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

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

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

The following report contains a description of the request, request specifications, and results from the modular program run(s).

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## Overview for Request: cder\_mpl1p\_wp239

**Request ID:** cder\_mpl1r\_wp239\_mkscnr\_v01

**Date Run:** January 17, 2023

**Request Description:** In this report, we compare the combined frequency of diagnosis codes for diverticulitis and colitis to examine trends in code usage surrounding the October, 2015 transition from International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) to International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes. We determined mappings by performing comprehensive code list searches in both the ICD-9 and ICD-10 eras and leveraging the Centers for Medicare and Medicaid Services (CMS) General Equivalence Mappings (GEMs). We used forward-backward mapping as part of this comprehensive approach.<sup>1</sup>

**Sentinel Routine Querying Module:** Cohort Identification and Descriptive Analysis (CIDA) module, version 12.0.0.

**Data Source:** We ran this request against a 100% sample from the Merative™ MarketScan® Research Databases which includes ~155 million members. We included data from October 1, 2010 to December 31, 2021 in this report. This report includes several distinct time periods: 1) October 1, 2013 to September 30, 2014; 2) October 1, 2014 to September 30, 2015; 3) October 1, 2015 to September 30, 2016; 4) October 1, 2016 to September 30, 2017; 5) October 1, 2010 to December 31, 2021. See Appendix A for the dates of available data used in this report.

**Study Design:** We examined the incidence and prevalence of diverticulitis and colitis across the ICD-9-CM era (October 2010-September 2015) and ICD-10-CM (October 2015-now) in data.

See Appendices B and C for specific codes used to define diverticulitis and colitis in this request.

**Cohort Eligibility Criteria:**

*Incident Cohorts:* We identified codes for diverticulitis and colitis and set this as our index date. For the one-year time periods, we defined index events using only the relevant terminologies available for use during that window. For example, in the October 2014 to September 2015 window we defined index using ICD-9-CM codes only. In the October 2015 to September 2016 window we defined index using ICD-10-CM codes only. For the October 2010 to December 2021 time period, we created separate cohorts for ICD-9 era codes and ICD-10 era codes but looked for these across the full study period. We required cohort members be continuously enrolled in plans with at least medical coverage for the 183 days prior to index, during which gaps in coverage up to 45 days were allowed and considered continuous enrollment. We defined incidence as no prior evidence of any outcome-defining code (including ICD-9 and ICD-10 terminologies) in the 183 days prior to index. Cohort re-entry was allowed. See Appendix C for specific codes used to define incidence criteria in this request.

*Prevalent Cohorts:* We identified codes for diverticulitis and colitis and set this as our index date. We created separate cohorts for ICD-9 era codes and ICD-10 era codes but looked for these across the full study period. We did not require any pre-index enrollment requirements for these cohorts. Cohort re-entry was allowed. We assessed prevalence only in the October 2010 to December 2021 time period.

**Limitations:** Algorithms used to define outcomes are imperfect; thus, it is possible that there may be misclassification. Therefore, data should be interpreted with this limitation in mind.

**Please refer to Appendix D for detailed specifications of parameters used in the analyses for this request.**

<sup>1</sup>Fung, K. W., et al. (2016). "Preparing for the ICD-10-CM Transition: Automated Methods for Translating ICD Codes in Clinical Phenotype Definitions." EGEMS (Wash DC) 4(1): 1211.

**Notes:** Please contact the Sentinel Operations Center ([info@sentinelssystem.org](mailto:info@sentinelssystem.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.sentinelssystem.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.

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

**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 1. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
<i>Diverticulitis and Colitis ICD-9-CM from 2013 to 2014</i>	1,296,709	1,315,254	49,197,330	263.57
<i>Diverticulitis and Colitis ICD-9-CM from 2014 to 2015</i>	1,023,399	1,036,969	45,037,575	227.23
<i>Diverticulitis and Colitis ICD-10-CM from 2015 to 2016</i>	472,637	480,545	29,514,134	160.14
<i>Diverticulitis and Colitis ICD-10-CM from 2016 to 2017</i>	408,647	413,548	29,790,185	137.18
<i>Diverticulitis and Colitis ICD-9-CM Incidence</i>	5,910,035	6,835,620	128,527,598	459.83
<i>Diverticulitis and Colitis ICD-10-CM Incidence</i>	1,958,626	2,238,735	128,527,598	152.39
<i>Diverticulitis and Colitis ICD-9-CM Prevalence</i>	6,938,344	13,096,147	149,022,924	465.59
<i>Diverticulitis and Colitis ICD-10-CM Prevalence</i>	2,312,209	4,549,248	149,022,924	155.16

<sup>1</sup>Eligible Members are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period.

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
<b>Diverticulitis and Colitis ICD-9-CM Incidence</b>				
<i>2010</i>				
October	126,112	126,112	43,073,630	29.28
November	134,786	134,786	42,557,506	31.67
December	141,601	141,601	43,386,785	32.64
<i>2011</i>				
January	118,610	118,610	37,623,457	31.53
February	110,628	110,628	37,046,380	29.86
March	128,535	128,535	37,205,274	34.55
April	112,777	112,777	37,292,908	30.24
May	108,295	108,295	37,262,611	29.06
June	107,060	107,060	37,262,903	28.73
July	122,004	122,004	46,709,057	26.12
August	139,765	139,765	47,062,683	29.70
September	134,296	134,296	46,344,598	28.98
October	139,741	139,741	46,757,677	29.89
November	140,379	140,379	46,232,122	30.36
December	149,328	149,328	47,206,353	31.63
<i>2012</i>				
January	139,645	139,645	42,446,031	32.90
February	138,027	138,027	41,880,547	32.96
March	137,833	137,833	41,847,915	32.94
April	124,382	124,382	41,700,911	29.83
May	125,728	125,728	41,691,557	30.16
June	118,493	118,493	41,653,256	28.45
July	127,895	127,895	46,813,672	27.32
August	136,889	136,889	47,166,660	29.02
September	124,087	124,087	46,484,610	26.69
October	146,199	146,199	46,902,235	31.17
November	146,035	146,035	46,385,108	31.48
December	146,892	146,892	47,275,408	31.07
<i>2013</i>				
January	110,760	110,760	32,748,388	33.82
February	102,327	102,327	32,376,154	31.61
March	116,190	116,190	32,540,283	35.71
April	115,648	115,648	32,591,135	35.48

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
May	103,240	103,240	32,587,610	31.68
June	90,842	90,842	32,469,549	27.98
July	106,317	106,317	37,182,381	28.59
August	107,510	107,510	37,500,334	28.67
September	104,031	104,031	36,899,961	28.19
October	116,667	116,667	37,188,094	31.37
November	109,470	109,470	36,650,020	29.87
December	120,461	120,461	37,132,528	32.44
<i>2014</i>				
January	104,374	104,374	32,520,101	32.10
February	97,447	97,447	32,095,375	30.36
March	115,320	115,320	32,298,717	35.70
April	113,570	113,570	32,248,339	35.22
May	102,881	102,881	32,046,452	32.10
June	97,152	97,152	32,145,609	30.22
July	113,137	113,137	38,415,328	29.45
August	110,241	110,241	38,746,123	28.45
September	114,534	114,534	38,154,748	30.02
October	128,046	128,046	38,687,693	33.10
November	112,904	112,904	38,148,594	29.60
December	132,763	132,763	38,976,038	34.06
<i>2015</i>				
January	72,464	72,464	21,760,348	33.30
February	74,511	74,511	21,485,970	34.68
March	86,230	86,230	21,508,207	40.09
April	77,763	77,763	21,487,897	36.19
May	68,137	68,137	21,458,499	31.75
June	67,771	67,771	21,397,210	31.67
July	72,450	72,450	23,654,455	30.63
August	71,204	71,204	23,877,286	29.82
September	72,718	72,718	23,526,434	30.91
October	79	79	23,709,144	0.03
November	48	48	23,459,722	0.02
December	54	54	23,881,994	0.02
<i>2016</i>				
January	3	3	21,490,218	0.00



**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
February	4	4	21,272,946	0.00
March	12	12	21,373,894	0.01
April	7	7	21,388,607	0.00
May	21	21	21,351,191	0.01
June	13	13	21,304,809	0.01
July	9	9	23,832,331	0.00
August	5	5	24,027,026	0.00
September	7	7	23,668,306	0.00
October	8	8	23,804,373	0.00
November	6	6	23,475,646	0.00
December	3	3	23,811,891	0.00
<i>2017</i>				
January	12	12	19,024,813	0.01
February	18	18	18,788,507	0.01
March	7	7	18,832,771	0.00
April	10	10	18,816,252	0.01
May	5	5	18,779,181	0.00
June	6	6	18,716,783	0.00
July	7	7	22,074,718	0.00
August	3	3	22,250,365	0.00
September	2	2	21,926,708	0.00
October	3	3	22,099,968	0.00
November	6	6	21,651,729	0.00
December	9	9	21,921,123	0.00
<i>2018</i>				
January	6	6	17,811,987	0.00
February	12	12	17,596,657	0.01
March	3	3	17,625,825	0.00
April	5	5	17,608,370	0.00
May	5	5	17,589,642	0.00
June	9	9	17,522,418	0.01
July	0	0	21,862,756	0.00
August	7	7	22,060,147	0.00
September	1	1	21,694,789	0.00
October	6	6	21,875,146	0.00
November	6	6	21,566,311	0.00

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
December	2	2	21,925,912	0.00
<i>2019</i>				
January	2	2	18,543,206	0.00
February	5	5	18,299,923	0.00
March	14	14	18,365,362	0.01
April	9	9	18,271,428	0.00
May	4	4	18,249,971	0.00
June	6	6	18,168,775	0.00
July	4	4	19,870,005	0.00
August	6	6	20,059,403	0.00
September	4	4	19,705,711	0.00
October	7	7	19,933,615	0.00
November	2	2	19,644,252	0.00
December	3	3	19,985,440	0.00
<i>2020</i>				
January	0	0	16,689,222	0.00
February	0	0	16,484,301	0.00
March	0	0	16,555,484	0.00
April	0	0	16,602,593	0.00
May	0	0	16,624,878	0.00
June	0	0	16,607,085	0.00
July	0	0	19,645,889	0.00
August	0	0	19,840,187	0.00
September	0	0	19,520,670	0.00
October	0	0	19,596,376	0.00
November	0	0	19,326,175	0.00
December	0	0	19,549,136	0.00
<i>2021</i>				
January	0	0	16,369,992	0.00
February	1	1	16,177,201	0.00
March	0	0	16,187,512	0.00
April	0	0	16,159,858	0.00
May	0	0	16,118,700	0.00
June	1	1	16,027,211	0.00
July	4	4	17,691,535	0.00
August	4	4	17,780,789	0.00

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
September	3	3	17,423,940	0.00
October	4	4	17,584,954	0.00
November	5	5	17,288,400	0.00
December	1	1	17,551,665	0.00
<b>Diverticulitis and Colitis ICD-10-CM Incidence</b>				
<i>2010</i>				
October	0	0	43,073,630	0.00
November	0	0	42,557,506	0.00
December	0	0	43,386,785	0.00
<i>2011</i>				
January	0	0	37,623,457	0.00
February	0	0	37,046,380	0.00
March	0	0	37,205,274	0.00
April	0	0	37,292,908	0.00
May	0	0	37,262,611	0.00
June	0	0	37,262,903	0.00
July	0	0	46,709,057	0.00
August	0	0	47,062,683	0.00
September	0	0	46,344,598	0.00
October	0	0	46,757,677	0.00
November	0	0	46,232,122	0.00
December	0	0	47,206,353	0.00
<i>2012</i>				
January	0	0	42,446,031	0.00
February	0	0	41,880,547	0.00
March	0	0	41,847,915	0.00
April	0	0	41,700,911	0.00
May	0	0	41,691,557	0.00
June	0	0	41,653,256	0.00
July	0	0	46,813,672	0.00
August	0	0	47,166,660	0.00
September	0	0	46,484,610	0.00
October	0	0	46,902,235	0.00
November	0	0	46,385,108	0.00
December	0	0	47,275,408	0.00
<i>2013</i>				

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
January	0	0	32,748,388	0.00
February	0	0	32,376,154	0.00
March	0	0	32,540,283	0.00
April	0	0	32,591,135	0.00
May	0	0	32,587,610	0.00
June	0	0	32,469,549	0.00
July	0	0	37,182,381	0.00
August	0	0	37,500,334	0.00
September	0	0	36,899,961	0.00
October	0	0	37,188,094	0.00
November	0	0	36,650,020	0.00
December	0	0	37,132,528	0.00
<i>2014</i>				
January	0	0	32,520,101	0.00
February	0	0	32,095,375	0.00
March	0	0	32,298,717	0.00
April	0	0	32,248,339	0.00
May	0	0	32,046,452	0.00
June	0	0	32,145,609	0.00
July	0	0	38,415,328	0.00
August	0	0	38,746,123	0.00
September	0	0	38,154,748	0.00
October	0	0	38,687,693	0.00
November	0	0	38,148,594	0.00
December	0	0	38,976,038	0.00
<i>2015</i>				
January	2	2	21,760,348	0.00
February	1	1	21,485,970	0.00
March	0	0	21,508,207	0.00
April	0	0	21,487,897	0.00
May	1	1	21,458,499	0.00
June	1	1	21,397,210	0.00
July	4	4	23,654,455	0.00
August	28	28	23,877,286	0.01
September	502	502	23,526,434	0.21
October	37,864	37,864	23,709,144	15.97

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
November	36,320	36,320	23,459,722	15.48
December	40,135	40,135	23,881,994	16.81
<i>2016</i>				
January	35,472	35,472	21,490,218	16.51
February	40,586	40,586	21,272,946	19.08
March	43,978	43,978	21,373,894	20.58
April	38,542	38,542	21,388,607	18.02
May	35,892	35,892	21,351,191	16.81
June	33,128	33,128	21,304,809	15.55
July	33,761	33,761	23,832,331	14.17
August	38,311	38,311	24,027,026	15.94
September	37,087	37,087	23,668,306	15.67
October	37,417	37,417	23,804,373	15.72
November	38,889	38,889	23,475,646	16.57
December	43,566	43,566	23,811,891	18.30
<i>2017</i>				
January	36,312	36,312	19,024,813	19.09
February	33,243	33,243	18,788,507	17.69
March	36,964	36,964	18,832,771	19.63
April	32,189	32,189	18,816,252	17.11
May	31,918	31,918	18,779,181	17.00
June	28,298	28,298	18,716,783	15.12
July	30,459	30,459	22,074,718	13.80
August	33,080	33,080	22,250,365	14.87
September	31,210	31,210	21,926,708	14.23
October	34,357	34,357	22,099,968	15.55
November	35,076	35,076	21,651,729	16.20
December	37,653	37,653	21,921,123	17.18
<i>2018</i>				
January	34,586	34,586	17,811,987	19.42
February	31,165	31,165	17,596,657	17.71
March	29,584	29,584	17,625,825	16.78
April	30,207	30,207	17,608,370	17.15
May	29,790	29,790	17,589,642	16.94
June	25,546	25,546	17,522,418	14.58
July	30,710	30,710	21,862,756	14.05

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
August	32,051	32,051	22,060,147	14.53
September	30,118	30,118	21,694,789	13.88
October	34,867	34,867	21,875,146	15.94
November	33,040	33,040	21,566,311	15.32
December	35,745	35,745	21,925,912	16.30
<i>2019</i>				
January	33,315	33,315	18,543,206	17.97
February	30,811	30,811	18,299,923	16.84
March	34,939	34,939	18,365,362	19.02
April	33,572	33,572	18,271,428	18.37
May	30,262	30,262	18,249,971	16.58
June	26,021	26,021	18,168,775	14.32
July	29,813	29,813	19,870,005	15.00
August	29,534	29,534	20,059,403	14.72
September	28,835	28,835	19,705,711	14.63
October	32,398	32,398	19,933,615	16.25
November	29,566	29,566	19,644,252	15.05
December	33,000	33,000	19,985,440	16.51
<i>2020</i>				
January	28,333	28,333	16,689,222	16.98
February	26,625	26,625	16,484,301	16.15
March	21,756	21,756	16,555,484	13.14
April	11,679	11,679	16,602,593	7.03
May	13,973	13,973	16,624,878	8.40
June	17,711	17,711	16,607,085	10.66
July	22,749	22,749	19,645,889	11.58
August	22,395	22,395	19,840,187	11.29
September	23,139	23,139	19,520,670	11.85
October	23,803	23,803	19,596,376	12.15
November	20,284	20,284	19,326,175	10.50
December	20,814	20,814	19,549,136	10.65
<i>2021</i>				
January	17,024	17,024	16,369,992	10.40
February	17,476	17,476	16,177,201	10.80
March	21,980	21,980	16,187,512	13.58
April	22,608	22,608	16,159,858	13.99

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
May	21,199	21,199	16,118,700	13.15
June	21,737	21,737	16,027,211	13.56
July	23,802	23,802	17,691,535	13.45
August	24,090	24,090	17,780,789	13.55
September	23,155	23,155	17,423,940	13.29
October	23,479	23,479	17,584,954	13.35
November	23,592	23,592	17,288,400	13.65
December	23,611	23,611	17,551,665	13.45
<b>Diverticulitis and Colitis ICD-9-CM Prevalence</b>				
<i>2010</i>				
October	181,194	217,862	47,783,732	37.92
November	191,464	227,525	47,714,965	40.13
December	198,174	235,569	47,760,109	41.49
<i>2011</i>				
January	212,074	255,722	52,274,120	40.57
February	200,302	239,955	52,038,076	38.49
March	230,094	280,005	51,957,287	44.29
April	204,729	248,067	51,860,782	39.48
May	198,476	242,034	51,769,930	38.34
June	197,010	241,941	51,756,451	38.06
July	180,524	222,317	51,804,123	34.85
August	203,315	252,485	51,756,708	39.28
September	196,337	242,202	51,699,947	37.98
October	203,321	249,599	51,652,144	39.36
November	204,013	249,401	51,621,813	39.52
December	213,437	258,382	51,691,308	41.29
<i>2012</i>				
January	219,397	268,079	52,576,934	41.73
February	218,654	264,262	52,397,697	41.73
March	219,881	268,580	52,177,387	42.14
April	200,813	245,594	51,958,063	38.65
May	203,879	251,563	51,927,518	39.26
June	193,227	238,389	51,845,618	37.27
July	189,014	234,394	51,815,509	36.48
August	202,156	251,575	51,942,235	38.92
September	185,126	227,093	52,013,540	35.59

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
October	214,290	262,730	52,041,223	41.18
November	211,523	255,948	52,036,409	40.65
December	211,054	253,746	52,143,790	40.48
<i>2013</i>				
January	180,024	219,473	41,330,662	43.56
February	167,847	201,334	41,267,747	40.67
March	186,803	225,356	41,223,201	45.32
April	186,923	226,215	41,169,578	45.40
May	170,953	210,326	41,107,177	41.59
June	152,710	187,683	41,036,151	37.21
July	158,005	195,247	40,989,887	38.55
August	158,834	196,300	40,976,506	38.76
September	154,348	189,005	41,041,550	37.61
October	171,129	210,742	41,017,147	41.72
November	160,202	193,620	41,146,809	38.93
December	173,610	208,538	41,022,577	42.32
<i>2014</i>				
January	180,608	221,761	43,473,954	41.54
February	170,371	206,426	43,277,665	39.37
March	197,504	240,644	43,280,753	45.63
April	195,649	239,715	43,218,379	45.27
May	177,937	219,088	43,004,996	41.38
June	172,102	213,196	42,964,110	40.06
July	173,326	217,145	43,114,303	40.20
August	167,371	207,796	43,028,459	38.90
September	173,372	215,460	43,006,724	40.31
October	190,572	236,304	42,978,610	44.34
November	168,693	205,004	42,927,741	39.30
December	192,844	233,639	42,855,039	45.00
<i>2015</i>				
January	115,054	142,637	26,489,481	43.43
February	118,041	143,500	26,451,586	44.63
March	134,733	164,753	26,381,863	51.07
April	123,576	152,457	26,312,168	46.97
May	110,959	137,900	26,259,467	42.25
June	111,637	140,105	26,200,289	42.61



**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
July	109,745	137,929	26,155,278	41.96
August	107,194	134,376	26,077,047	41.11
September	109,696	136,548	26,022,688	42.15
October	149	167	26,017,688	0.06
November	69	73	25,965,811	0.03
December	77	81	25,926,759	0.03
<b>2016</b>				
January	8	8	26,171,554	0.00
February	7	7	26,153,287	0.00
March	14	15	26,148,283	0.01
April	12	13	26,106,323	0.00
May	27	28	26,053,425	0.01
June	23	30	26,012,490	0.01
July	13	13	25,987,259	0.01
August	6	9	25,915,857	0.00
September	10	10	25,860,540	0.00
October	12	13	25,753,179	0.00
November	9	9	25,666,896	0.00
December	4	4	25,603,634	0.00
<b>2017</b>				
January	15	15	24,253,479	0.01
February	19	19	24,209,651	0.01
March	10	10	24,184,192	0.00
April	12	13	24,121,539	0.00
May	7	8	24,077,422	0.00
June	14	20	24,025,177	0.01
July	12	12	23,948,148	0.01
August	3	3	23,901,232	0.00
September	3	5	23,861,833	0.00
October	4	4	23,830,784	0.00
November	8	8	23,610,075	0.00
December	11	12	23,562,154	0.00
<b>2018</b>				
January	8	8	24,301,121	0.00
February	12	13	24,278,968	0.00
March	4	7	24,232,276	0.00

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
April	5	8	24,185,445	0.00
May	9	12	24,113,466	0.00
June	11	16	24,057,211	0.00
July	2	2	24,006,160	0.00
August	10	14	23,997,638	0.00
September	3	5	23,972,867	0.00
October	7	9	23,920,988	0.00
November	8	8	23,871,095	0.00
December	5	5	23,802,676	0.00
<i>2019</i>				
January	5	6	22,188,245	0.00
February	9	9	22,171,940	0.00
March	20	23	22,140,668	0.01
April	13	14	22,036,744	0.01
May	5	5	22,002,830	0.00
June	7	7	21,951,062	0.00
July	6	6	21,892,323	0.00
August	9	9	21,865,062	0.00
September	6	6	21,824,448	0.00
October	10	11	21,811,664	0.00
November	4	4	21,762,917	0.00
December	7	8	21,731,070	0.00
<i>2020</i>				
January	0	0	21,597,091	0.00
February	0	0	21,553,960	0.00
March	0	0	21,530,147	0.00
April	0	0	21,487,224	0.00
May	0	0	21,424,880	0.00
June	0	0	21,388,355	0.00
July	0	0	21,236,324	0.00
August	0	0	21,180,862	0.00
September	0	0	21,097,793	0.00
October	0	0	21,002,571	0.00
November	0	0	20,952,934	0.00
December	0	0	20,915,869	0.00
<i>2021</i>				

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
January	0	0	19,598,561	0.00
February	5	9	19,570,182	0.00
March	3	3	19,535,326	0.00
April	4	5	19,519,760	0.00
May	9	10	19,569,498	0.00
June	9	12	19,536,298	0.00
July	9	9	19,471,442	0.00
August	8	8	19,448,365	0.00
September	5	5	19,411,991	0.00
October	6	8	19,339,254	0.00
November	8	9	19,299,376	0.00
December	4	4	19,262,996	0.00
<b>Diverticulitis and Colitis ICD-10-CM Prevalence</b>				
<i>2010</i>				
October	0	0	47,783,732	0.00
November	0	0	47,714,965	0.00
December	0	0	47,760,109	0.00
<i>2011</i>				
January	0	0	52,274,120	0.00
February	0	0	52,038,076	0.00
March	0	0	51,957,287	0.00
April	0	0	51,860,782	0.00
May	0	0	51,769,930	0.00
June	0	0	51,756,451	0.00
July	0	0	51,804,123	0.00
August	0	0	51,756,708	0.00
September	0	0	51,699,947	0.00
October	0	0	51,652,144	0.00
November	0	0	51,621,813	0.00
December	0	0	51,691,308	0.00
<i>2012</i>				
January	0	0	52,576,934	0.00
February	0	0	52,397,697	0.00
March	0	0	52,177,387	0.00
April	0	0	51,958,063	0.00
May	0	0	51,927,518	0.00

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
June	0	0	51,845,618	0.00
July	0	0	51,815,509	0.00
August	0	0	51,942,235	0.00
September	0	0	52,013,540	0.00
October	0	0	52,041,223	0.00
November	0	0	52,036,409	0.00
December	0	0	52,143,790	0.00
<i>2013</i>				
January	0	0	41,330,662	0.00
February	0	0	41,267,747	0.00
March	0	0	41,223,201	0.00
April	0	0	41,169,578	0.00
May	0	0	41,107,177	0.00
June	0	0	41,036,151	0.00
July	0	0	40,989,887	0.00
August	0	0	40,976,506	0.00
September	0	0	41,041,550	0.00
October	0	0	41,017,147	0.00
November	0	0	41,146,809	0.00
December	0	0	41,022,577	0.00
<i>2014</i>				
January	0	0	43,473,954	0.00
February	0	0	43,277,665	0.00
March	0	0	43,280,753	0.00
April	0	0	43,218,379	0.00
May	0	0	43,004,996	0.00
June	0	0	42,964,110	0.00
July	0	0	43,114,303	0.00
August	0	0	43,028,459	0.00
September	0	0	43,006,724	0.00
October	0	0	42,978,610	0.00
November	0	0	42,927,741	0.00
December	0	0	42,855,039	0.00
<i>2015</i>				
January	2	2	26,489,481	0.00
February	2	2	26,451,586	0.00

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
March	0	0	26,381,863	0.00
April	0	0	26,312,168	0.00
May	3	3	26,259,467	0.00
June	3	3	26,200,289	0.00
July	6	6	26,155,278	0.00
August	62	95	26,077,047	0.02
September	969	1,161	26,022,688	0.37
October	55,831	73,148	26,017,688	21.46
November	53,658	68,995	25,965,811	20.66
December	58,066	74,936	25,926,759	22.40
<i>2016</i>				
January	55,692	72,035	26,171,554	21.28
February	62,914	79,619	26,153,287	24.06
March	67,169	85,943	26,148,283	25.69
April	59,833	77,170	26,106,323	22.92
May	56,358	73,243	26,053,425	21.63
June	52,967	70,237	26,012,490	20.36
July	49,525	66,334	25,987,259	19.06
August	55,367	73,913	25,915,857	21.36
September	53,835	71,218	25,860,540	20.82
October	53,940	71,074	25,753,179	20.94
November	55,483	71,966	25,666,896	21.62
December	59,961	76,048	25,603,634	23.42
<i>2017</i>				
January	57,564	72,556	24,253,479	23.73
February	53,540	66,812	24,209,651	22.12
March	59,403	75,132	24,184,192	24.56
April	52,275	66,832	24,121,539	21.67
May	52,516	68,190	24,077,422	21.81
June	47,563	62,317	24,025,177	19.80
July	44,312	58,163	23,948,148	18.50
August	48,106	63,363	23,901,232	20.13
September	45,386	59,013	23,861,833	19.02
October	49,466	63,505	23,830,784	20.76
November	49,945	63,629	23,610,075	21.15
December	52,132	64,907	23,562,154	22.13

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
<i>2018</i>				
January	58,482	73,485	24,301,121	24.07
February	53,756	67,062	24,278,968	22.14
March	52,385	67,094	24,232,276	21.62
April	52,060	65,935	24,185,445	21.53
May	51,930	66,625	24,113,466	21.54
June	45,662	59,203	24,057,211	18.98
July	45,350	59,463	24,006,160	18.89
August	47,679	62,974	23,997,638	19.87
September	44,567	58,140	23,972,867	18.59
October	51,154	66,730	23,920,988	21.38
November	48,430	61,960	23,871,095	20.29
December	50,720	63,773	23,802,676	21.31
<i>2019</i>				
January	51,191	65,227	22,188,245	23.07
February	47,792	60,041	22,171,940	21.56
March	53,037	66,817	22,140,668	23.95
April	51,890	65,907	22,036,744	23.55
May	47,884	62,071	22,002,830	21.76
June	42,103	54,873	21,951,062	19.18
July	44,558	58,937	21,892,323	20.35
August	44,142	58,588	21,865,062	20.19
September	43,251	56,465	21,824,448	19.82
October	48,167	62,977	21,811,664	22.08
November	43,946	56,241	21,762,917	20.19
December	47,366	60,336	21,731,070	21.80
<i>2020</i>				
January	49,066	63,964	21,597,091	22.72
February	46,265	59,508	21,553,960	21.46
March	38,786	50,745	21,530,147	18.01
April	22,952	31,915	21,487,224	10.68
May	26,774	37,688	21,424,880	12.50
June	33,227	46,182	21,388,355	15.54
July	35,028	48,546	21,236,324	16.49
August	34,278	47,638	21,180,862	16.18
September	35,421	49,205	21,097,793	16.79

**Table 2. Summary of Diverticulitis and Colitis in the Merative MarketScan Research Databases from October 1, 2010 to December 31, 2021, by Year and Month**

	Number of Patients	Number of Episodes	Number of Eligible Members <sup>1</sup>	Number of Exposed Members per 10,000 Eligible Members
October	36,659	50,813	21,002,571	17.45
November	32,184	43,806	20,952,934	15.36
December	33,058	45,429	20,915,869	15.81
<i>2021</i>				
January	29,922	40,796	19,598,561	15.27
February	30,456	41,059	19,570,182	15.56
March	37,670	51,471	19,535,326	19.28
April	38,226	51,729	19,519,760	19.58
May	36,215	48,863	19,569,498	18.51
June	37,599	51,253	19,536,298	19.25
July	37,032	50,416	19,471,442	19.02
August	37,436	50,652	19,448,365	19.25
September	36,133	48,656	19,411,991	18.61
October	36,666	49,404	19,339,254	18.96
November	36,550	48,670	19,299,376	18.94
December	36,224	48,346	19,262,996	18.80

<sup>1</sup>Eligible Members are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period.

Figure 1. Incidence of Diverticulitis or Colitis (183 Days Washout) per 10,000 Eligible Members from October 2010 to December 2021 by Code Type

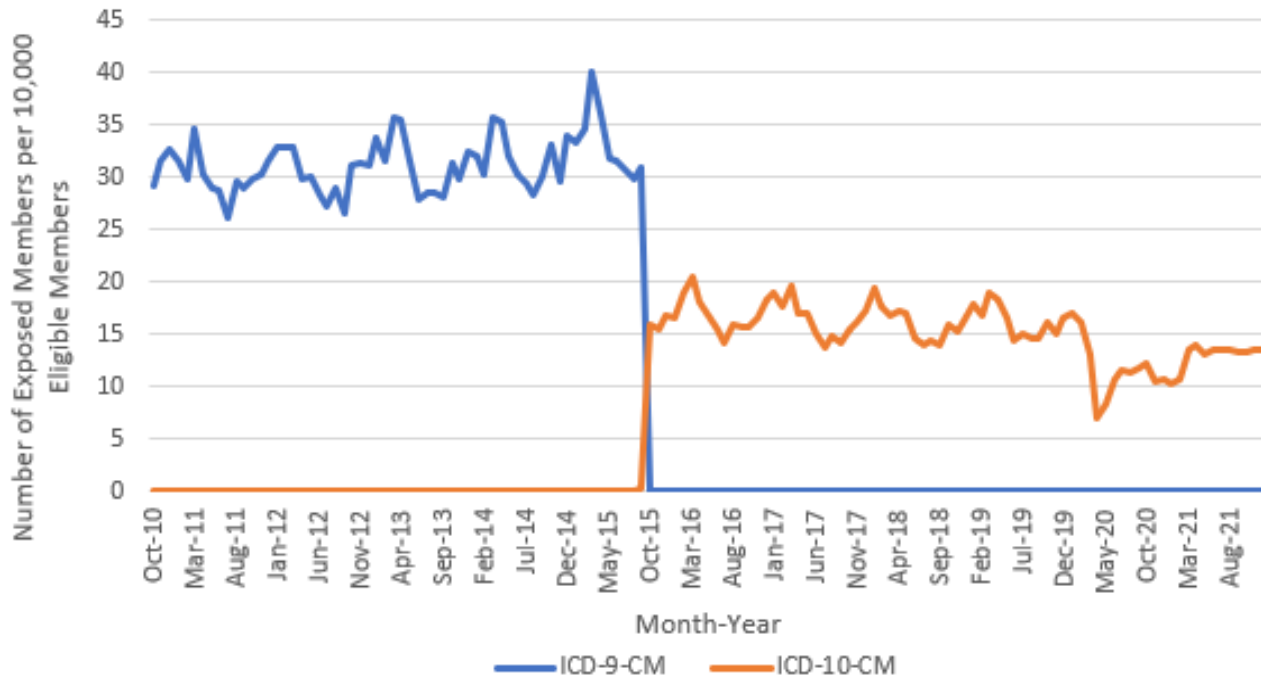
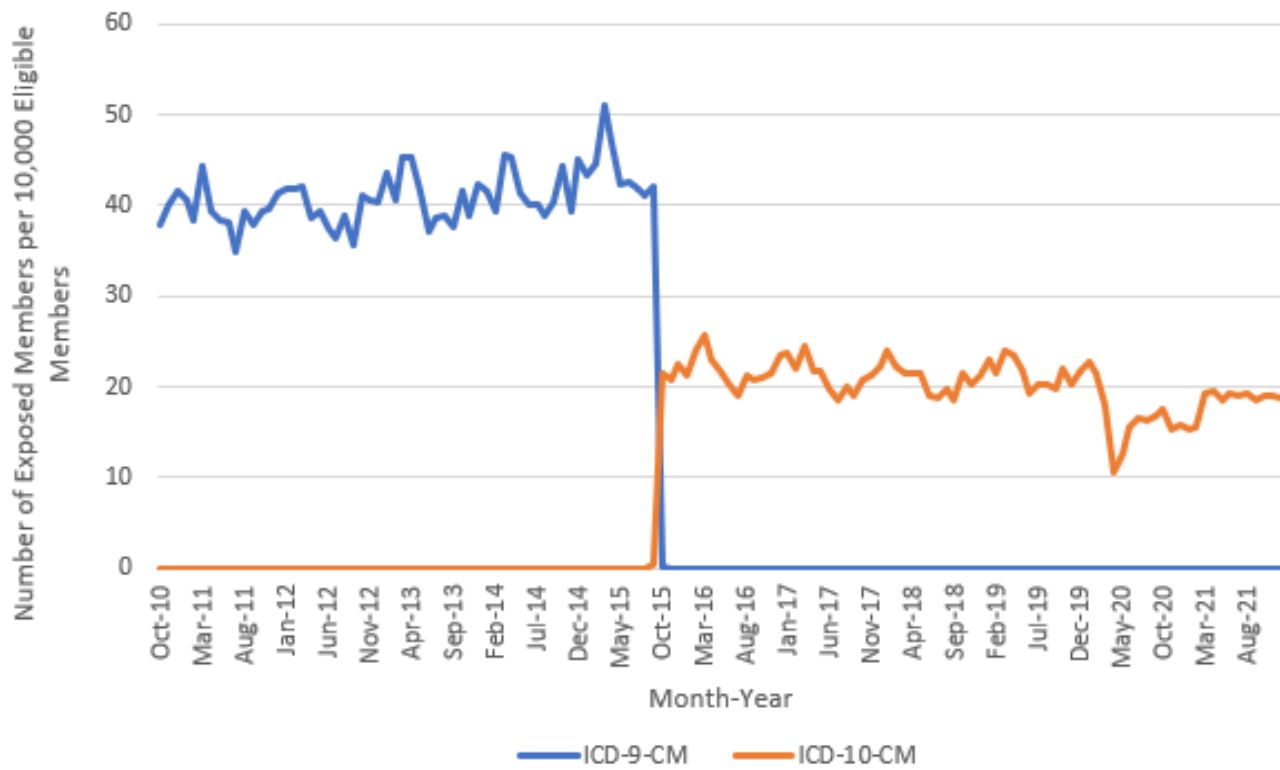




Figure 2. Prevalence of Diverticulitis or Colitis (0 Days Washout) per 10,000 Eligible Members from October 2010 to December 2021 by Code Type



**Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request Distribution Date (January 17, 2023)**

<b>Masked DP ID<sup>1</sup></b>	<b>DP Start Date</b>	<b>DP End Date<sup>2</sup></b>
DP01	01/01/2010	12/31/2021

<sup>1</sup>Participating Data Partner(s) include(s) Merative MarketScan Research Databases.

<sup>2</sup>End Date represents the earliest of: (1) query end date, or (2) last day of the most recent month for which all of a Data Partner's data tables (enrollment, dispensing, etc.) have at least 80% of the record count relative to the prior month.

**Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Diverticulitis and Colitis in this Request**

Code	Description	Code Category	Code Type
<b>Diverticulitis and Colitis</b>			
558	Other noninfectious gastroenteritis and colitis	Diagnosis	ICD-9-CM
8.45	Intestinal infections due to clostridium difficile	Diagnosis	ICD-9-CM
556.5	Left sided ulcerative (chronic) colitis	Diagnosis	ICD-9-CM
556.6	Universal ulcerative (chronic) colitis	Diagnosis	ICD-9-CM
556.8	Other ulcerative colitis	Diagnosis	ICD-9-CM
556.9	Unspecified ulcerative colitis	Diagnosis	ICD-9-CM
557	Acute vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.1	Chronic vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.9	Unspecified vascular insufficiency of intestine	Diagnosis	ICD-9-CM
558.4	Eosinophilic gastroenteritis and colitis	Diagnosis	ICD-9-CM
558.9	Other and unspecified noninfectious gastroenteritis and colitis	Diagnosis	ICD-9-CM
535.7	Eosinophilic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.71	Eosinophilic gastritis with hemorrhage	Diagnosis	ICD-9-CM
558.41	Eosinophilic gastroenteritis	Diagnosis	ICD-9-CM
558.42	Eosinophilic colitis	Diagnosis	ICD-9-CM
562.01	Diverticulitis of small intestine (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.03	Diverticulitis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.11	Diverticulitis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.13	Diverticulitis of colon with hemorrhage	Diagnosis	ICD-9-CM
8.45	Intestinal infections due to clostridium difficile	Diagnosis	ICD-9-CM
535.7	Eosinophilic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.71	Eosinophilic gastritis with hemorrhage	Diagnosis	ICD-9-CM
557	Acute vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.1	Chronic vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.9	Unspecified vascular insufficiency of intestine	Diagnosis	ICD-9-CM
562	Diverticula of small intestine	Diagnosis	ICD-9-CM
562.01	Diverticulitis of small intestine (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.02	Diverticulosis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.03	Diverticulitis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.1	Diverticulosis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.11	Diverticulitis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.12	Diverticulosis of colon with hemorrhage	Diagnosis	ICD-9-CM
562.13	Diverticulitis of colon with hemorrhage	Diagnosis	ICD-9-CM
A04.7	Enterocolitis due to Clostridium difficile	Diagnosis	ICD-10-CM
A04.71	Enterocolitis due to Clostridium difficile, recurrent	Diagnosis	ICD-10-CM
A04.72	Enterocolitis due to Clostridium difficile, not specified as recurrent	Diagnosis	ICD-10-CM
K52.3	Indeterminate colitis	Diagnosis	ICD-10-CM
K52.8	Other specified noninfective gastroenteritis and colitis	Diagnosis	ICD-10-CM
K52.81	Eosinophilic gastritis or gastroenteritis	Diagnosis	ICD-10-CM
K52.82	Eosinophilic colitis	Diagnosis	ICD-10-CM
K52.83	Microscopic colitis	Diagnosis	ICD-10-CM
K52.831	Collagenous colitis	Diagnosis	ICD-10-CM
K52.832	Lymphocytic colitis	Diagnosis	ICD-10-CM
K52.838	Other microscopic colitis	Diagnosis	ICD-10-CM
K52.839	Microscopic colitis, unspecified	Diagnosis	ICD-10-CM

**Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Diverticulitis and Colitis in this Request**

Code	Description	Code Category	Code Type
K52.89	Other specified noninfective gastroenteritis and colitis	Diagnosis	ICD-10-CM
K52.9	Noninfective gastroenteritis and colitis, unspecified	Diagnosis	ICD-10-CM
K57.0	Diverticulitis of small intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.00	Diverticulitis of small intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.01	Diverticulitis of small intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.12	Diverticulitis of small intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.13	Diverticulitis of small intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.2	Diverticulitis of large intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.20	Diverticulitis of large intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.21	Diverticulitis of large intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.32	Diverticulitis of large intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.33	Diverticulitis of large intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.4	Diverticulitis of both small and large intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.40	Diverticulitis of both small and large intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.41	Diverticulitis of both small and large intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.52	Diverticulitis of both small and large intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.53	Diverticulitis of both small and large intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.8	Diverticulitis of intestine, part unspecified, with perforation and abscess	Diagnosis	ICD-10-CM
K57.80	Diverticulitis of intestine, part unspecified, with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.81	Diverticulitis of intestine, part unspecified, with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.92	Diverticulitis of intestine, part unspecified, without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.93	Diverticulitis of intestine, part unspecified, without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
<b>Diverticulitis and Colitis ICD-9-CM</b>			
558	Other noninfectious gastroenteritis and colitis	Diagnosis	ICD-9-CM
8.45	Intestinal infections due to clostridium difficile	Diagnosis	ICD-9-CM
556.5	Left sided ulcerative (chronic) colitis	Diagnosis	ICD-9-CM
556.6	Universal ulcerative (chronic) colitis	Diagnosis	ICD-9-CM
556.8	Other ulcerative colitis	Diagnosis	ICD-9-CM
556.9	Unspecified ulcerative colitis	Diagnosis	ICD-9-CM
557	Acute vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.1	Chronic vascular insufficiency of intestine	Diagnosis	ICD-9-CM

**Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Diverticulitis and Colitis in this Request**

Code	Description	Code Category	Code Type
557.9	Unspecified vascular insufficiency of intestine	Diagnosis	ICD-9-CM
558.4	Eosinophilic gastroenteritis and colitis	Diagnosis	ICD-9-CM
558.9	Other and unspecified noninfectious gastroenteritis and colitis	Diagnosis	ICD-9-CM
535.7	Eosinophilic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.71	Eosinophilic gastritis with hemorrhage	Diagnosis	ICD-9-CM
558.41	Eosinophilic gastroenteritis	Diagnosis	ICD-9-CM
558.42	Eosinophilic colitis	Diagnosis	ICD-9-CM
562.01	Diverticulitis of small intestine (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.03	Diverticulitis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.11	Diverticulitis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.13	Diverticulitis of colon with hemorrhage	Diagnosis	ICD-9-CM
8.45	Intestinal infections due to clostridium difficile	Diagnosis	ICD-9-CM
535.7	Eosinophilic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.71	Eosinophilic gastritis with hemorrhage	Diagnosis	ICD-9-CM
557	Acute vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.1	Chronic vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.9	Unspecified vascular insufficiency of intestine	Diagnosis	ICD-9-CM
562	Diverticula of small intestine	Diagnosis	ICD-9-CM
562.01	Diverticulitis of small intestine (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.02	Diverticulosis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.03	Diverticulitis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.1	Diverticulosis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.11	Diverticulitis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.12	Diverticulosis of colon with hemorrhage	Diagnosis	ICD-9-CM
562.13	Diverticulitis of colon with hemorrhage	Diagnosis	ICD-9-CM
<b>Diverticulitis and Colitis ICD-10-CM</b>			
A04.7	Enterocolitis due to Clostridium difficile	Diagnosis	ICD-10-CM
A04.71	Enterocolitis due to Clostridium difficile, recurrent	Diagnosis	ICD-10-CM
A04.72	Enterocolitis due to Clostridium difficile, not specified as recurrent	Diagnosis	ICD-10-CM
K52.3	Indeterminate colitis	Diagnosis	ICD-10-CM
K52.8	Other specified noninfective gastroenteritis and colitis	Diagnosis	ICD-10-CM
K52.81	Eosinophilic gastritis or gastroenteritis	Diagnosis	ICD-10-CM
K52.82	Eosinophilic colitis	Diagnosis	ICD-10-CM
K52.83	Microscopic colitis	Diagnosis	ICD-10-CM
K52.831	Collagenous colitis	Diagnosis	ICD-10-CM
K52.832	Lymphocytic colitis	Diagnosis	ICD-10-CM
K52.838	Other microscopic colitis	Diagnosis	ICD-10-CM
K52.839	Microscopic colitis, unspecified	Diagnosis	ICD-10-CM
K52.89	Other specified noninfective gastroenteritis and colitis	Diagnosis	ICD-10-CM
K52.9	Noninfective gastroenteritis and colitis, unspecified	Diagnosis	ICD-10-CM
K57.0	Diverticulitis of small intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.00	Diverticulitis of small intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.01	Diverticulitis of small intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.12	Diverticulitis of small intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM

**Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Diverticulitis and Colitis in this Request**

Code	Description	Code Category	Code Type
K57.13	Diverticulitis of small intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.2	Diverticulitis of large intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.20	Diverticulitis of large intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.21	Diverticulitis of large intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.32	Diverticulitis of large intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.33	Diverticulitis of large intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.4	Diverticulitis of both small and large intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.40	Diverticulitis of both small and large intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.41	Diverticulitis of both small and large intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.52	Diverticulitis of both small and large intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.53	Diverticulitis of both small and large intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.8	Diverticulitis of intestine, part unspecified, with perforation and abscess	Diagnosis	ICD-10-CM
K57.80	Diverticulitis of intestine, part unspecified, with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.81	Diverticulitis of intestine, part unspecified, with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.92	Diverticulitis of intestine, part unspecified, without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.93	Diverticulitis of intestine, part unspecified, without perforation or abscess with bleeding	Diagnosis	ICD-10-CM

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Exposure Incidence Criteria in this Request**

Code	Description	Code Category	Code Type
<b>Diverticulitis and Colitis</b>			
558	Other noninfectious gastroenteritis and colitis	Diagnosis	ICD-9-CM
8.45	Intestinal infections due to clostridium difficile	Diagnosis	ICD-9-CM
556.5	Left sided ulcerative (chronic) colitis	Diagnosis	ICD-9-CM
556.6	Universal ulcerative (chronic) colitis	Diagnosis	ICD-9-CM
556.8	Other ulcerative colitis	Diagnosis	ICD-9-CM
556.9	Unspecified ulcerative colitis	Diagnosis	ICD-9-CM
557	Acute vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.1	Chronic vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.9	Unspecified vascular insufficiency of intestine	Diagnosis	ICD-9-CM
558.4	Eosinophilic gastroenteritis and colitis	Diagnosis	ICD-9-CM
558.9	Other and unspecified noninfectious gastroenteritis and colitis	Diagnosis	ICD-9-CM
535.7	Eosinophilic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.71	Eosinophilic gastritis with hemorrhage	Diagnosis	ICD-9-CM
558.41	Eosinophilic gastroenteritis	Diagnosis	ICD-9-CM
558.42	Eosinophilic colitis	Diagnosis	ICD-9-CM
562.01	Diverticulitis of small intestine (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.03	Diverticulitis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.11	Diverticulitis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.13	Diverticulitis of colon with hemorrhage	Diagnosis	ICD-9-CM
8.45	Intestinal infections due to clostridium difficile	Diagnosis	ICD-9-CM
535.7	Eosinophilic gastritis without mention of hemorrhage	Diagnosis	ICD-9-CM
535.71	Eosinophilic gastritis with hemorrhage	Diagnosis	ICD-9-CM
557	Acute vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.1	Chronic vascular insufficiency of intestine	Diagnosis	ICD-9-CM
557.9	Unspecified vascular insufficiency of intestine	Diagnosis	ICD-9-CM
562	Diverticula of small intestine	Diagnosis	ICD-9-CM
562.01	Diverticulitis of small intestine (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.02	Diverticulosis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.03	Diverticulitis of small intestine with hemorrhage	Diagnosis	ICD-9-CM
562.1	Diverticulosis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.11	Diverticulitis of colon (without mention of hemorrhage)	Diagnosis	ICD-9-CM
562.12	Diverticulosis of colon with hemorrhage	Diagnosis	ICD-9-CM
562.13	Diverticulitis of colon with hemorrhage	Diagnosis	ICD-9-CM
A04.7	Enterocolitis due to Clostridium difficile	Diagnosis	ICD-10-CM
A04.71	Enterocolitis due to Clostridium difficile, recurrent	Diagnosis	ICD-10-CM
A04.72	Enterocolitis due to Clostridium difficile, not specified as recurrent	Diagnosis	ICD-10-CM
K52.3	Indeterminate colitis	Diagnosis	ICD-10-CM
K52.8	Other specified noninfective gastroenteritis and colitis	Diagnosis	ICD-10-CM
K52.81	Eosinophilic gastritis or gastroenteritis	Diagnosis	ICD-10-CM
K52.82	Eosinophilic colitis	Diagnosis	ICD-10-CM
K52.83	Microscopic colitis	Diagnosis	ICD-10-CM
K52.831	Collagenous colitis	Diagnosis	ICD-10-CM
K52.832	Lymphocytic colitis	Diagnosis	ICD-10-CM
K52.838	Other microscopic colitis	Diagnosis	ICD-10-CM
K52.839	Microscopic colitis, unspecified	Diagnosis	ICD-10-CM

**Appendix C. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Codes Used to Define Exposure Incidence Criteria in this Request**

<b>Code</b>	<b>Description</b>	<b>Code Category</b>	<b>Code Type</b>
K52.89	Other specified noninfective gastroenteritis and colitis	Diagnosis	ICD-10-CM
K52.9	Noninfective gastroenteritis and colitis, unspecified	Diagnosis	ICD-10-CM
K57.0	Diverticulitis of small intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.00	Diverticulitis of small intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.01	Diverticulitis of small intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.12	Diverticulitis of small intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.13	Diverticulitis of small intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.2	Diverticulitis of large intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.20	Diverticulitis of large intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.21	Diverticulitis of large intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.32	Diverticulitis of large intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.33	Diverticulitis of large intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.4	Diverticulitis of both small and large intestine with perforation and abscess	Diagnosis	ICD-10-CM
K57.40	Diverticulitis of both small and large intestine with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.41	Diverticulitis of both small and large intestine with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.52	Diverticulitis of both small and large intestine without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.53	Diverticulitis of both small and large intestine without perforation or abscess with bleeding	Diagnosis	ICD-10-CM
K57.8	Diverticulitis of intestine, part unspecified, with perforation and abscess	Diagnosis	ICD-10-CM
K57.80	Diverticulitis of intestine, part unspecified, with perforation and abscess without bleeding	Diagnosis	ICD-10-CM
K57.81	Diverticulitis of intestine, part unspecified, with perforation and abscess with bleeding	Diagnosis	ICD-10-CM
K57.92	Diverticulitis of intestine, part unspecified, without perforation or abscess without bleeding	Diagnosis	ICD-10-CM
K57.93	Diverticulitis of intestine, part unspecified, without perforation or abscess with bleeding	Diagnosis	ICD-10-CM



**Appendix D. Specifications of the Study Design and Parameters Used in this Request**

Sentinel's Cohort Identification and Descriptive Analysis (CIDA) tool will be used to compare the frequency of diagnoses for a selection of health outcomes using ICD-9 versus ICD-10 codes

**Coverage requirement:** At least medical coverage  
**Enrollment gap:** 45 Days  
**Enrollment Requirement:** (See below)  
**Age groups:** 0-106  
**Stratifications:** (See below)

**Exposure/Event**

Scenario	Group	Event	Enrollment Requirement	Stratifications	Query Period Start	Query Period End	Monitoring File/Run #	Event Code Type	Incident Code Type	Cohort definition	Washout period	Care setting
1	DC_9_yr1	Diagnosis codes of Diverticulitis or Colitis	183	None	10/1/2013	9/30/2014	1	ICD-9-CM	ICD-9-CM	02	183	Any care setting
2	DC_9_yr2	Diagnosis codes of Diverticulitis or Colitis	183	None	10/1/2014	9/30/2015	2	ICD-9-CM	ICD-9-CM	02	183	Any care setting
3	DC_10_yr1	Diagnosis codes of Diverticulitis or Colitis	183	None	10/1/2015	9/30/2016	3	ICD-10-CM	ICD-10-CM	02	183	Any care setting
4	DC_10_yr2	Diagnosis codes of Diverticulitis or Colitis	183	None	10/1/2016	9/30/2017	4	ICD-10-CM	ICD-10-CM	02	183	Any care setting
5	DC_9_inc	Diagnosis codes of Diverticulitis or Colitis	183	Year*Month	10/1/2010	12/31/2022	5	ICD-9-CM	ICD-9-CM or ICD-10-CM	02	183	Any care setting
6	DC_10_inc	Diagnosis codes of Diverticulitis or Colitis	183	Year*Month	10/1/2010	12/31/2022	5	ICD-10-CM	ICD-9-CM or ICD-10-CM	02	183	Any care setting
7	DC_9_prev	Diagnosis codes of Diverticulitis or Colitis	0	Year*Month	10/1/2010	12/31/2022	5	ICD-9-CM	N/A	02	0	Any care setting
8	DC_10_prev	Diagnosis codes of Diverticulitis or Colitis	0	Year*Month	10/1/2010	12/31/2022	5	ICD-10-CM	N/A	02	0	Any care setting

ICD-9-CM and ICD-10-CM are provided by FDA. ICD-10-CM codes were mapped from ICD-9-CM codes and ICD-9-CM codes were mapped from ICD-10-CM. ☒

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

NDC codes are checked against First Data Bank's FDB MedKnowledge®.