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Policy Evaluation: ADHD Drugs (Part 2) – Policy Impact

Plain Language Summary:

- In January 2023, the Oregon Health Plan (OHP) adopted policy changes for medicines that are used to treat attention deficit hyperactivity disorder (ADHD). With these changes, OHP only pays for ADHD medicines when they are prescribed for conditions recommended by the Food and Drug Administration (FDA). These changes also made it easier for OHP to pay for ongoing treatment for people who were turning 18 years of age. This review looks at how this policy affected people on OHP.
- After this change, OHP paid for ongoing therapy for more members, but paid for fewer ADHD medicines in people who were less than 5 years of age. The most common medicines that OHP did not pay for were clonidine and guanfacine.
- When OHP did not initially pay for an ADHD medicine, some people switched to a different medicine or requested that OHP re-evaluate the decision to not pay for the medicine. For 68% of people, OHP eventually paid for the same or a similar ADHD medicine. After the policy change, OHP denied these requests more often (from 8% before the policy change to 15% of people after the policy change). For people who switched treatment or requested a re-evaluation, it took OHP about 2 weeks to pay for an ADHD medicine after a denial.
- A review of medical claims did not show that there was an increase or decrease in medical visits because of this policy change. However, this type of analysis is not designed to identify any specific harms.

Research Questions:

1. Did the change in PA policy decrease off-label use of ADHD drugs?
2. Did the change in PA policy interrupt or delay drug therapy for members with an evidence-based indication or with subsequent paid claims?
3. Did the change in PA policy impact healthcare resource utilization (HRU), psychotherapy, or prescription of other medications for members?
4. Were denied claims or denied PAs more frequent for particular populations, drugs, or provider types?

Conclusions:

- The proportion of members with an ADHD diagnosis was similar before and after the policy change (58% in the before group and 60% in the after group). Rates of other evidence-supported diagnoses were relatively infrequent (7%) with no differences between before or after groups.
- The proportion of people with denied claims was similar before and after the policy change (15% before vs. 13% after). However, there were differences in denied claims based on age and prior medication history. In the period after the policy change, there was a greater proportion of members who were less than 5 years of age with denied claims (17% vs. 9% before the policy change). Denials were less common after the policy change in members with ongoing treatment (21% vs. 31% before the policy change).
- The most common drugs with denied claims under the ADHD policy were extended-release guanfacine (69%) and clonidine (17%).
- In the 90 days after a denied claim:

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- There was a decrease in the proportion of members with a subsequent paid claim for an ADHD drug after the policy change (62% before the policy change vs. 54% after the policy change). Thirty-four percent of members had subsequent claims for stimulants and 21% of members had subsequent claims for extended-release guanfacine.
- Physical health (non-carveout) formulations of guanfacine and clonidine (which are primarily immediate-release [IR] formulations) were prescribed for 23% of members before the policy change and 25% of members after the policy change.
- For members with a subsequent paid claim, the median time between the first denial and a paid claim for an ADHD drug was 9 days before the policy change and 13 days after the policy change.
- About 45% of members who had a denied claim submitted a prior authorization request for coverage. The proportion of members with denied PAs increased after the change in policy (from 7.8% to 15.4%).
- Almost one-third of members with a denied claim did not have a subsequent paid claim for an ADHD drug or immediate-release guanfacine or clonidine. In the study period, about 30% of these members (or 10% of all members with a denial) had an ADHD diagnosis present in medical claims.

- No clear patterns based on inpatient hospitalizations or emergency department visits were identified to indicate harm because of paid or denied claims for ADHD drugs. Prevalence of other medications, pharmacy costs, and psychotherapy were similar before and after the change in policy.

Recommendations:

- Update clinical prior authorization (PA) criteria to permit off-label use of non-stimulant ADHD drugs upon consultation with a mental health provider.
- Age restrictions were removed for extended-release 12H clonidine and extended-release guanfacine to permit off-label use in adults and both agents were made preferred on preferred drug list (PDL).

Background:

There are many drugs which are used for treatment of ADHD. These broadly include stimulants (such as amphetamine and methylphenidate derivatives) and non-stimulants (including atomoxetine, extended-release 12H clonidine, extended-release guanfacine, and viloxazine). In the OHP, the FFS program covers and develops policy for non-stimulant medications for all members. Stimulants are covered by OHP's Coordinated Care Organizations (CCOs) for members enrolled in a CCO.

For treatment of ADHD, the National Institute for Health and Care Excellence (NICE) recommends stimulants as a first-line treatment options in children, adolescents, and adults.[1] Atomoxetine or guanfacine are recommended for children and adolescents unable to tolerate or do not have adequate response to methylphenidate or lisdexamfetamine.[1] Atomoxetine is an option for adults who have inadequate response to first-line treatment options.[1] Guanfacine and clonidine are not generally recommended for treatment of ADHD in adults.[1]

In January 2023, the OHP FFS criteria for ADHD drugs were updated to limit use to FDA-approved indications and allow ongoing use of an ADHD drug for adult members who had benefit with these medications as an adolescent. Previous criteria required consultation with a relevant mental health provider before off-label indications could be authorized. Indications which are FDA-approved for stimulants include narcolepsy, binge-eating disorder, and ADHD. Non-stimulants have indications for ADHD, and immediate-release clonidine and guanfacine are indicated for hypertension under different brand names. However, many of these medications have been studied for a wide variety of indications other than ADHD. A review of systematic reviews and guidelines identified literature studying ADHD drugs for the following conditions:

- Stimulant use disorder
- Fatigue and post-stroke symptoms

- Tic disorders, Tourette syndrome, and other movement disorders
- Post-traumatic stress disorder
- Autism and other developmental disorders
- Conduct and other behavioral health disorders

A review of prior authorizations for ADHD drugs identified that common off-label diagnoses submitted by providers included anxiety, stress and adjustment disorders, pervasive development disorders, depression, bipolar disorders, and sleep disorders. Because non-stimulants are carved-out of CCOs, the most prescribed drugs to which the FFS policy applies were atomoxetine, extended-release guanfacine, and extended-release clonidine. Atomoxetine is preferred with quantity limits. Extended-release guanfacine and clonidine are voluntary non-preferred with quantity limits and restrictions for anyone over 17 years of age consistent with FDA-approved ages.

The goal of this policy evaluation is to evaluate the impact of these PA changes on ADHD drug utilization for off-label conditions.

Methods:
Two evaluation windows were defined to compare utilization before the policy change (from 01/01/2022 to 06/30/2022) and after the policy change (from 1/1/2023 to 06/30/2023). Members were identified for inclusion in the study based on at least one paid or denied FFS claim for a drug in the ADHD Drugs Preferred Drug List (PDL) class during these evaluation windows. The first paid or denied claim that was not associated with an existing approved prior authorization was classified as the index event (IE). Members with denied claims were included if the claim was denied for an error code in **Table 1** indicating a PA was required and did not have any error codes indicating billing errors (**Appendix 1**).

Table 1. Error codes which indicate prior authorization is required.

Error Code	Description
4170	ADHD Safety Edit - Age Limits for ADHD Meds
3022	Non-Preferred Drug. Prior Authorization Required.
4167	DRUG QUANTITY PER DAY LIMIT EXCEEDED
3002	NDC REQUIRES PA
3000	UNITS EXCEED AUTHORIZED UNITS ON PA MASTER FILE

Inclusion criteria:
- Paid or denied FFS claim for a drug in the ADHD Drug PDL class during the evaluation window.

Exclusion criteria:
- Members with non-Medicaid primary insurance coverage (i.e., third party liability [TPL]) during the baseline or follow-up period
- Members with Medicare Part D coverage or limited or no Medicaid drug benefit at any time during the baseline or follow-up periods. Claims data for these members may be incomplete. Members were identified based on the following benefit packages:

Category	Benefit Package	Description
Medicare Part D coverage	BMM	Qualified Medicare Beneficiary + Oregon Health Plan with Limited Drug

	BMD	Oregon Health Plan with Limited Drug
	MED	Qualified Medicare Beneficiary
Limited or no Medicaid drug benefit	MND	Transplant package
	CWM	Citizenship Waived Emergency Medical
	SMF	Special Low-Income Medicare Beneficiary Only
	SMB	Special Low-Income Medicare Beneficiary Only

- Members with Heritage Native American All-Inclusive Rate (HNA AIR) claims during the baseline or follow-up period
- Members with Medicaid eligibility of less than 75% of days during the baseline or follow-up periods
- Members without an IE (at least one paid or denied claim which was not associated with a PA number).
- Members with an IE in both evaluation windows

Outcomes evaluated in this analysis included the following:

- Proportion of members with a paid or denied claim and no evidence-supported diagnosis
- Proportion of members with a subsequent PA request
- Time between 1st denied claim and the first subsequent PA approval or paid claim for an ADHD drug
- Total service days and costs for hospitalizations, emergency department visits, psychotherapy, and other mental health drugs
- Paid and denied claims by member, drug, or prescriber characteristics

Definitions:

- Relevant mental health diagnoses were evaluated in the baseline period and grouped into diagnoses with supporting evidence and diagnoses without supporting evidence based on available existing literature (Appendix 1).
- Baseline characteristics were identified at the time of the IE. Other mental health drugs were defined based on PDL class. The Hierarchical Ingredient Code List (HICL) sequence number (HSN) and non-carve-out status were used to identify physical health formulations of clonidine (HSN 000113) and guanfacine (HSN 000120).
- Provider specialty was identified based on primary prescriber taxonomy (**Appendix 1**).
- Residential area was based on member zip code and categorized into rural, urban, or frontier groups based on criteria in **Appendix 1.**[2] Members without an Oregon zip code were categorized as unknown.
- Psychotherapy visits were identified based on common CPT medical codes in **Appendix 1**

Results:

In total, 28,586 members were identified who had a paid or denied claim for an ADHD drug in the evaluation windows before and after the policy change. After screening for exclusion criteria, 3804 members were included in the control group (before the policy change) and 5514 members were included in the study group (after the policy change).

Table 2. Attrition table

	Before		After	
	Total		Total	
	#	%	#	%
Members with a FFS paid or denied claim for an ADHD drug in the evaluation window	13,303		15,283	
After exclusion of members without an IE (e.g., existing PA approved)	11,451	86.1%	13,870	90.8%
After exclusion of members with an IE in both groups	5,383	40.5%	7,802	51.1%
After exclusion of members with HNA AIR claims in the baseline or follow-up period	5,334	40.1%	7,706	50.4%
After exclusion of members with TPL or Medicare in the baseline or follow-up period	4,142	31.1%	6,052	39.6%
After exclusion of members with <75% eligibility in the baseline period	3,896	29.3%	5,608	36.7%
After exclusion of members with <75% eligibility in the follow-up period	3,804	28.6%	5,514	36.1%

Over half of members included in this analysis were adults (53% in the control group and 55% in the study group), most identified as White (60% in the control group and 57% in the study group), and most resided in urban areas (56% in the control group and 60% in the study group). In the period before the policy change, 47% of members had prior treatment for ADHD. After the policy change, the proportion of people who did not have prior treatment increased to 68% of members. Most members were enrolled in a CCO at the time of their IE (88% in the control group and 90% in the study group), and CCO claims for stimulants were not included in this analysis. Consequently, drugs to which the FFS policy applies are primarily non-stimulants which accounted for 90% of FFS use in the control group and 92% in the study group. The most prescribed non-stimulant was atomoxetine which has indications for all people over 5 years of age (52%), followed by guanfacine (32%) which is indicated only for ADHD in children and adolescents. Most prescriptions (57% in the control group and 59% in the study group) were written by general practitioners, and only 16% of members and the control group and 13% in the study group had prescriptions written by a psychiatrist. Twenty-seven percent of members had prescriptions written by another mental health provider, most commonly psychiatric mental health nurse practitioners.

Table 3. Demographics

	Before		After	
	Total		Total	
	3,804	%	5,514	%
Age				
<= 5 yo	52	1.4%	126	2.3%
6-17 yo	1,752	46.1%	2,326	42.2%
18-64 yo	2,000	52.6%	3,061	55.5%
>= 65 yo	0	0.0%	1	0.0%
Race				
White	2,304	60.6%	3,147	57.1%
Unknown	851	22.4%	1,352	24.5%
American Indian and Alaskan Native	313	8.2%	491	8.9%

Hispanic and Latino/a/x	187	4.9%	289	5.2%
Black and African American	78	2.1%	137	2.5%
Asian or Native Hawaiian or Pacific Islander	51	1.3%	70	1.3%
Middle Eastern/North African	0	0.0%	0	0.0%
Other	20	0.5%	28	0.5%
Member Location				
Urban	2,119	55.7%	3,287	59.6%
Rural	1,464	38.5%	2,029	36.8%
Frontier	108	2.8%	161	2.9%
Other	113	3.0%	37	0.7%
Enrollment				
CCO	3,342	87.9%	4,986	90.4%
FFS	462	12.1%	528	9.6%
Prior therapies in the baseline period				
IE molecular entity (based on HSN)	1,724	45.3%	1,660	30.1%
Other ADHD drug (exclusive of the IE)	152	4.0%	119	2.2%
Non-carveout guanfacine/clonidine	52	1.4%	54	1.0%
None of the above	2,014	52.9%	3,778	68.5%
IE Drug				
Stimulant	393	10.3%	426	7.7%
AMP IR	108	2.8%	108	2.0%
AMP LA	145	3.8%	144	2.6%
MTH IR	59	1.6%	70	1.3%
MTH LA	81	2.1%	104	1.9%
Non-stimulant carve-out drugs	3,411	89.7%	5,088	92.3%
Atomoxetine	1,771	46.6%	2,860	51.9%
Clonidine (extended-release)	313	8.2%	401	7.3%
Guanfacine (extended-release)	1,312	34.5%	1,747	31.7%
Viloxazine	15	0.4%	80	1.5%
Prescriber on the IE				
Psychiatrist	614	16.1%	747	13.5%
Other mental health provider	1,042	27.4%	1,535	27.8%
General practitioner	2,148	56.5%	3,232	58.6%

In the period after the policy change, there was a greater proportion of members who were less than 5 years of age with denied claims (17% vs. 9% before the policy change). Denials were less common after the policy change in members with ongoing treatment (21% vs. 31% before the policy change). There were also differences in the proportion of paid or denied claims when stratified based on drug. There was a higher rate of denials after the policy change for non-stimulants (90% vs. 83%) and a lower rate of denials for stimulants (10% vs. 17%). After the policy change, 69% of denials were for extended-release guanfacine and 17% were for extended-release clonidine.

Table 4. IE type based on therapy and prescriber

	Before				After			
	Paid		Denied		Paid		Denied	
	3,230	%	574	15%	4,781	%	733	13%
Prior therapies in the baseline period								
IE molecular entity (based on HSN)	1,548	47.9%	176	30.7%	1,509	31.6%	151	20.6%
Other ADHD drug (exclusive of the IE)	124	3.8%	28	4.9%	105	2.2%	14	1.9%
Non-carveout (IR) guanfacine/clonidine	44	1.4%	8	1.4%	47	1.0%	7	1.0%
None of the above	1,639	50.7%	375	65.3%	3,208	67.1%	570	77.8%
IE Drug								
Stimulant	293	9.1%	100	17.4%	353	7.4%	73	10.0%
AMP IR	82	2.5%	26	4.5%	81	1.7%	27	3.7%
AMP LA	142	4.4%	3	0.5%	137	2.9%	7	1.0%
MTH IR	54	1.7%	5	0.9%	62	1.3%	8	1.1%
MTH LA	15	0.5%	66	11.5%	73	1.5%	31	4.2%
Non-stimulant carve-out	2,937	90.9%	474	82.6%	4,428	92.6%	660	90.0%
Atomoxetine	1,714	53.1%	57	9.9%	2,837	59.3%	23	3.1%
Clonidine (extended-release)	204	6.3%	109	19.0%	275	5.8%	126	17.2%
Guanfacine (extended-release)	1,008	31.2%	304	53.0%	1,238	25.9%	509	69.4%
Viloxazine	11	0.3%	4	0.7%	78	1.6%	2	0.3%
Prescriber on the IE								
Psychiatrist	515	15.9%	99	17.2%	657	13.7%	90	12.3%
Other mental health provider	841	26.0%	201	35.0%	1,268	26.5%	267	36.4%
General practitioner	1,874	58.0%	274	47.7%	2,856	59.7%	376	51.3%

The proportion of members with an ADHD diagnosis in the previous 6 months was similar before and after the policy change (58% in the control group and 60% in the study group). Rates of other evidence supported diagnoses were relatively infrequent (7%). For 36% of members in the control group and 35% in the study group, there was no clear indication for an ADHD drug based on medical claims.

Table 5. Diagnoses associated with ADHD drugs

	Before						After					
	Total		Paid		Denied		Total		Paid		Denied	
	3,804	%	3,230	%	574	%	5,514	%	4,781	%	733	%
ADHD	2,225	58.5%	1,943	60.2%	282	49.1%	3,334	60.5%	2,989	62.5%	345	47.1%
Other Evidence-supported diagnosis	278	7.3%	210	6.5%	68	11.8%	397	7.2%	297	6.2%	100	13.6%
Learning disorder or intellectual disability	31	0.8%	27	0.8%	4	0.7%	26	0.5%	22	0.5%	4	0.5%
Autistic disorder	74	1.9%	54	1.7%	20	3.5%	107	1.9%	70	1.5%	37	5.0%
Conduct, oppositional defiant disorder, intermittent explosive disorder	64	1.7%	54	1.7%	10	1.7%	65	1.2%	54	1.1%	11	1.5%
Tic disorders	20	0.5%	17	0.5%	3	0.5%	19	0.3%	13	0.3%	6	0.8%
Eating disorders	28	0.7%	19	0.6%	9	1.6%	58	1.1%	44	0.9%	14	1.9%
Narcolepsy and cataplexy	4	0.1%	4	0.1%	0	0.0%	4	0.1%	3	0.1%	1	0.1%
Essential (primary) hypertension	87	2.3%	57	1.8%	30	5.2%	144	2.6%	109	2.3%	35	4.8%
No ADHD or evidence-supported diagnosis	1,382	36.3%	1,130	35.0%	252	43.9%	1,925	34.9%	1,602	33.5%	323	44.1%
F41 Other anxiety disorders	467	12.3%	383	11.9%	84	14.6%	696	12.6%	571	11.9%	125	17.1%
F43 Reaction to severe stress, and adjustment disorders	414	10.9%	328	10.2%	86	15.0%	563	10.2%	463	9.7%	100	13.6%
F33 Major depressive disorder, recurrent	267	7.0%	222	6.9%	45	7.8%	359	6.5%	283	5.9%	76	10.4%
F32 Depressive episode	245	6.4%	203	6.3%	42	7.3%	331	6.0%	288	6.0%	43	5.9%
F17 Nicotine dependence	157	4.1%	114	3.5%	43	7.5%	187	3.4%	149	3.1%	38	5.2%
F31 Bipolar disorder	126	3.3%	96	3.0%	30	5.2%	160	2.9%	116	2.4%	44	6.0%
F15 Other stimulant related disorders	105	2.8%	88	2.7%	17	3.0%	117	2.1%	99	2.1%	18	2.5%
F10 Alcohol related disorders	99	2.6%	77	2.4%	22	3.8%	121	2.2%	104	2.2%	17	2.3%
F11 Opioid related disorders	95	2.5%	71	2.2%	24	4.2%	105	1.9%	89	1.9%	16	2.2%

In members with a denied claim, 62% before the policy change and 54% after the policy change had a subsequent paid claim for an ADHD drug. The most common medications included stimulants (38% of members in the control group and 34% of members in the study group) which indicates a switch in therapy for many members. Twenty percent of members had a subsequent claim for extended-release guanfacine. Physical health formulations of guanfacine and clonidine (which are primarily immediate-release formulations) were also prescribed in the 90 days following a denial for 23% of members in the control group and 25% of members in the study group. The median time between the first denied claim and a subsequent paid claim was 9 days in the control group and 13 days in the study group. For members remaining in FFS, 36% of members before the policy change and 30% of members after the policy change had a PA request submitted by the provider. The proportion of denied PA requests increased after the policy evaluation (from 7.8% to 15.4%). The median time between the first denied claim and the PA request was 5 days in the control group and 4 days in the study group.

Almost one-third of members with a denied claim did not have a subsequent paid claim for an ADHD drug or immediate-release guanfacine or clonidine. In the study period, about 30% of these members (or 10% of all members with a denial) had an ADHD diagnosis present in medical claims.

Table 6. Follow-up after denied claims

	Before		After	
	Denied		Denied	
Members with denied IE	574	%	733	%
ADHD drug paid within 90 days	355	61.8%	395	53.9%
Stimulant	221	38.5%	248	33.8%
Non-stimulant	205	35.7%	211	28.8%
Atomoxetine	59	10.3%	41	5.6%
Clonidine (extended-release)	40	7.0%	24	3.3%
Guanfacine (extended-release)	114	19.9%	151	20.6%
Viloxazine	3	0.5%	3	0.4%
Non-carveout IR clonidine/guanfacine paid within 90 days	131	22.8%	181	24.7%
FFS claim	12	2.1%	9	1.2%
CCO claim	119	20.7%	172	23.5%
No subsequent paid claim for an ADHD drug or IR clonidine/guanfacine within 90 days	161	28.0%	236	32.2%
ADHD Diagnosis	67	11.7%	73	10.0%
No ADHD Diagnosis	94	16.4%	163	22.2%
Median days between 1st denied claim and a paid claim for an ADHD drug or IR clonidine/guanfacine		9		13
FFS ADHD PA requested within 90 days	259	45.1%	329	44.9%
PA approved	212	36.9%	209	28.5%
PA denied	45	7.8%	113	15.4%
Median days between denied IE and 1st PA request		5		4

Both before and after the change in policy, members with denied claims for an ADHD drug were generally more likely to be prescribed other types of mental health drugs (**Table 7**). In members with paid claims, 59% of members in the control group and 64% of members in the study group had at least one claim for another mental health drug in the 6 months before or after the IE. In members with denied claims, 66% of members in the control group and 78% of members in the study group were prescribed another mental health drug in the 6 months before or after the IE. The most common drugs included antidepressants, physical health clonidine or guanfacine, and antipsychotics. There were similar prescribing patterns in the 6-month baseline period before the IE and in the 6-month period following the IE, and there was very little discernable change in prescribing of other mental health drugs before or after the ADHD policy change.

Table 7. Utilization of concomitant mental health drugs

	Before				After			
	Paid		Denied		Paid		Denied	
	3,230		574		4,781		733	
Baseline	#	%	#	%	#	%	#	%
Members with claims for other mental health drugs	1,904	58.9%	381	66.4%	2,805	58.7%	494	67.4%
Benzodiazepines	199	6.2%	66	11.5%	290	6.1%	83	11.3%
Antidepressant	1,474	45.6%	290	50.5%	2143	44.8%	351	47.9%
Antipsychotic	531	16.4%	143	24.9%	669	14.0%	147	20.1%
Substance use disorder, opioid & alcohol	132	4.1%	30	5.2%	186	3.9%	36	4.9%
Sedative	66	2.0%	11	1.9%	101	2.1%	22	3.0%
Non-carveout (IR) clonidine/guanfacine	521	16.1%	125	21.8%	834	17.4%	180	24.6%
Follow-Up	#	%	#	%	#	%	#	%
Members with claims for other mental health drugs	2,083	64.5%	428	74.6%	2,953	61.8%	574	78.3%
Benzodiazepines	196	6.1%	61	10.6%	312	6.5%	98	13.4%
Antidepressant	1620	50.2%	322	56.1%	2292	47.9%	401	54.7%
Antipsychotic	589	18.2%	159	27.7%	760	15.9%	177	24.1%
Substance use disorder, opioid & alcohol	135	4.2%	36	6.3%	189	4.0%	42	5.7%
Sedative	86	2.7%	17	3.0%	119	2.5%	23	3.1%
Non-carveout (IR) clonidine/guanfacine	571	17.7%	168	29.3%	801	16.8%	246	33.6%
Change	#	%	#	%	#	%	#	%
Members with claims for other mental health drugs	179	-5.5%	47	-8.2%	148	-3.1%	80	-10.9%
Benzodiazepines	-3	0.1%	-5	0.9%	22	-0.5%	15	-2.0%
Antidepressant	146	-4.5%	32	-5.6%	149	-3.1%	50	-6.8%
Antipsychotic	58	-1.8%	16	-2.8%	91	-1.9%	30	-4.1%
SUD	3	-0.1%	6	-1.0%	3	-0.1%	6	-0.8%
Sedative	20	-0.6%	6	-1.0%	18	-0.4%	1	-0.1%
Non-carveout (IR) clonidine/guanfacine	50	-1.5%	43	-7.5%	-33	0.7%	66	-9.0%

Table 8 shows health resource utilization for inpatient visits, emergency department visits and psychotherapy in the 6 months before and after the IE. There was generally little to no change in medical visit days for patients with paid or denied claims for an ADHD drug.

Table 8. Health resource utilization – total service days

	Before				After			
	Paid		Denied		Paid		Denied	
	3,230		574		4,781		733	
Baseline	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Inpatient hospital days	10.7	6	7.5	6	10.2	7	9.6	4
Emergency department days	1.9	1	1.9	1	1.8	1	2.0	1
Psychotherapy days	12.3	8	12.8	9	12.4	9	12.1	9
Follow-Up	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Inpatient hospital days	11.2	6	6.8	3.5	7.7	4	9.6	4
Emergency department days	1.9	1	2.1	1	1.7	1	2.0	1
Psychotherapy days	12.4	8	12.8	9	13.2	9	14.4	10
Change	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Inpatient hospital days	0.5	0.0	-0.6	-2.5	-2.5	-3.0	0.0	0.0
Emergency department days	0.0	0.0	0.2	0.0	-0.1	0.0	0.1	0.0
Psychotherapy days	0.1	0.0	-0.1	0.0	0.9	0.0	2.3	1.0

Upon evaluation of costs associated with medical claims, there was very little change costs for emergency department, psychotherapy, or pharmacy-related costs. The average costs for inpatient hospital visits did change over time for the population. However, there were no discernable trends based on people who had paid or denied claims for ADHD drugs. Standard deviations for inpatient costs were generally large (particularly for members with denied claims) which indicates variability in costs per member.

Table 9. Healthcare resource utilization – costs

	Before				After			
	Paid		Denied		Paid		Denied	
Baseline	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Inpatient hospital costs	$12,307	$8,867	$25,761	$10,720	$16,321	$10,785	$16,025	$6,277
ED visit costs	$879	$496	$992	$628	$824	$500	$1,023	$609
Psychotherapy costs	$1,734	$875	$1,541	$919	$2,060	$1,049	$1,856	$1,195
Pharmacy costs	$545	$69	$979	$96	$469	$66	$904	$76

Follow-Up								
Inpatient hospital costs	$13,939	$9,750	$12,426	$8,194	$13,279	$9,330	$39,113	$13,212
ED visit costs	$816	$505	$1,023	$471	$840	$531	$1,003	$657
Psychotherapy costs	$1,797	$877	$1,424	$925	$2,456	$1,282	$2,576	$1,461
Pharmacy costs	$481	$71	$931	$97	$469	$72	$842	$83
Change								
Inpatient hospital costs	$1,632	$883	-$13,335	-$2,525	-$3,043	-$1,455	$23,088	$6,935
ED visit costs	-$62	$9	$30	-$157	$16	$31	-$20	$48
Psychotherapy costs	$63	$2	-$117	$6	$396	$232	$720	$266
Pharmacy costs	-$64	$2	-$48	$2	-$1	$6	-$63	$7

Limitations:

As a claims-based analysis, this study has multiple important limitations:

- Diagnostic data are based on claims history which may be incomplete or not accurately reflect true patient diagnoses. It is difficult to determine the intended indication for the drug, particularly when therapy is used off-label or the member has more than one mental health diagnosis. This analysis evaluated diagnoses over a 6-month period which may be too short to accurately capture diagnoses for a chronic condition like ADHD where there may be seasonal variability related to the school year.
- More than 60% of members identified with paid FFS claims for an ADHD drug were excluded from this analysis. This study assumes that included members are still representative of the entire Medicaid population.
- This analysis used common medical codes for psychotherapy to evaluate members accessing non-pharmacologic therapy and may not provide a comprehensive assessment for use of non-pharmacotherapy. Similarly, we were unable to discern the type of psychotherapy provided.
- This analysis did not control for potential confounding factors, and we are unable to discern whether any changes observed in medical claims are related to medication prescribing. However, there were no consistent trends to demonstrate increases in hospital claims, emergency department visits or medical costs after this policy change.

Discussion:

For treatment of ADHD, NICE recommends stimulants as a first-line treatment option in children, adolescents, and adults.[1] Atomoxetine or guanfacine are recommended for children and adolescents who are unable to tolerate or do not have adequate response to methylphenidate or lisdexamfetamine.[1] Atomoxetine is a second-line option for adults while guanfacine and clonidine are not generally recommended for treatment of ADHD in adults.[1]

In people with autism or learning disabilities and symptoms of inattention, distractibility, hypersensivity or impulsivity, guidelines from the American Academy of Pediatrics,[3] American Academy of Child and Adolescent Psychiatry,[4] and NICE[5] recommend treatment with an ADHD drug. Recommendations are generally based on low quality or emerging evidence. Guanfacine and clonidine may also improve tics especially in people with comorbid ADHD.[6,7]

In 2023, the FFS ADHD policy was changed to limit use of ADHD drugs to ADHD and narcolepsy, but allow ongoing use for people with ADHD who have benefit while on therapy. Overall, these changes in policy did not substantially change the proportion of people who had a denied claim for an ADHD drug, but did decrease the proportion of people who had a subsequent paid claim after an initial denial (from 62% to 54%). Because the current FFS policy incorporates age and quantity limits consistent with the FDA labeling, the majority of denied claims were for guanfacine and clonidine.

Populations most impacted by this policy were young children less than 5 years of age for whom identification of an accurate diagnosis may be more challenging. As expected, denials were less common in people who had prior claims for an ADHD drug.

In 68% of members with an initial denied claim, there was a subsequent claim for a similar medication:

- 25% of members had a subsequent paid claim for immediate-release clonidine or guanfacine.
- 20% of members had a subsequent paid claim for extended-release guanfacine.
- 34% of members had a subsequent paid claim for a stimulant.

Stimulants are recommended as a first-line treatment option for people with ADHD and the policy appears to encourage use of these first-line treatment options. However, 25% of members also had subsequent claims for immediate-release clonidine, and it is not clear whether use of an immediate-release formulations provides clinical benefits compared to an extended-release formulation. The policy was associated with administrative burden for providers and delay in care for members. Forty-five percent of members had a prior authorization request submitted by the provider; for 28% of members, this request was approved. The median time between an initial denial and a subsequent paid claim was 2 weeks. Ten percent of members with an initial denied claim had no subsequent paid claim for an ADHD drug, but did have a diagnosis of ADHD in medical claims.

Removal of age restrictions for clonidine and guanfacine may increase off-label use for ADHD in adults and off-label use conditions where there is limited evidence of benefit such as PTSD. However, removal of age restrictions would also would decrease barriers to care for ongoing treatment for adolescents who are turning 18 years of age and for people with comorbid behavioral health conditions for which there is some evidence of benefit. While this analysis was not designed to evaluate specific harms as a result of off-label prescribing, we did not identify any trends to indicate harm from off-label use of ADHD drugs. Prevalence of other medications, pharmacy costs, and psychotherapy were similar before and after the change in policy.

References:

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Appendix 1: Prior Authorization Criteria

Table A1. Error Codes for denied claims

Error Code	Description	Category
2017	RECIPIENT SERVICES COVERED BY HMO PLAN	Exclude
2508	RECIPIENT COVERED BY PRIVATE INSURANCE (PHARMACY)	Exclude
2002	RECIPIENT NOT ELIGIBLE FOR HEADER DATE OF SERVICE	Exclude
513	RECIPIENT NAME AND NUMBER DISAGREE	Exclude
4999	THIS DRUG IS COVERED BY MEDICARE PART D	Exclude
238	RECIPIENT NAME IS MISSING	Exclude
4264	QTY PRESCRIBED REQUIRED FOR CONTROLLED DRUGS	Exclude
628	Other Coverage Reject Code Required for OCC 3	Exclude
2507	RECIPIENT HAS MORE THAN ONE INSURANCE CARRIER	Exclude
351	REFILL NOT ALLOWED FOR NARCOTIC DRUGS	Exclude
270	HEADER TOTAL BILLED AMOUNT INVALID	Exclude
502	DATE DISPENSED EARLIER THAN DATE PRESCRIBED	Exclude
205	PRESCRIBING PROVIDER ID MISSING	Exclude
500	DATE PRESCRIBED AFTER BILLING DATE	Exclude
268	BILLED AMOUNT MISSING	Exclude
219	QUANTITY DISPENSED IS MISSING	Exclude
271	HEADER TOTAL BILLED AMOUNT INVALID	Exclude
269	DETAIL BILLED AMOUNT INVALID	Exclude
221	DAYS SUPPLY MISSING	Exclude
5001	EXACT DUPLICATE	Exclude
5000	POSSIBLE DUPLICATE	Exclude

Table A2. Evidence-supported diagnoses

ICD Code	Description
F81x	Learning disorder
F7x	Intellectual disability
F840	Autistic disorder
F91x	Conduct and oppositional defiant disorders
F95x	Tic disorders
F6381	Intermittent explosive disorder
F50x	Eating disorders
G474x	Narcolepsy and cataplexy
F90x	ADHD

Table A3. Provider taxonomy groups for mental health providers

Taxonomy	Taxonomy Description	Category
2080P0006X	PHYSICIAN-PEDIATRICS-DEVELOPMENTAL BEHAVORIAL PEDIATRICS	Psychiatrist
2080P0008X	PHYSICIAN-PEDIATRICS-NEURODEVELOPMENTAL DISABILITIES	Psychiatrist
2084A0401X	PSYCHIATRY & NEUROLOGY, ADDICTION MEDICINE	Psychiatrist
2084B0002X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-BARIATRIC MEDICINE	Psychiatrist
2084B0040X	BEHAVIORAL NEUROLOGY & NEUROPSYCHIATRY	Psychiatrist
2084D0003X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-DIAGNOSTIC NEUROIMAGING	Psychiatrist
2084F0202X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-FORENSIC PSYCHIATRY	Psychiatrist
2084H0002X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-HOSPICE AND PALLIATIVE MEDICINE	Psychiatrist
2084N0008X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-NEUROMUSCULAR MEDICINE	Psychiatrist
2084N0400X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-NEUROLOGY	Psychiatrist
2084N0402X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-NEUROLOGY WITH SPECIAL QUAL IN CHILD NEUROLO	Psychiatrist
2084N0600X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-CLINICAL NEUROPHYSIOLOGY	Psychiatrist
2084P0005X	PHYSICIAN-PSYCHIATRY&NERUOLOGY-NEURODEVELOPMENTAL DISABILITIES	Psychiatrist
2084P0015X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-PSYCHOSOMATIC MEDICINE	Psychiatrist
2084P0800X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-PSYCHIATRY	Psychiatrist
2084P0802X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-ADDICTION PSYCHIATRY	Psychiatrist
2084P0804X	PHYSICIAN-PSYCHIATRY&NEUROLGY-CHILD&ADOLESCENT PSYCHIATRY	Psychiatrist
2084P0805X	PHYSICIAN-PSYCHIATRY&NEUROLGY-GERIATRIC PSYCHIATRY	Psychiatrist
2084P2900X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-PAIN MEDICINE	Psychiatrist
2084S0010X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-SPORTS MEDICINE	Psychiatrist
2084S0012X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-SLEEP MEDICINE	Psychiatrist
2084V0102X	PHYSICIAN-PSYCHIATRY&NEUROLOGY-VASCULAR NEUROLOGY	Psychiatrist
103T00000X	PSYCHOLOGIST	Non-physician Mental Health Provider
103TA0400X	PSYCHOLOGIST - ADDICTION (SUBSTANCE USE DISORDER)	Non-physician Mental Health Provider
103TC0700X	PSYCHOLOGIST - CLINICAL	Non-physician Mental Health Provider
103TC2200X	PSYCHOLOGIST - CLINICAL CHILD & ADOLESCENT	Non-physician Mental Health Provider
163WP0807X	REGISTERED NURSE - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider
163WP0808X	REGISTERED NURSE - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider
163WP0809X	REGISTERED NURSE - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider
1835P1300X	PHARMACIST - PSYCHIATRIC	Non-physician Mental Health Provider

363LP0808X	NURSE PRACTITIONER - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider
364SP0807X	CLINICAL NURSE SPECIALIST - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider
364SP0808X	CLINICAL NURSE SPECIALIST - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider
364SP0809X	CLINICAL NURSE SPECIALIST - PSYCHIATRIC/MENTAL HEALTH	Non-physician Mental Health Provider

Table A4. CPT codes for psychotherapy

CPT Code	Description
90785	Psychiatric Services Complicated By Communication Factor
90832	Psychotherapy, 30 Minutes
90833	Psychotherapy With Evaluation And Management Visit, 30 Minutes
90834	Psychotherapy, 45 Minutes
90836	Psychotherapy With Evaluation And Management Visit, 45 Minutes
90837	Psychotherapy, 1 Hour
90838	Psychotherapy With Evaluation And Management Visit, 1 Hour
90839	Psychotherapy For Crisis, First Hour
90840	Psychotherapy For Crisis, Each Additional 30 Minutes
90846	Family Psychotherapy Without Patient, 50 Minutes
90847	Family Psychotherapy With Patient, 50 Minutes
90849	Multiple-Family Group Psychotherapy
90853	Group Psychotherapy
90876	Psychophysiological Therapy Incorporating Biofeedback Training With Psychotherapy, 45 Minutes
90899	Other Psychiatric Service Or Procedure
96158	Treatment Of Behavior Impacting Health, Initial 30 Minutes
96159	Treatment Of Behavior Impacting Health, Each Additional 15 Minutes
96167	Treatment Of Behavior Impacting Health With Family And Patient, Initial 30 Minutes
96168	Treatment Of Behavior Impacting Health With Family And Patient, Each Additional 30 Minutes
97153	Adaptive Behavior Treatment By Technician Using An Established Plan, Each 15 Minutes
97154	Adaptive Behavior Treatment By Technician With Multiple Patients Using An Established Plan, Each 15
97155	Adaptive Behavior Treatment By Professional Using An Established Plan, Each 15 Minutes
97156	Adaptive Behavior Treatment By Professional With Family Using An Established Plan, Each 15 Minutes
0362T	Behavior Identification Supporting Assessment For Patient Exhibiting Destructive Behavior, Each 15 M
0373T	Adaptive Behavior Treatment With Protocol Modification For Patient Exhibiting Destructive Behavior,
G0177	Training And Educational Services Related To The Care And Treatment Of Patient'S Disabling Mental He
G0410	Group Psychotherapy Other Than Of A Multiple-Family Group, In A Partial Hospitalization Setting, App
H0004	Behavioral Health Counseling And Therapy, Per 15 Minutes

H0036	Community Psychiatric Supportive Treatment, Face-To-Face, Per 15 Minutes
H0037	Community Psychiatric Supportive Treatment Program, Per Diem
H0038	Self-Help/Peer Services, Per 15 Minutes
H0039	Assertive Community Treatment, Face-To-Face, Per 15 Minutes
H2014	Skills Training And Development, Per 15 Minutes
H2018	Psychosocial Rehabilitation Services, Per Diem
H2027	Psychoeducational Service, Per 15 Minutes
S9480	Intensive Outpatient Psychiatric Services, Per Diem

Table A5. Residential area based on Zip Code. Based on the Oregon Office of Rural Health Geographic Definitions[2]

Zip Code	Designation	Zip Code	Designation	Zip Code	Designation	Zip Code	Designation	Zip Code	Designation
97001	Rural	97026	Rural	97055	Rural	97108	Rural	97136	Rural
97002	Rural	97027	Urban	97056	Rural	97109	Rural	97137	Rural
97003	Urban	97028	Rural	97057	Rural	97110	Rural	97138	Rural
97004	Rural	97029	Frontier	97058	Rural	97111	Rural	97140	Urban
97005	Urban	97030	Urban	97060	Urban	97112	Rural	97141	Rural
97006	Urban	97031	Rural	97062	Urban	97113	Urban	97143	Rural
97007	Urban	97032	Rural	97063	Rural	97114	Rural	97144	Rural
97008	Urban	97033	Frontier	97064	Rural	97115	Rural	97145	Rural
97009	Urban	97034	Urban	97065	Frontier	97116	Urban	97146	Rural
97010	Rural	97035	Urban	97067	Rural	97117	Rural	97147	Rural
97011	Rural	97036	Urban	97068	Urban	97118	Rural	97148	Rural
97013	Rural	97037	Rural	97070	Urban	97119	Rural	97149	Rural
97014	Rural	97038	Rural	97071	Rural	97121	Rural	97201	Urban
97015	Urban	97039	Frontier	97075	Urban	97122	Rural	97202	Urban
97016	Rural	97040	Rural	97076	Urban	97123	Urban	97203	Urban
97017	Rural	97041	Rural	97077	Urban	97124	Urban	97204	Urban
97018	Rural	97042	Rural	97078	Urban	97125	Rural	97205	Urban
97019	Rural	97044	Rural	97080	Urban	97127	Rural	97206	Urban
97020	Rural	97045	Urban	97086	Urban	97128	Rural	97207	Urban
97021	Rural	97048	Rural	97089	Urban	97130	Rural	97208	Urban
97022	Rural	97049	Rural	97101	Rural	97131	Rural	97209	Urban
97023	Rural	97050	Frontier	97102	Rural	97132	Rural	97210	Urban
97024	Urban	97051	Rural	97103	Rural	97133	Rural	97211	Urban
		97053	Rural	97106	Urban	97134	Rural	97212	Urban
		97054	Rural	97107	Rural	97135	Rural	97213	Urban

97214	Urban	97290	Urban	97343	Rural	97385	Rural	97431	Rural
97215	Urban	97291	Urban	97344	Rural	97386	Rural	97432	Rural
97216	Urban	97292	Urban	97345	Rural	97388	Rural	97434	Rural
97217	Urban	97293	Urban	97346	Rural	97389	Urban	97435	Rural
97218	Urban	97294	Urban	97347	Rural	97390	Rural	97436	Rural
97219	Urban	97296	Urban	97348	Rural	97391	Rural	97437	Rural
97220	Urban	97298	Urban	97350	Rural	97392	Urban	97438	Rural
97221	Urban	97301	Urban	97351	Urban	97394	Rural	97439	Rural
97222	Urban	97302	Urban	97352	Urban	97396	Rural	97440	Urban
97223	Urban	97303	Urban	97355	Rural	97401	Urban	97441	Rural
97224	Urban	97304	Urban	97357	Rural	97402	Urban	97442	Rural
97225	Urban	97305	Urban	97358	Rural	97403	Urban	97443	Rural
97227	Urban	97306	Urban	97359	Urban	97404	Urban	97444	Rural
97228	Urban	97307	Urban	97360	Rural	97405	Urban	97446	Rural
97229	Urban	97308	Urban	97361	Rural	97406	Rural	97447	Rural
97230	Urban	97309	Urban	97362	Rural	97407	Rural	97448	Rural
97231	Urban	97310	Urban	97364	Rural	97408	Urban	97449	Rural
97232	Urban	97312	Urban	97365	Rural	97409	Urban	97450	Rural
97233	Urban	97317	Urban	97366	Rural	97410	Rural	97451	Rural
97236	Urban	97321	Urban	97367	Rural	97411	Rural	97452	Rural
97238	Urban	97322	Urban	97368	Rural	97412	Rural	97453	Rural
97239	Urban	97324	Rural	97369	Rural	97413	Rural	97454	Rural
97240	Urban	97325	Rural	97370	Urban	97414	Rural	97455	Urban
97242	Urban	97326	Rural	97371	Urban	97415	Rural	97456	Rural
97256	Urban	97327	Rural	97372	Rural	97416	Rural	97457	Rural
97258	Urban	97329	Rural	97373	Rural	97417	Rural	97458	Rural
97266	Urban	97330	Urban	97374	Rural	97419	Rural	97459	Rural
97267	Urban	97331	Urban	97375	Rural	97420	Rural	97461	Rural
97268	Urban	97333	Urban	97376	Rural	97423	Rural	97462	Rural
97269	Urban	97335	Rural	97377	Rural	97424	Rural	97463	Rural
97280	Urban	97336	Rural	97378	Rural	97425	Rural	97464	Rural
97281	Urban	97338	Rural	97380	Rural	97426	Urban	97465	Rural
97282	Urban	97339	Urban	97381	Rural	97428	Rural	97466	Rural
97283	Urban	97341	Rural	97383	Rural	97429	Rural	97467	Rural
97286	Urban	97342	Rural	97384	Rural	97430	Rural	97469	Rural

97470	Rural	97527	Rural	97638	Frontier	97760	Rural	97857	Frontier
97471	Rural	97528	Rural	97639	Rural	97761	Rural	97859	Rural
97473	Rural	97530	Rural	97640	Frontier	97801	Rural	97861	Frontier
97475	Urban	97531	Rural	97641	Frontier	97810	Rural	97862	Rural
97476	Rural	97532	Rural	97701	Urban	97812	Frontier	97864	Frontier
97477	Urban	97533	Rural	97702	Urban	97813	Rural	97865	Frontier
97478	Urban	97534	Rural	97703	Urban	97814	Frontier	97867	Rural
97479	Rural	97535	Urban	97707	Rural	97817	Frontier	97868	Rural
97480	Rural	97536	Rural	97708	Urban	97818	Frontier	97869	Frontier
97481	Rural	97537	Rural	97709	Urban	97819	Frontier	97870	Frontier
97484	Rural	97538	Rural	97710	Frontier	97820	Frontier	97873	Frontier
97486	Rural	97539	Rural	97711	Rural	97823	Frontier	97874	Frontier
97487	Rural	97540	Urban	97712	Rural	97824	Rural	97875	Rural
97488	Rural	97541	Rural	97720	Frontier	97825	Frontier	97876	Rural
97489	Rural	97543	Rural	97721	Frontier	97826	Rural	97877	Frontier
97490	Rural	97544	Rural	97722	Frontier	97827	Rural	97880	Rural
97491	Rural	97601	Rural	97730	Rural	97828	Frontier	97882	Rural
97492	Rural	97602	Rural	97731	Rural	97830	Frontier	97883	Rural
97493	Rural	97603	Rural	97732	Frontier	97833	Frontier	97884	Frontier
97494	Rural	97604	Rural	97733	Rural	97834	Frontier	97885	Frontier
97495	Rural	97620	Frontier	97734	Rural	97835	Rural	97886	Rural
97496	Rural	97621	Rural	97735	Frontier	97836	Frontier	97901	Frontier
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97498	Rural	97623	Rural	97737	Rural	97838	Rural	97903	Frontier
97499	Rural	97624	Rural	97738	Frontier	97839	Frontier	97904	Frontier
97501	Urban	97625	Rural	97739	Rural	97840	Frontier	97905	Frontier
97502	Urban	97626	Rural	97741	Rural	97841	Rural	97906	Frontier
97503	Urban	97627	Rural	97750	Frontier	97842	Frontier	97907	Frontier
97504	Urban	97630	Frontier	97751	Rural	97843	Frontier	97908	Frontier
97520	Rural	97632	Rural	97752	Rural	97844	Frontier	97909	Frontier
97522	Rural	97633	Rural	97753	Rural	97845	Frontier	97910	Frontier
97523	Rural	97634	Rural	97754	Rural	97846	Frontier	97911	Frontier
97524	Rural	97635	Frontier	97756	Rural	97848	Frontier	97913	Frontier
97525	Rural	97636	Frontier	97758	Frontier	97850	Rural	97914	Frontier
97526	Rural	97637	Frontier	97759	Rural	97856	Frontier	97917	Frontier

97918 Frontier
97920 Frontier

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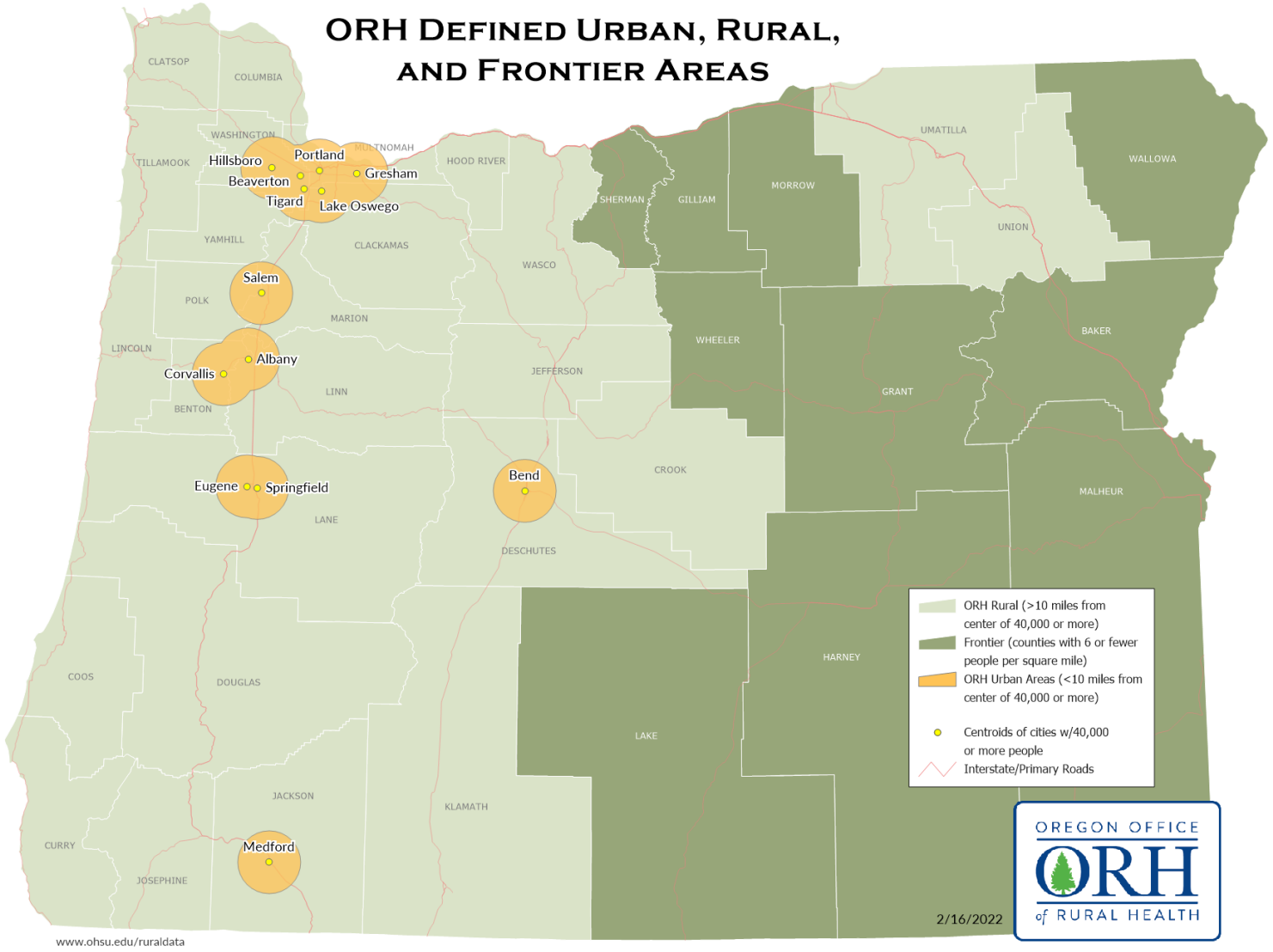

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