Disclaimer

The following report(s) provides findings from an FDA-initiated query using Sentinel. While Sentinel queries may be undertaken to assess potential medical product safety risks, they may also be initiated for various other reasons. Some examples include determining a rate or count of an identified health outcome of interest, examining medical product use, exploring the feasibility of future, more detailed analyses within Sentinel, and seeking to better understand Sentinel capabilities.

Data obtained through Sentinel are intended to complement other types of evidence such as preclinical studies, clinical trials, postmarket studies, and adverse event reports, all of which are used by FDA to inform regulatory decisions regarding medical product safety. The information contained in this report is provided as part of FDA's commitment to place knowledge acquired from Sentinel in the public domain as soon as possible. Any public health actions taken by FDA regarding products involved in Sentinel queries will continue to be communicated through existing channels.

FDA wants to emphasize that the fact that FDA has initiated a query involving a medical product and is reporting findings related to that query does not mean that FDA is suggesting health care practitioners should change their prescribing practices for the medical product or that patients taking the medical product should stop using it. Patients who have questions about the use of an identified medical product should contact their health care practitioners.

The following report contains a description of the request, request specifications, and results from the Query Builder analysis.

If you are using a web page screen reader and are unable to access this document, please contact the Sentinel Operations Center for assistance at info@sentinelsystem.org.

Overview

Query Builder Report: This report details the results of an analysis generated by the Sentinel Query Builder application. Query Builder enables FDA to visualize, draft, and create standardized medical product utilization queries examining dispensing patterns and cohort characteristics using a set of pre-defined parameters. This is a Type 5 (Medical Product Utilization) analysis as described in the Query Request Package (QRP) documentation.

Request Description: In this analysis, we investigated utilization patterns of alosetron and eluxadoline. Two patient cohorts assessed these products without inclusion or exclusion requirements. Two additional cohorts assess these products with an inclusion requirement of a diagnosis of irritable bowel syndrome (IBS) in addition to an exclusion requirement of a diagnosis of intestinal ischemia.

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, version 10.4.0

Data Source: We executed this request on IBM® MarketScan® Commercial Claims and Encounters Database and Medicare Supplemental Database, which included 149 million members, on August 23, 2021. The study period included data from January 1, 2010 to September 30, 2020. Please see Appendix A for data availability dates.

Limitations: Algorithms used to define exposures and inclusion and exclusion criteria are imperfect; thus it is possible that there may be misclassification. Therefore, data should be interpreted with these limitations in mind.

Notes: Please contact the Sentinel Operations Center (info@sentinelsystem.org) for questions and to provide comments/suggestions for future enhancements to this document. For more information on Sentinel Query Builder, please refer to the documentation (https://dev.sentinelsystem.org/projects/QB/repos/querybuilder/browse).

Table of contents

Table 1a: Baseline table (Alosetron)		
Characteristic[1]	**N/Mean**	**%/Std Dev[2]**
Number of unique patients	1,735	
Demographics		
Mean Age (Years)	51.0	14.9
Age (Years): 00-17	8	0.5%
Age (Years): 18-24	101	5.8%
Age (Years): 25-40	319	18.4%
Age (Years): 41-64	1,075	62.0%
Age (Years): 65+	232	13.4%
Sex (Female)	1,530	88.2%
Sex (Male)	205	11.8%
Year (2016)	549	31.6%
Year (2017)	458	26.4%
Year (2018)	293	16.9%
Year (2019)	276	15.9%
Year (2020)	159	9.2%
Recorded history of:		
Prior combined comorbidity score[3]	0.5	1.3
Acquired Hypothyroidism	222	12.8%
Acute Myocardial Infarction	1	0.1%
Alzheimer's Disease	1	0.1%
Alzheimer's Disease, Related Disorders, or Senile Dementia	9	0.5%
Anemia	116	6.7%
Asthma	93	5.4%
Atrial Fibrillation	25	1.4%
Benign Prostatic Hyperplasia	16	0.9%
Breast Cancer	27	1.6%
Cataracts	65	3.7%
Chronic Kidney Disease	105	6.1%
Chronic Obstructive Pulmonary Disease	73	4.2%
Colorectal Cancer	18	1.0%
Depression	265	15.3%
Diabetes	193	11.1%
Endometrial Cancer	4	0.2%
Glaucoma	52	3.0%
Heart Failure	19	1.1%
Hip / Pelvic Fracture	1	0.1%
Hyperlipidemia	332	19.1%
Hypertension	414	23.9%
Ischemic Heart Disease	55	3.2%
Lung Cancer	3	0.2%
Osteoporosis	30	1.7%
Prostate Cancer	2	0.1%
Rheumatoid Arthritis / Osteoarthritis	227	13.1%
Stroke / Transient Ischemic Attack	16	0.9%
Health Service Utilization Intensity:		

Table 1a: Baseline table (Alosetron)

Characteristic[1]	N/Mean	%/Std Dev[2]
Mean number of ambulatory encounters (AV)	6.4	5.8
Mean number of emergency room encounters (ED)	0.2	0.7
Mean number of inpatient hospital encounters (IP)	0.0	0.2
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	1.3	2.6
Mean number of filled prescriptions	11.4	9.1
Mean number of generics	7.6	4.8
Mean number of unique drug classes	7.3	4.5

[1]All metrics based on total number of unique patients

[2]Value represents standard deviation where no % follows the value

[3]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1b: Baseline table (Alosetron with Irritable Bowel Syndrome)		
Characteristic[1]	**N/Mean**	**%/Std Dev[2]**
Number of unique patients	914	
Demographics		
Mean Age (Years)	50.4	14.5
Age (Years): 00-17	4	0.4%
Age (Years): 18-24	49	5.4%
Age (Years): 25-40	179	19.6%
Age (Years): 41-64	574	62.8%
Age (Years): 65+	108	11.8%
Sex (Female)	818	89.5%
Sex (Male)	96	10.5%
Year (2016)	252	27.6%
Year (2017)	230	25.2%
Year (2018)	164	17.9%
Year (2019)	168	18.4%
Year (2020)	100	10.9%
Recorded history of:		
Prior combined comorbidity score[3]	0.5	1.1
Acquired Hypothyroidism	117	12.8%
Acute Myocardial Infarction	0	0.0%
Alzheimer's Disease	0	0.0%
Alzheimer's Disease, Related Disorders, or Senile Dementia	3	0.3%
Anemia	58	6.3%
Asthma	51	5.6%
Atrial Fibrillation	8	0.9%
Benign Prostatic Hyperplasia	5	0.5%
Breast Cancer	19	2.1%
Cataracts	41	4.5%
Chronic Kidney Disease	42	4.6%
Chronic Obstructive Pulmonary Disease	36	3.9%
Colorectal Cancer	11	1.2%
Depression	141	15.4%
Diabetes	91	10.0%
Endometrial Cancer	3	0.3%
Glaucoma	31	3.4%
Heart Failure	8	0.9%
Hip / Pelvic Fracture	0	0.0%
Hyperlipidemia	184	20.1%
Hypertension	207	22.6%
Ischemic Heart Disease	24	2.6%
Lung Cancer	0	0.0%
Osteoporosis	22	2.4%
Prostate Cancer	0	0.0%
Rheumatoid Arthritis / Osteoarthritis	124	13.6%
Stroke / Transient Ischemic Attack	9	1.0%
Health Service Utilization Intensity:		

Table 1b: Baseline table (Alosetron with Irritable Bowel Syndrome)

Characteristic[1]	N/Mean	%/Std Dev[2]
Mean number of ambulatory encounters (AV)	6.6	5.6
Mean number of emergency room encounters (ED)	0.2	0.8
Mean number of inpatient hospital encounters (IP)	0.0	0.3
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	1.2	2.1
Mean number of filled prescriptions	10.9	9.0
Mean number of generics	7.4	4.7
Mean number of unique drug classes	7.1	4.4

[1]All metrics based on total number of unique patients

[2]Value represents standard deviation where no % follows the value

[3]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1c: Baseline table (Eluxadoline)		
Characteristic[1]	**N/Mean**	**%/Std Dev[2]**
Number of unique patients	16,844	
Demographics		
Mean Age (Years)	47.0	15.3
Age (Years): 00-17	102	0.6%
Age (Years): 18-24	1,576	9.4%
Age (Years): 25-40	4,352	25.8%
Age (Years): 41-64	9,371	55.6%
Age (Years): 65+	1,443	8.6%
Sex (Female)	10,915	64.8%
Sex (Male)	5,929	35.2%
Year (2016)	6,126	36.4%
Year (2017)	4,637	27.5%
Year (2018)	2,879	17.1%
Year (2019)	2,048	12.2%
Year (2020)	1,154	6.9%
Recorded history of:		
Prior combined comorbidity score[3]	0.4	1.2
Acquired Hypothyroidism	1,416	8.4%
Acute Myocardial Infarction	24	0.1%
Alzheimer's Disease	16	0.1%
Alzheimer's Disease, Related Disorders, or Senile Dementia	72	0.4%
Anemia	999	5.9%
Asthma	803	4.8%
Atrial Fibrillation	237	1.4%
Benign Prostatic Hyperplasia	236	1.4%
Breast Cancer	175	1.0%
Cataracts	475	2.8%
Chronic Kidney Disease	932	5.5%
Chronic Obstructive Pulmonary Disease	544	3.2%
Colorectal Cancer	119	0.7%
Depression	2,443	14.5%
Diabetes	1,831	10.9%
Endometrial Cancer	10	0.1%
Glaucoma	295	1.8%
Heart Failure	156	0.9%
Hip / Pelvic Fracture	6	0.0%
Hyperlipidemia	3,285	19.5%
Hypertension	4,115	24.4%
Ischemic Heart Disease	463	2.7%
Lung Cancer	25	0.1%
Osteoporosis	228	1.4%
Prostate Cancer	50	0.3%
Rheumatoid Arthritis / Osteoarthritis	1,630	9.7%
Stroke / Transient Ischemic Attack	100	0.6%
Health Service Utilization Intensity:		

Table 1c: Baseline table (Eluxadoline)

Characteristic[1]	N/Mean	%/Std Dev[2]
Mean number of ambulatory encounters (AV)	5.3	5.3
Mean number of emergency room encounters (ED)	0.2	0.6
Mean number of inpatient hospital encounters (IP)	0.0	0.2
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	1.0	2.6
Mean number of filled prescriptions	10.1	8.4
Mean number of generics	6.8	4.5
Mean number of unique drug classes	6.5	4.2

[1]All metrics based on total number of unique patients

[2]Value represents standard deviation where no % follows the value

[3]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1d: Baseline table(Eluxadoline with Irritable Bowel Syndrome)		
Characteristic[1]	**N/Mean**	**%/Std Dev[2]**
Number of unique patients	9,663	
Demographics		
Mean Age (Years)	45.7	15.2
Age (Years): 00-17	66	0.7%
Age (Years): 18-24	1,028	10.6%
Age (Years): 25-40	2,698	27.9%
Age (Years): 41-64	5,188	53.7%
Age (Years): 65+	683	7.1%
Sex (Female)	6,277	65.0%
Sex (Male)	3,386	35.0%
Year (2016)	3,368	34.9%
Year (2017)	2,642	27.3%
Year (2018)	1,703	17.6%
Year (2019)	1,259	13.0%
Year (2020)	691	7.2%
Recorded history of:		
Prior combined comorbidity score[3]	0.4	1.1
Acquired Hypothyroidism	778	8.1%
Acute Myocardial Infarction	12	0.1%
Alzheimer's Disease	9	0.1%
Alzheimer's Disease, Related Disorders, or Senile Dementia	39	0.4%
Anemia	498	5.2%
Asthma	489	5.1%
Atrial Fibrillation	109	1.1%
Benign Prostatic Hyperplasia	128	1.3%
Breast Cancer	88	0.9%
Cataracts	246	2.5%
Chronic Kidney Disease	428	4.4%
Chronic Obstructive Pulmonary Disease	271	2.8%
Colorectal Cancer	37	0.4%
Depression	1,481	15.3%
Diabetes	880	9.1%
Endometrial Cancer	2	0.0%
Glaucoma	145	1.5%
Heart Failure	60	0.6%
Hip / Pelvic Fracture	4	0.0%
Hyperlipidemia	1,716	17.8%
Hypertension	2,230	23.1%
Ischemic Heart Disease	212	2.2%
Lung Cancer	11	0.1%
Osteoporosis	111	1.1%
Prostate Cancer	21	0.2%
Rheumatoid Arthritis / Osteoarthritis	911	9.4%
Stroke / Transient Ischemic Attack	53	0.5%
Health Service Utilization Intensity:		

Table 1d: Baseline table (Eluxadoline with Irritable Bowel Syndrome)		
Characteristic[1]	**N/Mean**	**%/Std Dev**[2]
Mean number of ambulatory encounters (AV)	5.4	5.1
Mean number of emergency room encounters (ED)	0.2	0.6
Mean number of inpatient hospital encounters (IP)	0.0	0.2
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	1.0	2.3
Mean number of filled prescriptions	9.7	8.1
Mean number of generics	6.6	4.4
Mean number of unique drug classes	6.3	4.1

[1]All metrics based on total number of unique patients

[2]Value represents standard deviation where no % follows the value

[3]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 2a: Distribution of cumulative exposure duration, by length categories, in days												
	Total Patients		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	1,735	100.0	51	2.9	674	38.8	616	35.5	232	13.4	162	9.3
Alosetron with Irritable Bowel Syndrome	914	100.0	25	2.7	361	39.5	319	34.9	121	13.2	88	9.6
Eluxadoline	16,844	100.0	523	3.1	7,375	43.8	6,006	35.7	1,808	10.7	1,132	6.7
Eluxadoline with Irritable Bowel Syndrome	9,663	100.0	303	3.1	4,116	42.6	3,442	35.6	1,104	11.4	698	7.2

Table 2b: Distribution of cumulative exposure duration, by length categories, in days, by sex												
	Total Patients		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**1,735**	**100.0**	**51**	**100.0**	**674**	**100.0**	**616**	**100.0**	**232**	**100.0**	**162**	**100.0**
Female	1,530	88.2	45	88.2	585	86.8	555	90.1	202	87.1	143	88.3
Male	205	11.8	6	11.8	89	13.2	61	9.9	30	12.9	19	11.7
Alosetron with Irritable Bowel Syndrome	**914**	**100.0**	**25**	**100.0**	**361**	**100.0**	**319**	**100.0**	**121**	**100.0**	**88**	**100.0**
Female	818	89.5	23	92.0	317	87.8	294	92.2	104	86.0	80	90.9
Male	96	10.5	2	8.0	44	12.2	25	7.8	17	14.0	8	9.1
Eluxadoline	**16,844**	**100.0**	**523**	**100.0**	**7,375**	**100.0**	**6,006**	**100.0**	**1,808**	**100.0**	**1,132**	**100.0**
Female	10,915	64.8	332	63.5	4,969	67.4	3,840	63.9	1,101	60.9	673	59.5
Male	5,929	35.2	191	36.5	2,406	32.6	2,166	36.1	707	39.1	459	40.5
Eluxadoline with Irritable Bowel Syndrome	**9,663**	**100.0**	**303**	**100.0**	**4,116**	**100.0**	**3,442**	**100.0**	**1,104**	**100.0**	**698**	**100.0**
Female	6,277	65.0	196	64.7	2,801	68.1	2,208	64.1	669	60.6	403	57.7
Male	3,386	35.0	107	35.3	1,315	31.9	1,234	35.9	435	39.4	295	42.3

Table 2c: Distribution of cumulative exposure duration, by length categories, in days, by age group (years)												
	Total Patients		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**1,735**	**100.0**	**51**	**100.0**	**674**	**100.0**	**616**	**100.0**	**232**	**100.0**	**162**	**100.0**
00-17	8	0.5	0	0.0	4	0.6	2	0.3	1	0.4	1	0.6
18-24	101	5.8	4	7.8	46	6.8	36	5.8	10	4.3	5	3.1
25-40	319	18.4	18	35.3	130	19.3	114	18.5	33	14.2	24	14.8
41-64	1,075	62.0	22	43.1	404	59.9	380	61.7	158	68.1	111	68.5
65+	232	13.4	7	13.7	90	13.4	84	13.6	30	12.9	21	13.0
Alosetron with Irritable Bowel Syndrome	**914**	**100.0**	**25**	**100.0**	**361**	**100.0**	**319**	**100.0**	**121**	**100.0**	**88**	**100.0**
00-17	4	0.4	0	0.0	3	0.8	0	0.0	1	0.8	0	0.0
18-24	49	5.4	0	0.0	28	7.8	15	4.7	3	2.5	3	3.4
25-40	179	19.6	6	24.0	76	21.1	67	21.0	19	15.7	11	12.5
41-64	574	62.8	16	64.0	219	60.7	202	63.3	77	63.6	60	68.2
65+	108	11.8	3	12.0	35	9.7	35	11.0	21	17.4	14	15.9
Eluxadoline	**16,844**	**100.0**	**523**	**100.0**	**7,375**	**100.0**	**6,006**	**100.0**	**1,808**	**100.0**	**1,132**	**100.0**
00-17	102	0.6	1	0.2	48	0.7	40	0.7	9	0.5	4	0.4
18-24	1,576	9.4	52	9.9	736	10.0	564	9.4	151	8.4	73	6.4
25-40	4,352	25.8	173	33.1	1,992	27.0	1,511	25.2	425	23.5	251	22.2
41-64	9,371	55.6	243	46.5	4,008	54.3	3,373	56.2	1,049	58.0	698	61.7
65+	1,443	8.6	54	10.3	591	8.0	518	8.6	174	9.6	106	9.4
Eluxadoline with Irritable Bowel Syndrome	**9,663**	**100.0**	**303**	**100.0**	**4,116**	**100.0**	**3,442**	**100.0**	**1,104**	**100.0**	**698**	**100.0**
00-17	66	0.7	1	0.3	29	0.7	26	0.8	7	0.6	3	0.4
18-24	1,028	10.6	35	11.6	476	11.6	364	10.6	102	9.2	51	7.3
25-40	2,698	27.9	109	36.0	1,189	28.9	956	27.8	278	25.2	166	23.8
41-64	5,188	53.7	130	42.9	2,165	52.6	1,837	53.4	635	57.5	421	60.3
65+	683	7.1	28	9.2	257	6.2	259	7.5	82	7.4	57	8.2

Table 3a: Distribution of first exposure episode duration, by length categories, in days												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	1,735	100.0	51	2.9	939	54.1	602	34.7	94	5.4	49	2.8
Alosetron with Irritable Bowel Syndrome	914	100.0	25	2.7	498	54.5	311	34.0	51	5.6	29	3.2
Eluxadoline	16,844	100.0	531	3.2	9,648	57.3	5,331	31.6	892	5.3	442	2.6
Eluxadoline with Irritable Bowel	9,663	100.0	310	3.2	5,433	56.2	3,119	32.3	526	5.4	275	2.8

Table 3b: Distribution of first exposure episode duration, by length categories, in days, by sex												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**1,735**	**100.0**	**51**	**100.0**	**939**	**100.0**	**602**	**100.0**	**94**	**100.0**	**49**	**100.0**
Female	1,530	88.2	45	88.2	827	88.1	540	89.7	80	85.1	38	77.6
Male	205	11.8	6	11.8	112	11.9	62	10.3	14	14.9	11	22.4
Alosetron with Irritable Bowel Syndrome	**914**	**100.0**	**25**	**100.0**	**498**	**100.0**	**311**	**100.0**	**51**	**100.0**	**29**	**100.0**
Female	818	89.5	23	92.0	441	88.6	287	92.3	41	80.4	26	89.7
Male	96	10.5	2	8.0	57	11.4	24	7.7	10	19.6	3	10.3
Eluxadoline	**16,844**	**100.0**	**531**	**100.0**	**9,648**	**100.0**	**5,331**	**100.0**	**892**	**100.0**	**442**	**100.0**
Female	10,915	64.8	335	63.1	6,441	66.8	3,367	63.2	515	57.7	257	58.1
Male	5,929	35.2	196	36.9	3,207	33.2	1,964	36.8	377	42.3	185	41.9
Eluxadoline with Irritable Bowel Syndrome	**9,663**	**100.0**	**310**	**100.0**	**5,433**	**100.0**	**3,119**	**100.0**	**526**	**100.0**	**275**	**100.0**
Female	6,277	65.0	198	63.9	3,659	67.3	1,976	63.4	285	54.2	159	57.8
Male	3,386	35.0	112	36.1	1,774	32.7	1,143	36.6	241	45.8	116	42.2

Table 3c: Distribution of first exposure episode duration, by length categories, in days, by age group (years)												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**1,735**	**100.0**	**51**	**100.0**	**939**	**100.0**	**602**	**100.0**	**94**	**100.0**	**49**	**100.0**
00-17	8	0.5	0	0.0	5	0.5	1	0.2	1	1.1	1	2.0
18-24	101	5.8	4	7.8	61	6.5	29	4.8	5	5.3	2	4.1
25-40	319	18.4	18	35.3	182	19.4	99	16.4	13	13.8	7	14.3
41-64	1,075	62.0	22	43.1	568	60.5	387	64.3	64	68.1	34	69.4
65+	232	13.4	7	13.7	123	13.1	86	14.3	11	11.7	5	10.2
Alosetron with Irritable Bowel Syndrome	**914**	**100.0**	**25**	**100.0**	**498**	**100.0**	**311**	**100.0**	**51**	**100.0**	**29**	**100.0**
00-17	4	0.4	0	0.0	3	0.6	0	0.0	1	2.0	0	0.0
18-24	49	5.4	0	0.0	34	6.8	10	3.2	3	5.9	2	6.9
25-40	179	19.6	6	24.0	107	21.5	55	17.7	8	15.7	3	10.3
41-64	574	62.8	16	64.0	304	61.0	202	65.0	31	60.8	21	72.4
65+	108	11.8	3	12.0	50	10.0	44	14.1	8	15.7	3	10.3
Eluxadoline	**16,844**	**100.0**	**531**	**100.0**	**9,648**	**100.0**	**5,331**	**100.0**	**892**	**100.0**	**442**	**100.0**
00-17	102	0.6	2	0.4	65	0.7	31	0.6	2	0.2	2	0.5
18-24	1,576	9.4	54	10.2	957	9.9	475	8.9	67	7.5	23	5.2
25-40	4,352	25.8	175	33.0	2,528	26.2	1,322	24.8	215	24.1	112	25.3
41-64	9,371	55.6	245	46.1	5,310	55.0	3,026	56.8	520	58.3	270	61.1
65+	1,443	8.6	55	10.4	788	8.2	477	8.9	88	9.9	35	7.9
Eluxadoline with Irritable Bowel Syndrome	**9,663**	**100.0**	**310**	**100.0**	**5,433**	**100.0**	**3,119**	**100.0**	**526**	**100.0**	**275**	**100.0**
00-17	66	0.7	2	0.6	41	0.8	20	0.6	1	0.2	2	0.7
18-24	1,028	10.6	37	11.9	623	11.5	310	9.9	41	7.8	17	6.2
25-40	2,698	27.9	111	35.8	1,524	28.1	856	27.4	134	25.5	73	26.5
41-64	5,188	53.7	132	42.6	2,893	53.2	1,693	54.3	304	57.8	166	60.4
65+	683	7.1	28	9.0	352	6.5	240	7.7	46	8.7	17	6.2

Table 4a: Distribution of second and subsequent exposure episode duration, by length categories, in days												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	1,474	100.0	54	3.7	727	49.3	607	41.2	67	4.5	19	1.3
Alosetron with Irritable Bowel Syndrome	701	100.0	25	3.6	322	45.9	307	43.8	35	5.0	12	1.7
Eluxadoline	11,152	100.0	458	4.1	5,956	53.4	4,281	38.4	358	3.2	99	0.9
Eluxadoline with Irritable Bowel	6,787	100.0	287	4.2	3,634	53.5	2,589	38.1	215	3.2	62	0.9

Table 4b: Distribution of second and subsequent exposure episode duration, by length categories, in days, by sex												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**1,474**	**100.0**	**54**	**100.0**	**727**	**100.0**	**607**	**100.0**	**67**	**100.0**	**19**	**100.0**
Female	1,354	91.9	51	94.4	673	92.6	555	91.4	57	85.1	18	94.7
Male	120	8.1	3	5.6	54	7.4	52	8.6	10	14.9	1	5.3
Alosetron with Irritable Bowel Syndrome	**701**	**100.0**	**25**	**100.0**	**322**	**100.0**	**307**	**100.0**	**35**	**100.0**	**12**	**100.0**
Female	651	92.9	24	96.0	304	94.4	283	92.2	29	82.9	11	91.7
Male	50	7.1	1	4.0	18	5.6	24	7.8	6	17.1	1	8.3
Eluxadoline	**11,152**	**100.0**	**458**	**100.0**	**5,956**	**100.0**	**4,281**	**100.0**	**358**	**100.0**	**99**	**100.0**
Female	7,117	63.8	286	62.4	3,868	64.9	2,682	62.6	216	60.3	65	65.7
Male	4,035	36.2	172	37.6	2,088	35.1	1,599	37.4	142	39.7	34	34.3
Eluxadoline with Irritable Bowel Syndrome	**6,787**	**100.0**	**287**	**100.0**	**3,634**	**100.0**	**2,589**	**100.0**	**215**	**100.0**	**62**	**100.0**
Female	4,308	63.5	181	63.1	2,363	65.0	1,593	61.5	130	60.5	41	66.1
Male	2,479	36.5	106	36.9	1,271	35.0	996	38.5	85	39.5	21	33.9

Table 4c: Distribution of second and subsequent exposure episode duration, by length categories, in days, by age group (years)												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**1,474**	**100.0**	**54**	**100.0**	**727**	**100.0**	**607**	**100.0**	**67**	**100.0**	**19**	**100.0**
00-17	2	0.1	0	0.0	0	0.0	2	0.3	0	0.0	0	0.0
18-24	52	3.5	3	5.6	32	4.4	15	2.5	1	1.5	1	5.3
25-40	245	16.6	9	16.7	132	18.2	91	15.0	11	16.4	2	10.5
41-64	978	66.4	33	61.1	476	65.5	414	68.2	44	65.7	11	57.9
65+	197	13.4	9	16.7	87	12.0	85	14.0	11	16.4	5	26.3
Alosetron with Irritable Bowel Syndrome	**701**	**100.0**	**25**	**100.0**	**322**	**100.0**	**307**	**100.0**	**35**	**100.0**	**12**	**100.0**
00-17	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
18-24	12	1.7	0	0.0	9	2.8	2	0.7	1	2.9	0	0.0
25-40	122	17.4	7	28.0	65	20.2	45	14.7	4	11.4	1	8.3
41-64	461	65.8	12	48.0	212	65.8	208	67.8	23	65.7	6	50.0
65+	106	15.1	6	24.0	36	11.2	52	16.9	7	20.0	5	41.7
Eluxadoline	**11,152**	**100.0**	**458**	**100.0**	**5,956**	**100.0**	**4,281**	**100.0**	**358**	**100.0**	**99**	**100.0**
00-17	77	0.7	2	0.4	51	0.9	23	0.5	1	0.3	0	0.0
18-24	1,008	9.0	40	8.7	600	10.1	336	7.8	25	7.0	7	7.1
25-40	2,673	24.0	141	30.8	1,528	25.7	908	21.2	82	22.9	14	14.1
41-64	6,425	57.6	246	53.7	3,318	55.7	2,578	60.2	213	59.5	70	70.7
65+	969	8.7	29	6.3	459	7.7	436	10.2	37	10.3	8	8.1
Eluxadoline with Irritable Bowel Syndrome	**6,787**	**100.0**	**287**	**100.0**	**3,634**	**100.0**	**2,589**	**100.0**	**215**	**100.0**	**62**	**100.0**
00-17	54	0.8	1	0.3	35	1.0	17	0.7	1	0.5	0	0.0
18-24	704	10.4	29	10.1	421	11.6	232	9.0	17	7.9	5	8.1
25-40	1,773	26.1	93	32.4	1,011	27.8	608	23.5	52	24.2	9	14.5
41-64	3,764	55.5	146	50.9	1,936	53.3	1,513	58.4	126	58.6	43	69.4
65+	492	7.2	18	6.3	231	6.4	219	8.5	19	8.8	5	8.1

Table 5a: Distribution of all episode durations, by length categories, in days												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	3,209	100.0	105	3.3	1,666	51.9	1,209	37.7	161	5.0	68	2.1
Alosetron with Irritable Bowel Syndrome	1,615	100.0	50	3.1	820	50.8	618	38.3	86	5.3	41	2.5
Eluxadoline	27,996	100.0	989	3.5	15,604	55.7	9,612	34.3	1,250	4.5	541	1.9
Eluxadoline with Irritable Bowel	16,450	100.0	597	3.6	9,067	55.1	5,708	34.7	741	4.5	337	2.0

Table 5b: Distribution of all episode durations, by length categories, in days, by sex												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**3,209**	**100.0**	**105**	**100.0**	**1,666**	**100.0**	**1,209**	**100.0**	**161**	**100.0**	**68**	**100.0**
Female	2,884	89.9	96	91.4	1,500	90.0	1,095	90.6	137	85.1	56	82.4
Male	325	10.1	9	8.6	166	10.0	114	9.4	24	14.9	12	17.6
Alosetron with Irritable Bowel Syndrome	**1,615**	**100.0**	**50**	**100.0**	**820**	**100.0**	**618**	**100.0**	**86**	**100.0**	**41**	**100.0**
Female	1,469	91.0	47	94.0	745	90.9	570	92.2	70	81.4	37	90.2
Male	146	9.0	3	6.0	75	9.1	48	7.8	16	18.6	4	9.8
Eluxadoline	**27,996**	**100.0**	**989**	**100.0**	**15,604**	**100.0**	**9,612**	**100.0**	**1,250**	**100.0**	**541**	**100.0**
Female	18,032	64.4	621	62.8	10,309	66.1	6,049	62.9	731	58.5	322	59.5
Male	9,964	35.6	368	37.2	5,295	33.9	3,563	37.1	519	41.5	219	40.5
Eluxadoline with Irritable Bowel Syndrome	**16,450**	**100.0**	**597**	**100.0**	**9,067**	**100.0**	**5,708**	**100.0**	**741**	**100.0**	**337**	**100.0**
Female	10,585	64.3	379	63.5	6,022	66.4	3,569	62.5	415	56.0	200	59.3
Male	5,865	35.7	218	36.5	3,045	33.6	2,139	37.5	326	44.0	137	40.7

Table 5c: Distribution of all episode durations, by length categories, in days, by age group (years)												
	Total Episodes		1-30		31-90		91-365		366-730		731+	
Exposures	N	%	N	%	N	%	N	%	N	%	N	%
Alosetron	**3,209**	**100.0**	**105**	**100.0**	**1,666**	**100.0**	**1,209**	**100.0**	**161**	**100.0**	**68**	**100.0**
00-17	10	0.3	0	0.0	5	0.3	3	0.2	1	0.6	1	1.5
18-24	153	4.8	7	6.7	93	5.6	44	3.6	6	3.7	3	4.4
25-40	564	17.6	27	25.7	314	18.8	190	15.7	24	14.9	9	13.2
41-64	2,053	64.0	55	52.4	1,044	62.7	801	66.3	108	67.1	45	66.2
65+	429	13.4	16	15.2	210	12.6	171	14.1	22	13.7	10	14.7
Alosetron with Irritable Bowel Syndrome	**1,615**	**100.0**	**50**	**100.0**	**820**	**100.0**	**618**	**100.0**	**86**	**100.0**	**41**	**100.0**
00-17	4	0.2	0	0.0	3	0.4	0	0.0	1	1.2	0	0.0
18-24	61	3.8	0	0.0	43	5.2	12	1.9	4	4.7	2	4.9
25-40	301	18.6	13	26.0	172	21.0	100	16.2	12	14.0	4	9.8
41-64	1,035	64.1	28	56.0	516	62.9	410	66.3	54	62.8	27	65.9
65+	214	13.3	9	18.0	86	10.5	96	15.5	15	17.4	8	19.5
Eluxadoline	**27,996**	**100.0**	**989**	**100.0**	**15,604**	**100.0**	**9,612**	**100.0**	**1,250**	**100.0**	**541**	**100.0**
00-17	179	0.6	4	0.4	116	0.7	54	0.6	3	0.2	2	0.4
18-24	2,584	9.2	94	9.5	1,557	10.0	811	8.4	92	7.4	30	5.5
25-40	7,025	25.1	316	32.0	4,056	26.0	2,230	23.2	297	23.8	126	23.3
41-64	15,796	56.4	491	49.6	8,628	55.3	5,604	58.3	733	58.6	340	62.8
65+	2,412	8.6	84	8.5	1,247	8.0	913	9.5	125	10.0	43	7.9
Eluxadoline with Irritable Bowel Syndrome	**16,450**	**100.0**	**597**	**100.0**	**9,067**	**100.0**	**5,708**	**100.0**	**741**	**100.0**	**337**	**100.0**
00-17	120	0.7	3	0.5	76	0.8	37	0.6	2	0.3	2	0.6
18-24	1,732	10.5	66	11.1	1,044	11.5	542	9.5	58	7.8	22	6.5
25-40	4,471	27.2	204	34.2	2,535	28.0	1,464	25.6	186	25.1	82	24.3
41-64	8,952	54.4	278	46.6	4,829	53.3	3,206	56.2	430	58.0	209	62.0
65+	1,175	7.1	46	7.7	583	6.4	459	8.0	65	8.8	22	6.5

Table 6a: Distribution of days supplied per dispensing, by length categories										
	Total Dispensings		1-30		31-60		61-90		91+	
Exposures	N	%	N	%	N	%	N	%	N	%
Alosetron	8,941	100.0	7,369	82.4	188	2.1	1,378	15.4	6	0.1
Alosetron with Irritable Bowel Syndrome	4,723	100.0	3,910	82.8	92	1.9	719	15.2	2	0.0
Eluxadoline	75,135	100.0	65,485	87.2	964	1.3	8,618	11.5	68	0.1
Eluxadoline with Irritable Bowel	44,604	100.0	38,818	87.0	551	1.2	5,195	11.6	40	0.1

Table 6b: Distribution of days supplied per dispensing, by length categories, by sex										
	Total Dispensings		1-30		31-60		61-90		91+	
Exposures	N	%	N	%	N	%	N	%	N	%
Alosetron	**8,941**	**100.0**	**7,369**	**100.0**	**188**	**100.0**	**1,378**	**100.0**	**6**	**100.0**
Female	7,976	89.2	6,664	90.4	144	76.6	1,163	84.4	5	83.3
Male	965	10.8	705	9.6	44	23.4	215	15.6	1	16.7
Alosetron with Irritable Bowel Syndrome	**4,723**	**100.0**	**3,910**	**100.0**	**92**	**100.0**	**719**	**100.0**	**2**	**100.0**
Female	4,306	91.2	3,600	92.1	88	95.7	616	85.7	2	100.0
Male	417	8.8	310	7.9	4	4.3	103	14.3	0	0.0
Eluxadoline	**75,135**	**100.0**	**65,485**	**100.0**	**964**	**100.0**	**8,618**	**100.0**	**68**	**100.0**
Female	45,970	61.2	39,984	61.1	596	61.8	5,343	62.0	47	69.1
Male	29,165	38.8	25,501	38.9	368	38.2	3,275	38.0	21	30.9
Eluxadoline with Irritable Bowel Syndrome	**44,604**	**100.0**	**38,818**	**100.0**	**551**	**100.0**	**5,195**	**100.0**	**40**	**100.0**
Female	27,158	60.9	23,728	61.1	339	61.5	3,070	59.1	21	52.5
Male	17,446	39.1	15,090	38.9	212	38.5	2,125	40.9	19	47.5

Table 6c: Distribution of days supplied per dispensing, by length categories, by age group (years)										
	Total Dispensings		1-30		31-60		61-90		91+	
Exposures	N	%	N	%	N	%	N	%	N	%
Alosetron	**8,941**	**100.0**	**7,369**	**100.0**	**188**	**100.0**	**1,378**	**100.0**	**6**	**100.0**
00-17	62	0.7	48	0.7	14	7.4	0	0.0	0	0.0
18-24	415	4.6	369	5.0	6	3.2	40	2.9	0	0.0
25-40	1,500	16.8	1,323	18.0	8	4.3	169	12.3	0	0.0
41-64	5,778	64.6	4,699	63.8	127	67.6	949	68.9	3	50.0
65+	1,186	13.3	930	12.6	33	17.6	220	16.0	3	50.0
Alosetron with Irritable Bowel Syndrome	**4,723**	**100.0**	**3,910**	**100.0**	**92**	**100.0**	**719**	**100.0**	**2**	**100.0**
00-17	25	0.5	25	0.6	0	0.0	0	0.0	0	0.0
18-24	185	3.9	161	4.1	5	5.4	19	2.6	0	0.0
25-40	790	16.7	710	18.2	5	5.4	75	10.4	0	0.0
41-64	3,039	64.3	2,483	63.5	68	73.9	486	67.6	2	100.0
65+	684	14.5	531	13.6	14	15.2	139	19.3	0	0.0
Eluxadoline	**75,135**	**100.0**	**65,485**	**100.0**	**964**	**100.0**	**8,618**	**100.0**	**68**	**100.0**
00-17	387	0.5	356	0.5	3	0.3	28	0.3	0	0.0
18-24	5,955	7.9	5,339	8.2	41	4.3	570	6.6	5	7.4
25-40	18,663	24.8	16,966	25.9	149	15.5	1,539	17.9	9	13.2
41-64	43,661	58.1	37,579	57.4	572	59.3	5,470	63.5	40	58.8
65+	6,469	8.6	5,245	8.0	199	20.6	1,011	11.7	14	20.6
Eluxadoline with Irritable Bowel Syndrome	**44,604**	**100.0**	**38,818**	**100.0**	**551**	**100.0**	**5,195**	**100.0**	**40**	**100.0**
00-17	277	0.6	251	0.6	2	0.4	24	0.5	0	0.0
18-24	4,001	9.0	3,587	9.2	26	4.7	387	7.4	1	2.5
25-40	11,922	26.7	10,798	27.8	95	17.2	1,024	19.7	5	12.5
41-64	25,267	56.6	21,662	55.8	340	61.7	3,238	62.3	27	67.5
65+	3,137	7.0	2,520	6.5	88	16.0	522	10.0	7	17.5

Table 7a: Descriptive statistics of the length of the first gap between treatment episodes, in days								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	589	97.29	161.42	1	15	37	104	1,213
Alosetron with Irritable Bowel Syndrome	299	105.74	176.19	1	17	38	111	1,213
Eluxadoline	4,921	78.18	142.39	1	10	28	77	1,299
Eluxadoline with Irritable Bowel Syndrome	2,935	78.78	141.76	1	10	28	77	1,252

Table 7b: Descriptive statistics of the length of the first gap between treatment episodes, in days, by sex								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	**589**	**97.29**	**161.42**	**1**	**15**	**37**	**104**	**1,213**
Female	538	99.21	160.19	1	14	39	111	1,114
Male	51	77.08	174.27	1	15	32	90	1,213
Alosetron with Irritable Bowel Syndrome	**299**	**105.74**	**176.19**	**1**	**17**	**38**	**111**	**1,213**
Female	274	105.52	169.60	1	17	38	114	1,021
Male	25	108.16	241.31	1	18	38	92	1,213
Eluxadoline	**4,921**	**78.18**	**142.39**	**1**	**10**	**28**	**77**	**1,299**
Female	3,123	79.35	140.78	1	10	30	79	1,299
Male	1,798	76.15	145.18	1	9	25	74	1,252
Eluxadoline with Irritable Bowel Syndrome	**2,935**	**78.78**	**141.76**	**1**	**10**	**28**	**77**	**1,252**
Female	1,856	80.85	142.36	1	10	30	81	1,198
Male	1,079	75.23	140.72	1	9	26	73	1,252

Table 7c: Descriptive statistics of the length of the first gap between treatment episodes, in days, by age group (years)								
Exposures	Total Gaps	Mean	STD	Min	Q1	Median	Q3	Max
Alosetron	**589**	**97.29**	**161.42**	**1**	**15**	**37**	**104**	**1,213**
00-17	2	31.50	28.99	11	11	32	52	52
18-24	30	81.13	149.95	1	6	26	86	605
25-40	103	85.61	151.38	1	14	30	75	844
41-64	378	103.56	173.09	1	14	45	114	1,213
65+	76	90.05	114.68	1	24	47	115	589
Alosetron with Irritable Bowel Syndrome	**299**	**105.74**	**176.19**	**1**	**17**	**38**	**111**	**1,213**
00-17	0	-	-	-	-	-	-	-
18-24	10	93.90	185.19	1	2	24	90	605
25-40	59	81.68	152.26	1	17	28	58	686
41-64	193	118.03	191.25	1	18	46	125	1,213
65+	37	83.22	116.76	1	24	40	93	623
Eluxadoline	**4,921**	**78.18**	**142.39**	**1**	**10**	**28**	**77**	**1,299**
00-17	30	114.30	136.48	2	13	30	201	432
18-24	453	67.69	126.49	1	9	24	70	1,076
25-40	1,205	71.48	129.57	1	9	26	67	1,252
41-64	2,829	80.37	145.60	1	10	29	80	1,299
65+	404	91.93	169.55	1	10	33	84	1,243
Eluxadoline with Irritable Bowel Syndrome	**2,935**	**78.78**	**141.76**	**1**	**10**	**28**	**77**	**1,252**
00-17	22	110.68	136.74	2	12	29	239	413
18-24	304	74.36	142.26	1	9	24	75	1,076
25-40	773	72.06	127.44	1	10	26	68	1,252
41-64	1,633	82.63	150.97	1	10	29	80	1,198
65+	203	76.58	113.75	1	11	36	84	856

Table 8a: Descriptive statistics of the length of second and subequent gaps between treatment episodes, in days								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	885	70.86	112.46	1	13	34	78	1,321
Alosetron with Irritable Bowel Syndrome	402	67.23	90.63	1	13	37	80	749
Eluxadoline	6,231	55.70	95.02	1	8	24	61	1,496
Eluxadoline with Irritable Bowel Syndrome	3,852	54.68	90.59	1	9	24	61	1,496

Table 8b: Descriptive statistics of the length of second and subequent gaps between treatment episodes, in days, by sex								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	**885**	**70.86**	**112.46**	**1**	**13**	**34**	**78**	**1,321**
Female	816	71.82	113.53	1	13	35	80	1,321
Male	69	59.59	98.90	3	10	27	58	606
Alosetron with Irritable Bowel Syndrome	**402**	**67.23**	**90.63**	**1**	**13**	**37**	**80**	**749**
Female	377	68.65	92.52	1	14	37	81	749
Male	25	45.80	51.16	3	10	32	56	215
Eluxadoline	**6,231**	**55.70**	**95.02**	**1**	**8**	**24**	**61**	**1,496**
Female	3,994	55.24	90.04	1	9	24	62	1,028
Male	2,237	56.54	103.33	1	8	24	60	1,496
Eluxadoline with Irritable Bowel Syndrome	**3,852**	**54.68**	**90.59**	**1**	**9**	**24**	**61**	**1,496**
Female	2,452	53.83	86.47	1	9	23	60	847
Male	1,400	56.16	97.41	1	9	25	64	1,496

Table 8c: Descriptive statistics of the length of second and subequent gaps between treatment episodes, in days, by age group (years)								
Exposures	Total Gaps	Mean	STD	Min	Q1	Median	Q3	Max
Alosetron	**885**	**70.86**	**112.46**	**1**	**13**	**34**	**78**	**1,321**
00-17	0	-	-	-	-	-	-	-
18-24	22	78.91	203.96	1	3	15	79	969
25-40	142	63.97	85.55	1	17	32	74	646
41-64	600	72.61	116.22	1	12	34	80	1,321
65+	121	68.81	98.88	1	18	43	77	623
Alosetron with Irritable Bowel Syndrome	**402**	**67.23**	**90.63**	**1**	**13**	**37**	**80**	**749**
00-17	0	-	-	-	-	-	-	-
18-24	2	14.50	2.12	13	13	15	16	16
25-40	63	77.21	104.39	3	19	43	92	646
41-64	268	68.65	93.68	1	12	38	81	749
65+	69	54.13	60.70	1	17	31	68	291
Eluxadoline	**6,231**	**55.70**	**95.02**	**1**	**8**	**24**	**61**	**1,496**
00-17	47	56.68	86.27	3	6	27	55	390
18-24	555	49.76	82.12	1	9	22	54	847
25-40	1,468	54.93	92.12	1	8	24	61	981
41-64	3,596	56.57	96.97	1	9	24	62	1,496
65+	565	57.96	102.21	1	7	23	68	1,205
Eluxadoline with Irritable Bowel Syndrome	**3,852**	**54.68**	**90.59**	**1**	**9**	**24**	**61**	**1,496**
00-17	32	67.34	95.80	3	10	30	58	390
18-24	400	50.66	85.71	1	9	22	55	847
25-40	1,000	54.07	81.86	1	9	25	63	647
41-64	2,131	54.84	92.10	1	9	23	60	1,496
65+	289	59.78	111.95	1	7	23	67	1,205

Table 9a: Descriptive statistics of the length of all gaps between treatment episodes, in days								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	1,474	81.42	134.75	1	13	36	87	1,321
Alosetron with Irritable Bowel Syndrome	701	83.65	135.22	1	15	37	87	1,213
Eluxadoline	11,152	65.62	118.81	1	9	25	68	1,496
Eluxadoline with Irritable Bowel Syndrome	6,787	65.10	116.14	1	9	26	68	1,496

Table 9b: Descriptive statistics of the length of all gaps between treatment episodes, in days, by sex								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	**1,474**	**81.42**	**134.75**	**1**	**13**	**36**	**87**	**1,321**
Female	1,354	82.70	134.64	1	14	36	89	1,321
Male	120	67.03	135.74	1	10	31	63	1,213
Alosetron with Irritable Bowel Syndrome	**701**	**83.65**	**135.22**	**1**	**15**	**37**	**87**	**1,213**
Female	651	84.17	131.78	1	15	37	89	1,021
Male	50	76.98	175.49	1	12	35	68	1,213
Eluxadoline	**11,152**	**65.62**	**118.81**	**1**	**9**	**25**	**68**	**1,496**
Female	7,117	65.82	115.70	1	9	26	69	1,299
Male	4,035	65.28	124.10	1	8	24	65	1,496
Eluxadoline with Irritable Bowel Syndrome	**6,787**	**65.10**	**116.14**	**1**	**9**	**26**	**68**	**1,496**
Female	4,308	65.47	114.73	1	10	26	68	1,198
Male	2,479	64.46	118.58	1	9	25	67	1,496

Table 9c: Descriptive statistics of the length of all gaps between treatment episodes, in days, by age group (years)								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Alosetron	**1,474**	**81.42**	**134.75**	**1**	**13**	**36**	**87**	**1,321**
00-17	2	31.50	28.99	11	11	32	52	52
18-24	52	80.19	172.96	1	4	18	80	969
25-40	245	73.07	118.00	1	16	31	74	844
41-64	978	84.57	141.67	1	13	37	92	1,321
65+	197	77.01	105.48	1	21	43	89	623
Alosetron with Irritable Bowel Syndrome	**701**	**83.65**	**135.22**	**1**	**15**	**37**	**87**	**1,213**
00-17	0	-	-	-	-	-	-	-
18-24	12	80.67	170.34	1	6	17	66	605
25-40	122	79.37	129.23	1	19	32	75	686
41-64	461	89.32	144.76	1	14	41	90	1,213
65+	106	64.28	85.17	1	18	35	87	623
Eluxadoline	**11,152**	**65.62**	**118.81**	**1**	**9**	**25**	**68**	**1,496**
00-17	77	79.13	111.41	2	8	27	107	432
18-24	1,008	57.81	104.74	1	9	23	59	1,076
25-40	2,673	62.39	110.87	1	9	25	63	1,252
41-64	6,425	67.05	121.39	1	9	26	70	1,496
65+	969	72.13	135.41	1	8	27	76	1,243
Eluxadoline with Irritable Bowel Syndrome	**6,787**	**65.10**	**116.14**	**1**	**9**	**26**	**68**	**1,496**
00-17	54	85.00	115.06	2	12	30	107	413
18-24	704	60.89	114.15	1	9	23	60	1,076
25-40	1,773	61.91	104.56	1	9	26	65	1,252
41-64	3,764	66.90	121.96	1	9	26	69	1,496
65+	492	66.71	112.89	1	8	28	76	1,205

Table 10: Counts of reason for censoring, all episodes and first episode										
	Total		Disenrollment		Evidence of death		DP/Query end date		Episode end	
	N	%	N	%	N	%	N	%	N	%
Exposures										
Alosetron	3,209	100.0	581	18.1	0	0.0	267	8.3	2,631	82.0
Alosetron with Irritable Bowel Syndrome	1,615	100.0	298	18.5	0	0.0	149	9.2	1,319	81.7
Eluxadoline	27,996	100.0	5,008	17.9	0	0.0	1,867	6.7	23,017	82.2
Eluxadoline with Irritable Bowel Syndrome	16,450	100.0	2,964	18.0	0	0.0	1,196	7.3	13,505	82.1
Patients' First Episode										
Alosetron	1,735	100.0	304	17.5	0	0.0	128	7.4	1,433	82.6
Alosetron with Irritable Bowel Syndrome	914	100.0	154	16.8	0	0.0	76	8.3	761	83.3
Eluxadoline	16,844	100.0	2,973	17.7	0	0.0	898	5.3	13,889	82.5
Eluxadoline with Irritable Bowel Syndrome	9,663	100.0	1,729	17.9	0	0.0	574	5.9	7,946	82.2

Table 11: Cohort Attrition Table	
Attrition Criteria	**Members**
Alosetron	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	54,816,443 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must satisfy the age range condition within the query period	51,474,939 (93.9%)
Exclusion - Members must meet chart availability criterion within the query period	51,474,939 (93.9%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	51,474,939 (93.9%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	2,384 (0.0%)
Exclusion - Members must have at least one cohort episode index date within the age range condition	2,384 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	2,008 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	2,008 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	1,735 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying all exclusion and inclusion criteria	1,735 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	1,735 (0.0%)
Alosetron with Irritable Bowel Syndrome	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	54,816,443 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must satisfy the age range condition within the query period	51,474,939 (93.9%)
Exclusion - Members must meet chart availability criterion within the query period	51,474,939 (93.9%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	51,474,939 (93.9%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	2,384 (0.0%)
Exclusion - Members must have at least one cohort episode index date within the age range condition	2,384 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	2,008 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	2,008 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	1,735 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying all exclusion and inclusion criteria	914 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	914 (0.0%)
Eluxadoline	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	54,816,443 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must satisfy the age range condition within the query period	51,474,939 (93.9%)
Exclusion - Members must meet chart availability criterion within the query period	51,474,939 (93.9%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	51,474,939 (93.9%)

Table 11: Cohort Attrition Table	
Attrition Criteria	**Members**
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	18,918 (0.0%)
Exclusion - Members must have at least one cohort episode index date within the age range condition	18,918 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	18,881 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	18,881 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	16,844 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying all exclusion and inclusion criteria	16,844 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	16,844 (0.0%)
Eluxadoline with Irritable Bowel Syndrome	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	54,816,443 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	51,475,019 (93.9%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y or A during the query period	51,475,019 (93.9%)
Exclusion - Members must satisfy the age range condition within the query period	51,474,939 (93.9%)
Exclusion - Members must meet chart availability criterion within the query period	51,474,939 (93.9%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	51,474,939 (93.9%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	18,918 (0.0%)
Exclusion - Members must have at least one cohort episode index date within the age range condition	18,918 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	18,881 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	18,881 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	16,844 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying all exclusion and inclusion criteria	9,663 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	9,663 (0.0%)

Appendix A. Dates of Available Data for Each Data Partner (DP) up to Request End Date (09/30/2020) as of Query Distribution Date		
Data Partner (Masked)	**Start Date**	**End Date**
DP01	01/01/2010	09/30/2020

Appendix B. Specifications Defining Parameters in this Query

Global Values

Enrollment Criteria:**Medical and Drug Coverage**
Enrollment Gap (Days):**45**
Age Groups (Years):**00-17, 18-24, 25-40, 41-64, 65+**
Reporting Output:**Categorical tables only, with gap tables**
Query Period: **01/01/2016-09/30/2020**
Baseline Characteristics Table:**Yes**
Baseline Evaluation Window (Day): **-91,0**

#	Cohort Name	Index Exposure	Pre-Index Enrollment Period (Days)	Washout Period (Days)	Treatment Episode Gap (Days)	Treatment Episode Extension (Days)	Inclusion/ Exclusion	Criteria	Criteria Definition	Evaluation Period Start (Day)	Evaluation Period End (Day)
1	Alosetron	alosetron[1]	91	91	30	30	--	--	--	--	--
							--	--	--	--	--
2	Eluxadoline	eluxadoline[2]	91	91	30	30	--	--	--	--	--
							--	--	--	--	--
3	Alosetron with Irritable Bowel Syndrome	alosetron[3]	91	91	30	30	Inclusion	IBS	Irritable Bowel Syndrome[4]	-91	0
							Exclusion	IC	Intestinal Ischemia[5]	-91	0
							Exclusion	Eluxadoline	Eluxadoline dispensings[6]	-91	0
4	Eluxadoline with Irritable Bowel Syndrome	eluxadoline[7]	91	91	30	30	Inclusion	IBS	Irritable Bowel Syndrome[8]	-91	0
							Exclusion	IC	Intestinal Ischemia[9]	-91	0
							Exclusion	Alosetron	Alosetron dispensings[10]	-91	0

ICD-9,ICD-10,HCPCS AND CPT are provided by Optum360
NDCs are checked against First Data Bank's MedKnowledge.

Appendix of Generic Names and Chronic Conditions

[1] See Appendix C

[2]See Appendix C

[3] See Appendix C

[4] See Appendix D

[5] See Appendix E

[6]See Appendix C

[7]See Appendix C

[8] See Appendix D

[9] See Appendix E

[10] See Appendix C

Baseline Characteristics Table

Acquired Hypothyroidism
Acute Myocardial Infarction
Alzheimer's Disease
Alzheimer's Disease, Related Disorders, or Senile Dementia
Anemia
Asthma
Atrial Fibrillation
Benign Prostatic Hyperplasia
Breast Cancer
Cataracts
Chronic Kidney Disease
Chronic Obstructive Pulmonary Disease
Colorectal Cancer
Depression
Diabetes
Endometrial Cancer
Glaucoma
Heart Failure
Hip / Pelvic Fracture
Hyperlipidemia
Hypertension
Ischemic Heart Disease
Lung Cancer
Osteoporosis
Prostate Cancer
Rheumatoid Arthritis / Osteoarthritis
Stroke / Transient Ischemic Attack

Glossary of Terms for Analyses Using Cohort Identification and Descriptive Analysis (CIDA) Module

Age Groups - Age groups of members included in the cohort. Strata also used for reporting purposes.

Ambulatory Visit (AV) - A care setting value including visits at outpatient clinics, same-day surgeries, urgent care visits, and other same-day ambulatory hospital encounters, but excludes emergency department encounters.

Baseline Characteristics Table - Optional table containing general characteristics of study population, including background rates of 27 chronic conditions from the CMS Chronic Condition Warehouse (see above if table requested). Users define an evaluation period for the presence of baseline characteristics.

Care Setting - Type of medical encounter or facility where the exposure, event, or condition code was recorded. Possible care settings include: Inpatient Hospital Stay (IP), Non-Acute Institutional Stay (IS), Emergency Department (ED), Ambulatory Visit (AV), and Other Ambulatory Visit (OA). For laboratory results, possible care settings include: Emergency Department (E), Home (H), Inpatient (I), Outpatient (O), or Unknown or Missing (U). The Care Setting, along with the Principal Diagnosis Indicator (PDX), forms the Care Setting/PDX parameter.

Charlson/Elixhauser Combined Comorbidity Score - Calculated based on comorbidities observed during a requester-defined window around the exposure episode start date (e.g., in the 183 days prior to index).

Cohort Definition - Cohort includes all valid exposure episodes during the query period. Only the first valid episode's incidence is assessed using the washout period.

Emergency Department (ED) - A care setting value including ED encounters that become inpatient stays (in which case inpatient stays would be a separate encounter). Excludes urgent care visits.

Enrollment Criteria - Type of coverage required during enrollment period. By default, all patients must have medical and drug coverage.

Enrollment Gap - Allowed gap between coverage periods.

Episodes - Treatment episodes; length of episode is determined by days supplied in one dispensing or consecutive dispensings bridged by the episode gap.

Inclusion/Exclusion - Contains the comprehensive set of codes used to define additional cohort inclusion and/or exclusion criteria (e.g., restrict cohort to individuals with evidence of a pre-existing condition 183 days before the index date). Criteria could be defined with complex algorithms (e.g., diagnosis codes and drug codes) defined under Criteria Definition.

Inpatient Hospital Stay (IP) - A care setting value including all inpatient stays, same-day hospital discharges, hospital transfers, and acute hospital care where the discharge is after the admission date.

Non-Acute Institutional Stay (IS) - A care setting value including hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

Other Ambulatory Visit (OA) - A care setting value including other non-overnight AV encounters such as hospice visits, home health visits, skilled nursing facility visits, other non-hospital visits, as well as telemedicine, telephone and email consultations.

Principal Diagnosis (PDX) - Diagnosis or condition established to be chiefly responsible for admission of the patient to the hospital. 'P' = principal diagnosis, 'S' = secondary diagnosis, 'X' = unspecified diagnosis, '.' = blank. Along with the Care Setting values, forms the Caresetting/PDX parameter.

Query Period - The period of time which patients can contribute index-defining exposure/events. Data prior to the start date may be used to determine enrollment, washout, and other cohort inclusion criteria.

Treatment Episode Extension - The episode extension adds the selected number of days to the end of an episode to count as exposed time.

Treatment Episode Gap - The maximum number of days allowed between two dispensings to consider them part of the same episode.

Washout Period - The period before an exposure episode during which an individual cannot have evidence of incidence-defining criteria.

Appendix C. List of Generic Names of Medical Products Used to Define Index Exposure in this Request

Generic Name
Alosetron
alosetron HCl
Eluxadoline
eluxadoline

Appendix D. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Inclusion Criteria in this Request

Code	Code Category	Code Type	Description
		Irritable Bowel Syndrome	
K580	Diagnosis	ICD-10-CM	Irritable bowel syndrome with diarrhea
K581	Diagnosis	ICD-10-CM	Irritable bowel syndrome with constipation
K582	Diagnosis	ICD-10-CM	Mixed irritable bowel syndrome
K588	Diagnosis	ICD-10-CM	Other irritable bowel syndrome
K589	Diagnosis	ICD-10-CM	Irritable bowel syndrome without diarrhea

Appendix E. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Exclusion Criteria in this Request

Code	Code Category	Code Type	Description
			Intestinal Ischemia
K55.0	Diagnosis	ICD-10-CM	Acute vascular disorders of intestine
K55.01	Diagnosis	ICD-10-CM	Acute (reversible) ischemia of small intestine
K55.011	Diagnosis	ICD-10-CM	Focal (segmental) acute (reversible) ischemia of small intestine
K55.012	Diagnosis	ICD-10-CM	Diffuse acute (reversible) ischemia of small intestine
K55.019	Diagnosis	ICD-10-CM	Acute (reversible) ischemia of small intestine, extent unspecified
K55.02	Diagnosis	ICD-10-CM	Acute infarction of small intestine
K55.021	Diagnosis	ICD-10-CM	Focal (segmental) acute infarction of small intestine
K55.022	Diagnosis	ICD-10-CM	Diffuse acute infarction of small intestine
K55.029	Diagnosis	ICD-10-CM	Acute infarction of small intestine, extent unspecified
K55.03	Diagnosis	ICD-10-CM	Acute (reversible) ischemia of large intestine
K55.031	Diagnosis	ICD-10-CM	Focal (segmental) acute (reversible) ischemia of large intestine
K55.032	Diagnosis	ICD-10-CM	Diffuse acute (reversible) ischemia of large intestine
K55.039	Diagnosis	ICD-10-CM	Acute (reversible) ischemia of large intestine, extent unspecified
K55.04	Diagnosis	ICD-10-CM	Acute infarction of large intestine
K55.041	Diagnosis	ICD-10-CM	Focal (segmental) acute infarction of large intestine
K55.042	Diagnosis	ICD-10-CM	Diffuse acute infarction of large intestine
K55.049	Diagnosis	ICD-10-CM	Acute infarction of large intestine, extent unspecified
K55.05	Diagnosis	ICD-10-CM	Acute (reversible) ischemia of intestine, part unspecified
K55.051	Diagnosis	ICD-10-CM	Focal (segmental) acute (reversible) ischemia of intestine, part unspecified
K55.052	Diagnosis	ICD-10-CM	Diffuse acute (reversible) ischemia of intestine, part unspecified
K55.059	Diagnosis	ICD-10-CM	Acute (reversible) ischemia of intestine, part and extent unspecified
K55.06	Diagnosis	ICD-10-CM	Acute infarction of intestine, part unspecified
K55.061	Diagnosis	ICD-10-CM	Focal (segmental) acute infarction of intestine, part unspecified
K55.062	Diagnosis	ICD-10-CM	Diffuse acute infarction of intestine, part unspecified
K55.069	Diagnosis	ICD-10-CM	Acute infarction of intestine, part and extent unspecified
K55.1	Diagnosis	ICD-10-CM	Chronic vascular disorders of intestine
K55.2	Diagnosis	ICD-10-CM	Angiodysplasia of colon
K55.20	Diagnosis	ICD-10-CM	Angiodysplasia of colon without hemorrhage
K55.21	Diagnosis	ICD-10-CM	Angiodysplasia of colon with hemorrhage
K55.3	Diagnosis	ICD-10-CM	Necrotizing enterocolitis
K55.30	Diagnosis	ICD-10-CM	Necrotizing enterocolitis, unspecified
K55.31	Diagnosis	ICD-10-CM	Stage 1 necrotizing enterocolitis
K55.32	Diagnosis	ICD-10-CM	Stage 2 necrotizing enterocolitis
K55.33	Diagnosis	ICD-10-CM	Stage 3 necrotizing enterocolitis
K55.8	Diagnosis	ICD-10-CM	Other vascular disorders of intestine
K55.9	Diagnosis	ICD-10-CM	Vascular disorder of intestine, unspecified

Appendix F. List of Generic Names of Medical Products Used to Define Exclusion Criteria in this Request

Generic Name
Alosetron
alosetron HCl
Eluxadoline
eluxadoline