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

MISSISSIPPI DIVISION OF
MEDICAID

March 1, 2018 at 2:00pm

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

Rhonda Dunaway, RPh
Coastal Family Health Center
9113 Hwy 49 Suite 200
Gulfport 39503
Term Expires: June 30, 2020

Craig L. Escudé, MD **(Chair)**
Mississippi State Hospital
PO Box 97
Whitfield, MS 39193
Term Expires: June 30, 2019

Juanice Glaze, RPh
Wal-Mart Pharmacy
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Hattiesburg, MS 39402
Term Expires: June 30, 2019

Alice F. Messer, FNP-BC
Newsouth Neurospine
2470 Flowood Drive
Flowood, MS 39232
Term Expires: June 30, 2019

Ray Montalvo, MD
KDMC Specialty Clinic
940 Brookway Boulevard
Brookhaven, MS 39601
Term Expires: June 30, 2020

Holly R. Moore, PharmD
Anderson Regional Medical Center
2124 14th Street
Meridian, MS 39301
Term Expires: June 30, 2020

Janet Ricks, DO
UMMC, Family Medicine
2500 North State Street
Jackson, MS 39216
Term Expires: June 30, 2018

Sue H. Simmons, MD
Maben Medical Clinic
49 Turner St.
Maben, MS 39750
Term Expires: June 30, 2018

Dennis Smith, RPh
Polk's Discount Drugs
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Brandon, MS 39042
Term Expires: June 30, 2020

James Taylor, PharmD
North MS Medical Center
830 S. Gloster Street
Tupelo, MS 38801
Term Expires: June 30, 2019

Pearl Wales, PharmD
Be Jay PE Pharmacy 1668
West Peace Street
Canton, MS 39047
Term Expires: June 30, 2018

2018 DUR Board Meeting Dates

March 1, 2018
May 31, 2018
September 13, 2018
December 6, 2018

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 1, 2018

Welcome — Craig Escude', MD (Chair)

Old Business — Craig Escude', MD
- Approval of November 2017 Meeting Minutes — page 5

Resource Utilization Review

- Enrollment Statistics — page 12
- Pharmacy Utilization Statistics — page 13
- Top 10 Drug Categories by Number of Claims — page 14
- Top 10 Drug Categories by Amount Paid — page 15
- Top 25 Drug Molecules by Number of Claims — page 16
- Top 25 Drug Molecules by Dollars Paid — page 17
- Top 25 Drug Molecules by Change in Number of Claims — page 18
- Top 25 Drug Molecules by Change in Dollars Paid — page 19
- Top 15 Solid Dosage Form High Volume Products By Percent Change In Amount Paid Per Unit — page 20

Pharmacy Program Update — Terri Kirby, RPh; Sara (Cindy) Noble, PharmD, MPH

Feedback and Discussion from the Board

New Business

Election of Officer

Update on MS-DUR Educational Interventions — page 22

Special Analysis Projects

- *Review of Pharmacy Quality Alliance (PQA) Recommendations For Diabetes Medication Dosing And Utilization In MS Medicaid* — page 23
- *Review of Stimulants And Related Agents In Mississippi Medicaid* — page 28
- *Proton Pump Inhibitor Use And Potential Deprescribing Opportunities In Mississippi Medicaid* — page 32

FDA Drug Safety Updates — page 46

Next Meeting Information — Craig Escude', MD

DUR Board Meeting Minutes

MISSISSIPPI DIVISION OF MEDICAID
DRUG UTILIZATION REVIEW (DUR) BOARD
MINUTES OF THE NOVEMBER 9, 2017 MEETING

DUR Board Members:	Jan 2016	Apr 2016	Jul 2016	Sep 2016	Feb 2017	April 2017	July 2017	Nov 2017
Allison Bell, PharmD	✓	✓		✓	✓	✓	✓	✓
Rhonda Dunaway, RPh								✓
Craig Escudé, MD (Chair)				✓	✓	✓	✓	
Juanice Glaze, RPh				✓	✓	✓		✓
Alice Messer, DNP, FNP-BC				✓	✓	✓	✓	✓
Ray Montalvo, MD	NA	NA	NA	NA	NA	NA	NA	✓
Holly Moore, PharmD	NA	NA	NA	NA	NA	NA	NA	
Janet Ricks, DO	✓			✓	✓	✓		✓
Sue Simmons, MD	✓	✓		✓	✓			✓
Dennis Smith, RPh	NA	NA	NA	NA	NA	NA	NA	
James Taylor, PharmD				✓	✓			✓
Pearl Wales, PharmD	✓	✓	✓	✓	✓	✓	✓	✓
TOTAL PRESENT	**10**	**11**	**3***	**10**	**10**	**10**	**4***	**9**

**Only eight members were active due to new appointments to DUR Board not being approved by Governor prior to meeting.*

Also Present:

Division of Medicaid (DOM) Staff:
Terri Kirby, RPh, CPM, Pharmacy Director; Cindy Noble, PharmD, MPH, DUR Coordinator; Gail McCorkle, RPh, Clinical Pharmacist; Chris Yount, MA, PMP, Staff Officer - Pharmacy

University of Mississippi School of Pharmacy - MS-DUR Staff:
Ben Banahan, PhD, MS-DUR Project Director; Eric Pittman, PharmD, MS-DUR Clinical Director

Conduent Staff:
Leslie Leon, PharmD, Clinical Pharmacist, Mississippi Medicaid Project; Felecia Lobrano, Professional Services Sr. Analyst

Change Healthcare Staff:
Shannon Hardwick, RPh, CPC Pharmacist; Paige Clayton, PharmD, On-Site Clinical Pharmacist; Sarah Boydstun, PharmD, Mississippi PA Pharmacist

Coordinated Care Organization Staff:
Heather Odem, PharmD, United Healthcare Community & State, Director of Pharmacy- Mississippi; Conor Smith, MS, RPh, Director of Pharmacy, Magnolia Health; Mike Todaro, PharmD, Vice President, Pharmacy Operations, Magnolia Health

Visitors:
Phil Hecht, Abbvie; Michael Packer, Purdue; Tyler Craddock, The Medicines Company; Wendy Phillabaum, Supernus; Douglas Welch, Merck; Judy Clark, Consultant; Kim Clark, ViiV

Call to Order:
In the absence of Dr. Escude', Dr. Wales, past Chair, called the meeting to order at 2:00pm.

Dr. Wales welcomed the new members recently approved by the Governor and opened the meeting with a time for introductions and orientation.

Ms. Kirby thanked Dr. Allison Bell for her service to the Board. Dr. Bell has submitted her resignation effective December 31, 2017 due to her relocating out of state.

Old Business:
Dr. Simmons moved to approve the minutes from the April DUR Board Meeting, seconded by Dr. Bell and unanimously approved by the DUR Board.

Dr. Bell moved to approve the minutes from the July DUR Board Meeting, seconded by Dr. Taylor and unanimously approved by the DUR Board.

Dr. Banahan provided a brief overview of DUR Board functions and responsibilities.

Pharmacy Program Update:
Ms. Kirby informed the board that the new pharmacy reimbursement methodology for DOM impacting both fee-for-service (FFS) and Mississippi CAN pharmacy claims was implemented in September 2017 in response to the Centers for Medicare and Medicaid Services (CMS) published 42 CFR, Part 447: Medicaid Program Covered Outpatient Drugs with final comments (CMS-2345-FC). Due to the effective date of April 1, 2017, reprocessing of claims began in October and will continue in batches over a ten month period for claims with dates of service in the months of April 2017 through September 2017.

Ms. Kirby also provided an update on the board's recommendation to implement the CDC Guideline for Prescribing Opioids for Chronic Pain. DOM is in the process of purchasing a morphine equivalent daily dose (MEDD) module, but is waiting on CMS approval in order to receive federal matching dollars to pay for the module. Ms. Kirby emphasized the complex processes involved in implementing the CDC opioid prescribing guidelines, and DOM is diligently working on this project.

DOM was recently made aware of some issues with desk audits from the CCOs and interpretation of Medicaid policies. Ms. Kirby asked that pharmacists please contact Medicaid's Office of Pharmacy if they receive a desk audit finding that does not look correct.

The 90 day maintenance list is in process of being updated and should be completed by in the first quarter of 2018.

Resource Utilization Review:
Dr. Pittman informed the board that encounter data for UHC is incomplete for August 2017. This should not impact any of the resource utilization ranks, but does impact dollar amounts paid, number of claims, and number of beneficiaries for the month of August. Enrollment has remained consistent. He noted that cost per beneficiary in FFS has been slowly rising. This rise can be attributed to new, high cost treatments for some of the more serious disease states that are more prevalent in FFS beneficiaries. The top categories by number of claims and dollars paid have remained consistent except for the seasonal increase in a few drug categories (stimulants and antibiotics) that can be attributed to beginning of the school year or related seasonal considerations.

N**EW BUSINESS**

Election of Co-Chair:
Dr. James Taylor was nominated as co-chair by Ms. Glaze, seconded by Dr. Simmons and unanimously approved by the DUR Board.

Research Reports:

Use of Antipsychotics (AP) in Beneficiaries with Intellectual and Developmental Disabilities (IDD)
Dr. Pittman provided an overview of the report from the July DUR Board meeting and recent updates. This analysis was undertaken at the request of Dr. Escude'. Results found that approximately one-fourth of Medicaid beneficiaries with a diagnosis of IDD are being treated with an antipsychotic. Of those treated with an antipsychotic, a primary psychiatric indication for use could not be determined through claims data in approximately 32% of beneficiaries. At the July meeting, board members requested Dr. Escude', in conjunction with MS-DUR, develop educational materials for distribution. The Board discussed the potential target audience for the educational materials. Those proposed educational materials were presented to the board. A motion was made by Dr. Ricks recommending the mailing be sent to all prescribers of APs to beneficiaries with IDD diagnosis. It was also recommended that the information be distributed through pertinent state medical associations, MS-DUR's web site and a notice in the DOM provider bulletin. Dr. Messer seconded the motion and the DUR Board unanimously approved.

Use of Codeine and Tramadol
Dr. Pittman provided an overview of the codeine/tramadol report from the July DUR Board meeting and highlighted that Table 2 contained updated prescribing statistics since the initial analysis was conducted. During the July meeting, questions regarding alternative treatment options available were asked. Dr. Pittman subsequently consulted an ENT physician concerning alternative treatment options post tonsillectomy and adenoidectomy and provided the ENT's input to the board.

The following recommendations were proposed to the DUR Board:
1. DOM should set a minimum age limit of 12 years for tramadol and codeine products,
2. DOM should modify the short and long-acting narcotic electronic PA rules to require the following: (added since July meeting)
    a. A manual PA for beneficiaries under age 18 years with diagnosis of sleep apnea prescribed codeine or tramadol.
    b. A manual PA for beneficiaries under age 18 years prescribed codeine or tramadol within 3 days of tonsillectomy or adenoidectomy.
3. MS-DUR should implement an educational initiative to notify providers of the April 20, 2017 FDA recommendations and the new clinical edits being implemented.

Dr. Bell asked if MS-DUR could monitor use of hydrocodone products in the post tonsillectomy and adenoidectomy population after the edits are implemented. A motion was made by Dr. Simmons to accept the recommendations in the MS-DUR report, seconded by Dr. Montalvo and unanimously approved by the DUR Board.

Cytokine and CAM Antagonist Utilization

Dr. Banahan provided an overview of the July DUR Board report and further analysis that had been conducted. Representatives from the CCOs were asked for additional input. Dr. Heather Odem, UHC, raised a question referencing therapy guidelines for rheumatoid arthritis recommending DMARDs as first line therapy before transitioning to a biologic agent. Mr. Conor Smith, Magnolia Health, reported that Magnolia Health is experiencing use of biologics without first using traditional DMARDs. Dr. Paige Clayton, Change Healthcare, commented on potential step therapy edits and limitations regarding manufacturer rebates. A motion was made by Ms. Dunaway for MS-DUR to continue monitoring this category, seconded by Dr. Messer and unanimously approved by the DUR Board.

Gabapentinoid Use in Mississippi Medicaid

Dr. Pittman presented a report on gabapentinoid (gabapentin and pregabalin) use in MS Medicaid beneficiaries. Results from this retrospective claims analysis stratified use by total daily dose and concomitant opioid use. Based on current utilization patterns for these products, MS-DUR proposed the following recommendations to the DUR Board for consideration.

Recommendations:
1. DOM should set a maximum daily dosage of 3600mg for gabapentin products.
2. DOM should set a maximum daily dosage of 600mg for pregabalin products.
3. DOM should conduct a one-time educational mailing outlining the proposed changes to include all prescribers writing gabapentin and pregabalin prescriptions during the last six months that exceeded the recommended maximum daily dosage limits.
4. DOM should monitor concomitant opioid use with pregabalin /gabapentin claims to determine impact of pregabalin/gabapentin on reducing or eliminating opioids.

Board members discussed recommendations proposed by MS-DUR, particularly maximum daily dosage limits for each medication. Of Note, the FFS claims system already has a max daily dose limit of 2,400mg/day on gabapentin and 600mg/day on pregabalin. After discussion was completed, Dr. Messer made a motion to accept the MS-DUR recommendations with a change in maximum daily dosage of gabapentin from 3600mg to 2400mg. This motion was seconded by Dr. Simmons and unanimously approved by the DUR Board.

Update on High Dose Opioid Prescriptions

Dr. Banahan presented an update on high dose opioid prescribing trend report with morphine equivalent daily dose (MEDD) stratified by <50; 50-89; 90-119; and >120 MEDD. Dr. Taylor inquired about opioid tapering guidance resources that might be provided prescribers. Consensus from the DUR Board discussion regarding potential tapering guidance resources was there are no clear guideline resources available that would guide physicians for different scenarios. Due to potential complex issues, tapering should be addressed on an individual case by case basis.

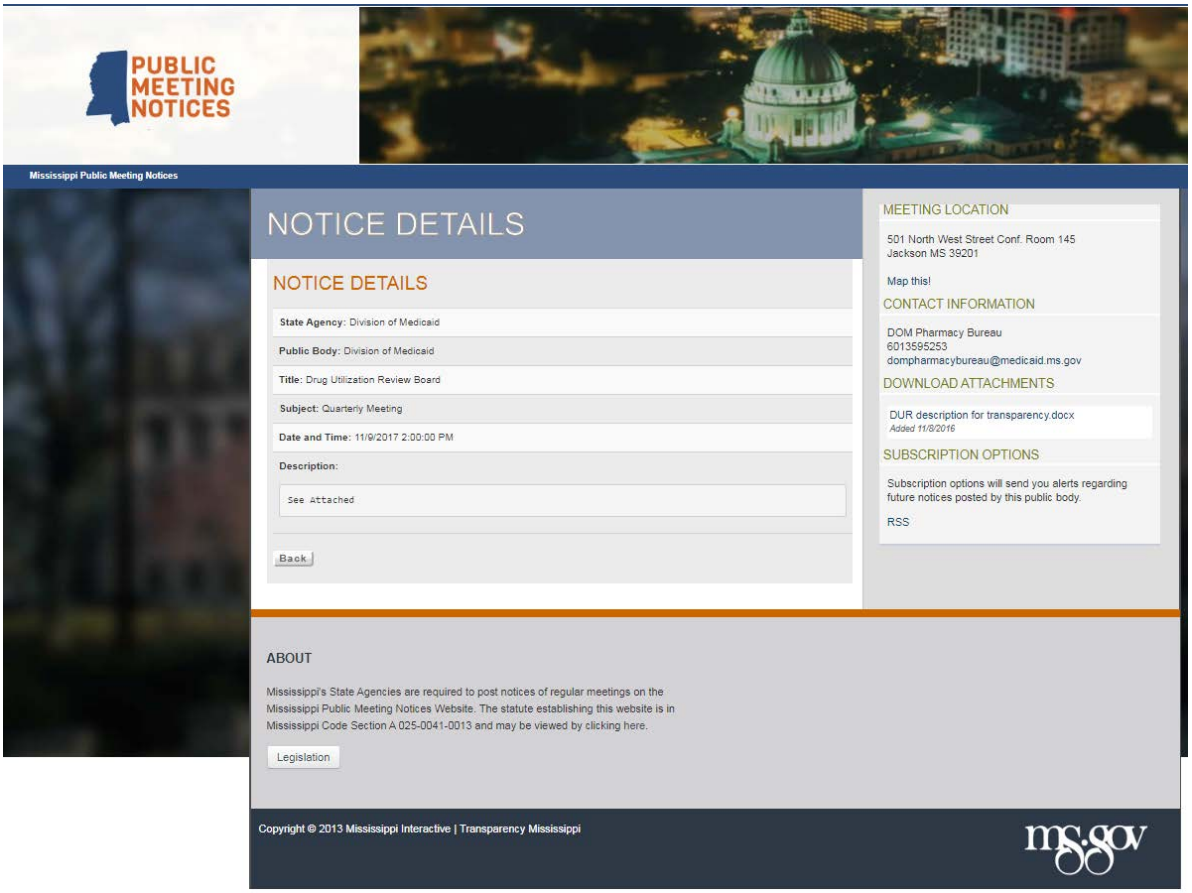
Next Meeting Information:

Dr. Wales announced that the next meeting of the DUR Board will take place on March 1, 2018 at 2:00 p.m. Dr. Wales thanked everyone for their attendance and participation at the November 9, 2017 DUR Board meeting. Christopher Yount reviewed the State's new mileage reimbursement guidelines. Several DUR Board members expressed concern that these changes could negatively impact future recruitment of volunteers for the DUR Board.

The meeting adjourned at 3:40 pm.

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

PUBLIC MEETING NOTICES



Resource Utilizaton Review

TABLE 04A: ENROLLMENT STATISTICS FOR LAST 6 MONTHS June 1, 2017 through November 30, 2017							
			Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
Total enrollment			741,731	740,492	740,298	736,984	733,792	729,505
Dual-eligibles			156,363	156,209	156,089	155,777	155,468	155,073
Pharmacy benefits			631,954	630,985	630,647	627,829	624,235	619,188
	LTC		17,215	17,224	17,301	17,166	17,051	16,846
	PLAN %	**FFS**	22.7%	22.9%	23.2%	23.4%	23.1%	22.5%
		MSCAN-UHC	37.5%	37.4%	37.2%	37.1%	37.2%	37.5%
		MSCAN-Magnolia	39.8%	39.7%	39.6%	39.5%	39.7%	40.0%

TABLE 04B: PHARMACY UTILIZATION STATISTICS FOR LAST 6 MONTHS June 1, 2017 through November 30, 2017							
		Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17
# Rx Fills	**FFS**	97,785	93,544	108,985	106,362	110,581	111,106
	MSCAN-UHC	168,684	161,885	195,441	188,284	199,198	191,093
	MSCAN-Mag	210,314	203,049	240,003	231,114	246,985	195,929
# Rx Fills / Bene	**FFS**	0.7	0.6	0.7	0.7	0.8	0.8
	MSCAN-UHC	0.7	0.7	0.8	0.8	0.9	0.8
	MSCAN-Mag	0.8	0.8	1.0	0.9	1.0	0.8
$ Paid Rx	**FFS**	$14,324,701	$12,561,965	$14,944,323	$12,098,307	$12,450,711	$11,965,712
	MSCAN-UHC	$14,818,571	$14,638,824	$15,107,459	$14,444,844	$15,146,792	$14,581,047
	MSCAN-Mag	$17,594,521	$16,685,106	$17,427,131	$16,986,833	$17,979,972	$14,666,635
$ /Rx Fill	**FFS**	$146.49	$134.29	$137.12	$113.75	$112.59	$107.70
	MSCAN-UHC	$87.85	$90.43	$77.30	$76.72	$76.04	$76.30
	MSCAN-Mag	$83.66	$82.17	$72.61	$73.50	$72.80	$74.86
$ /Bene	**FFS**	$99.86	$86.94	$102.14	$82.35	$86.34	$85.89
	MSCAN-UHC	$62.53	$62.03	$64.40	$62.02	$65.23	$62.80
	MSCAN-Mag	$69.95	$66.61	$69.78	$68.50	$72.55	$59.22

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

TABLE C: TOP 10 DRUG CATEGORIES BY NUMBER OF CLAIMS IN NOV 2017 (FFS AND CCOs)

Category	Month Year	Rank Volume	# RXs	$ Paid	# Unique Benes
CNS stimulants	Nov 2017	1	24,205	$5,340,571	21,261
	Oct 2017	1	29,104	$6,449,407	25,092
	Sep 2017	1	27,718	$6,151,403	24,061
aminopenicillins	Nov 2017	2	19,919	$256,310	19,620
	Oct 2017	3	20,196	$262,434	19,811
	Sep 2017	3	17,956	$230,377	17,653
narcotic analgesic combinations	Nov 2017	3	18,116	$578,878	16,825
	Oct 2017	2	21,939	$681,868	19,985
	Sep 2017	2	21,731	$678,737	19,821
adrenergic bronchodilators	Nov 2017	4	16,444	$1,025,494	14,669
	Oct 2017	4	17,835	$1,170,508	15,551
	Sep 2017	4	16,300	$1,130,829	14,210
macrolides	Nov 2017	5	15,079	$374,422	14,746
	Oct 2017	8	14,089	$358,309	13,725
	Sep 2017	8	12,596	$306,168	12,280
glucocorticoids	Nov 2017	6	14,760	$867,639	13,974
	Oct 2017	7	15,676	$989,663	14,722
	Sep 2017	7	13,799	$840,662	13,048
antihistamines	Nov 2017	7	14,596	$256,400	14,207
	Oct 2017	5	17,774	$300,681	17,192
	Sep 2017	5	15,985	$276,818	15,496
nonsteroidal anti-inflammatory agents	Nov 2017	8	14,406	$230,894	13,878
	Oct 2017	6	16,860	$265,714	16,129
	Sep 2017	6	15,944	$259,353	15,278
leukotriene modifiers	Nov 2017	9	11,050	$208,656	10,886
	Oct 2017	9	12,937	$248,225	12,671
	Sep 2017	9	12,217	$238,745	12,023
atypical antipsychotics	Nov 2017	10	10,971	$1,155,103	9,776
	Oct 2017	12	12,403	$1,273,332	10,851
	Sep 2017	11	11,995	$1,286,014	10,643

TABLE D: TOP 10 DRUG CATEGORIES BY DOLLARS PAID IN NOV 2017 (FFS AND CCOs)

Category	Month Year	Rank Paid Amt	# RXs	$ Paid	# Unique Benes
CNS stimulants	Nov 2017	1	24,205	$5,340,571	21,261
	Oct 2017	1	29,104	$6,449,407	25,092
	Sep 2017	1	27,718	$6,151,403	24,061
insulin	Nov 2017	2	4,279	$2,217,008	3,266
	Oct 2017	2	4,869	$2,501,634	3,630
	Sep 2017	2	4,906	$2,532,766	3,638
antiviral combinations	Nov 2017	3	648	$2,110,253	615
	Oct 2017	3	782	$2,364,441	733
	Sep 2017	3	726	$2,337,659	694
factor for bleeding disorders	Nov 2017	4	84	$1,925,174	67
	Oct 2017	4	112	$2,363,007	84
	Sep 2017	4	92	$1,971,350	75
TNF alpha inhibitors	Nov 2017	5	277	$1,371,251	262
	Oct 2017	5	315	$1,556,312	294
	Sep 2017	5	303	$1,465,194	284
neuraminidase inhibitors	Nov 2017	6	7,550	$1,220,505	7,521
	Oct 2017	15	2,627	$530,122	2,618
	Sep 2017	56	941	$172,755	940
atypical antipsychotics	Nov 2017	7	10,971	$1,155,103	9,776
	Oct 2017	6	12,403	$1,273,332	10,851
	Sep 2017	6	11,995	$1,286,014	10,643
adrenergic bronchodilators	Nov 2017	8	16,444	$1,025,494	14,669
	Oct 2017	7	17,835	$1,170,508	15,551
	Sep 2017	7	16,300	$1,130,829	14,210
gamma-aminobutyric acid analogs	Nov 2017	9	8,155	$910,296	7,694
	Oct 2017	8	9,239	$1,025,991	8,657
	Sep 2017	8	9,080	$1,008,786	8,536
bronchodilator combinations	Nov 2017	10	3,079	$892,063	2,900
	Oct 2017	10	3,366	$986,164	3,125
	Sep 2017	9	3,358	$980,212	3,131

TABLE E: TOP 25 DRUG MOLECULES
BY NUMBER OF CLAIMS IN NOV 2017 (FFS and CCOs)

Drug Molecule Therapeutic Category	Oct 2017 # Claims	Nov 2017 # Claims	Nov 2017 $ Paid	Nov 2017 # Unique Benes
amoxicillin / aminopenicillins	20,085	19,839	$254,307	19,544
albuterol / adrenergic bronchodilators	17,079	15,856	$791,943	14,242
azithromycin / macrolides	13,263	14,267	$282,061	13,998
acetaminophen-hydrocodone / narcotic analgesic combinations	14,953	12,345	$183,986	11,699
montelukast / leukotriene modifiers	12,936	11,048	$208,333	10,884
cetirizine / antihistamines	12,194	9,774	$132,529	9,658
lisdexamfetamine / CNS stimulants	9,722	8,207	$2,205,766	8,012
oseltamivir / neuraminidase inhibitors	2,627	7,550	$1,220,505	7,521
prednisolone / glucocorticoids	7,727	7,496	$193,940	7,277
ibuprofen / nonsteroidal anti-inflammatory agents	7,609	6,959	$90,485	6,840
amoxicillin-clavulanate / penicillins/beta-lactamase inhibitors	6,965	6,833	$180,930	6,709
gabapentin / gamma-aminobutyric acid analogs	7,749	6,782	$102,658	6,447
cefdinir / third generation cephalosporins	6,202	6,543	$185,694	6,462
fluticasone nasal / nasal steroids	7,647	6,539	$94,780	6,511
amlodipine / calcium channel blocking agents	7,077	6,124	$55,484	5,981
methylphenidate / CNS stimulants	6,894	5,611	$1,370,268	5,089
omeprazole / proton pump inhibitors	6,393	5,552	$61,938	5,450
ondansetron / 5HT3 receptor antagonists	6,342	5,444	$97,102	5,319
clonidine / antiadrenergic agents, centrally acting	6,216	5,407	$135,633	5,161
amphetamine-dextroamphetamine / CNS stimulants	6,390	5,339	$304,060	4,647
sulfamethoxazole-trimethoprim / sulfonamides	5,533	4,309	$89,978	4,238
guanfacine / antiadrenergic agents, centrally acting	4,486	4,024	$82,051	3,849
ethinyl estradiol-norgestimate / contraceptives	4,597	3,926	$75,638	3,777
lisinopril / angiotensin converting enzyme (ACE) inhibitors	4,347	3,857	$33,137	3,716
ranitidine / H2 antagonists	4,643	3,788	$49,494	3,683

TABLE F: TOP 25 DRUG MOLECULES
BY DOLLARS PAID IN NOV 2017 (FFS and CCOs)

Drug Molecule Therapeutic Category	Oct 2017 $ Paid	Nov 2017 $ Paid	Nov 2017 # Claims	Nov 2017 # Unique Benes
lisdexamfetamine / CNS stimulants	$2,616,430	$2,205,766	8,207	8,012
methylphenidate / CNS stimulants	$1,686,747	$1,370,268	5,611	5,089
oseltamivir / neuraminidase inhibitors	$530,122	$1,220,505	7,550	7,521
antihemophilic factor / factor for bleeding disorders	$1,335,694	$1,133,877	31	24
adalimumab / TNF alpha inhibitors	$1,055,651	$922,876	171	159
deferasirox / chelating agents	$952,621	$824,305	76	74
somatropin / growth hormones	$817,565	$822,968	191	175
albuterol / adrenergic bronchodilators	$871,980	$791,943	15,856	14,242
dexmethylphenidate / CNS stimulants	$950,813	$763,984	2,938	2,485
insulin aspart / insulin	$809,467	$703,219	1,216	1,173
insulin glargine / insulin	$775,069	$678,201	1,567	1,517
pregabalin / gamma-aminobutyric acid analogs	$662,471	$601,219	1,355	1,307
palivizumab / immune globulins	$0	$600,797	241	183
budesonide / glucocorticoids	$697,861	$588,650	1,380	1,366
anti-inhibitor coagulant complex / factor for bleeding disorders	$693,946	$561,422	5	3
lurasidone / atypical antipsychotics	$616,458	$561,070	468	453
ledipasvir-sofosbuvir / antiviral combinations	$672,950	$552,226	18	18
ivacaftor-lumacaftor / CFTR combinations	$419,592	$482,531	23	21
fluticasone-salmeterol / bronchodilator combinations	$464,624	$427,435	1,193	1,181
etanercept / TNF alpha inhibitors	$421,770	$410,824	100	98
cobicistat/elvitegravir/emtricitabine/tenofov / antiviral combinations	$525,319	$403,726	153	147
insulin detemir / insulin	$399,063	$345,208	719	692
clobazam / benzodiazepine anticonvulsants	$352,022	$330,881	209	187
atomoxetine / CNS stimulants	$375,082	$319,007	799	753
lacosamide / miscellaneous anticonvulsants	$350,563	$304,447	403	368

TABLE G: TOP 25 DRUG MOLECULES
BY CHANGE IN NUMBER OF CLAIMS FROM SEP 2017 TO NOV 2017 (FFS and CCOs)

Drug Molecule	Sep 2017 # Claims	Oct 2017 # Claims	Nov 2017 # Claims	Nov 2017 $ Paid	Nov 2017 # Unique Benes
oseltamivir / neuraminidase inhibitors	941	2,627	7,550	$1,220,505	7,521
azithromycin / macrolides	11,969	13,263	14,267	$282,061	13,998
amoxicillin / aminopenicillins	17,853	20,085	19,839	$254,307	19,544
prednisolone / glucocorticoids	6,284	7,727	7,496	$193,940	7,277
cefdinir / third generation cephalosporins	5,446	6,202	6,543	$185,694	6,462
amoxicillin-clavulanate / penicillins/beta-lactamase inhibitors	6,344	6,965	6,833	$180,930	6,709
albuterol / adrenergic bronchodilators	15,536	17,079	15,856	$791,943	14,242
benzonatate / antitussives	1,010	1,072	1,327	$19,046	1,287
dextromethorphan-promethazine / upper respiratory combinations	620	830	895	$9,874	877
palivizumab / immune globulins	0	0	241	$600,797	183
brompheniramine/dextromethorphan/pse / upper respiratory combinations	627	799	864	$19,316	855
cefprozil / second generation cephalosporins	943	1,084	1,157	$51,389	1,141
clarithromycin / macrolides	560	755	743	$51,785	731
codeine-guaifenesin / upper respiratory combinations	864	890	1,035	$15,648	1,030
ondansetron / 5HT3 receptor antagonists	5,346	6,342	5,444	$97,102	5,319
levofloxacin / quinolones	614	613	682	$7,999	669
empagliflozin / SGLT-2 inhibitors	240	295	273	$113,350	266
cefuroxime / second generation cephalosporins	413	431	440	$12,604	436
rivaroxaban / factor Xa inhibitors	295	321	312	$117,676	286
clozapine / atypical antipsychotics	99	113	116	$10,089	84
varenicline / smoking cessation agents	147	193	163	$56,815	156
paliperidone / atypical antipsychotics	107	128	121	$81,868	107
amphetamine / CNS stimulants	670	739	684	$201,753	658
avibactam-ceftazidime / cephalosporins/beta-lactamase inhibitors	0	0	13	$14,425	1
vilazodone / miscellaneous antidepressants	153	157	166	$37,629	162

TABLE H: TOP 25 DRUG MOLECULES
BY CHANGE IN AMOUNT PAID FROM SEP 2017 TO NOV 2017 (FFS and CCOs)

Drug Molecule	Sep 2017 $ Paid	Oct 2017 $ Paid	Nov 2017 $ Paid	Nov 2017 # Claims	Nov 2017 # Unique Benes
oseltamivir / neuraminidase inhibitors	$172,755	$530,122	$1,220,505	7,550	7,521
palivizumab / immune globulins	$0	$0	$600,797	241	183
ivacaftor-lumacaftor / CFTR combinations	$356,654	$419,592	$482,531	23	21
valbenazine / VMAT2 inhibitors	$21,219	$87,989	$95,833	10	10
bexarotene / miscellaneous antineoplastics	$0	$0	$53,728	1	1
azithromycin / macrolides	$231,506	$259,330	$282,061	14,267	13,998
sofosbuvir-velpatasvir / antiviral combinations	$217,085	$169,683	$267,430	11	11
ustekinumab / interleukin inhibitors	$45,688	$73,087	$91,912	5	5
somatropin / growth hormones	$778,276	$817,565	$822,968	191	175
tipiracil-trifluridine / antineoplastic combinations	$0	$58,848	$43,917	5	4
glycerol phenylbutyrate / urea cycle disorder agents	$45,824	$45,824	$87,488	2	2
dimethyl fumarate / selective immunosuppressants	$164,164	$150,130	$204,759	30	29
glecaprevir-pibrentasvir / antiviral combinations	$13,208	$26,417	$52,833	4	3
prednisolone / glucocorticoids	$155,851	$194,482	$193,940	7,496	7,277
corticotropin / corticotropin	$109,262	$145,702	$145,702	3	3
amoxicillin / aminopenicillins	$228,647	$259,943	$254,307	19,839	19,544
sofosbuvir/velpatasvir/voxilaprevir / antiviral combinations	$0	$0	$24,928	1	1
cefdinir / third generation cephalosporins	$162,533	$180,755	$185,694	6,543	6,462
amoxicillin-clavulanate / penicillins/beta-lactamase inhibitors	$161,775	$180,414	$180,930	6,833	6,709
bosentan / agents for pulmonary hypertension	$45,116	$35,118	$63,937	8	8
natalizumab / selective immunosuppressants	$0	$12,017	$18,025	3	3
nilotinib / BCR-ABL tyrosine kinase inhibitors	$58,186	$40,689	$75,625	7	7
fentanyl / narcotic analgesics	$36,615	$62,355	$53,314	293	261
ponatinib / VEGF/VEGFR inhibitors	$0	$16,619	$16,619	1	1
afatinib / multikinase inhibitors	$0	$0	$16,368	1	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 SEP 2017 TO NOV 2017 (FFS and CCOs)

Drug Product Therapeutic Category	Nov 2017 # Claims	Nov 2017 $ Paid	Nov 2017 Avr. Paid Per Rx	Nov 2017 Avr. Units Per Rx	Sep 2017 Paid Per Unit	Oct 2017 Paid Per Unit	Nov 2017 Paid Per Unit	Percent Change
azithromycin 250 mg tablet / macrolides (P)	5,856	$78,806	$13.46	6	$1.33	$1.40	$1.45	8.5%
ketorolac 10 mg tablet / nonsteroidal anti-inflammatory agents (P)	748	$21,318	$28.50	17	$1.25	$1.24	$1.35	8.4%
azithromycin 500 mg tablet / macrolides (P)	854	$13,325	$15.60	4	$2.88	$2.96	$2.99	3.7%
methylphenidate 18 mg/24 hr tablet, extended release / CNS stimulants (P)	353	$77,780	$220.34	30	$7.04	$7.36	$7.29	3.5%
cefuroxime 250 mg tablet / second generation cephalosporins (P)	237	$5,886	$24.84	19	$1.05	$1.07	$1.08	2.2%
nitrofurantoin macrocrystals-monohydrate 100 mg capsule / urinary anti-infectives (P)	1,226	$27,882	$22.74	15	$1.17	$1.19	$1.19	2.0%
methylphenidate 54 mg/24 hr tablet, extended release / CNS stimulants (P)	792	$204,393	$258.07	30	$8.34	$8.48	$8.48	1.7%
Jardiance (empagliflozin) 10 mg tablet / SGLT-2 inhibitors (P)	118	$49,765	$421.74	30	$13.70	$13.84	$13.92	1.6%
Focalin XR (dexmethylphenidate) 25 mg capsule, extended release / CNS stimulants (P)	190	$69,627	$366.46	30	$11.90	$11.93	$12.06	1.3%
phenazopyridine 200 mg tablet / miscellaneous genitourinary tract agents	268	$6,669	$24.88	11	$1.74	$1.80	$1.76	1.3%
methylphenidate 36 mg/24 hr tablet, extended release / CNS stimulants (P)	997	$300,061	$300.96	38	$7.72	$7.82	$7.79	1.0%
Zithromax (azithromycin) 500 mg tablet / macrolides (N)	172	$2,666	$15.50	4	$3.03	$3.21	$3.06	1.0%
Lyrica (pregabalin) 300 mg capsule / gamma-aminobutyric acid analogs (P)	107	$44,374	$414.71	61	$6.65	$6.71	$6.71	0.8%
Adzenys XR-ODT (amphetamine) 12.5 mg tablet, disintegrating, extended release / CNS stimulants (P)	128	$37,902	$296.11	30	$9.52	$9.59	$9.59	0.7%
Vyvanse (lisdexamfetamine) 10 mg capsule / CNS stimulants (P)	226	$60,977	$269.81	30	$8.87	$8.95	$8.94	0.7%

New Business

Special Analysis Projects

MISSISSIPPI DIVISION OF MEDICAID

MS-DUR INTERVENTION / EDUCATIONAL MAILING UPDATE

NOVEMBER 2017 – JANUARY 2018

HIGH MEDD (≥90 MEDD) MAILING			CONCOMITANT BENZODIAZEPINE / OPIOID USE		PROVIDER SHOPPING FOR OPIOIDS (≥4 Prescribers AND ≥4 Pharmacies)		
Month	Prescribers Mailed	Benes Addressed	Prescribers Mailed	Benes Addressed	Prescribers Mailed	Pharms Mailed	Benes Addressed
Nov-17	51	61	150	532	64	49	112
Dec-17	-	-	150	485	56	44	105
Jan-18	46	50	150	380	54	32	95

ANTIPSYCHOTIC USE IN IDD POPULATION	
	Prescribers Mailed
Dec-17	300
Jan-18	300
Feb-18	
*Onetime mailing to 1069 prescribers spread over 3 months.	

GABAPENTIN / PREGABALIN PROVIDER NOTICE	
	Prescribers Mailed
Dec-17	457

REVIEW OF PHARMACY QUALITY ALLIANCE (PQA) RECOMMENDATIONS FOR DIABETES MEDICATION DOSING AND UTILIZATION IN MS MEDICAID

BACKGROUND

Pharmacy Quality Alliance (PQA) is a multi-stakeholder, consensus-based membership organization established in 2006 to collaboratively promote appropriate medication use and develop strategies for measuring and reporting performance information related to medications. PQA has developed quality measures in areas such as medication safety, medication adherence and appropriateness. Various PQA measures are included in the Centers for Medicare and Medicaid Services (CMS) Medicare Part D Star Rating system and in the CMS Medicaid Adult Core Set and Child Core Set of quality measures.

One of the performance measures currently being developed by PQA addresses diabetes medication dosing. Type 2 diabetes mellitus is a chronic disease characterized by hyperglycemia resulting from the combination of resistance to insulin action, inadequate insulin secretion, and excessive or inappropriate glucagon secretion. According to the Centers for Disease Control and Prevention (CDC) National Diabetes Statistics Report, 9.4% of the U.S. population had diabetes in 2015.[1] Diabetes' progressive nature can lead to increased rates of heart disease, stroke, blindness, kidney disease, amputations and death.[2] Despite a plethora of pharmacologic agents available to treat diabetes, some patients are inadequately maintained on high doses of oral hypoglycemic agents rather than adding additional agents to their therapy. Excessive dosages of oral diabetes medications have not been shown to have better efficacy and may cause adverse effects.

The PQA Diabetes Medication Dosing (DOS) measure examines the percentage of individuals who were dispensed a dose higher than the daily recommended maximum dose for more than 90 (cumulative) days during the measurement year for the following categories of oral diabetes medications: alpha-glucosidase inhibitors, biguanides, dipeptidyl peptidase-4 (DPP-4) inhibitors, meglitinides, sodium-glucose cotransporter-2 (SGLT-2) inhibitors, sulfonylureas and thiazolidinediones.[3]

METHODS

A retrospective analysis was conducted using Division of Medicaid (DOM) administrative claims from January 1, 2017 through December 31, 2017. Claims for fee-for-service (FFS) and both coordinated care programs (United Healthcare and Magnolia) were included. The PQA DOS draft specifications were used for the analysis. For combination ingredient products the measure is calculated separately for each active ingredient in the target classes.

[1] CDC National Diabetes Statistics Report, 2017

[2] CDC. Diabetes: Working to reverse the US epidemic at a glance 2016. July 25, 2016. Available at: https://www.cdc.gov/chronicdisease/resources/publications/aag/diabetes.htm

[3] PQA Measure Specifications: Diabetes Medication Dosing (DOS) – Revised 2017

Denominator for measure (inclusion criteria):

- Age 18 years and above at the beginning of the measurement year
- Continuously enrolled (11+ months) during the measurement year
- Two or more prescriptions fills for the same active ingredient.
- The index prescription start date (IPSD) for the active ingredient is at least 91 days prior to the end of the measurement year.

Numerator for measure (exceptions to standard):

- Individuals in denominator where the daily dose for the active ingredient exceeded the maximum recommended daily dose (see Table 1) for more than 90 days (cumulative).

TABLE 1: Maximum Recommended Daily Doses[a]	
Alpha-Glucosidase Inhibitors	
Acarbose	300 mg/day
Miglitol	300 mg/day
Biguanides	
Metformin[b]	2,550 mg/day
Dipeptidyl Peptidase 4 (DPP-4) Inhibitors	
Alogliptin	25 mg/day
Linagliptin	5 mg/day
Saxagliptin	5 mg/day
Sitagliptin	100 mg/day
Meglitinides	
Nateglinide	360 mg/day
Repaglinide	16 mg/day
Sulfonylureas	
Chlorpropamide	750 mg/day
Glimepiride	8 mg/day
Glipizide IR[c]	40 mg/day
Glipizide XL[c]	20 mg/day
Glyburide[d]	20 mg/day
Glyburide, micronized[d]	12 mg/day
Tolazamide	1,000 mg/day
Tolbutaminde	3,000 mg/day
Sodium-glucose Contransporter-2 (SGLT-2) Inhibitors	
Canagliflozin	300 mg/day
Dapagliflozin	10 mg/day
Empagliflozin	25 mg/day
Thiazolidinediones	
Pioglitazone	45 mg/day
Rosiglitazone	8 mg/day

[a] *Sources: American Diabetes Association. Pharmacologic approaches to glycemic treatment. Diabetes Care. 2017; 40(Suppl. 1):S64-S74. doi: 10.2337/dc17-S011.*
Facts & Comparison eAnswers Online, Hudson, OH, Wolters Kluwer Clinical Drug Information, Inc.; 2017. Accessed 05/31/2017.

[b] *Metformin: The maximum daily dose used for this measure is the highest maximum daily dose across all metformin products.*

[c] *Glipizide: If an individual is receiving glipizide IR and glipizide XL concurrently, the maximum daily dose for days of concurrent use is 20 mg/day.*

[d] *Glyburide: If an individual is receiving glyburide and glyburide, micronized concurrently, the maximum daily dose for days of concurrent use is 12 mg/day.*

The number of exceptions to the measure were identified using the proposed PQA quality measure criteria. As with most quality measures, the standard for not meeting the measure (90 days or more above the recommended dose and continuous enrollment for observation year) are set fairly high to minimize false positives due to clinical situations that could occur and to assure that all people included in the denominator have an equal chance of being in the numerator. Conservative specifications like these are needed when comparing health plans to assure a fair comparison. MS-DUR also ran the analysis using less stringent criteria of 30 or more days exceeding the recommended daily dose and 2 or more months of eligibility. More than 30 days exceeding the recommended daily dose is sufficient to rule out false positives resulting from changing medication strengths shortly after a prescription refill and having what would appear to be two overlapping prescriptions for the same medication. Dropping the enrollment criteria to 2 months or more includes the maximum number of beneficiaries that could potentially be exceptions to the clinical rule. The less stringent criteria are more in line with what would be used for drug utilization management interventions and quality improvement initiatives and provide a better estimate of the potential impact of potential drug utilization management strategies.

RESULTS

Table 2 shows the number of beneficiaries taking each active ingredient and the number exceeding the recommended maximum daily dose for more than 90 days (highlighted columns) using the proposed PQA criteria. Using the 90-day criteria, few exceptions were identified.

TABLE 2: Number Beneficiaries Taking Medication and Exceeding Maximum Daily Dose for PQA Criteria of More Than 90 Days*

	FFS		UHC		MAG	
	Taking Medication	Exceeding Max Dose 91+ Days	Taking Medication	Exceeding Max Dose 91+ Days	Taking Medication	Exceeding Max Dose 91+ Days
Alpha-Glucosidase Inhibitors						
Acarbose	2	0	1	0	0	0
Biguanides						
Metformin	1,022	2	1,590	2	2,480	1
Dipeptidyl Peptidase 4 (DPP-4) Inhibitors						
Alogliptin	1	1	0	0	0	0
Linagliptin	28	1	38	1	113	2
Saxagliptin	15	1	42	0	79	0
Sitagliptin	90	0	134	0	182	0
Meglitinides						
Repaglinide	1	0	0	0	0	0
Sulfonylureas						
Chlorpropamide	0	0	1	0	0	0
Glimepiride	64	0	112	0	195	0
Glipizide IR	69	0	86	0	178	0
Glipizide XL	25	0	37	0	65	0
Glipizide IR/XL	1	0	7	0	12	1
Glyburide	75	0	139	0	188	0
Glyburide, micronized	1	0	1	0	3	0
Sodium-Glucose Contransporter-2 (SGLT-2) Inhibitors						
Canagliflozin	4	0	4	0	14	0
Dapagliflozin	1	0	2	0	10	0
Empagliflozin	25	0	55	0	82	0
Thiaxolidinediones						
Pioglitazone	26	1	40	0	66	0

** Includes beneficiaries 18 and older, enrolled at least 11 months during year, filling 2+ prescriptions for medication ingredient, and having first fill for active ingredient at least 91 days before end of year.*

Table 3 shows the number of beneficiaries taking each ingredient and exceeding the recommended daily dose when a 30-day limit and 2-month enrollment criteria are used. Using the alternate criteria, a small percentage of beneficiaries taking metformin are identified as exceeding the recommended dose. Only 54 beneficiaries were identified as exceeding the maximum daily dose when a 30-day limit and 2-month enrollment criteria were utilized.

TABLE 3: Number Beneficiaries Taking Medication and Exceeding Maximum Daily Dose for More Than 30 Days*

	FFS		UHC		MAG	
	Taking Medication	Exceeding Max Dose 30+ Days	Taking Medication	Exceeding Max Dose 30+ Days	Taking Medication	Exceeding Max Dose 30+ Days
Alpha-Glucosidase Inhibitors						
Acarbose	3	0	2	0	0	0
Biguanides						
Metformin	1,630	11	2,555	12	3,817	13
Dipeptidyl Peptidase 4 (DPP-4) Inhibitors						
Alogliptin	1	1	0	0	0	0
Linagliptin	46	1	56	1	153	4
Saxagliptin	22	1	48	0	100	0
Sitagliptin	137	0	212	0	261	4
Meglitinides						
Repaglinide	1	0	1	0	0	0
Sulfonylureas						
Chlorpropamide	0	0	1	0	0	0
Glimepiride	95	0	179	0	292	0
Glipizide IR	114	0	140	0	269	0
Glipizide XL	34	0	60	0	94	1
Glipizide IR/XL	2	0	10	0	14	1
Glyburide	102	0	181	0	264	2
Glyburide, micronized	1	0	1	0	3	0
Glyburide and miconized	0	0	0	0	0	0
Sodium-Glucose Contransporter-2 (SGLT-2) Inhibitors						
Canagliflozin	9	0	8	0	18	0
Dapagliflozin	2	0	4	0	17	1
Empagliflozin	51	0	111	0	154	0
Thiaxolidinediones						
Pioglitazone	39	1	53	0	93	0

** Includes beneficiaries 18 and older, enrolled at least 2 months during year, filling 2+ prescriptions for medication ingredient, and having 30+ days supply of active ingredient.*

CONCLUSIONS AND RECOMMENDATIONS

After applying both the PQA criteria and the modified lower criteria, very few exceptions were captured. Both FFS and the CCOs appear to have maximum daily dosage limits mirroring the PQA criteria currently in place in Mississippi Medicaid. MS-DUR recommends no additional changes be made at this time.

REVIEW OF STIMULANTS AND RELATED AGENTS IN MISSISSIPPI MEDICAID

BACKGROUND

In Mississippi Medicaid, use of CNS stimulants consistently ranks at the top of drug categories in both number of claims and amount of dollars paid. More than 20,000 Medicaid beneficiaries receive stimulants and related agents monthly at average cost of around $6,000,000 monthly to Medicaid. The utilization of short-acting and long-acting stimulants and non-stimulants in Mississippi Medicaid was assessed. Presence of attention deficit disorder (ADD) and attention deficit/hyperactivity disorder (ADHD) diagnoses was also reviewed taking into consideration the current Universal Preferred Drug List (UPDL) requirements. Beneficiaries above the age of 21 years are required to have a diagnosis of ADD/ADHD when submitting claims for stimulant medications.

ADD/ADHD are common childhood neurobehavioral disorders that can persist into adulthood. According to the 2011 National Survey on Children's Health, 11% of children in the United States ages 4-17 years had received a diagnosis of ADD/ADHD.[1] The estimated prevalence of adults aged 18-44 years in 2006 with a current ADD/ADHD diagnosis was 4.4%.[2] Behavioral therapy and medication management are the primary treatments for ADD/ADHD symptoms. Medications for the treatment of ADD/ADHD can be divided into two categories, stimulants and non-stimulants.

METHODS

A retrospective analysis of pharmacy claims for short-acting (SA) and long-acting (LA) stimulants and non-stimulants during calendar year 2017 and medical claims during calendar years 2015 – 2017 was conducted. An ADD/ADHD diagnosis was considered to be present if any diagnosis on medical claims contained an ICD-9 code of 314.0 or ICD-10 code of F90 within the past 24 months at the time the medication prescription was filled.

RESULTS

In calendar year 2017, children ages ≤17 years accounted for the majority of stimulant and non-stimulant prescriptions (87% of SA stimulants, 94% of LA stimulants, 84% of SA non-stimulants, and 95% of LA non-stimulants). Adults age ≥ 21 years accounted for only 10% of SA stimulants, 2% of LA stimulants, 13% of SA non-stimulants, and 1% of LA non-stimulants (Table 1).

[1] Visser S, Danielson M, Bitsko R, et al. Trends in the Parent-Report of Health Care Provider-Diagnosis and Medication Treatment for ADHD disorder: United States, 2003–2011. J Am Acad Child Adolesc Psychiatry. 2014,53(1):34–46.e2.

[2] Kessler RC, Adler L, Barkley R, Biederman J, Conners CK, Demler O, Faraone SV, Greenhill LL, Howes MJ, Secnik K, Spencer T, Ustun TB, Walters EE, Zaslavsky AM. The prevalence and correlates of adult ADHD in the United States: results from the National Comorbidity Survey Replication. Am J Psychiatry. 2006 Apr;163(4):716-23. PMID: 16585449

TABLE 1: Number of Prescriptions Filled for Stimulants and Non-Stimulants in 2017												
	FFS				UHC				MAG			
	Age at Fill				Age at Fill				Age at Fill			
	0 to 17	18 to 20	21+	Total	0 to 17	17 to 20	21+	Total	0 to 17	17 to 20	21+	Total
Stimulants Short-Acting												
Adderall (amphetamine-dextroamphetamine)	7	0	0	7	45	5	9	59	10	0	3	13
Amphetamine-Dextroamphetamine	4,975	403	555	5,933	13,033	686	2,736	16,455	10,951	727	2,128	13,806
Dexmethylphenidate	2,486	78	9	2,573	3,751	75	22	3,848	2,875	42	22	2,939
Dextroamphetamine	66	6	0	72	146	0	20	166	197	0	6	203
Evekeo (amphetamine)	95	1	0	96	186	0	23	209	17	0	0	17
Focalin (dexmethylphenidate)	54	0	12	66	50	0	12	62	40	0	2	42
Methylin (methylphenidate)	63	0	2	65	156	1	0	157	73	0	0	73
Methylphenidate	2,245	68	56	2,369	3,830	103	132	4,065	3,656	88	153	3,897
Procentra (dextroamphetamine)	471	0	0	471	1,714	2	0	1,716	1,763	0	0	1,763
Ritalin (methylphenidate)					2	0	0	2	3	0	1	4
Zenzedi (dextroamphetamine)	5	0	0	5	6	0	0	6	5	0	1	6
Total	10,467	556	634	11,657	22,919	872	2,954	26,745	19,590	857	2,316	22,763
Stimulants Long-Acting												
Adderall XR (amphetamine-dextroamphetamine ER)	156	14	0	170	63	12	40	115	2,013	134	112	2,259
Adzenys XR-ODT (amphetamine)	1,111	31	5	1,147	2,234	37	21	2,292	1,924	19	2	1,945
Amphetamine-Dextroamphetamine ER	6,362	640	203	7,205	13,225	970	638	14,833	10,897	747	417	12,061
Aptensio XR (methylphenidate ER)	63	0	0	63	47	0	0	47	22	0	0	22
Armodafinil					10	0	41	51	0	0	57	57
Concerta (methylphenidate ER)	45	3	0	48	11	0	2	13	174	14	0	188
Cotempla XR (methylphenidate ER)	2	0	0	2	5	0	0	5	2	0	0	2
Daytrana (methylphenidate ER)	301	12	0	313	313	11	0	324	208	2	3	213
Dexmethylphenidate ER	265	5	0	270	116	4	0	120	3,108	96	34	3,238
Dextroamphetamine ER	18	1	0	19	4	0	14	18	17	0	0	17
Dyanavel XR (amphetamine)	17	0	0	17	1	0	0	1	5	0	0	5
Focalin XR (dexmethylphenidate ER)	6,435	216	47	6,698	11,698	270	77	12,045	6,640	151	26	6,817
Metadate CD (methylphenidate ER)	1,067	38	16	1,121	1,709	41	17	1,767	997	12	6	1,015
Metadate ER (methylphenidate ER)	9	0	0	9	7	0	0	7	6	1	0	7
Methylphenidate CD	105	0	0	105	259	5	1	265	533	13	0	546
Methylphenidate ER	8,219	367	110	8,696	13,723	554	154	14,431	12,259	537	112	12,908
Methylphenidate SR	37	7	1	45	34	0	1	35	14	0	0	14
Modafinil					0	0	44	44	13	4	130	147
Mydayis (amphetamine-dextroamphetamine ER)					8	0	0	8	2	0	0	2
Nuvigil (armodafinil)	1	0	0	1					0	0	33	33
Provigil (modafinil)	25	15	46	86	11	4	74	89	0	1	6	7
QuilliChew ER (methylphenidate)	1,327	9	0	1,336	2,407	18	1	2,426	2,403	5	4	2,412
Quillivant XR (methylphenidate)	2,761	14	11	2,786	4,704	20	3	4,727	4,637	15	0	4,652
Ritalin LA (methylphenidate)	17	0	0	17	2	0	0	2	33	0	0	33
Vyvanse (lisdexamfetamine)	19,438	1,165	194	20,797	41,349	1,704	1,218	44,271	36,500	1,291	895	38,686
Total	47,781	2,537	633	50,951	91,940	3,650	2,346	97,936	82,407	3,042	1,837	87,286
TOTAL ALL STIMULANTS	**116,496**	**6,186**	**2,534**	**125,216**	**229,718**	**9,044**	**10,600**	**249,362**	**203,994**	**7,798**	**8,306**	**220,098**
Non-stimulants Short-Acting												
Atomoxetine	28	0	1	29	54	5	7	66	43	2	4	49
Clonidine	10,889	703	3,355	14,947	20,354	610	3,933	24,897	18,456	549	5,472	24,477
Guanfacine	7,120	455	361	7,936	12,270	295	332	12,897	11,833	416	348	12,597
Strattera (atomoxetine)	2,412	229	99	2,740	3,818	176	198	4,192	3,231	141	138	3,510
Total	20,449	1,387	3,816	25,652	36,496	1,086	4,470	42,052	33,563	1,108	5,962	40,633
Non-stimulants Long-Acting												
Clonidine ER	973	67	49	1,089	1,167	34	6	1,207	821	48	45	914
Guanfacine ER	4,890	269	27	5,186	5,554	224	41	5,819	5,512	182	55	5,749
Intuniv (guanfacine ER)	110	10	2	122	24	0	0	24	192	3	8	203
Kapvay (clonidine ER)	70	22	0	92	14	0	0	14	17	0	0	17
Total	6,043	368	78	6,489	6,759	258	47	7,064	6,542	233	108	6,883

NOTE: At time of analysis, data were not complete for Magnolia in December.

Table 2 shows the number of first prescriptions fills in 2017 for each category and the percentage of prescriptions having an ADD/ADHD diagnosis in the medical claims within the prior 24 months. Even though a diagnosis is required for use of stimulants by adult beneficiaries, the percentage for which no diagnosis was found in the medical claims ranged across pharmacy programs and type of stimulant from 22.1% to 31.5%. Beneficiaries age ≤ 20 years taking stimulants are not required to have a diagnosis for stimulants, however, the percentage without a diagnosis in the medical claims was lower than that for adults in almost every situation, ranging from 3.6% to 27.4%.

TABLE 2: Number of First Prescription Fills in 2017 and Percentage of First Fills Associated With ADD/ADHD Diagnoses in Medical Claims*

	FFS				UHC				MAG			
	Age at Fill				Age at Fill				Age at Fill			
	≤ 17 Years	18 to 20 Years	≥ 21 Years	Total	≤ 17 Years	18 to 20 Years	≥ 21 Years	Total	≤ 17 Years	18 to 20 Years	≥ 21 Years	Total
Stimulants Short-Acting												
Total number of first prescription fills	1,670	73	183	1,926	3,555	98	418	4,071	3,417	119	367	3,903
% No diagnosis	24.9%	27.4%	15.8%	24.1%	4.7%	11.2%	15.8%	6.0%	5.4%	13.4%	22.1%	7.3%
% ADD/ADHD diagnosis*	75.1%	72.6%	84.2%	75.9%	95.3%	88.8%	84.2%	94.0%	94.6%	86.6%	77.9%	92.7%
Stimulants Long-Acting												
Total number of first prescription fills	9,260	414	143	9,817	16,761	620	394	17,775	15,760	512	323	16,595
% No diagnosis	25.3%	22.2%	24.5%	25.2%	3.6%	7.1%	23.1%	4.1%	3.9%	7.2%	31.6%	4.5%
% ADD/ADHD diagnosis*	74.7%	77.8%	75.5%	74.8%	96.4%	92.9%	76.9%	95.9%	96.1%	92.8%	68.4%	95.5%
Non-stimulants Short-Acting												
Total number of first prescription fills	3,910	208	793	4,911	7,414	223	1,045	8,682	7,072	234	1,280	8,586
% No diagnosis	25.4%	29.8%	93.7%	36.7%	10.3%	23.3%	90.7%	20.3%	11.0%	29.1%	95.2%	24.1%
% ADD/ADHD diagnosis*	74.6%	70.2%	6.3%	63.3%	89.7%	76.7%	9.3%	79.7%	89.0%	70.9%	4.8%	75.9%
Non-stimulants Long-Acting												
Total number of first prescription fills	750	43	6	799	1,018	37	5	1,060	940	39	10	989
% No diagnosis	12.4%	23.3%	66.7%	13.4%	2.5%	0.0%	60.0%	2.6%	1.9%	2.6%	40.0%	2.3%
% ADD/ADHD diagnosis*	87.6%	76.7%	33.3%	86.6%	97.5%	100.0%	40.0%	97.4%	98.1%	97.4%	60.0%	97.7%
Intuniv and Kapvay ONLY												
Total number of first prescription fills	19	1	0	20	4	0	0	4	32	1	1	34
% No diagnosis	21.1%	100.0%	0.0%	25.0%	25.0%	0.0%	0.0%	25.0%	0.0%	100.0%	0.0%	2.9%
% ADD/ADHD diagnosis*	78.9%	0.0%	0.0%	75.0%	75.0%	0.0%	0.0%	75.0%	100.0%	0.0%	100.0%	97.1%

** At least one medical claim with an ADD/ADHD diagnosis occurred within 24 months of the new prescription fill date.*

The only non-stimulants with diagnosis requirements are Intuniv and Kapvay on the UPDL. Almost all use of these products was in the age ≤ 17 year group.

- 21% in Fee-For-Service did not have a diagnoses for ADD/ADHD
- 25% in United Healthcare did not have a diagnoses for ADD/ADHD
- 0% in Magnolia did not have a diagnoses for ADD/ADHD.

CONCLUSIONS AND RECOMMENDATIONS

The percentages of children and adolescents taking stimulants and having documented diagnoses for ADD/ADHD was fairly consistent across all pharmacy programs with approximately one-fourth not having a documented diagnosis. The percentage of adults taking stimulants without a diagnosis present in the medical claims varied considerably between FFS and the two CCO programs but generally was in line with or lower than for children and adolescents.

Although non-stimulants are listed with stimulants in the UPDL as other related products for treating ADHD, requiring an ADD/ADHD diagnosis for nonstimulants would not be feasible due to the fact that these agents have indications for various other conditions in children and adults.

Recommendations:

1. DOM should require an ADD/ADHD diagnosis for children, adolescents, and adults who are prescribed stimulants to assure appropriate use and assure adequate monitoring of beneficiaries taking stimulants.

PROTON PUMP INHIBITOR USE AND POTENTIAL DEPRESCRIBING OPPORTUNITIES IN MISSISSIPPI MEDICAID

BACKGROUND

The Mississippi Division of Medicaid (DOM) DUR Board requested MS-DUR conduct an analysis to examine the chronic use of proton pump inhibitors (PPI) in DOM beneficiaries. PPIs are indicated in the treatment of various gastrointestinal (GI) disorders. PPIs make up more than half of the gastrointestinal drug market and account for billions of dollars in healthcare costs to Americans annually. [1] Although PPIs are effective, they are often prescribed inappropriately. This misuse can result in negative health-related consequences and financial implications. Long-term PPI use has been associated with increased risk of fractures[2], Clostridium difficile infection (CDI)[3], community-acquired pneumonia, vitamin B-12 deficiency, low magnesium levels and other potential negative outcomes.[4]

Treatment guidelines define appropriate use of PPIs based on recent evidence. Conditions indicated for short-term use of PPIs include gastroesophageal reflux disease (GERD), gastric and duodenal ulcers, H. Pylori infection and stress ulcer prophylaxis. It is not uncommon for PPI use in these conditions to extend past the recommended treatment timeframe resulting in increased risk of adverse events and unnecessary healthcare costs.

Guidelines addressing an evidenced based approach to PPI deprescribing were developed and are provided in Appendix A.[5] They include a decision-support algorithm to address clinicians' common questions about PPI deprescribing. Specific recommendations regarding when and how to reduce the dose of or stop PPIs are given.

Based on these guidelines, the Atom Alliance collaborative network of health care providers in five states created the below algorithm for PPI deprescribing. (Figure 1)

[1] Heidelbaugh JJ, Kim AH, Chang R, Walker PC. Overutilization of proton-pump inhibitors: what the clinician needs to know. Therap Adv Gastroenterol 2012;5:219-32.

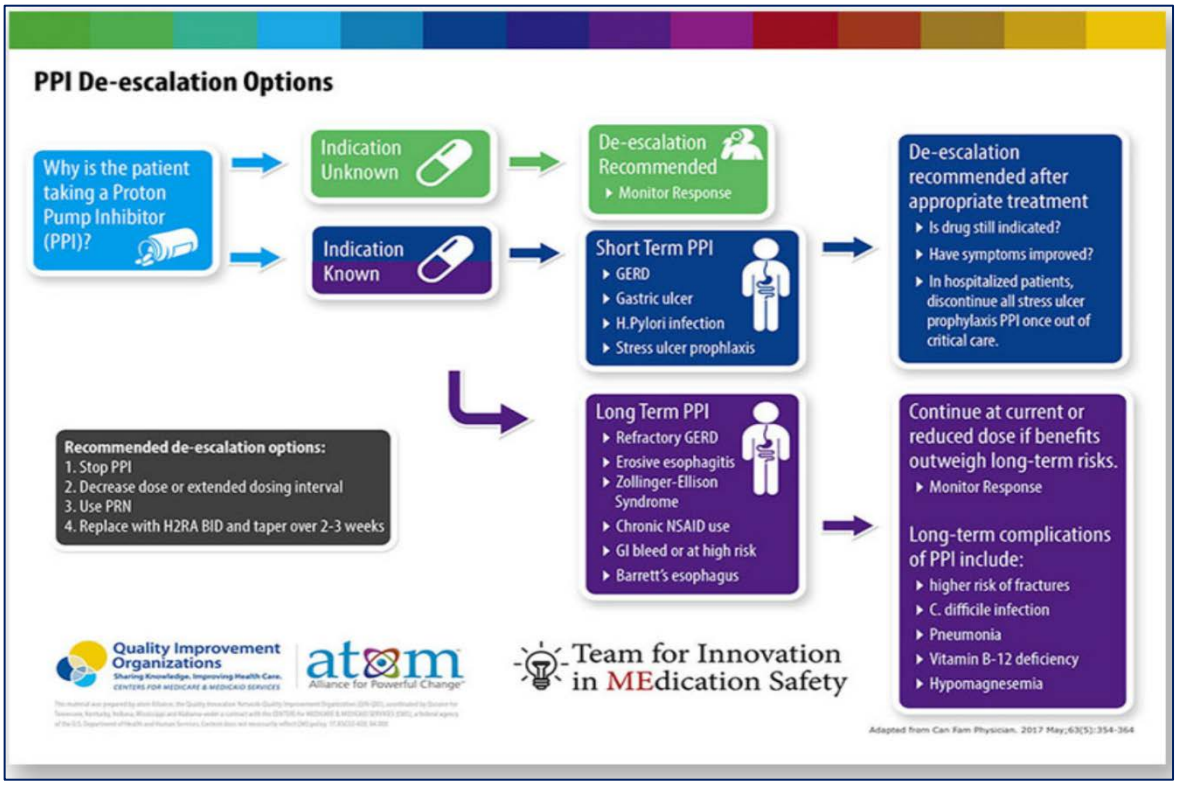
[2] Ding J, Heller DA, Ahern FM, Brown TV. The relationship between proton pump inhibitor adherence and fracture risk in the elderly. Calcif Tissue Int. 2014;94: 597e607

[3] McDonald EG, Milligan J, Frenette C, Lee TC. Continuous proton pump inhibitor therapy and the associated risk of recurrent clostridium difficile infection. JAMA Intern Med. 2015. http://dx.doi.org/10.1001/jamainternmed.2015.42

[4] Desilets AR, Asal NJ, Dunican KC. Considerations for the use of proton-pump inhibitors in older adults. Consult Pharm. 2012; 27(2): 114-120.

[5] Barbara Farrell, Kevin Pottie, Wade Thompson, Taline Boghossian, Lisa Pizzola, Farah Joy Rashid, Carlos Rojas-Fernandez, Kate Walsh, Vivian Welch, Paul Moayyedi. Deprescribing Proton Pump Inhibitors. Canadian Family Physician May 2017, 63 (5) 354-364

Figure 1: Atom Alliance PPI Deprescribing Algorithm



Similar to the Atom Alliance deprescribing guidelines, Oregon Medicaid (Appendix B) recently adopted prior authorization (PA) criteria for the prescribing of PPIs. Oregon's criteria allows for use $\leq$ 60 days of PPI therapy of preferred agents without PA. Use of non-preferred products or any products for $\geq$ 60 days of PPI therapy requires a PA. Their PA criteria establishes days supply guidelines that are dependent upon diagnosis.

METHODS

A retrospective analysis was conducted using DOM pharmacy and medical claims. Pharmacy claims for the period October 1, 2015 – December 31, 2017 were used to determine new starts on PPIs. Medical claims for the period January 1, 2015 – December 31, 2017 were used to determine whether new starts were associated with target diagnoses. Compliance with the deprescribing algorithm guidelines was evaluated for beneficiaries initiating PPI therapy during 2016 – 2017. Beneficiaries were identified as "new starts" if a:

- prescription for a PPI was filled without having had possession of a PPI agent during a wash-out period of 90 days AND
- beneficiary was continuously enrolled during the wash-out period.

For new starts, the length of time on therapy was analyzed by presence of target diagnoses. Target diagnoses had to be present in medical claims within 24 months of the prescription fill date.

RESULTS

As shown in Table 1, the overall number of prescription fills for PPIs in 2017 by month has been fairly stable in all three pharmacy programs.

TABLE 1: Proton Pump Inhibitor Prescription Fills 2017													
Generic (Brand) Drug Name	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**	**Nov**	**Dec**	**TOTAL**
ALL PHARMACY PROGRAMS													
rabeprazole (Pariet)	8	9	11	11	9	11	10	10	12	12	11	8	122
dexlansoprazole (Dexilant)	126	113	122	125	109	121	111	122	107	123	110	94	1,383
esomeprazole (Nexium)	2,408	2,180	2,444	2,328	2,300	2,234	2,261	2,328	2,203	2,272	1,885	1,284	26,127
lansoprazole (Prevacid)	100	84	85	78	89	78	76	76	77	86	73	60	962
omeprazole (Losec)	1,651	1,656	1,844	1,829	1,967	1,995	1,998	2,098	2,076	2,175	1,927	1,384	22,600
pantoprazole (Tecta, Pantoloc)	1,647	1,652	1,840	1,827	1,965	1,993	1,996	2,096	2,074	2,173	1,925	1,384	22,572
Total	11,346	10,591	11,502	11,014	11,315	10,971	10,748	11,332	10,798	11,059	9,573	6,507	126,756
Fee-For-Service													
rabeprazole (Pariet)	1	0	2	1	1	1	1	1	1	1	2	1	13
dexlansoprazole (Dexilant)	3	5	6	5	3	4	5	5	2	4	4	5	51
esomeprazole (Nexium)	521	483	554	494	502	490	482	495	454	485	468	443	5,871
lansoprazole (Prevacid)	24	25	25	17	26	21	18	20	20	24	20	17	257
omeprazole (Losec)	1,119	1,037	1,115	1,040	1,136	1,044	1,030	1,058	1,050	1,039	1,052	937	12,657
pantoprazole (Tecta, Pantoloc)	436	408	469	446	481	476	480	497	512	533	514	507	5,759
Total	2,104	1,958	2,171	2,003	2,149	2,036	2,016	2,076	2,039	2,086	2,060	1,910	24,608
United Healthcare													
rabeprazole (Pariet)	6	7	7	7	5	5	5	4	5	6	5	5	67
dexlansoprazole (Dexilant)	101	88	93	96	86	94	82	89	82	86	85	81	1,063
esomeprazole (Nexium)	820	755	822	798	723	751	742	791	736	742	666	605	8,951
lansoprazole (Prevacid)	52	36	38	42	39	37	41	32	39	37	38	38	469
omeprazole (Losec)	2,349	2,170	2,276	2,217	2,204	2,104	2,030	2,168	2,035	2,077	1,912	1,794	25,336
pantoprazole (Tecta, Pantoloc)	550	558	608	616	688	638	671	703	669	715	657	640	7,713
Total	3,878	3,614	3,844	3,778	3,745	3,629	3,571	3,787	3,566	3,663	3,363	3,163	43,601
Magnolia													
rabeprazole (Pariet)	1	2	2	2	3	4	4	4	5	5	3	2	37
dexlansoprazole (Dexilant)	22	20	23	22	18	20	22	25	21	32	19	7	251
esomeprazole (Nexium)	1,048	925	1,048	1,020	1,061	978	1,022	1,026	1,000	1,030	741	229	11,128
lansoprazole (Prevacid)	23	23	22	19	24	20	17	24	18	25	15	5	235
omeprazole (Losec)	3,562	3,318	3,584	3,364	3,484	3,361	3,213	3,444	3,221	3,252	2,584	927	37,314
pantoprazole (Tecta, Pantoloc)	653	682	755	760	793	876	838	890	886	920	748	233	9,034
Total	5,309	4,970	5,434	5,187	5,383	5,259	5,116	5,413	5,151	5,264	4,110	1,403	57,999

NOTE: At time of analysis, data were not complete for Magnolia in December.

Table 2 includes information about the presence of target diagnoses for beneficiaries who initiated therapy with proton pump inhibitors during 2016 – 2017. In the three pharmacy programs 62% - 64% of beneficiaries taking PPIs did not have a target diagnosis in the medical claims during the last 24 months. For three of the diagnoses where the guidelines recommended short term treatment (*H. pylori* infection, GERD and esophagitis), 43% of beneficiaries taking PPIs had done so for more > 90 days. Overall for all diagnoses and pharmacy programs, 57% of beneficiaries initiating treatment with PPIs remained on therapy for > 90 days. The percentage of beneficiaries on therapy > 90 days was similar for beneficiaries with target diagnoses (41%) and those without target diagnoses (38%).

TABLE 2: Presence of Medical Claim and Length of Time on Theray for Beneficiaries Initiating Therapy With Proton Pump Inhibitors in 2016 - 2017

	FFS (n = 7,012)				United Healthcare (n = 12,037)				Magnolia (n = 15,399)			
		Length of Therapy				Length of Therapy				Length of Therapy		
Target Diagnosis*	Total w/Dx	≤ 90 Days	> 90 Days		Total w/Dx	≤ 90 Days	> 90 Days		Total w/Dx	≤ 90 Days	> 90 Days	
H. pylori infection	146	100	46	31.5%	356	271	85	23.9%	426	325	101	23.7%
GERD	1,984	1,065	919	46.3%	3,711	2,187	1,524	41.1%	4,771	2,581	2,190	45.9%
Esophagitis (GERD)	2,168	1,179	989	45.6%	4,059	2,411	1,648	40.6%	5,165	2,817	2,348	45.5%
Stress ulcer	116	78	38	32.8%	197	139	58	29.4%	199	120	79	39.7%
Gastric ulcer	137	98	39	28.5%	176	120	56	31.8%	222	152	70	31.5%
Erosive esophagitis	17	11	6	35.3%	13	11	2	15.4%	20	14	6	30.0%
Zollinger-Ellison	1	1	0	0.0%	1	0	1	100.0%	0	0	0	0.0%
NSAID use	68	45	23	33.8%	141	104	37	26.2%	172	126	46	26.7%
GI bleed	280	180	100	35.7%	254	173	81	31.9%	292	206	86	29.5%
Barrett's esophagus	29	15	14	48.3%	54	29	25	46.3%	67	35	32	47.8%
Other (from Oregon list)	351	230	121	34.5%	626	432	194	31.0%	792	522	270	34.1%
NO TARGET DIAGNOSIS	4,505	2,731	1,774	39.4%	7,443	4,953	2,490	33.5%	9,594	5,745	3,849	40.1%

NOTE: Beneficiaries taking PPIs may be included in more than 1 diagnosis category, except the "No Target Diagnosis" category.

** Diagnosis code was recorded in a medical claim within 24 months of starting therapy.*

In addition to limiting treatment with PPIs to recommended therapy duration, the deprescribing algorithm also recommends using PPIs at the lowest strength possible, especially during maintenance therapy. Table 3 illustrates:

- the number of beneficiaries who took PPIs for > 90 days
- whether the dose of their last prescription filled was considered to be standard dose vs low dose.

With the exception of erosive esophagitis, 95% or more of these beneficiaries were still taking the standard dose for the specific PPI being prescribed.

TABLE 3: Dose Level for Last Prescription Fill for Benefiticaires Taking Proton Pump Inhibitors for >90 Days (2016 - 2017 FFS and CCOs)

	All Pharmacy Programs Beneficiaries Taking PPIs > 90 Days (n = 13,489)			
		Strength of Last PPI Filled**		
Target Diagnosis*	Total w/Dx	Low Dose	Standard Dose	
H. pylori infection	232	11	221	95.3%
GERD	4,633	148	4,485	96.8%
Esophagitis (GERD)	4,985	156	4,829	96.9%
Stress ulcer	175	7	168	96.0%
Gastric ulcer	165	4	161	97.6%
Erosive esophagitis	14	3	11	78.6%
Zollinger-Ellison	1	0	1	100.0%
NSAID use	106	3	103	97.2%
GI bleed	267	5	262	98.1%
Barrett's esophagus	71	1	70	98.6%
Other (from Oregon list)	585	17	568	97.1%
NO TARGET DIAGNOSIS	8,113	222	7,891	97.3%

NOTE: Beneficiaries taking PPIs may be included in more than 1 diagnosis category, except the "No Target Diagnosis" category.

** Diagnosis code was recorded in a medical claim within 24 months of starting therapy.*

*** Low (maintenance) dose and standard (healing) dose for each medication as specified in PPI Deprescribing Algorithm.*

MS-DUR estimated the number of beneficiaries each month that would exceed limits on length of time on therapy by examining all new starts on PPIs in July 2017. Since DOM allows up to 31 days per prescription, limits of 62 days (2 months) and 93 days (3 months) were tested. (Table 4)

TABLE 4: Number of Beneficiaries Starting PPI Therapy In July 2017 and Remaining on Therapy More Than 62 and 93 Days

Beneficiary Characteristic		On Therapy > 62 Days				On Therapy > 93 Days			
		Pharmacy Program				Pharmacy Program			
		FFS	UHC	MAG	Total	FFS	UHC	MAG	Total
TOTAL		68	126	170	364	50	77	113	240
Gender	Female	42	88	106	236	33	55	73	161
	Male	26	38	64	128	17	22	40	79
Race	Caucasian	33	57	77	167	24	34	58	116
	African Amer	30	45	62	137	22	27	33	82
	Other	5	24	31	60	4	16	22	42
Age	11 or less	12	23	31	66	10	15	17	42
	12 - 20	10	19	18	47	7	12	10	29
	21 - 34	4	18	36	58	4	12	27	43
	35 - 64	42	66	85	193	29	38	59	126

Of the beneficiaries beginning PPI therapy in July 2017:

- 364 had> 62 days of treatment
- 240 had > 93 days of treatment
- ~ 30% of these beneficiaries were children or adolescents.

Treatment with PPIs for longer than recommended is fairly widespread. Overall, 325 different prescribers accounted for the initiation of therapy for the 364 beneficiaries receiving > 62 days of therapy and 224 prescribers accounted for initiation of therapy for the 240 beneficiaries receiving > 93 days of therapy.

CONCLUSIONS AND RECOMMENDATIONS

This analysis indicates there are multiple opportunities for PPI deprescribing in Mississippi Medicaid. For beneficiaries initiating PPI therapy in 2016-2017 a target diagnosis for treatment could not be identified in a 24 month review of medical claims for over 60% of beneficiaries. For those beneficiaries with a diagnosis present in medical claims, there are three diagnoses (*H. pylori* infection, GERD and esophagitis) where guidelines recommended short term treatment (2-8 weeks). The analyses revealed 43% of beneficiaries taking PPIs in Mississippi Medicaid with one of these three diagnoses had done so for more > 90 days. Overall, more than half (57%) of beneficiaries initiating treatment with PPIs remained on therapy for> 90 days.

Recommendations:

1. DOM should set an electronic PA edit to limit the maximum days supply for PPI therapy to 90 days in a 12 month period before a PA is required.

2. For therapy exceeding the 90 day limit, DOM should implement electronic or manual PA requirements for the maximum number of days supply based on diagnoses similar to Oregon Medicaid. (Table 5)

TALBE 5: Recommended Duration of Therapy and Maximum Dose for PPI Therapy

Condition	Duration	Maximum Recommended Dose
GERD: Esophageal reflux (K219) Esophagitis (K200-K210)	8 weeks*	Dexlansoprazole 30 mg Esomeprazole 20 mg Lansoprazole 15 mg Omeprazole 20 mg Pantoprazole 40 mg Rabeprazole 20 mg
H. pylori Infection (B9681)	2 weeks*	
Achalasia and cardiospasm (K220) Barrett's esophagus (K22.70; K2271x) Duodenal Ulcer (K260-K269) Dyskinesia of esophagus (K224) Esophageal hemorrhage (K228) Gastritis and duodenitis (K2900-K2901; K5281) Gastroesophageal laceration-hemorrhage syndrome (K226) Gastric Ulcer (K250-K259) Gastrojejunal ulcer (K280-K289) Malignant mast cell tumors (C962) Multiple endocrine neoplasia [MEN] type I (E3121) Neoplasm of uncertain behavior of other and unspecified endocrine glands (D440; D442; D449) Peptic ulcer site unspecified (K270-K279) Perforation of Esophagus (K223) Stricture & Stenosis of Esophagus (K222) Zollinger-Ellison (E164)	Ongoing maintenance therapy allowed**	Dexlansoprazole 60 mg Esomeprazole 40 mg Lansoprazole 60 mg Omeprazole 40 mg Pantoprazole 80 mg Rabeprazole 40 mg

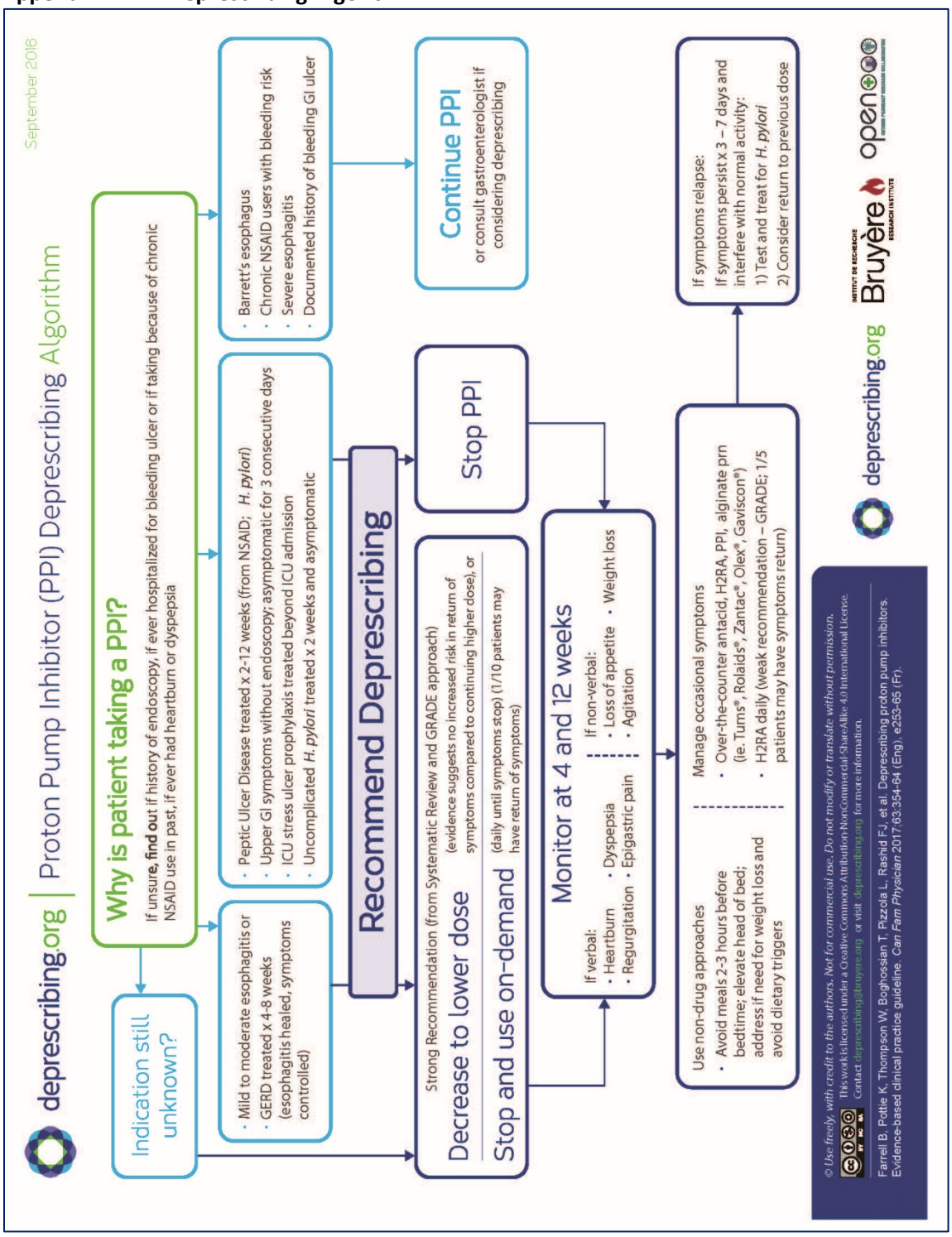
** Treatment with PPI beyond the initial duration allowed will require medical justification through manual PA.*

*** Documentation of condition will be required through electronic or manual PA to continue treatment with PPI beyond the initial duration allowed.*

3. MS-DUR should implement an educational initiative notifying providers of the new PPI prescribing criteria and guidance on deprescribing. Deprescribing Options include:
    - Decrease PPI to lower dose or extend dosing interval
    - Stop PPI and use on demand – For on demand use, use daily once symptoms return then discontinue when resolved
    - Replace PPI with Histamine-2 Receptor Antagonist (H2RA)
    - Use behavioral approaches:
        - avoid meals 2-3 hrs before bedtime
        - elevate head of bed
        - address if need for weight loss
        - avoid dietary triggers

APPENDICES

Appendix A: PPI Deprescribing Algorithm



deprescribing.org | Proton Pump Inhibitor (PPI) Deprescribing Notes

September 2016

PPI Availability

PPI	Standard dose (healing) (once daily)*	Low dose (maintenance) (once daily)
Omeprazole (Losec®) - Capsule	20 mg+	10 mg+
Esomeprazole (Nexium®) - Tablet	20[a] or 40[b] mg	20 mg
Lansoprazole (Prevacid®) - Capsule	30 mg+	15 mg+
Dexlansoprazole (Dexilant®) - Tablet	30[c] or 60[d] mg	30 mg
Pantoprazole (Tecta®, Pantoloc®) - Tablet	40 mg	20 mg
Rabeprazole (Pariet®) - Tablet	20 mg	10 mg

Legend

a Non-erosive reflux disease

b Reflux esophagitis

c Symptomatic non-erosive gastroesophageal reflux disease

d Healing of erosive esophagitis

+ Can be sprinkled on food

* Standard dose PPI taken BID only indicated in treatment of peptic ulcer caused by *H. pylori*; PPI should generally be stopped once eradication therapy is complete unless risk factors warrant continuing PPI (see guideline for details)

Key

GERD = gastroesophageal reflux disease

NSAID = nonsteroidal anti-inflammatory drugs

H2RA = H2 receptor antagonist

SR = systematic review

GRADE = Grading of Recommendations Assessment, Development and Evaluation

Engaging patients and caregivers

Patients and/or caregivers may be more likely to engage if they understand the rationale for deprescribing (risks of continued PPI use; long-term therapy may not be necessary), and the deprescribing process

PPI side effects

- When an ongoing indication is unclear, the risk of side effects may outweigh the chance of benefit
- PPIs are associated with higher risk of fractures, *C. difficile* infections and diarrhea, community-acquired pneumonia, vitamin B12 deficiency and hypomagnesemia
- Common side effects include headache, nausea, diarrhea and rash

Tapering doses

- No evidence that one tapering approach is better than another
- Lowering the PPI dose (for example, from twice daily to once daily, or halving the dose, or taking every second day) OR stopping the PPI and using it on-demand are equally recommended strong options
- Choose what is most convenient and acceptable to the patient

On-demand definition

Daily intake of a PPI for a period sufficient to achieve resolution of the individual's reflux-related symptoms; following symptom resolution, the medication is discontinued until the individual's symptoms recur, at which point, medication is again taken daily until the symptoms resolve

Farrell B, Pottie K, Thompson W, Boghossian T, Pizzola L, Rashid FJ, et al. Deprescribing proton pump inhibitors. Evidence-based clinical practice guideline. *Can Fam Physician* 2017;63:354-64 (Eng), e253-65 (Fr).

deprescribing.org | Bruyère Research Institute | open

Appendix B: Oregon Health Authority Prior Authorization Criteria for PPIs

Oregon Medicaid Pharmaceutical Services Prior Authorization Criteria

Oregon Health Authority

HEALTH SYSTEMS DIVISION

Prior authorization (PA) criteria for fee-for-service prescriptions for Oregon Health Plan clients

June 1, 2017

Oregon HEALTH PLAN

Proton Pump Inhibitors (PPIs)

Goals:

- Promote PDL options
- Restrict PPI use to patients with OHP-funded conditions

Requires PA:

Use of Preferred PPIs greater than 60 days
Non-preferred PPIs

Covered Alternatives:

- Preferred alternatives listed at www.orpdl.org/drugs/
- Individual components for treatment of *H. pylori* that are preferred products

Approval Criteria		
1. What diagnosis is being treated?	Record ICD10 code.	
2. Is the request for a preferred PPI?	Yes: Go to 5	No: Go to 3
3. Is the treating diagnosis an OHP-funded condition (see **Table**)?	Yes: Go to 4	No: Pass to RPh; deny, not funded by OHP.
4. Will the prescriber consider changing to a preferred PPI product? Message: Preferred products are evidence-based reviewed for comparative effectiveness and safety by the Pharmacy and Therapeutics (P&T) Committee.	Yes: Inform prescriber of covered alternatives.	No: Go to 5
5. Has the patient already received 68 days of PPI therapy for either of the following diagnoses: • GERD [esophageal reflux (K219), esophagitis (K200 - K210)] or • *H. pylori* infection (B9681)?	Yes: Go to 6	No: Go to 7

6. Does the patient have recurrent, symptomatic erosive esophagitis that has resulted in previous emergency department visits or hospitalizations?	Yes: Approve for 1 year	No: Pass to RPh; not funded by OHP. RPh may approve a quantity limit of 30 doses (not to exceed the GERD dose in the **Table**) over 90 days if time is needed to taper off PPI. Note: No specific PPI taper regimen has proven to be superior. H2RAs may be helpful during the taper. Preferred H2RAs are available without PA.

7. Does the patient have a history of gastrointestinal ulcer or bleed and have one or more of the following risk factors? a. Age 65 years or older b. Requires at least 3 months of continuous daily: i. Anticoagulant, ii. Aspirin or non-selective NSAID, or iii. Oral corticosteroid	Yes: Approve for 1 year	No: Go to 8
8. Are the indication, daily dose and duration of therapy consistent with criteria outlined in the **Table**? Message: OHP-funded conditions are listed in the **Table**.	Yes: Approve for recommended duration.	No: Pass to RPh. Deny; medical appropriateness or not funded by OHP Message: Patient may only receive 8 weeks of continuous PPI therapy.

Table. Dosing and Duration of PPI Therapy for OHP Funded Conditions.

Funded OHP Conditions*	Maximum Duration	Maximum Daily Dose
GERD: Esophageal reflux (K219) Esophagitis (K200-K210)	8 weeks* *Treatment beyond 8 weeks is not funded by OHP.	Dexlansoprazole 30 mg Esomeprazole 20 mg Lansoprazole 15 mg Omeprazole 20 mg Pantoprazole 40 mg Rabeprazole 20 mg
H. pylori Infection (B9681)	2 weeks	
Achalasia and cardiospasm (K220) **Barrett's esophagus (K22.70; K22.71x)** Duodenal Ulcer (K260-K269) Dyskinesia of esophagus (K224) Esophageal hemorrhage (K228) Gastritis and duodenitis (K2900-K2901; K5281) Gastroesophageal laceration-hemorrhage syndrome (K226) Gastric Ulcer (K250-K259) Gastrojejunal ulcer (K280-K289) Malignant mast cell tumors (C962) Multiple endocrine neoplasia [MEN] type I (E3121) Neoplasm of uncertain behavior of other and unspecified endocrine glands (D440; D442; D449) Peptic ulcer site unspecified (K270-K279) Perforation of Esophagus (K223) Stricture & Stenosis of Esophagus (K222) Zollinger-Ellison (E164)	1 year	Dexlansoprazole 60 mg Esomeprazole 40 mg Lansoprazole 60 mg Omeprazole 40 mg Pantoprazole 80 mg Rabeprazole 40 mg

*A current list of funded conditions is available at: http://www.oregon.gov/oha/herc/Pages/PrioritizedList.aspx

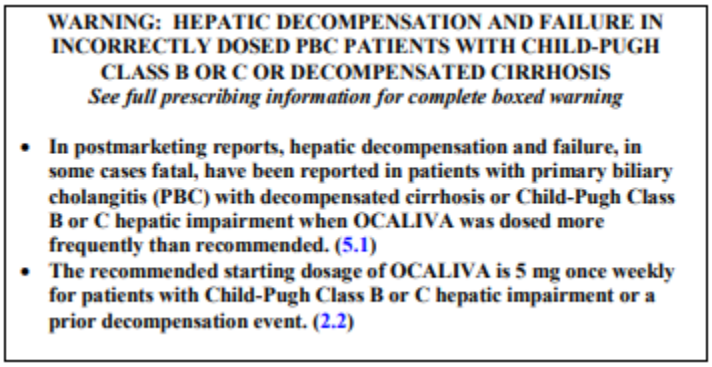
P&T / DUR Review: *1/16; 5/15; 3/15; 1/13; 2/12; 9/10; 3/10; 12/09; 5/09; 5/02; 2/02; 9/01, 9/98*

Implementation: *2/16; 10/15; 7/15; 4/15; 5/13; 5/12; 1/11; 4/10; 1/10; 9/06, 7/06, 10/04, 3/04*

FDA DRUG SAFETY COMMUNICATIONS

JULY 2017 – FEBRUARY 2018

- FDA adds Boxed Warning to highlight correct dosing of Ocaliva (obeticholic acid) for patients with a rare chronic liver disease. 2/1/2018



WARNING: HEPATIC DECOMPENSATION AND FAILURE IN INCORRECTLY DOSED PBC PATIENTS WITH CHILD-PUGH CLASS B OR C OR DECOMPENSATED CIRRHOSIS

See full prescribing information for complete boxed warning

- **In postmarketing reports, hepatic decompensation and failure, in some cases fatal, have been reported in patients with primary biliary cholangitis (PBC) with decompensated cirrhosis or Child-Pugh Class B or C hepatic impairment when OCALIVA was dosed more frequently than recommended. (5.1)**
- **The recommended starting dosage of OCALIVA is 5 mg once weekly for patients with Child-Pugh Class B or C hepatic impairment or a prior decompensation event. (2.2)**

- FDA Drug Safety Communication: FDA limits packaging for anti-diarrhea medicine Loperamide (Imodium) to encourage safe use. 1/30/2018
- FDA Drug Safety Communication: FDA requires labeling changes for prescription opioid cough and cold medicines to limit their use to adults 18 years and older. 1/11/2018
- FDA Drug Safety Communication: FDA review finds no significant increase in risk of serious asthma outcomes with long-acting beta agonists (LABAs) used in combination with inhaled corticosteroids (ICS). 12/20/2017
- FDA Drug Safety Communication: FDA warns that gadolinium-based contrast agents (GBCAs) are retained in the body; requires new class warnings. 12/19/2017
- FDA Drug Safety Communication: FDA to evaluate increased risk of heart-related death and death from all causes with the gout medicine febuxostat (Uloric). 11/15/2017
- FDA Drug Safety Communication: FDA warns about serious liver injury with Ocaliva (obeticholic acid) for rare chronic liver disease. 9/21/2017 *(updated 2/1/2018*)
- FDA Drug Safety Communication: FDA urges caution about withholding opioid addiction medications from patients taking benzodiazepines or CNS depressants: careful medication management can reduce risks. 9/20/2017
- FDA Drug Safety Communication: FDA recommends separating dosing of potassium-lowering drug sodium polystyrene sulfonate (Kayexalate) from all other oral drugs. 9/6/2017

APPENDIX

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
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
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