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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 modular program run(s).

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Overview for Request: care_mpl1r_wp003

Request ID: care_mpl1r_wp003

Request Description: In this report we assessed the utilization patterns of asthma and chronic obstructive pulmonary disease (COPD) treatments in the Sentinel Distributed Database (SDD).

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) tool, version 8.1.0, with ad hoc

Data Source: We distributed this request to 14 Sentinel Data Partners (DPs) on December 30, 2019. The study period included data from January 1, 2000 through July 31, 2019. Please see Appendix A for a list of dates of available data for each Data Partner.

Study Design: We identified individuals with prevalent use of inhaled corticosteroids mono-product (ICS), long-acting muscarinic antagonist mono-product (LAMA), ICS and long-acting beta agonist (LABA) combination product (ICS_LABA), LABA and LAMA combination product (LABA_LAMA), and ICS, LABA and LAMA combination product (ICS_LABA_LAMA). In addition, we identified individuals with incident use of interleukin 5 (IL5), azithromycin, and roflumilast. This is a Type 5 analysis in the Query Request Package (QRP) documentation.

Exposures of Interest: We defined the exposures of interest, ICS, LAMA, ICS_LABA, LABA_LAMA, ICS_LABA_LAMA, azithromycin, and roflumilast, using outpatient dispensing data and National Drug Codes (NDCs). We required azithromycin dispensings to have at least 14 days of supply. For IL5 exposures, we used a combination of NDCs and Healthcare Common Procedure Coding System (HCPCS) codes. We applied a washout period to identify the first valid exposure episode of incident drug use; otherwise we assessed all valid exposure episodes during the query period for prevalent drug use. Please see Appendix B for a list of generic and brand names of medical products and Appendix C for a list of HCPCS codes used to define exposures and incidence criteria in this request.

Cohort Eligibility Criteria: We required members to be continuously enrolled in health plans with medical and drug coverage in the 183 days prior to their index date, during which gaps in coverage of up to 45 days were allowed. We also required members to be continuously enrolled in the 365 days after their index date. The following age groups were included in the cohort: 18-64 and 65+ years.

Pre-Index Inclusion Criteria for Diagnoses: We required an asthma diagnosis in the 183 days prior to the index date for cohorts 1-3 (see below); and a COPD diagnosis in the 183 days prior to the index date for cohorts 4-10 (see below).

Pre-Index Exclusion Criteria for Diagnoses: We required no evidence of COPD diagnoses in the 183 days prior to and including the index date for cohorts 1-3 (see below); and no evidence of asthma diagnoses in the 183 days prior to and including the index date for cohorts 4-10 (see below). For all cohorts 1-10 (see below), we required no evidence of alpha-1-antitrypsin deficiency, sarcoidosis, cystic fibrosis, bronchiectasis, interstitial lung disease, pneumoconiosis and miscellaneous other lung diseases in the 183 days prior to and including the index date.

We formed the following ten cohort groups with distinct incidence, inclusion, and exclusion criteria as specified for each cohort:

- 1) Prevalent cohort with ICS mono-product exposures with no evidence of ICS_LABA, ICS_LABA_LAMA, LABA, LAMA, LABA_LAMA, leukotriene receptor antagonist (LTRA), cromolyn dispensings or injections, theophylline, interleukin 4 receptor (IL4R), IL5 dispensings or injections in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded.
- 2) Prevalent cohort with ICS and LABA combination product exposures with no evidence of ICS, LABA, LAMA, LABA_LAMA, ICS_LABA_LAMA, LTRA, cromolyn dispensings or injections, theophylline, IL4R, or IL5 dispensings or injections, in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded.
- 3) Incident cohort with IL5 exposures with no evidence of IL5 dispensings or injections in the 183 days prior to the index date. Patient must also have evidence of ICS_LABA or ICS_LABA_LAMA both 183 days prior to the index date and 365 days after and including the index date to be included.
- 4) Prevalent cohort with LAMA mono-product exposures with no evidence of ICS, ICS_LABA, ICS_LABA_LAMA, LABA, LABA_LAMA, roflumilast, or theophylline in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded.

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- 5) Prevalent cohort with ICS and LABA combination product exposures with no evidence of ICS, LABA, LAMA, LABA_LAMA, ICS_LABA_LAMA, roflumilast, or theophylline in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded.
- 6) Prevalent cohort with LABA and LAMA combination product exposures with no evidence of ICS, LABA, LAMA, ICS_LABA, ICS_LABA_LAMA, roflumilast, or theophylline in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded.
- 7) Prevalent cohort with ICS, LABA, and LAMA combination product exposures with no evidence of ICS, LABA, LAMA, ICS_LABA, LABA_LAMA, roflumilast, or theophylline in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded.
- 8) Prevalent cohort with ICS and LABA combination product exposures with no evidence of roflumilast, theophylline in the 365 days after and including index date; patient must have at least 2 dispensings from the above list to be excluded. Patient must also have evidence of LAMA, LABA_LAMA, or ICS_LABA_LAMA in the 365 days after and including the index date; patient must have at least 4 dispensings from the above list to be included.
- 9) Incident cohort with azithromycin exposures with at least 14 days of supply and no evidence of azithromycin dispensings with at least 14 days of supply in the 183 days prior to the index date. Patient must also have at least 14 days of supply of ICS, ICS_LABA, ICS_LABA_LAMA, LABA, LABA_LAMA, or LAMA both 183 days prior to the index date and 365 days after and including the index date.
- 10) Incident cohort with roflumilast exposures with no evidence of roflumilast dispensings in the 183 days prior to their index date. Patient must also have evidence of ICS, ICS_LABA, ICS_LABA_LAMA, LABA, LABA_LAMA, or LAMA both 183 days prior to the index date and 365 days after and including the index date.

Please see Appendix D for a list of generic and brand names of medical products, Appendix E for a list of HCPCS codes, and Appendix F for a list of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) diagnosis codes used to define inclusion and exclusion criteria in this request.

Please see Appendix G for the specifications of parameters used in this request.

Limitations: Algorithms to define exposures, incidence, inclusion and exclusion criteria are imperfect and may be misclassified. Therefore, data should be interpreted with this limitation in mind.

Notes: Please contact the Sentinel Operations Center (info@sentinel-system.org) for questions and to provide comments/suggestions for future enhancements to this document. For more information on Sentinel's routine querying modules, please refer to the documentation (<https://dev.sentinel-system.org/projects/sentinel/repos/sentinel-routine-querying-tool-documentation/browse>).

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

Amount Supplied - number of units (pills, tablets, vials) dispensed. Net amount per NDC per dispensing.

Blackout Period - number of days at the beginning of a treatment episode that events are to be ignored. If an event occurs during the blackout period, the episode is excluded.

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.

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

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

Inpatient Hospital Stay (IP) - includes 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) - includes hospice, skilled nursing facility (SNF), rehab center, nursing home, residential, overnight non-hospital dialysis and other non-hospital stays.

Other Ambulatory Visit (OA) - includes 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.

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).

Code Days - the minimum number of times the diagnosis must be found during the evaluation period in order to fulfill the algorithm to identify the corresponding patient characteristic.

Cohort Definition (drug/exposure) - indicates how the cohort will be defined: 01: Cohort includes only the first valid treatment episode during the query period; 02: Cohort includes all valid treatment episodes during the query period; 03: Cohort includes all valid treatment episodes during the query period until an event occurs.

Computed Start Marketing Date - represents the first observed dispensing date among all valid users within a GROUP (scenario) within each Data Partner site.

Days Supplied - number of days supplied for all dispensings in qualifying treatment episodes.

Eligible Members - number of members eligible for an incident treatment episode (defined by the drug/exposure and event washout periods) with drug and medical coverage during the query period.

Enrollment Gap - number of days allowed between two consecutive enrollment periods without breaking a "continuously enrolled" sequence.

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

Episode Gap - number of days allowed between two (or more) consecutive exposures (dispensings/procedures) to be considered the same treatment episode.

Event Deduplication - specifies how events are counted by the Modular Program (MP) algorithm: 0: Counts all occurrences of a health outcome of interest (HOI) during an exposure episode; 1: de-duplicates occurrences of the same HOI code and code type on the same day; 2: de-duplicates occurrences of the same HOI group on the same day (e.g., de-duplicates at the group level).

Exposure Episode Length - number of days after exposure initiation that is considered "exposed time."

Exposure Extension Period - number of days post treatment period in which the outcomes/events are counted for a treatment episode. Extensions are added after any episode gaps have been bridged.

Lookback Period - number of days wherein a member is required to have evidence of pre-existing condition (diagnosis/procedure/drug dispensing).

Maximum Episode Duration - truncates exposure episodes after a requester-specified number of exposed days. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

Member-Years - sum of all days of enrollment with medical and drug coverage in the query period preceded by an exposure washout period all divided by 365.25.

Minimum Days Supplied - specifies a minimum number of days in length of the days supplied for the episode to be considered.

Minimum Episode Duration - specifies a minimum number of days in length of the episode for it to be considered. Applied after any gaps are bridged and extension days added to the length of the exposure episode.

Monitoring Period - used to define time periods of interest for both sequential analysis and simple cohort characterization requests.

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 - period in which the modular program looks for exposures and outcomes of interest.

Switch Evaluation Step Value - value used to differentiate evaluation step. Each switch pattern can support up to 2 evaluation steps (0 = switch pattern evaluation start; 1 = first evaluation; 2 = second evaluation).

Switch Gap Inclusion Indicator - indicator for whether gaps in treatment episodes that are included in a switch episode will be counted as part of the switch episode duration.

Switch Pattern Cohort Inclusion Date - indicates which date to use for inclusion into the switch pattern cohort of interest as well as optionally as the index date of the treatment episode initiating the switch pattern. Valid options are the product approval date, product marketing date, other requester defined date, or computed start marketing date.

Switch Pattern Cohort Inclusion Strategy - indicates how the switch pattern cohort inclusion date will be used: 01: used only as a switch cohort entry date. First treatment episode dispensing date is used as index for computing time to first switch; 02: used as switch cohort entry date and as initial switch step index date for computing time to first switch.

Treatment Episode Truncation Indicator - indicates whether the exposure episode will be truncated at the occurrence of a requester-specified code.

Washout Period (drug/exposure) - number of days a user is required to have no evidence of prior exposure (drug dispensing/procedure) and continuous drug and medical coverage prior to an incident treatment episode.

Washout Period (event/outcome) - number of days a user is required to have no evidence of a prior event (procedure/diagnosis) and continuous drug and medical coverage prior to an incident treatment episode.

Years at Risk - number of days supplied plus any episode gaps and exposure extension periods all divided by 365.25.

*all terms may not be used in this report

Table 1a. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days

Exposures	Total Patients		1-13 Days		14-14 Days		15-27 Days		28-28 Days		29-29 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	100.0	2,113	0.3	418	0.1	29,200	3.6	2,944	0.4	630	0.1
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	100.0	1,067	0.1	114	0.0	3,873	0.3	851	0.1	728	0.1
Interleukin 5 (IL5)	1,327	100.0	707	53.3	51	3.8	*****	*****	19	1.4	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	100.0	292	0.0	20	0.0	513	0.1	174	0.0	35	0.0
ICS/LABA Combination Product Alone	1,342,082	100.0	1,230	0.1	192	0.0	3,516	0.3	1,170	0.1	667	0.0
LABA/LAMA Combination Product Alone	126,490	100.0	68	0.1	*****	*****	55	0.0	65	0.1	*****	*****
ICS/LABA/LAMA Combination Product Alone	2,431	100.0	0	0.0	*****	*****	*****	*****	25	1.0	0	0.0
ICS/LABA Combination Product AND LAMA-Containing	504,649	100.0	166	0.0	28	0.0	480	0.1	152	0.0	93	0.0
Azithromycin (at least 14 Days of Supply)	5,564	100.0	0	0.0	359	6.5	310	5.6	186	3.3	30	0.5
Roflumilast	12,831	100.0	36	0.3	21	0.2	22	0.2	*****	*****	*****	*****

¹Distribution of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 1a. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days

Exposures	30-30 Days		31-90 Days		91-180 Days		181-270 Days		271-365 Days		366 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	186,140	23.2	236,047	29.4	183,802	22.9	92,744	11.6	62,008	7.7	6,591	0.8
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	217,764	18.3	270,804	22.8	298,431	25.1	205,939	17.3	172,491	14.5	16,632	1.4
Interleukin 5 (IL5)	*****	*****	57	4.3	72	5.4	121	9.1	281	21.2	*****	*****
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	130,219	17.7	147,521	20.1	139,233	18.9	118,342	16.1	180,704	24.6	18,345	2.5
ICS/LABA Combination Product Alone	213,521	15.9	269,241	20.1	302,266	22.5	246,714	18.4	276,310	20.6	27,255	2.0
LABA/LAMA Combination Product Alone	17,155	13.6	20,134	15.9	21,737	17.2	22,749	18.0	40,145	31.7	4,355	3.4
ICS/LABA/LAMA Combination Product Alone	197	8.1	274	11.3	385	15.8	474	19.5	937	38.5	126	5.2
ICS/LABA Combination Product AND LAMA-Containing	24,443	4.8	50,301	10.0	110,974	22.0	123,343	24.4	174,439	34.6	20,230	4.0
Azithromycin (at least 14 Days of Supply)	761	13.7	944	17.0	711	12.8	623	11.2	1,291	23.2	349	6.3
Roflumilast	2,706	21.1	2,044	15.9	1,567	12.2	1,466	11.4	4,206	32.8	746	5.8

¹Distribution of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 1b. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Sex

Exposures	Total Patients		1-13 Days		14-14 Days		15-27 Days		28-28 Days		29-29 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	100.0	2,113	100.0	418	100.0	29,200	100.0	2,944	100.0	630	100.0
Female	549,811	68.5	1,512	71.6	308	73.7	20,520	70.3	2,102	71.4	431	68.4
Male	252,810	31.5	601	28.4	110	26.3	*****	*****	842	28.6	199	31.6
Other	16	0.0	0	0.0	0	0.0	*****	*****	0	0.0	0	0.0
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	100.0	1,067	100.0	114	100.0	3,873	100.0	851	100.0	728	100.0
Female	789,544	66.4	722	67.7	76	66.7	2,662	68.7	597	70.2	492	67.6
Male	*****	*****	345	32.3	38	33.3	1,211	31.3	254	29.8	236	32.4
Other	*****	*****	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Interleukin 5 (IL5)	1,327	100.0	707	100.0	51	100.0	*****	*****	*****	*****	0	0.0
Female	855	64.4	462	65.3	34	66.7	*****	*****	*****	*****	0	0.0
Male	472	35.6	245	34.7	17	33.3	0	0.0	*****	*****	0	0.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	100.0	292	100.0	20	100.0	513	100.0	174	100.0	35	100.0
Female	412,404	56.1	137	46.9	*****	*****	255	49.7	99	56.9	18	51.4
Male	*****	*****	155	53.1	*****	*****	258	50.3	75	43.1	17	48.6
Other	*****	*****	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA Combination Product Alone	1,342,082	100.0	1,230	100.0	192	100.0	3,516	100.0	1,170	100.0	667	100.0
Female	765,634	57.0	660	53.7	110	57.3	1,938	55.1	626	53.5	370	55.5
Male	*****	*****	570	46.3	82	42.7	1,578	44.9	544	46.5	297	44.5
Other	*****	*****	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 1b. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Sex

Exposures	Total Patients		1-13 Days		14-14 Days		15-27 Days		28-28 Days		29-29 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
LABA/LAMA Combination Product Alone	126,490	100.0	68	100.0	*****	*****	55	100.0	65	100.0	*****	100.0
Female	66,412	52.5	43	63.2	*****	*****	23	41.8	29	44.6	*****	66.7
Male	60,078	47.5	25	36.8	*****	*****	32	58.2	36	55.4	*****	33.3
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA/LAMA Combination Product Alone	2,431	100.0	0	0.0	*****	*****	*****	*****	25	100.0	0	0.0
Female	1,227	50.5	0	0.0	*****	*****	*****	*****	*****	*****	0	0.0
Male	1,204	49.5	0	0.0	*****	*****	0	0.0	*****	*****	0	0.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA Combination Product AND LAMA-Containing	504,649	100.0	166	100.0	28	100.0	480	100.0	152	100.0	93	100.0
Female	286,247	56.7	100	60.2	14	50.0	290	60.4	93	61.2	56	60.2
Male	*****	*****	66	39.8	14	50.0	190	39.6	59	38.8	37	39.8
Other	*****	*****	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Azithromycin (at least 14 Days of Supply)	5,564	100.0	0	0.0	359	100.0	310	100.0	186	100.0	30	100.0
Female	3,157	56.7	0	0.0	211	58.8	178	57.4	103	55.4	19	63.3
Male	*****	*****	0	0.0	148	41.2	132	42.6	*****	*****	11	36.7
Other	*****	*****	0	0.0	0	0.0	0	0.0	*****	*****	0	0.0
Roflumilast	12,831	100.0	36	100.0	21	100.0	22	100.0	*****	100.0	*****	100.0
Female	6,995	54.5	19	52.8	*****	*****	*****	*****	*****	*****	*****	100.0
Male	5,836	45.5	17	47.2	*****	*****	*****	*****	*****	*****	0	0.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

¹Distribution of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 1b. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Sex

Exposures	30-30 Days		31-90 Days		91-180 Days		181-270 Days		271-365 Days		366 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	186,140	100.0	236,047	100.0	183,802	100.0	92,744	100.0	62,008	100.0	6,591	100.0
Female	130,476	70.1	164,011	69.5	123,265	67.1	61,548	66.4	41,239	66.5	4,399	66.7
Male	*****	*****	*****	*****	*****	*****	31,196	33.6	*****	*****	2,192	33.3
Other	*****	*****	*****	*****	*****	*****	0	0.0	*****	*****	0	0.0
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	217,764	100.0	270,804	100.0	298,431	100.0	205,939	100.0	172,491	100.0	16,632	100.0
Female	152,796	70.2	186,699	68.9	194,283	65.1	130,645	63.4	109,754	63.6	10,818	65.0
Male	*****	*****	*****	*****	*****	*****	*****	*****	62,737	36.4	5,814	35.0
Other	*****	*****	*****	*****	*****	*****	*****	*****	0	0.0	0	0.0
Interleukin 5 (IL5)	*****	*****	57	100.0	72	100.0	121	100.0	281	100.0	*****	*****
Female	0	0.0	43	75.4	43	59.7	73	60.3	174	61.9	*****	*****
Male	*****	*****	14	24.6	29	40.3	48	39.7	107	38.1	*****	*****
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	130,219	100.0	147,521	100.0	139,233	100.0	118,342	100.0	180,704	100.0	18,345	100.0
Female	69,835	53.6	82,453	55.9	80,057	57.5	68,199	57.6	101,287	56.1	10,051	54.8
Male	60,384	46.4	*****	*****	*****	*****	50,143	42.4	*****	*****	8,294	45.2
Other	0	0.0	*****	*****	*****	*****	0	0.0	*****	*****	0	0.0
ICS/LABA Combination Product Alone	213,521	100.0	269,241	100.0	302,266	100.0	246,714	100.0	276,310	100.0	27,255	100.0
Female	119,988	56.2	155,227	57.7	173,221	57.3	141,501	57.4	156,577	56.7	15,416	56.6
Male	93,533	43.8	114,014	42.3	*****	*****	*****	*****	119,733	43.3	11,839	43.4
Other	0	0.0	0	0.0	*****	*****	*****	*****	0	0.0	0	0.0

Table 1b. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Sex

Exposures	30-30 Days		31-90 Days		91-180 Days		181-270 Days		271-365 Days		366 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
LABA/LAMA Combination Product Alone	17,155	100.0	20,134	100.0	21,737	100.0	22,749	100.0	40,145	100.0	4,355	100.0
Female	9,044	52.7	10,607	52.7	11,534	53.1	11,994	52.7	20,803	51.8	2,324	53.4
Male	8,111	47.3	9,527	47.3	10,203	46.9	10,755	47.3	19,342	48.2	2,031	46.6
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA/LAMA Combination Product Alone	197	100.0	274	100.0	385	100.0	474	100.0	937	100.0	126	100.0
Female	98	49.7	135	49.3	212	55.1	237	50.0	460	49.1	58	46.0
Male	99	50.3	139	50.7	173	44.9	237	50.0	477	50.9	68	54.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA Combination Product AND LAMA-Containing	24,443	100.0	50,301	100.0	110,974	100.0	123,343	100.0	174,439	100.0	20,230	100.0
Female	14,284	58.4	29,045	57.7	63,295	57.0	70,515	57.2	97,387	55.8	11,168	55.2
Male	10,159	41.6	21,256	42.3	47,679	43.0	52,828	42.8	****	****	9,062	44.8
Other	0	0.0	0	0.0	0	0.0	0	0.0	****	****	0	0.0
Azithromycin (at least 14 Days of Supply)	761	100.0	944	100.0	711	100.0	623	100.0	1,291	100.0	349	100.0
Female	456	59.9	563	59.6	401	56.4	352	56.5	696	53.9	178	51.0
Male	305	40.1	381	40.4	310	43.6	271	43.5	595	46.1	171	49.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Roflumilast	2,706	100.0	2,044	100.0	1,567	100.0	1,466	100.0	4,206	100.0	746	100.0
Female	1,498	55.4	1,086	53.1	830	53.0	777	53.0	2,373	56.4	374	50.1
Male	1,208	44.6	958	46.9	737	47.0	689	47.0	1,833	43.6	372	49.9
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

¹Distribution of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 1c. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Age Group

Exposures	Total Patients		1-13 Days		14-14 Days		15-27 Days		28-28 Days		29-29 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	100.0	2,113	100.0	418	100.0	29,200	100.0	2,944	100.0	630	100.0
18-64 years	519,087	64.7	1,511	71.5	292	69.9	22,552	77.2	2,010	68.3	448	71.1
65+ years	283,550	35.3	602	28.5	126	30.1	6,648	22.8	934	31.7	182	28.9
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	100.0	1,067	100.0	114	100.0	3,873	100.0	851	100.0	728	100.0
18-64 years	660,582	55.6	715	67.0	73	64.0	2,642	68.2	552	64.9	451	62.0
65+ years	528,112	44.4	352	33.0	41	36.0	1,231	31.8	299	35.1	277	38.0
Interleukin 5 (IL5)	1,327	100.0	707	100.0	51	100.0	*****	*****	19	100.0	0	0.0
18-64 years	801	60.4	330	46.7	11	21.6	*****	*****	*****	*****	0	0.0
65+ years	526	39.6	377	53.3	40	78.4	0	0.0	*****	*****	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	100.0	292	100.0	20	100.0	513	100.0	174	100.0	35	100.0
18-64 years	194,137	26.4	71	24.3	*****	*****	184	35.9	*****	*****	*****	*****
65+ years	541,261	73.6	221	75.7	*****	*****	329	64.1	*****	*****	*****	*****
ICS/LABA Combination Product Alone	1,342,082	100.0	1,230	100.0	192	100.0	3,516	100.0	1,170	100.0	667	100.0
18-64 years	385,872	28.8	426	34.6	42	21.9	1,243	35.4	377	32.2	210	31.5
65+ years	956,210	71.2	804	65.4	150	78.1	2,273	64.6	793	67.8	457	68.5
LABA/LAMA Combination Product Alone	126,490	100.0	68	100.0	*****	*****	55	100.0	65	100.0	*****	*****
18-64 years	27,631	21.8	19	27.9	*****	*****	15	27.3	17	26.2	*****	*****
65+ years	98,859	78.2	49	72.1	*****	*****	40	72.7	48	73.8	*****	*****

Table 1c. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Age Group

Exposures	Total Patients		1-13 Days		14-14 Days		15-27 Days		28-28 Days		29-29 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ICS/LABA/LAMA Combination Product Alone	2,431	100.0	0	0.0	*****	*****	*****	*****	25	100.0	0	0.0
18-64 years	643	26.5	0	0.0	*****	*****	0	0.0	*****	12.0	0	0.0
65+ years	1,788	73.5	0	0.0	*****	*****	*****	*****	*****	88.0	0	0.0
ICS/LABA Combination Product AND LAMA-Containing	504,649	100.0	166	100.0	28	100.0	480	100.0	152	100.0	93	100.0
18-64 years	137,129	27.2	46	27.7	*****	*****	119	24.8	36	23.7	*****	*****
65+ years	367,520	72.8	120	72.3	*****	*****	361	75.2	116	76.3	68	73.1
Azithromycin (at least 14 Days of Supply)	5,564	100.0	0	0.0	359	100.0	310	100.0	186	100.0	30	100.0
18-64 years	1,309	23.5	0	0.0	86	24.0	75	24.2	*****	*****	*****	*****
65+ years	4,255	76.5	0	0.0	273	76.0	235	75.8	*****	*****	*****	*****
Roflumilast	12,831	100.0	36	100.0	21	100.0	22	100.0	*****	*****	*****	*****
18-64 years	3,796	29.6	*****	*****	*****	*****	*****	*****	*****	*****	0	0.0
65+ years	9,035	70.4	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****

¹Distribution of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

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Table 1c. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Age Group

Exposures	30-30 Days		31-90 Days		91-180 Days		181-270 Days		271-365 Days		366 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	186,140	100.0	236,047	100.0	183,802	100.0	92,744	100.0	62,008	100.0	6,591	100.0
18-64 years	137,427	73.8	161,440	68.4	112,296	61.1	49,177	53.0	28,791	46.4	3,143	47.7
65+ years	48,713	26.2	74,607	31.6	71,506	38.9	43,567	47.0	33,217	53.6	3,448	52.3
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	217,764	100.0	270,804	100.0	298,431	100.0	205,939	100.0	172,491	100.0	16,632	100.0
18-64 years	138,905	63.8	161,142	59.5	164,377	55.1	105,459	51.2	78,845	45.7	7,421	44.6
65+ years	78,859	36.2	109,662	40.5	134,054	44.9	100,480	48.8	93,646	54.3	9,211	55.4
Interleukin 5 (IL5)	*****	*****	57	100.0	72	100.0	121	100.0	281	100.0	*****	*****
18-64 years	*****	*****	*****	*****	58	80.6	104	86.0	226	80.4	*****	*****
65+ years	0	0.0	*****	*****	14	19.4	17	14.0	55	19.6	*****	*****
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	130,219	100.0	147,521	100.0	139,233	100.0	118,342	100.0	180,704	100.0	18,345	100.0
18-64 years	41,054	31.5	44,132	29.9	37,849	27.2	28,343	24.0	38,609	21.4	3,843	20.9
65+ years	89,165	68.5	103,389	70.1	101,384	72.8	89,999	76.0	142,095	78.6	14,502	79.1
ICS/LABA Combination Product Alone	213,521	100.0	269,241	100.0	302,266	100.0	246,714	100.0	276,310	100.0	27,255	100.0
18-64 years	69,314	32.5	86,485	32.1	86,498	28.6	65,117	26.4	68,932	24.9	7,228	26.5
65+ years	144,207	67.5	182,756	67.9	215,768	71.4	181,597	73.6	207,378	75.1	20,027	73.5
LABA/LAMA Combination Product Alone	17,155	100.0	20,134	100.0	21,737	100.0	22,749	100.0	40,145	100.0	4,355	100.0
18-64 years	4,467	26.0	5,091	25.3	5,071	23.3	4,737	20.8	7,340	18.3	867	19.9
65+ years	12,688	74.0	15,043	74.7	16,666	76.7	18,012	79.2	32,805	81.7	3,488	80.1
ICS/LABA/LAMA Combination Product Alone	197	100.0	274	100.0	385	100.0	474	100.0	937	100.0	126	100.0
18-64 years	68	34.5	67	24.5	82	21.3	117	24.7	274	29.2	*****	*****
65+ years	129	65.5	207	75.5	303	78.7	357	75.3	663	70.8	*****	*****

Table 1c. Distribution of Cumulative Exposure Duration¹, by Length Categories, All Episodes, in Days, by Age Group

Exposures	30-30 Days		31-90 Days		91-180 Days		181-270 Days		271-365 Days		366 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ICS/LABA Combination Product AND LAMA-Containing	24,443	100.0	50,301	100.0	110,974	100.0	123,343	100.0	174,439	100.0	20,230	100.0
18-64 years	6,005	24.6	12,935	25.7	30,416	27.4	34,116	27.7	47,924	27.5	5,503	27.2
65+ years	18,438	75.4	37,366	74.3	80,558	72.6	89,227	72.3	126,515	72.5	14,727	72.8
Azithromycin (at least 14 Days of Supply)	761	100.0	944	100.0	711	100.0	623	100.0	1,291	100.0	349	100.0
18-64 years	182	23.9	240	25.4	170	23.9	161	25.8	287	22.2	66	18.9
65+ years	579	76.1	704	74.6	541	76.1	462	74.2	1,004	77.8	283	81.1
Roflumilast	2,706	100.0	2,044	100.0	1,567	100.0	1,466	100.0	4,206	100.0	746	100.0
18-64 years	651	24.1	531	26.0	469	29.9	451	30.8	1,460	34.7	215	28.8
65+ years	2,055	75.9	1,513	74.0	1,098	70.1	1,015	69.2	2,746	65.3	531	71.2

¹Distribution of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 2a. Descriptive Statistics of Cumulative Exposure Duration¹, All Episodes, in Days

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	114.19	91.74	1	30	90	173	366
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	150.83	103.13	1	60	121	223	366
Interleukin 5 (IL5)	1,327	111.35	134.75	1	11	13	252	366
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	175.92	116.80	1	60	155	286	366
ICS/LABA Combination Product Alone	1,342,082	169.45	110.09	1	60	150	270	366
LABA/LAMA Combination Product Alone	126,490	199.95	117.45	1	90	210	313	366
ICS/LABA/LAMA Combination Product Alone	2,431	225.57	113.07	14	120	251	330	366
ICS/LABA Combination Product AND LAMA-Containing	504,649	225.99	102.01	1	150	240	320	366
Azithromycin (at least 14 Days of Supply)	5,564	162.18	131.78	14	30	120	301	366
Roflumilast	12,831	193.95	131.33	1	60	181	332	366

¹Descriptive statistics of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

Table 2b. Descriptive Statistics of Cumulative Exposure Duration¹, All Episodes, in Days, by Sex

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	114.19	91.74	1	30	90	173	366
Female	549,811	112.26	91.14	1	30	90	165	366
Male	252,810	118.38	92.88	1	30	90	180	366
Other	16	99.81	95.71	25	30	61	110	342
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone								
Female	789,544	147.06	102.9	1	60	120	213	366
Male	****	158.28	103.18	1	60	150	240	366
Other	****	123.13	78.51	30	50	128	180	240
Interleukin 5 (IL5)								
Female	855	106.86	132.82	1	11	13	229	366
Male	472	119.49	137.95	1	11	13	261	366
Other	0	-	-	-	-	-	-	-
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone								
Female	412,404	176.94	115.89	1	60	163	285	366
Male	****	174.63	117.93	1	60	150	288	366
Other	****	135.6	96.91	60	90	90	136	302
ICS/LABA Combination Product Alone								
Female	765,634	169.28	109.77	1	60	150	270	366
Male	****	169.68	110.52	1	60	150	270	366
Other	****	159	40.35	120	120	161	180	214
LABA/LAMA Combination Product Alone								
Female	66,412	199.27	117.42	1	90	210	312	366
Male	60,078	200.7	117.48	1	90	210	313	366
Other	0	-	-	-	-	-	-	-

Table 2b. Descriptive Statistics of Cumulative Exposure Duration¹, All Episodes, in Days, by Sex

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
ICS/LABA/LAMA Combination Product Alone	2,431	225.57	113.07	14	120	251	330	366
Female	1,227	222.44	113.18	14	120	246	326	366
Male	1,204	228.76	112.91	14	123	257	330	366
Other	0	-	-	-	-	-	-	-
ICS/LABA Combination Product AND LAMA-Containing	504,649	225.99	102.01	1	150	240	320	366
Female	286,247	224.49	102.08	1	150	237	318	366
Male	*****	227.95	101.89	2	150	240	323	366
Other	*****	309.33	33.72	286	286	294	348	348
Azithromycin (at least 14 Days of Supply)	5,564	162.18	131.78	14	30	120	301	366
Female	3,157	156.29	129.98	14	30	112	292	366
Male	*****	169.97	133.73	14	30	141	318	366
Other	*****	28	-	28	28	28	28	28
Roflumilast	12,831	193.95	131.33	1	60	181	332	366
Female	6,995	194.14	131.58	3	60	188	331	366
Male	5,836	193.73	131.04	1	60	180	333	366
Other	0	-	-	-	-	-	-	-

¹Descriptive statistics of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Data presented by a dash, asterisk, or period represent missing information. Data are not presented in shaded cells due to their inability to be calculated. This table may not use all data representations.

Table 2c. Descriptive Statistics of Cumulative Exposure Duration¹, All Episodes, in Days, by Age Group

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product								
Alone	802,637	114.19	91.74	1	30	90	173	366
18-64 years	519,087	101.35	84.54	1	30	60	145	366
65+ years	283,550	137.7	99.42	1	60	115	205	366
ICS/Long-Acting Beta Agonist (LABA)								
Combination Product Alone								
	1,188,694	150.83	103.13	1	60	121	223	366
18-64 years	660,582	139.33	99.81	1	60	120	210	366
65+ years	528,112	165.21	105.38	1	60	150	247	366
Interleukin 5 (IL5)								
	1,327	111.35	134.75	1	11	13	252	366
18-64 years	801	144.99	139.75	1	12	88	297	366
65+ years	526	60.13	108.38	1	10	13	14	366
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA)								
Mono-Product Alone								
	735,398	175.92	116.8	1	60	155	286	366
18-64 years	194,137	158.04	113.96	1	60	120	263	366
65+ years	541,261	182.33	117.14	1	60	180	298	366
ICS/LABA Combination Product Alone								
	1,342,082	169.45	110.09	1	60	150	270	366
18-64 years	385,872	157.96	108.82	1	60	133	242	366
65+ years	956,210	174.09	110.27	1	64	169	270	366
LABA/LAMA Combination Product Alone								
	126,490	199.95	117.45	1	90	210	313	366
18-64 years	27,631	183.66	117.56	2	60	180	300	366
65+ years	98,859	204.51	117.02	1	90	210	317	366
ICS/LABA/LAMA Combination Product								
Alone								
	2,431	225.57	113.07	14	120	251	330	366
18-64 years	643	229.44	116.3	14	120	270	330	366
65+ years	1,788	224.17	111.88	14	131	240	328	366
ICS/LABA Combination Product AND LAMA-Containing								
	504,649	225.99	102.01	1	150	240	320	366
18-64 years	137,129	227.67	100.78	1	150	240	320	366
65+ years	367,520	225.37	102.46	1	150	239	320	366

Table 2c. Descriptive Statistics of Cumulative Exposure Duration¹, All Episodes, in Days, by Age Group

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Azithromycin (at least 14 Days of Supply)	5,564	162.18	131.78	14	30	120	301	366
18-64 years	1,309	156.66	128.94	14	30	120	287	366
65+ years	4,255	163.88	132.61	14	30	120	305	366
Roflumilast	12,831	193.95	131.33	1	60	181	332	366
18-64 years	3,796	211.31	129.64	3	64	240	341	366
65+ years	9,035	186.66	131.36	1	60	180	330	366

¹Descriptive statistics of patients' cumulative exposure duration represents each patient's total episode length across all episodes.

Table 3a. Distribution of Days Supplied Per Dispensing, by Length Categories

Exposures	Total Dispensings		1-1 Days		2-13 Days		14-14 Days		15-15 Days		16-27 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	2,477,884	100.0	8,786	0.4	72,758	2.9	6,726	0.3	54,583	2.2	228,363	9.2
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	5,089,753	100.0	12,831	0.3	148,960	2.9	12,265	0.2	20,360	0.4	159,307	3.1
Interleukin 5 (IL5)	13,004	100.0	8,257	63.5	111	0.9	*****	*****	*****	*****	121	0.9
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	3,638,694	100.0	10,170	0.3	103,405	2.8	6,410	0.2	11,425	0.3	81,817	2.2
ICS/LABA Combination Product Alone	6,633,746	100.0	18,110	0.3	210,515	3.2	28,687	0.4	31,177	0.5	217,144	3.3
LABA/LAMA Combination Product Alone	729,004	100.0	1,855	0.3	22,715	3.1	1,894	0.3	2,006	0.3	17,478	2.4
ICS/LABA/LAMA Combination Product Alone	15,679	100.0	55	0.4	420	2.7	330	2.1	79	0.5	415	2.6
ICS/LABA Combination Product AND LAMA-Containing	3,390,673	100.0	10,285	0.3	119,401	3.5	13,893	0.4	16,672	0.5	115,576	3.4
Azithromycin (at least 14 Days of Supply)	26,202	100.0	73	0.3	680	2.6	1,202	4.6	421	1.6	1,637	6.2
Roflumilast	75,211	100.0	207	0.3	3,058	4.1	3,089	4.1	199	0.3	1,687	2.2

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 3a. Distribution of Days Supplied Per Dispensing, by Length Categories

Exposures	28-28 Days		29-29 Days		30-30 Days		31-89 Days		90-90 Days		91+ Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	34,204	1.4	16,457	0.7	1,557,914	62.9	264,663	10.7	198,600	8.0	34,830	1.4
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	26,099	0.5	31,284	0.6	4,042,027	79.4	190,481	3.7	443,486	8.7	2,653	0.1
Interleukin 5 (IL5)	3,991	30.7	*****	*****	234	1.8	267	2.1	0	0.0	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	10,194	0.3	8,547	0.2	2,972,253	81.7	75,482	2.1	358,406	9.8	585	0.0
ICS/LABA Combination Product Alone	42,497	0.6	46,301	0.7	5,299,186	79.9	245,301	3.7	493,105	7.4	1,723	0.0
LABA/LAMA Combination Product Alone	3,036	0.4	2,082	0.3	595,865	81.7	23,538	3.2	58,396	8.0	139	0.0
ICS/LABA/LAMA Combination Product Alone	327	2.1	29	0.2	12,117	77.3	490	3.1	1,415	9.0	*****	*****
ICS/LABA Combination Product AND LAMA-Containing	22,427	0.7	24,340	0.7	2,730,615	80.5	106,065	3.1	230,701	6.8	698	0.0
Azithromycin (at least 14 Days of Supply)	5,054	19.3	130	0.5	12,440	47.5	2,928	11.2	1,580	6.0	57	0.2
Roflumilast	713	0.9	175	0.2	58,846	78.2	1,640	2.2	5,582	7.4	15	0.0

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 3b. Distribution of Days Supplied Per Dispensing, by Length Categories, by Sex

Exposures	Total Dispensings		1-1 Days		2-13 Days		14-14 Days		15-15 Days		16-27 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	2,477,884	100.0	8,786	100.0	72,758	100.0	6,726	100.0	54,583	100.0	228,363	100.0
Female	1,678,438	67.7	5,907	67.2	49,185	67.6	4,624	68.7	38,911	71.3	155,637	68.2
Male	799,414	32.3	*****	*****	23,573	32.4	2,102	31.3	15,672	28.7	*****	*****
Other	32	0.0	*****	*****	0	0.0	0	0.0	0	0.0	*****	*****
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	5,089,753	100.0	12,831	100.0	148,960	100.0	12,265	100.0	20,360	100.0	159,307	100.0
Female	3,306,163	65.0	8,168	63.7	95,948	64.4	8,202	66.9	13,189	64.8	103,426	64.9
Male	1,783,564	35.0	4,663	36.3	*****	*****	4,063	33.1	*****	*****	55,881	35.1
Other	26	0.0	0	0.0	*****	*****	0	0.0	*****	*****	0	0.0
Interleukin 5 (IL5)	13,004	100.0	8,257	100.0	111	100.0	*****	*****	*****	*****	121	100.0
Female	8,325	64.0	5,409	65.5	*****	*****	*****	*****	*****	*****	72	59.5
Male	4,679	36.0	2,848	34.5	*****	*****	*****	*****	*****	*****	49	40.5
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	3,638,694	100.0	10,170	100.0	103,405	100.0	6,410	100.0	11,425	100.0	81,817	100.0
Female	2,066,966	56.8	5,757	56.6	59,595	57.6	3,749	58.5	6,638	58.1	46,993	57.4
Male	1,571,704	43.2	4,413	43.4	*****	*****	2,661	41.5	4,787	41.9	*****	*****
Other	24	0.0	0	0.0	*****	*****	0	0.0	0	0.0	*****	*****
ICS/LABA Combination Product Alone	6,633,746	100.0	18,110	100.0	210,515	100.0	28,687	100.0	31,177	100.0	217,144	100.0
Female	3,807,440	57.4	10,234	56.5	122,055	58.0	17,631	61.5	18,377	58.9	125,230	57.7
Male	2,826,279	42.6	7,876	43.5	*****	*****	11,056	38.5	12,800	41.1	91,914	42.3
Other	27	0.0	0	0.0	*****	*****	0	0.0	0	0.0	0	0.0
LABA/LAMA Combination Product Alone	729,004	100.0	1,855	100.0	22,715	100.0	1,894	100.0	2,006	100.0	17,478	100.0
Female	383,682	52.6	971	52.3	12,121	53.4	1,020	53.9	1,064	53.0	9,239	52.9
Male	345,322	47.4	884	47.7	10,594	46.6	874	46.1	942	47.0	8,239	47.1
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 3b. Distribution of Days Supplied Per Dispensing, by Length Categories, by Sex

Exposures	Total Dispensings		1-1 Days		2-13 Days		14-14 Days		15-15 Days		16-27 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ICS/LABA/LAMA Combination Product Alone	15,679	100.0	55	100.0	420	100.0	330	100.0	79	100.0	415	100.0
Female	7,987	50.9	26	47.3	214	51.0	229	69.4	39	49.4	222	53.5
Male	7,692	49.1	29	52.7	206	49.0	101	30.6	40	50.6	193	46.5
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA Combination Product AND LAMA-Containing	3,390,673	100.0	10,285	100.0	119,401	100.0	13,893	100.0	16,672	100.0	115,576	100.0
Female	1,922,381	56.7	5,738	55.8	68,302	57.2	8,076	58.1	9,611	57.6	65,775	56.9
Male	1,468,274	43.3	4,547	44.2	51,099	42.8	5,817	41.9	7,061	42.4	****	****
Other	18	0.0	0	0.0	0	0.0	0	0.0	0	0.0	****	****
Azithromycin (at least 14 Days of Supply)	26,202	100.0	73	100.0	680	100.0	1,202	100.0	421	100.0	1,637	100.0
Female	14,425	55.1	42	57.5	371	54.6	685	57.0	233	55.3	928	56.7
Male	****	****	31	42.5	309	45.4	****	****	188	44.7	709	43.3
Other	****	****	0	0.0	0	0.0	****	****	0	0.0	0	0.0
Roflumilast	75,211	100.0	207	100.0	3,058	100.0	3,089	100.0	199	100.0	1,687	100.0
Female	41,578	55.3	118	57.0	1,782	58.3	1,993	64.5	138	69.3	925	54.8
Male	33,633	44.7	89	43.0	1,276	41.7	1,096	35.5	61	30.7	762	45.2
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 3b. Distribution of Days Supplied Per Dispensing, by Length Categories, by Sex

Exposures	28-28 Days		29-29 Days		30-30 Days		31-89 Days		90-90 Days		91+ Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	34,204	100.0	16,457	100.0	1,557,914	100.0	264,663	100.0	198,600	100.0	34,830	100.0
Female	23,400	68.4	11,082	67.3	1,058,315	67.9	177,437	67.0	131,282	66.1	22,658	65.1
Male	10,804	31.6	5,375	32.7	499,583	32.1	*****	*****	*****	*****	*****	*****
Other	0	0.0	0	0.0	16	0.0	*****	*****	*****	*****	*****	*****
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	26,099	100.0	31,284	100.0	4,042,027	100.0	190,481	100.0	443,486	100.0	2,653	100.0
Female	17,105	65.5	20,499	65.5	2,631,955	65.1	123,760	65.0	282,264	63.6	1,647	62.1
Male	8,994	34.5	10,785	34.5	1,410,055	34.9	*****	*****	*****	*****	1,006	37.9
Other	0	0.0	0	0.0	17	0.0	*****	*****	*****	*****	0	0.0
Interleukin 5 (IL5)	3,991	100.0	*****	*****	234	100.0	267	100.0	0	0.0	0	0.0
Female	2,502	62.7	*****	*****	91	38.9	170	63.7	0	0.0	0	0.0
Male	1,489	37.3	0	0.0	143	61.1	97	36.3	0	0.0	0	0.0
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	10,194	100.0	8,547	100.0	2,972,253	100.0	75,482	100.0	358,406	100.0	585	100.0
Female	5,690	55.8	4,894	57.3	1,695,487	57.0	41,746	55.3	196,130	54.7	287	49.1
Male	4,504	44.2	3,653	42.7	*****	*****	33,736	44.7	162,276	45.3	298	50.9
Other	0	0.0	0	0.0	*****	*****	0	0.0	0	0.0	0	0.0
ICS/LABA Combination Product Alone	42,497	100.0	46,301	100.0	5,299,186	100.0	245,301	100.0	493,105	100.0	1,723	100.0
Female	24,210	57.0	26,668	57.6	3,053,972	57.6	138,333	56.4	269,758	54.7	972	56.4
Male	18,287	43.0	19,633	42.4	*****	*****	*****	*****	223,347	45.3	751	43.6
Other	0	0.0	0	0.0	*****	*****	*****	*****	0	0.0	0	0.0

Table 3b. Distribution of Days Supplied Per Dispensing, by Length Categories, by Sex

Exposures	28-28 Days		29-29 Days		30-30 Days		31-89 Days		90-90 Days		91+ Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
LABA/LAMA Combination Product Alone	3,036	100.0	2,082	100.0	595,865	100.0	23,538	100.0	58,396	100.0	139	100.0
Female	1,630	53.7	1,106	53.1	314,518	52.8	12,388	52.6	29,553	50.6	72	51.8
Male	1,406	46.3	976	46.9	281,347	47.2	11,150	47.4	28,843	49.4	67	48.2
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA/LAMA Combination Product Alone	327	100.0	*****	*****	12,117	100.0	490	100.0	1,415	100.0	*****	*****
Female	197	60.2	*****	*****	6,167	50.9	236	48.2	643	45.4	*****	*****
Male	130	39.8	*****	*****	5,950	49.1	254	51.8	772	54.6	*****	*****
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
ICS/LABA Combination Product AND LAMA-Containing	22,427	100.0	24,340	100.0	2,730,615	100.0	106,065	100.0	230,701	100.0	698	100.0
Female	12,658	56.4	13,958	57.3	1,554,021	56.9	58,706	55.3	125,137	54.2	399	57.2
Male	9,769	43.6	10,382	42.7	*****	*****	*****	*****	*****	*****	299	42.8
Other	0	0.0	0	0.0	*****	*****	*****	*****	*****	*****	0	0.0
Azithromycin (at least 14 Days of Supply)	5,054	100.0	130	100.0	12,440	100.0	2,928	100.0	1,580	100.0	57	100.0
Female	2,932	58.0	84	64.6	6,634	53.3	1,680	57.4	813	51.5	23	40.4
Male	2,122	42.0	46	35.4	5,806	46.7	1,248	42.6	767	48.5	34	59.6
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Roflumilast	713	100.0	175	100.0	58,846	100.0	1,640	100.0	5,582	100.0	15	100.0
Female	352	49.4	*****	*****	32,386	55.0	848	51.7	2,928	52.5	*****	*****
Male	361	50.6	*****	*****	26,460	45.0	792	48.3	2,654	47.5	*****	*****
Other	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 3c. Distribution of Days Supplied Per Dispensing, by Length Categories, by Age Group

Exposures	Total Dispensings		1-1 Days		2-13 Days		14-14 Days		15-15 Days		16-27 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	2,477,884	100.0	8,786	100.0	72,758	100.0	6,726	100.0	54,583	100.0	228,363	100.0
18-64 years	1,457,178	58.8	4,951	56.4	39,918	54.9	3,731	55.5	27,803	50.9	141,374	61.9
65+ years	1,020,706	41.2	3,835	43.6	32,840	45.1	2,995	44.5	26,780	49.1	86,989	38.1
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	5,089,753	100.0	12,831	100.0	148,960	100.0	12,265	100.0	20,360	100.0	159,307	100.0
18-64 years	2,712,710	53.3	6,587	51.3	76,768	51.5	5,608	45.7	11,402	56.0	86,208	54.1
65+ years	2,377,043	46.7	6,244	48.7	72,192	48.5	6,657	54.3	8,958	44.0	73,099	45.9
Interleukin 5 (IL5)	13,004	100.0	8,257	100.0	111	100.0	*****	*****	*****	*****	121	100.0
18-64 years	7,468	57.4	3,643	44.1	91	82.0	*****	*****	*****	*****	95	78.5
65+ years	5,536	42.6	4,614	55.9	20	18.0	*****	*****	*****	*****	26	21.5
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	3,638,694	100.0	10,170	100.0	103,405	100.0	6,410	100.0	11,425	100.0	81,817	100.0
18-64 years	919,784	25.3	2,489	24.5	24,228	23.4	1,524	23.8	2,947	25.8	20,215	24.7
65+ years	2,718,910	74.7	7,681	75.5	79,177	76.6	4,886	76.2	8,478	74.2	61,602	75.3
ICS/LABA Combination Product Alone	6,633,746	100.0	18,110	100.0	210,515	100.0	28,687	100.0	31,177	100.0	217,144	100.0
18-64 years	1,857,079	28.0	5,008	27.7	56,858	27.0	5,589	19.5	8,188	26.3	60,652	27.9
65+ years	4,776,667	72.0	13,102	72.3	153,657	73.0	23,098	80.5	22,989	73.7	156,492	72.1
LABA/LAMA Combination Product Alone	729,004	100.0	1,855	100.0	22,715	100.0	1,894	100.0	2,006	100.0	17,478	100.0
18-64 years	154,043	21.1	361	19.5	4,595	20.2	421	22.2	458	22.8	3,680	21.1
65+ years	574,961	78.9	1,494	80.5	18,120	79.8	1,473	77.8	1,548	77.2	13,798	78.9

Table 3c. Distribution of Days Supplied Per Dispensing, by Length Categories, by Age Group

Exposures	Total Dispensings		1-1 Days		2-13 Days		14-14 Days		15-15 Days		16-27 Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ICS/LABA/LAMA Combination Product Alone	15,679	100.0	55	100.0	420	100.0	330	100.0	79	100.0	415	100.0
18-64 years	4,428	28.2	17	30.9	109	26.0	54	16.4	22	27.8	111	26.7
65+ years	11,251	71.8	38	69.1	311	74.0	276	83.6	57	72.2	304	73.3
ICS/LABA Combination Product AND LAMA-Containing	3,390,673	100.0	10,285	100.0	119,401	100.0	13,893	100.0	16,672	100.0	115,576	100.0
18-64 years	965,610	28.5	3,061	29.8	33,020	27.7	2,797	20.1	4,478	26.9	33,523	29.0
65+ years	2,425,063	71.5	7,224	70.2	86,381	72.3	11,096	79.9	12,194	73.1	82,053	71.0
Azithromycin (at least 14 Days of Supply)	26,202	100.0	73	100.0	680	100.0	1,202	100.0	421	100.0	1,637	100.0
18-64 years	6,293	24.0	18	24.7	155	22.8	344	28.6	128	30.4	407	24.9
65+ years	19,909	76.0	55	75.3	525	77.2	858	71.4	293	69.6	1,230	75.1
Roflumilast	75,211	100.0	207	100.0	3,058	100.0	3,089	100.0	199	100.0	1,687	100.0
18-64 years	24,868	33.1	81	39.1	865	28.3	462	15.0	*****	*****	607	36.0
65+ years	50,343	66.9	126	60.9	2,193	71.7	2,627	85.0	*****	*****	1,080	64.0

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 3c. Distribution of Days Supplied Per Dispensing, by Length Categories, by Age Group

Exposures	28-28 Days		29-29 Days		30-30 Days		31-89 Days		90-90 Days		91+ Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Asthma Cohorts												
Inhaled Corticosteroids (ICS) Mono-Product Alone	34,204	100.0	16,457	100.0	1,557,914	100.0	264,663	100.0	198,600	100.0	34,830	100.0
18-64 years	18,312	53.5	9,543	58.0	946,412	60.7	147,507	55.7	93,205	46.9	24,422	70.1
65+ years	15,892	46.5	6,914	42.0	611,502	39.3	117,156	44.3	105,395	53.1	10,408	29.9
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	26,099	100.0	31,284	100.0	4,042,027	100.0	190,481	100.0	443,486	100.0	2,653	100.0
18-64 years	14,043	53.8	16,309	52.1	2,224,371	55.0	85,990	45.1	183,655	41.4	1,769	66.7
65+ years	12,056	46.2	14,975	47.9	1,817,656	45.0	104,491	54.9	259,831	58.6	884	33.3
Interleukin 5 (IL5)	3,991	100.0	*****	*****	234	100.0	267	100.0	0	0.0	0	0.0
18-64 years	3,219	80.7	*****	*****	*****	*****	224	83.9	0	0.0	0	0.0
65+ years	772	19.3	*****	*****	*****	*****	43	16.1	0	0.0	0	0.0
Chronic Obstructive Pulmonary Disease (COPD) Cohorts												
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	10,194	100.0	8,547	100.0	2,972,253	100.0	75,482	100.0	358,406	100.0	585	100.0
18-64 years	2,542	24.9	2,159	25.3	790,840	26.6	13,556	18.0	59,166	16.5	118	20.2
65+ years	7,652	75.1	6,388	74.7	2,181,413	73.4	61,926	82.0	299,240	83.5	467	79.8
ICS/LABA Combination Product Alone	42,497	100.0	46,301	100.0	5,299,186	100.0	245,301	100.0	493,105	100.0	1,723	100.0
18-64 years	12,375	29.1	13,075	28.2	1,538,301	29.0	61,421	25.0	95,035	19.3	577	33.5
65+ years	30,122	70.9	33,226	71.8	3,760,885	71.0	183,880	75.0	398,070	80.7	1,146	66.5
LABA/LAMA Combination Product Alone	3,036	100.0	2,082	100.0	595,865	100.0	23,538	100.0	58,396	100.0	139	100.0
18-64 years	708	23.3	471	22.6	130,751	21.9	4,545	19.3	8,014	13.7	39	28.1
65+ years	2,328	76.7	1,611	77.4	465,114	78.1	18,993	80.7	50,382	86.3	100	71.9

Table 3c. Distribution of Days Supplied Per Dispensing, by Length Categories, by Age Group

Exposures	28-28 Days		29-29 Days		30-30 Days		31-89 Days		90-90 Days		91+ Days	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
ICS/LABA/LAMA Combination Product Alone	327	100.0	*****	*****	12,117	100.0	490	100.0	1,415	100.0	*****	*****
18-64 years	50	15.3	*****	*****	3,660	30.2	124	25.3	272	19.2	*****	*****
65+ years	277	84.7	*****	*****	8,457	69.8	366	74.7	1,143	80.8	*****	*****
ICS/LABA Combination Product AND LAMA-Containing	22,427	100.0	24,340	100.0	2,730,615	100.0	106,065	100.0	230,701	100.0	698	100.0
18-64 years	6,768	30.2	7,047	29.0	801,669	29.4	27,138	25.6	45,892	19.9	217	31.1
65+ years	15,659	69.8	17,293	71.0	1,928,946	70.6	78,927	74.4	184,809	80.1	481	68.9
Azithromycin (at least 14 Days of Supply)	5,054	100.0	130	100.0	12,440	100.0	2,928	100.0	1,580	100.0	57	100.0
18-64 years	1,206	23.9	33	25.4	3,160	25.4	557	19.0	271	17.2	14	24.6
65+ years	3,848	76.1	97	74.6	9,280	74.6	2,371	81.0	1,309	82.8	43	75.4
Roflumilast	713	100.0	175	100.0	58,846	100.0	1,640	100.0	5,582	100.0	15	100.0
18-64 years	284	39.8	68	38.9	20,646	35.1	453	27.6	1,345	24.1	*****	*****
65+ years	429	60.2	107	61.1	38,200	64.9	1,187	72.4	4,237	75.9	*****	*****

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Table 4a. Descriptive Statistics of Days Supplied Per Dispensing

Exposures	Total Dispensings	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	2,477,884	36.99	20.91	1	30	30	30	366
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	5,089,753	35.23	18.71	1	30	30	30	366
Interleukin 5 (IL5)	13,004	11.39	14.98	1	1	1	28	84
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	3,638,694	35.55	19.27	1	30	30	30	366
ICS/LABA Combination Product Alone	6,633,746	34.28	17.64	1	30	30	30	366
LABA/LAMA Combination Product Alone	729,004	34.69	18.10	1	30	30	30	366
ICS/LABA/LAMA Combination Product Alone	15,679	34.97	19.03	1	30	30	30	120
ICS/LABA Combination Product AND LAMA-Containing	3,390,673	33.64	17.05	1	30	30	30	360
Azithromycin (at least 14 Days of Supply)	26,202	34.44	19.53	1	28	30	30	165
Roflumilast	75,211	33.09	17.82	1	30	30	30	180

Table 4b. Descriptive Statistics of Days Supplied Per Dispensing, by Sex

Exposures	Total Dispensings	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	2,477,884	36.99	20.91	1	30	30	30	366
Female	1,678,438	36.77	20.71	1	30	30	30	366
Male	799,414	37.44	21.31	1	30	30	30	366
Other	32	49.91	32.53	1	30	30	90	100
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	5,089,753	35.23	18.71	1	30	30	30	366
Female	3,306,163	35.12	18.55	1	30	30	30	366
Male	1,783,564	35.42	19	1	30	30	30	366
Other	26	37.88	17.9	10	30	30	60	90
Interleukin 5 (IL5)	13,004	11.39	14.98	1	1	1	28	84
Female	8,325	11.01	14.93	1	1	1	28	84
Male	4,679	12.08	15.05	1	1	1	28	84
Other	0	-	-	-	-	-	-	-
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	3,638,694	35.55	19.27	1	30	30	30	366
Female	2,066,966	35.3	18.99	1	30	30	30	366
Male	1,571,704	35.89	19.64	1	30	30	30	366
Other	24	28.25	6.28	2	30	30	30	30
ICS/LABA Combination Product Alone	6,633,746	34.28	17.64	1	30	30	30	366
Female	3,807,440	34.04	17.32	1	30	30	30	366
Male	2,826,279	34.61	18.06	1	30	30	30	366
Other	27	29.44	8.61	4	30	30	30	60
LABA/LAMA Combination Product Alone	729,004	34.69	18.1	1	30	30	30	366
Female	383,682	34.49	17.84	1	30	30	30	366
Male	345,322	34.92	18.38	1	30	30	30	366
Other	0	-	-	-	-	-	-	-

Table 4b. Descriptive Statistics of Days Supplied Per Dispensing, by Sex

Exposures	Total Dispensings	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
ICS/LABA/LAMA Combination Product Alone	15,679	34.97	19.03	1	30	30	30	120
Female	7,987	34.17	18.23	1	30	30	30	120
Male	7,692	35.81	19.81	1	30	30	30	120
Other	0	-	-	-	-	-	-	-
ICS/LABA Combination Product AND LAMA-Containing	3,390,673	33.64	17.05	1	30	30	30	360
Female	1,922,381	33.43	16.75	1	30	30	30	336
Male	1,468,274	33.91	17.42	1	30	30	30	360
Other	18	51.56	30.46	16	30	30	90	90
Azithromycin (at least 14 Days of Supply)	26,202	34.44	19.53	1	28	30	30	165
Female	14,425	34.21	19.3	1	28	30	30	118
Male	*****	34.73	19.81	1	28	30	30	165
Other	*****	14	0	14	14	14	14	14
Roflumilast	75,211	33.09	17.82	1	30	30	30	180
Female	41,578	32.66	17.56	1	30	30	30	180
Male	33,633	33.62	18.12	1	30	30	30	180
Other	0	-	-	-	-	-	-	-

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Data presented by a dash, asterisk, or period represent missing information. Data are not presented in shaded cells due to their inability to be calculated. This table may not use all data representations.

Table 4c. Descriptive Statistics of Days Supplied Per Dispensing, by Age Group

Exposures	Total Dispensings	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	2,477,884	36.99	20.91	1	30	30	30	366
18-64 years	1,457,178	36.1	19.87	1	30	30	30	366
65+ years	1,020,706	38.25	22.24	1	30	30	30	366
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	5,089,753	35.23	18.71	1	30	30	30	366
18-64 years	2,712,710	33.93	16.93	1	30	30	30	366
65+ years	2,377,043	36.71	20.46	1	30	30	30	366
Interleukin 5 (IL5)	13,004	11.39	14.98	1	1	1	28	84
18-64 years	7,468	15.6	15.92	1	1	14	28	84
65+ years	5,536	5.72	11.38	1	1	1	1	84
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	3,638,694	35.55	19.27	1	30	30	30	366
18-64 years	919,784	33.36	16.07	1	30	30	30	366
65+ years	2,718,910	36.3	20.19	1	30	30	30	366
ICS/LABA Combination Product Alone	6,633,746	34.28	17.64	1	30	30	30	366
18-64 years	1,857,079	32.82	15.26	1	30	30	30	366
65+ years	4,776,667	34.85	18.46	1	30	30	30	366
LABA/LAMA Combination Product Alone	729,004	34.69	18.1	1	30	30	30	366
18-64 years	154,043	32.94	15.38	1	30	30	30	366
65+ years	574,961	35.16	18.73	1	30	30	30	366
ICS/LABA/LAMA Combination Product Alone	15,679	34.97	19.03	1	30	30	30	120
18-64 years	4,428	33.32	16.25	1	30	30	30	120
65+ years	11,251	35.63	19.99	1	30	30	30	120
ICS/LABA Combination Product AND LAMA-Containing	3,390,673	33.64	17.05	1	30	30	30	360
18-64 years	965,610	32.33	14.82	1	30	30	30	360
65+ years	2,425,063	34.15	17.83	1	30	30	30	336

Table 4c. Descriptive Statistics of Days Supplied Per Dispensing, by Age Group

Exposures	Total Dispensings	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Azithromycin (at least 14 Days of Supply)	26,202	34.44	19.53	1	28	30	30	165
18-64 years	6,293	32.59	17.56	1	28	30	30	120
65+ years	19,909	35.02	20.08	1	28	30	30	165
Roflumilast	75,211	33.09	17.82	1	30	30	30	180
18-64 years	24,868	32.26	15.42	1	30	30	30	180
65+ years	50,343	33.5	18.88	1	30	30	30	180

Table 5a. Descriptive Statistics for Proportion of Days Covered (PDC, Percent)¹ Over Exactly 366 Days of Follow-Up

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	31.2%	25.1%	0.0%	8.0%	25.0%	47.0%	100.0%
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	41.2%	28.2%	0.0%	16.0%	33.0%	61.0%	100.0%
Interleukin 5 (IL5)	1,327	30.4%	36.8%	0.0%	3.0%	4.0%	69.0%	100.0%
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	48.1%	31.9%	0.0%	16.0%	42.0%	78.0%	100.0%
ICS/LABA Combination Product Alone	1,342,082	46.3%	30.1%	0.0%	16.0%	41.0%	74.0%	100.0%
LABA/LAMA Combination Product Alone	126,490	54.6%	32.1%	0.0%	25.0%	57.0%	86.0%	100.0%
ICS/LABA/LAMA Combination Product Alone	2,431	61.6%	30.9%	4.0%	33.0%	69.0%	90.0%	100.0%
ICS/LABA Combination Product AND LAMA-Containing	504,649	61.8%	27.9%	0.0%	41.0%	66.0%	87.0%	100.0%
Azithromycin (at least 14 Days of Supply)	5,564	44.3%	36.0%	4.0%	8.0%	33.0%	82.0%	100.0%
Roflumilast	12,831	53.0%	35.9%	0.0%	16.0%	49.0%	91.0%	100.0%

¹Proportion of days covered (PDC, Percent) is computed by dividing a patient's cumulative exposure duration by 366 days.

Table 5b. Number of Patients Meeting or Exceeding the Specified Proportion of Days Covered (PDC, Percent)¹

Exposures	Total Patients	>=10%	>=20%	>=30%	>=40%	>=50%	>=60%	>=70%	>=80%	>=90%	=100%
Asthma Cohorts											
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	577,517	436,857	317,727	245,885	159,789	118,972	86,933	56,690	32,102	6,591
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	961,110	819,340	677,492	568,131	391,218	301,833	233,730	161,844	97,959	16,632
Interleukin 5 (IL5)	1,327	543	512	490	453	418	391	310	259	153	17
Chronic Obstructive Pulmonary Disease (COPD) Cohorts											
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	603,258	533,059	450,667	399,070	316,050	274,338	232,870	177,629	118,259	18,345
ICS/LABA Combination Product Alone	1,342,082	1,118,471	980,278	836,696	725,062	546,455	448,269	361,011	263,720	164,846	27,255
LABA/LAMA Combination Product Alone	126,490	108,980	98,602	88,103	80,141	67,061	59,332	50,841	39,676	25,829	4,355
ICS/LABA/LAMA Combination Product Alone	2,431	2,195	2,054	1,901	1,784	1,530	1,360	1,189	942	610	126
ICS/LABA Combination Product AND LAMA-Containing	504,649	478,803	455,870	424,225	386,985	316,255	269,324	223,745	171,601	111,956	20,230
Azithromycin (at least 14 Days of Supply)	5,564	3,875	3,302	2,915	2,610	2,254	2,014	1,768	1,488	1,119	349
Roflumilast	12,831	10,007	8,997	7,902	7,324	6,406	5,920	5,397	4,604	3,462	746

¹Proportion of days covered (PDC, Percent) is computed by dividing a patient's cumulative exposure duration by 366 days.

Table 6a. Descriptive Statistics for Number of Dispensings (Raw) Administered Over Exactly 366 Days Follow-Up

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	3	3	1	1	2	4	43
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	4	3	1	2	3	6	48
Interleukin 5 (IL5)	1,327	10	4	1	7	11	13	26
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	5	4	1	2	4	8	71
ICS/LABA Combination Product Alone	1,342,082	5	4	1	2	4	7	53
LABA/LAMA Combination Product Alone	126,490	6	4	1	2	5	9	48
ICS/LABA/LAMA Combination Product Alone	2,431	6	4	1	3	6	10	20
ICS/LABA Combination Product AND LAMA-Containing	504,649	7	4	1	4	6	10	51
Azithromycin (at least 14 Days of Supply)	5,564	5	4	1	1	3	7	27
Roflumilast	12,831	6	5	1	1	5	10	52

Table 6b. Descriptive Statistics for Number of Dispensings (Adjusted) Administered Over Exactly 366 Days Follow-Up

Exposures	Total Patients	Mean	Standard Deviation	Minimum	Q1	Median	Q3	Maximum
Asthma Cohorts								
Inhaled Corticosteroids (ICS) Mono-Product Alone	802,637	3	3	1	1	2	4	43
ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	1,188,694	4	3	1	2	3	6	48
Interleukin 5 (IL5)	1,327	10	4	1	7	11	13	26
Chronic Obstructive Pulmonary Disease (COPD) Cohorts								
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product Alone	735,398	5	4	1	2	4	8	71
ICS/LABA Combination Product Alone	1,342,082	5	4	1	2	4	7	53
LABA/LAMA Combination Product Alone	126,490	6	4	1	2	5	9	48
ICS/LABA/LAMA Combination Product Alone	2,431	6	4	1	3	6	10	20
ICS/LABA Combination Product AND LAMA-Containing	504,649	7	4	1	4	6	10	51
Azithromycin (at least 14 Days of Supply)	5,564	5	4	1	1	3	7	27
Roflumilast	12,831	6	5	1	1	5	10	52

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
Asthma cohort - ICS MONO ALONE	290,897	1	1
Asthma cohort - ICS MONO ALONE	311	1	2
Asthma cohort - ICS MONO ALONE	161,314	2	2
Asthma cohort - ICS MONO ALONE	*****	2	8
Asthma cohort - ICS MONO ALONE	276	2	3
Asthma cohort - ICS MONO ALONE	104,110	3	3
Asthma cohort - ICS MONO ALONE	262	3	4
Asthma cohort - ICS MONO ALONE	73,891	4	4
Asthma cohort - ICS MONO ALONE	25	2	4
Asthma cohort - ICS MONO ALONE	48,578	5	5
Asthma cohort - ICS MONO ALONE	231	4	5
Asthma cohort - ICS MONO ALONE	*****	6	12
Asthma cohort - ICS MONO ALONE	24	3	5
Asthma cohort - ICS MONO ALONE	30	4	6
Asthma cohort - ICS MONO ALONE	36,132	6	6
Asthma cohort - ICS MONO ALONE	*****	7	12
Asthma cohort - ICS MONO ALONE	201	5	6
Asthma cohort - ICS MONO ALONE	23,820	7	7
Asthma cohort - ICS MONO ALONE	24	5	7
Asthma cohort - ICS MONO ALONE	141	6	7
Asthma cohort - ICS MONO ALONE	*****	7	14
Asthma cohort - ICS MONO ALONE	16,009	8	8
Asthma cohort - ICS MONO ALONE	23	6	8
Asthma cohort - ICS MONO ALONE	111	7	8
Asthma cohort - ICS MONO ALONE	*****	8	14
Asthma cohort - ICS MONO ALONE	*****	13	15
Asthma cohort - ICS MONO ALONE	*****	11	16
Asthma cohort - ICS MONO ALONE	*****	9	16
Asthma cohort - ICS MONO ALONE	12,448	9	9
Asthma cohort - ICS MONO ALONE	*****	12	16
Asthma cohort - ICS MONO ALONE	78	8	9
Asthma cohort - ICS MONO ALONE	19	7	9
Asthma cohort - ICS MONO ALONE	65	9	10
Asthma cohort - ICS MONO ALONE	*****	14	16
Asthma cohort - ICS MONO ALONE	*****	10	16
Asthma cohort - ICS MONO ALONE	24	8	10
Asthma cohort - ICS MONO ALONE	10,211	10	10
Asthma cohort - ICS MONO ALONE	*****	14	18
Asthma cohort - ICS MONO ALONE	*****	18	19
Asthma cohort - ICS MONO ALONE	55	10	11
Asthma cohort - ICS MONO ALONE	9,008	11	11
Asthma cohort - ICS MONO ALONE	*****	17	20
Asthma cohort - ICS MONO ALONE	*****	20	21
Asthma cohort - ICS MONO ALONE	13	10	12
Asthma cohort - ICS MONO ALONE	*****	15	21
Asthma cohort - ICS MONO ALONE	*****	22	23
Asthma cohort - ICS MONO ALONE	*****	26	26
Asthma cohort - ICS MONO ALONE	*****	27	27
Asthma cohort - ICS MONO ALONE	46	11	12
Asthma cohort - ICS MONO ALONE	9,002	12	12
Asthma cohort - ICS MONO ALONE	3,903	13	13
Asthma cohort - ICS MONO ALONE	42	12	13

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
Asthma cohort - ICS MONO ALONE	*****	29	29
Asthma cohort - ICS MONO ALONE	*****	30	30
Asthma cohort - ICS MONO ALONE	*****	31	31
Asthma cohort - ICS MONO ALONE	*****	32	32
Asthma cohort - ICS MONO ALONE	*****	35	35
Asthma cohort - ICS MONO ALONE	*****	42	42
Asthma cohort - ICS MONO ALONE	*****	43	43
Asthma cohort - ICS/LABA COMBO ALONE	*****	1	4
Asthma cohort - ICS MONO ALONE	370	14	14
Asthma cohort - ICS/LABA COMBO ALONE	*****	5	10
Asthma cohort - ICS/LABA COMBO ALONE	*****	6	11
Asthma cohort - ICS/LABA COMBO ALONE	*****	12	15
Asthma cohort - ICS/LABA COMBO ALONE	*****	14	16
Asthma cohort - ICS/LABA COMBO ALONE	*****	27	27
Asthma cohort - ICS/LABA COMBO ALONE	*****	28	28
Asthma cohort - ICS MONO ALONE	171	15	15
Asthma cohort - ICS/LABA COMBO ALONE	*****	30	30
Asthma cohort - ICS/LABA COMBO ALONE	*****	34	34
Asthma cohort - ICS MONO ALONE	107	16	16
Asthma cohort - ICS/LABA COMBO ALONE	*****	34	35
Asthma cohort - ICS/LABA COMBO ALONE	*****	40	40
Asthma cohort - ICS/LABA COMBO ALONE	*****	42	42
Asthma cohort - ICS/LABA COMBO ALONE	*****	44	44
Asthma cohort - ICS/LABA COMBO ALONE	*****	45	45
Asthma cohort - ICS MONO ALONE	79	17	17
Asthma cohort - ICS/LABA COMBO ALONE	*****	48	48
Asthma cohort - ICS MONO ALONE	80	18	18
Asthma cohort - IL5	*****	26	26
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	6	7
Asthma cohort - ICS MONO ALONE	59	19	19
Asthma cohort - ICS MONO ALONE	59	20	20
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	9	10
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	12	13
Asthma cohort - ICS MONO ALONE	61	21	21
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	17	17
Asthma cohort - ICS MONO ALONE	56	22	22
Asthma cohort - ICS MONO ALONE	37	23	23
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	20	20
Asthma cohort - ICS MONO ALONE	39	24	24
Asthma cohort - ICS MONO ALONE	18	25	25
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	24	24
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	26	26
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	27	27
COPD cohort - ICS/LABA COMBO ALONE	*****	2	5
COPD cohort - ICS/LABA COMBO ALONE	*****	3	7
COPD cohort - ICS/LABA COMBO ALONE	*****	16	20
COPD cohort - ICS/LABA COMBO ALONE	*****	38	38
COPD cohort - ICS/LABA COMBO ALONE	*****	42	42
COPD cohort - ICS/LABA COMBO ALONE	*****	45	45
COPD cohort - ICS/LABA COMBO ALONE	*****	46	46
Asthma cohort - ICS/LABA COMBO ALONE	267,557	1	1
Asthma cohort - ICS/LABA COMBO ALONE	246	1	2

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
Asthma cohort - ICS/LABA COMBO ALONE	184,975	2	2
Asthma cohort - ICS/LABA COMBO ALONE	346	2	3
Asthma cohort - ICS/LABA COMBO ALONE	152,664	3	3
COPD cohort - ICS/LABA COMBO ALONE	*****	47	47
Asthma cohort - ICS/LABA COMBO ALONE	132,515	4	4
COPD cohort - ICS/LABA COMBO ALONE	*****	48	48
Asthma cohort - ICS/LABA COMBO ALONE	33	2	4
Asthma cohort - ICS/LABA COMBO ALONE	351	3	4
Asthma cohort - ICS/LABA COMBO ALONE	100,701	5	5
COPD cohort - ICS/LABA COMBO ALONE	*****	49	49
Asthma cohort - ICS/LABA COMBO ALONE	381	4	5
Asthma cohort - ICS/LABA COMBO ALONE	45	3	5
Asthma cohort - ICS/LABA COMBO ALONE	86,007	6	6
Asthma cohort - ICS/LABA COMBO ALONE	12	3	6
Asthma cohort - ICS/LABA COMBO ALONE	48	4	6
Asthma cohort - ICS/LABA COMBO ALONE	362	5	6
Asthma cohort - ICS/LABA COMBO ALONE	54	5	7
COPD cohort - ICS/LABA COMBO ALONE	*****	53	53
Asthma cohort - ICS/LABA COMBO ALONE	268	6	7
Asthma cohort - ICS/LABA COMBO ALONE	65,865	7	7
Asthma cohort - ICS/LABA COMBO ALONE	44,921	8	8
Asthma cohort - ICS/LABA COMBO ALONE	12	4	8
Asthma cohort - ICS/LABA COMBO ALONE	12	5	8
Asthma cohort - ICS/LABA COMBO ALONE	218	7	8
Asthma cohort - ICS/LABA COMBO ALONE	51	6	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	4	8
Asthma cohort - ICS/LABA COMBO ALONE	184	8	9
Asthma cohort - ICS/LABA COMBO ALONE	37,256	9	9
Asthma cohort - ICS/LABA COMBO ALONE	49	7	9
Asthma cohort - ICS/LABA COMBO ALONE	19	6	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	6	12
Asthma cohort - ICS/LABA COMBO ALONE	34	8	10
Asthma cohort - ICS/LABA COMBO ALONE	11	7	10
Asthma cohort - ICS/LABA COMBO ALONE	32,909	10	10
Asthma cohort - ICS/LABA COMBO ALONE	198	9	10
Asthma cohort - ICS/LABA COMBO ALONE	12	6	10
Asthma cohort - ICS/LABA COMBO ALONE	31,947	11	11
Asthma cohort - ICS/LABA COMBO ALONE	39	9	11
Asthma cohort - ICS/LABA COMBO ALONE	161	10	11
Asthma cohort - ICS/LABA COMBO ALONE	21	8	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	13	15
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	13	16
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	15	16
Asthma cohort - ICS/LABA COMBO ALONE	34,162	12	12
Asthma cohort - ICS/LABA COMBO ALONE	12	9	12
Asthma cohort - ICS/LABA COMBO ALONE	164	11	12
Asthma cohort - ICS/LABA COMBO ALONE	44	10	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	18	19
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	19	20
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	11	20
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	20	21
Asthma cohort - ICS/LABA COMBO ALONE	19	10	13

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
Asthma cohort - ICS/LABA COMBO ALONE	22	9	13
Asthma cohort - ICS/LABA COMBO ALONE	46	11	13
Asthma cohort - ICS/LABA COMBO ALONE	130	12	13
Asthma cohort - ICS/LABA COMBO ALONE	13,151	13	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	16	21
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	24	25
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	29	30
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	37	37
Asthma cohort - ICS/LABA COMBO ALONE	131	14	14
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	39	39
Asthma cohort - ICS/LABA COMBO ALONE	15	13	14
Asthma cohort - ICS/LABA COMBO ALONE	44	15	15
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	41	41
Asthma cohort - ICS/LABA COMBO ALONE	30	16	16
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	44	44
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	47	47
Asthma cohort - ICS/LABA COMBO ALONE	30	17	17
Asthma cohort - ICS/LABA COMBO ALONE	20	18	18
Asthma cohort - ICS/LABA COMBO ALONE	22	19	19
Asthma cohort - ICS/LABA COMBO ALONE	15	20	20
Asthma cohort - ICS/LABA COMBO ALONE	14	21	21
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	48	48
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	50	50
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	51	51
COPD cohort - ICS/LABA/LAMA COMBO ALONE	*****	15	15
COPD cohort - ICS/LABA/LAMA COMBO ALONE	*****	17	17
COPD cohort - ICS/LABA/LAMA COMBO ALONE	*****	18	18
COPD cohort - ICS/LABA/LAMA COMBO ALONE	*****	19	19
COPD cohort - LABA/LAMA COMBO ALONE	*****	3	5
COPD cohort - LABA/LAMA COMBO ALONE	*****	3	6
COPD cohort - LABA/LAMA COMBO ALONE	*****	5	7
COPD cohort - LABA/LAMA COMBO ALONE	*****	5	8
COPD cohort - LABA/LAMA COMBO ALONE	*****	8	10
COPD cohort - LABA/LAMA COMBO ALONE	*****	9	11
COPD cohort - LABA/LAMA COMBO ALONE	*****	7	13
COPD cohort - LABA/LAMA COMBO ALONE	*****	10	13
COPD cohort - LABA/LAMA COMBO ALONE	*****	22	22
Asthma cohort - IL5	53	1	1
Asthma cohort - IL5	47	2	2
Asthma cohort - IL5	51	3	3
Asthma cohort - IL5	47	4	4
Asthma cohort - IL5	53	5	5
Asthma cohort - IL5	63	6	6
Asthma cohort - IL5	53	7	7
Asthma cohort - IL5	64	8	8
Asthma cohort - IL5	78	9	9
Asthma cohort - IL5	88	10	10
Asthma cohort - IL5	123	11	11
Asthma cohort - IL5	205	12	12
Asthma cohort - IL5	274	13	13
Asthma cohort - IL5	79	14	14
COPD cohort - LABA/LAMA COMBO ALONE	*****	24	24

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - LABA/LAMA COMBO ALONE	*****	29	29
COPD cohort - LABA/LAMA COMBO ALONE	*****	30	30
COPD cohort - LABA/LAMA COMBO ALONE	*****	33	33
COPD cohort - LABA/LAMA COMBO ALONE	*****	37	37
COPD cohort - LABA/LAMA COMBO ALONE	*****	42	42
COPD cohort - LABA/LAMA COMBO ALONE	*****	44	44
COPD cohort - LABA/LAMA COMBO ALONE	*****	46	46
COPD cohort - LAMA MONO ALONE	*****	1	3
COPD cohort - LAMA MONO ALONE	*****	2	4
COPD cohort - LAMA MONO ALONE	*****	3	5
COPD cohort - LAMA MONO ALONE	*****	3	6
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	1,835	1	1
COPD cohort - LAMA MONO ALONE	*****	6	9
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	603	2	2
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	363	3	3
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	460	4	4
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	442	5	5
COPD cohort - LAMA MONO ALONE	*****	6	10
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	268	6	6
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	240	7	7
COPD cohort - LAMA MONO ALONE	*****	12	14
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	197	8	8
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	170	9	9
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	191	10	10
COPD cohort - LAMA MONO ALONE	*****	11	14
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	216	11	11
COPD cohort - LAMA MONO ALONE	*****	13	15
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	270	12	12
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	244	13	13
COPD cohort - LAMA MONO ALONE	*****	15	16
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	36	14	14
COPD cohort - LAMA MONO ALONE	*****	32	32
COPD cohort - LAMA MONO ALONE	*****	42	42
COPD cohort - LAMA MONO ALONE	*****	44	44
COPD cohort - LAMA MONO ALONE	*****	45	45
COPD cohort - LAMA MONO ALONE	*****	53	53
COPD cohort - LAMA MONO ALONE	*****	54	54
COPD cohort - LAMA MONO ALONE	*****	64	64
COPD cohort - LAMA MONO ALONE	*****	71	71
COPD cohort - ROFLUMILAST	*****	5	6
COPD cohort - ROFLUMILAST	*****	29	29
COPD cohort - ICS/LABA COMBO ALONE	270,321	1	1
COPD cohort - ICS/LABA COMBO ALONE	177,123	2	2
COPD cohort - ICS/LABA COMBO ALONE	250	1	2
COPD cohort - ICS/LABA COMBO ALONE	260	2	3
COPD cohort - ROFLUMILAST	*****	30	30
COPD cohort - ICS/LABA COMBO ALONE	147,582	3	3
COPD cohort - ICS/LABA COMBO ALONE	23	2	4
COPD cohort - ICS/LABA COMBO ALONE	140,530	4	4
COPD cohort - ICS/LABA COMBO ALONE	286	3	4
COPD cohort - ICS/LABA COMBO ALONE	109,310	5	5
COPD cohort - ICS/LABA COMBO ALONE	353	4	5

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - ICS/LABA COMBO ALONE	49	3	5
COPD cohort - ROFLUMILAST	*****	35	35
COPD cohort - ICS/LABA COMBO ALONE	92,052	6	6
COPD cohort - ICS/LABA COMBO ALONE	316	5	6
COPD cohort - ICS/LABA COMBO ALONE	45	4	6
COPD cohort - ICS/LABA COMBO ALONE	13	3	6
COPD cohort - ICS/LABA COMBO ALONE	77,245	7	7
COPD cohort - ICS/LABA COMBO ALONE	351	6	7
COPD cohort - ICS/LABA COMBO ALONE	61	5	7
COPD cohort - ICS/LABA COMBO ALONE	13	4	7
COPD cohort - ROFLUMILAST	*****	42	42
COPD cohort - ICS/LABA COMBO ALONE	62,329	8	8
COPD cohort - ICS/LABA COMBO ALONE	285	7	8
COPD cohort - ICS/LABA COMBO ALONE	75	6	8
COPD cohort - ICS/LABA COMBO ALONE	22	5	8
COPD cohort - ROFLUMILAST	*****	44	44
COPD cohort - ICS/LABA COMBO ALONE	56,175	9	9
COPD cohort - ICS/LABA COMBO ALONE	262	8	9
COPD cohort - ICS/LABA COMBO ALONE	56	7	9
COPD cohort - ICS/LABA COMBO ALONE	24	6	9
COPD cohort - ICS/LABA COMBO ALONE	12	5	9
COPD cohort - ICS/LABA COMBO ALONE	54,500	10	10
COPD cohort - ICS/LABA COMBO ALONE	315	9	10
COPD cohort - ICS/LABA COMBO ALONE	63	8	10
COPD cohort - ICS/LABA COMBO ALONE	24	7	10
COPD cohort - ICS/LABA COMBO ALONE	12	6	10
COPD cohort - ROFLUMILAST	*****	49	49
COPD cohort - ICS/LABA COMBO ALONE	56,096	11	11
COPD cohort - ICS/LABA COMBO ALONE	254	10	11
COPD cohort - ICS/LABA COMBO ALONE	63	9	11
COPD cohort - ICS/LABA COMBO ALONE	21	8	11
COPD cohort - ICS/LABA COMBO ALONE	13	7	11
Asthma cohort - ICS MONO ALONE	*****	5	9
COPD cohort - ICS/LABA COMBO ALONE	65,233	12	12
COPD cohort - ICS/LABA COMBO ALONE	298	11	12
COPD cohort - ICS/LABA COMBO ALONE	89	10	12
COPD cohort - ICS/LABA COMBO ALONE	51	9	12
COPD cohort - ICS/LABA COMBO ALONE	14	8	12
COPD cohort - ICS/LABA COMBO ALONE	12	7	12
Asthma cohort - ICS MONO ALONE	*****	6	10
COPD cohort - ICS/LABA COMBO ALONE	27,376	13	13
COPD cohort - ICS/LABA COMBO ALONE	247	12	13
COPD cohort - ICS/LABA COMBO ALONE	113	11	13
COPD cohort - ICS/LABA COMBO ALONE	50	10	13
COPD cohort - ICS/LABA COMBO ALONE	41	9	13
COPD cohort - ICS/LABA COMBO ALONE	23	8	13
COPD cohort - ICS/LABA COMBO ALONE	20	7	13
COPD cohort - ICS/LABA COMBO ALONE	12	7	14
COPD cohort - ICS/LABA COMBO ALONE	451	14	14
COPD cohort - ICS/LABA COMBO ALONE	37	13	14
COPD cohort - ICS/LABA COMBO ALONE	15	12	14
COPD cohort - ICS/LABA COMBO ALONE	18	11	14

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - ICS/LABA COMBO ALONE	22	10	14
COPD cohort - ICS/LABA COMBO ALONE	13	9	14
Asthma cohort - ICS MONO ALONE	*****	9	14
Asthma cohort - ICS MONO ALONE	*****	11	14
Asthma cohort - ICS MONO ALONE	*****	12	15
Asthma cohort - ICS MONO ALONE	*****	14	15
Asthma cohort - ICS MONO ALONE	*****	15	16
COPD cohort - ICS/LABA COMBO ALONE	220	15	15
Asthma cohort - ICS MONO ALONE	*****	41	41
Asthma cohort - ICS/LABA COMBO ALONE	*****	2	5
COPD cohort - ICS/LABA COMBO ALONE	136	16	16
COPD cohort - ICS/LABA COMBO ALONE	119	17	17
Asthma cohort - ICS/LABA COMBO ALONE	*****	11	14
COPD cohort - ICS/LABA COMBO ALONE	100	18	18
Asthma cohort - ICS/LABA COMBO ALONE	*****	15	16
COPD cohort - ICS/LABA COMBO ALONE	91	19	19
COPD cohort - ICS/LABA COMBO ALONE	73	20	20
Asthma cohort - ICS/LABA COMBO ALONE	*****	32	32
Asthma cohort - IL5	*****	19	19
COPD cohort - ICS/LABA COMBO ALONE	54	21	21
COPD cohort - ICS/LABA COMBO ALONE	49	22	22
COPD cohort - ICS/LABA COMBO ALONE	63	23	23
COPD cohort - ICS/LABA COMBO ALONE	45	24	24
COPD cohort - ICS/LABA COMBO ALONE	45	25	25
COPD cohort - ICS/LABA COMBO ALONE	28	26	26
COPD cohort - ICS/LABA COMBO ALONE	12	27	27
Asthma cohort - IL5	*****	21	21
Asthma cohort - IL5	*****	23	23
Asthma cohort - IL5	*****	25	25
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	1	2
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	4	5
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	18	18
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	21	21
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	22	22
COPD cohort - ICS/LABA COMBO ALONE	*****	6	11
COPD cohort - ICS/LABA COMBO ALONE	*****	13	15
COPD cohort - ICS/LABA COMBO ALONE	*****	14	16
COPD cohort - ICS/LABA COMBO ALONE	*****	15	16
COPD cohort - ICS/LABA COMBO ALONE	*****	16	17
COPD cohort - ICS/LABA COMBO ALONE	*****	17	18
COPD cohort - ICS/LABA COMBO ALONE	*****	36	36
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	5	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	6	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	33	33
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	46	46
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	49	49
COPD cohort - ICS/LABA/LAMA COMBO ALONE	*****	20	20
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	31,318	1	1
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	31,060	2	2
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	25	1	2
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	40,129	3	3
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	37	2	3

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	59,252	4	4
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	64	3	4
COPD cohort - LABA/LAMA COMBO ALONE	*****	4	6
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	53,604	5	5
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	136	4	5
COPD cohort - LABA/LAMA COMBO ALONE	*****	6	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	44,935	6	6
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	12	4	6
COPD cohort - LABA/LAMA COMBO ALONE	*****	7	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	148	5	6
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	40,650	7	7
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	172	6	7
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	16	5	7
COPD cohort - LABA/LAMA COMBO ALONE	*****	5	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	35,156	8	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	161	7	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	28	6	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	14	5	8
COPD cohort - LABA/LAMA COMBO ALONE	*****	8	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	33,271	9	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	193	8	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	49	7	9
COPD cohort - LABA/LAMA COMBO ALONE	*****	17	17
COPD cohort - LABA/LAMA COMBO ALONE	*****	21	21
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	33,073	10	10
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	233	9	10
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	41	8	10
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	12	7	10
COPD cohort - LABA/LAMA COMBO ALONE	*****	26	26
COPD cohort - LABA/LAMA COMBO ALONE	*****	28	28
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	35,669	11	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	206	10	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	37	9	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	22	8	11
COPD cohort - LABA/LAMA COMBO ALONE	*****	34	34
COPD cohort - LABA/LAMA COMBO ALONE	*****	35	35
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	43,497	12	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	245	11	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	65	10	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	34	9	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	20	8	12
COPD cohort - LABA/LAMA COMBO ALONE	*****	38	38
COPD cohort - LABA/LAMA COMBO ALONE	*****	48	48
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	19,577	13	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	236	12	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	78	11	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	42	10	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	20	9	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	11	8	13
COPD cohort - LABA/LAMA COMBO ALONE	*****	5	7
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	283	14	14
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	16	12	14

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - LAMA MONO ALONE	*****	7	10
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	15	10	14
COPD cohort - LAMA MONO ALONE	*****	9	12
COPD cohort - LAMA MONO ALONE	*****	10	13
COPD cohort - LAMA MONO ALONE	*****	9	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	38	13	14
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	131	15	15
COPD cohort - LAMA MONO ALONE	*****	9	14
COPD cohort - LAMA MONO ALONE	*****	27	27
COPD cohort - LAMA MONO ALONE	*****	29	29
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	89	16	16
COPD cohort - LAMA MONO ALONE	*****	30	30
COPD cohort - LAMA MONO ALONE	*****	51	51
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	72	17	17
COPD cohort - ROFLUMILAST	*****	1	2
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	56	18	18
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	51	19	19
COPD cohort - ROFLUMILAST	*****	40	40
COPD cohort - ROFLUMILAST	*****	52	52
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	40	20	20
Asthma cohort - ICS MONO ALONE	*****	2	5
Asthma cohort - ICS MONO ALONE	*****	5	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	30	21	21
Asthma cohort - ICS MONO ALONE	*****	4	8
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	28	22	22
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	28	23	23
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	17	24	24
Asthma cohort - ICS MONO ALONE	*****	6	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	19	25	25
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	15	26	26
Asthma cohort - ICS MONO ALONE	*****	10	14
Asthma cohort - ICS MONO ALONE	*****	10	15
Asthma cohort - ICS MONO ALONE	*****	16	17
Asthma cohort - ICS/LABA COMBO ALONE	*****	5	9
Asthma cohort - IL5	*****	17	17
Asthma cohort - IL5	*****	22	22
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	10	11
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	16	16
COPD cohort - ICS/LABA COMBO ALONE	*****	5	10
COPD cohort - ICS/LABA COMBO ALONE	*****	11	15
COPD cohort - ICS/LABA COMBO ALONE	*****	19	20
COPD cohort - ICS/LABA COMBO ALONE	*****	33	33
COPD cohort - ICS/LABA COMBO ALONE	*****	39	39
COPD cohort - ICS/LABA COMBO ALONE	*****	44	44
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	5	10
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	11	15
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	31	31
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	32	32
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	34	34
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	35	35
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	36	36
COPD cohort - ICS/LABA/LAMA COMBO ALONE	281	1	1

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - ICS/LABA/LAMA COMBO ALONE	198	2	2
COPD cohort - ICS/LABA/LAMA COMBO ALONE	193	3	3
COPD cohort - ICS/LABA/LAMA COMBO ALONE	246	4	4
COPD cohort - ICS/LABA/LAMA COMBO ALONE	233	5	5
COPD cohort - ICS/LABA/LAMA COMBO ALONE	157	6	6
COPD cohort - ICS/LABA/LAMA COMBO ALONE	153	7	7
COPD cohort - ICS/LABA/LAMA COMBO ALONE	139	8	8
COPD cohort - ICS/LABA/LAMA COMBO ALONE	133	9	9
COPD cohort - ICS/LABA/LAMA COMBO ALONE	171	10	10
COPD cohort - ICS/LABA/LAMA COMBO ALONE	208	11	11
COPD cohort - ICS/LABA/LAMA COMBO ALONE	230	12	12
COPD cohort - ICS/LABA/LAMA COMBO ALONE	77	13	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	38	38
COPD cohort - LABA/LAMA COMBO ALONE	*****	8	9
COPD cohort - LABA/LAMA COMBO ALONE	*****	9	12
COPD cohort - LABA/LAMA COMBO ALONE	*****	11	13
COPD cohort - LABA/LAMA COMBO ALONE	*****	23	23
COPD cohort - LABA/LAMA COMBO ALONE	*****	25	25
COPD cohort - LABA/LAMA COMBO ALONE	21,305	1	1
COPD cohort - LABA/LAMA COMBO ALONE	12,839	2	2
COPD cohort - LABA/LAMA COMBO ALONE	*****	32	32
COPD cohort - LABA/LAMA COMBO ALONE	11,084	3	3
COPD cohort - LAMA MONO ALONE	*****	8	10
COPD cohort - LABA/LAMA COMBO ALONE	13,079	4	4
COPD cohort - LAMA MONO ALONE	*****	9	11
COPD cohort - LABA/LAMA COMBO ALONE	10,574	5	5
COPD cohort - LABA/LAMA COMBO ALONE	*****	4	5
COPD cohort - LAMA MONO ALONE	*****	8	12
COPD cohort - LABA/LAMA COMBO ALONE	7,868	6	6
COPD cohort - LAMA MONO ALONE	*****	8	13
COPD cohort - LAMA MONO ALONE	*****	13	14
COPD cohort - LAMA MONO ALONE	*****	23	23
COPD cohort - LABA/LAMA COMBO ALONE	6,867	7	7
COPD cohort - LAMA MONO ALONE	*****	31	31
COPD cohort - LAMA MONO ALONE	*****	33	33
COPD cohort - LABA/LAMA COMBO ALONE	6,729	8	8
COPD cohort - LAMA MONO ALONE	*****	37	37
COPD cohort - LAMA MONO ALONE	*****	40	40
Asthma cohort - ICS MONO ALONE	*****	9	13
Asthma cohort - ICS/LABA COMBO ALONE	*****	1	3
Asthma cohort - ICS/LABA COMBO ALONE	*****	6	12
Asthma cohort - ICS/LABA COMBO ALONE	*****	25	25
COPD cohort - LABA/LAMA COMBO ALONE	6,808	9	9
COPD cohort - LABA/LAMA COMBO ALONE	7,254	10	10
Asthma cohort - IL5	*****	24	24
COPD cohort - ICS/LABA COMBO ALONE	*****	12	15
COPD cohort - LABA/LAMA COMBO ALONE	8,247	11	11
COPD cohort - LABA/LAMA COMBO ALONE	13	10	11
COPD cohort - ICS/LABA COMBO ALONE	*****	28	28
COPD cohort - LABA/LAMA COMBO ALONE	9,987	12	12
COPD cohort - LABA/LAMA COMBO ALONE	11	11	12
COPD cohort - ICS/LABA COMBO ALONE	*****	34	34

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings	
	Number of patients	(Adjusted) Number of Dispensings (Raw)
COPD cohort - ICS/LABA COMBO ALONE	*****	37 37
COPD cohort - ICS/LABA COMBO ALONE	*****	41 41
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	3 6
COPD cohort - LABA/LAMA COMBO ALONE	3,630	13 13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	7 12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	16 17
COPD cohort - LAMA MONO ALONE	*****	4 6
COPD cohort - LABA/LAMA COMBO ALONE	22	14 14
COPD cohort - LABA/LAMA COMBO ALONE	11	15 15
COPD cohort - LAMA MONO ALONE	*****	7 9
COPD cohort - LAMA MONO ALONE	*****	10 12
COPD cohort - LAMA MONO ALONE	*****	26 26
COPD cohort - LABA/LAMA COMBO ALONE	12	19 19
Asthma cohort - ICS/LABA COMBO ALONE	*****	12 14
Asthma cohort - ICS/LABA COMBO ALONE	*****	22 22
Asthma cohort - IL5	*****	18 18
COPD cohort - AZITHROMYCIN (at least 14 days of supply)	*****	15 15
COPD cohort - ICS/LABA COMBO ALONE	*****	14 15
COPD cohort - ICS/LABA COMBO ALONE	*****	31 31
COPD cohort - ICS/LABA COMBO ALONE	*****	35 35
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	2 4
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	4 7
COPD cohort - LABA/LAMA COMBO ALONE	*****	2 3
COPD cohort - LABA/LAMA COMBO ALONE	*****	10 12
COPD cohort - LABA/LAMA COMBO ALONE	*****	18 18
COPD cohort - LABA/LAMA COMBO ALONE	*****	20 20
COPD cohort - LAMA MONO ALONE	*****	25 25
Asthma cohort - ICS MONO ALONE	*****	4 7
Asthma cohort - ICS MONO ALONE	*****	7 10
Asthma cohort - ICS MONO ALONE	*****	7 11
Asthma cohort - ICS MONO ALONE	*****	9 12
Asthma cohort - ICS MONO ALONE	*****	8 13
Asthma cohort - ICS/LABA COMBO ALONE	*****	7 13
COPD cohort - LAMA MONO ALONE	163,809	1 1
COPD cohort - LAMA MONO ALONE	96,802	2 2
COPD cohort - LAMA MONO ALONE	63	1 2
COPD cohort - LAMA MONO ALONE	76,992	3 3
COPD cohort - LAMA MONO ALONE	59	2 3
Asthma cohort - ICS/LABA COMBO ALONE	*****	7 14
COPD cohort - LAMA MONO ALONE	79,260	4 4
COPD cohort - LAMA MONO ALONE	58	3 4
Asthma cohort - ICS/LABA COMBO ALONE	*****	9 14
COPD cohort - LAMA MONO ALONE	56,144	5 5
COPD cohort - LAMA MONO ALONE	117	4 5
Asthma cohort - ICS/LABA COMBO ALONE	*****	23 23
COPD cohort - LAMA MONO ALONE	39,272	6 6
COPD cohort - LAMA MONO ALONE	52	5 6
Asthma cohort - ICS/LABA COMBO ALONE	*****	24 24
Asthma cohort - ICS/LABA COMBO ALONE	*****	26 26
COPD cohort - LAMA MONO ALONE	33,782	7 7
COPD cohort - LAMA MONO ALONE	37	6 7
COPD cohort - ICS/LABA COMBO ALONE	*****	6 12

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - LAMA MONO ALONE	30,836	8	8
COPD cohort - LAMA MONO ALONE	57	7	8
COPD cohort - LAMA MONO ALONE	29,848	9	9
COPD cohort - LAMA MONO ALONE	38	8	9
COPD cohort - ICS/LABA COMBO ALONE	*****	32	32
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	7	11
COPD cohort - LAMA MONO ALONE	30,689	10	10
COPD cohort - LAMA MONO ALONE	27	9	10
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	8	14
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	14	15
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	29	29
COPD cohort - LAMA MONO ALONE	33,905	11	11
COPD cohort - LAMA MONO ALONE	27	10	11
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	30	30
COPD cohort - LAMA MONO ALONE	44,489	12	12
COPD cohort - LAMA MONO ALONE	34	11	12
COPD cohort - ICS/LABA/LAMA COMBO ALONE	*****	14	14
COPD cohort - LABA/LAMA COMBO ALONE	*****	1	2
COPD cohort - LABA/LAMA COMBO ALONE	*****	6	7
COPD cohort - LAMA MONO ALONE	18,645	13	13
COPD cohort - LAMA MONO ALONE	20	12	13
COPD cohort - LABA/LAMA COMBO ALONE	*****	12	13
COPD cohort - LAMA MONO ALONE	*****	24	24
COPD cohort - LAMA MONO ALONE	*****	28	28
COPD cohort - ROFLUMILAST	*****	19	19
COPD cohort - LAMA MONO ALONE	85	14	14
Asthma cohort - ICS MONO ALONE	*****	8	11
Asthma cohort - ICS MONO ALONE	*****	10	13
Asthma cohort - ICS MONO ALONE	*****	13	14
Asthma cohort - ICS MONO ALONE	*****	12	14
COPD cohort - LAMA MONO ALONE	33	15	15
Asthma cohort - IL5	*****	16	16
COPD cohort - LAMA MONO ALONE	28	16	16
COPD cohort - ICS/LABA COMBO ALONE	*****	1	3
COPD cohort - LAMA MONO ALONE	22	17	17
COPD cohort - LAMA MONO ALONE	14	18	18
COPD cohort - LAMA MONO ALONE	13	19	19
COPD cohort - ICS/LABA COMBO ALONE	*****	8	14
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	6	10
COPD cohort - LAMA MONO ALONE	15	22	22
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	7	13
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	9	14
COPD cohort - LABA/LAMA COMBO ALONE	*****	3	4
COPD cohort - LABA/LAMA COMBO ALONE	*****	16	16
COPD cohort - LAMA MONO ALONE	*****	11	13
COPD cohort - ROFLUMILAST	*****	16	16
COPD cohort - ROFLUMILAST	*****	22	22
Asthma cohort - ICS MONO ALONE	*****	3	6
Asthma cohort - ICS MONO ALONE	*****	9	11
Asthma cohort - ICS/LABA COMBO ALONE	*****	8	13
Asthma cohort - ICS/LABA COMBO ALONE	*****	10	14
Asthma cohort - IL5	*****	20	20

Table 6c. Distribution of Patients by Number of Dispensings

Exposures	Number of Dispensings		
	Number of patients	(Adjusted)	Number of Dispensings (Raw)
COPD cohort - ICS/LABA COMBO ALONE	*****	4	8
COPD cohort - ICS/LABA COMBO ALONE	*****	29	29
COPD cohort - ICS/LABA COMBO ALONE	*****	30	30
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	7	14
COPD cohort - LABA/LAMA COMBO ALONE	*****	9	10
COPD cohort - ROFLUMILAST	*****	15	15
COPD cohort - ROFLUMILAST	*****	17	17
Asthma cohort - ICS MONO ALONE	*****	1	3
Asthma cohort - ICS MONO ALONE	*****	6	9
COPD cohort - ROFLUMILAST	3,286	1	1
COPD cohort - ROFLUMILAST	1,216	2	2
Asthma cohort - ICS MONO ALONE	*****	8	12
COPD cohort - ROFLUMILAST	831	3	3
COPD cohort - ROFLUMILAST	966	4	4
COPD cohort - ROFLUMILAST	893	5	5
COPD cohort - ROFLUMILAST	581	6	6
Asthma cohort - ICS MONO ALONE	*****	11	13
COPD cohort - ROFLUMILAST	519	7	7
COPD cohort - ROFLUMILAST	514	8	8
COPD cohort - ROFLUMILAST	486	9	9
COPD cohort - ROFLUMILAST	544	10	10
COPD cohort - ROFLUMILAST	749	11	11
COPD cohort - ROFLUMILAST	1,360	12	12
COPD cohort - ROFLUMILAST	694	13	13
COPD cohort - ROFLUMILAST	42	14	14
Asthma cohort - ICS/LABA COMBO ALONE	*****	7	12
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	6	9
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	11	14
COPD cohort - LABA/LAMA COMBO ALONE	*****	5	6
COPD cohort - LAMA MONO ALONE	*****	20	20
COPD cohort - LAMA MONO ALONE	*****	21	21
COPD cohort - ROFLUMILAST	*****	18	18
COPD cohort - ROFLUMILAST	*****	21	21
COPD cohort - ROFLUMILAST	12	23	23
COPD cohort - ROFLUMILAST	*****	24	24
COPD cohort - ROFLUMILAST	15	25	25
COPD cohort - ROFLUMILAST	16	26	26
COPD cohort - ROFLUMILAST	21	27	27
Asthma cohort - ICS/LABA COMBO ALONE	*****	4	7
Asthma cohort - ICS/LABA COMBO ALONE	*****	7	11
Asthma cohort - ICS/LABA COMBO ALONE	*****	8	12
Asthma cohort - IL5	*****	15	15
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	3	5
COPD cohort - ICS/LABA COMBO AND LAMA-CONTAINING	*****	27	27
COPD cohort - LABA/LAMA COMBO ALONE	*****	7	8
COPD cohort - ROFLUMILAST	*****	20	20

*****Data are not presented in these cells due to a small sample size or to assure a small cell cannot be recalculated through the cells presented.

Figure 6.1. Scatter Plot of Raw Dispensing Patterns for Asthma Cohort - Inhaled Corticosteroids Mono-Product (ICS) Alone

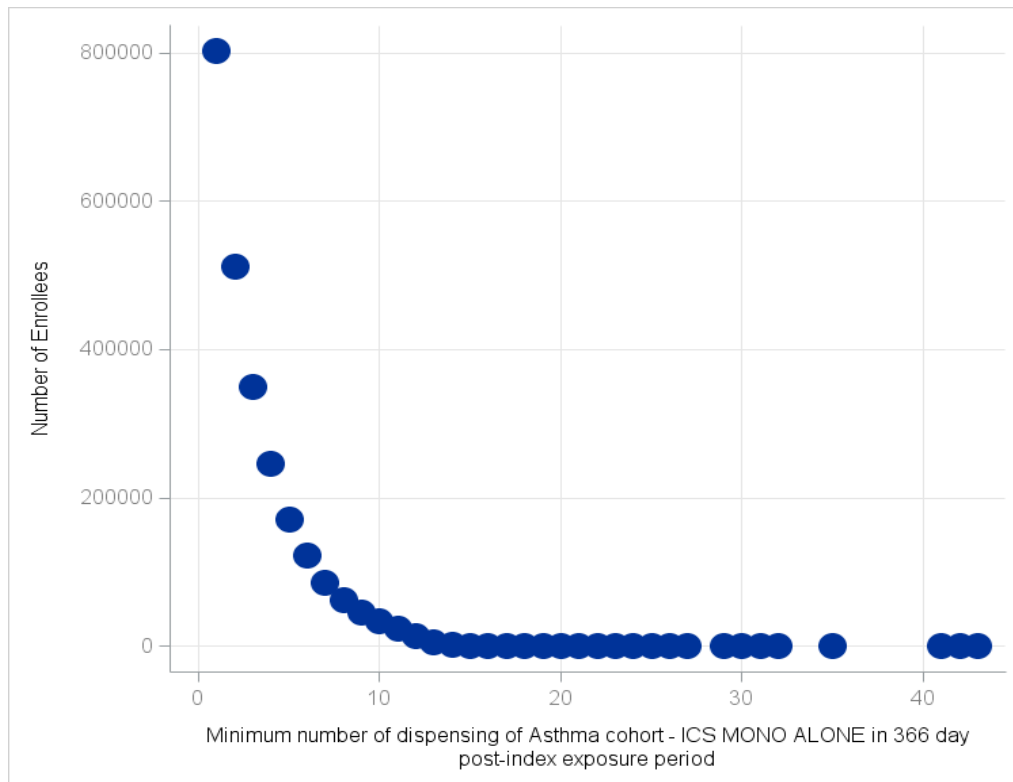


Figure 6.2. Scatter Plot of Raw Dispensing Patterns for Asthma Cohort - Inhaled Corticosteroids (ICS)/Long-Acting Beta Agonist (LABA) Combination Product Alone

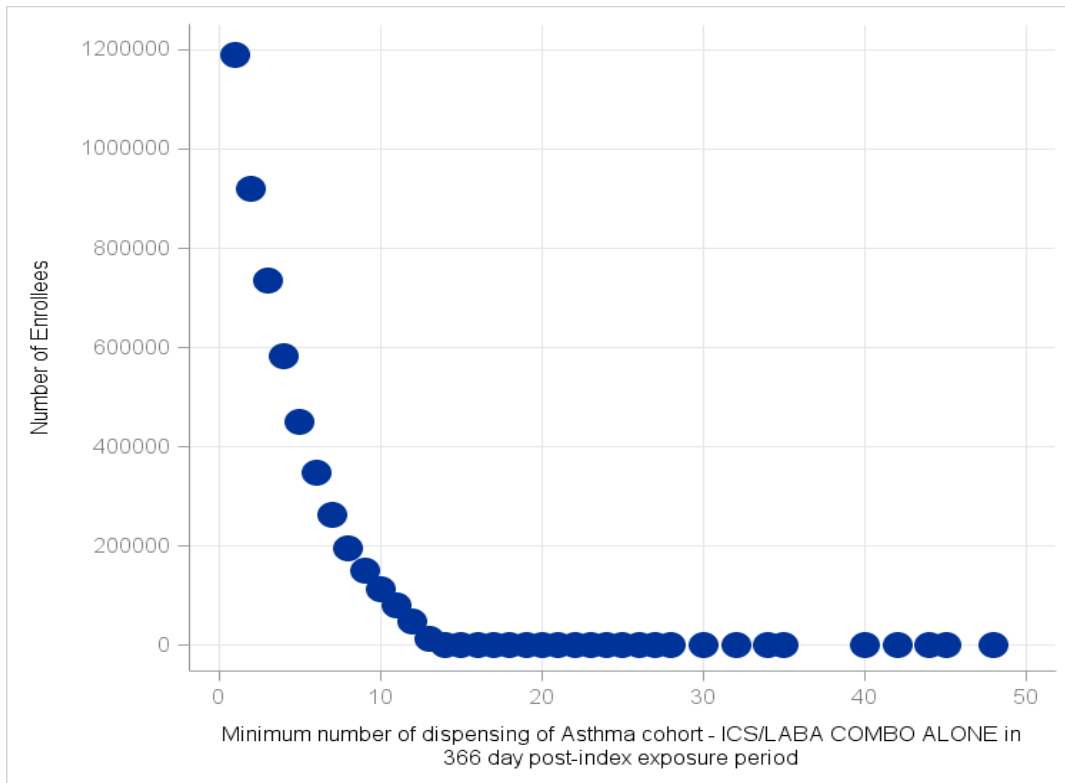


Figure 6.3. Scatter Plot of Raw Dispensing Patterns for Asthma Cohort - Interleukin 5 (IL5)

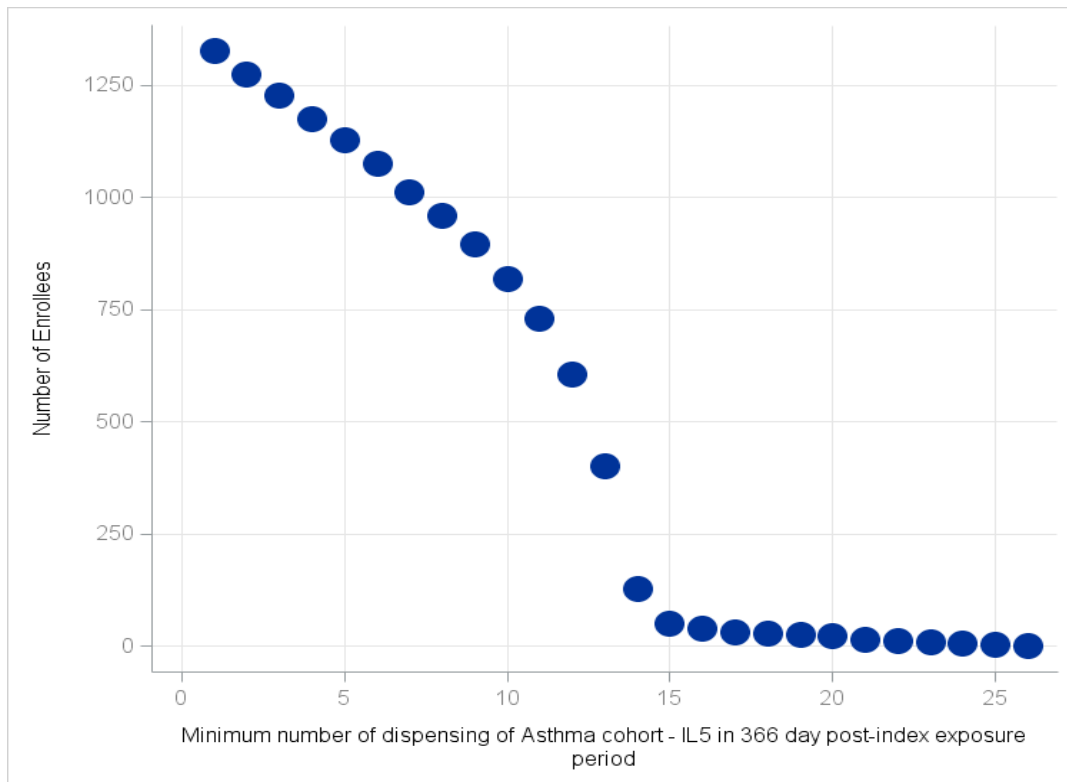


Figure 6.4. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Long-Acting Muscarinic Antagonist Mono-Product (LAMA) Alone

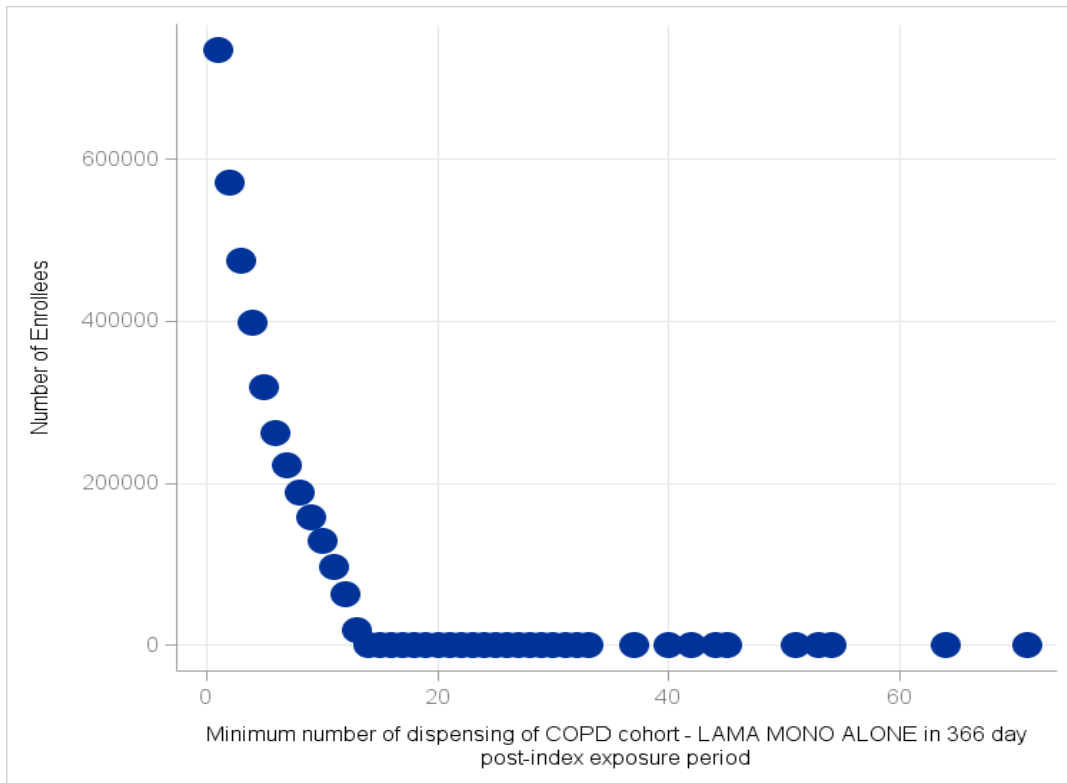


Figure 6.5. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Inhaled Corticosteroids (ICS)/Long-Acting Beta Agonist (LABA) Combination Product Alone

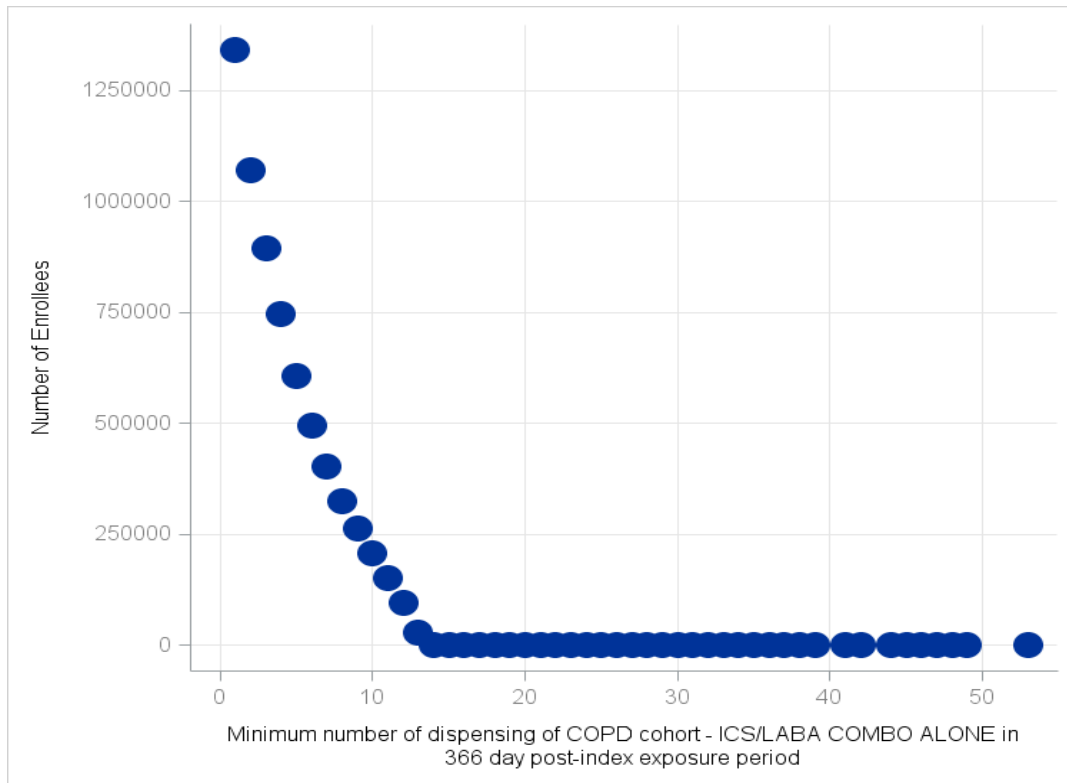


Figure 6.6. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Long-Acting Beta Agonist (LABA)/Long-Acting Muscarinic Antagonist (LAMA) Combination Product Alone

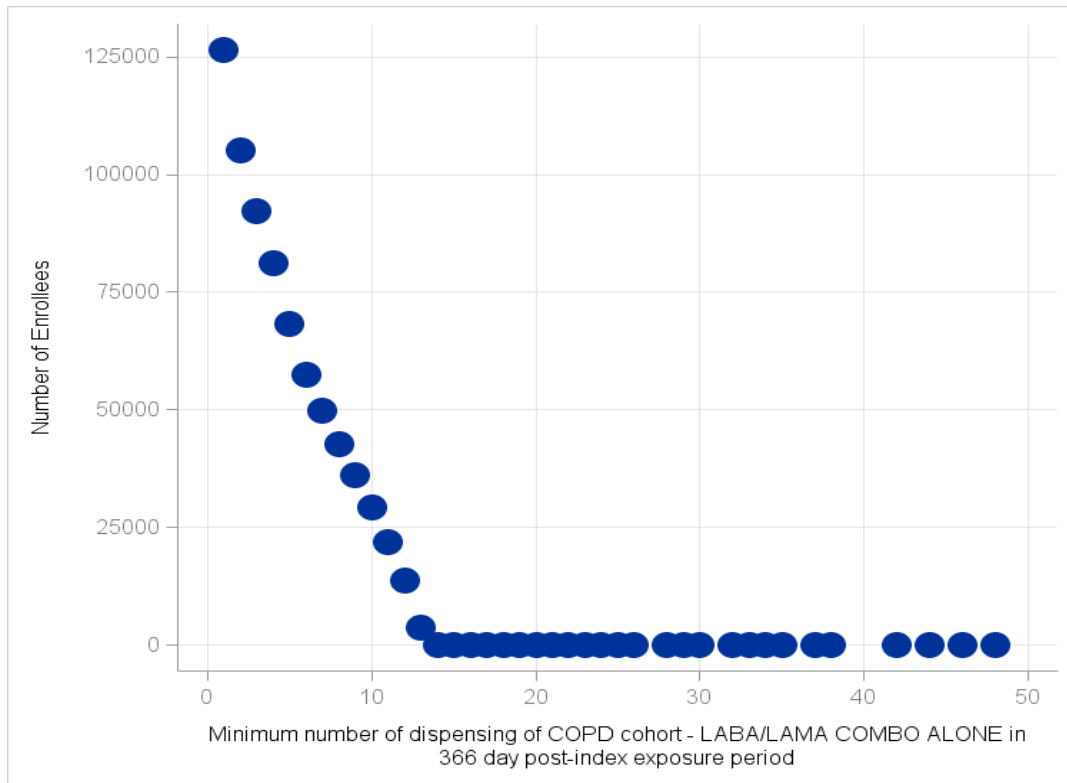


Figure 6.7. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Inhaled Corticosteroids (ICS)/Long-Acting Beta Agonist (LABA)/Long-Acting Muscarinic Antagonist (LAMA) Combination Product Alone

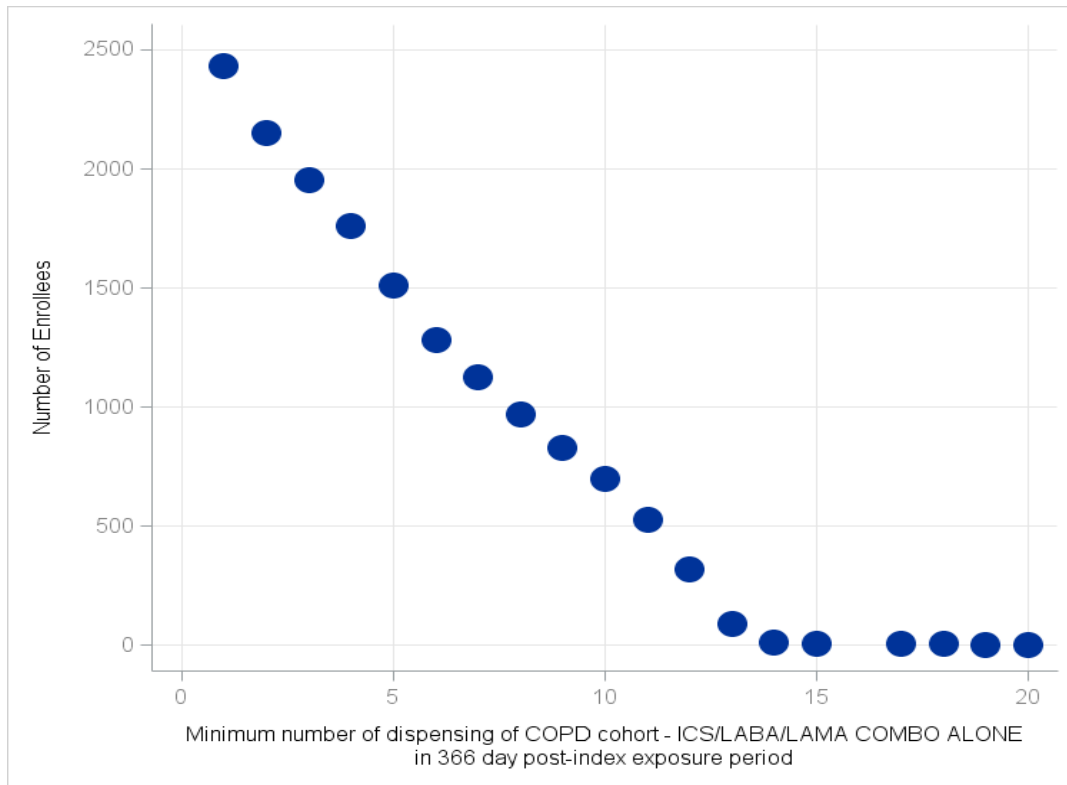


Figure 6.8. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Inhaled Corticosteroids (ICS)/Long-Acting Beta Agonist (LABA) Combination Product AND Long-Acting Muscarinic Antagonist Mono-Product (LAMA)-Containing

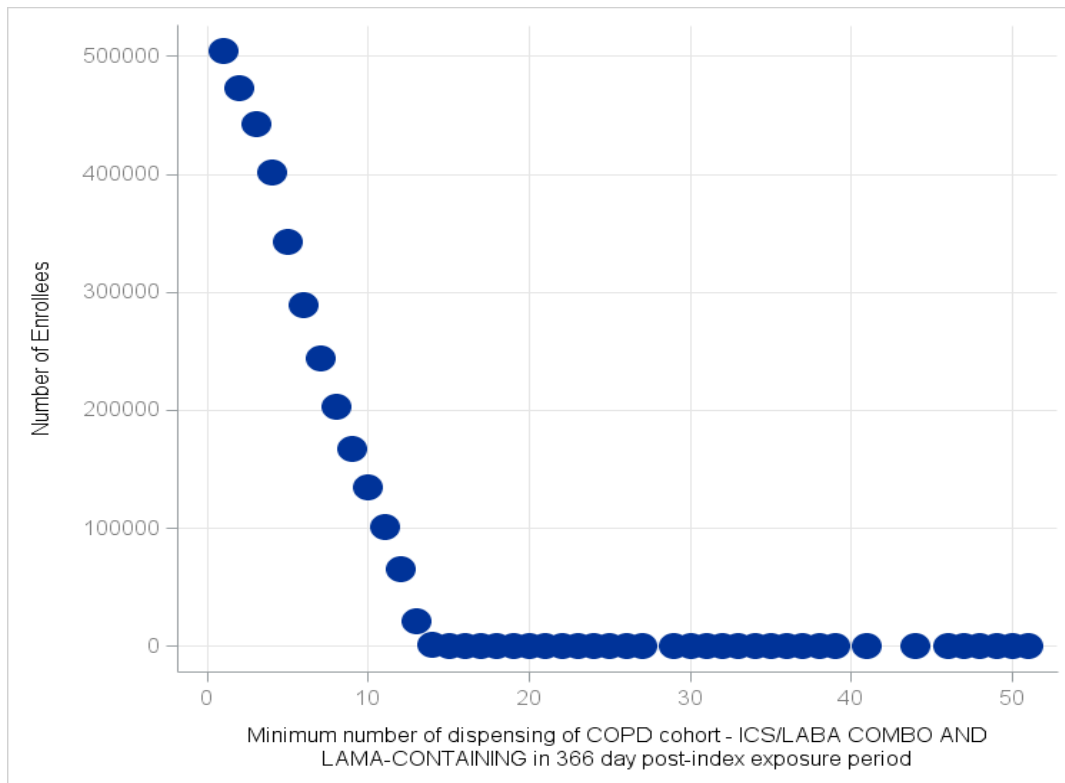


Figure 6.9. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Azithromycin (at least 14 Days of Supply)

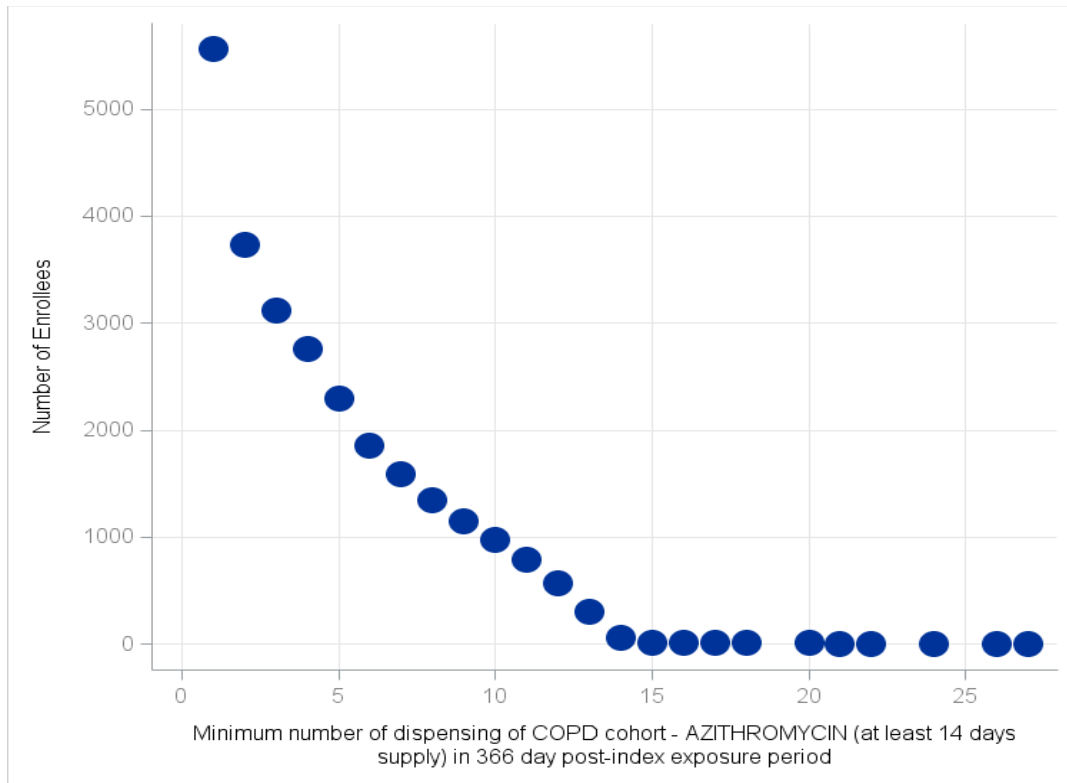
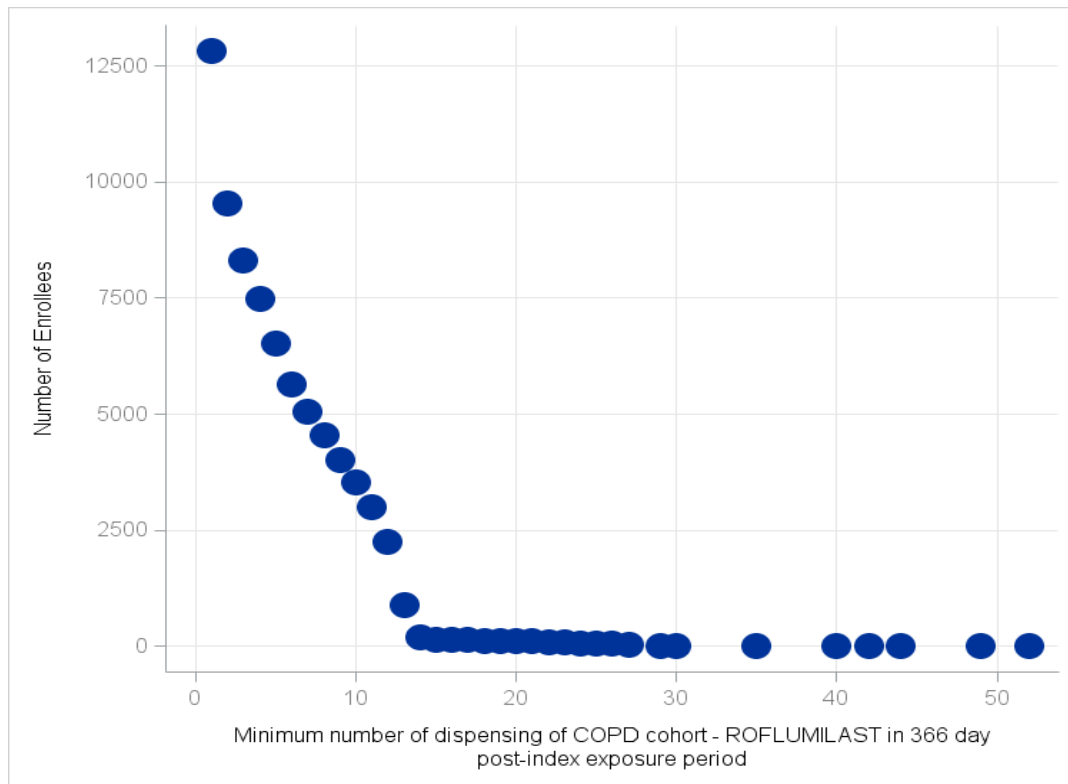


Figure 6.10. Scatter Plot of Raw Dispensing Patterns for Chronic Obstructive Pulmonary Disease (COPD) Cohort - Roflumilast



Appendix A. Start and End Dates for Each Data Partner (DP) up to Request End Date (December 31, 2019)

DP ID	Start Date ¹	End Date ¹
DP01	1/1/2000	1/31/2019
DP02	1/1/2005	7/31/2018
DP03	1/1/2000	12/31/2017
DP04	1/1/2008	3/31/2019
DP05	1/1/2000	6/30/2018
DP06	1/1/2006	6/30/2019
DP07	1/1/2000	4/30/2019
DP08	1/1/2000	2/28/2019
DP09	6/1/2007	4/30/2019
DP10	1/1/2000	7/31/2019
DP11	1/1/2004	3/31/2019
DP12	1/1/2000	3/31/2019
DP13	1/1/2000	4/30/2018
DP14	1/1/2010	3/31/2019

¹The start and end dates are based on the minimum and maximum dates within each DP. The month with the maximum date must have at least 80% of the number of records in the previous month.

Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposures and Incidence Criteria in this Request

Generic Name	Brand Name
Inhaled Corticosteroids (ICS) Mono-Product	
budesonide	budesonide
budesonide	Pulmicort
budesonide	Pulmicort Flexhaler
fluticasone furoate	Arnuity Ellipta
fluticasone propionate	Flovent HFA
fluticasone propionate	Flovent Diskus
mometasone furoate	Asmanex Twisthaler
mometasone furoate	Asmanex HFA
beclomethasone dipropionate	Qvar
beclomethasone dipropionate	Qvar RediHaler
budesonide	Pulmicort Turbuhaler
ciclesonide	Alvesco
fluticasone propionate	ArmonAir RespiClick
ICS and Long-Acting Beta Agonist (LABA) Combination Product	
mometasone furoate/formoterol fumarate	Dulera
fluticasone propionate/salmeterol xinafoate	fluticasone propion-salmeterol
fluticasone propionate/salmeterol xinafoate	Advair Diskus
fluticasone propionate/salmeterol xinafoate	Advair HFA
fluticasone furoate/vilanterol trifenate	Breo Ellipta
budesonide/formoterol fumarate	Symbicort
fluticasone propionate/salmeterol xinafoate	Wixela Inhub
fluticasone propionate/salmeterol xinafoate	AirDuo RespiClick
Interleukin 5 (IL5)	
mepolizumab	Nucala
benralizumab	Fasenra
reslizumab	Cinqair
benralizumab	Fasenra Pen
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product	
umeclidinium bromide	Incruse Ellipta
tiotropium bromide	Spiriva with HandiHaler
tiotropium bromide	Spiriva Respimat
glycopyrrolate	Seebri Neohaler
acridinium bromide	Tudorza Pressair
revedfenacin	Yupelri
glycopyrrolate/nebulizer and accessories	Lonhala Magnair Starter
glycopyrrolate/nebulizer accessories	Lonhala Magnair Refill
LABA and LAMA Combination Product	
glycopyrrolate/formoterol fumarate	Bevespi Aerosphere
indacaterol maleate/glycopyrrolate	Utibron Neohaler
tiotropium bromide/olodaterol HCl	Stiolto Respimat
umeclidinium bromide/vilanterol trifenate	Anoro Ellipta
ICS, LABA and LAMA Combination Product	
fluticasone furoate/umeclidinium bromide/vilanterol trifenate	Trelegy Ellipta

Appendix B. List of Generic and Brand Names of Medical Products Used to Define Exposures and Incidence Criteria in this Request

Generic Name	Brand Name
Azithromycin	
azithromycin	Zithromax
azithromycin	Zithromax Z-Pak
azithromycin	Zithromax TRI-PAK
azithromycin	Zmax
azithromycin	azithromycin
azithromycin	Zmax Pediatric
Roflumilast	
roflumilast	Daliresp

Appendix C. List of Healthcare Common Procedure Coding System (HCPCS) Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
Interleukin 5 (IL5) Injection			
C9466	Injection, benralizumab, 1 mg	Procedure	HCPCS
J0517	Injection, benralizumab, 1 mg	Procedure	HCPCS
C9473	Injection, mepolizumab, 1 mg	Procedure	HCPCS
J2182	Injection, mepolizumab, 1 mg	Procedure	HCPCS
C9481	Injection, reslizumab, 1 mg	Procedure	HCPCS
J2786	Injection, reslizumab, 1 mg	Procedure	HCPCS

Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion/Exclusion Criteria in this Request

Generic Name	Brand Name
Inhaled Corticosteroids (ICS) Mono-Product	
budesonide	budesonide
budesonide	Pulmicort
budesonide	Pulmicort Flexhaler
fluticasone furoate	Arnuity Ellipta
fluticasone propionate	Flovent HFA
fluticasone propionate	Flovent Diskus
mometasone furoate	Asmanex Twisthaler
mometasone furoate	Asmanex HFA
beclomethasone dipropionate	Qvar
beclomethasone dipropionate	Qvar RediHaler
budesonide	Pulmicort Turbuhaler
ciclesonide	Alvesco
fluticasone propionate	ArmonAir RespiClick
ICS and Long-Acting Beta Agonist (LABA) Combination Product	
mometasone furoate/formoterol fumarate	Dulera
fluticasone propionate/salmeterol xinafoate	fluticasone propion-salmeterol
fluticasone propionate/salmeterol xinafoate	Advair Diskus
fluticasone propionate/salmeterol xinafoate	Advair HFA
fluticasone furoate/vilanterol trifenate	Breo Ellipta
budesonide/formoterol fumarate	Symbicort
fluticasone propionate/salmeterol xinafoate	Wixela Inhub
fluticasone propionate/salmeterol xinafoate	AirDuo RespiClick
LABA Mono-Product	
indacaterol maleate	Arcapta Neohaler
olodaterol HCl	Striverdi Respimat
salmeterol xinafoate	Serevent Diskus
arformoterol tartrate	Brovana
formoterol fumarate	Foradil Aerolizer
formoterol fumarate	Perforomist
Long-Acting Muscarinic Antagonist (LAMA) Mono-Product	
umeclidinium bromide	Incruse Ellipta
tiotropium bromide	Spiriva with HandiHaler
tiotropium bromide	Spiriva Respimat
glycopyrrolate	Seebri Neohaler
aclidinium bromide	Tudorza Pressair
revefenacin	Yupelri
glycopyrrolate/nebulizer and accessories	Lonhala Magnair Starter
glycopyrrolate/nebulizer accessories	Lonhala Magnair Refill
LABA and LAMA Combination Product	
glycopyrrolate/formoterol fumarate	Bevespi Aerosphere
indacaterol maleate/glycopyrrolate	Utibron Neohaler
tiotropium bromide/olodaterol HCl	Stiolto Respimat
umeclidinium bromide/vilanterol trifenate	Anoro Ellipta
ICS, LABA and LAMA Combination Product	
fluticasone furoate/umeclidinium bromide/vilanterol trifenate	Trelegy Ellipta

Appendix D. List of Generic and Brand Names of Medical Products Used to Define Inclusion/Exclusion Criteria in this Request

Generic Name	Brand Name
Leukotriene Receptor Antagonist (LTRA)	
zafirlukast	zafirlukast
montelukast sodium	Singulair
montelukast sodium	montelukast
zileuton	Zyflo
zileuton	Zyflo CR
zileuton	zileuton
zafirlukast	Accolate
Cromolyn	
cromolyn sodium	cromolyn
cromolyn sodium	Intal 112
cromolyn sodium	Intal 200
cromolyn sodium	Intal
cromolyn sodium	Gastrocrom
Theophylline	
theophylline anhydrous	theophylline
theophylline anhydrous	Elixophyllin
theophylline anhydrous	TheoCap
theophylline anhydrous	Theochron
theophylline anhydrous	Theo-24
theophylline anhydrous	Uniphyll
theophylline in dextrose 5 % in water	theophylline in dextrose 5 %
Interleukin 4 Receptor (IL4R)	
dupilumab	Dupixent
Interleukin 5 (IL5)	
mepolizumab	Nucala
benralizumab	Fasenra
reslizumab	Cinqair
benralizumab	Fasenra Pen
Azithromycin	
azithromycin	Zithromax
azithromycin	Zithromax Z-Pak
azithromycin	Zithromax TRI-PAK
azithromycin	Zmax
azithromycin	azithromycin
azithromycin	Zmax Pediatric
Roflumilast	
roflumilast	Daliresp

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) Codes Used to Define Baseline Characteristics in this Request

Code	Description	Code Category	Code Type
Interleukin 5 (IL5) Injection			
C9466	Injection, benralizumab, 1 mg	Procedure	HCPCS
J0517	Injection, benralizumab, 1 mg	Procedure	HCPCS
C9473	Injection, mepolizumab, 1 mg	Procedure	HCPCS
J2182	Injection, mepolizumab, 1 mg	Procedure	HCPCS
C9481	Injection, reslizumab, 1 mg	Procedure	HCPCS
J2786	Injection, reslizumab, 1 mg	Procedure	HCPCS
Cromolyn Injection			
J7632	Cromolyn sodium, inhalation solution, compounded product, administered through DME, unit dose form, per 10 mg	Procedure	HCPCS
K0511	Cromolyn sodium, inhalation solution administered through DME, unit dose form, per 10 milligrams	Procedure	HCPCS
J7631	Cromolyn sodium, inhalation solution, FDA-approved final product, noncompounded, administered through DME, unit dose form, per 10 mg	Procedure	HCPCS
J7630	Cromolyn sodium, per 20 mg, inhalation solution administered through DME	Procedure	HCPCS

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
Asthma			
J45	Asthma	Diagnosis	ICD-10-CM
J45.2	Mild intermittent asthma	Diagnosis	ICD-10-CM
J45.20	Mild intermittent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.21	Mild intermittent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.22	Mild intermittent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.3	Mild persistent asthma	Diagnosis	ICD-10-CM
J45.30	Mild persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.31	Mild persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.32	Mild persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.4	Moderate persistent asthma	Diagnosis	ICD-10-CM
J45.40	Moderate persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.41	Moderate persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.42	Moderate persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.5	Severe persistent asthma	Diagnosis	ICD-10-CM
J45.50	Severe persistent asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.51	Severe persistent asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.52	Severe persistent asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.9	Other and unspecified asthma	Diagnosis	ICD-10-CM
J45.90	Unspecified asthma	Diagnosis	ICD-10-CM
J45.901	Unspecified asthma with (acute) exacerbation	Diagnosis	ICD-10-CM
J45.902	Unspecified asthma with status asthmaticus	Diagnosis	ICD-10-CM
J45.909	Unspecified asthma, uncomplicated	Diagnosis	ICD-10-CM
J45.99	Other asthma	Diagnosis	ICD-10-CM
J45.991	Cough variant asthma	Diagnosis	ICD-10-CM
J45.998	Other asthma	Diagnosis	ICD-10-CM
493.00	Extrinsic asthma, unspecified	Diagnosis	ICD-9-CM
493.10	Intrinsic asthma, unspecified	Diagnosis	ICD-9-CM
493.02	Extrinsic asthma, with (acute) exacerbation	Diagnosis	ICD-9-CM
493.12	Intrinsic asthma, with (acute) exacerbation	Diagnosis	ICD-9-CM
493.01	Extrinsic asthma with status asthmaticus	Diagnosis	ICD-9-CM
493.11	Intrinsic asthma with status asthmaticus	Diagnosis	ICD-9-CM
493.92	Asthma, unspecified, with (acute) exacerbation	Diagnosis	ICD-9-CM
493.91	Asthma, unspecified with status asthmaticus	Diagnosis	ICD-9-CM
493.90	Asthma, unspecified, unspecified status	Diagnosis	ICD-9-CM
493.82	Cough variant asthma	Diagnosis	ICD-9-CM
493.20	Chronic obstructive asthma, unspecified ICD-9-CM	Diagnosis	ICD-9-CM
493.21	Chronic obstructive asthma with status asthmaticus ICD-9-CM	Diagnosis	ICD-9-CM
493.22	Chronic obstructive asthma, with (acute) exacerbation ICD-9-CM	Diagnosis	ICD-9-CM
Chronic Obstructive Pulmonary Disease (COPD)			
491.0	Simple chronic bronchitis	Diagnosis	ICD-9-CM
491.1	Mucopurulent chronic bronchitis	Diagnosis	ICD-9-CM
491.20	Obstructive chronic bronchitis, without exacerbation	Diagnosis	ICD-9-CM
491.21	Obstructive chronic bronchitis, with (acute) exacerbation	Diagnosis	ICD-9-CM
491.22	Obstructive chronic bronchitis with acute bronchitis	Diagnosis	ICD-9-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
491.8	Other chronic bronchitis	Diagnosis	ICD-9-CM
491.9	Unspecified chronic bronchitis	Diagnosis	ICD-9-CM
492.0	Emphysematous bleb	Diagnosis	ICD-9-CM
492.8	Other emphysema	Diagnosis	ICD-9-CM
496	Chronic airway obstruction, not elsewhere classified	Diagnosis	ICD-9-CM
J41	Simple and mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J41.0	Simple chronic bronchitis	Diagnosis	ICD-10-CM
J41.1	Mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J41.8	Mixed simple and mucopurulent chronic bronchitis	Diagnosis	ICD-10-CM
J42	Unspecified chronic bronchitis	Diagnosis	ICD-10-CM
J43	Emphysema	Diagnosis	ICD-10-CM
J43.1	Panlobular emphysema	Diagnosis	ICD-10-CM
J43.2	Centrilobular emphysema	Diagnosis	ICD-10-CM
J43.8	Other emphysema	Diagnosis	ICD-10-CM
J43.9	Emphysema, unspecified	Diagnosis	ICD-10-CM
J44	Other chronic obstructive pulmonary disease	Diagnosis	ICD-10-CM
J44.0	Chronic obstructive pulmonary disease with acute lower respiratory infection	Diagnosis	ICD-10-CM
J44.1	Chronic obstructive pulmonary disease with (acute) exacerbation	Diagnosis	ICD-10-CM
J44.9	Chronic obstructive pulmonary disease, unspecified	Diagnosis	ICD-10-CM
Alpha-1-antitrypsin deficiency			
273.4	Alpha-1-antitrypsin deficiency	Diagnosis	ICD-9-CM
E88.01	Alpha-1-antitrypsin deficiency	Diagnosis	ICD-10-CM
Bronchiectasis			
J47	Bronchiectasis	Diagnosis	ICD-10-CM
J47.0	Bronchiectasis with acute lower respiratory infection	Diagnosis	ICD-10-CM
J47.1	Bronchiectasis with (acute) exacerbation	Diagnosis	ICD-10-CM
J47.9	Bronchiectasis, uncomplicated	Diagnosis	ICD-10-CM
Q33.4	Congenital bronchiectasis	Diagnosis	ICD-10-CM
A15.0	Tuberculous bronchiectasis (current disease)	Diagnosis	ICD-10-CM
494.0	Bronchiectasis without acute exacerbation	Diagnosis	ICD-9-CM
494.1	Bronchiectasis with acute exacerbation	Diagnosis	ICD-9-CM
748.61	Congenital bronchiectasis	Diagnosis	ICD-9-CM
011.90	Unspecified pulmonary tuberculosis, confirmation unspecified	Diagnosis	ICD-9-CM
011.00	Tuberculosis of lung, infiltrative, confirmation unspecified	Diagnosis	ICD-9-CM
011.01	Tuberculosis of lung, infiltrative, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.02	Tuberculosis of lung, infiltrative, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.03	Tuberculosis of lung, infiltrative, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.04	Tuberculosis of lung, infiltrative, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.05	Tuberculosis of lung, infiltrative, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
011.06	Tuberculosis of lung, infiltrative, tubercle bacilli not found bacteriological or histological examination, but tuberculosis confirmed by other methods (inoculation of animals)	Diagnosis	ICD-9-CM
011.10	Tuberculosis of lung, nodular, confirmation unspecified	Diagnosis	ICD-9-CM
011.11	Tuberculosis of lung, nodular, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.12	Tuberculosis of lung, nodular, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.13	Tuberculosis of lung, nodular, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.14	Tuberculosis of lung, nodular, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.15	Tuberculosis of lung, nodular, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.16	Tuberculosis of lung, nodular, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
011.20	Tuberculosis of lung with cavitation, confirmation unspecified	Diagnosis	ICD-9-CM
011.21	Tuberculosis of lung with cavitation, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.22	Tuberculosis of lung with cavitation, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.23	Tuberculosis of lung with cavitation, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.24	Tuberculosis of lung with cavitation, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.25	Tuberculosis of lung with cavitation, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.26	Tuberculosis of lung with cavitation, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
011.40	Tuberculous fibrosis of lung, confirmation unspecified	Diagnosis	ICD-9-CM
011.41	Tuberculous fibrosis of lung, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.42	Tuberculous fibrosis of lung, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.43	Tuberculous fibrosis of lung, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.44	Tuberculous fibrosis of lung, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.45	Tuberculous fibrosis of lung, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.46	Tuberculous fibrosis of lung, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
011.50	Tuberculous bronchiectasis, confirmation unspecified	Diagnosis	ICD-9-CM
011.51	Tuberculous bronchiectasis, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.52	Tuberculous bronchiectasis, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.53	Tuberculous bronchiectasis, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.54	Tuberculous bronchiectasis, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.55	Tuberculous bronchiectasis, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.56	Tuberculous bronchiectasis, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
011.60	Tuberculous pneumonia (any form), confirmation unspecified	Diagnosis	ICD-9-CM
011.61	Tuberculous pneumonia (any form), bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.62	Tuberculous pneumonia (any form), bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.63	Tuberculous pneumonia (any form), tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.64	Tuberculous pneumonia (any form), tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.65	Tuberculous pneumonia (any form), tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.66	Tuberculous pneumonia (any form), tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
011.70	Tuberculous pneumothorax, confirmation unspecified	Diagnosis	ICD-9-CM
011.71	Tuberculous pneumothorax, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.72	Tuberculous pneumothorax, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.73	Tuberculous pneumothorax, tubercle bacilli not found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.74	Tuberculous pneumothorax, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.75	Tuberculous pneumothorax, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.76	Tuberculous pneumothorax, tubercle bacilli not found by bacteriological or histological examination but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
011.80	Other specified pulmonary tuberculosis, confirmation unspecified	Diagnosis	ICD-9-CM
011.81	Other specified pulmonary tuberculosis, bacteriological or histological examination not done	Diagnosis	ICD-9-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
011.82	Other specified pulmonary tuberculosis, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.83	Other specified pulmonary tuberculosis, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.84	Other specified pulmonary tuberculosis, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.85	Other specified pulmonary tuberculosis, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.86	Other specified pulmonary tuberculosis, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
011.91	Unspecified pulmonary tuberculosis, bacteriological or histological examination not done	Diagnosis	ICD-9-CM
011.92	Unspecified pulmonary tuberculosis, bacteriological or histological examination unknown (at present)	Diagnosis	ICD-9-CM
011.93	Unspecified pulmonary tuberculosis, tubercle bacilli found (in sputum) by microscopy	Diagnosis	ICD-9-CM
011.94	Unspecified pulmonary tuberculosis, tubercle bacilli not found (in sputum) by microscopy, but found by bacterial culture	Diagnosis	ICD-9-CM
011.95	Unspecified pulmonary tuberculosis, tubercle bacilli not found by bacteriological examination, but tuberculosis confirmed histologically	Diagnosis	ICD-9-CM
011.96	Unspecified pulmonary tuberculosis, tubercle bacilli not found by bacteriological or histological examination, but tuberculosis confirmed by other methods [inoculation of animals]	Diagnosis	ICD-9-CM
Cystic Fibrosis			
E84	Cystic fibrosis	Diagnosis	ICD-10-CM
E84.0	Cystic fibrosis with pulmonary manifestations	Diagnosis	ICD-10-CM
E84.1	Cystic fibrosis with intestinal manifestations	Diagnosis	ICD-10-CM
E84.11	Meconium ileus in cystic fibrosis	Diagnosis	ICD-10-CM
E84.19	Cystic fibrosis with other intestinal manifestations	Diagnosis	ICD-10-CM
E84.8	Cystic fibrosis with other manifestations	Diagnosis	ICD-10-CM
E84.9	Cystic fibrosis, unspecified	Diagnosis	ICD-10-CM
277.00	Cystic fibrosis without mention of meconium ileus	Diagnosis	ICD-9-CM
277.01	Cystic fibrosis with meconium ileus	Diagnosis	ICD-9-CM
277.02	Cystic fibrosis with pulmonary manifestations	Diagnosis	ICD-9-CM
277.03	Cystic fibrosis with gastrointestinal manifestations	Diagnosis	ICD-9-CM
277.09	Cystic fibrosis with other manifestations	Diagnosis	ICD-9-CM
Sarcoidosis			
D86	Sarcoidosis	Diagnosis	ICD-10-CM
D860	Sarcoidosis of lung	Diagnosis	ICD-10-CM
D861	Sarcoidosis of lymph nodes	Diagnosis	ICD-10-CM
D862	Sarcoidosis of lung with sarcoidosis of lymph nodes	Diagnosis	ICD-10-CM
D863	Sarcoidosis of skin	Diagnosis	ICD-10-CM
D868	Sarcoidosis of other sites	Diagnosis	ICD-10-CM
D8681	Sarcoid meningitis	Diagnosis	ICD-10-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
D8682	Multiple cranial nerve palsies in sarcoidosis	Diagnosis	ICD-10-CM
D8683	Sarcoid iridocyclitis	Diagnosis	ICD-10-CM
D8684	Sarcoid pyelonephritis	Diagnosis	ICD-10-CM
D8685	Sarcoid myocarditis	Diagnosis	ICD-10-CM
D8686	Sarcoid arthropathy	Diagnosis	ICD-10-CM
D8687	Sarcoid myositis	Diagnosis	ICD-10-CM
D8689	Sarcoidosis of other sites	Diagnosis	ICD-10-CM
D869	Sarcoidosis, unspecified	Diagnosis	ICD-10-CM
135	Sarcoidosis	Diagnosis	ICD-9-CM
Interstitial Lung Disease (ILD), Pneumoconiosis and Miscellaneous Lung Diseases			
J84	Other interstitial pulmonary diseases	Diagnosis	ICD-10-CM
J84.0	Alveolar and parieto-alveolar conditions	Diagnosis	ICD-10-CM
J84.01	Alveolar proteinosis	Diagnosis	ICD-10-CM
J84.02	Pulmonary alveolar microlithiasis	Diagnosis	ICD-10-CM
J84.03	Idiopathic pulmonary hemosiderosis	Diagnosis	ICD-10-CM
J84.09	Other alveolar and parieto-alveolar conditions	Diagnosis	ICD-10-CM
J84.1	Other interstitial pulmonary diseases with fibrosis	Diagnosis	ICD-10-CM
J84.11	Idiopathic interstitial pneumonia	Diagnosis	ICD-10-CM
J84.111	Idiopathic interstitial pneumonia, not otherwise specified	Diagnosis	ICD-10-CM
J84.112	Idiopathic pulmonary fibrosis	Diagnosis	ICD-10-CM
J84.113	Idiopathic non-specific interstitial pneumonitis	Diagnosis	ICD-10-CM
J84.114	Acute interstitial pneumonitis	Diagnosis	ICD-10-CM
J84.115	Respiratory bronchiolitis interstitial lung disease	Diagnosis	ICD-10-CM
J84.116	Cryptogenic organizing pneumonia	Diagnosis	ICD-10-CM
J84.117	Desquamative interstitial pneumonia	Diagnosis	ICD-10-CM
J84.17	Other interstitial pulmonary diseases with fibrosis in diseases classified elsewhere	Diagnosis	ICD-10-CM
J84.2	Lymphoid interstitial pneumonia	Diagnosis	ICD-10-CM
J84.8	Other specified interstitial pulmonary diseases	Diagnosis	ICD-10-CM
J84.81	Lymphangioleiomyomatosis	Diagnosis	ICD-10-CM
J84.82	Adult pulmonary Langerhans cell histiocytosis	Diagnosis	ICD-10-CM
J84.83	Surfactant mutations of the lung	Diagnosis	ICD-10-CM
J84.84	Other interstitial lung diseases of childhood	Diagnosis	ICD-10-CM
J84.841	Neuroendocrine cell hyperplasia of infancy	Diagnosis	ICD-10-CM
J84.842	Pulmonary interstitial glycogenosis	Diagnosis	ICD-10-CM
J84.843	Alveolar capillary dysplasia with vein misalignment	Diagnosis	ICD-10-CM
J84.848	Other interstitial lung diseases of childhood	Diagnosis	ICD-10-CM
J84.89	Other specified interstitial pulmonary diseases	Diagnosis	ICD-10-CM
J84.9	Interstitial pulmonary disease, unspecified	Diagnosis	ICD-10-CM
J60	Coalworker's pneumoconiosis	Diagnosis	ICD-10-CM
J61	Pneumoconiosis due to asbestos and other mineral fibers	Diagnosis	ICD-10-CM
J62	Pneumoconiosis due to dust containing silica	Diagnosis	ICD-10-CM
J63	Pneumoconiosis due to other inorganic dusts	Diagnosis	ICD-10-CM
J64	Unspecified pneumoconiosis	Diagnosis	ICD-10-CM
J65	Pneumoconiosis associated with tuberculosis	Diagnosis	ICD-10-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
J66	Airway disease due to specific organic dust	Diagnosis	ICD-10-CM
J67	Hypersensitivity pneumonitis due to organic dust	Diagnosis	ICD-10-CM
J68	Respiratory conditions due to inhalation of chemicals, gases, fumes and vapors	Diagnosis	ICD-10-CM
J69	Pneumonitis due to solids and liquids	Diagnosis	ICD-10-CM
J70	Respiratory conditions due to other external agents	Diagnosis	ICD-10-CM
J70.0	Acute pulmonary manifestations due to radiation	Diagnosis	ICD-10-CM
J70.1	Chronic and other pulmonary manifestations due to radiation	Diagnosis	ICD-10-CM
J70.2	Acute drug-induced interstitial lung disorders	Diagnosis	ICD-10-CM
J70.3	Chronic drug-induced interstitial lung disorders	Diagnosis	ICD-10-CM
J70.4	Drug-induced interstitial lung disorders, unspecified	Diagnosis	ICD-10-CM
J70.5	Respiratory conditions due to smoke inhalation	Diagnosis	ICD-10-CM
J70.8	Respiratory conditions due to other specified external agents	Diagnosis	ICD-10-CM
J70.9	Respiratory conditions due to unspecified external agent	Diagnosis	ICD-10-CM
516.34	Respiratory bronchiolitis interstitial lung disease	Diagnosis	ICD-9-CM
516.69	Other interstitial lung diseases of childhood	Diagnosis	ICD-9-CM
516.0	Pulmonary alveolar proteinosis	Diagnosis	ICD-9-CM
516.2	Pulmonary alveolar microlithiasis	Diagnosis	ICD-9-CM
516.1	Idiopathic pulmonary hemosiderosis	Diagnosis	ICD-9-CM
516.8	Other specified alveolar and parietoalveolar pneumonopathies	Diagnosis	ICD-9-CM
516.30	Idiopathic interstitial pneumonia, not otherwise specified	Diagnosis	ICD-9-CM
516.31	Idiopathic pulmonary fibrosis	Diagnosis	ICD-9-CM
516.32	Idiopathic non-specific interstitial pneumonitis	Diagnosis	ICD-9-CM
516.33	Acute interstitial pneumonitis	Diagnosis	ICD-9-CM
516.36	Cryptogenic organizing pneumonia	Diagnosis	ICD-9-CM
516.37	Desquamative interstitial pneumonia	Diagnosis	ICD-9-CM
515	Postinflammatory pulmonary fibrosis	Diagnosis	ICD-9-CM
516.35	Idiopathic lymphoid interstitial pneumonia	Diagnosis	ICD-9-CM
516.4	Lymphangioleiomyomatosis	Diagnosis	ICD-9-CM
516.5	Adult pulmonary Langerhans cell histiocytosis	Diagnosis	ICD-9-CM
516.63	Surfactant mutations of the lung	Diagnosis	ICD-9-CM
516.61	Neuroendocrine cell hyperplasia of infancy	Diagnosis	ICD-9-CM
516.62	Pulmonary interstitial glycogenosis	Diagnosis	ICD-9-CM
516.64	Alveolar capillary dysplasia with vein misalignment	Diagnosis	ICD-9-CM
516.9	Unspecified alveolar and parietoalveolar pneumonopathy	Diagnosis	ICD-9-CM
500	Coal workers' pneumoconiosis	Diagnosis	ICD-9-CM
501	Asbestosis	Diagnosis	ICD-9-CM
505	Unspecified pneumoconiosis	Diagnosis	ICD-9-CM
508.0	Acute pulmonary manifestations due to radiation	Diagnosis	ICD-9-CM
508.1	Chronic and other pulmonary manifestations due to radiation	Diagnosis	ICD-9-CM
508.8	Respiratory conditions due to other specified external agents	Diagnosis	ICD-9-CM
508.2	Respiratory conditions due to smoke inhalation	Diagnosis	ICD-9-CM
508.9	Respiratory conditions due to unspecified external agent	Diagnosis	ICD-9-CM
502	Pneumoconiosis due to other silica or silicates	Diagnosis	ICD-9-CM
503	Pneumoconiosis due to other inorganic dust	Diagnosis	ICD-9-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
Other Lung Diseases			
011	Pulmonary tuberculosis	Diagnosis	ICD-9-CM
012	Other respiratory tuberculosis	Diagnosis	ICD-9-CM
495	Extrinsic allergic alveolitis	Diagnosis	ICD-9-CM
510.0	Empyema with fistula	Diagnosis	ICD-9-CM
510.9	Empyema without mention of fistula	Diagnosis	ICD-9-CM
511.0	Pleurisy without mention of effusion or current tuberculosis	Diagnosis	ICD-9-CM
511.1	Pleurisy with effusion, with mention of bacterial cause other than tuberculosis	Diagnosis	ICD-9-CM
511.8	Other specified forms of pleural effusion, except tuberculous	Diagnosis	ICD-9-CM
511.81	Malignant pleural effusion	Diagnosis	ICD-9-CM
511.89	Other specified forms of effusion, except tuberculous	Diagnosis	ICD-9-CM
511.9	Unspecified pleural effusion	Diagnosis	ICD-9-CM
512.0	Spontaneous tension pneumothorax	Diagnosis	ICD-9-CM
512.1	Iatrogenic pneumothorax	Diagnosis	ICD-9-CM
512.2	Postoperative air leak	Diagnosis	ICD-9-CM
512.8	Other pneumothorax and air leak	Diagnosis	ICD-9-CM
512.81	Primary spontaneous pneumothorax	Diagnosis	ICD-9-CM
512.82	Secondary spontaneous pneumothorax	Diagnosis	ICD-9-CM
512.83	Chronic pneumothorax	Diagnosis	ICD-9-CM
512.84	Other air leak	Diagnosis	ICD-9-CM
512.89	Other pneumothorax	Diagnosis	ICD-9-CM
513.0	Abscess of lung	Diagnosis	ICD-9-CM
513.1	Abscess of mediastinum	Diagnosis	ICD-9-CM
516.3	Idiopathic interstitial pneumonia	Diagnosis	ICD-9-CM
516.6	Interstitial lung diseases of childhood	Diagnosis	ICD-9-CM
517.1	Rheumatic pneumonia	Diagnosis	ICD-9-CM
517.2	Lung involvement in systemic sclerosis	Diagnosis	ICD-9-CM
517.3	Acute chest syndrome	Diagnosis	ICD-9-CM
517.8	Lung involvement in other diseases classified elsewhere	Diagnosis	ICD-9-CM
518.0	Pulmonary collapse	Diagnosis	ICD-9-CM
518.1	Interstitial emphysema	Diagnosis	ICD-9-CM
518.2	Compensatory emphysema	Diagnosis	ICD-9-CM
518.3	Pulmonary eosinophilia	Diagnosis	ICD-9-CM
518.4	Unspecified acute edema of lung	Diagnosis	ICD-9-CM
518.5	Pulmonary insufficiency following trauma and surgery	Diagnosis	ICD-9-CM
518.51	Acute respiratory failure following trauma and surgery	Diagnosis	ICD-9-CM
518.52	Other pulmonary insufficiency, not elsewhere classified, following trauma and surgery	Diagnosis	ICD-9-CM
518.53	Acute and chronic respiratory failure following trauma and surgery	Diagnosis	ICD-9-CM
518.6	Allergic bronchopulmonary aspergillosis	Diagnosis	ICD-9-CM
518.7	Transfusion related acute lung injury [TRALI]	Diagnosis	ICD-9-CM
518.8	Other diseases of lung	Diagnosis	ICD-9-CM
518.81	Acute respiratory failure	Diagnosis	ICD-9-CM
518.82	Other pulmonary insufficiency, not elsewhere classified	Diagnosis	ICD-9-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
518.83	Chronic respiratory failure	Diagnosis	ICD-9-CM
518.84	Acute and chronic respiratory failure	Diagnosis	ICD-9-CM
518.89	Other diseases of lung, not elsewhere classified	Diagnosis	ICD-9-CM
519.0	Tracheostomy complications	Diagnosis	ICD-9-CM
519.00	Unspecified tracheostomy complication	Diagnosis	ICD-9-CM
519.01	Infection of tracheostomy	Diagnosis	ICD-9-CM
519.02	Mechanical complication of tracheostomy	Diagnosis	ICD-9-CM
519.09	Other tracheostomy complications	Diagnosis	ICD-9-CM
519.1	Other diseases of trachea and bronchus, not elsewhere classified	Diagnosis	ICD-9-CM
519.11	Acute bronchospasm	Diagnosis	ICD-9-CM
519.19	Other diseases of trachea and bronchus	Diagnosis	ICD-9-CM
519.2	Mediastinitis	Diagnosis	ICD-9-CM
519.3	Other diseases of mediastinum, not elsewhere classified	Diagnosis	ICD-9-CM
519.4	Disorders of diaphragm	Diagnosis	ICD-9-CM
519.8	Other diseases of respiratory system, not elsewhere classified	Diagnosis	ICD-9-CM
519.9	Unspecified disease of respiratory system	Diagnosis	ICD-9-CM
J18.2	Hypostatic pneumonia, unspecified organism	Diagnosis	ICD-10-CM
J81.1	Chronic pulmonary edema	Diagnosis	ICD-10-CM
J84.10	Pulmonary fibrosis, unspecified	Diagnosis	ICD-10-CM
B44.81	Allergic bronchopulmonary aspergillosis	Diagnosis	ICD-10-CM
D57.01	Hb-SS disease with acute chest syndrome	Diagnosis	ICD-10-CM
D57.211	Sickle-cell/Hb-C disease with acute chest syndrome	Diagnosis	ICD-10-CM
D57.411	Sickle-cell thalassemia with acute chest syndrome	Diagnosis	ICD-10-CM
D57.811	Other sickle-cell disorders with acute chest syndrome	Diagnosis	ICD-10-CM
J17	Pneumonia in diseases classified elsewhere	Diagnosis	ICD-10-CM
J22	Unspecified acute lower respiratory infection	Diagnosis	ICD-10-CM
J39.8	Other specified diseases of upper respiratory tract	Diagnosis	ICD-10-CM
J80	Acute respiratory distress syndrome	Diagnosis	ICD-10-CM
J81.0	Acute pulmonary edema	Diagnosis	ICD-10-CM
J82	Pulmonary eosinophilia, not elsewhere classified	Diagnosis	ICD-10-CM
J85.0	Gangrene and necrosis of lung	Diagnosis	ICD-10-CM
J85.1	Abscess of lung with pneumonia	Diagnosis	ICD-10-CM
J85.2	Abscess of lung without pneumonia	Diagnosis	ICD-10-CM
J85.3	Abscess of mediastinum	Diagnosis	ICD-10-CM
J86.0	Pyothorax with fistula	Diagnosis	ICD-10-CM
J86.9	Pyothorax without fistula	Diagnosis	ICD-10-CM
J90	Pleural effusion, not elsewhere classified	Diagnosis	ICD-10-CM
J91.0	Malignant pleural effusion	Diagnosis	ICD-10-CM
J91.8	Pleural effusion in other conditions classified elsewhere	Diagnosis	ICD-10-CM
J92.0	Pleural plaque with presence of asbestos	Diagnosis	ICD-10-CM
J92.9	Pleural plaque without asbestos	Diagnosis	ICD-10-CM
J93.0	Spontaneous tension pneumothorax	Diagnosis	ICD-10-CM
J93.11	Primary spontaneous pneumothorax	Diagnosis	ICD-10-CM
J93.12	Secondary spontaneous pneumothorax	Diagnosis	ICD-10-CM
J93.81	Chronic pneumothorax	Diagnosis	ICD-10-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
J93.82	Other air leak	Diagnosis	ICD-10-CM
J93.83	Other pneumothorax	Diagnosis	ICD-10-CM
J93.9	Pneumothorax, unspecified	Diagnosis	ICD-10-CM
J94.0	Chylous effusion	Diagnosis	ICD-10-CM
J94.1	Fibrothorax	Diagnosis	ICD-10-CM
J94.2	Hemothorax	Diagnosis	ICD-10-CM
J94.8	Other specified pleural conditions	Diagnosis	ICD-10-CM
J94.9	Pleural condition, unspecified	Diagnosis	ICD-10-CM
J95.00	Unspecified tracheostomy complication	Diagnosis	ICD-10-CM
J95.01	Hemorrhage from tracheostomy stoma	Diagnosis	ICD-10-CM
J95.02	Infection of tracheostomy stoma	Diagnosis	ICD-10-CM
J95.03	Malfunction of tracheostomy stoma	Diagnosis	ICD-10-CM
J95.04	Tracheo-esophageal fistula following tracheostomy	Diagnosis	ICD-10-CM
J95.09	Other tracheostomy complication	Diagnosis	ICD-10-CM
J95.1	Acute pulmonary insufficiency following thoracic surgery	Diagnosis	ICD-10-CM
J95.2	Acute pulmonary insufficiency following nonthoracic surgery	Diagnosis	ICD-10-CM
J95.3	Chronic pulmonary insufficiency following surgery	Diagnosis	ICD-10-CM
J95.811	Postprocedural pneumothorax	Diagnosis	ICD-10-CM
J95.812	Postprocedural air leak	Diagnosis	ICD-10-CM
J95.821	Acute postprocedural respiratory failure	Diagnosis	ICD-10-CM
J95.822	Acute and chronic postprocedural respiratory failure	Diagnosis	ICD-10-CM
J95.84	Transfusion-related acute lung injury (TRALI)	Diagnosis	ICD-10-CM
J96.00	Acute respiratory failure, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.01	Acute respiratory failure with hypoxia	Diagnosis	ICD-10-CM
J96.02	Acute respiratory failure with hypercapnia	Diagnosis	ICD-10-CM
J96.10	Chronic respiratory failure, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.11	Chronic respiratory failure with hypoxia	Diagnosis	ICD-10-CM
J96.12	Chronic respiratory failure with hypercapnia	Diagnosis	ICD-10-CM
J96.20	Acute and chronic respiratory failure, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.21	Acute and chronic respiratory failure with hypoxia	Diagnosis	ICD-10-CM
J96.22	Acute and chronic respiratory failure with hypercapnia	Diagnosis	ICD-10-CM
J96.90	Respiratory failure, unspecified, unspecified whether with hypoxia or hypercapnia	Diagnosis	ICD-10-CM
J96.91	Respiratory failure, unspecified with hypoxia	Diagnosis	ICD-10-CM
J96.92	Respiratory failure, unspecified with hypercapnia	Diagnosis	ICD-10-CM
J98.01	Acute bronchospasm	Diagnosis	ICD-10-CM
J98.09	Other diseases of bronchus, not elsewhere classified	Diagnosis	ICD-10-CM
J98.11	Atelectasis	Diagnosis	ICD-10-CM
J98.19	Other pulmonary collapse	Diagnosis	ICD-10-CM
J98.2	Interstitial emphysema	Diagnosis	ICD-10-CM
J98.3	Compensatory emphysema	Diagnosis	ICD-10-CM
J98.4	Other disorders of lung	Diagnosis	ICD-10-CM

Appendix F. List of International Classification of Diseases, Ninth and Tenth Revisions, Clinical Modification (ICD-9-CM and ICD-10-CM) Diagnosis Codes Used to Define Inclusion/Exclusion Criteria in this Request

Code	Description	Code Category	Code Type
J98.51	Mediastinitis	Diagnosis	ICD-10-CM
J98.59	Other diseases of mediastinum, not elsewhere classified	Diagnosis	ICD-10-CM
J98.6	Disorders of diaphragm	Diagnosis	ICD-10-CM
J98.8	Other specified respiratory disorders	Diagnosis	ICD-10-CM
J98.9	Respiratory disorder, unspecified	Diagnosis	ICD-10-CM
J99	Respiratory disorders in diseases classified elsewhere	Diagnosis	ICD-10-CM
M32.13	Lung involvement in systemic lupus erythematosus	Diagnosis	ICD-10-CM
M33.01	Juvenile dermatomyositis with respiratory involvement	Diagnosis	ICD-10-CM
M33.11	Other dermatomyositis with respiratory involvement	Diagnosis	ICD-10-CM
M33.21	Polymyositis with respiratory involvement	Diagnosis	ICD-10-CM
M33.91	Dermatopolymyositis, unspecified with respiratory involvement	Diagnosis	ICD-10-CM
M34.81	Systemic sclerosis with lung involvement	Diagnosis	ICD-10-CM
M35.02	Sicca syndrome with lung involvement	Diagnosis	ICD-10-CM
R06.03	Acute respiratory distress	Diagnosis	ICD-10-CM
R09.1	Pleurisy	Diagnosis	ICD-10-CM

Appendix G. Specifications Defining Parameters for this Request

This request executed the Cohort Identification and Descriptive Analysis (CIDA) tool, version 8.1.0, to examine utilization pattern of asthma and chronic obstructive pulmonary disease (COPD) treatments in the Sentinel Distributed Database (SDD).

Query period: January 1, 2008 - December 31, 2019
Coverage requirement: Medical and Drug
Pre-index enrollment requirement: 183 days
Post-index enrollment requirement: 365 days
Enrollment gap: 45 days
Age groups: 18-64, 65+
Stratifications: Overall, sex, and age group
Envelope macro: Default (Reclassify encounters during inpatient stay as inpatient)

Exposure

Scenario	Index exposure	Code list(s)	Cohort definition	Incident exposure washout period	Incident with respect to	Incidence evaluation should search for evidence of	Episode gap	Forced Days Supplied	Censor episode at evidence of
1	Inhaled Corticosteroids (ICS) Mono-Product Alone	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date
2	ICS/Long-Acting Beta Agonist (LABA) Combination Product Alone	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date

Appendix G. Specifications Defining Parameters for this Request

Scenario	Index exposure	Code list(s)	Cohort definition	Exposure					Censor episode at evidence of
				Incident exposure washout period	Incident with respect to	Incidence evaluation should search for evidence of	Episode gap	Forced Days Supplied	
3	Interleukin 5 (IL5) (with evidence of ICS/LABA combo containing product pre-index AND post-index)	See Appendices B and C	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	183 days	IL5	Days supply	0 days	NA	Death; Query End Date; Data Partner End Date
4	Long-Acting Muscarinic Antagonist (LAMA) Mono-Product	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date
5	ICS/LABA Combination Product Alone	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date
6	LABA/LAMA Combination Product Alone	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date

Appendix G. Specifications Defining Parameters for this Request

Scenario	Index exposure	Code list(s)	Cohort definition	Exposure					
				Incident exposure washout period	Incident with respect to	Incidence evaluation should search for evidence of	Episode gap	Forced Days Supplied	Censor episode at evidence of
7	ICS/LABA/LAMA Combination Product Alone	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date
8	ICS/LABA Combination Product (with evidence of 4 dispensings of LAMA-containing product post-index)	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	0 days	NA	NA	0 days	NA	Death; Query End Date; Data Partner End Date
9	Azithromycin ≥ 14 days supply (with evidence of ICS-containing, LABA-containing, and LAMA-containing products both pre-index AND post-index)	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	183 days	Azithromycin ≥ 14 days supply	Days supply	0 days	NA	Death; Query End Date; Data Partner End Date
10	Roflumilast (with evidence of ICS-containing, LABA-containing, and LAMA-containing products both pre-index AND post-index)	See Appendix B	All valid exposure episodes during query period (only the first valid exposure episode is assessed using incidence/inclusion/exclusion criteria.)	183 days	Roflumilast	Days supply	0 days	NA	Death; Query End Date; Data Partner End Date

International Classification of Diseases, Ninth and Tenth Revisions (ICD-9 and ICD-10), Healthcare Common Procedure Coding System (HCPCS), and Current Procedural Terminology (CPT) codes are provided by Optum360

NDC codes are checked against First Data Bank's "National Drug Data File (NDDF®) Plus."

Appendix G. Specifications Defining Parameters for this Request (Continued)

Scenario	Condition(s)	Inclusion / Exclusion					Inclusion/Exclusion evaluation should search for evidence of	Number of instances the criterion should be found in evaluation period
		Include or Exclude	Code list(s)	Evaluation period start	Evaluation period end	Inclusion/Exclusion care setting		
1	Asthma	Include	See Appendix F	-183	-1	Any	Date of diagnosis	1
	COPD; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	ICS/LABA combo product; or ICS/LABA/LAMA combo product; or LABA monoprodut; or LAMA monoprodut; or LABA/LAMA combo product; or LTRA; or Cromolyn; or Theophylline; or IL4R; or IL5	Exclude	See Appendices D and E	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy
2	Asthma	Include	See Appendix F	-183	-1	Any	Date of diagnosis	1
	COPD; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	ICS monoprodut; or LABA monoprodut; or LAMA monoprodut; or LABA/LAMA combo product; or ICS/LABA/LAMA combo product; or LTRA; or Cromolyn; or Theophylline; or IL4R; or IL5	Exclude	See Appendices D and E	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy

Appendix G. Specifications Defining Parameters for this Request (Continued)

Inclusion / Exclusion								
Scenario	Condition(s)	Include or Exclude	Code list(s)	Evaluation period start	Evaluation period end	Inclusion/ Exclusion care setting	Inclusion/Exclusion evaluation should search for evidence of	Number of instances the criterion should be found in evaluation period
	Asthma; and	Include	See Appendices D and F	-183	-1	Any	Date of diagnosis	1
	ICS/LABA combo containing, pre-index;			-183	-1	Any	Date of dispensing	1
	and ICS/LABA combo containing, post-index			0	365	Any	Date of dispensing	1
3	COPD; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
4	COPD	Include	See Appendix F	-183	-1	Any	Date of diagnosis	1
	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	ICS monoprodut; or ICS/LABA combo product; or ICS/LABA/LAMA combo product; or LABA monoprodut; or LABA/LAMA combo product; or Roflumilast; or Theophylline	Exclude	See Appendix D	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy

Appendix G. Specifications Defining Parameters for this Request (Continued)

Inclusion / Exclusion								
Scenario	Condition(s)	Include or Exclude	Code list(s)	Evaluation period start	Evaluation period end	Inclusion/ Exclusion care setting	Inclusion/Exclusion evaluation should search for evidence of	Number of instances the criterion should be found in evaluation period
5	COPD	Include	See Appendix F	-183	-1	Any	Date of diagnosis	1
	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	ICS monoprodut; or LABA monoprodut; or LAMA monoprodut; or LABA/LAMA combo produt; or ICS/LABA/LAMA combo produt; or Roflumilast; or Theophylline	Exclude	See Appendix D	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy
6	COPD	Include	COPD	-183	-1	Any	Date of diagnosis	1
	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	ICS monoprodut; or LABA monoprodut; or LAMA monoprodut; or ICS/LABA combo produt; or ICS/LABA/LAMA combo produt; or Roflumilast; or Theophylline	Exclude	See Appendix D	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy

Appendix G. Specifications Defining Parameters for this Request (Continued)

Inclusion / Exclusion								
Scenario	Condition(s)	Include or Exclude	Code list(s)	Evaluation period start	Evaluation period end	Inclusion/ Exclusion care setting	Inclusion/Exclusion evaluation should search for evidence of	Number of instances the criterion should be found in evaluation period
7	COPD	Include	See Appendix F	-183	-1	Any	Date of diagnosis	1
	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	ICS monoprodukt; or LABA monoprodukt; or LAMA monoprodukt; or ICS/LABA combo produkt; or LABA/LAMA combo produkt; or Roflumilast; or Theophylline	Exclude	See Appendix D	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy
	COPD; and LAMA-containing produkt	Include	See Appendices D and F	-183 0	-1 365	Any Any	Date of diagnosis Date of dispensing	1 4
8	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	Roflumilast; or Theophylline	Exclude	See Appendix D	0	365	Any	Date of dispensing	2 of any exclusion maintenance therapy

Appendix G. Specifications Defining Parameters for this Request (Continued)

Scenario	Condition(s)	Inclusion / Exclusion					Inclusion/Exclusion evaluation should search for evidence of	Number of instances the criterion should be found in evaluation period
		Include or Exclude	Code list(s)	Evaluation period start	Evaluation period end	Inclusion/Exclusion care setting		
9	COPD; and	Include	See Appendices D and F	-183	-1	Any	Date of diagnosis	1
	ICS-containing, pre-index; and			-183	-1	Any	Date of dispensing	1
	LABA-containing, pre-index; and			-183	-1	Any	Date of dispensing	1
	LAMA-containing, pre-index; and			-183	-1	Any	Date of dispensing	1
	ICS-containing, post-index; and			0	365	Any	Date of dispensing	1
	LABA-containing, post-index; and			0	365	Any	Date of dispensing	1
	LAMA-containing, post-index			0	365	Any	Date of dispensing	1
10	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1
	COPD; and	Include	See Appendices D and F	-183	-1	Any	Date of diagnosis	1
	ICS-containing, pre-index; and			-183	-1	Any	Date of dispensing	1
	LABA-containing, pre-index; and			-183	-1	Any	Date of dispensing	1
	LAMA-containing, pre-index; and			-183	-1	Any	Date of dispensing	1
	ICS-containing, post-index; and			0	365	Any	Date of dispensing	1
	LABA-containing, post-index; and			0	365	Any	Date of dispensing	1
LAMA-containing, post-index	0			365	Any	Date of dispensing	1	
10	Asthma; or Alpha-1-antitrypsin deficiency; or Sarcoidosis; or Cystic Fibrosis; or Bronchiectasis; or ILD, pneumoconiosis and miscellaneous; or Other lung disease	Exclude	See Appendix F	-183	0	Any	Date of diagnosis	1

ICD-9, ICD-10, HCPCS, and CPT codes are provided by Optum360.

NDC codes are checked against First Data Bank's "National Drug Data File (NDDF®) Plus."