with cocaine-induced anxiety disorder
F15.180	Other stimulant abuse with stimulant-induced anxiety disorder
F15.280	Other stimulant dependence with stimulant-induced anxiety disorder
F15.980	Other stimulant use, unspecified with stimulant-induced anxiety disorder
F16.180	Hallucinogen abuse with hallucinogen-induced anxiety disorder
F16.280	Hallucinogen dependence with hallucinogen-induced anxiety disorder
F16.980	Hallucinogen use, unspecified with hallucinogen-induced anxiety disorder
F18.180	Inhalant abuse with inhalant-induced anxiety disorder
F18.280	Inhalant dependence with inhalant-induced anxiety disorder
F18.980	Inhalant use, unspecified with inhalant-induced anxiety disorder
F19.180	Other psychoactive substance abuse with psychoactive substance-induced anxiety disorder
F19.280	Other psychoactive substance dependence with psychoactive substance-induced anxiety disorder
F19.980	Other psychoactive substance use, unspecified with psychoactive substance-induced anxiety disorder
F34.1	Dysthymic disorder
F40.00	Agoraphobia, unspecified
F40.01	Agoraphobia with panic disorder
F40.02	Agoraphobia without panic disorder
F40.10	Social phobia, unspecified

F40.11	Social phobia, generalized
F40.210	Arachnophobia
F40.218	Other animal type phobia
F40.220	Fear of thunderstorms
F40.228	Other natural environment type phobia
F40.230	Fear of blood
F40.231	Fear of injections and transfusions
F40.232	Fear of other medical care
F40.233	Fear of injury
F40.240	Claustrophobia
F40.241	Acrophobia
F40.242	Fear of bridges
F40.243	Fear of flying
F40.248	Other situational type phobia
F40.290	Androphobia
F40.291	Gynephobia
F40.298	Other specified phobia
F40.8	Other phobic anxiety disorders
F40.9	Phobic anxiety disorder, unspecified
F41.0	Panic disorder [episodic paroxysmal anxiety]
F41.1	Generalized anxiety disorder
F41.3	Other mixed anxiety disorders
F41.8	Other specified anxiety disorders
F41.9	Anxiety disorder, unspecified
F43.22	Adjustment disorder with anxiety
F43.23	Adjustment disorder with mixed anxiety and depressed mood
F45.21	Hypochondriasis
F51.5	Nightmare disorder
F93.0	Separation anxiety disorder of childhood
F94.0	Selective mutism

12  
13  
14  
15  
16  
17  
18

Alcohol and Other Drug Abuse and Dependence (AOD) was defined by HEDIS Value Set:  
AOD Abuse and Dependence – OID 2.16.840.1.113883.3.464.1004.1013

Conduct Disorder was defined by any of the following ICD-10-CM codes:

F91.0	Conduct disorder confined to family context
F91.1	Conduct disorder, childhood-onset type
F91.2	Conduct disorder, adolescent-onset type
F91.8	Other conduct disorders
F91.9	Conduct disorder, unspecified

19  
20  
21  
22  
23  
24  
25

Depression was defined by the HEDIS value set, Major Depression Value Set – OID  
2.16.840.1.113883.3.464.1004.1166, or by a prescription for depression medication.

Oppositional Defiant Disorder was defined by ICD-10-CM code, F91.3 - Oppositional defiant disorder.

26 Post-Traumatic Stress Disorder was defined by ICD-10-CM codes F43.10 – post-traumatic stress  
27 disorder, unspecified; F43.11 – post-traumatic stress disorder, acute; F43.12 – post-traumatic  
28 stress disorder, chronic

29 Reactive to Stress was defined by any of the following ICD10 codes: F43.0 Acute stress  
30 reaction; F43.8 Other reactions to severe stress; F43.9 Reaction to severe stress, unspecified

31  
32

### 33 Defining Hospitalizations, Emergency Department usage and Behavioral vs non-Behavioral

34

35 Hospital and emergency department visits were defined using Revenue codes. The determination  
36 between behavioral and non-behavioral is maintained utilizing Relias internal clinical expertise.  
37 A periodic review process pulls new codes from First Databank (FDB), surfaces them for review,  
38 and then internal clinical expertise assigns the Behavioral or non-Behavioral value. Behavioral,  
39 physical or pharmacy claims were defined using the pharmacy claim type, diagnosis codes or  
40 procedure codes.

41

42

### 43 Describing the Behavioral Health Organizations included

44

45 The current study included data from 5 organizations in Southern and Midwest states. Four of  
46 the organizations serve both adults and children providing mental health services, IDD services,  
47 and substance abuse services. One of the organizations is a collection of state Medicaid agencies  
48 and the coalition for community behavioral health centers that oversees and supports services  
49 and outcomes for over 1 million Medicaid eligible members. They serve patients through  
50 pharmacy management programs, community behavioral health centers, and child and youth  
51 services. Services captured in the data primarily include mental health services, pharmacy  
52 services and filled prescriptions, and IDD services.

53 Table 2. Top 5 Most Common Mental Health Diagnoses by Age by Cohort

For Ages <18		
	Pre-Covid	Covid
1	Attention-deficit hyperactivity disorders	Attention-deficit hyperactivity disorders
2	Reaction to severe stress, and adjustment disorders	Reaction to severe stress, and adjustment disorders
3	Specific developmental disorders of speech and language	Encounter for general exam without complaint, susp or reported diagnosis
4	Encounter for general exam without complaint, susp or reported diagnosis	Specific developmental disorders of speech and language
5	Other anxiety disorders	Other anxiety disorders
For Ages 18-64		
	Pre-Covid	Covid
1	Other anxiety disorders	Other anxiety disorders
2	Major depressive disorder, recurrent	Major depressive disorder, recurrent
3	Bipolar Disorder	Bipolar Disorder
4	Major depressive disorder, single episode	Major depressive disorder, single episode
5	Reaction to severe stress, and adjustment disorders	Reaction to severe stress, and adjustment disorders
For Ages 65+		
	Pre-Covid	Covid
1	Unspecified dementia	Unspecified dementia
2	Other anxiety disorders	Other anxiety disorders
3	Major depressive disorder, recurrent	Major depressive disorder, recurrent
4	Major depressive disorder, single episode	Major depressive disorder, single episode
5	Schizophrenia	Schizophrenia

54

55

56 Table 3.

**New patients, new patients with anxiety and depression by age and time period**

Age Band	Total New Patients with Service			New Patients with Anxiety			New Patients with Depression		
	Pre period	Post period	p-value	Pre period	Post period	p-value	Pre period	Post period	p-value
<18	137758	210562	<.001	681	1274	.698	5361	11417	<.001
18-64	132046	216202	<.001	7501	14378	<.001	28807	57097	.121
65+	20560	30375	<.001	725	1051	.768	4056	6298	.077

57  
58

59 Table 4.

For Ages <18					
Cohort	% with Outpatient Visits	% with Behavioral Health Hospital Visits	% with Behavioral Health Emergency Department Visits	% with Non-Behavioral Health Hospital Visits	% with Non-Behavioral Health Emergency Department Visits
Pre-Covid N=833,969	96.25%	0.90%	0.94%	1.61%	32.83%
Covid N=751,349	96.61%	0.90%	0.93%	1.43%	22.72%
p-value <sup>a</sup>	<.001	<.001	<.001	.811	<.001
For Ages 18-64					
Pre-Covid N=622,417	94.49%	2.47%	3.48%	15.05%	46.42%
Covid N=590,706	95.71%	2.33%	3.13%	14.15%	40.88%
p-value <sup>a</sup>	<.001	.344	<.001	<.001	<.001
For Ages 65+					
Pre-Covid N=130,442	97.52%	0.98%	1.08%	22.02%	34.10%
Covid N=116,471	97.54%	0.68%	0.84%	19.89%	13.09%
p-value <sup>a</sup>	<.001	<.001	<.001	<.001	<.001

60 Note. P-values are based on bivariate logistic regression analyses with Cohort as the outcome. The generalized estimating equations  
61 framework to run the logistic regression to adjust for clustering of observations across observation periods.  
62

63 Table 5. Comparing diagnoses before and during the pandemic era by age

Age Band	Diagnosis Description	Pre-period		Post-period		p-value
		Patient Counts	%	Patient Counts	%	
<18	Oppositional defiant disorder	26900	3.01	23074	2.84	.065
	Conduct disorder	13165	1.47	10606	1.31	<.001
	Anxiety disorder, unspecified	8747	0.98	8388	1.03	<.001
	Depression	63769	7.14	69130	8.51	<.001
	PTSD	19032	2.18	19661	2.50	<.001
	Adjustment disorders	34979	4.01	30688	3.90	<.001
	Reactive to stress	10584	1.21	9961	1.26	<.001
	AOD	5277	0.60	5501	0.70	<.001
	ADHD	92345	10.59	86530	10.99	<.001
18-64	Anxiety disorder, unspecified	79704	11.70	69746	10.74	<.001
	Depression	244004	35.82	233622	35.98	<.001
	PTSD	42041	6.46	41742	6.70	<.001
	adjustment disorders	20842	3.20	18191	2.92	<.001
	reactive to stress disorder	6487	1.00	5855	0.94	.388
	AOD	67612	10.39	64354	10.34	<.001
65+	Anxiety disorder, unspecified	8470	5.99	6369	4.99	<.001
	Depression	38503	27.25	31982	25.08	<.001
	PTSD	1320	1	1127	0.94	.845
	adjustment disorders	2503	1.89	1953	1.62	<.001
	reactive to stress disorder	312	0.24	230	0.19	.129
	AOD	4057	3.06	3294	2.74	.001

64 Note. The similar or even decreased patient counts in anxiety and depression between pre- and post-periods despite the increase in  
65 new patients with these diagnoses reflects members dropping out between pre- and post-period.