Disclaimer

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

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

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

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

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

Overview

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

Request Description: In this request, we examined characteristics of patients with a diagnosis of polyarticular Juvenile Idiopathic Arthritis (pJIA) and utilization of tocilizumab, abatacept, adalimumab and etanercept, in the IBM® MarketScan® Research Databases between October 1, 2015 and March 31, 2019. This is Report 1 of 2. In this report, the analysis specifies a pre-index enrollment period of 365 days for all cohorts. In Report 2, the analysis modifies the pre-index enrollment period to 183 days.

Sentinel Routine Querying Module: Cohort Identification and Descriptive Analysis (CIDA) module, version 9.1.0.

Data Source: We executed this request on IBM® MarketScan® Commercial Claims and Encounters Database and Medicare Supplemental Database, which included 142 million members, on September 10, 2020. The study period included data from October 1, 2015 to March 31, 2019. Please see Appendix A for data availability dates.

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

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

Table 1a: Baseline characteristics of abatacept users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Number of unique patients	208	
Demographics		
Mean Age (Years)	29.0	14.6
Age: 00-01	-	-
Age: 02-04	-	-
Age: 05-09	4	1.9%
Age: 10-14	13	6.3%
Age: 15-18	45	21.6%
Age: 19-21	33	15.9%
Age: 22-44	79	38.0%
Age: 45-64	31	14.9%
Age: 65-74	3	1.4%
Age: 75+	-	-
Sex (Female)	178	85.6%
Sex (Male)	30	14.4%
Year (2015)	18	8.7%
Year (2016)	52	25.0%
Year (2017)	64	30.8%
Year (2018)	59	28.4%
Year (2019)	15	7.2%
Recorded history of, in the 365 days prior to drug initiation:		
Prior combined comorbidity score[4]	0.8	1.5
Acquired Hypothyroidism	20	9.6%
Acute Myocardial Infarction	0	0.0%
Alzheimer's Disease	0	0.0%
Alzheimer's Disease, Related Disorders, or Senile Dementia	0	0.0%
Anemia	24	11.5%
Asthma	22	10.6%
Atrial Fibrillation	5	2.4%
Benign Prostatic Hyperplasia	1	0.5%
Breast Cancer	1	0.5%
Cataracts	6	2.9%
Chronic Kidney Disease	14	6.7%
Chronic Obstructive Pulmonary Disease	12	5.8%
Colorectal Cancer	0	0.0%
Depression	30	14.4%
Diabetes	13	6.3%
Endometrial Cancer	1	0.5%
Glaucoma	3	1.4%
Heart Failure	4	1.9%
Hip / Pelvic Fracture	0	0.0%
Hyperlipidemia	21	10.1%
Hypertension	36	17.3%
Ischemic Heart Disease	2	1.0%
Lung Cancer	0	0.0%
Osteoporosis	12	5.8%
Prostate Cancer	0	0.0%
Rheumatoid Arthritis / Osteoarthritis	208	100.0%
Stroke / Transient Ischemic Attack	2	1.0%
Health Service Utilization Intensity, in the 365 days prior to drug initiation:		
Mean number of ambulatory encounters (AV)	23.1	17.0

Table 1a: Baseline characteristics of abatacept users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Mean number of emergency room encounters (ED)	0.6	1.1
Mean number of inpatient hospital encounters (IP)	0.1	0.4
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	4.0	5.4
Mean number of filled prescriptions	35.8	28.5
Mean number of generics	11.3	6.5
Mean number of unique drug classes	9.7	5.5

[1]Baseline characteristics were evaluated for the 365 days prior to drug initiation.
[2]All metrics based on total number of unique patients .
[3]Value represents standard deviation where no % follows the value.
[4]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1b: Baseline characteristics of etanercept users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Number of unique patients	1,675	
Demographics		
Mean Age (Years)	22.1	14.7
Age: 00-01	3	0.2%
Age: 02-04	73	4.4%
Age: 05-09	174	10.4%
Age: 10-14	365	21.8%
Age: 15-18	355	21.2%
Age: 19-21	153	9.1%
Age: 22-44	362	21.6%
Age: 45-64	176	10.5%
Age: 65-74	12	0.7%
Age: 75+	2	0.1%
Sex (Female)	1,232	73.6%
Sex (Male)	443	26.4%
Year (2015)	225	13.4%
Year (2016)	656	39.2%
Year (2017)	352	21.0%
Year (2018)	311	18.6%
Year (2019)	131	7.8%
Recorded history of, in the 365 days prior to drug initiation:		
Prior combined comorbidity score[4]	0.4	0.9
Acquired Hypothyroidism	111	6.6%
Acute Myocardial Infarction	1	0.1%
Alzheimer's Disease	0	0.0%
Alzheimer's Disease, Related Disorders, or Senile Dementia	1	0.1%
Anemia	135	8.1%
Asthma	124	7.4%
Atrial Fibrillation	12	0.7%
Benign Prostatic Hyperplasia	9	0.5%
Breast Cancer	4	0.2%
Cataracts	46	2.7%
Chronic Kidney Disease	43	2.6%
Chronic Obstructive Pulmonary Disease	53	3.2%
Colorectal Cancer	1	0.1%
Depression	176	10.5%
Diabetes	53	3.2%
Endometrial Cancer	0	0.0%
Glaucoma	43	2.6%
Heart Failure	9	0.5%
Hip / Pelvic Fracture	1	0.1%
Hyperlipidemia	109	6.5%
Hypertension	136	8.1%
Ischemic Heart Disease	14	0.8%
Lung Cancer	1	0.1%
Osteoporosis	39	2.3%
Prostate Cancer	2	0.1%
Rheumatoid Arthritis / Osteoarthritis	1,675	100.0%
Stroke / Transient Ischemic Attack	10	0.6%
Health Service Utilization Intensity, in the 365 days prior to drug initiation:		
Mean number of ambulatory encounters (AV)	17.3	15.7

Table 1b: Baseline characteristics of etanercept users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Mean number of emergency room encounters (ED)	0.5	1.2
Mean number of inpatient hospital encounters (IP)	0.1	0.4
Mean number of non-acute institutional encounters (IS)	0.0	0.1
Mean number of other ambulatory encounters (OA)	3.1	9.1
Mean number of filled prescriptions	24.2	22.3
Mean number of generics	7.7	5.4
Mean number of unique drug classes	6.9	4.6

[1]Baseline characteristics were evaluated for the 365 days prior to drug initiation.
[2]All metrics based on total number of unique patients .
[3]Value represents standard deviation where no % follows the value.
[4]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1c: Baseline characteristics of tocilizumab users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Number of unique patients	206	
Demographics		
Mean Age (Years)	28.0	14.8
Age: 00-01	-	-
Age: 02-04	2	1.0%
Age: 05-09	9	4.4%
Age: 10-14	19	9.2%
Age: 15-18	35	17.0%
Age: 19-21	37	18.0%
Age: 22-44	69	33.5%
Age: 45-64	33	16.0%
Age: 65-74	1	0.5%
Age: 75+	1	0.5%
Sex (Female)	170	82.5%
Sex (Male)	36	17.5%
Year (2015)	19	9.2%
Year (2016)	54	26.2%
Year (2017)	61	29.6%
Year (2018)	47	22.8%
Year (2019)	25	12.1%
Recorded history of, in the 365 days prior to drug initiation:		
Prior combined comorbidity score[4]	0.7	1.4
Acquired Hypothyroidism	21	10.2%
Acute Myocardial Infarction	1	0.5%
Alzheimer's Disease	0	0.0%
Alzheimer's Disease, Related Disorders, or Senile Dementia	0	0.0%
Anemia	26	12.6%
Asthma	24	11.7%
Atrial Fibrillation	1	0.5%
Benign Prostatic Hyperplasia	0	0.0%
Breast Cancer	1	0.5%
Cataracts	8	3.9%
Chronic Kidney Disease	9	4.4%
Chronic Obstructive Pulmonary Disease	9	4.4%
Colorectal Cancer	0	0.0%
Depression	31	15.0%
Diabetes	7	3.4%
Endometrial Cancer	0	0.0%
Glaucoma	11	5.3%
Heart Failure	2	1.0%
Hip / Pelvic Fracture	1	0.5%
Hyperlipidemia	22	10.7%
Hypertension	37	18.0%
Ischemic Heart Disease	8	3.9%
Lung Cancer	0	0.0%
Osteoporosis	12	5.8%
Prostate Cancer	0	0.0%
Rheumatoid Arthritis / Osteoarthritis	206	100.0%
Stroke / Transient Ischemic Attack	3	1.5%
Health Service Utilization Intensity, in the 365 days prior to drug initiation:		
Mean number of ambulatory encounters (AV)	23.8	22.4

Table 1c: Baseline characteristics of tocilizumab users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Mean number of emergency room encounters (ED)	0.6	1.4
Mean number of inpatient hospital encounters (IP)	0.2	0.8
Mean number of non-acute institutional encounters (IS)	0.0	0.0
Mean number of other ambulatory encounters (OA)	4.2	6.3
Mean number of filled prescriptions	33.6	27.9
Mean number of generics	10.3	6.5
Mean number of unique drug classes	8.7	5.3

[1]Baseline characteristics were evaluated for the 365 days prior to drug initiation.
[2]All metrics based on total number of unique patients .
[3]Value represents standard deviation where no % follows the value.
[4]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1d: Baseline characteristics of adalimumab users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Number of unique patients	1,624	
Demographics		
Mean Age (Years)	21.6	13.7
Age: 00-01	2	0.1%
Age: 02-04	41	2.5%
Age: 05-09	168	10.3%
Age: 10-14	339	20.9%
Age: 15-18	409	25.2%
Age: 19-21	172	10.6%
Age: 22-44	347	21.4%
Age: 45-64	129	7.9%
Age: 65-74	12	0.7%
Age: 75+	5	0.3%
Sex (Female)	1,122	69.1%
Sex (Male)	502	30.9%
Year (2015)	136	8.4%
Year (2016)	507	31.2%
Year (2017)	366	22.5%
Year (2018)	444	27.3%
Year (2019)	171	10.5%
Recorded history of, in the 365 days prior to drug initiation:		
Prior combined comorbidity score[4]	0.5	1.0
Acquired Hypothyroidism	87	5.4%
Acute Myocardial Infarction	2	0.1%
Alzheimer's Disease	0	0.0%
Alzheimer's Disease, Related Disorders, or Senile Dementia	2	0.1%
Anemia	152	9.4%
Asthma	167	10.3%
Atrial Fibrillation	6	0.4%
Benign Prostatic Hyperplasia	5	0.3%
Breast Cancer	3	0.2%
Cataracts	81	5.0%
Chronic Kidney Disease	47	2.9%
Chronic Obstructive Pulmonary Disease	40	2.5%
Colorectal Cancer	1	0.1%
Depression	174	10.7%
Diabetes	54	3.3%
Endometrial Cancer	0	0.0%
Glaucoma	92	5.7%
Heart Failure	4	0.2%
Hip / Pelvic Fracture	2	0.1%
Hyperlipidemia	100	6.2%
Hypertension	120	7.4%
Ischemic Heart Disease	18	1.1%
Lung Cancer	0	0.0%
Osteoporosis	34	2.1%
Prostate Cancer	0	0.0%
Rheumatoid Arthritis / Osteoarthritis	1,624	100.0%
Stroke / Transient Ischemic Attack	8	0.5%
Health Service Utilization Intensity, in the 365 days prior to drug initiation:		
Mean number of ambulatory encounters (AV)	19.0	15.8

Table 1d: Baseline characteristics of adalimumab users with polyarticular juvenile idiopathic arthritis[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Mean number of emergency room encounters (ED)	0.5	1.1
Mean number of inpatient hospital encounters (IP)	0.1	0.4
Mean number of non-acute institutional encounters (IS)	0.0	0.1
Mean number of other ambulatory encounters (OA)	3.0	5.5
Mean number of filled prescriptions	26.2	23.4
Mean number of generics	8.4	5.9
Mean number of unique drug classes	7.6	5.0

[1]Baseline characteristics were evaluated for the 365 days prior to drug initiation.
[2]All metrics based on total number of unique patients .
[3]Value represents standard deviation where no % follows the value.
[4]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

Table 1e: Baseline characteristics of polyarticular juvenile idiopathic arthritis patients[1]

Characteristic [2]	N/Mean	%/Std Dev[3]
Number of unique patients	14,235	
Demographics		
Mean Age (Years)	26.8	19.2
Age: 00-01	72	0.5%
Age: 02-04	566	4.0%
Age: 05-09	1,448	10.2%
Age: 10-14	2,585	18.2%
Age: 15-18	2,443	17.2%
Age: 19-21	1,094	7.7%
Age: 22-44	3,055	21.5%
Age: 45-64	2,399	16.9%
Age: 65-74	302	2.1%
Age: 75+	271	1.9%
Sex (Female)	10,191	71.6%
Sex (Male)	4,044	28.4%
Year (2015)	3,379	23.7%
Year (2016)	4,300	30.2%
Year (2017)	2,748	19.3%
Year (2018)	2,765	19.4%
Year (2019)	1,043	7.3%
Recorded history of, in the 365 days prior to drug initiation:		
Prior combined comorbidity score[4]	0.6	1.3
Acquired Hypothyroidism	1,077	7.6%
Acute Myocardial Infarction	42	0.3%
Alzheimer's Disease	15	0.1%
Alzheimer's Disease, Related Disorders, or Senile Dementia	67	0.5%
Anemia	1,445	10.2%
Asthma	1,516	10.6%
Atrial Fibrillation	166	1.2%
Benign Prostatic Hyperplasia	112	0.8%
Breast Cancer	104	0.7%
Cataracts	685	4.8%
Chronic Kidney Disease	635	4.5%
Chronic Obstructive Pulmonary Disease	609	4.3%
Colorectal Cancer	18	0.1%
Depression	1,723	12.1%
Diabetes	753	5.3%
Endometrial Cancer	14	0.1%
Glaucoma	612	4.3%
Heart Failure	163	1.1%
Hip / Pelvic Fracture	43	0.3%
Hyperlipidemia	1,698	11.9%
Hypertension	2,011	14.1%
Ischemic Heart Disease	340	2.4%
Lung Cancer	8	0.1%
Osteoporosis	404	2.8%
Prostate Cancer	29	0.2%
Rheumatoid Arthritis / Osteoarthritis	14,235	100.0%
Stroke / Transient Ischemic Attack	140	1.0%
Health Service Utilization Intensity, in the 365 days prior to drug initiation:		
Mean number of ambulatory encounters (AV)	16.6	15.9

Table 1e: Baseline characteristics of polyarticular juvenile idiopathic arthritis patients[1]		
Characteristic [2]	**N/Mean**	**%/Std Dev** [3]
Mean number of emergency room encounters (ED)	0.5	1.3
Mean number of inpatient hospital encounters (IP)	0.2	0.6
Mean number of non-acute institutional encounters (IS)	0.0	0.1
Mean number of other ambulatory encounters (OA)	3.0	8.0
Mean number of filled prescriptions	19.9	23.2
Mean number of generics	6.7	5.9
Mean number of unique drug classes	6.1	5.1

[1]Baseline characteristics were evaluated for the 365 days prior to drug initiation.
[2]All metrics based on total number of unique patients .
[3]Value represents standard deviation where no % follows the value.
[4]The Combined Comorbidity Score is calculated based on comorbidities observed during a requester-defined window around the exposure episode start date. (Gagne JJ, Glynn RJ, Avorn J, Levin R, Schneeweiss S. A Combined Comorbidity Score Predicted Mortality in Elderly Patients Better Than Existing Scores. J Clin Epidemiol. 2011;64(7):749-759; Sun JW, Rogers JR, Her Q, Welch EC, Panozzo CA, Toh S, Gagne JJ. Adaptation and Validation of the Combined Comorbidity Score for ICD-10-CM. Med Care. 2017;55(12):1046-1051).

3f

Table 2a: Descriptive statistics of cumulative exposure duration, all episodes, in days								
Exposures	**Total Patients**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	208	229.14	209.29	1	84	164	308	1,098
Etanercept	1,675	299.55	263.70	1	84	224	430	1,228
Tocilizumab	206	247.36	242.95	5	69	159	367	1,175
Adalimumab	1,624	285.36	257.38	1	84	200	406	1,251
Polyarticular Juvenile Idiopathic Arthritis patients	14,235	6.07	10.69	1	1	2	6	464

Table 2b: Descriptive statistics of cumulative exposure duration, all episodes, in days, by sex								
Exposures	**Total Patients**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	**208**	**229.14**	**209.29**	**1**	**84**	**164**	**308**	**1,098**
Female	178	215.80	198.88	1	84	144	280	1,098
Male	30	308.33	252.35	23	112	248	504	839
Other	0	-	-	-	-	-	-	-
Etanercept	**1,675**	**299.55**	**263.70**	**1**	**84**	**224**	**430**	**1,228**
Female	1,232	293.65	263.03	1	84	217	420	1,194
Male	443	315.94	265.17	2	89	251	468	1,228
Other	0	-	-	-	-	-	-	-
Tocilizumab	**206**	**247.36**	**242.95**	**5**	**69**	**159**	**367**	**1,175**
Female	170	245.14	240.70	5	72	162	336	1,175
Male	36	257.83	256.58	12	56	159	407	994
Other	0	-	-	-	-	-	-	-
Adalimumab	**1,624**	**285.36**	**257.38**	**1**	**84**	**200**	**406**	**1,251**
Female	1,122	276.97	253.28	1	84	196	392	1,251
Male	502	304.12	265.61	3	91	224	435	1,230
Other	0	-	-	-	-	-	-	-
Polyarticular Juvenile Idiopathic Arthritis patients	**14,235**	**6.07**	**10.69**	**1**	**1**	**2**	**6**	**464**
Female	10,191	6.33	10.33	1	1	2	7	139
Male	4,044	5.42	11.53	1	1	2	5	464
Other	0	-	-	-	-	-	-	-

Table 2c: Descriptive statistics of cumulative exposure duration, all episodes, in days, by age group (years)								
Exposures	Total Patients	Mean	STD	Min	Q1	Median	Q3	Max
Abatacept	**208**	**229.14**	**209.29**	**1**	**84**	**164**	**308**	**1,098**
00-01	0	-	-	-	-	-	-	-
02-04	0	-	-	-	-	-	-	-
05-09	4	215.25	204.07	56	72	151	359	504
10-14	13	246.69	261.99	28	31	168	336	839
15-18	45	222.84	159.09	28	102	187	342	601
19-21	33	267.33	238.70	18	112	187	313	1,098
22-44	79	204.44	206.52	1	56	126	280	774
45-64	31	254.65	231.50	12	84	168	310	867
65-74	3	233.00	249.36	55	55	126	518	518
75+	0	-	-	-	-	-	-	-
Etanercept	**1,675**	**299.55**	**263.70**	**1**	**84**	**224**	**430**	**1,228**
00-01	3	382.33	200.80	196	196	356	595	595
02-04	73	339.68	277.74	12	112	257	532	1,082
05-09	174	362.37	297.85	15	112	261	560	1,194
10-14	365	309.69	264.57	1	84	224	448	1,228
15-18	355	266.99	253.16	1	84	182	391	1,127
19-21	153	259.90	216.44	1	84	199	392	1,071
22-44	362	274.27	244.78	3	84	216	392	1,174
45-64	176	348.81	297.80	1	112	258	522	1,165
65-74	12	289.83	226.95	56	171	209	338	924
75+	2	503.00	444.06	189	189	503	817	817
Tocilizumab	**206**	**247.36**	**242.95**	**5**	**69**	**159**	**367**	**1,175**
00-01	0	-	-	-	-	-	-	-
02-04	2	104.00	11.31	96	96	104	112	112
05-09	9	220.33	338.29	5	28	61	237	1,054
10-14	19	147.05	124.89	27	51	89	273	364
15-18	35	254.69	239.56	12	90	158	434	1,175
19-21	37	315.76	285.82	14	112	168	495	1,036
22-44	69	215.26	206.94	13	56	140	336	840
45-64	33	299.27	276.57	28	99	199	412	994
65-74	1	505.00	-	505	505	505	505	505
75+	1	140.00	-	140	140	140	140	140
Adalimumab	**1,624**	**285.36**	**257.38**	**1**	**84**	**200**	**406**	**1,251**
00-01	2	62.00	48.08	28	28	62	96	96
02-04	41	318.73	248.45	16	75	249	532	934
05-09	168	309.18	275.30	4	88	220	478	1,081
10-14	339	296.96	267.96	3	89	224	404	1,196

Table 2c: Descriptive statistics of cumulative exposure duration, all episodes, in days, by age group (years)								
Exposures	Total Patients	Mean	STD	Min	Q1	Median	Q3	Max
15-18	409	280.22	253.45	4	84	196	420	1,067
19-21	172	273.40	240.31	2	84	209	393	1,006
22-44	347	261.35	238.77	1	84	196	342	1,230
45-64	129	317.50	288.73	1	112	236	412	1,251
65-74	12	274.58	261.75	28	77	211	382	965
75+	5	209.00	221.52	55	55	84	285	566
Polyarticular Juvenile Idiopathic Arthritis patients	**14,235**	**6.07**	**10.69**	**1**	**1**	**2**	**6**	**464**
00-01	72	15.04	16.79	1	3	11	21	108
02-04	566	11.21	14.18	1	2	6	16	110
05-09	1,448	9.74	12.95	1	2	5	13	116
10-14	2,585	8.69	12.19	1	1	4	11	118
15-18	2,443	7.20	13.93	1	1	3	8	464
19-21	1,094	5.25	9.32	1	1	2	6	139
22-44	3,055	3.74	6.22	1	1	2	4	115
45-64	2,399	2.73	4.95	1	1	1	2	78
65-74	302	2.14	3.36	1	1	1	2	35
75+	271	1.76	2.62	1	1	1	1	27

Table 3a: Descriptive statistics of first exposure episode duration, in days								
Exposures	**Total Episodes**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	208	73.31	79.79	1	28	35	84	601
Etanercept	1,675	79.36	105.80	1	28	30	84	1,097
Tocilizumab	206	77.25	91.92	4	28	39	84	681
Adalimumab	1,624	85.22	117.02	1	28	52	84	1,077
Polyarticular Juvenile Idiopathic Arthtritis patients	14,235	1.03	0.43	1	1	1	1	43

Table 3b: Descriptive statistics of first exposure episode duration, in days, by sex								
Exposures	**Total Episodes**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	**208**	**73.31**	**79.79**	**1**	**28**	**35**	**84**	**601**
Female	178	70.43	72.27	1	28	30	84	588
Male	30	90.40	114.96	23	28	56	84	601
Other	0	-	-	-	-	-	-	-
Etanercept	**1,675**	**79.36**	**105.80**	**1**	**28**	**30**	**84**	**1,097**
Female	1,232	77.17	102.13	1	28	28	84	1,041
Male	443	85.45	115.30	1	28	50	84	1,097
Other	0	-	-	-	-	-	-	-
Tocilizumab	**206**	**77.25**	**91.92**	**4**	**28**	**39**	**84**	**681**
Female	170	75.84	91.02	5	28	45	84	681
Male	36	83.92	97.08	4	28	32	84	392
Other	0	-	-	-	-	-	-	-
Adalimumab	**1,624**	**85.22**	**117.02**	**1**	**28**	**52**	**84**	**1,077**
Female	1,122	85.35	118.79	1	28	49	84	1,077
Male	502	84.93	113.07	1	28	56	84	992
Other	0	-	-	-	-	-	-	-
Polyarticular Juvenile Idiopathic Arthritis patients	**14,235**	**1.03**	**0.43**	**1**	**1**	**1**	**1**	**43**
Female	10,191	1.03	0.49	1	1	1	1	43
Male	4,044	1.03	0.18	1	1	1	1	4
Other	0	-	-	-	-	-	-	-

Table 3c: Descriptive statistics of first exposure episode duration, in days, by age group (years)								
Exposures	Total Episodes	Mean	STD	Min	Q1	Median	Q3	Max
Abatacept	**208**	**73.31**	**79.79**	**1**	**28**	**35**	**84**	**601**
00-01	0	-	-	-	-	-	-	-
02-04	0	-	-	-	-	-	-	-
05-09	4	28.00	0.00	28	28	28	28	28
10-14	13	62.85	64.56	28	28	28	56	259
15-18	45	84.91	103.73	28	28	56	84	601
19-21	33	77.33	58.82	18	28	56	112	223
22-44	79	69.01	83.25	1	28	28	84	588
45-64	31	75.90	63.98	12	28	56	84	255
65-74	3	47.00	14.73	30	30	55	56	56
75+	0	-	-	-	-	-	-	-
Etanercept	**1,675**	**79.36**	**105.80**	**1**	**28**	**30**	**84**	**1,097**
00-01	3	37.33	16.17	28	28	28	56	56
02-04	73	91.56	120.32	12	28	30	84	672
05-09	174	100.93	136.81	1	28	56	112	1,097
10-14	365	83.72	121.62	1	28	28	84	1,041
15-18	355	76.69	107.07	1	28	28	84	812
19-21	153	60.17	65.96	1	28	28	84	504
22-44	362	70.26	80.34	3	28	31	84	838
45-64	176	86.42	101.05	1	28	56	84	635
65-74	12	56.75	44.31	28	28	30	84	174
75+	2	126.00	59.40	84	84	126	168	168
Tocilizumab	**206**	**77.25**	**91.92**	**4**	**28**	**39**	**84**	**681**
00-01	0	-	-	-	-	-	-	-
02-04	2	104.00	11.31	96	96	104	112	112
05-09	9	85.11	111.17	5	28	56	84	364
10-14	19	77.21	84.77	27	28	28	84	327
15-18	35	96.14	113.60	4	28	56	112	530
19-21	37	78.81	125.67	14	28	28	84	681
22-44	69	60.68	47.56	13	28	30	84	224
45-64	33	86.79	97.69	28	28	30	84	392
65-74	1	84.00	-	84	84	84	84	84
75+	1	56.00	-	56	56	56	56	56
Adalimumab	**1,624**	**85.22**	**117.02**	**1**	**28**	**52**	**84**	**1,077**
00-01	2	62.00	48.08	28	28	62	96	96
02-04	41	121.80	154.86	16	28	56	140	608
05-09	168	92.17	150.87	1	28	44	84	1,077
10-14	339	85.18	113.76	1	28	33	84	924

Table 3c: Descriptive statistics of first exposure episode duration, in days, by age group (years)								
Exposures	**Total Episodes**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
15-18	409	84.90	122.59	1	28	55	84	1,067
19-21	172	70.07	106.15	2	28	28	84	895
22-44	347	80.53	94.70	1	28	56	84	646
45-64	129	102.09	115.93	1	28	56	124	538
65-74	12	63.08	62.75	28	28	56	56	254
75+	5	54.20	30.14	20	28	55	84	84
Polyarticular Juvenile Idiopathic Arthritis patients	**14,235**	**1.03**	**0.43**	**1**	**1**	**1**	**1**	**43**
00-01	72	1.08	0.28	1	1	1	1	2
02-04	566	1.03	0.17	1	1	1	1	2
05-09	1,448	1.02	0.17	1	1	1	1	4
10-14	2,585	1.03	0.18	1	1	1	1	4
15-18	2,443	1.03	0.18	1	1	1	1	3
19-21	1,094	1.04	0.23	1	1	1	1	4
22-44	3,055	1.05	0.86	1	1	1	1	43
45-64	2,399	1.02	0.16	1	1	1	1	3
65-74	302	1.02	0.13	1	1	1	1	2
75+	271	1.04	0.31	1	1	1	1	5

Table 4a: Descriptive statistics of all exposure episode durations, in days								
Exposures	Total Episodes	Mean	STD	Min	Q1	Median	Q3	Max
Abatacept	818	58.27	62.93	1	28	28	69	601
Etanercept	8,541	58.74	74.76	1	28	28	56	1,144
Tocilizumab	819	62.22	70.62	2	28	28	84	681
Adalimumab	7,067	65.58	87.01	1	28	28	84	1,083
Polyarticular Juvenile Idiopathic Arthritis patients	83,129	1.04	0.29	1	1	1	1	43

Table 4b: Descriptive statistics of all exposure episode durations, in days, by sex								
Exposures	**Total Episodes**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	**818**	**58.27**	**62.93**	**1**	**28**	**28**	**69**	**601**
Female	667	57.59	61.78	1	28	28	62	588
Male	151	61.26	67.90	6	28	28	84	601
Other	0	-	-	-	-	-	-	-
Etanercept	**8,541**	**58.74**	**74.76**	**1**	**28**	**28**	**56**	**1,144**
Female	6,189	58.45	72.55	1	28	28	56	1,041
Male	2,352	59.51	80.30	1	28	28	56	1,144
Other	0	-	-	-	-	-	-	-
Tocilizumab	**819**	**62.22**	**70.62**	**2**	**28**	**28**	**84**	**681**
Female	683	61.02	69.43	3	28	28	82	681
Male	136	68.25	76.34	2	28	28	84	392
Other	0	-	-	-	-	-	-	-
Adalimumab	**7,067**	**65.58**	**87.01**	**1**	**28**	**28**	**84**	**1,083**
Female	4,730	65.70	86.07	1	28	28	84	1,083
Male	2,337	65.33	88.90	1	28	28	83	992
Other	0	-	-	-	-	-	-	-
Polyarticular Juvenile Idiopathic Arthritis patients	**83,129**	**1.04**	**0.29**	**1**	**1**	**1**	**1**	**43**
Female	62,119	1.04	0.30	1	1	1	1	43
Male	21,010	1.04	0.25	1	1	1	1	9
Other	0	-	-	-	-	-	-	-

Table 4c: Descriptive statistics of all exposure episode durations, in days, by age group (years)								
Exposures	**Total Episodes**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	**818**	**58.27**	**62.93**	**1**	**28**	**28**	**69**	**601**
00-01	0	-	-	-	-	-	-	-
02-04	0	-	-	-	-	-	-	-
05-09	18	47.83	38.75	28	28	28	56	168
10-14	57	56.26	54.57	3	27	28	82	336
15-18	151	66.41	75.84	4	28	28	84	601
19-21	143	61.69	66.58	10	28	28	84	504
22-44	310	52.10	56.41	1	28	28	56	588
45-64	132	59.80	53.74	12	28	28	84	255
65-74	7	99.86	158.77	14	30	55	56	458
75+	0	-	-	-	-	-	-	-
Etanercept	**8,541**	**58.74**	**74.76**	**1**	**28**	**28**	**56**	**1,144**
00-01	15	76.47	85.51	28	28	28	84	287
02-04	403	61.53	78.05	4	28	28	56	672
05-09	1,011	62.37	87.92	1	28	28	56	1,097
10-14	1,819	62.14	86.84	1	28	28	56	1,144
15-18	1,678	56.49	74.36	1	28	28	56	812
19-21	840	47.34	44.93	1	28	28	56	504
22-44	1,778	55.84	62.66	1	28	28	56	922
45-64	940	65.31	70.56	1	28	28	84	635
65-74	53	65.62	83.43	28	28	28	56	504
75+	4	251.50	326.60	21	53	126	451	733
Tocilizumab	**819**	**62.22**	**70.62**	**2**	**28**	**28**	**84**	**681**
00-01	0	-	-	-	-	-	-	-
02-04	2	104.00	11.31	96	96	104	112	112
05-09	23	86.22	141.50	5	21	28	111	628
10-14	48	58.21	62.07	3	28	28	59	327
15-18	117	76.19	89.76	2	28	42	84	530
19-21	225	51.92	60.41	4	28	28	56	681
22-44	266	55.84	51.21	3	28	28	60	391
45-64	130	75.97	81.86	3	28	32	84	420
65-74	4	126.25	95.30	29	57	112	196	252
75+	4	35.00	14.00	28	28	28	42	56
Adalimumab	**7,067**	**65.58**	**87.01**	**1**	**28**	**28**	**84**	**1,083**
00-01	2	62.00	48.08	28	28	62	96	96
02-04	202	64.69	88.50	7	28	28	56	608
05-09	724	71.74	100.78	1	28	28	80	1,077
10-14	1,525	66.01	91.70	1	28	28	70	925

Exposures	Total Episodes	Mean	STD	Min	Q1	Median	Q3	Max
Table 4c: Descriptive statistics of all exposure episode durations, in days, by age group (years)								
15-18	1,815	63.15	86.36	1	28	28	82	1,067
19-21	769	61.15	74.44	1	28	28	84	895
22-44	1,425	63.64	76.24	1	28	28	84	978
45-64	526	77.87	100.33	1	28	55	84	1,083
65-74	55	59.91	60.60	8	28	28	56	280
75+	24	43.54	50.78	6	20	20	40	220
Polyarticular Juvenile Idiopathic Arthritis patients	**83,129**	**1.04**	**0.29**	**1**	**1**	**1**	**1**	**43**
00-01	1,024	1.06	0.23	1	1	1	1	2
02-04	6,127	1.04	0.19	1	1	1	1	4
05-09	13,601	1.04	0.21	1	1	1	1	5
10-14	21,643	1.04	0.22	1	1	1	1	7
15-18	16,793	1.05	0.25	1	1	1	1	6
19-21	5,522	1.04	0.22	1	1	1	1	5
22-44	10,983	1.04	0.53	1	1	1	1	43
45-64	6,354	1.03	0.26	1	1	1	1	10
65-74	637	1.02	0.12	1	1	1	1	2
75+	445	1.07	0.39	1	1	1	1	5

Table 5a: Descriptive statistics of days supplied per dispensing

Exposures	Total Dispensings	Mean	STD	Min	Q1	Median	Q3	Max
Abatacept	1,458	32.69	16.80	1	28	28	28	112
Etanercept	15,455	32.47	16.41	1	28	28	28	168
Tocilizumab	1,532	33.26	17.94	2	28	28	28	180
Adalimumab	14,453	32.07	16.47	1	28	28	28	194
Polyarticular Juvenile Idiopathic Arthritis patients	100,334	1.00	0.00	1	1	1	1	1

Table 5b: Descriptive statistics of days supplied per dispensing, by sex

Exposures	Total Dispensings	Mean	STD	Min	Q1	Median	Q3	Max
Abatacept	**1,458**	**32.69**	**16.80**	**1**	**28**	**28**	**28**	**112**
Female	1,181	32.52	16.61	1	28	28	28	112
Male	277	33.39	17.62	6	28	28	28	84
Other	0	-	-	-	-	-	-	-
Etanercept	**15,455**	**32.47**	**16.41**	**1**	**28**	**28**	**28**	**168**
Female	11,108	32.58	16.53	1	28	28	28	112
Male	4,347	32.20	16.08	1	28	28	28	168
Other	0	-	-	-	-	-	-	-
Tocilizumab	**1,532**	**33.26**	**17.94**	**2**	**28**	**28**	**28**	**180**
Female	1,249	33.37	18.14	3	28	28	28	180
Male	283	32.80	17.03	2	28	28	28	84
Other	0	-	-	-	-	-	-	-
Adalimumab	**14,453**	**32.07**	**16.47**	**1**	**28**	**28**	**28**	**194**
Female	9,617	32.32	16.97	1	28	28	28	194
Male	4,836	31.57	15.42	1	28	28	28	84
Other	0	-	-	-	-	-	-	-
Polyarticular Juvenile Idiopathic Arthritis patients	**100,334**	**1.00**	**0.00**	**1**	**1**	**1**	**1**	**1**
Female	75,051	1.00	0.00	1	1	1	1	1
Male	25,283	1.00	0.00	1	1	1	1	1
Other	0	-	-	-	-	-	-	-

Table 5c: Descriptive statistics of days supplied per dispensing, by age group (years)								
Exposures	**Total Dispensings**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	**1,458**	**32.69**	**16.80**	**1**	**28**	**28**	**28**	**112**
00-01	0	-	-	-	-	-	-	-
02-04	0	-	-	-	-	-	-	-
05-09	24	35.88	22.81	17	28	28	28	112
10-14	102	31.44	15.80	3	27	28	28	84
15-18	338	29.67	11.94	3	28	28	28	84
19-21	258	34.19	18.15	3	28	28	28	90
22-44	496	32.56	16.47	1	28	28	28	84
45-64	222	35.56	20.13	3	28	28	28	84
65-74	18	38.83	25.59	6	28	28	30	84
75+	0	-	-	-	-	-	-	-
Etanercept	**15,455**	**32.47**	**16.41**	**1**	**28**	**28**	**28**	**168**
00-01	37	31.00	12.54	7	28	28	28	84
02-04	758	32.71	13.92	1	28	28	28	94
05-09	2,014	31.31	14.45	1	28	28	28	90
10-14	3,589	31.50	14.69	1	28	28	28	90
15-18	3,024	31.34	14.33	1	28	28	28	90
19-21	1,250	31.87	19.37	1	28	28	28	168
22-44	2,903	34.20	18.50	1	28	28	28	112
45-64	1,768	34.72	18.93	1	28	28	28	84
65-74	95	36.61	21.06	4	28	28	28	84
75+	17	59.18	28.33	21	28	84	84	84
Tocilizumab	**1,532**	**33.26**	**17.94**	**2**	**28**	**28**	**28**	**180**
00-01	0	-	-	-	-	-	-	-
02-04	8	26.00	5.66	12	28	28	28	28
05-09	69	28.74	12.76	5	28	28	30	84
10-14	94	29.72	9.84	3	28	28	28	56
15-18	265	33.64	18.74	2	28	28	28	116
19-21	378	30.91	15.37	3	28	28	28	180
22-44	456	32.57	16.51	3	28	28	28	90
45-64	247	39.98	23.80	3	28	28	31	84
65-74	10	50.50	28.83	28	28	29	84	84
75+	5	28.00	0.00	28	28	28	28	28
Adalimumab	**14,453**	**32.07**	**16.47**	**1**	**28**	**28**	**28**	**194**
00-01	5	24.80	7.16	12	28	28	28	28
02-04	420	31.11	12.70	5	28	28	28	84
05-09	1,708	30.41	13.45	1	28	28	28	84
10-14	3,364	29.93	12.23	1	28	28	28	90

Table 5c: Descriptive statistics of days supplied per dispensing, by age group								
Exposures	Total Dispensings	Mean	STD	Min	Q1	Median	Q3	Max
15-18	3,694	31.03	15.54	1	28	28	28	90
19-21	1,381	34.05	18.84	1	28	28	28	194
22-44	2,628	34.52	19.75	1	28	28	28	168
45-64	1,102	37.17	22.03	1	28	28	28	168
65-74	114	28.90	8.78	8	28	28	28	84
75+	37	28.24	20.80	6	20	20	20	84
Polyarticular Juvenile Idiopathic Arthritis patients	**100,334**	**1.00**	**0.00**	**1**	**1**	**1**	**1**	**1**
00-01	1,271	1.00	0.00	1	1	1	1	1
02-04	7,398	1.00	0.00	1	1	1	1	1
05-09	16,587	1.00	0.00	1	1	1	1	1
10-14	26,541	1.00	0.00	1	1	1	1	1
15-18	20,525	1.00	0.00	1	1	1	1	1
19-21	6,782	1.00	0.00	1	1	1	1	1
22-44	12,861	1.00	0.00	1	1	1	1	1
45-64	7,167	1.00	0.00	1	1	1	1	1
65-74	697	1.00	0.00	1	1	1	1	1
75+	505	1.00	0.00	1	1	1	1	1

Table 6a: Descriptive statistics of the length of all gaps between treatment episodes, in days								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	818	67.11	166.72	0	3	10	34	1,182
Etanercept	8,541	52.80	138.23	0	4	13	34	1,231
Tocilizumab	819	50.73	137.52	0	2	9	25	1,175
Adalimumab	7,067	47.10	131.51	0	2	8	27	1,243
Polyarticular Juvenile Idiopathic Arthritis patients	83,129	95.16	175.17	0	12	34	92	1,276

Table 6b: Descriptive statistics of the length of all gaps between treatment episodes, in days, by sex								
Exposures	**Total Gaps**	**Mean**	**STD**	**Min**	**Q1**	**Median**	**Q3**	**Max**
Abatacept	**818**	**67.11**	**166.72**	**0**	**3**	**10**	**34**	**1,182**
Female	667	69.60	168.25	0	3	10	33	1,081
Male	151	56.15	159.87	0	3	9	35	1,182
Other	0	-	-	-	-	-	-	-
Etanercept	**8,541**	**52.80**	**138.23**	**0**	**4**	**13**	**34**	**1,231**
Female	6,189	55.86	144.55	0	4	13	34	1,231
Male	2,352	44.75	119.68	0	4	12	32	1,192
Other	0	-	-	-	-	-	-	-
Tocilizumab	**819**	**50.73**	**137.52**	**0**	**2**	**9**	**25**	**1,175**
Female	683	53.21	143.07	0	2	9	27	1,175
Male	136	38.32	104.83	0	2	8	23	635
Other	0	-	-	-	-	-	-	-
Adalimumab	**7,067**	**47.10**	**131.51**	**0**	**2**	**8**	**27**	**1,243**
Female	4,730	51.38	141.61	0	2	8	27	1,243
Male	2,337	38.44	107.74	0	2	9	26	1,124
Other	0	-	-	-	-	-	-	-
Polyarticular Juvenile Idiopathic Arthritis patients	**83,129**	**95.16**	**175.17**	**0**	**12**	**34**	**92**	**1,276**
Female	62,119	91.33	168.96	0	12	33	90	1,276
Male	21,010	106.48	191.89	0	12	37	103	1,276
Other	0	-	-	-	-	-	-	-

Table 6c: Descriptive statistics of the length of all gaps between treatment episodes, in days, by age group (years)

Exposures	Total Gaps	Mean	STD	Min	Q1	Median	Q3	Max
Abatacept	**818**	**67.11**	**166.72**	**0**	**3**	**10**	**34**	**1,182**
00-01	0	-	-	-	-	-	-	-
02-04	0	-	-	-	-	-	-	-
05-09	18	106.50	256.26	0	1	10	27	969
10-14	57	49.51	146.68	0	2	7	22	930
15-18	151	74.60	173.55	0	2	8	41	860
19-21	143	82.83	194.89	0	3	14	41	1,182
22-44	310	60.22	146.73	0	4	11	29	1,081
45-64	132	63.31	167.84	0	3	10	33	1,061
65-74	7	3.43	4.79	0	0	1	5	13
75+	0	-	-	-	-	-	-	-
Etanercept	**8,541**	**52.80**	**138.23**	**0**	**4**	**13**	**34**	**1,231**
00-01	15	30.20	40.32	0	1	12	54	143
02-04	403	42.84	105.01	0	4	14	34	1,075
05-09	1,011	45.96	131.89	0	4	12	29	1,189
10-14	1,819	56.91	149.95	0	4	13	35	1,231
15-18	1,678	66.81	166.51	0	4	14	38	1,180
19-21	840	60.85	144.70	0	5	15	49	1,110
22-44	1,778	45.47	115.01	0	3	11	33	1,157
45-64	940	38.60	110.12	0	3	9	26	1,160
65-74	53	54.79	99.78	0	8	24	54	509
75+	4	3.00	3.56	0	0	3	6	7
Tocilizumab	**819**	**50.73**	**137.52**	**0**	**2**	**9**	**25**	**1,175**
00-01	0	-	-	-	-	-	-	-
02-04	2	53.50	75.66	0	0	54	107	107
05-09	23	29.13	60.33	0	0	7	35	285
10-14	48	43.40	169.04	0	1	5	13	1,073
15-18	117	45.61	98.82	0	2	10	28	535
19-21	225	43.76	116.04	0	4	11	27	1,046
22-44	266	59.92	159.83	0	2	8	23	1,175
45-64	130	54.65	152.42	0	3	8	28	969
65-74	4	2.50	1.73	0	2	3	4	4
75+	4	113.50	125.57	2	9	97	219	258
Adalimumab	**7,067**	**47.10**	**131.51**	**0**	**2**	**8**	**27**	**1,243**
00-01	2	1.50	2.12	0	0	2	3	3
02-04	202	24.46	65.53	0	1	6	18	622
05-09	724	28.67	92.65	0	1	6	16	1,075
10-14	1,525	44.11	128.87	0	2	7	22	1,238

Table 6c: Descriptive statistics of the length of all gaps between treatment episodes, in days, by age group (years)

Exposures	Total Gaps	Mean	STD	Min	Q1	Median	Q3	Max
15-18	1,815	51.23	144.56	0	3	11	28	1,159
19-21	769	64.49	159.26	0	4	12	41	1,243
22-44	1,425	49.28	126.79	0	3	10	31	1,124
45-64	526	46.88	125.27	0	3	8	26	1,081
65-74	55	37.09	105.68	0	1	7	18	616
75+	24	17.38	41.27	0	4	9	12	207
Polyarticular Juvenile Idiopathic Arthritis patients	**83,129**	**95.16**	**175.17**	**0**	**12**	**34**	**92**	**1,276**
00-01	1,024	37.98	88.18	1	6	16	41	1,065
02-04	6,127	52.10	105.56	0	8	24	60	1,263
05-09	13,601	64.46	117.26	0	9	28	74	1,276
10-14	21,643	70.84	134.31	0	10	28	75	1,276
15-18	16,793	86.69	161.76	0	11	30	89	1,272
19-21	5,522	117.13	193.65	0	15	42	118	1,262
22-44	10,983	136.55	208.96	0	19	57	155	1,276
45-64	6,354	200.13	283.16	0	26	80	233	1,276
65-74	637	220.09	286.20	1	26	90	325	1,248
75+	445	288.47	335.43	1	32	144	437	1,271

Table 7: Counts of reason for censoring, all episodes and first episode	Total		Disenrollment		Evidence of death		Episode end	
	N	%	N	%	N	%	N	%
All Episodes								
Abatacept	818	100.0	93	11.4	0	0.0	818	100.0
Etanercept	8,541	100.0	805	9.4	0	0.0	8,541	100.0
Tocilizumab	819	100.0	109	13.3	0	0.0	819	100.0
Adalimumab	7,067	100.0	944	13.4	0	0.0	7,067	100.0
Polyarticular Juvenile Idiopathic Arthritis patients	83,129	100.0	30	0.0	0	0.0	83,129	100.0
First Episode								
Abatacept	208	100.0	27	13.0	0	0.0	208	100.0
Etanercept	1,675	100.0	182	10.9	0	0.0	1,675	100.0
Tocilizumab	206	100.0	33	16.0	0	0.0	206	100.0
Adalimumab	1,624	100.0	268	16.5	0	0.0	1,624	100.0
Polyarticular Juvenile Idiopathic Arthritis patients	14,235	100.0	4	0.0	0	0.0	14,235	100.0

Table 8: Cohort Attrition Table

Attrition Criteria	Members
Abatacept	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	50,793,879 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must satisfy the age range condition within the query period	47,489,733 (93.5%)
Exclusion - Members must meet chart availability criterion within the query period	47,489,733 (93.5%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	47,489,733 (93.5%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	7,344 (0.0%)
Exclusion - Members must have at least one cohort episode beginning within the age range condition	7,344 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	7,078 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	7,078 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	5,727 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the exclusion conditions	5,727 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the inclusion conditions	208 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	208 (0.0%)
Etanercept	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	50,793,879 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must satisfy the age range condition within the query period	47,489,733 (93.5%)
Exclusion - Members must meet chart availability criterion within the query period	47,489,733 (93.5%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	47,489,733 (93.5%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	52,264 (0.1%)
Exclusion - Members must have at least one cohort episode beginning within the age range condition	52,264 (0.1%)
Exclusion - Members must have at least one episode defining index claim during the query period	49,754 (0.1%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	49,754 (0.1%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	38,952 (0.1%)
Exclusion - Members must have at least one cohort episode satisfying the exclusion conditions	38,952 (0.1%)
Exclusion - Members must have at least one cohort episode satisfying the inclusion conditions	1,675 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	1,675 (0.0%)
Tocilizumab	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	50,793,879 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must satisfy the age range condition within the query period	47,489,733 (93.5%)

Table 8: Cohort Attrition Table

Attrition Criteria	Members
Exclusion - Members must meet chart availability criterion within the query period	47,489,733 (93.5%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	47,489,733 (93.5%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	4,517 (0.0%)
Exclusion - Members must have at least one cohort episode beginning within the age range condition	4,517 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	4,311 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	4,311 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	3,490 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the exclusion conditions	3,490 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the inclusion conditions	206 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	206 (0.0%)
Adalimumab	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	50,793,879 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must satisfy the age range condition within the query period	47,489,733 (93.5%)
Exclusion - Members must meet chart availability criterion within the query period	47,489,733 (93.5%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	47,489,733 (93.5%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	106,756 (0.2%)
Exclusion - Members must have at least one cohort episode beginning within the age range condition	106,756 (0.2%)
Exclusion - Members must have at least one episode defining index claim during the query period	101,468 (0.2%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	101,468 (0.2%)
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	76,582 (0.2%)
Exclusion - Members must have at least one cohort episode satisfying the exclusion conditions	76,582 (0.2%)
Exclusion - Members must have at least one cohort episode satisfying the inclusion conditions	1,624 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	1,624 (0.0%)
Polyarticular Juvenile Idiopathic Arthritis patients	
Initial Member Count - Members with a non-missing birth date/sex at any enrollment episode overlapping the query period	50,793,879 (100.0%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N during the query period	47,490,984 (93.5%)
Exclusion - Members must be excluded if they only have enrollment episodes with DrugCov=Y and MedCov=N and DrugCov=N and MedCov=Y during the query period	47,490,984 (93.5%)
Exclusion - Members must satisfy the age range condition within the query period	47,489,733 (93.5%)
Exclusion - Members must meet chart availability criterion within the query period	47,489,733 (93.5%)
Exclusion - Members must satisfy the demographic (sex, race and hispanic) condition	47,489,733 (93.5%)
Exclusion - Members must have at least one claim with cohort-identifying codes within the query period	18,546 (0.0%)
Exclusion - Members must have at least one cohort episode beginning within the age range condition	18,546 (0.0%)
Exclusion - Members must have at least one episode defining index claim during the query period	18,546 (0.0%)
Exclusion - Members must have at least one cohort episode incident with respect to other criteria	18,546 (0.0%)

Table 8: Cohort Attrition Table	
Attrition Criteria	**Members**
Exclusion - Members must have at least one cohort episode satisfying the pre-index enrollment criterion	14,235 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the exclusion conditions	14,235 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the inclusion conditions	14,235 (0.0%)
Exclusion - Members must have at least one cohort episode satisfying the post-index enrollment criterion	14,235 (0.0%)

Appendix A. Dates of Available Data for Each Data Partner (DP) up to Request End Date (03/31/2019) as of Query Distribution Date		
Data Partner (Masked)	**Start Date**	**End Date**
DP01	01/01/2010	03/31/2019

Appendix B. Specifications Used to Define Parameters in this Query

Global Values

Enrollment Criteria:**Medical and Drug Coverage**

Enrollment Gap (Days):**45**

Age Groups (Years):**00-01, 02-04, 05-09, 10-14, 15-18, 19-21, 22-44, 45-64, 65-74, 75+**

Query Period: **10/01/2015-03/31/2019**

Baseline Characteristics Table:**Yes**

Baseline Evaluation Window (Day): **-365,0**

#	Cohort Name	Index Exposure	Pre-Index Enrollment Period (Days)	Washout Period (Days)	Treatment Episode Gap (Days)	Treatment Episode Extension (Days)	Inclusion/ Exclusion	Criteria	Criteria Definition	Evaluation Period Start (Day)	Evaluation Period End (Day)
1	Tocilizumab	Tocilizumab[1]	365	0	0	0	Inclusion	pJIA	pJIA[2]	-365	0
							--	--	--	--	--
2	Abatacept	Abatacept[3]	365	0	0	0	Inclusion	pJIA	pJIA[4]	-365	0
							--	--	--	--	--
3	Adalimumab	Adalimumab[5]	365	0	0	0	Inclusion	pJIA	pJIA[6]	-365	0
							--	--	--	--	--
4	Etanercept	Etanercept[7]	365	0	0	0	Inclusion	pJIA	pJIA[8]	-365	0
							--	--	--	--	--
5	Polyarticular Juvenile Idiopathic Arthritis (pJIA) patients	pJIA[9]	365	0	0	0	--	--	--	--	--
							--	--	--	--	--

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

Appendix of Generic Names and Chronic Conditions

[1] See Appendices C and D for index exposure definitions.

[2] See Appendix E for inclusion criteria definitions.

[3] See Appendices C and D for index exposure definitions.

[4] See Appendix E for inclusion criteria definitions.

[5] See Appendices C and D for index exposure definitions.

[6] See Appendix E for inclusion criteria definitions.

[7] See Appendices C and D for index exposure definitions.

[8] See Appendix E for inclusion criteria definitions.

[9] See Appendices C and D for index exposure definitions.

Baseline Characteristics Table

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

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

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

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

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

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

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

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

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

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

Enrollment Gap - Allowed gap between coverage periods.

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

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

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

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

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

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

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

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

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

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

Appendix C. List of Healthcare Common Procedure Coding System (HCPCS) Procedure Codes, Current Procedural Terminology (CPT) Procedure Codes, and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Index Exposures in this Request

Code	Code Category	Code Type	Description
			Adalimumab
J0135	Procedure	HCPCS	Adalimumab
			Etanercept
J1438	Procedure	HCPCS	Etanercept
			Tocilizumab
C9264	Procedure	CPT-4	Tocilizumab
J3262	Procedure	CPT-4	Tocilizumab
			Polyarticular Juvenile Idiopathic Arthritis
M0800	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis of unspecified site
M08011	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right shoulder
M08012	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left shoulder
M08019	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified shoulder
M08021	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right elbow
M08022	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left elbow
M08029	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified elbow
M08031	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right wrist
M08032	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left wrist
M08039	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified wrist
M08041	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right hand
M08042	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left hand
M08049	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified hand
M08051	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right hip
M08052	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left hip
M08059	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified hip
M08061	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right knee
M08062	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left knee
M08069	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified knee
M08071	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right ankle and foot
M08072	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left ankle and foot
M08079	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified ankle and foot
M0808	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, vertebrae
M0809	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, multiple sites
M081	Diagnosis	ICD-10-CM	Juvenile ankylosing spondylitis
M083	Diagnosis	ICD-10-CM	Juvenile rheumatoid polyarthritis (seronegative)
M0840	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified site
M08411	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right shoulder
M08412	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left shoulder
M08419	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified shoulder
M08421	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right elbow
M08422	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left elbow
M08429	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified elbow

Appendix C. List of Healthcare Common Procedure Coding System (HCPCS) Procedure Codes, Current Procedural Terminology (CPT) Procedure Codes, and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Index Exposures in this Request

Code	Code Category	Code Type	Description
M08431	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right wrist
M08432	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left wrist
M08439	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified wrist
M08441	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right hand
M08442	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left hand
M08449	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified hand
M08451	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right hip
M08452	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left hip
M08459	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified hip
M08461	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right knee
M08462	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left knee
M08469	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified knee
M08471	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right ankle and foot
M08472	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left ankle and foot
M08479	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified ankle and foot
M0880	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified site
M08811	Diagnosis	ICD-10-CM	Other juvenile arthritis, right shoulder
M08812	Diagnosis	ICD-10-CM	Other juvenile arthritis, left shoulder
M08819	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified shoulder
M08821	Diagnosis	ICD-10-CM	Other juvenile arthritis, right elbow
M08822	Diagnosis	ICD-10-CM	Other juvenile arthritis, left elbow
M08829	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified elbow
M08831	Diagnosis	ICD-10-CM	Other juvenile arthritis, right wrist
M08832	Diagnosis	ICD-10-CM	Other juvenile arthritis, left wrist
M08839	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified wrist
M08841	Diagnosis	ICD-10-CM	Other juvenile arthritis, right hand
M08842	Diagnosis	ICD-10-CM	Other juvenile arthritis, left hand
M08849	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified hand
M08851	Diagnosis	ICD-10-CM	Other juvenile arthritis, right hip
M08852	Diagnosis	ICD-10-CM	Other juvenile arthritis, left hip
M08859	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified hip
M08861	Diagnosis	ICD-10-CM	Other juvenile arthritis, right knee
M08862	Diagnosis	ICD-10-CM	Other juvenile arthritis, left knee
M08869	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified knee
M08871	Diagnosis	ICD-10-CM	Other juvenile arthritis, right ankle and foot
M08872	Diagnosis	ICD-10-CM	Other juvenile arthritis, left ankle and foot
M08879	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified ankle and foot
M0888	Diagnosis	ICD-10-CM	Other juvenile arthritis, other specified site
M0889	Diagnosis	ICD-10-CM	Other juvenile arthritis, multiple sites
M0890	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified site
M08911	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right shoulder

Appendix C. List of Healthcare Common Procedure Coding System (HCPCS) Procedure Codes, Current Procedural Terminology (CPT) Procedure Codes, and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Index Exposures in this Request

Code	Code Category	Code Type	Description
M08912	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left shoulder
M08919	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified shoulder
M08921	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right elbow
M08922	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left elbow
M08929	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified elbow
M08931	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right wrist
M08932	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left wrist
M08939	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified wrist
M08941	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right hand
M08942	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left hand
M08949	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified hand
M08951	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right hip
M08952	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left hip
M08959	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified hip
M08961	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right knee
M08962	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left knee
M08969	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified knee
M08971	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right ankle and foot
M08972	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left ankle and foot
M08979	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified ankle and foot
M0898	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, vertebrae
M0899	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, multiple sites

Appendix D. List of Generic Names of Medical Products Used to Define Index Exposures in this Request

Generic Name
Abatacept
Etanercept
Tocilizumab
Adalimumab

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

Code	Code Category	Code Type	Description
Polyarticular Juvenile Idiopathic Arthritis			
M0800	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis of unspecified site
M08011	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right shoulder
M08012	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left shoulder
M08019	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified shoulder
M08021	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right elbow
M08022	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left elbow
M08029	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified elbow
M08031	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right wrist
M08032	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left wrist
M08039	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified wrist
M08041	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right hand
M08042	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left hand
M08049	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified hand
M08051	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right hip
M08052	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left hip
M08059	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified hip
M08061	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right knee
M08062	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left knee
M08069	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified knee
M08071	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, right ankle and foot
M08072	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, left ankle and foot
M08079	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, unspecified ankle and foot
M0808	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, vertebrae
M0809	Diagnosis	ICD-10-CM	Unspecified juvenile rheumatoid arthritis, multiple sites
M081	Diagnosis	ICD-10-CM	Juvenile ankylosing spondylitis
M083	Diagnosis	ICD-10-CM	Juvenile rheumatoid polyarthritis (seronegative)
M0840	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified site
M08411	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right shoulder
M08412	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left shoulder
M08419	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified shoulder
M08421	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right elbow
M08422	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left elbow
M08429	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified elbow
M08431	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right wrist
M08432	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left wrist
M08439	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified wrist
M08441	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right hand
M08442	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left hand
M08449	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified hand
M08451	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right hip
M08452	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left hip

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

Code	Code Category	Code Type	Description
M08459	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified hip
M08461	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right knee
M08462	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left knee
M08469	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified knee
M08471	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, right ankle and foot
M08472	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, left ankle and foot
M08479	Diagnosis	ICD-10-CM	Pauciarticular juvenile rheumatoid arthritis, unspecified ankle and foot
M0880	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified site
M08811	Diagnosis	ICD-10-CM	Other juvenile arthritis, right shoulder
M08812	Diagnosis	ICD-10-CM	Other juvenile arthritis, left shoulder
M08819	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified shoulder
M08821	Diagnosis	ICD-10-CM	Other juvenile arthritis, right elbow
M08822	Diagnosis	ICD-10-CM	Other juvenile arthritis, left elbow
M08829	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified elbow
M08831	Diagnosis	ICD-10-CM	Other juvenile arthritis, right wrist
M08832	Diagnosis	ICD-10-CM	Other juvenile arthritis, left wrist
M08839	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified wrist
M08841	Diagnosis	ICD-10-CM	Other juvenile arthritis, right hand
M08842	Diagnosis	ICD-10-CM	Other juvenile arthritis, left hand
M08849	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified hand
M08851	Diagnosis	ICD-10-CM	Other juvenile arthritis, right hip
M08852	Diagnosis	ICD-10-CM	Other juvenile arthritis, left hip
M08859	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified hip
M08861	Diagnosis	ICD-10-CM	Other juvenile arthritis, right knee
M08862	Diagnosis	ICD-10-CM	Other juvenile arthritis, left knee
M08869	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified knee
M08871	Diagnosis	ICD-10-CM	Other juvenile arthritis, right ankle and foot
M08872	Diagnosis	ICD-10-CM	Other juvenile arthritis, left ankle and foot
M08879	Diagnosis	ICD-10-CM	Other juvenile arthritis, unspecified ankle and foot
M0888	Diagnosis	ICD-10-CM	Other juvenile arthritis, other specified site
M0889	Diagnosis	ICD-10-CM	Other juvenile arthritis, multiple sites
M0890	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified site
M08911	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right shoulder
M08912	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left shoulder
M08919	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified shoulder
M08921	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right elbow
M08922	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left elbow
M08929	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified elbow
M08931	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right wrist
M08932	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left wrist
M08939	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified wrist
M08941	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right hand

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

Code	Code Category	Code Type	Description
M08942	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left hand
M08949	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified hand
M08951	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right hip
M08952	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left hip
M08959	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified hip
M08961	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right knee
M08962	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left knee
M08969	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified knee
M08971	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, right ankle and foot
M08972	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, left ankle and foot
M08979	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, unspecified ankle and foot
M0898	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, vertebrae
M0899	Diagnosis	ICD-10-CM	Juvenile arthritis, unspecified, multiple sites