Division of Medicaid
Office of the Governor
State of Mississippi
Drug Utilization Review (DUR) Board Meeting

MISSISSIPPI DIVISION OF
MEDICAID

March 3, 2022 at 1:00pm

Woolfolk Building, Room 145

Jackson, MS

Prepared by:

MS | DUR Evidence-Based DUR Initiative
The University of Mississippi School of Pharmacy

Drug Utilization Review Board

Lauren Bloodworth, PharmD
University of MS School of Pharmacy
201D Faser Hall
University, MS 38677
Term Expires: June 30, 2024

Terrence Brown, PharmD
GA Carmichael Family Health Center
1668 West Peace Street
Canton, MS 39046
Term Expires: June 20, 2023

Patrick Bynum, MD
MEA Vicksburg Ambulatory Care Clinic
4204 Clay Street
Vicksburg, MS 39183
Term Expires: June 30, 2022

Cesar Cardenas, MD
MS Center for Advanced Medicine
401 Baptist Drive, Suite 301
Madison, MS 39110
Term Expires: June 30, 2024

Rhonda Dunaway, RPh (Co-Chair)
Coastal Family Health Center
9113 Hwy 49 Suite 200
Gulfport, MS 39503
Term Expires: June 30, 2023

Tanya Fitts, MD
Lafayette Pediatric Clinic
1300 Access Road, Suite 400
Oxford, MS 38655
Term Expires: June 30, 2024

Ray Montalvo, MD
KDMC Specialty Clinic
940 Brookway Boulevard
Brookhaven, MS 39601
Term Expires: June 30, 2023

Holly R. Moore, PharmD
Anderson Regional Medical Center
2124 14th Street
Meridian, MS 39301
Term Expires: June 30, 2023

Joshua Pierce, PharmD
McGuffee Drugs
102 Main St.
Magee, MS 39111
Term Expires: June 30, 2024

Cheryl Sudduth, RPh
Funderburk's Pharmacy
134 West Commerce Street
Hernando, MS 38632
Term Expires: June 30, 2022

James Taylor, PharmD (Chair)
North MS Medical Center
830 S. Gloster Street
Tupelo, MS 38801
Term Expires: June 30, 2022

Alan Torrey, MD
Merit Health Medical Group
Pain Management
2080 South Frontage Road
Vicksburg, MS 39180
Term Expires: June 30, 2022

2022 DUR Board Meeting Dates

March 3, 2022
June 9, 2022
September 15, 2022
December 8, 2022

As with any analysis, great efforts are made to ensure that the information reported in this document is accurate. The most recent administrative claims data available are being used at the time the reports are generated, which includes the most recent adjudication history. As a result, values may vary between reporting periods and between DUR Board meetings, reflecting updated reversals and claims adjustments.

Unless otherwise indicated, all MS-DUR analyses are conducted for the entire Mississippi Medicaid program including beneficiaries receiving services through the Medicaid fee-for-service (FFS) and the two Mississippi Medicaid Coordinated Care Organizations (CCOs). When dollar figures are reported, the reported dollar figures represent reimbursement amounts paid to providers and are not representative of final Medicaid costs after rebates. Any reported enrollment data presented are unofficial and are only for general information purposes for the DUR Board.

Please refer to the Mississippi Division of Medicaid website for the current official Universal Preferred Drug List (PDL).

http://www.medicaid.ms.gov/providers/pharmacy/preferred-drug-list/

MISSISSIPPI DIVISION OF MEDICAID
OFFICE OF THE GOVERNOR
DRUG UTILIZATION REVIEW BOARD
AGENDA
March 3, 2022

Welcome

Old Business

Resource Utilization Review

Follow-up and Discussion from the Board

New Business

Pharmacy Program Update Terri Kirby, RPh

Next Meeting Information

2022 DUR Board Meeting Dates:

March 3, 2022	June 9, 2022
September 15,2022	December 8, 2022

DUR Board Meeting Minutes

MISSISSIPPI DIVISION OF MEDICAID
DRUG UTILIZATION REVIEW (DUR) BOARD
MINUTES OF THE DECEMBER 9, 2021 MEETING

DUR Board Roster: State Fiscal Year 2022 (July 1, 2021 – June 30, 2022)	Mar 2021	Jun 2021	Sep 2021	Dec 2021
Lauren Bloodworth, PharmD	✓	✓	✓	✓
Terrence Brown, PharmD	✓		✓	✓
Patrick Bynum, MD	✓	✓	✓	✓
Cesar Cardenas, MD	NA	NA	NA	✓
Rhonda Dunaway, RPh	✓	✓	✓	✓
Tanya Fitts, MD	✓		✓	
Ray Montalvo, MD		✓	✓	✓
Holly Moore, PharmD	✓		✓	
Joshua Pierce, PharmD	NA	NA	NA	✓
Cheryl Sudduth, RPh		✓		
James Taylor, PharmD (Chair)	✓		✓	
Alan Torrey, MD		✓		
TOTAL PRESENT**	**9**	**7**	**9**	**7**

** *Total Present may not be reflected by individual members marked as present above due to members who either resigned or whose terms expired being removed from the list.*

Also Present:

Division of Medicaid (DOM) Staff:
Terri Kirby, RPh, CPM, Pharmacy Director; Dennis Smith, RPh, DUR Coordinator; Chris Yount, MA, PMP, Staff Officer – Pharmacy; Sue Reno, RN, Program Integrity;

University of Mississippi School of Pharmacy - MS-DUR Staff:
Eric Pittman, PharmD, MS-DUR Project Director; Kaustuv Bhattacharya, PhD, Research Assistant Professor;

Change Healthcare Staff:
Paige Clayton, PharmD, On-Site Clinical Pharmacist;

Coordinated Care Organization (CCO) Staff:
Heather Odem, PharmD, Director of Pharmacy - Mississippi, UnitedHealthcare Community & State; Jenni Grantham, PharmD, Director of Pharmacy, Magnolia Health; Trina Stewart, PharmD, Pharmacy Manager, Molina Healthcare;

Alliant Health Staff:
Buddy Ogletree, PharmD, Clinical Pharmacist;

Visitors:
Keanna Dandridge, Norvartis; Brian Hall, BMS; David Large, Biohaven; Chrystal Mayes, Sanofi Genzyme; Harper Mims, Capitol Resources; Michelle Peoples, Lilly; Cathy Prine-Eagle, Merck; Lisa Tracz, Global Blood Therapeutics; Shauna Williams, Bayer; Julie Young, Abbvie; Paula Whatley, Novo Nordisk.

Call to Order/Welcome:
Ms. Dunaway called the meeting to order at 1:05 pm. Mr. Dennis Smith welcomed everyone to our first live meeting in 2 years. DOM staff and Board members took a few moments for introductions.

OLD BUSINESS:
Dr. Bloodworth moved to approve the minutes from the September 2021 DUR Board Meeting, seconded by Dr. Brown, and unanimously approved by the DUR Board.

Resource Utilization Review:
Dr. Pittman presented the resource utilization report for September 2021. Enrollment numbers continued to climb. The number of beneficiaries with pharmacy benefits was up 10% compared to September 2020 and the number of prescription fills also increased 19.4% compared to September 2020. Dr. Pittman discussed several trends and items of note from the resource report.

NEW BUSINESS:

Update on MS-DUR Educational Interventions:
Dr. Pittman provided an overview of all DUR mailings and educational notices that occurred September 2021 – November 2021.

Special Analysis Projects:

Statin Therapy for Patients with Diabetes
MS-DUR presented a report detailing performance on the Health Effectiveness Data and Information Set (HEDIS) Statin Therapy for Patients with Diabetes (SPD) quality measure among Medicaid beneficiaries for calendar year (CY) 2020. The HEDIS-SPD measure reports the percentage of members 40-75 years of age during the measurement year with diabetes who do not have clinical atherosclerotic cardiovascular disease (ASCVD). Two rates are reported:

1. Received a Statin Therapy. Members who were dispensed at least one statin medication of any intensity during the measurement year.
2. Statin Adherence 80%. Members who remained on a statin medication of any intensity for at least 80% of the treatment period.

It was noted that while the overall rates for both measures were the same (45.8%), performance was different across pharmacy plans. Beneficiaries enrolled in the coordinated care organizations (CCOs) had higher rates for 'Received Statin Therapy' compared to FFS. The

rates for 'Statin Adherence' varied across plans with Magnolia having the highest. It was noted that each of the CCOs have 'Gaps in Care' programs addressing the utilization of statins among individuals with diabetes.

The following recommendations were presented:

1. MS-DUR should work with DOM to develop and implement a 'Gaps In Care' program for the FFS population aimed at improving the rate of beneficiaries with diabetes prescribed statin therapy.
2. DOM should work with CCOs and FFS programs to develop plans for improving adherence rates for beneficiaries with diabetes prescribed statin therapy.

Following discussion, Dr. Montalvo made a motion, seconded by Dr. Bloodworth, and unanimously approved by the Board to accept the recommendations presented.

Asthma Guideline Update and UPDL Implications

At the March 2019 DUR Board Meeting, an overview of asthma, along with performance on related quality measures, was presented. The board recommended MS-DUR design and implement an educational intervention program to educate providers about performance on asthma quality measures. Prior to implementing any provider education, an updated report from the Global Initiative for Asthma (GINA) was released in April 2019 and recommended significant changes in asthma management. The landmark changes involved the recommendation that all adults and adolescents with asthma receive symptom-driven or regular low-dose inhaled corticosteroid (ICS) containing controller treatment, specifically low-dose ICS-formoterol. The Division of Medicaid (DOM) requested MS-DUR conduct an updated analysis and review the Universal Preferred Drug List (UPDL) for any issues that may limit providers from prescribing in accordance with the updated guidelines

MS-DUR presented a report on performance on the Asthma Medication Ratio (AMR) quality measure, healthcare utilization costs associated with asthma, and potential UPDL issues that may limit providers from prescribing in accordance with the updated guidelines.

The following recommendations were presented:

1. The UPDL quantity limit for Symbicort® should be updated to allow for its prescribing in both as-needed and maintenance therapy concurrently.
2. MS-DUR should design and implement an educational intervention program to educate providers on the updated asthma guidelines, performance on asthma medication management quality measures, and any asthma-related UPDL updates.

At the conclusion of discussions by the Board, Dr. Montalvo made a motion, seconded by Dr. Brown, and unanimously approved by the Board to accept the recommendations presented.

90-Day Drug List Utilization

MS-DUR presented a report detailing the utilization of medications included on Medicaid's 90-Day Drug List. This list may be used by prescribers as a tool to manage a beneficiary's

prescription drug limit, unless clinically contraindicated. Dr. Pittman presented utilization trends by number of prescription fills, proportion of fills for that specific drug class, and dollars paid. This report for the DUR Board was for informational purposes only.

No action was sought as a result of this report.

FDA Drug Safety Updates:
Dr. Pittman presented FDA drug safety communications for September 2021 – November 2021.

Pharmacy Program Update:
Ms. Kirby provided a pharmacy program update highlighting the following updates:

1) Medicaid will be changing their fiscal agent from Conduent to Gainwell. A tentative 'go live' date is proposed for July 2022. Providers should begin seeing communications related to that change soon.
2) DOM is continuing to make updates to COVID-19 billing guidance.
3) Pharmacy permits are expiring at the end of December 2021. Renewals need to be submitted before January 1, 2022 to DOM to prevent any interruptions in reimbursements.
4) The UPDL changes will go into effect January 1, 2022.

Next Meeting Information:
The following proposed 2022 meeting dates were presented to the Board: March 3, 2022; June 9, 2022; September 15, 2022; and December 8, 2022.

Dr. Bloodworth motioned to adjourn the meeting at 2:07 pm, seconded by Dr. Montalvo, and unanimously approved by the Board.

Submitted,

Eric Pittman, PharmD
Evidence-Based DUR Initiative, MS-DUR

Meeting Location: Meetings will be held virtually until further notice. Please visit Medicaid.ms.gov and click on the Pharmacy Information link for further information.

Contact Information: Office of Pharmacy:
Chris Yount, 601-359-5253: Christopher.yount@medicaid.ms.gov, or
Jessica Tyson, 601-359-5253; Jessica.Tyson@medicaid.ms.gov

Notice details:

State Agency: MS Division of Medicaid

Public Body: Drug Utilization Board (DUR) Meeting

Subject: Quarterly Meeting

Date and Time: March 4, 2021; June 10, 2021; September 16, 2021; and December 9, 2021 at 1PM

Description: The Mississippi Division of Medicaid's Drug Utilization Review (DUR) Board is a quality assurance body which seeks to assure appropriate drug therapy to include optimal beneficiary outcomes and appropriate education for physicians, pharmacists, and the beneficiary. The Drug Utilization Review (DUR) Board is composed of twelve participating physicians and pharmacists who are active MS Medicaid providers and in good standing with their representative organizations.

The Board reviews utilization of drug therapy and evaluates the long-term success of the treatments.

The Drug Utilization Review (DUR) Board meets quarterly.

Resource Utilizaton Review

TABLE 04A: ENROLLMENT STATISTICS FOR LAST 6 MONTHS
July 1, 2021 through December 31, 2021

			Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
Total enrollment			788,136	792,599	795,721	798,537	800,747	802,564
Dual-eligibles			165,380	165,583	165,560	165,530	165,681	165,699
Pharmacy benefits			672,735	677,139	680,448	683,280	685,347	687,027
	LTC		15,030	15,016	15,012	15,012	14,906	14,739
	PLAN %	**FFS**	29.4%	33.0%	35.2%	37.0%	38.6%	39.8%
		MSCAN-UHC	27.1%	25.9%	25.1%	24.4%	23.8%	23.3%
		MSCAN-Magnolia	28.7%	27.3%	26.4%	25.7%	25.1%	24.6%
		MSCAN-Molina	14.8%	13.8%	13.3%	12.9%	12.5%	12.3%

TABLE 04B: PHARMACY UTILIZATION STATISTICS FOR LAST 6 MONTHS
July 1, 2021 through December 31, 2021

		Jul-21	Aug-21	Sep-21	Oct-21	Nov-21	Dec-21
# Rx Fills	**FFS**	125,652	147,434	144,983	148,640	159,940	161,769
	MSCAN-UHC	162,922	177,364	165,226	159,021	164,552	158,945
	MSCAN-Mag	163,602	175,473	165,798	160,871	165,593	157,861
	MSCAN-Mol	57,825	61,959	57,700	56,169	58,068	55,888
# Rx Fills / Bene	**FFS**	0.6	0.7	0.6	0.6	0.6	0.6
	MSCAN-UHC	0.9	1.0	1.0	1.0	1.0	1.0
	MSCAN-Mag	0.8	0.9	0.9	0.9	1.0	0.9
	MSCAN-Mol	0.6	0.7	0.6	0.6	0.7	0.7
$ Paid Rx	**FFS**	$14,949,018	$16,084,160	$16,045,791	$15,615,106	$16,591,456	$17,225,164
	MSCAN-UHC	$19,890,471	$20,495,599	$20,413,352	$18,999,064	$19,707,811	$19,411,042
	MSCAN-Mag	$16,597,067	$17,088,194	$16,695,656	$16,447,547	$16,989,149	$16,454,220
	MSCAN-Mol	$4,533,248	$4,836,190	$5,190,113	$4,944,731	$5,303,338	$5,183,874
$ /Rx Fill	**FFS**	$118.97	$109.09	$110.67	$105.05	$103.74	$106.48
	MSCAN-UHC	$122.09	$115.56	$123.55	$119.48	$119.77	$122.12
	MSCAN-Mag	$101.45	$97.38	$100.70	$102.24	$102.60	$104.23
	MSCAN-Mol	$78.40	$78.05	$89.95	$88.03	$91.33	$92.75
$ /Bene	**FFS**	$75.58	$71.98	$66.99	$61.77	$62.72	$63.00
	MSCAN-UHC	$109.10	$116.86	$119.52	$113.96	$120.82	$121.26
	MSCAN-Mag	$85.96	$92.44	$92.94	$93.66	$98.76	$97.36
	MSCAN-Mol	$45.53	$51.75	$57.35	$56.10	$61.91	$61.34

NOTE: Paid amounts represent amount reported on claims as paid to the pharmacy. These amounts do not reflect final actual costs after rebates, etc.

In April 2021, UHC changed their claims reporting procedure, and the estimates presented in these tables may be slightly higher than the amount actually paid by UHC

TABLE C: TOP 10 DRUG CATEGORIES BY NUMBER OF CLAIMS IN DEC 2021 (FFS AND CCOs)

Category	Month Year	Rank Volume	# RXs	$ Paid	# Unique Benes
CNS stimulants	Dec 2021	1	23,796	$4,007,534	19,849
	Nov 2021	1	25,425	$4,343,777	21,381
	Oct 2021	1	25,201	$4,292,476	21,302
adrenergic bronchodilators	Dec 2021	2	17,009	$1,003,239	14,516
	Nov 2021	3	18,368	$1,062,141	15,452
	Oct 2021	3	16,759	$990,961	14,252
macrolides	Dec 2021	3	16,817	$351,920	16,195
	Nov 2021	6	16,765	$383,209	16,153
	Oct 2021	9	13,224	$300,019	12,761
aminopenicillins	Dec 2021	4	16,418	$212,599	15,951
	Nov 2021	2	19,619	$260,068	19,015
	Oct 2021	4	15,915	$208,348	15,443
antihistamines	Dec 2021	5	15,770	$225,025	14,809
	Nov 2021	4	17,793	$253,444	16,817
	Oct 2021	2	17,287	$246,441	16,298
glucocorticoids	Dec 2021	6	15,656	$341,151	14,841
	Nov 2021	5	17,066	$310,476	16,160
	Oct 2021	8	14,087	$265,398	13,389
nonsteroidal anti-inflammatory agents	Dec 2021	7	15,255	$220,988	14,305
	Nov 2021	7	15,254	$221,655	14,392
	Oct 2021	5	15,402	$223,893	14,517
SSRI antidepressants	Dec 2021	8	14,570	$179,034	13,152
	Nov 2021	8	14,746	$178,125	13,437
	Oct 2021	6	14,339	$174,676	13,161
atypical antipsychotics	Dec 2021	9	14,375	$4,298,954	11,809
	Nov 2021	9	14,496	$4,197,251	12,008
	Oct 2021	7	14,337	$4,046,859	12,027
narcotic analgesic combinations	Dec 2021	10	12,656	$570,218	11,284
	Nov 2021	10	12,259	$539,970	11,187
	Oct 2021	10	12,669	$525,397	11,516

TABLE D: TOP 10 DRUG CATEGORIES BY DOLLARS PAID IN DEC 2021 (FFS AND CCOs)

Category	Month Year	Rank Paid Amt	# RXs	$ Paid	# Unique Benes
antirheumatics	Dec 2021	1	792	$4,400,397	635
	Nov 2021	1	763	$4,439,795	607
	Oct 2021	2	749	$4,183,020	624
atypical antipsychotics	Dec 2021	2	14,375	$4,298,954	11,809
	Nov 2021	3	14,496	$4,197,251	12,008
	Oct 2021	3	14,337	$4,046,859	12,027
CNS stimulants	Dec 2021	3	23,796	$4,007,534	19,849
	Nov 2021	2	25,425	$4,343,777	21,381
	Oct 2021	1	25,201	$4,292,476	21,302
interleukin inhibitors	Dec 2021	4	534	$2,912,037	419
	Nov 2021	4	506	$2,750,718	394
	Oct 2021	5	504	$2,622,002	385
antiviral combinations	Dec 2021	5	876	$2,844,526	784
	Nov 2021	5	868	$2,711,584	776
	Oct 2021	4	882	$2,921,655	794
insulin	Dec 2021	6	5,378	$2,460,882	3,906
	Nov 2021	6	5,565	$2,537,886	3,969
	Oct 2021	6	5,456	$2,480,445	3,922
CFTR combinations	Dec 2021	7	93	$2,003,812	69
	Nov 2021	7	93	$1,958,616	71
	Oct 2021	7	95	$2,015,782	73
miscellaneous uncategorized agents	Dec 2021	8	129	$1,563,954	107
	Nov 2021	11	156	$1,130,341	133
	Oct 2021	8	180	$1,357,815	156
factor for bleeding disorders	Dec 2021	9	142	$1,503,500	111
	Nov 2021	8	141	$1,591,327	111
	Oct 2021	10	122	$1,191,834	105
bronchodilator combinations	Dec 2021	10	4,069	$1,308,510	3,590
	Nov 2021	10	4,250	$1,337,473	3,759
	Oct 2021	9	4,146	$1,286,558	3,651

TABLE E: TOP 25 DRUG MOLECULES
BY NUMBER OF CLAIMS IN DEC 2021 (FFS and CCOs)

Drug Molecule Therapeutic Category	Nov 2021 # Claims	Dec 2021 # Claims	Dec 2021 $ Paid	Dec 2021 # Unique Benes
albuterol / adrenergic bronchodilators	17,723	16,390	$817,234	14,119
amoxicillin / aminopenicillins	19,587	16,384	$211,723	15,921
azithromycin / macrolides	16,245	16,355	$268,334	15,808
cetirizine / antihistamines	13,117	11,168	$149,427	10,648
montelukast / leukotriene modifiers	10,526	9,433	$148,994	8,992
ondansetron / 5HT3 receptor antagonists	7,965	8,473	$128,048	8,090
gabapentin / gamma-aminobutyric acid analogs	8,137	8,406	$127,497	7,629
fluticasone nasal / nasal steroids	9,511	7,990	$122,789	7,717
acetaminophen-hydrocodone / narcotic analgesic combinations	7,632	7,766	$101,649	7,106
cefdinir / third generation cephalosporins	8,865	7,735	$177,764	7,526
prednisolone / glucocorticoids	9,068	7,558	$109,556	7,203
ibuprofen / nonsteroidal anti-inflammatory agents	7,171	7,343	$88,847	7,076
lisdexamfetamine / CNS stimulants	7,797	7,135	$2,329,607	6,673
clonidine / antiadrenergic agents, centrally acting	6,614	6,587	$89,182	6,040
amoxicillin-clavulanate / penicillins/beta-lactamase inhibitors	7,022	6,510	$138,707	6,311
amphetamine-dextroamphetamine / CNS stimulants	6,577	6,383	$187,313	5,369
amlodipine / calcium channel blocking agents	6,356	6,309	$75,340	5,907
methylphenidate / CNS stimulants	6,636	6,211	$963,454	5,318
omeprazole / proton pump inhibitors	5,851	5,662	$67,793	5,376
sertraline / SSRI antidepressants	5,425	5,262	$65,152	4,735
atorvastatin / HMG-CoA reductase inhibitors (statins)	4,368	4,510	$50,475	4,120
famotidine / H2 antagonists	3,869	4,502	$166,837	4,202
sars-cov-2 mrna (tozinameran) vaccine / viral vaccines	3,057	4,241	$141,068	3,958
guanfacine / antiadrenergic agents, centrally acting	4,297	4,167	$114,711	3,844
prednisone / glucocorticoids	4,388	4,128	$45,435	3,931

TABLE F: TOP 25 DRUG MOLECULES
BY DOLLARS PAID IN DEC 2021 (FFS and CCOs)

Drug Molecule Therapeutic Category	Nov 2021 $ Paid	Dec 2021 $ Paid	Dec 2021 # Claims	Dec 2021 # Unique Benes
adalimumab / antirheumatics	$3,241,668	$3,113,169	413	323
lisdexamfetamine / CNS stimulants	$2,543,978	$2,329,607	7,135	6,673
elexacaftor/ivacaftor/tezacaftor / CFTR combinations	$1,791,172	$1,815,437	84	63
paliperidone / atypical antipsychotics	$1,679,909	$1,696,175	658	579
bictegravir/emtricitabine/tenofovir / antiviral combinations	$1,351,596	$1,403,607	396	371
dupilumab / interleukin inhibitors	$1,074,436	$1,174,774	375	280
aripiprazole / atypical antipsychotics	$1,025,331	$1,141,724	3,932	3,523
methylphenidate / CNS stimulants	$1,016,575	$963,454	6,211	5,318
insulin glargine / insulin	$924,748	$908,337	1,956	1,846
liraglutide / GLP-1 receptor agonists	$877,105	$844,045	1,048	972
albuterol / adrenergic bronchodilators	$871,134	$817,234	16,390	14,119
ustekinumab / interleukin inhibitors	$652,855	$706,115	35	32
etanercept / antirheumatics	$652,623	$664,181	121	105
somatropin / growth hormones	$701,835	$664,085	157	125
emicizumab / factor for bleeding disorders	$634,045	$636,660	27	22
palivizumab / immune globulins	$982,351	$620,806	217	163
lacosamide / miscellaneous anticonvulsants	$612,653	$618,303	636	550
carglumic acid / miscellaneous uncategorized agents	$205,595	$616,786	3	2
ixekizumab / interleukin inhibitors	$445,707	$577,592	59	46
empagliflozin / SGLT-2 inhibitors	$555,513	$560,069	742	690
budesonide-formoterol / bronchodilator combinations	$562,695	$556,890	1,660	1,580
insulin aspart / insulin	$561,769	$545,038	1,452	1,321
everolimus / mTOR inhibitors	$336,269	$526,716	46	31
apixaban / factor Xa inhibitors	$477,166	$496,865	1,086	989
cannabidiol / miscellaneous anticonvulsants	$422,171	$480,216	152	123

TABLE G: TOP 25 DRUG MOLECULES
BY CHANGE IN NUMBER OF CLAIMS FROM OCT 2021 TO DEC 2021 (FFS and CCOs)

Drug Molecule	Oct 2021 # Claims	Nov 2021 # Claims	Dec 2021 # Claims	Dec 2021 $ Paid	Dec 2021 # Unique Benes
azithromycin / macrolides	12,800	16,245	16,355	$268,334	15,808
oseltamivir / neuraminidase inhibitors	592	1,110	4,123	$166,026	3,960
sars-cov-2 mrna (tozinameran 5y-11y) vaccine / viral vaccines	0	1,592	3,439	$110,489	3,109
ondansetron / 5HT3 receptor antagonists	7,232	7,965	8,473	$128,048	8,090
cefdinir / third generation cephalosporins	6,804	8,865	7,735	$177,764	7,526
amoxicillin-clavulanate / penicillins/beta-lactamase inhibitors	5,692	7,022	6,510	$138,707	6,311
benzonatate / antitussives	998	1,218	1,661	$20,066	1,596
famotidine / H2 antagonists	3,850	3,869	4,502	$166,837	4,202
prednisolone / glucocorticoids	6,946	9,068	7,558	$109,556	7,203
amoxicillin / aminopenicillins	15,877	19,587	16,384	$211,723	15,921
albuterol / adrenergic bronchodilators	16,028	17,723	16,390	$817,234	14,119
prednisone / glucocorticoids	3,776	4,388	4,128	$45,435	3,931
sars-cov-2 (covid-19) mrna-1273 vaccine / viral vaccines	1,038	1,076	1,365	$47,126	1,339
dexamethasone / glucocorticoids	565	604	854	$12,283	822
methylprednisolone / glucocorticoids	2,626	2,817	2,913	$40,248	2,864
dextromethorphan-promethazine / upper respiratory combinations	306	463	572	$9,475	534
doxycycline / tetracyclines	2,132	2,237	2,384	$33,715	2,315
polymyxin b-trimethoprim ophthalmic / ophthalmic anti-infectives	677	794	910	$14,420	896
ibuprofen / nonsteroidal anti-inflammatory agents	7,112	7,171	7,343	$88,847	7,076
promethazine / antihistamines	2,228	2,400	2,405	$36,040	2,216
levofloxacin / quinolones	515	594	667	$8,214	640
codeine-guaifenesin / upper respiratory combinations	122	173	272	$3,612	266
budesonide / inhaled corticosteroids	2,001	2,337	2,141	$216,984	1,991
medroxyprogesterone / contraceptives	2,924	2,849	3,062	$126,832	2,991
gabapentin / gamma-aminobutyric acid analogs	8,276	8,137	8,406	$127,497	7,629

TABLE H: TOP 25 DRUG MOLECULES
BY CHANGE IN AMOUNT PAID FROM OCT 2021 TO DEC 2021 (FFS and CCOs)

Drug Molecule	Oct 2021 $ Paid	Nov 2021 $ Paid	Dec 2021 $ Paid	Dec 2021 # Claims	Dec 2021 # Unique Benes
palivizumab / immune globulins	$316,609	$982,351	$620,806	217	163
adalimumab / antirheumatics	$2,817,648	$3,241,668	$3,113,169	413	323
ustekinumab / interleukin inhibitors	$448,331	$652,855	$706,115	35	32
everolimus / mTOR inhibitors	$297,817	$336,269	$526,716	46	31
carglumic acid / miscellaneous uncategorized agents	$411,191	$205,595	$616,786	3	2
ixekizumab / interleukin inhibitors	$415,953	$445,707	$577,592	59	46
antihemophilic factor / factor for bleeding disorders	$293,875	$276,348	$453,962	27	15
oseltamivir / neuraminidase inhibitors	$23,046	$44,150	$166,026	4,123	3,960
triptorelin / antineoplastic hormones	$0	$212,068	$141,378	8	6
nusinersen / miscellaneous uncategorized agents	$0	$0	$127,511	1	1
sars-cov-2 mrna (tozinameran 5y-11y) vaccine / viral vaccines	$0	$20,797	$110,489	3,439	3,109
aripiprazole / atypical antipsychotics	$1,044,758	$1,025,331	$1,141,724	3,932	3,523
palbociclib / CDK 4/6 inhibitors	$209,282	$235,442	$300,843	23	19
eltrombopag / platelet-stimulating agents	$9,313	$62,225	$95,917	7	3
abemaciclib / CDK 4/6 inhibitors	$108,470	$168,816	$194,864	16	10
coagulation factor ix / factor for bleeding disorders	$110,837	$330,384	$196,217	8	6
paliperidone / atypical antipsychotics	$1,610,868	$1,679,909	$1,696,175	658	579
alpha 1-proteinase inhibitor / miscellaneous respiratory agents	$51,515	$131,553	$134,896	12	6
teduglutide / miscellaneous GI agents	$41,672	$166,693	$125,018	3	3
cannabidiol / miscellaneous anticonvulsants	$402,289	$422,171	$480,216	152	123
pancrelipase / digestive enzymes	$320,500	$315,211	$393,395	189	156
dupilumab / interleukin inhibitors	$1,104,540	$1,074,436	$1,174,774	375	280
somatropin / growth hormones	$596,958	$701,835	$664,085	157	125
sofosbuvir-velpatasvir / antiviral combinations	$204,148	$184,945	$268,863	36	25
lenalidomide / other immunosuppressants	$195,452	$206,620	$256,869	15	11

TABLE I: TOP 15 DRUG SOLID DOSAGE FORM HIGH VOLUME (100+ RX FILLS LAST MONTH) PRODUCTS WITH UNIT COST > $1
BY PERCENT CHANGE IN AMOUNT PAID PER UNIT OCT 2021 TO DEC 2021 (FFS and CCOs)

Drug Product Therapeutic Category	Dec 2021 # Claims	Dec 2021 $ Paid	Dec 2021 Avr. Paid Per Rx	Dec 2021 Avr. Units Per Rx	Oct 2021 Paid Per Unit	Nov 2021 Paid Per Unit	Dec 2021 Paid Per Unit	Percent Change
ivermectin 3 mg tablet / anthelmintics (P)	140	$9,464	$67.60	15	$3.21	$2.94	$3.40	5.7%
Xulane (ethinyl estradiol-norelgestromin) 35 mcg-150 mcg/24 hr film, extended release / contraceptives (P)	1,466	$196,702	$134.18	3	$36.09	$37.83	$37.98	5.2%
Eliquis (apixaban) 2.5 mg tablet / factor Xa inhibitors (P)	133	$55,348	$416.15	52	$7.72	$7.73	$7.85	1.7%
oseltamivir 75 mg capsule / neuraminidase inhibitors (P)	1,787	$50,482	$28.25	10	$1.69	$1.67	$1.71	1.5%
Brilinta (ticagrelor) (ticagrelor) 90 mg tablet / platelet aggregation inhibitors (P)	179	$76,622	$428.06	62	$6.40	$6.41	$6.48	1.2%
buprenorphine-naloxone 8 mg-2 mg tablet / narcotic analgesic combinations (P)	139	$8,521	$61.30	45	$1.03	$1.02	$1.04	1.1%
colchicine 0.6 mg capsule / antigout agents (P)	169	$29,679	$175.62	39	$4.25	$4.19	$4.29	1.0%
Linzess (linaclotide) 145 mcg capsule / guanylate cyclase-C agonists (P)	154	$80,777	$524.52	33	$14.50	$14.72	$14.64	1.0%
Spiriva HandiHaler (tiotropium) 18 mcg capsule / anticholinergic bronchodilators (P)	364	$177,865	$488.64	32	$14.91	$14.92	$15.03	0.8%
Tradjenta (linagliptin) 5 mg tablet / dipeptidyl peptidase 4 inhibitors (P)	197	$134,662	$683.56	45	$14.98	$14.84	$15.10	0.8%
Vyvanse (lisdexamfetamine) 40 mg tablet, chewable / CNS stimulants (P)	155	$50,623	$326.60	30	$10.50	$10.50	$10.58	0.8%
atomoxetine 40 mg capsule / noradrenergic uptake inhibitors for ADHD (P)	237	$10,996	$46.39	30	$1.17	$1.16	$1.17	0.5%
Trintellix (vortioxetine) 10 mg tablet / miscellaneous antidepressants (P)	169	$76,381	$451.96	31	$13.21	$13.23	$13.27	0.5%

Products are only included if 100 or more fills in last month and average cost per unit in reference month was >= $1.

TABLE I: TOP 15 DRUG SOLID DOSAGE FORM HIGH VOLUME (100+ RX FILLS LAST MONTH) PRODUCTS WITH UNIT COST > $1
BY PERCENT CHANGE IN AMOUNT PAID PER UNIT OCT 2021 TO DEC 2021 (FFS and CCOs)

Drug Product Therapeutic Category	Dec 2021 # Claims	Dec 2021 $ Paid	Dec 2021 Avr. Paid Per Rx	Dec 2021 Avr. Units Per Rx	Oct 2021 Paid Per Unit	Nov 2021 Paid Per Unit	Dec 2021 Paid Per Unit	Percent Change
Vyvanse (lisdexamfetamine) 10 mg tablet, chewable / CNS stimulants (P)	164	$53,710	$327.50	30	$10.63	$10.64	$10.68	0.5%
Eliquis (apixaban) 5 mg tablet / factor Xa inhibitors (P)	946	$437,335	$462.30	57	$7.74	$7.76	$7.78	0.5%

Products are only included if 100 or more fills in last month and average cost per unit in reference month was >= $1.

New Business

Special Analysis Projects

MISSISSIPPI DIVISION OF MEDICAID

MS-DUR INTERVENTION / EDUCATIONAL INITIATIVE UPDATE

December 2021 – February 2022

Ongoing Intervention(s):

PROVIDER SHOPPING FOR OPIOIDS (≥4 Prescribers AND ≥4 Pharmacies)				CONCOMITANT USE OF OPIOIDS AND ANTIPSYCHOTICS		
Month	Prescribers Mailed	Pharms Mailed	Benes Addressed	Month	Prescribers Mailed	Benes Addressed
21-Mar	6	5	11	21-May	74	94
21-Apr	6	6	12	21-Jun	60	80
21-May	3	3	6	21-Jul	44	48
21-Jun	4	4	8	21-Aug	45	47
21-Jul	3	2	5	21-Sep	46	50
21-Aug	6	4	10	21-Oct	51	88
21-Sep	5	4	9	21-Nov	43	49
21-Oct	5	1	6	21-Dec	54	66
21-Nov	4	3	7	22-Jan	28	34
21-Dec	4	2	6	22-Feb	63	71
22-Jan	4	2	6			
22-Feb	6	5	11			

MATERNAL HEALTH AND RELATED DRUG UTILIZATION ISSUES

BACKGROUND

The Mississippi Division of Medicaid (DOM) strives to continually improve the quality of care provided to individuals served. The Comprehensive Quality Strategy (CQS) was developed to help focus and direct the quality improvement activities of Medicaid.[1] Within the CQS, one of the focus areas identified was maternal health. Improving maternal health and decreasing preterm births among covered individuals is a priority for DOM.

The preterm birth rate in the United States for 2020 was 10.1%, however, Mississippi ranked last in the nation at 14.2%.[2,3] According to the March of Dimes, on an average week in Mississippi, there are 704 births with 102 of those considered preterm as defined as less than 37 weeks of pregnancy. Mississippi also led the nation in infant mortality at 9.1% per 1,000 live births while the national average was 5.6%.[2,3] Additionally, studies show that the preterm birth rate among Black women is higher than in other women. In Mississippi, the preterm birth rate among Black women is 44% higher than the rate among all other women.[3]

Considering both DOM's quality improvement focus on maternal health along with the high rate of preterm births in Mississippi, MS-DUR conducted several drug utilization projects centered on maternal health. The projects contained in this report include:

- Prenatal vitamin use among pregnant women;
- Opioid use among pregnant women;
- Low-dose aspirin use among pregnant women at high-risk for preeclampsia;
- ACEI/ARB use among women of childbearing age with hypertension.

METHODS FOR IDENTIFYING PREGNANCY EPISODES

A retrospective analysis was conducted using medical and pharmacy point-of-sale (POS) claims for Mississippi Medicaid fee-for-service (FFS) and coordinated care organizations [CCOs: UnitedHealthcare (UHC), Magnolia Health (MAG), and Molina Healthcare (MOL)] for the period of January 1, 2018 to December 31, 2021 to identify individuals with a pregnancy event.

Beneficiaries with pregnancy events were identified using the International Classification of Diseases (ICD) -10 codes for live births or stillbirths from any diagnosis field in medical claims (inpatient, outpatient, and medical files) as per the criteria used by Moll et.al.[4] The date of service for the claim for live or stillbirths was assigned as the pregnancy end date. The type of term associated with the delivery was determined using ICD-10 codes for preterm status or full-term status. The pregnancy start date was determined using the criteria of 245 days before the pregnancy end date for pregnancies that were identified as preterm and 270 days before the pregnancy end date for all other pregnancies.[5] For those pregnancy end dates for which the term could not be identified using the previous step, the week of gestation associated with the end date was determined using ICD-10 codes, and the start date was calculated using the formula:

pregnancy end date - week of gestation*7 +1 following the methodology of Moll et.al.[4] Finally, those individuals that were not continuously enrolled during the pregnancy event, were age less than 10 years, age greater than 65 years, or had missing plan information were excluded from the final sample. Figure 1 describes the attrition for the pregnancy events included in the final sample. This sample of pregnancy events was used in the analyses for prenatal vitamin use, opioid use, and low-dose aspirin use among pregnant women.

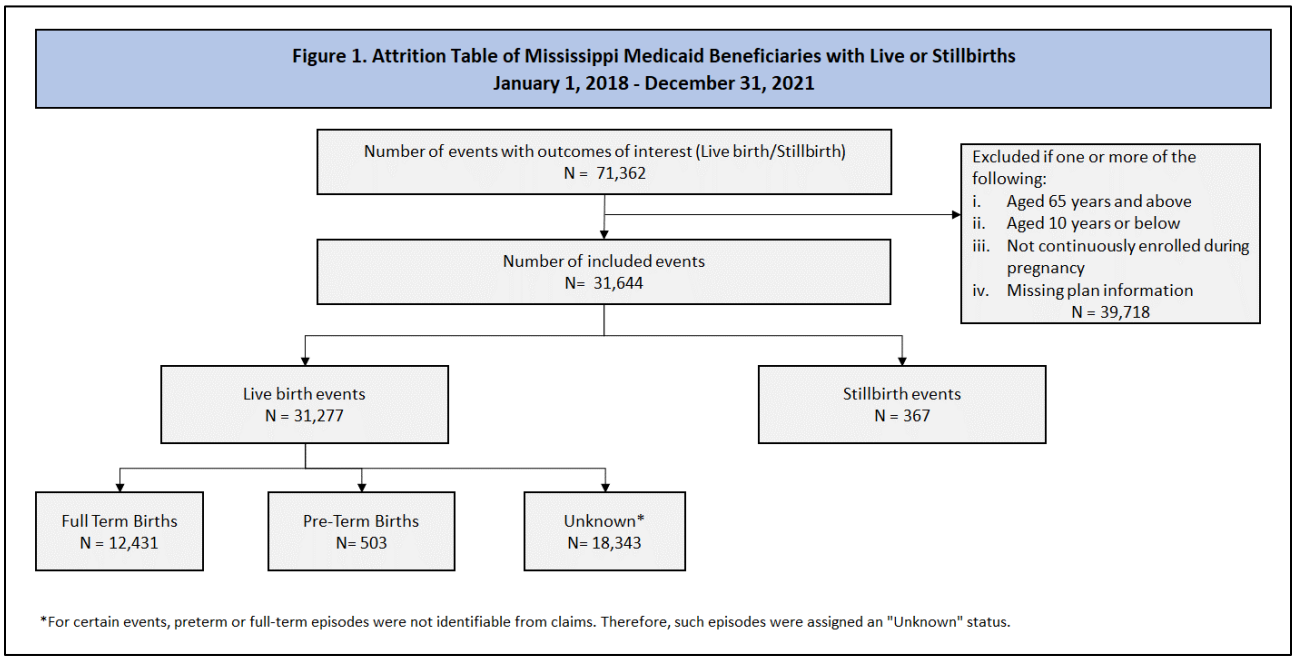

Table 1 displays the number of beneficiaries with pregnancy events between January 1, 2018 and December 31, 2021.

- A total of 28,366 beneficiaries experienced 31,644 pregnancy events during the study period.
- Beneficiaries 18-25 years had the highest proportion of pregnancy events by age category, followed closely by those 26-44 years.
- African Americans made up the highest proportion by race category with 61.86%.

TABLE 1. Beneficiaries with Pregnancy Events January 1, 2018 - December 31, 2021					
Variable	**Pharmacy Plan (as of pregnancy start)**				
Age Category (years)	**FFS**	**UHC**	**MAG**	**MOL**	**Total**
< 18	248	486	654	136	1,524
18-25	8,831	2,119	2,403	936	14,289
26-44	6,936	2,084	2,516	1,002	12,538
45-64	6	2	5	2	15
Total	*16,021*	*4,691*	*5,578*	*2,076*	*28,366*
Race					
Caucasian	5,986	1,519	1,593	674	9,772
African American	9,369	3,028	3,825	1,324	17,546
Hispanic	128	52	48	17	245
Amer. Indian	225	3	8	5	241
Other	311	89	104	56	560
Total	*16,019*	*4,691*	*5,578*	*2,076*	*28,364*

Notes: FFS: Fee-for-Service, UHC: United HealthCare, MAG: Magnolia Health, MOL: Molina Healthcare; Race variable excludes 2 benes without race variable present.

REPORT 1: PRENATAL VITAMIN USE AMONG PREGNANT WOMEN

Prenatal vitamins are recommended to meet the increased dietary vitamin and mineral intake needs required during pregnancy.[6] Recently DOM expanded its list of prenatal vitamins included on the preferred drug list (PDL) to increase beneficiary access to prenatal vitamins. Figure 2 details the updated list of prenatal vitamin National Drug Codes (NDCs) included on Medicaid's PDL.[7]

Figure 2. PDL Covered Prenatal Vitamins

PDL PRENATAL	NDC(S)
COMPLETE NATAL DHA	13811001030
COMPLETENATE CHEW TABLET	13811001490
M-NATAL PLUS Tablet	58657017001
NESTABS DHA COMBO PKG	50967031730
PNV 29-1 Tablet	69543026790
PNV 95	00536408501
PNV 137	00904531360
PRENATAL VITAMIN PLUS LOW IRON Tablet	39328010610 63044015001 63044015005
PREPLUS Ca/Fe27/FA 1 Tablet	69543025810 69543025850
PRETAB 29 Tablet	69543025910
SE-NATAL 19 CHEW Tablet	13925011701
SE-NATAL 19 TABLET	13925011601
THRIVITE RX Tablet	58657013390
TRINATAL Rx 1 Tablet	13811000710
VIRT-NATE DHA Softgel	69543037030
VP-PNV-DHA Capsule	69543022330
WESTAB PLUS Tablet	69367026701

For this report, MS-DUR analyzed prenatal vitamin use among Medicaid beneficiaries with a pregnancy event between January 1, 2018 and December 31, 2021.

METHODS

A retrospective database analysis of Mississippi Medicaid beneficiaries was conducted. Beneficiaries with complete pregnancy events between January 1, 2018 and December 31, 2021 were included in the study sample. Details of the study sample and inclusion/exclusion criteria are described above. Pharmacy claims data were used to identify prenatal vitamin use during pregnancy events for eligible beneficiaries. Prenatal vitamins were identified using their 11-digit NDCs. Demographic characteristics such as age, race, and pharmacy plan were ascertained as of the beginning of each pregnancy event. Additionally, the total number of days with prenatal vitamin use during each pregnancy event was calculated. Trimester-specific use of prenatal vitamins was also identified. Pregnancy trimesters were identified based on the start date of each pregnancy event. The first trimester comprised the 90 days from the pregnancy start date, the second trimester from days 91 to 180, and the third trimester from day 181 through the end of the pregnancy.

RESULTS

During the study period, overall prenatal vitamin use occurred in **30.9%** of all pregnancy events with a mean duration of **22.4** days. (Table 1.1)

TABLE 1.1. Prenatal Vitamin Utilization among Pregnant Beneficiaries by Plan (January 1, 2018 - December 31, 2018)

Plan at pregnancy start	*Total (# of pregnancy events)*	Any Prenatal Vitamin Use		Proportion of pregnancy events with prenatal vitamin use	Days of prenatal vitamin use during each pregnancy event (mean)
		# events	# claims		
FFS	*17,843*	4,308	9,952	24.1%	17.1
UHC	*5,192*	2,023	4,899	39.0%	29.1
MAG	*6,225*	2,657	6,505	42.7%	31.8
MOL	*2,384*	783	1,854	32.8%	23.1
Total	***31,644***	***9,771***	***23,210***	***30.9%***	***22.4***

FFS: Fee-for-Service, UHC: United HealthCare, MAG: Magnolia, MOL: Molina;

Table 1.2 examines trimester-specific prenatal vitamin use. The highest proportion of prenatal vitamin use occurred during the second trimester of pregnancy events compared to other trimesters.

Table 1.2. Trimester-specific Prenatal Vitamin (PNV) Utilization during Pregnancy Events (January 1, 2018 - December 31, 2021)

Plan	# pregnancy events	# pregnancy events with PNV use	Trimester-specific PNV Use					
			Trimester 1		Trimester 2		Trimester 3	
			#claims	#pregnancy events	#claims	#pregnancy events	#claims	#pregnancy events
FFS	17,843	4,308	2,088	1,828	4,100	2,724	3,764	2,255
UHC	5,192	2,023	1,538	1,244	1,858	1,175	1,503	907
MAG	6,225	2,657	2,002	1,634	2,470	1,563	2,033	1,225
MOL	2,384	783	598	494	697	456	559	340
Total	31,644	9,771	6,226	5,200	9,125	5,918	7,859	4,727

FFS: Fee-for-Service, UHC: United HealthCare, MAG: Magnolia, MOL: Molina; PNV: prenatal vitamin

CONCLUSIONS

Claims data analysis showed that prenatal vitamins were utilized in only 30.9% of pregnancy events between 2018 and 2021. Prenatal vitamin use may have been negatively impacted by supply-chain issues related to prenatal vitamins. Supply chain issues could have pushed more beneficiaries to use over-the-counter vitamins in prenatal care. To increase access to prenatal vitamins, DOM recently expanded the number of prenatal vitamins included in their PDL.

RECOMMENDATIONS

1. DOM should initiate educational activities to increase awareness of their expanded PDL list of prenatal vitamins.
2. DOM should explore innovative approaches to increase prenatal vitamin use among beneficiaries.

REPORT 2: OPIOID USE AMONG PREGNANT WOMEN

Studies have shown varying rates of opioid use among pregnant women in the United States (U.S.). An analysis of self-reported data from the 2019 Pregnancy Risk Assessment Monitoring System (PRAMS) indicates that 6.6% of respondents reported prescription opioid use during pregnancy.[8] Another study using national claims data examining opioid use during pregnancy among Medicaid-enrolled women between 2000 and 2007 reported 21.6% of women in the study population filled a prescription for an opioid during pregnancy.[5] In this study, rates increased during the study period from 18.5% in 2000 to 22.8% in 2007 and varied by geographic region with the South having the highest regional rate.[5] The proportion of pregnant women with chronic opioid use was estimated at 2.5%.[5] A recently published study using an all-payer database of hospital discharges from 2010 through 2017 estimates that the maternal opioid-related diagnosis (MOD) rate in the U.S. increased 131% from 2010 to 2017.[9]

Opioid use during pregnancy can have negative impacts on women and their babies. Opioid use during pregnancy has been linked to poor health outcomes such as preterm birth, poor fetal health, neonatal abstinence syndrome (NAS), stillbirth, and birth defects.[10,11]

For this report, MS-DUR examined opioid use among pregnant women to assess the landscape in the Mississippi Medicaid population.

METHODS

A retrospective database analysis of Mississippi Medicaid beneficiaries was conducted. Pharmacy and medical claims for fee-for-service (FFS) and CCOs [United Healthcare (UHC), Magnolia Health (MAG), and Molina Healthcare (MOL)] from January 1, 2018 to December 31, 2021 were reviewed. Beneficiaries with complete pregnancy events were included in the study sample. Details of the study sample and inclusion/exclusion criteria are described above.

Pregnant women who received any prescription for an opioid during each pregnancy event were identified using pharmacy claims. The average morphine equivalent daily doses (MEDD) and maximum MEDD were calculated for opioids with a MEDD conversion factor. Trimester-specific use of opioids was also identified. Pregnancy trimesters were identified based on the start date of each pregnancy event. The first trimester comprised the 90 days from the pregnancy start date, the second trimester from days 91 to 180, and the third trimester from day 181 through the end of the pregnancy. Chronic opioid use was operationalized as 30 or more cumulative days' supply of opioids during a pregnancy event. The use of medication-assisted treatment (MAT) during pregnancy was examined and trimester-specific use of buprenorphine-naloxone products was further explored.

Pharmacy and medical claims were used to identify psychotropic medications, and the concomitant use of opioids and psychotropic medications was identified during each pregnancy

event. Concomitant use was defined as an overlap of one or more days of opioid and psychotropic medications. The list of psychotropic medications included can be found in Figure 3.

Figure 3: Psychotropic Medication List

Psychotropic Medication List	
Class	**Active ingredients**
Opioids	codeine, fentanyl, hydrocodone, hydromorphone, levorphanol, meperidine, morphine, oxycodone, oxymorphone, tapentadol, tramadol
Antidepressants	amitriptyline; amoxapine; bupropion; citalopram; clomipramine; desipramine; desvenlafaxine; doxepin; duloxetine; escitalopram; fluoxetine; fluvoxamine; imipramine; maprotiline; mirtazapine; nefazodone; nortriptyline; paroxetine;phenelzine; protriptyline; selegiline; sertraline; tranylcypromine; trazodone; trimipramine; venlafaxine
Anticonvulsants	carbamazepine, divalproex, eslicarbazepine, ethosuximide, ethotoin, ezogabine, felbamate, gabapentin, lacosamide, lamotrigine, levetiracetam, lithium, methsuximide, oxcarbazepine, perampanel, phenytoin, pregabalin, primidone, rufinamide, tiagabine, topiramate, valproic acid, vigabatrin, zonisamide
Antipsychotics	aripiprazole; chlorpromazine; clozapine; fluphenazine; haloperidol; loxapine; mesoridazine; molindone; olanzapine; paliperidone; perphenazine; pimozide; prochlorperazine; quetiapine; risperidone; thioridazine; thiothixene; trifluoperazine; ziprasidone
Benzodiazepines	alprazolam, chlordiazepoxide, chlorazepate, clonazepam, diazepam, estazolam, flurazepam, lorazepam, midazolam, oxazepam, quazepam, temazepam, triazolam, clonazepam
Non-benzodiazepine hyponotics	buspirone, butabarbital, chloral hydrate, eszopiclone, hydroxyzine, mephobarbital, meprobamate, phenobarbital, promethazine, ramelteon, secobarbital, suvorexant, tasimelteon, zaleplon, zolpidem
Skeletal muscle relaxants	baclofen, carisoprodol, chlorzoxazone, cyclobenzaprine, metaxalone, methocarbamol, orphenadrine, tizanidine

Analyses were conducted across all years and also stratified by year. For year-level analyses, beneficiaries were included in the year based on the pregnancy start year.

RESULTS

Table 2.1 details opioid use among pregnant beneficiaries during the study period.

- A total of 31,644 pregnancy events occurred.
- Opioid use occurred in 12.19% of pregnancy events (3,858).
    - This figure falls within the range of rates reported in previous literature.[5,8]
- During 186 pregnancy events, beneficiaries received MAT.
- Codeine-containing opioids were used in 4.71% of pregnancy events (1491).
- Chronic opioid use occurred during 1.02% of pregnancy events (322).
    - This figure is below the 2.5% reported by Desai et al.[5]
- Concomitant opioid and psychotropic medication use occurred in 2.41% of pregnancy events (764).

TABLE 2.1. Opioid Utilization among Pregnant Beneficiaries by Plan (across all years)

Plan at pregnancy start	*Total (# of pregnancy events)*	Any Opioid Use		MAT use		Codeine-containing product use		Chronic Opioid Use	Any Concomitant Psychotropic Medication Use
		# events	# claims	# events	# claims	# events	# claims		
FFS	*17,843*	1,799	2,803	61	309	810	1,030	83	290
UHC	*5,192*	774	1,578	40	324	240	302	100	182
MAG	*6,225*	945	1,950	67	443	328	408	119	231
MOL	*2,384*	340	580	18	124	113	144	20	61
Total	***31,644***	***3,858***	***6,911***	***186***	***1,200***	***1,491***	***1,884***	***322***	***764***

Table 2.2. Utilization of Opioids and Concomitant Psychotropic Medication Use Over Time

Year	Utilization Characteristics	Pharmacy Program (as of pregnancy event start)				
		FFS	UHC	MAG	MOL	Total
2018	Opioid Use Type (#benes)					
	Any	604	311	395	10	1,320
	Buprenorphine	16	6	15	0	37
	Buprenorphine/Naloxone	6	5	12	0	23
	Opioid Dose (per claim)					
	Avg MEDD	27.5	28.9	28.1	24.5	28.0
	Max MEDD	270	124	300	45	300
	Opioid Use Duration					
	Chronic use (#benes)	30	30	52	0	112
	Mean	4.2	5.6	6.2	3.2	5.1
	Median	3	3	3	3	3
	IQR	2	3	2.5	2	3
	Concomitant Use of Any Psychotropic Medication	109	72	104	0	285
2019	Opioid Use Type					
	Any	473	188	279	128	1,068
	Buprenorphine	12	11	11	8	42
	Buprenorphine/Naloxone	1	10	12	6	29
	Opioid Dose (per claim)					
	Avg MEDD	26.8	26.5	27.9	27.5	27.1
	Max MEDD	105	75	96	75	105
	Opioid Use Duration					
	Chronic use (#benes)	17	31	30	10	88
	Mean	3.8	6.3	5.6	4.4	4.8
	Median	3	3	3	3	3
	IQR	2	4	3	2.5	3
	Concomitant Use of Any Psychotropic Medication	80	47	66	26	219
2020	Opioid Use Type					
	Any	541	221	228	150	1140
	Buprenorphine	20	9	19	4	52
	Buprenorphine/Naloxone	6	11	16	3	36
	Opioid Dose (per claim)					
	Avg MEDD	26.6	27.0	26.9	28.0	26.9
	Max MEDD	80	60	60	90	90
	Opioid Use Duration					
	Chronic use (#benes)	27	32	34	4	97
	Mean	3.6	6.0	6.0	3.2	4.5
	Median	3	3	3	3	3
	IQR	2	3	3	1.5	2
	Concomitant Use of Any Psychotropic Medication	83	52	52	20	207
2021	Opioid Use Type					
	Any	181	54	43	52	330
	Buprenorphine	6	3	2	3	14
	Buprenorphine/Naloxone	2	2	1	5	10
	Opioid Dose (per claim)					
	Avg MEDD	27.4	26.1	30.2	27.1	27.5
	Max MEDD	80	90	60	60	90
	Opioid Use Duration					
	Chronic use (#benes)	9	7	3	6	25
	Mean	3.9	6.1	3.9	5.2	4.4
	Median	3	3	3	3	3
	IQR	2	3	2	2	2
	Concomitant Use of Any Psychotropic Medication	18	11	9	15	53

Notes: IQR - interquartile range; Only completed pregnancy events were captured resulting in a lower number of events for 2021.

Table 2.2 displays utilization trends over time:

- Opioid use during pregnancy events decreased after 2018.
- Average MEDD did not fluctuate much over the study period.
- Max MEDD decreased substantially beginning 2019 when the opioid initiatives were implemented.
- Chronic use of opioids during pregnancy decreased after 2018.
- Concomitant use with any psychotropic medication decreased over time.
- *Note: Only data for completed pregnancy events is presented. This resulted in a lower number of pregnancy events and utilization events for calendar year 2021.*

To further assess opioid use during pregnancy, trimester-specific trends were examined. (Table 2.3)

Table 2.3. Trimester-specific Opioid Utilization during Pregnancy Events (across all years)

Plan	Trimester 1				Trimester 2				Trimester 3			
	All Opioids		Buprenorphine-Naloxone		All Opioids		Buprenorphine-Naloxone		All Opioids		Buprenorphine-Naloxone	
	#claims	#benes	#claims	#benes	#claims	#benes	#claims	#benes	#claims	#benes	#claims	#benes
FFS	460	358	22	9	1,062	806	18	6	1,281	911	17	7
UHC	615	379	68	26	464	283	31	9	499	317	24	7
MAG	705	461	97	39	624	378	46	20	621	398	31	12
MOL	194	143	35	13	172	129	11	5	214	143	2	1
Total	1,974	1,341	222	87	2,322	1,596	106	40	2,615	1,769	74	27

- Overall the number of claims for opioids and beneficiaries receiving opioids increased across trimesters of pregnancy. This increase appeared to be primarily attributed to increased opioid use in beneficiaries in the FFS program across trimesters.
- Buprenorphine/naloxone combination product use decreased across trimesters. The use of buprenorphine monoproducts has historically been recommended in pregnant women rather than combination buprenorphine/naloxone.[12]

CONCLUSIONS

The rates of opioid use among pregnant women in Mississippi Medicaid appear to be in line with rates published in the literature. Reductions in maximum MEDD levels, chronic use, and concomitant use with psychotropic medications all occurred following the implementation of Medicaid's opioid initiatives in 2019. Additionally, there does not appear to be substantial use of buprenorphine/naloxone products among pregnant women.

RECOMMENDATIONS

No formal recommendations are presented as part of this report.

REPORT 3: USE OF LOW-DOSE ASPIRIN AMONG PREGNANT WOMEN AT HIGH-RISK FOR PREECLAMPSIA

In 2013 the American College of Obstetricians and Gynecologists (ACOG) Hypertension in Pregnancy Task Force Report recommended daily low-dose aspirin beginning in the late first trimester for women with a medical history of early-onset preeclampsia and preterm delivery or preeclampsia in more than one prior pregnancy.[13] In 2018 ACOG and the Society for Maternal-Fetal Medicine issued an opinion updating their recommendations to the following:

- Low-dose aspirin (81 mg/day) prophylaxis is recommended in women at high risk of preeclampsia and should be initiated between 12 weeks and 28 weeks of gestation (optimally before 16 weeks) and continued daily until delivery.
- Low-dose aspirin prophylaxis should be considered for women with more than one of several moderate risk factors for preeclampsia.
- Low-dose aspirin prophylaxis is not recommended solely for the indication of prior unexplained stillbirth, in the absence of risk factors for preeclampsia.
- Low-dose aspirin prophylaxis is not recommended for the prevention of fetal growth restriction, in the absence of risk factors for preeclampsia.
- Low-dose aspirin prophylaxis is not recommended for the prevention of spontaneous preterm birth, in the absence of risk factors for preeclampsia.
- Low-dose aspirin prophylaxis is not recommended for the prevention of early pregnancy loss.[14]

Figure 1 details risk factors described in the ACOG/Society of Maternal-Fetal Medicine opinion statement.[14]

Figure 1. Risk Factors for Preeclampsia

Risk Level	Risk Factors	Recommendation
High	History of preeclampsia Multifetal gestation Chronic hypertension Type 1 or 2 diabetes Renal disease Autoimmune disease (systemic lupus erythematosus, antiphospholipid syndrome)	Recommend low-dose aspirin if the patient has one or more of these high-risk factors
Moderate	Nulliparity Obesity (body mass index > 30) Family history of preeclampsia (mother or sister) Sociodemographic characteristics (African American race, low socioeconomic status) Age ≥ 35 years Personal history factors (eg, low birthweight or small for gestational age, previous adverse pregnancy outcome, more than 10-year pregnancy interval)	Consider low-dose aspirin if the patient has more than one of these moderate-risk factors
Low	Previous uncomplicated full-term delivery	Do not recommend

MS-DUR was asked to analyze claims data to assess the prevalence of low-dose aspirin claims among pregnant women at high risk of preeclampsia.

METHODS

The utilization of low-dose aspirin among Medicaid beneficiaries with pregnancy events was assessed between January 1, 2018 to December 31, 2021. Low-dose aspirin use was identified from pharmacy claims using NDC codes for 81 mg or 60 mg doses of aspirin, and trimester-specific utilization was determined. The first trimester comprised the 90 days from the pregnancy start date, the second trimester from days 91 to 180, and the third trimester from day 181 through the end of the pregnancy. The presence of high-risk conditions such as a history of preeclampsia, hypertension, multifetal gestation, renal disease, diabetes, antiphospholipid syndrome, and systemic erythematosus lupus was identified in the 12-month period before the start date through the end of each pregnancy event using ICD-10 codes from any diagnosis field in medical claims (inpatient, outpatient, and medical files). Information on age, race, type of high-risk condition, and plan (FFS/UHC/MAG/MOL) for each pregnancy event was summarized in the analysis. Age and plan were determined as of the start date of the pregnancy event.

RESULTS

Table 3.1. Demographics of Beneficiaries Enrolled in Mississippi Medicaid with Pregnancy Events January 1, 2018 - December 31, 2021

Characteristics	Total Pregnancy Events* (N=)	Plan at Pregnancy Start							
		FFS		UHC		MAG		MOL	
		Pregnancy Events	Low-dose ASA use	Pregnancy Events	Low-dose ASA use	Pregnancy Events	Low-dose ASA use	Pregnancy Events	Low-dose ASA use
Age Category (years)									
< 18	1,569	254	1	502	11	676	9	137	1
18-30	24,735	14,829	125	3,705	31	4,381	77	1,820	31
31-40	5,147	2,664	36	945	23	1,123	36	415	9
41-64	193	96	2	40	1	45	3	12	1
Total	**31,644**	**17,843**	**164**	**5,192**	**66**	**6,225**	**125**	**2,384**	**42**
Race									
Caucasian	**10,826**	6,621	30	1,672	8	1,767	20	766	2
African American	**19,658**	10,479	128	3,361	58	4,283	103	1,535	39
Other	**1,158**	741	6	159	0	175	2	83	1
Total**	**31,642**	**17,841**	**164**	**5,192**	**66**	**6,225**	**125**	**2,384**	**42**
High Risk Conditions***									
Preeclampsia	**3,027**	1,603	36	514	13	641	25	269	14
Hypertension	**2,898**	1,188	46	639	23	836	49	235	17
Multifetal Gestation	**1,373**	651	9	267	5	295	15	160	3
Renal Disease	**207**	91	1	40	1	52	3	24	1
Diabetes	**883**	397	12	170	9	232	13	84	2
Antiphospholipid syndrome	**46**	30	0	13	2	3	0	0	0
Systemic Erythematosus Lupus	**88**	39	0	16	0	29	1	4	0
Total Number of events With Any Risk Flag****	**6,683**	**3,206**	**79**	**1,270**	**36**	**1,605**	**74**	**602**	**38**

Note: FFS - Fee-for-Service; UHC - UnitedHealthcare; MAG - Magnolia Health; MOL - Molina Healthcare; *Pregnancy events included were live birth and stillbirths; Denominator = All beneficiaries with a pregnancy episode of interest (live birth/stillbirth) between 2018-2021; Numerator - Beneficiaries with low-dose aspirin use during the pregnancy episode; ***Two pregnancy events had missing race information. *** High-Risk conditions were identified using ICD Codes in the 365 days prior to the pregnancy start date to the end date of the pregnancy episode. ****The total number of pregnancy events was calculated as the sum of events that had one or more risk flags during or prior to the pregnancy end date and therefore may not add up to the column total as some events may have multiple risk flags

Table 3.1 describes beneficiary characteristics for those with pregnancy events during the study period.

- 31,644 pregnancy events occurred during the study period.
- 21.19% (6,683) of those pregnancy events were considered high-risk for preeclampsia.
- History of preeclampsia and hypertension were the two most common high-risk conditions noted.
- There were claims for low-dose aspirin use in 227 of those high-risk pregnancy events resulting in a 3.4% rate of use.

TABLE 3.2. Low-dose Aspirin Utilization Among Medicaid Beneficiaries by Trimester
January 1, 2018 - December 31, 2021

Plan at Pregnancy Start	No Low-dose Aspirin Use	Any Low-Dose Aspirin Use*	Trimester-Specific Low-Dose Aspirin Use**					
			Trimester 1		Trimester 2		Trimester 3	
	Events	Events	Events	Claims per Event	Events	Claims per Event	Events	Claims per Event
Overall								
No High Risk	24,781	180	38	1.11	119	1.39	88	1.53
High Risk	6,456	227	52	1.12	152	1.47	127	1.71
FFS								
No High Risk	14,552	85	14	1.21	61	1.38	46	1.39
High Risk	3,127	79	16	1.13	54	1.39	46	1.67
UHC								
No High Risk	3,892	30	3	1.00	18	1.50	17	1.82
High Risk	1,234	36	10	1.10	23	1.35	19	1.74
MAG								
No High Risk	4,569	51	17	1.06	33	1.42	21	1.62
High Risk	1,531	74	18	1.06	61	1.57	43	1.79
MOL								
No High Risk	1,768	14	4	1.00	7	1.14	4	1.50
High Risk	574	28	8	1.25	14	1.57	19	1.58

Note: FFS - Fee-for-Service; UHC - UnitedHealthcare; MAG - Magnolia Health; MOL - Molina Healthcare; *Low-Dose Aspirin use was identified using NDCs for 81 mg or 60 mg dose of Aspirin; **Beneficiaries were assigned High-Risk status if they had ICD Codes for any of the following conditions in the 365 days prior to the pregnancy start date to the end date of the pregnancy event: Preeclampsia, Multi-fetal gestation, Renal Disease, Diabetes, Hypertension, Systemic Erythematosus Lupus or Anti-Phospholipid Syndrome; *This column describes the number of unique events with any low dose aspirin use and therefore may not add up to the count of trimester-specific use; **Trimester 1 was identified within 90 days from the pregnancy start date, trimester 2 was identified as 91 to 180 days from the pregnancy start date, and trimester 3 was identified as the time between 181st day to the end of the pregnancy.

In Table 3.2 low-dose aspirin use was broken down by trimester. Of the 227 high-risk pregnancy events with low-dose aspirin use:

- The majority of use occurred during the second and third trimesters.
- The mean number of low-dose aspirin claims per pregnancy event was less than 2 claims across each trimester.

Table 3.3 displays low-dose aspirin use among pregnancy events resulting in pre-term births.

- Of the 188 high-risk pregnancy events resulting in pre-term births, 7 had claims for low-dose aspirin use.
- For those 7 high-risk pregnancy events with low-dose aspirin use and resulting in pre-term births, the majority of use also occurred during the second and third trimesters.

TABLE 3.3. Low-dose Aspirin Utilization Among Medicaid Beneficiaries With Pre-Term Birth by Trimester January 1, 2018 - December 31, 2021								
	No Low-dose Aspirin Use	Any Low-Dose Aspirin Use*	Trimester-Specific Low-Dose Aspirin Use**					
			Trimester 1		Trimester 2		Trimester 3	
Plan at Pregnancy Start	events	events	events	Claims per event	events	Claims per event	events	Claims per event
Overall								
No High Risk	383	3	1	1.00	3	2.33	2	2.00
High Risk	181	7	1	1.00	4	1.75	6	1.17
FFS								
No High Risk	204	0	0	0.00	0	0.00	0	0.00
High Risk	88	1	0	0.00	0	0.00	1	1.00
UHC								
No High Risk	74	2	0	0.00	2	2.50	1	3.00
High Risk	33	0	0	0.00	0	0.00	0	0.00
MAG								
No High Risk	80	1	1	1.00	1	2.00	1	1.00
High Risk	41	4	0	0.00	3	2.00	3	1.33
MOL								
No High Risk	25	0	0	0.00	0	0.00	0	0.00
High Risk	19	2	1	1.00	1	1.00	2	1.00

Note: FFS - Fee-for-Service; UHC - UnitedHealthcare; MAG - Magnolia Health; MOL - Molina Healthcare; Low-Dose Aspirin use was identified using NDCs for 81 mg or 60 mg dose of Aspirin; Beneficiaries were assigned High-Risk status if they had ICD Codes for any of the following conditions in the 365 days prior to the pregnancy start date to the end date of the pregnancy event: Preeclampsia, Multi-fetal gestation, Renal Disease, Diabetes, Hypertension, Systemic Erythematosus Lupus or Anti-Phospholipid Syndrome; *This column described the number of unique events with any low dose aspirin use and therefore may not add up to the count of trimester-specific use; **Trimester 1 was identified within 90 days from the pregnancy start date, trimester 2 was identified as 91 to 180 days from the pregnancy start date, and trimester 3 was identified as the time between 181st day to the end of the pregnancy.

It should be noted that the low rate of aspirin claims described in this report is to be expected. Because aspirin is an inexpensive, over-the-counter medication, many individuals may choose to pay for out-of-pocket. Claims data do not capture out-of-pocket purchases. Therefore, this rate likely does not reflect the true rate of use of low-dose aspirin among pregnant beneficiaries at high risk of preeclampsia.

CONCLUSIONS

Low-dose aspirin is recommended for use among pregnant beneficiaries at high risk for developing preeclampsia. Claims data analysis revealed a low rate of low-dose aspirin use among this high-risk population. However, limitations in claims data likely prohibit capturing the true rate of low-dose aspirin use among high-risk Medicaid beneficiaries.

RECOMMENDATIONS

1. MS-DUR recommends that DOM explore and implement policies that encourage the prescribing and coverage of daily low-dose aspirin for women at high risk for preeclampsia as recommended by ACOG.

REPORT 4: USE OF ANGIOTENSIN-CONVERTING ENZYME (ACE) INHIBITORS AND ANGIOTENSIN RECEPTOR BLOCKERS (ARBs) AMONG WOMEN OF CHILDBEARING AGE

Angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) are effective antihypertensive agents that carry risks when used during pregnancy. ACE inhibitors and ARBs are associated with well-documented risks of fetal injury and death, and both classes carry "black box" warnings from the U.S. Food and Drug Administration (FDA).[15,16] The American College of Obstetricians and Gynecologists (ACOG) recommends against the use of these products in females of childbearing age unless potential benefits outweigh associated risks.[13] If the use of these agents is indicated in women of childbearing age, effective contraception is recommended.[13] The American College of Cardiology/American Heart Association (ACC/AHA) recommendations differ somewhat in that they recommend ACE inhibitors and ARBs as first-line options for most individuals regardless of age and gender.[17] However, for women that become pregnant or are thinking of becoming pregnant, the ACC/AHA Blood Pressure Guidelines recommend not treating hypertension with ACE inhibitors or ARBs but switching to another agent with a more proven safety profile in pregnancy.[17]

Data from the National Survey of Family Growth 2015-2017 indicated that 64.9% of females 15 to 49 years of age currently used contraception.[18] In a recent cross-sectional study evaluating the landscape of antihypertensive prescribing and contraceptive use among women of childbearing age, ACE inhibitors and ARBs were found to be the most commonly prescribed antihypertensive agents (37.6%) among women of childbearing age.[19] Of those prescribed an ACE inhibitor or ARB, 48% had a documented form of contraception.

The objective of this analysis was to evaluate the use of ACE inhibitors and ARBs among women of childbearing age in Mississippi Medicaid and assess their concomitant use of documented contraception.

METHODS

A retrospective analysis of Medicaid medical and pharmacy point-of-sale (POS) claims data from fee-for-service and the three coordinated care organizations (CCOs) [UnitedHealthcare (UHC), Magnolia Health (MAG), and Molina Healthcare (MOL)] was conducted for the observational period January 1, 2018 – December 31, 2021. Beneficiaries were included in the analysis if they were female of childbearing age (age 15-44 years), had a diagnosis of hypertension, and were prescribed an ACE inhibitor or ARB during the study period. Beneficiaries were excluded from the analysis if they had a diagnostic history of hysterectomy between January 2017 through the end of the study period. Individuals were included in the analysis at the date of the first hypertension diagnosis during the study period and followed until the end of the study period or cessation of continuous enrollment. Beneficiaries were assessed for concomitant utilization of antihypertensive medications ACE inhibitors or ARBs with a contraceptive agent (oral contraceptives, depot contraceptive injections, long-acting reversible contraceptives [LARC],

vaginal contraceptive rings, and contraceptive patches). One day of overlapping use was considered as concomitant use.

RESULTS

A total of 5,065 beneficiaries of childbearing age were prescribed an ACE inhibitor or ARB to treat their hypertension during the study period. Of those beneficiaries:

- 91.14% were between the ages of 26-44 years;
- 71.00% were African American;
- Only **23.26%** had documented use of concomitant contraception.
- The mean length of follow-up was just over 34 months. The mean length of follow-up captured the number of months from the presence of the first hypertension diagnosis claim during the study period through the end of the study period or cessation of Medicaid eligibility. (Table 4.1)

TABLE 4.1. Beneficiary Demographic Characteristics at Hypertension Diagnosis Index Date January 1, 2018 - December 31, 2021

Variable	FFS	UHC	MAG	MOL	Total
Age Category (years)					
15-17	26	69	57	4	**156**
18-25	60	114	114	5	**293**
26-44	444	1,721	2,249	202	**4,616**
Total	*802*	*1,904*	*2,420*	*211*	***5,065***
Race					
Caucasian	118	528	582	64	**1,292**
African American	379	1,310	1,770	137	**3,596**
Other	33	66	68	10	**177**
Total	*530*	*1,904*	*2,420*	*211*	***5,065***
Concomitant ACE-I or ARB and Contraceptive Use					
Yes	149	438	557	34	**1,178**
No	381	1,466	1,863	177	**3,887**
Total	*530*	*1,904*	*2,420*	*211*	***5,065***
Length of Follow-up					
Mean No. Months	32.79	34.35	35.2	20.27	***34.01***

Table 4.2 depicts concomitant use at a claim level. Examining concomitant contraception use for every ACE inhibitor or ARB claim, we found that only **16.7%** of claims had documented use of concomitant contraception.

TABLE 4.2. Claims for ACE Inhibitors or ARBs and Concomitant Contraceptive Use Status by Pharmacy Plan			
Plan at Fill Date for ACE Inhibitor or ARB	**Concomitant Contraceptive Use**	**No Concomitant Contraceptive Use**	***Total***
FFS	906	3,311	*4,217*
UHC	2,818	13,789	*16,607*
MAG	3,650	19,252	*22,902*
MOL	226	1,545	*1,771*
Total	***7,600***	***37,897***	***45,497***

Table 4.3 describes the types of contraceptive agents associated with concomitant use. As expected, oral contraceptives made up the majority of claims.

Table 4.3. Types of Contraceptive Agents Associated with Concomitant ACE Inhibitor or ARB Use (N = 6,116)		
Type of contraceptive	# of claims	# of benes
Oral contraceptives	3,448	579
Depot injectables	2,133	478
Long-acting reversible contraceptives	220	203
Patches	172	26
Vaginal rings	143	16

Limitations to this data include the lookback period for determining concomitant contraception use. To assess concomitant use of contraception with an intrauterine device (IUD), we looked back 1 year prior to the first hypertension diagnosis claim during the study period through the end of the study period or cessation of continuous enrollment to detect. Intrauterine devices can be effective for 3-10 years. A beneficiary that had an IUD implanted greater than 1 year prior to the first hypertension diagnosis during the study period would not have had their use of an IUD captured.

CONCLUSIONS

Despite well-documented risks of teratogenic effects associated with the use of ACE inhibitors and ARBs during pregnancy, there is significant use of these agents to treat hypertension among women of childbearing age. Our analysis indicated that among female Medicaid beneficiaries of childbearing age diagnosed with hypertension and treated with ACE inhibitors or ARBs, only 23.26% had concomitant use of contraception documented in claims data. This rate is well below

other published rates of contraception use in women of childbearing age. Results from this analysis present great opportunities for future education and intervention activities.

RECOMMENDATIONS

1. DOM should include results from this analysis in future provider communications and should explore opportunities to increase contraception use rates among female beneficiaries of childbearing age prescribed ACE inhibitors or ARBs.

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USE OF LONG-ACTING INJECTABLE ANTIPSYCHOTICS AMONG MEDICAID BENEFICIARIES AND ASSOCIATED OUTCOMES

BACKGROUND

Similar to maternal health, behavioral health is another focus area identified by the Mississippi Division of Medicaid (DOM) in their Comprehensive Quality Strategy (CQS).[1] According to the CQS, nearly 20% of preventable hospital readmissions among adult beneficiaries could be attributed to mental health disorders such as schizophrenia and bipolar disorder. DOM is working to reduce preventable hospital readmissions related to mental health issues. One approach to improving preventable hospital readmissions is through increased access to mental health services and coordination of care.

The Medicaid EASE Initiative – Enhancing Access to Services and Engagement – was launched in 2018 and is a multi-faceted approach to increase Medicaid beneficiaries' access to needed services such as mental health care.[2] An aspect of this initiative was the implementation of the Clinician-Administered Drugs and Implantable Drug System Devices (CADD) List. The CADD list allows certain injectable drugs to be billed and reimbursed as either a medical or pharmacy point-of-sale (POS) claim to improve access to these drugs. The CADD List became effective July 1, 2018, and included atypical long-acting injectable (LAI) antipsychotic (AP) medications. (Figure 1)

At the September 2019 DUR Board meeting a report was presented that analyzed utilization data for each of the categories included on the CADD List detailing trends prior to and after implementation. This report noted an increase in the utilization of atypical LAI AP agents associated with their inclusion on the CADD List. It was also noted that claims submitted for atypical LAI AP agents had transitioned from being submitted as primarily medical claims to POS claims after their addition to the CADD List. Since their addition to the CADD List, utilization of atypical LAI APs has continued to increase.

For this report, MS-DUR was tasked with examining the utilization of atypical LAI APs among Medicaid beneficiaries and assessing clinical outcomes associated with their use.

FIGURE 1: Atypical LAI AP Agents on CADD List

Atypical Antipsychotic Long-Acting Agents - Injectable		
Drug Name	NDC	Effective Date
Abilify Maintena ER 300 mg	59148001870	7/1/2018
	59148001871	7/1/2018
	59148004580	7/1/2018
Abilify Maintena ER 400 mg	59148001970	7/1/2018
	59148001971	7/1/2018
	59148007280	7/1/2018
Aristada ER 441 mg/1.6 ml	65757040101	7/1/2018
	65757040103	7/1/2018
Aristada ER 662 mg/2.4 ml	65757040201	7/1/2018
	65757040203	7/1/2018
Aristada ER 882 mg/3.2 ml	65757040301	7/1/2018
	65757040303	7/1/2018
Aristada ER 1064 mg/3.9 ml	65757040401	7/1/2018
	65757040403	7/1/2018
Aristada Initio ER 675mg/2ml	65757050003	11/1/2018
Invega Hafyera 1092mg/3.5ml	50458061101	9/18/2021
Invega Hafyera 1560mg/5ml	50458061201	9/18/2021
Invega Sustenna 39 mg/0.25ml	50458056001	7/1/2018
Invega Sustenna 78 mg/0.5 ml	50458056101	7/1/2018
Invega Sustenna 117 mg/0.75 ml	50458056201	7/1/2018
Invega Sustenna 156 mg/ml	50458056301	7/1/2018
Invega Sustenna 234 mg/1.5 ml	50458056401	7/1/2018
Invega Trinza 273 mg/0.875 ml	50458060601	7/1/2018
Invega Trinza 410 mg/1.315 ml	50458060701	7/1/2018
Invega Trinza 546 mg/1.75 ml	50458060801	7/1/2018
Invega Trinza 819 mg/2.625 ml	50458060901	7/1/2018
Perseris Inj 90mg	12496009001	11/1/2018
Perseris Inj 120mg	12496012001	11/1/2018
Risperdal Consta 12.5 mg syr.	50458030911	7/1/2018
Risperdal Consta 25 mg syr.	50458030611	7/1/2018
Risperdal Consta 37.5 mg syr.	50458030711	7/1/2018
Risperdal Consta 50 mg syr.	50458030811	7/1/2018
Zyprexa Relprevv 210 mg Vial	00002763511	7/1/2018
Zyprexa Relprevv 300 mv Vial	00002763611	7/1/2018
Zyprexa Relprevv 405 mg Vial	00002763711	7/1/2018

METHODS

A retrospective analysis of Medicaid medical and pharmacy POS claims data from fee-for-service (FFS) and the three coordinated care organizations (CCOs) [UnitedHealthcare (UHC), Magnolia Health (MAG), and Molina Healthcare (MOL)] was conducted for the observational period January 1, 2017 - December 31, 2021. Beneficiaries were included in the analysis if they had at least one medical or pharmacy claim for atypical long-acting injectable antipsychotics between January 1, 2018 and December 31, 2020, had no use of LAI APs in the 6 months prior to the date of the first administration of LAI AP (index date) in the study period, and had continuous enrollment in the 12-month period prior to and after the index date.

The total number of emergency department (ED) visits and the number of hospitalizations were extracted in the 12-month period prior to and after each beneficiary's LAI AP index date. The included ED visits and hospitalizations were required to have a mental health-related principal diagnosis (attention deficit hyperactivity disorder, anxiety, autism/pervasive developmental disorder, behavioral disturbance, bipolar disorder, dementia, depression, dissociative disorders, eating disorder, enuresis, habit disorders, intellectual disabilities, obsessive-compulsive disorder, organic disorders, personality disorders, psychotic disorders, gender identity disorder, sleep disorders, developmental delay, stress and adjustment, substance use and alcohol abuse). (See Appendix)

Continuity of care was also assessed using the Continuity of Care Index (COCI). COCI is a numeric indicator reflecting the extent to which an individual's total number of visits during a specific period are with a given provider or a group of referred providers.[3] COCI is an indicator reflecting the extent to which an individual sees a given provider (or provider group) over a specified period of time. With the context of the present study, COCI was calculated in the 12-month period prior to and after the LAI AP index date for each beneficiary, based on medical claims with a mental health-related principal diagnosis. Beneficiaries who did not have claims with a mental health-related principal diagnosis were assigned as "Unknown" COCI group. Beneficiaries with a COCI score of 1 were assigned as "Perfect" group, and those below 1 were assigned as "Not perfect" group.

Beneficiaries were further stratified based on their antecedent use and adherence to oral antipsychotics in 12-month period prior to the LAI AP index date. The antecedent use of the oral agents was captured using the pharmacy claims data. Proportion of Days Covered (PDC) was measured to indicate adherence to these oral agents. Larger PDC scores represent better adherence to the oral agents before starting LAI APs.

RESULTS

Table 1a and Figure 2 provide a monthly summary of atypical LAI AP claims by type.

- As noted earlier in the report, claim types have shifted from being primarily medical claims prior to implementation of the CADD List to almost exclusively being pharmacy POS claims currently.

- There was an immediate increase in total monthly claims when the CADD List first went into effect. Comparing mean monthly claims for the six-month period immediately prior to the CADD List implementation [the first half of calendar year (CY) 2018] with the six-month period after [the second half of CY 2018], there was a 17.78% increase in the second half of CY 2018.

- Examining the change in mean monthly claims since implementation of the CADD List, we see a 27.75% increase in mean monthly claims when comparing the second half of CY 2018 to CY 2021.

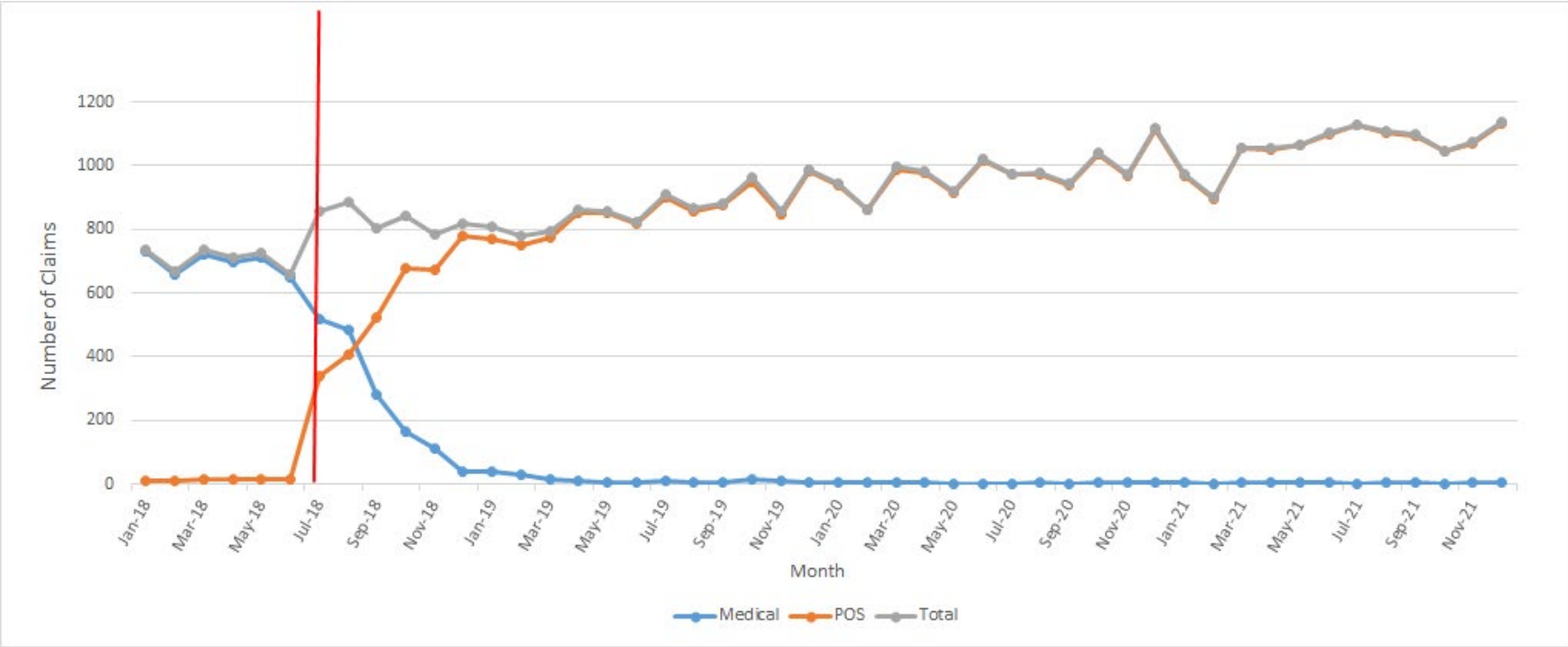
- The largest one-year increase in mean monthly claims occurred between CY 2019 and CY 2020 (13.15% increase). This corresponds to the period of time immediately before and after the COVID-19 pandemic began.

Table 1a. Monthly Trends in Number of Claims for Atypical LAI APs by Claim Type (Jan 2018 - Dec 2021)

Month	Medical	POS	Total
Jan-18	729	9	738
Feb-18	656	10	666
Mar-18	723	13	736
Apr-18	698	13	711
May-18	711	15	726
Jun-18	647	13	660
Jul-18	519	337	856
Aug-18	482	405	887
Sep-18	281	523	804
Oct-18	164	678	842
Nov-18	112	672	784
Dec-18	39	778	817
Jan-19	38	772	810
Feb-19	29	750	779
Mar-19	17	775	792
Apr-19	10	854	864
May-19	6	853	859
Jun-19	7	816	823
Jul-19	8	900	908
Aug-19	7	858	865
Sep-19	4	876	880
Oct-19	14	948	962
Nov-19	10	849	859
Dec-19	6	981	987
Jan-20	3	941	944
Feb-20	3	861	864
Mar-20	7	988	995
Apr-20	5	980	985
May-20	2	917	919
Jun-20	2	1018	1020
Jul-20	2	971	973
Aug-20	5	975	980
Sep-20	2	940	942
Oct-20	4	1038	1042
Nov-20	4	970	974
Dec-20	4	1112	1116
Jan-21	3	970	973
Feb-21	2	897	899
Mar-21	3	1053	1056
Apr-21	5	1050	1055
May-21	3	1064	1067
Jun-21	5	1101	1106
Jul-21	1	1127	1128
Aug-21	3	1105	1108
Sep-21	6	1095	1101
Oct-21	1	1044	1045
Nov-21	3	1071	1074
Dec-21	5	1132	1137
Total	*6000*	*38118*	*44118*

Note: Red line indicates implementation of the CADD List.

Figure 2: Monthly Trends in Number of Claims for Atypical LAI APs by Claim Type (Medical vs. POS)



To further examine utilization and outcomes, we examined beneficiaries that initiated therapy with atypical LAI APs. Table 1b displays demographic characteristics for beneficiaries that initiated use of an atypical LAI AP between January 2018 and December 2020 who had continuous Medicaid eligibility for 12 months prior to and after LAI AP initiation.

- 51.76% were between the ages 26-44 years;
- 53.78% were male;
- 63.64% were African American;
- 40.67% were from MAG.

Table 1b. Beneficiary Demographic Characteristics for New Users of Atypical LAI APs (January 2018 - December 2020)

Variable	FFS	UHC	MAG	MOL	Total
Age Category (yrs)					
0-17	4	12	6	2	**24**
18-25	46	74	78	22	**220**
26-44	90	205	254	39	**588**
45-64	64	94	124	13	**295**
65+	7	2	0	0	**9**
Total	*211*	*387*	*462*	*76*	***1,136***
Gender					
Female	88	187	223	27	**525**
Male	123	200	239	49	**611**
Total	*211*	*387*	*462*	*76*	***1,136***
Race					
Caucasian	59	81	120	17	**277**
African American	123	251	299	50	**723**
Other	29	55	43	9	**136**
Total	*211*	*387*	*462*	*76*	***1,136***

Note: FFS - Fee for service; UHC - UnitedHealthcare; MAG - Magnolia Health; MOL - Molina Healthcare; Only new users of injectables between 2018-2020 were considered for this analysis ; new users were identified as those who had continuous Medicaid eligibility in the 12 months prior to and after index use but no claims for injectable APs in the 6 month washout period.

Table 1c examines adherence to oral antipsychotic medications prior to initiating LAI therapy.

- 60% of individuals in the study population were $\geq$ 80% adherent to oral antipsychotic medications during the 12-month period prior to initiation of the LAI AP.
- Approximately 21% had no history of oral antipsychotic medication use in claims data during the 12-month period prior to initiating LAI AP therapy. ** *It should be noted that data related to inpatient treatment with oral antipsychotic agents is not accurately captured in claims data.***

Table 1c. Adherence to Oral Antipsychotics prior to Atypical LAI AP Initiation						
Plan at index injectable fill	PDC Category					
	No rx use	< 50%	50% - 69%	70% - 79%	≥ 80%	Total
FFS	83	0	11	11	106	211
UHC	70	4	33	34	246	387
MAG	69	1	47	58	287	462
MOL	16	0	9	8	43	76
Total (across all plans)	238	5	100	111	682	1136
Notes: FFS - Fee-for-service; UHC - UnitedHealthcare; MAG - Magnolia Health; MOL - Molina Healthcare; PDC - Proportion of days covered; Oral antipsychotic use and adherence were measured using pharmacy claims in the 12 months prior to the index use of LAIs.						

For the 1136 beneficiaries initiated on atypical LAI AP therapy between 2018 and 2020, we assessed health outcomes using three metrics measurable through claims data: ED visits, hospitalizations, and continuity of care.

ED Visits:

When examining the number of emergency department (ED) visits in the 12-month period prior to and after initiation of atypical LAI APs, we found:

- Total ED visits decreased 33.62%. (Table 2a)
- Looking at the change in ED visits by adherence to oral AP therapy prior to initiating LAI therapy, the reduction in ED visits post-LAI therapy initiation was seen across most PDC categories including those with PDC ≥ 80%. (Table 2b)

Table 2a. Number of ED Visits in the 12-month Period Pre and Post LAI AP Index Date		
Plan at index date	Pre-index period ED visits	Post-index period ED visits
FFS	184	152
UHC	462	336
MAG	629	376
MOL	102	50
Total (across all plans)	1377	914
Note: ED visits with mental health-related principal diagnosis.		

Table 2b. Number of ED Visits in the 12-month Period Pre and Post LAI AP Index Date by Adherence to Oral APs in the 12-month Period Prior to the Index Date							
Period	Plan at index date	Number of ED visits					
		Adherence to oral AP prior to LAI AP initiation					
		No rx use	< 50%	50% - 69%	70% - 79%	≥ 80%	Total
12-month period before the index date	FFS	31	0	46	18	89	184
	UHC	52	7	30	68	305	462
	MAG	51	0	122	66	390	629
	MOL	11	0	18	10	63	102
	Total (across all plans)	145	7	216	162	847	1377
12-month period after the index date	FFS	25	0	65	9	53	152
	UHC	43	13	20	48	212	336
	MAG	38	0	46	32	260	376
	MOL	1	0	5	11	33	50
	Total (across all plans)	107	13	136	100	558	914

In addition to comparing ED visits at a claim level, we also examined ED visits at a beneficiary level. We assessed the number and proportion of beneficiaries with at least one ED visit in the 12-month period prior to and after initiation of LAI AP therapy. (Table 2c)

- 488 (42.96%) of the 1136 beneficiaries initiating LAI AP therapy had at least one ED visit in the 12-month period prior to initiating therapy as compared to 322 (28.35%) in the 12-month period after initiating therapy.
- A McNemar test was conducted to examine the difference between the proportion of beneficiaries who had at least one ED visit in the pre-index period and the proportion of beneficiaries who had at least one ED visit in the post-index period across all plans. The result of the McNemar test indicates a statistically significant difference between the groups (Chi-square: 80.1047, DF:1, p-value: <0.0001).

Table 2c. Number and Proportion of Beneficiaries with at least One ED Visit in the 12-month Period Pre and Post LAI AP Index Date

Plan at index date	Pre-index ED visits		Post-index ED visits	
	Number of beneficiaries	Proportion of beneficiaries	Number of beneficiaries	Proportion of beneficiaries
FFS	67	31.75%	46	21.80%
UHC	171	44.19%	130	33.59%
MAG	207	44.81%	124	26.84%
MOL	43	56.58%	22	28.95%
Total (across all plans)	488	42.96%	322	28.35%

Note: A McNemar test was conducted to examine the difference between the proportion of beneficiaries who had at least one ED visit in the pre-index period and the proportion of beneficiaries who had at least one ED visit in the post-index period across all plans. The McNemar test indicates a statistically significant difference between the groups (Chi-square: 80.1047, DF:1, p-value: <0.0001).

Hospitalizations:

Tables 3a-3c display results when we compared hospitalizations in the 12-month period prior to and after initiation of therapy with atypical LAI APs.

- Total hospitalizations decreased 39.03%. (Table 3a)
- Similar to the results seen with ED visits, the reduction in hospitalizations in the post-index period was seen across most PDC categories including those with > 80% PDC. (Table 3b)

Table 3a. Number of Hospitalizations in the 12-month Period Pre and Post LAI AP Index Date

Plan at index date	Pre-index period hospitalizations	Post-index period hospitalizations
FFS	82	72
UHC	217	133
MAG	294	159
MOL	45	25
Total (across all plans)	638	389

Note: Hospitalizations with mental health-related principal diagnosis.

Table 3b. Number of Hospitalizations in the 12-month Period Pre and Post LAI AP Index Date by Adherence to Oral APs in the 12-month Period Prior to the Index Date							
Period	Plan at index date	Number of hospitalizations					
		Adherence to oral AP prior to LAI AP initiation					
		No rx use	< 50%	50% - 69%	70% - 79%	≥ 80%	Total
12-month period before the index date	FFS	7	0	22	9	44	82
	UHC	12	1	13	36	155	217
	MAG	24	0	67	33	170	294
	MOL	6	0	11	4	24	45
	Total (across all plans)	49	1	113	82	393	638
12-month period after the index date	FFS	5	0	24	8	35	72
	UHC	9	5	5	19	95	133
	MAG	7	0	25	16	111	159
	MOL	1	0	2	1	21	25
	Total (across all plans)	22	5	56	44	262	389

We also examined hospitalizations at a beneficiary level. We assessed the number and proportion of beneficiaries with at least one hospitalization in the 12-month period prior to and after initiation of LAI AP therapy. (Table 3c)

- 308 (27.11%) of the 1136 beneficiaries initiating LAI AP therapy had at least one hospitalization in the 12-month period prior to initiating therapy as compared to 181 (15.93%) in the 12-month period after initiating therapy.
- We again conducted a McNemar test and found a statistically significant difference between the groups (Chi-square: 66.9253, DF:1, p-value: <0.0001).

Table 3c. Number and Proportion of Beneficiaries with at least One Hospitalization in the 12-month Period Pre and Post LAI AP Index Date				
Plan at index date	Pre-index hospitalizations		Post-index hospitalizations	
	Number of beneficiaries	Proportion of beneficiaries	Number of beneficiaries	Proportion of beneficiaries
FFS	40	18.96%	27	12.80%
UHC	96	24.81%	61	15.76%
MAG	144	31.17%	79	17.10%
MOL	28	36.84%	14	18.42%
Total (across all plans)	308	27.11%	181	15.93%
Note: A McNemar test was conducted to examine the difference between the proportion of beneficiaries who had at least one hospitalization in the pre-index period and the proportion of beneficiaries who had at least one hospitalization in the post-index period across all plans. The McNemar test indicates a statistically significant difference between the groups (Chi-square: 66.9253, DF:1, p-value: <0.0001).				

Cost Impacts Related to Hospitalizations and ED Visits:
Research from the Healthcare Cost and Utilization Project (HCUP) Statistical Brief assessed data from the 2016 National Inpatient Sample (NIS) on inpatient stays involving individuals with mental and/or substance use disorders (MSUD) at community hospitals among patients aged 5 years or older. This data showed that the mean cost per stay for an individual with a primary MSUD diagnosis was $7,100 per stay.[4] In a separate study from the HCUP using Nationwide Emergency Department Database Sample (NEDS), the average cost per MSUD related ED visit was calculated at $520 per visit.[5]

Continuity of Care:

As described in the methods section, continuity care can be assessed in claims data via the COCI index. COCI reflects the extent to which an individual's total number of visits during a specific period are with a given provider or a group of referred providers. Tables 4a and 4b detail those results.

Table 4a. Continuity of Care Index (COCI) in the 12-month Period Pre and Post LAI AP Index Date

Plan at index date	Assessment period	Mean	Proportion of benes with perfect COCI (COCI = 1)
FFS	Pre-index COCI (N =105)	0.68	0.53
	Post-index COCI (N = 80)	0.73	0.58
UHC	Pre-index COCI (N =220)	0.73	0.62
	Post-index COCI (N = 158)	0.71	0.59
MAG	Pre-index COCI (N = 287)	0.66	0.53
	Post-index COCI (N = 175)	0.71	0.61
MOL	Pre-index COCI (N =51)	0.56	0.41
	Post-index COCI (N = 29)	0.54	0.45
Total (across all plans)	Pre-index COCI (N =663)	0.68	0.55
	Post-index COCI (N = 442)	0.70	0.58

Notes: Individuals without medical claims with principal diagnosis for mental health conditions pre and post index date were excluded; COCI is defined as the degree of coordination required between different providers during an episode. It was calculated using Bice-Boxerman continuity of care index formula.

- Although not as dramatic of a change compared to ED visits and hospitalizations, the total mean COCI index improved slightly when comparing pre-and post-index periods. (Table 4a)
- The proportion of beneficiaries with perfect COCI also improved in the post-index period compared to the pre-index period.
- The mean COCI index also improved across most PDC categories when comparing pre- and post-index periods. (Table 4b)

Table 4b. COCI in the 12-month Period Pre and Post LAI AP Index Date by Adherence to Oral APs in the 12-month Period Prior to the Index Date							
Period	Plan at index date	MEAN COCI					
		Adherence to oral AP prior to LAI initiation					
		No rx use	< 50%	50% - 69%	70% - 79%	≥ 80%	Total
12-month period before the index date	FFS	0.76	NA	0.42	0.71	0.70	0.68
	UHC	0.74	0.57	0.64	0.82	0.72	0.73
	MAG	0.73	NA	0.56	0.63	0.67	0.66
	MOL	0.71	NA	0.62	0.31	0.54	0.56
	Total (across all plans)	0.74	0.57	0.56	0.69	0.68	0.68
12-month period after the index date	FFS	0.83	NA	0.48	0.68	0.73	0.73
	UHC	0.80	0.56	0.81	0.73	0.67	0.71
	MAG	0.64	NA	0.81	0.73	0.71	0.71
	MOL	0.67	NA	0.43	0.56	0.54	0.54
	Total (across all plans)	0.76	0.56	0.73	0.70	0.69	0.70
Note: Individuals without medical claims with principal diagnosis for mental health conditions pre and post index date were excluded.							

It must be noted that there are limitations to this analysis. Claims data for individuals that have a stay in an inpatient state-operated psychiatric facility are not routinely captured by Medicaid. This creates a large gap in data related to mental health services. However, emergency department claims would not be impacted by this fact. Another limitation assessing data during this period is the potential impact of COVID-19 on healthcare utilization such as hospitalizations, ED visits, outpatient visits, and prescription claims. It should also be noted that claims data can only provide a partial picture related to outcomes associated with mental health care.

CONCLUSIONS

The creation of the CADD List in 2018 was intended to increase beneficiary access to needed Medicaid services. Since their addition to the CADD List, utilization of atypical LAI APs has consistently increased. Our analysis also found that when comparing outcomes in the 12-month period prior to and after LAI AP initiation, ED visits, hospitalizations, and continuity of care all improved.

RECOMMENDATIONS

1. MS-DUR recommends DOM continue their current policies supporting access to long-acting injectable antipsychotic medications.

REFERENCES

1. Public Notice for DOM's 2021 Managed Care Quality Strategy | Mississippi Division of Medicaid. Accessed February 8, 2022. https://medicaid.ms.gov/public-notice-for-doms-2021-comprehensive-quality-strategy/

2. Medicaid EASE Initiative aims to improve access to needed services | Mississippi Division of Medicaid. Accessed February 17, 2022. https://medicaid.ms.gov/medicaid-ease-initiative-aims-to-improve-access-to-needed-services/

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4. Owens PL, McDermott KW, Heslin KC. Inpatient Stays Involving Mental and Substance Use Disorders, 2016. :20.

5. Karaca Z (AHRQ), Moore BJ (IBM Watson Health). Costs of Emergency Department Visits for Mental and Substance Use Disorders in the United States, 2017 #257. Accessed February 18, 2022. https://www.hcup-us.ahrq.gov/reports/statbriefs/sb257-ED-Costs-Mental-Substance-Use-Disorders-2017.jsp

APPENDIX - Diagnosis codes for identifying ED visits/hospitalizations and calculating COCI

Conditions	ICD-10 codes
Attention-deficit hyperactivity disorders	F90
Phobic anxiety disorders	F40
Other anxiety disorders	F41
Emotional disorders with onset specific to childhood	F93
Pervasive developmental disorders	F84
Other disorders of psychological development	F88
Unspecified disorder of psychological development	F89
Conduct disorders	F91
Impulse disorders	F63
Manic episode	F30
Bipolar disorder	F31
Vascular dementia	F01
Dementia in other diseases classified elsewhere	F02
Unspecified dementia	F03
Amnestic disorder due to known physiological condition	F04
Delirium due to known physiological condition	F05
Other mental disorders due to known physiological condition	F06
Personality and behavioral disorders due to known physiological condition	F07
Unspecified mental disorder due to known physiological condition	F09

psychological and behavioral factors associated with disorders or diseases classified elsewhere	F54
Bipolar disorder, current episode depressed, mild or moderate severity	F31.3
Bipolar disorder, current episode depressed, severe, without psychotic features	F31.4
Bipolar disorder, current episode depressed, severe, with psychotic features	F31.5
Dysthymic disorder	F34.1
transient adjustment reaction	F43.2
Depressive episode	F32
Major depressive disorder, recurrent	F33
Dissociative and conversion disorders	F44
Somatoform disorders	F45
Other nonpsychotic mental disorders	F48
Other feeding disorders of infancy and childhood	F98.2
Pica of infancy and childhood	F98.3
Eating disorders	F50
Enuresis not due to a substance or known physiological condition	F98.0
Encopresis not due to a substance or known physiological condition	F98.1
Stereotyped movement disorders	F98.4
Tic disorder	F95
Mild intellectual disabilities	F70
Moderate intellectual disabilities	F71
Severe intellectual disabilities	F72

Profound intellectual disabilities	F73
Other intellectual disabilities	F78
Unspecified intellectual disabilities	F79
Obsessive-compulsive disorder	F42
Unspecified behavioral syndromes associated with physiological disturbances and physical factors	F59
Adult onset fluency disorder	F98.5
Psychological and behavioral factors associated with disorders or diseases classified elsewhere	F54
Unspecified mental disorder	F99
Specific personality disorders	F60
Other disorders of adult personality and behavior	F68
Unspecified disorder of adult personality and behavior	F69
Schizophrenia	F20
Schizotypal disorder	F21
Delusional disorders	F22
Brief psychotic disorder	F23
Shared psychotic disorder	F24
Schizoaffective disorders	F25
Other psychotic disorders not due to a substance or known physiological condition	F28
Unspecified psychosis not due to a substance or known physiological condition	F29
Mental and behavioral disorders associated with the puerperium, not elsewhere classified	F53

Sexual dysfunction not due to a substance or known physiological condition	F52
Gender identity disorders	F64
Paraphilias	F65
Other sexual disorders	F66
Sleep disorders not due to a substance or known physiological condition	F51
Specific developmental disorders of speech and language	F80
Specific developmental disorders of scholastic skills	F81
Specific developmental disorder of motor function	F82
Reaction to severe stress, and adjustment disorders	F43
Alcohol-related disorders	F10
Opioid-related disorders	F11
Cannabis-related disorders	F12
Sedative, hypnotic, or anxiolytic related disorders	F13
Cocaine related disorders	F14
Other stimulant related disorders	F15
Hallucinogen related disorders	F16
Nicotine dependence	F17
Inhalant related disorders	F18
Other psychoactive substance-related disorders	F19
Abuse of non-psychoactive substances	F55
Alcoholic polyneuropathy	G62.1
alcoholic cardiomyopathy	I42.6
Alcoholic gastritis	K29.2

Alcoholic fatty liver	K70.0
Alcoholic cirrhosis of the liver	K70.3
Alcoholic liver disease, unspecified	K70.9
Toxic effect of alcohol	T51
Alcohol abuse counseling and surveillance	Z71.4
Manic episode, severe with psychotic symptoms	F30.2
Bipolar disorder, current episode manic severe with psychotic features	F31.2

FDA DRUG SAFETY COMMUNICATIONS

December 2021 – February 2022

- 2/3/2022 FDA investigating possible increased risk of death with lymphoma medicine Ukoniq (umbralisib)
- 1/12/2022 FDA warns about dental problems with buprenorphine medicines dissolved in the mouth to treat opioid use disorder and pain

APPENDIX

Division of Medicaid
Drug Utilization Review Board
By-Laws

Article I. Purpose

The Drug Utilization Review Board (DUR) is a requirement of the Social Security Act, Section 1927. The purpose of the DUR Board is to provide clinical guidance to the Division of Medicaid (DOM) regarding the utilization of pharmaceutical products within the Mississippi Medicaid program. The DUR Board makes recommendations to DOM to promote patient safety and cost effective care in the Mississippi Medicaid program. The DUR Board shall advise DOM with respect to the content of medical criteria and standards for utilization management strategies including prospective drug prior authorization (PA), concurrent patient management, retrospective drug utilization review, and educational intervention programs. DOM retains the authority to accept or reject the recommendations by the DUR Board.

Article II. Membership

Section 1 – Board Composition

A. The DUR Board will consist of not less than twelve (12) voting members.
B. The DUR Board voting members will be comprised of at least one-third (1/3), but no more than fifty-one percent (51%), licensed and actively practicing physicians and at least one-third (1/3) licensed and actively practicing pharmacists. Voting members may consist of health care professionals with knowledge/expertise in one or more of the following:
   1) Prescribing of drugs,
   2) Dispensing and monitoring of drugs,
   3) Drug use review, evaluation, and intervention,
   4) Medical quality assurance.
C. Non-voting board members consist of the Division of Medicaid (DOM) Executive Director, Office of Pharmacy pharmacists, DUR Coordinator, the DUR contractor and Medical Director.

Section 2 – Appointment selection methodology

A. DOM's Office of Pharmacy in consultation with officially recognized state professional healthcare associations recommends potential, qualified new candidates for appointment or reappointment of existing board members to DOM's Executive Director.
B. Nominations are considered internally and appointments are given final approval by the DOM Executive Director.
C. Board members are appointed by the Governor of the State of Mississippi, or Governor's designee, pursuant to state law.

Section 3 - Term of Office

A. All members are appointed for three year terms following a staggered appointment fulfillment as follows: one-third of DUR Board members shall be appointed each term. All subsequent appointments shall be for terms of three years from the expiration date of the previous term.
B. Members may serve up to three consecutive three-year terms (for a total of nine consecutive years).
C. Members may serve for either an extended term or a fourth consecutive term at the discretion of the Executive Director and by recommendation of both the DUR Coordinator and Division of Medicaid Office of Pharmacy in the event that no qualified, willing candidate is found in sufficient time. Members, including those filling vacated positions, may be re-appointed by the Executive Director for a subsequent term.
D. In the event of an unexpected or expected vacancy, the DUR Coordinator and Office of Pharmacy may recommend a qualified replacement candidate to DOM's Executive Director for emergency approval.
E. The Executive Director shall fill any vacancy before the end of the term, and the person appointed to fill the vacancy shall serve for the remainder of the unexpired term. Members, including those filling vacated positions, may be re-appointed by the Executive Director for a subsequent term.

Section 4 - Attendance

A. Members are required to attend at least fifty percent of the meetings per year. Failure to attend meetings without an explanation of extenuating circumstances will result in the termination of the member's appointment.
B. Members are asked to give advance notice regarding any planned absences so that a quorum may be determined prior to meetings.

Section 5 - Resignation

A member of the DUR Board may resign by giving a 30 day written advance notice to the DUR Board Chair and DUR Coordinator.

Section 6 - Removal

A member of the DUR Board may be removed by either the DUR Board Chair or majority vote of the DUR Board for good cause. Good cause may be defined as one or more of the following conditions:

A. Lack of attendance –failure to attend at least 50% of the scheduled DUR meetings shall constitute a resignation by said DUR Board member,
B. Identified misconduct or wrongdoing during any DUR Board term, or

C. Not disclosing a conflict of interest either upon initial disclosure or throughout the rest of the term.

Section 7 - Board Officers

At the first meeting of the state fiscal year, which constitutes July 1 through June 30, board members shall select two members to serve as Chair and Chair-Elect of the board, respectively. The Chair and Chair-Elect shall both serve one year terms. At the end of the serving year, the Chair-Elect assumes the role of Chair, and a new Chair-Elect will be chosen.

If the persons serving as Chair and Chair-Elect have either previously served as Chair or Chair-Elect, that person may be reelected to either posting.

The Chair-Elect will serve as Chair in absentia of the Chair or by the Chair's request.

Section 8 – Reimbursement

The Division of Medicaid will reimburse DUR Board members for travel related expenses.

Article III. Meetings

Section 1 – Frequency

The DUR Board shall meet at least quarterly, and may meet at other times as necessary for the purpose of conducting business that may be required. The DUR Board Chair, a majority of the members of the board, or the Division of Medicaid Office of Pharmacy and DUR Coordinator, shall maintain the authority of calling DUR meetings.

Section 2 – Regular Meetings

The DUR Board will hold regular quarterly meetings in the city of Jackson, Mississippi. Meetings will occur at the predesignated time and place. Dates for the upcoming year's quarterly meetings will be posted before the first quarterly meeting of the upcoming year.

Section 3 – Special Meetings

The DUR Board may meet at other times other than regular quarterly meetings as deemed necessary and appropriate. The DUR Coordinator and Office of Pharmacy must notify DUR Board members of any special meeting at least two weeks, i.e., ten (10) days, prior to the requested meeting date. Special meetings may be requested by the following officials:

A. Division of Medicaid Executive Director,
B. DUR Coordinator and Office of Pharmacy,
C. DUR Board Chair, or
D. Majority of DUR Board members via communication to DUR Coordinator and/or DUR Board Chair.

Section 4 – Meeting Notice

DUR Board members will be notified of the location for the meeting a minimum of ten (10) days in advance. Notification may include one or a combination of the following methods: e-mail, fax, or other written communication. DUR Board members are required to keep on file with
DOM Office of Pharmacy his or her address, primary phone number, alternate phone number (i.e., cell), fax number, and email address to which notices and DUR related communications may be submitted.

Meetings may be cancelled due to lack of quorum, severe inclement weather, or other reasons as determined by the DUR Coordinator and Office of Pharmacy. In the event of a cancellation, the DUR Coordinator and DOM Pharmacy staff will communicate with DUR Board members regarding the meeting cancellation as soon as circumstances permit. Notifications shall also be posted with DFA and on DOM's website to ensure that the public is notified of any meeting cancellation.

DUR Board Meetings shall be open to the public and conducted in accordance with state law, specifically the Open Meetings Act. Notice of any meetings held shall be provided at least five (5) days in advance of the date scheduled for the meeting. The notice shall include the date, time, place and purpose for the meeting and shall identify the location of the meeting to the general public.

Section 5 – Meeting Sign-In

All meeting attendees will be required to sign-in at the meeting entrance for DUR meetings. Sign-in sheets will be logged, scanned and transferred to electronic medium for official records. All attendees shall include participant's name and entity represented (as applicable).

Section 6 – Quorum

A simple majority of voting board members shall constitute a quorum and must be present for the transaction of any business of the board. For a fully-appointed 12-person DUR Board as required by state law, seven voting board members constitutes a quorum. If a quorum is not present, the Chair, Chair-Elect or DUR Coordinator maintains the responsibility to conclude meeting proceedings. Meeting minutes shall reflect that a quorum was not present.

Section 7 – Voting

The voting process shall be conducted by the Chair or the Chair-Elect in absentia of the Chair.

All board recommendations shall begin with a motion by a voting board member. The motion may then be seconded by a voting board member. If a recommendation does not receive a second motion, the motion shall not pass. If a recommendation receives a second motion, then the board shall vote on the motion. A motion shall be considered as passed if the motion carries a majority of votes if a quorum of the board is present.

In the event that a motion receives a tie vote in the presence of a quorum, the motion shall not pass. The motion can be brought up for further discussion after which a subsequent motion may be made to vote on the issue again during the same meeting, or a motion can be made to table the issue and discussion until the next quarterly DUR Board meeting.

A vote abstention occurs when a voting member is present for the meeting and the action but has chosen not to vote on the current motion. An abstention is a vote with the majority on the measure. A recusal, on the other hand, is necessitated when a voting member has a conflict of interest or potential pecuniary benefit resulting from a particular measure. In order to properly and completely recuse oneself from a matter, the DUR Board member must leave the room or area where discussions, considerations, or other actions take place

before the matter comes up for discussion. The member must remain absent from the meeting until the vote is concluded. The minutes will state the recusing member left the room before the matter came before the DUR Board and did not return until after the vote.

Section 8 – Minutes

A public body speaks only through its minutes. State law, specifically the Open Meetings Act, requires minutes be kept of all meetings of a public body, whether in open or executive session, showing the following:

A. Members present or absent,
B. Date, time and place of meeting,
C. Accurate recording of any final actions taken,
D. Record, by individual member, of how s/he voted on any final action, and
E. Any other information that the public body requests is reflected in the minutes.

The minutes shall be finalized no later than thirty (30) days after the adjournment of the DUR Board meeting and shall be made available for public inspection. DOM Office of Pharmacy posts all DUR Board Minutes on the DUR webpage.

Section 9 – Speakers & Special Topics

DUR Board members may request various healthcare, industry, or specialized professionals to present at DUR meetings regarding a posted topic on an upcoming DUR agenda.

A. The DUR Board may allow up to 20 minutes for topic presentation by an invited speaker.
B. DUR Board Members may ask a member of the audience to provide information on a topic being discussed by the Board. Invited participants may be asked to disclose any potential conflicts of interests if applicable. (See Article IV, Section 1).
C. Members of the audience may not speak unless so designated at the appropriate time by a DUR Board member.
D. DUR Board Members, both voting and non-voting, maintain speaking privileges at DUR meetings.
E. Contracted employees of DOM and employees of other DOM vendors are considered members of the audience.

Section 10 – Executive Session

During special circumstances, the DUR Board may go into executive session at the conclusion of normal meeting proceedings; however, all DUR Board meetings must commence as an open meeting. In order for executive session to be called, the following procedure must be followed in accordance with the Open Meetings Act:

A. A member may <u>move to close</u> the meeting to determine whether board needs to go into executive session; vote in open meeting with vote recorded in minutes, majority rules.
B. Closed meeting: vote taken on whether to <u>declare</u> executive session, requires 3/5 of all members present.
C. Board comes back into open session and states statutory reason for executive session. The reason for the executive session shall be recorded in the meeting minutes.
D. Board members then will go into executive session where action may be taken on stated subject matter only.

E. Minutes must be kept in accordance with the Open Meetings Act.

Section 11 – Conduct of Participants

Pursuant to state law, specifically the Open Meetings Act, the DUR Board may make and enforce reasonable rules and regulations for the conduct of persons attending the DUR meetings. The following is a non-exhaustive list of rules for DUR Board meetings:

A. Attendees should please remain silent and allow for the efficient transaction of business.
B. Cell phones should be placed on silent or vibrate.
C. Laptop computers are discouraged from being utilized during meetings as frequent typing may distract board members.
D. Food and drink are not allowed in the meeting room.
E. Security is provided by the state. Guests not following proper decorum may be asked to leave by security.

Article IV. Public Participation

Section 1 - Disclosure of Persons Appearing Before DUR Board

The DUR Board may ask individuals appearing before the board to disclose either in writing or verbally their relationship, as applicable, including but not limited to pharmaceutical companies or special interest groups. Any such disclosures should be recorded as a matter of public record in the documented meeting minutes.

Article V. Conflicts of Interest

DUR Board members are expected to maintain the highest professional, ethical standards. A conflict of interest may exist when a DUR Board member maintains a financial/pecuniary, personal, or professional interest that may compete or interfere with the DUR Board member's ability to act in a fair, impartial manner while acting in the best interests of the Division of Medicaid and the beneficiaries that it serves.

As such, DUR Board members are required to complete and submit annually a Conflict of Interest disclosure statement with the DOM Office of Pharmacy and DUR Coordinator. Statements shall be maintained by the Office of Pharmacy. Members have an ongoing responsibility to update and revise said statements, disclosing any new conflicts of interest to the DUR Coordinator and DOM Office of Pharmacy.

It is the sole responsibility and requirement of each board member to review the agenda of each forthcoming board meeting to determine any if any potential conflicts of interest exist. If so, an aforementioned Disclosure statement must be updated indicating the conflict of interest. The board member should notify the Chair or Chair-Elect of the conflict of interest prior to the meeting.

A DUR Board member shall recuse himself/herself from any vote, action, or discussion pertaining to any product or product class if there is documentation stating an actual or perceived conflict of interest. Please refer to the procedure outlined in Article III, Section 7.

Article VI. Confidentiality

DUR Board members are required to safeguard all confidential and proprietary information, including but not limited to pricing information, which is disclosed by the Mississippi Division of Medicaid for purposes of conducting DUR Board activities. Any provider or patient specific information discussed by the DUR Board shall also be kept strictly confidential in accordance with state and federal law.

Article VII. Amendments

Proposed Amendments of By-Laws

A. Proposed amendments must be submitted to the DUR Coordinator at least thirty (30) days prior to the next scheduled DUR meeting and the proposed amendments will be disseminated to the DUR Board en masse for consideration at said DUR Board meeting.
B. Proposed amendments will be distributed to board members no less than five (5) business days prior to next DUR Board meeting.
C. Proposed amendments will be initiated by the Chair, or the Chair-Elect in absentia of the Chair, prior to Next Meeting Information announcements.
D. Proposed amendments will be voted upon at the next scheduled DUR Board meeting. If majority of DUR Board votes to ratify amendment, the amendment will take effect immediately at the conclusion of the meeting.

MS-DUR BOARD
COMMON ABBREVIATIONS

AWP	Any Willing Provider, Average Wholesale Price
BENE	Beneficiary
CAH	Critical Access Hospital
CCO	Coordinated Care Organization
CDC	Centers for Disease Control
CHIP	Children's Health Insurance Program
CMS	Center for Medicare and Medicaid Services
COB	Coordination of Benefits
CPC	Complex Pharmaceutical Care
DME	Durable Medical Equipment
DOC	Department of Corrections
DOM	Division of Medicaid
DUR	Drug Utilization Review
EOB	Explanation of Benefits
EPSDT	Early and Periodic Screening, Diagnosis and Treatment
FA	Fiscal Agent
FFS	Fee For Service
FPW	Family Planning Waiver
FQHC	Federally Qualified Health Clinic
FY	Fiscal Year
HB	House Bill
HCPCS/ HEIDIS	Health Plan Employer Data and Information Set
HHS	Department of Health and Human Services
HIPAA	Health Insurance Portability and Accountability
IDD	Intellectual and Developmental Disabilities
LTC	Long Term Care
MAG	Magnolia Health
MEDD	Morphine Equivalent Daily Dose
MOL	Molina Healthcare
MPR	Medication Possession Ratio
MSCAN	Mississippi Coordinated Access Network
MSDH	Mississippi State Department of Health
NADAC	National Average Drug Acquisition Cost
NDC	National Drug Code
P&T	Pharmacy and Therapeutics
PA	Prior Authorization
PBM	Pharmacy Benefit Manager
PDC	Proportion of Days Covered
PDL	Preferred Drug List
PI	Program Integrity
PIP	Performance Improvement Program
POS	Point of Sale, Place of Service, Point of Service
Pro-DUR	Prospective Drug Use Review
OTC	Over the Counter
QI	Quality Indicator
QIO	Quality Improvement Organization
QM	Quality Management
RA	Remittance Advise
REOMB	Recipient's Explanation of Medicaid Benefits
Retro-DUR	Retrospective Drug Utilization Review
RFI	Request for Information
RFP	Request for Proposal
RHC	Rural Health Clinic
SB	Senate Bill
SCHIP	State Child Health Insurance Program
SMART PA	Conduent's Pharmacy Application (SmartPA) is a proprietary electronic prior authorization system used for Medicaid fee for service claims
SPA	State Plan Amendment
UHC	United Healthcare
UM/QIO	Utilization Management and Quality Improvement Organization
UPDL	Universal Preferred Drug List
UR	Utilization Review
VFC	Vaccines for Children
WAC	Wholesale Acquisition Cost
WIC	Women, Infants, Children
340B	Federal Drug Discount Program