

Drug Use Evaluation: Proton Pump Inhibitor (PPI) /Histamine-2 Receptor Antagonist (H2RA) Length of Therapy

The Health Evidence Review Committee (HERC) placed long-term (>8 weeks) medical treatment of gastro-esophageal reflux disease (GERD) below the funding line effective January 1, 2015.¹ Dyspepsia is also a non-funded condition. Other Food and Drug Administration (FDA) approved indications for PPIs and H2RAs remain funded. PPIs and H2RAs were associated with close to \$500,000 annual net cost in the fee-for-service (FFS) program and \$2.13 million annual net cost in the coordinated care organizations during calendar year 2014.

The goal of this drug use evaluation is to quantify the long-term use (>8 weeks) of PPIs and H2RAs in terms of volume and associated diagnosis funding to inform policy options.

Methods:

A cross-section of all patients with a single paid fee-for-service (FFS) drug claim for a drug in the PPI, H2RA or *H. pylori* Drugs classes during calendar year in 2014 were included. Patients were excluded if they were covered by Medicare Part D as defined by the benefit package BMM or BMD. Patients were also excluded if they were eligible fewer than 274 days in CY 2014.

The first claim in 2014 (including encounter drug claims) for any drugs of interest was identified as the index claim. Spans of continuous therapy on any drug (i.e. multiple drugs serially) from included classes with a maximum gap of 15 days for each patient were determined. Patients with less than 60 days of continuous therapy were excluded.

For all remaining patients, the diagnoses groups in **Appendix 1** were flagged if present 1 year prior to the index claims and throughout CY2015 year to date, in either encounter or FFS claims.

Results:

Table 1 displays patient selection flow. Approximately 75% (n=5944) of patients meeting eligibility criteria used antiulcer drugs for 60 days or longer. **Table 2** displays the demographics of long-term acid suppressant users which are predominantly adults. **Table 3** indicates 93.3% of patients are treated first with a preferred drug and is most often a PPI (>85%). **Table 4** reveals funded conditions are associated with just 14-16% of long-term users, there was no diagnosis of interest associated with 44-45% of patients and 39-42% of long-term patients were associated with non-funded diagnoses only. Finally, **Table 5** summarizes the average length of therapy spans (230 days), unique drugs used during the span (1) and average cost of therapy per patient (\$166) and \$24 per claim.

Table 1 – Patient Selection

Criteria	Remaining	Lost
Non Medicare patients with selected FFS claim in CY 2014 for PPI, H2RA, <i>H pylori</i> :	7,605	
Patients with >=75% eligibility in CY 2014	6,712	893
Patients with >= 60 days of therapy	5,051	1,661

Table 2 – Demographics

	All Patients		Patients on >= 60 days continuous Tx		Patients on multiple Tx spans (none >=60 days)	
	N=	%	N=	%	N=	%
Mean age (range)	39.0	(0-92)	42.1	(0-92)	37.1	(0-70)
< 19	961	14.3%	471	10.9%	113	15.2%
19-64	5,711	85.1%	3,809	88.5%	629	84.4%
> 64	40	0.6%	26	0.6%	3	0.4%
Female	4,223	62.9%	2,661	61.8%	474	63.6%
Caucasian	4,773	71.1%	3,189	74.1%	517	69.4%

Table 3 – Index Drug Distribution

Class	Group	Brand Name*	All Patients		Patients on >= 60 days continuous Tx		Patients on multiple Tx spans (none >=60 days)	
			N=	%	N=	%	N=	%
PPI		DEXILANT	11	0.2%	10	0.2%	1	0.1%
PPI		FIRST-OMEPRAZOLE	41	0.6%	27	0.6%	3	0.4%
PPI		LANSOPRAZOLE	45	0.7%	38	0.9%	2	0.3%
PPI		NEXIUM	62	0.9%	50	1.2%	6	0.8%
PPI		OMEPRAZOLE	4,867	72.5%	3,143	73.0%	547	73.4%
PPI		PANTOPRAZOLE SODIUM	773	11.5%	515	12.0%	81	10.9%
PPI		PREVACID	63	0.9%	56	1.3%	3	0.4%
PPI		PROTONIX	15	0.2%	14	0.3%		0.0%
H2A		ACID REDUCER	17	0.3%	10	0.2%		0.0%
H2A		CIMETIDINE	48	0.7%	21	0.5%	2	0.3%
H2A		FAMOTIDINE	107	1.6%	67	1.6%	13	1.7%
H2A		RANITIDINE HCL	623	9.3%	328	7.6%	83	11.1%

* Only drugs with >10 patients are displayed

Table 4 – Diagnoses Groups Associated with Long-Term Acid Suppressant User

	All Patients		Patients on >= 60 days continuous Tx		Patients on multiple Tx spans (none >=60 days)	
	N=	%	N=	%	N=	%
Dx Group 1 - Non-funded Dx only	2,612	38.9%	1,822	42.3%	289	38.8%
Dx Group 2 - Funded Dx	330	4.9%	175	4.1%	37	5.0%
Dx Group 3 - Severe Dx, Funded	0	0.0%	2	0.0%	0	0.0%
Dx Group 1 + (2 or 3)	597	8.9%	428	9.9%	83	11.1%
No Dx from any group	3,169	47.2%	1,877	43.6%	336	45.1%

Table 5 – Drug Use Description by Index Drug

Class	Group	Brand Name*	Patients on >= 60 days continuous Tx		Sum of days drug available	Unique Drug count per patient	Total cost^ of drugs of interest per patient	Total claim count on drugs of interest per patient
			N=	%	Mean (Range)	Mean (Range)	Mean (Range)	Mean (Range)
		All patients combined	4,306	100.0%	230 (42-1110)	1.15 (1-5)	\$166 (0-10232.59)	7.1 (1-37)
PPI		DEXILANT	10	0.2%	283 (60-630)	1.30 (1-3)	\$1,634 (373.22-5175.71)	8.6 (2-21)
PPI		FIRST-OMEPRAZOLE	27	0.6%	170 (60-349)	1.26 (1-2)	\$736 (55.22-7550.28)	6.4 (2-19)
PPI		LANSOPRAZOLE	38	0.9%	299 (60-450)	1.37 (1-3)	\$383 (0-2539.73)	10.0 (2-15)
PPI		NEXIUM	50	1.2%	273 (60-720)	1.28 (1-4)	\$2,301 (0-10232.59)	9.0 (2-24)
PPI		OMEPRAZOLE	3,143	73.0%	224 (56-870)	1.09 (1-3)	\$93 (0-3420.93)	6.9 (1-29)
PPI		PANTOPRAZOLE SODIUM	515	12.0%	241 (42-840)	1.25 (1-5)	\$117 (0-4746.1)	7.4 (1-28)
PPI		PREVACID	56	1.3%	285 (90-420)	1.07 (1-2)	\$1,984 (0-6444.24)	10.1 (3-21)
PPI		PROTONIX	14	0.3%	263 (60-360)	1.57 (1-2)	\$269 (26.03-1204.01)	8.8 (2-14)
H2A		ACID REDUCER	10	0.2%	187 (60-270)	1.50 (1-2)	\$94 (18.13-199.29)	5.7 (1-10)
H2A		CIMETIDINE	21	0.5%	216 (60-1110)	1.43 (1-3)	\$113 (14.32-618.66)	6.7 (2-37)
H2A		FAMOTIDINE	67	1.6%	237 (60-570)	1.46 (1-3)	\$83 (0-704.81)	7.7 (2-19)
H2A		RANITIDINE HCL	328	7.6%	241 (56-810)	1.35 (1-4)	\$140 (0-3407.87)	8.1 (1-26)

* On brands with 10 or more patient displayed ^Reimbursed pharmacy cost not including rebates

Discussion/Recommendations:

There is significant long-term (>8 weeks) use of PPIs in the OHP FFS population (75% of acid-suppressant users). Less than 16% of long-term PPI users are associated with funded diagnoses.

- 1) Maintain open access of preferred H2RAs due to their low overall utilization, low cost and established safety profiles.
- 2) Continue open access of preferred PPIs for up to 60 days to allow for short-term treatment of GERD and *H. pylori*.
- 3) Establish new Prior Authorization (PA) criteria to encourage use of preferred PPIs and limit use of all PPIs for more than 60 days to conditions funded by OHP (see **Appendix 2**).
- 4) Grandfather current long-term PPI users to phase-in implementation.
- 5) Implement broad education outreach to prescribers before applying new criteria.
- 6) Recommend re-evaluating policy 1 year after implementation.

Appendix 1: Diagnoses of Interest

1) Non-funded Dx	
Dyspepsia	5368x
Esophagitis	53010 - 53019
Ulcer of esophagus	5302x
Diverticulum of esophagus, acquired	5306x
Esophageal reflux	53081
Esophageal leukoplakia	53083
Barrett's esophagus	53085
Unspecified disorder of esophagus	53089-5309x
2) Funded Dx	
Achalasia and cardiospasm	5300x
Stricture & Stenosis of Esophagus	5303x
Perforation of Esophagus	5304x
Dyskinesia of esophagus	5305x
Gastro-esophageal laceration-hemorrhage syndrome	5307x
Esophageal hemorrhage	53082
Gastric Ulcer	5310x - 53191
Duodenal Ulcer	5320x - 53291
Peptic ulcer, site unspecified	5330x - 53391
Gastrojejunal ulcer	5340x - 53491
Gastritis and duodenitis	5350x - 53571
3) Severe Dx	
Zollinger-Ellison	2515x
Neoplasm of uncertain behavior of other and unspecified endocrine glands	2374x
Malignant mast cell tumors	2026x
Multiple endocrine neoplasia [MEN] type I	25801

Appendix 2: Suggested Prior Authorization Criteria

Proton Pump Inhibitors (PPIs)

Goals:

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

Requires PA:

- Preferred PPIs beyond 60 days' duration
- Non-preferred PPIs

Covered Alternatives:

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

Approval Criteria

1. What diagnosis is being treated?	Record ICD9 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?	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 7
5. Has the patient already received 60 days of PPI therapy and is the diagnosis: <ul style="list-style-type: none"> • GERD [esophageal reflux (53081), esophagitis (53010 – 53019)] or • <i>H. pylori</i> infection (04186)? 	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. Deny; medical appropriateness. Message: Patient has received a full course of OHP-funded treatment.
7. Are the indication, daily dose and duration of therapy consistent with criteria outlined in Table 1 ? Message: OHP-funded conditions are listed in Table 1 . A current list of funded conditions is available at: http://www.oregon.gov/oha/herc/Pages/PrioritizedList.aspx	Yes: Approve for recommended duration.	No: Pass to RPh. Deny; medical appropriateness or not funded by OHP

Table 1. Dosing and Duration of PPI Therapy for OHP Funded Conditions.

Funded OHP Conditions*	Maximum Duration	Maximum Daily Dose
GERD: Esophageal reflux (53081) Esophagitis (5301x)	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
<i>H. pylori</i> Infection (04186)	2 weeks	
Achalasia and cardiospasm (5300x) Stricture & Stenosis of Esophagus (5303x) Perforation of Esophagus (5304x) Dyskinesia of esophagus (5305x) Gastroesophageal laceration-hemorrhage syndrome (5307x) Esophageal hemorrhage (53082) Gastric Ulcer (5310x – 53191) Duodenal Ulcer (5320x – 53291) Peptic ulcer site unspecified (5330x – 53391) Gastrojejunal ulcer (5340x – 53491) Gastritis and duodenitis (5350x – 53571) Zollinger-Ellison (2515x) Neoplasm of uncertain behavior of other and unspecified endocrine glands (2374x) Malignant mast cell tumors (2026x) Multiple endocrine neoplasia [MEN] type I (25801)	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 Action: 3/15 (AG), 1/13, 2/12, 9/10, 3/10, 12/09, 5/09; 5/02; 2/02; 9/01, 9/98
 Revision(s) 2/15, 5/13, 5/12, 1/11, 4/10, 1/10; 9/06, 7/06, 10/04, 3/04
 Initiated: