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

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

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

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Overview for Request: cder_mpl1r_wp101

Request ID: cder_mpl1r_wp101_nsdv_v01

Request Description: This report contains estimates of interleukin-1 (IL-1) and interleukin-6 (IL-6) inhibitor use and occurrence of pulmonary arterial hypertension (PAH), interstitial lung disease (ILD), and macrophage activation syndrome (MAS) among an adult cohort with Adult-Onset Still's Disease (AOSD) and a pediatric cohort with Systemic Juvenile Idiopathic Arthritis (SJIA) in the Sentinel Distributed Database (SDD). This is report 2 of 2. Report 1 contains estimates of PAH, ILD, and MAS among an adult cohort with AOSD and a pediatric cohort with SJIA in the SDD.

Sentinel Modular Program Tool Used: Cohort Identification and Descriptive Analysis (CIDA) tool, version 5.4.4

Data Source: Data from October 1, 2015 to March 31, 2018 from 15 Data Partners contributing to the SDD were included in this report. See Appendix A for a list of dates of available data for each Data Partner. This request was distributed to Data Partners on August 15, 2018.

Purpose: The purpose of this request was to estimate the number of incident PAH, ILD, and MAS diagnoses among:

- 1) a cohort of adult members who were dispensed IL-1/-6 inhibitors and were previously diagnosed with AOSD
- 2) a cohort of pediatric members who were dispensed IL-1/-6 inhibitors and were previously diagnosed with SJIA

Member demographic characteristics and health service utilization intensity in the 183 days prior to their first qualifying dispensing, across different care settings, were additionally assessed for each cohort.

Exposures of Interest: The exposures of interest were IL-1 and IL-6 inhibitors; generic names of these drugs include anakinra, canakinumab, riloncept, sarilumab, and tocilizumab. These exposures were identified using National Drug Codes (NDC) and Healthcare Common Procedure Coding System (HCPCS) codes. Qualifying exposure dispensing dates are defined as the first exposure episode during the query period that meets all requested criteria, specified below. See Appendix B for a full list of drug names and codes used to define IL-1/-6 inhibitors in this request.

Cohort Eligibility Criteria: Those included in the cohorts were required to be continuously enrolled in plans with medical and drug coverage for at least 183 days prior to their first qualifying dispensing, during which gaps in coverage of up to 45 days were allowed. The adult cohort included members who were 17 to less than 65 years of age and had a diagnosis of AOSD. The pediatric cohort included members who were six months to less than 17 years of age and had a diagnosis of SJIA. Eligible members could not have evidence of PAH or ILD events in any available enrollment history prior to the first qualifying dispensing event. Please see Appendix C for a list of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) AOSD and SJIA diagnosis codes used to define the cohorts, and see Appendix D for a list of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and ICD-10-CM codes used as exclusion criteria in defining first qualifying dispensings.

Health Care Characteristics of Interest: Prior glucocorticoid agent and pain medication use were assessed throughout patient's entire available enrollment history until the day prior to first qualifying IL-1/-6 inhibitor dispensing. Diagnoses of PAH, ILD, and MAS were identified from the day after first qualifying IL-1/-6 dispensing until the patient's disenrollment or Data Partner end date. See Appendix E for HCPCS and Current Procedural Terminology, Fourth Edition (CPT-4) codes, and the generic and brand drug names used to define glucocorticoid agents and pain medications, and Appendix F for ICD-10-CM diagnosis codes used to define PAH, ILD, and MAS.

Please see Appendices G (adult population) and H (pediatric population) for the specifications of parameters used in the analyses for this request.

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

Notes: Please contact the Sentinel Operations Center Query Fulfillment Team (qf@sentinelssystem.org) for questions and to provide comments/suggestions for future enhancements to this document.

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

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). Along with the Principal Diagnosis Indicator, 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.

Cohort Definition (drug/exposure) - indicates how the cohort will be defined: (1): Cohort includes only the first valid treatment episode during the query period; (2): Cohort includes all valid treatment episodes during the query period; (3): Cohort includes all valid treatment episodes during the query period until an event occurs.

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 MP algorithm: (0): Counts all occurrences of an 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 days are added after any episode gaps have been bridged.

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

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

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

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

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

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

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

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

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.

*not all terms may be used in this report

Table 1. Characterization Table for the First Qualifying Dispensing of Interleukin (IL)-1/-6 Inhibitors among Adult Members with Adult-Onset Still's Disease (AOSD) in the Sentinel Distributed Database (SDD) between October 1, 2015 and March 31, 2018

IL-1/-6 inhibitor use among adult members with AOSD, no evidence of PAH or ILD prior to IL-1/-6 dispensing		
	Number	
Number of episodes	222	
Number of unique patients	222	
Eligible Members ¹	1,265	
Eligible Member Years ¹	984.9	
Characteristic	Mean	Standard Deviation
Mean Age	42	11.8
	Number	%
Age: 17-64	222	100.0%
Gender (Female)	139	62.6%
Gender (Male)	83	37.4%
Year (2015)	61	27.5%
Year (2016)	93	41.9%
Year (2017)	68	30.6%
Year (2018)	0	0.0%
Recorded history of:	Number	%
Glucocorticoid Use	192	86.5%
Pain Medication Use	143	64.4%
Diagnosis following dispensing:	Number	%
Pulmonary Arterial Hypertension (PAH)	7	3.2%
Interstitial Lung Disease (ILD)	2	0.9%
Macrophage Activation Syndrome (MAS)	13	5.9%
Health service utilization intensity in the prior 183 days:	Mean	Standard Deviation
Mean number of ambulatory encounters (AV)	12.3	10.2
Mean number of emergency room encounters (ED)	0.5	1.4
Mean number of inpatient hospital encounters (IP)	0.4	0.8
Mean number of non-acute institutional encounters (IS)	0	0.3
Mean number of other ambulatory encounters (OA)	3.5	4.7

¹Eligible Members and Member Years are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period

Table 2. Characterization Table for the First Qualifying Dispensing of Interleukin (IL)-1/-6 Inhibitors among Pediatric Members with Systemic Juvenile Idiopathic Arthritis (SJIA) in the Sentinel Distributed Database (SDD) between October 1, 2015 and March 31, 2018

IL-1/-6 inhibitor use among pediatric members with SJIA, no evidence of PAH or ILD prior to IL-1/-6 dispensing		
	Number	
Number of episodes	194	
Number of unique patients	194	
Eligible Members ¹	897	
Eligible Member Years ¹	670.4	
Characteristic	Mean	Standard Deviation
Mean Age	9.3	4.8
	Number	%
Age: 0-16	194	100.0%
Gender (Female)	110	56.7%
Gender (Male)	84	43.3%
Year (2015)	74	38.1%
Year (2016)	76	39.2%
Year (2017)	44	22.7%
Year (2018)	0	0.0%
Recorded history of:	Number	%
Glucocorticoid Use	144	74.2%
Pain Medication Use	135	69.6%
Diagnosis following dispensing:	Number	%
Pulmonary Arterial Hypertension (PAH)	1	0.5%
Interstitial Lung Disease (ILD)	4	2.1%
Macrophage Activation Syndrome (MAS)	20	10.3%
Health service utilization intensity in the prior 183 days:	Mean	Standard Deviation
Mean number of ambulatory encounters (AV)	12.1	11.5
Mean number of emergency room encounters (ED)	0.7	1.3
Mean number of inpatient hospital encounters (IP)	0.5	0.7
Mean number of non-acute institutional encounters (IS)	0	0.1
Mean number of other ambulatory encounters (OA)	3.8	12.6

¹Eligible Members and Member Years are reflective of the number of patients that met all cohort entry criteria on at least one day during the query period

Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request End Date (March 31, 2018)

Data Partner ID	Start Date¹	End Date¹
DP01	01/01/2000	03/31/2018
DP02	01/01/2005	09/30/2017
DP03	01/01/2008	06/30/2017
DP04	01/01/2008	11/30/2017
DP05	01/01/2000	06/30/2017
DP06	01/01/2006	12/31/2017
DP07	01/01/2000	08/31/2017
DP08	01/01/2000	10/31/2017
DP09	06/01/2007	10/31/2017
DP10	01/01/2000	12/31/2017
DP11	01/01/2004	01/31/2018
DP12	01/01/2000	01/31/2017
DP13	01/01/2000	12/31/2016
DP14	01/01/2000	03/31/2016
DP15	01/01/2012	06/30/2017

¹Start Date and End Date are first calculated by individual table (enrollment, dispensing, etc). End Date is defined as the greatest year-month with a record count that is within 80% of the previous year-month. After Start Date and End Dates are calculated by individual tables, the overall End Date is the minimum of all the table End Dates.

Appendix B. List of Generic and Brand Drug Names and Healthcare Common Procedure Coding System (HCPCS) Codes Used to Define Interleukin (IL)-1/-6 Inhibitor Exposure in this Request

Anakinra

Code Type	Generic Name	Brand Name
NDC	ANAKINRA	Kineret

Canakinumab

Code Type	Generic Name	Brand Name
NDC	CANAKINUMAB/PF	Ilaris (PF)

Code Type	Code	Code Category	Description
HCPCS	J0638	PX	Injection, canakinumab, 1 mg

Rilonacept

Code Type	Generic Name	Brand Name
NDC	RILONACEPT	Arcalyst

Code Type	Code	Code Category	Description
HCPCS	J2793	PX	Injection, rilonacept, 1 mg

Sarilumab

Code Type	Generic Name	Brand Name
NDC	SARILUMAB	Kevzara

Tocilizumab

Code Type	Generic Name	Brand Name
NDC	TOCILIZUMAB	Actemra

Code Type	Code	Code Category	Description
HCPCS	C9264	PX	Injection, tocilizumab, 1 mg
HCPCS	J3262	PX	Injection, tocilizumab, 1 mg

Appendix C. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define the Adult and Pediatric Cohorts in this Request

Code	Description	Code Type
Adult-Onset Still's Disease		
M06.1	Adult-onset Still's disease	ICD-10-CM
Systemic Juvenile Idiopathic Arthritis		
M08.2	Juvenile rheumatoid arthritis with systemic onset	ICD-10-CM
M08.20	Juvenile rheumatoid arthritis with systemic onset, unspecified site	ICD-10-CM
M08.21	Juvenile rheumatoid arthritis with systemic onset, shoulder	ICD-10-CM
M08.211	Juvenile rheumatoid arthritis with systemic onset, right shoulder	ICD-10-CM
M08.212	Juvenile rheumatoid arthritis with systemic onset, left shoulder	ICD-10-CM
M08.219	Juvenile rheumatoid arthritis with systemic onset, unspecified shoulder	ICD-10-CM
M08.22	Juvenile rheumatoid arthritis with systemic onset, elbow	ICD-10-CM
M08.221	Juvenile rheumatoid arthritis with systemic onset, right elbow	ICD-10-CM
M08.222	Juvenile rheumatoid arthritis with systemic onset, left elbow	ICD-10-CM
M08.229	Juvenile rheumatoid arthritis with systemic onset, unspecified elbow	ICD-10-CM
M08.23	Juvenile rheumatoid arthritis with systemic onset, wrist	ICD-10-CM
M08.231	Juvenile rheumatoid arthritis with systemic onset, right wrist	ICD-10-CM
M08.232	Juvenile rheumatoid arthritis with systemic onset, left wrist	ICD-10-CM
M08.239	Juvenile rheumatoid arthritis with systemic onset, unspecified wrist	ICD-10-CM
M08.24	Juvenile rheumatoid arthritis with systemic onset, hand	ICD-10-CM
M08.241	Juvenile rheumatoid arthritis with systemic onset, right hand	ICD-10-CM
M08.242	Juvenile rheumatoid arthritis with systemic onset, left hand	ICD-10-CM
M08.249	Juvenile rheumatoid arthritis with systemic onset, unspecified hand	ICD-10-CM
M08.25	Juvenile rheumatoid arthritis with systemic onset, hip	ICD-10-CM
M08.251	Juvenile rheumatoid arthritis with systemic onset, right hip	ICD-10-CM
M08.252	Juvenile rheumatoid arthritis with systemic onset, left hip	ICD-10-CM
M08.259	Juvenile rheumatoid arthritis with systemic onset, unspecified hip	ICD-10-CM
M08.26	Juvenile rheumatoid arthritis with systemic onset, knee	ICD-10-CM
M08.261	Juvenile rheumatoid arthritis with systemic onset, right knee	ICD-10-CM
M08.262	Juvenile rheumatoid arthritis with systemic onset, left knee	ICD-10-CM
M08.269	Juvenile rheumatoid arthritis with systemic onset, unspecified knee	ICD-10-CM
M08.27	Juvenile rheumatoid arthritis with systemic onset, ankle and foot	ICD-10-CM
M08.271	Juvenile rheumatoid arthritis with systemic onset, right ankle and foot	ICD-10-CM
M08.272	Juvenile rheumatoid arthritis with systemic onset, left ankle and foot	ICD-10-CM
M08.279	Juvenile rheumatoid arthritis with systemic onset, unspecified ankle and foot	ICD-10-CM
M08.28	Juvenile rheumatoid arthritis with systemic onset, vertebrae	ICD-10-CM
M08.29	Juvenile rheumatoid arthritis with systemic onset, multiple sites	ICD-10-CM

Appendix D. 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) Diagnosis Codes Used as Exclusion Criteria in Defining First Qualifying Dispensings

Code	Description	Code Type
Pulmonary Arterial Hypertension		
416.0	Primary pulmonary hypertension	ICD-9-CM
416.2	Chronic pulmonary embolism	ICD-9-CM
416.8	Other chronic pulmonary heart diseases	ICD-9-CM
416.9	Unspecified chronic pulmonary heart disease	ICD-9-CM
I27.0	Primary pulmonary hypertension	ICD-10-CM
I27.2	Other secondary pulmonary hypertension	ICD-10-CM
I27.20	Pulmonary hypertension, unspecified	ICD-10-CM
I27.21	Secondary pulmonary arterial hypertension	ICD-10-CM
I27.22	Pulmonary hypertension due to left heart disease	ICD-10-CM
I27.23	Pulmonary hypertension due to lung diseases and hypoxia	ICD-10-CM
I27.24	Chronic thromboembolic pulmonary hypertension	ICD-10-CM
I27.29	Other secondary pulmonary hypertension	ICD-10-CM
I27.8	Other specified pulmonary heart diseases	ICD-10-CM
I27.81	Cor pulmonale (chronic)	ICD-10-CM
I27.82	Chronic pulmonary embolism	ICD-10-CM
I27.83	Eisenmenger's syndrome	ICD-10-CM
I27.89	Other specified pulmonary heart diseases	ICD-10-CM
I27.9	Pulmonary heart disease, unspecified	ICD-10-CM
Interstitial Lung Disease		
515	Postinflammatory pulmonary fibrosis	ICD-9-CM
516.0	Pulmonary alveolar proteinosis	ICD-9-CM
516.1	Idiopathic pulmonary hemosiderosis	ICD-9-CM
516.2	Pulmonary alveolar microlithiasis	ICD-9-CM
516.30	Idiopathic interstitial pneumonia, not otherwise specified	ICD-9-CM
516.31	Idiopathic pulmonary fibrosis	ICD-9-CM
516.32	Idiopathic non-specific interstitial pneumonitis	ICD-9-CM
516.33	Acute interstitial pneumonitis	ICD-9-CM
516.34	Respiratory bronchiolitis interstitial lung disease	ICD-9-CM
516.35	Idiopathic lymphoid interstitial pneumonia	ICD-9-CM
516.36	Cryptogenic organizing pneumonia	ICD-9-CM
516.37	Desquamative interstitial pneumonia	ICD-9-CM
516.4	Lymphangioleiomyomatosis	ICD-9-CM
516.5	Adult pulmonary Langerhans cell histiocytosis	ICD-9-CM
516.61	Neuroendocrine cell hyperplasia of infancy	ICD-9-CM
516.62	Pulmonary interstitial glycogenosis	ICD-9-CM
516.63	Surfactant mutations of the lung	ICD-9-CM
516.64	Alveolar capillary dysplasia with vein misalignment	ICD-9-CM
516.69	Other interstitial lung diseases of childhood	ICD-9-CM
516.8	Other specified alveolar and parietoalveolar pneumonopathies	ICD-9-CM
516.9	Unspecified alveolar and parietoalveolar pneumonopathy	ICD-9-CM
J84	Other interstitial pulmonary diseases	ICD-10-CM
J84.0	Alveolar and parieto-alveolar conditions	ICD-10-CM

Appendix D. 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) Diagnosis Codes Used as Exclusion Criteria in Defining First Qualifying Dispensings

Code	Description	Code Type
J84.01	Alveolar proteinosis	ICD-10-CM
J84.02	Pulmonary alveolar microlithiasis	ICD-10-CM
J84.03	Idiopathic pulmonary hemosiderosis	ICD-10-CM
J84.09	Other alveolar and parieto-alveolar conditions	ICD-10-CM
J84.1	Other interstitial pulmonary diseases with fibrosis	ICD-10-CM
J84.10	Pulmonary fibrosis, unspecified	ICD-10-CM
J84.11	Idiopathic interstitial pneumonia	ICD-10-CM
J84.111	Idiopathic interstitial pneumonia, not otherwise specified	ICD-10-CM
J84.112	Idiopathic pulmonary fibrosis	ICD-10-CM
J84.113	Idiopathic non-specific interstitial pneumonitis	ICD-10-CM
J84.114	Acute interstitial pneumonitis	ICD-10-CM
J84.115	Respiratory bronchiolitis interstitial lung disease	ICD-10-CM
J84.116	Cryptogenic organizing pneumonia	ICD-10-CM
J84.117	Desquamative interstitial pneumonia	ICD-10-CM
J84.17	Other interstitial pulmonary diseases with fibrosis in diseases classified elsewhere	ICD-10-CM
J84.2	Lymphoid interstitial pneumonia	ICD-10-CM
J84.8	Other specified interstitial pulmonary diseases	ICD-10-CM
J84.81	Lymphangioleiomyomatosis	ICD-10-CM
J84.82	Adult pulmonary Langerhans cell histiocytosis	ICD-10-CM
J84.83	Surfactant mutations of the lung	ICD-10-CM
J84.84	Other interstitial lung diseases of childhood	ICD-10-CM
J84.841	Neuroendocrine cell hyperplasia of infancy	ICD-10-CM
J84.842	Pulmonary interstitial glycogenosis	ICD-10-CM
J84.843	Alveolar capillary dysplasia with vein misalignment	ICD-10-CM
J84.848	Other interstitial lung diseases of childhood	ICD-10-CM
J84.89	Other specified interstitial pulmonary diseases	ICD-10-CM
J84.9	Interstitial pulmonary disease, unspecified	ICD-10-CM

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) and Current Procedural Terminology, Fourth Edition (CPT-4) Procedure Codes, and the Generic and Brand Drug Names Used to Define Health Care Characteristics of Interest in this Request

Code	Description	Code Type
Glucocorticoid Agents - Procedure Codes		
J0702	Injection, betamethasone acetate 3 mg and betamethasone	HCPCS
J0704	Injection, betamethasone sodium phosphate, per 4 mg	HCPCS
J1700	Injection, hydrocortisone acetate, up to 25 mg	HCPCS
J7638	Dexamethasone, inhalation solution, compounded product	HCPCS
J7312	Injection, dexamethasone, intravitreal implant, 0.1 mg	HCPCS
J8540	Dexamethasone, oral, 0.25 mg	HCPCS
C9256	Injection, dexamethasone intravitreal implant, 0.1 mg	HCPCS
S0173	Dexamethasone, oral, 4 mg	HCPCS
J1094	Injection, dexamethasone acetate, 1 mg	HCPCS
J1095	Injection, dexamethasone acetate, per 8 mg	HCPCS
J1100	Injection, dexamethasone sodium phosphate, 1 mg	HCPCS
J1700	Injection, hydrocortisone acetate, up to 25 mg	HCPCS
J1710	Injection, hydrocortisone sodium phosphate, up to 50 mg	HCPCS
J1720	Injection, hydrocortisone sodium succinate, up to 100 mg	HCPCS
J1020	Injection, methylprednisolone acetate, 20 mg	HCPCS
J1030	Injection, methylprednisolone acetate, 40 mg	HCPCS
J1040	Injection, methylprednisolone acetate, 80 mg	HCPCS
J2920	Injection, methylprednisolone sodium succinate, up to 40 mg	HCPCS
J2930	Injection, methylprednisolone sodium succinate, up to 125 mg	HCPCS
J7509	Methylprednisolone, oral, per 4 mg	HCPCS
S0190	Mifepristone, oral, 200 mg	HCPCS
J2650	Injection, prednisolone acetate, up to 1 ml	HCPCS
J2640	Injection, prednisolone sodium phosphate, to 20 mg	HCPCS
J7510	Prednisolone, oral, per 5 mg	HCPCS
J1690	Injection, prednisolone tebutate, up to 20 mg	HCPCS
J7506	Prednisone, oral, per 5 mg	HCPCS
J3301	Injection, triamcinolone acetonide, not otherwise specified, 10 mg	HCPCS
J3302	Injection, triamcinolone diacetate, per 5 mg	HCPCS
J3303	Injection, triamcinolone hexacetonide, per 5 mg	HCPCS
C9469	Injection, triamcinolone acetonide, preservative-free	HCPCS
J3300	Injection, triamcinolone acetonide, preservative free, 1 mg	HCPCS

Generic Name	Brand Name
Glucocorticoid Agents - Drug Names	
BETAMETHASONE	Celestone
BUDESONIDE	budesonide
BUDESONIDE	Entocort EC
BUDESONIDE	Uceris
CORTISONE ACETATE	cortisone
DEFLAZACORT	Emflaza
DEXAMETHASONE	Baycadron

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) and Current Procedural Terminology, Fourth Edition (CPT-4) Procedure Codes, and the Generic and Brand Drug Names Used to Define Health Care Characteristics of Interest in this Request

Generic Name	Brand Name
DEXAMETHASONE	Decadron
DEXAMETHASONE	Decadron Dose Pack
DEXAMETHASONE	dexamethasone
DEXAMETHASONE	Dexamethasone Intensol
DEXAMETHASONE	Dexone
DEXAMETHASONE	DexPak 10 day
DEXAMETHASONE	DexPak 13 Day
DEXAMETHASONE	DexPak 6 Day
DEXAMETHASONE	LoCort
DEXAMETHASONE	TaperDex
DEXAMETHASONE	Zema-Pak
DEXAMETHASONE	ZoDex
DEXAMETHASONE	ZonaCort
DEXAMETHASONE SOD PHOSPHATE	Decadron
DEXAMETHASONE SODIUM PHOSPHATE IN 0.9 % SODIUM CHLORIDE	dexamethasone in 0.9 % sod chl
HYDROCORTISONE	Cortef
HYDROCORTISONE	hydrocortisone
HYDROCORTISONE	Hydrocortone
HYDROCORTISONE CYPIONATE	Cortef (as cypionate)
METHYLPREDNISOLONE	Medrol
METHYLPREDNISOLONE	Medrol (Pak)
METHYLPREDNISOLONE	Meprolone Unipak
METHYLPREDNISOLONE	Methylpred
METHYLPREDNISOLONE	methylprednisolone
METHYLPREDNISOLONE SODIUM SUCCINATE	A-Methapred
METHYLPREDNISOLONE SODIUM SUCCINATE	methylprednisolone sodium succinate
METHYLPREDNISOLONE SODIUM SUCCINATE	Solu-Medrol
METHYLPREDNISOLONE SODIUM SUCCINATE/PF	Solu-Medrol (PF)
MIFEPRISTONE	Korlym
PREDNISOLONE	Millipred
PREDNISOLONE	Millipred DP
PREDNISOLONE	prednisolone
PREDNISOLONE	Pre lone
PREDNISOLONE ACETATE	Flo-Pred
PREDNISOLONE SOD PHOSPHATE	Bubbli-Pred
PREDNISOLONE SOD PHOSPHATE	Millipred
PREDNISOLONE SOD PHOSPHATE	Orapred
PREDNISOLONE SOD PHOSPHATE	Orapred ODT
PREDNISOLONE SOD PHOSPHATE	Pediapred
PREDNISOLONE SOD PHOSPHATE	prednisolone sodium phosphate
PREDNISOLONE SOD PHOSPHATE	Veripred 20

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) and Current Procedural Terminology, Fourth Edition (CPT-4) Procedure Codes, and the Generic and Brand Drug Names Used to Define Health Care Characteristics of Interest in this Request

Generic Name	Brand Name
PREDNISOLONE SODIUM PHOSPHATE/PEAK FLOW METER	Asmalpred
PREDNISOLONE SODIUM PHOSPHATE/PEAK FLOW METER	Asmalpred Plus
PREDNISONE	Deltasone
PREDNISONE	Deltasone Dose Pack
PREDNISONE	Liquid Pred
PREDNISONE	Meticorten
PREDNISONE	prednisone
PREDNISONE	Prednisone Intensol
PREDNISONE	Rayos
PREDNISONE	Sterapred
PREDNISONE	Sterapred DS
TRIAMCINOLONE	Aristocort
TRIAMCINOLONE	triamcinolone

Code	Description	Code Type
Pain Medications - Procedure Codes		
82003	Acetaminophen	CPT-4
84033	Phenylbutazone	CPT-4
C9283	Injection, acetaminophen, 10 mg	HCPCS
J0131	Injection, acetaminophen, 10 mg	HCPCS
C9279	Injection, ibuprofen, 100 mg	HCPCS
J1741	Injection, ibuprofen, 100 mg	HCPCS
J0730	Injection, chlorpheniramine maleate, per 10 mg	HCPCS
J1130	Injection, diclofenac sodium, 0.5 mg	HCPCS
J1590	Injection, gatifloxacin, 10 mg	HCPCS
S0085	Injection, gatifloxacin, 200 mg	HCPCS
C9447	Injection, phenylephrine and ketorolac, 4 ml vial	HCPCS
J1885	Injection, ketorolac tromethamine, per 15 mg	HCPCS
C9447	Injection, phenylephrine and ketorolac, 4 ml vial	HCPCS
J2370	Injection, phenylephrine HCl, up to 1 ml	HCPCS
J2795	Injection, ropivacaine HCl, 1 mg	HCPCS
J3030	Injection, sumatriptan succinate, 6 mg (code may be used for Medicare when drug administered under the direct supervision of a physician, not for use when drug is self-administered)	HCPCS

Generic Name	Brand Name
Pain Medications - Drug Names	
ACETAMINOPHEN	8 Hour Pain Reliever
ACETAMINOPHEN	8HR Muscle Ache-Pain
ACETAMINOPHEN	Acephen
ACETAMINOPHEN	Aceta
ACETAMINOPHEN	AcetaDrink

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Generic Name	Brand Name
ACETAMINOPHEN	acetaminophen
ACETAMINOPHEN	acetaminophen (bulk)
ACETAMINOPHEN	Acetaminophen Extra Strength
ACETAMINOPHEN	Acetaminophen Infant
ACETAMINOPHEN	Acetaminophen Jr
ACETAMINOPHEN	Acetaminophen Non Aspirin
ACETAMINOPHEN	Acetaminophen Pain Relief
ACETAMINOPHEN	Actamin Maximum Strength
ACETAMINOPHEN	Albatemp
ACETAMINOPHEN	Alba-Temp 300
ACETAMINOPHEN	Anacin A.F.
ACETAMINOPHEN	Apapedyn
ACETAMINOPHEN	Aphen
ACETAMINOPHEN	Apra
ACETAMINOPHEN	Arthritis Pain Relief (acetam)
ACETAMINOPHEN	Arthritis Pain Reliever
ACETAMINOPHEN	Aspirin Free
ACETAMINOPHEN	Aspirin Free Childs
ACETAMINOPHEN	Aspirin Free Extra Strength
ACETAMINOPHEN	Aspirin-Free Infant
ACETAMINOPHEN	Aspirin-Free Relief
ACETAMINOPHEN	Athenol
ACETAMINOPHEN	BetaTemp
ACETAMINOPHEN	Child APAP
ACETAMINOPHEN	Child Non-Aspirin
ACETAMINOPHEN	Child Non-Aspirin Pain Relief
ACETAMINOPHEN	Child Non-Aspirin Quick Melts
ACETAMINOPHEN	Child Pain Rel-Fever Reducer
ACETAMINOPHEN	Child Pain Relief
ACETAMINOPHEN	Child Pain Relief F
ACETAMINOPHEN	Child Pain Reliever No Aspirin
ACETAMINOPHEN	Children's Acetaminophen
ACETAMINOPHEN	Children's Aspirin Free
ACETAMINOPHEN	Children's Easy-Melts
ACETAMINOPHEN	Children's Fever Reducing
ACETAMINOPHEN	Children's Mapap
ACETAMINOPHEN	Children's Medi-Tabs
ACETAMINOPHEN	Children's Non-Aspirin

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Generic Name	Brand Name
ACETAMINOPHEN	Children's Non-Aspirin Pain
ACETAMINOPHEN	Children's Pain Relief
ACETAMINOPHEN	Children's Pain Reliever
ACETAMINOPHEN	Children's Pain-Fever Relief
ACETAMINOPHEN	Children's Q-PAP
ACETAMINOPHEN	Children's Relief
ACETAMINOPHEN	Children's Silapap
ACETAMINOPHEN	Children's Tactinal
ACETAMINOPHEN	Children's Triaminic Fever
ACETAMINOPHEN	Children's Tylenol
ACETAMINOPHEN	Children's Tylenol Meltaways
ACETAMINOPHEN	Child's Accudial Acetaminophen
ACETAMINOPHEN	Childs Aspirin Free
ACETAMINOPHEN	Child's Pain Relief
ACETAMINOPHEN	Childs Pain Reliever
ACETAMINOPHEN	Dolono
ACETAMINOPHEN	Dolono Infants
ACETAMINOPHEN	Ed-APAP
ACETAMINOPHEN	ElixSure Fever-Pain
ACETAMINOPHEN	Ex-Prin
ACETAMINOPHEN	Ex-Prin Child
ACETAMINOPHEN	Ex-Prin Extra Strength
ACETAMINOPHEN	Ex-Prin for Children
ACETAMINOPHEN	Ex-Prin Infant
ACETAMINOPHEN	Ex-Prin Junior Strength
ACETAMINOPHEN	Ex-Strength Medi-Tabs
ACETAMINOPHEN	Extended Pain Relief
ACETAMINOPHEN	Extra Strength Pain Relief
ACETAMINOPHEN	Febrol
ACETAMINOPHEN	Fever Reducer
ACETAMINOPHEN	Fever Reducer an Pain Reliever
ACETAMINOPHEN	Feverall
ACETAMINOPHEN	Feverall Infants
ACETAMINOPHEN	Feverall Junior Strength
ACETAMINOPHEN	Feverall Sprinkle Caps Child
ACETAMINOPHEN	Feverall Sprinkle Caps Jr Str
ACETAMINOPHEN	Genapap
ACETAMINOPHEN	Genapap Childrens

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Generic Name	Brand Name
ACETAMINOPHEN	Genapap Extra Strength
ACETAMINOPHEN	Genebs
ACETAMINOPHEN	Infant Acetaminophen
ACETAMINOPHEN	Infant Fever Reducer-Pain Relf
ACETAMINOPHEN	Infant Non Aspirin Pain Relief
ACETAMINOPHEN	Infant Pain Reliever
ACETAMINOPHEN	Infantaire
ACETAMINOPHEN	Infant's Acetaminophen
ACETAMINOPHEN	Infants Aspirin Free
ACETAMINOPHEN	Infants Concentrated
ACETAMINOPHEN	Infants Mapap
ACETAMINOPHEN	Infant's Non-Aspirin
ACETAMINOPHEN	Infants' Pain and Fever
ACETAMINOPHEN	Infants' Pain Relief
ACETAMINOPHEN	Infant's Pain Reliever
ACETAMINOPHEN	Infants Silapap
ACETAMINOPHEN	Infants' Triaminic Fever
ACETAMINOPHEN	Infant's Tylenol
ACETAMINOPHEN	Jr Str Non-Aspirin Quick Melts
ACETAMINOPHEN	Jr. Acetaminophen
ACETAMINOPHEN	Jr. Str Non-Aspirin Pain
ACETAMINOPHEN	Jr. Strength Pain Reliever
ACETAMINOPHEN	Jr. Tylenol Meltaways
ACETAMINOPHEN	Junior Mapap
ACETAMINOPHEN	Komaphen
ACETAMINOPHEN	Kosher Care Liquid
ACETAMINOPHEN	Liquiprin
ACETAMINOPHEN	Little Fevers
ACETAMINOPHEN	Little Remedies Fever and Pain
ACETAMINOPHEN	Mapap (acetaminophen)
ACETAMINOPHEN	Mapap Arthritis Pain
ACETAMINOPHEN	Mapap Children's
ACETAMINOPHEN	Mapap Extra Strength
ACETAMINOPHEN	Mapap Infants'
ACETAMINOPHEN	Mapap Junior Strength
ACETAMINOPHEN	Masophen
ACETAMINOPHEN	Maxapap Maximum Strength
ACETAMINOPHEN	Maxapap Regular Strength



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Generic Name	Brand Name
ACETAMINOPHEN	Medi-Tabs
ACETAMINOPHEN	Medi-Tabs Pain Reliever
ACETAMINOPHEN	Non Aspirin Extended Release
ACETAMINOPHEN	Non-Aspirin
ACETAMINOPHEN	NON-ASPIRIN 8 HOUR
ACETAMINOPHEN	Non-Aspirin Child
ACETAMINOPHEN	Non-Aspirin Childrens
ACETAMINOPHEN	Non-Aspirin Children's
ACETAMINOPHEN	Non-Aspirin Extra Strength
ACETAMINOPHEN	Non-Aspirin Infant
ACETAMINOPHEN	Non-Aspirin Infant Pain Relief
ACETAMINOPHEN	Non-Aspirin Infants
ACETAMINOPHEN	Non-Aspirin Jr Strength
ACETAMINOPHEN	Non-Aspirin Pain Relief
ACETAMINOPHEN	Non-Aspirin Pain Relief Ex Str
ACETAMINOPHEN	Non-Aspirin Pain Reliever
ACETAMINOPHEN	Nortemp
ACETAMINOPHEN	Ofirmev
ACETAMINOPHEN	Pain and Fever
ACETAMINOPHEN	Pain Relief
ACETAMINOPHEN	Pain Relief 8HR
ACETAMINOPHEN	Pain Relief Adult
ACETAMINOPHEN	Pain Relief Cool Ice
ACETAMINOPHEN	Pain Relief Extra Strength
ACETAMINOPHEN	Pain Relief Infant Drops
ACETAMINOPHEN	Pain Relief Junior Strength
ACETAMINOPHEN	Pain Relief Regular Strength
ACETAMINOPHEN	Pain Relief without Aspirin
ACETAMINOPHEN	Pain Reliever
ACETAMINOPHEN	Pain Reliever Child
ACETAMINOPHEN	Pain Reliever Extra Strength
ACETAMINOPHEN	Pain Reliever Jr Strength
ACETAMINOPHEN	Pain Reliever Non-Aspirin
ACETAMINOPHEN	Pain Reliever w/o Aspirin
ACETAMINOPHEN	Pain Reliever W/Out Aspirin
ACETAMINOPHEN	Pain Reliever without Aspirin
ACETAMINOPHEN	Pain Relieving (acetaminophen)
ACETAMINOPHEN	Pain-Eze +
ACETAMINOPHEN	Panadol Children's

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Generic Name	Brand Name
ACETAMINOPHEN	Panadol Extra Strength
ACETAMINOPHEN	Panadol Maximum Strength
ACETAMINOPHEN	Paramol
ACETAMINOPHEN	PediaCare Fever Reducer
ACETAMINOPHEN	Pharbetol
ACETAMINOPHEN	Pyregesic
ACETAMINOPHEN	Q-Nol
ACETAMINOPHEN	Q-PAP
ACETAMINOPHEN	Q-PAP Extra Strength
ACETAMINOPHEN	Shake That Ache
ACETAMINOPHEN	Silapap
ACETAMINOPHEN	S-T Febrol
ACETAMINOPHEN	St. Joseph
ACETAMINOPHEN	St. Joseph Asa-Free Children's
ACETAMINOPHEN	St. Joseph Aspirin-Free Adult
ACETAMINOPHEN	St. Joseph Fever Reducer
ACETAMINOPHEN	Stanback AF
ACETAMINOPHEN	Tactinal
ACETAMINOPHEN	Tactinal Extra Strength
ACETAMINOPHEN	T-Painol
ACETAMINOPHEN	T-Painol Extra Strength
ACETAMINOPHEN	Triaminic Fever Reducer
ACETAMINOPHEN	Tylenol
ACETAMINOPHEN	Tylenol 8 Hour
ACETAMINOPHEN	Tylenol Arthritis
ACETAMINOPHEN	Tylenol Arthritis Pain
ACETAMINOPHEN	Tylenol Children's
ACETAMINOPHEN	Tylenol Ex Str Arthritis Pain
ACETAMINOPHEN	Tylenol Ex Str Rapid Release
ACETAMINOPHEN	Tylenol Extra Strength
ACETAMINOPHEN	Tylenol For Children
ACETAMINOPHEN	Tylenol Junior
ACETAMINOPHEN	Tylenol Sore Throat
ACETAMINOPHEN	Tylophen
ACETAMINOPHEN	Un-Aspirin
ACETAMINOPHEN	Yacemol Extra Strength
BROMFENAC SODIUM	Bromday
BROMFENAC SODIUM	Bromday TwinPack
BROMFENAC SODIUM	bromfenac

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Generic Name	Brand Name
BROMFENAC SODIUM	bromfenac sodium (bulk)
BROMFENAC SODIUM	BromSite
BROMFENAC SODIUM	Prolensa
BROMFENAC SODIUM	XIBROM
CELECOXIB	Celebrex
CELECOXIB	celecoxib
CELECOXIB	celecoxib (bulk)
CELECOXIB/CAPSAICIN/MENTHOL	CapXib
CELECOXIB/LIDOCAINE/MENTHOL	LidoXib
CHLORPHENIRAMINE MALEATE/PHENYLEPHRINE HCL/IBUPROFEN	Advil Allergy-Congestion Rlf
CHLORPHENIRAMINE MALEATE/PSEUDOEPHEDRINE HCL/IBUPROFEN	Advil Allergy Sinus
CHLORPHENIRAMINE MALEATE/PSEUDOEPHEDRINE HCL/IBUPROFEN	Advil Multi-Symptom Cold
CHLORPHENIRAMINE MALEATE/PSEUDOEPHEDRINE HCL/IBUPROFEN	Children's Advil Allergy Sinus
DICLOFENAC EPOLAMINE	Flector
DICLOFENAC POTASSIUM	Cambia
DICLOFENAC POTASSIUM	Cataflam
DICLOFENAC POTASSIUM	diclofenac potassium
DICLOFENAC POTASSIUM	Zipsor
DICLOFENAC SODIUM	Diclo Gel
DICLOFENAC SODIUM	diclofenac sodium
DICLOFENAC SODIUM	diclofenac sodium (bulk)
DICLOFENAC SODIUM	Diclozor
DICLOFENAC SODIUM	Dyloject
DICLOFENAC SODIUM	Klofensaid II
DICLOFENAC SODIUM	Pennsaid
DICLOFENAC SODIUM	Solaraze
DICLOFENAC SODIUM	Voltaren
DICLOFENAC SODIUM	Voltaren-XR
DICLOFENAC SODIUM	Vopac MDS
DICLOFENAC SODIUM, MICRONIZED	diclofenac sod, micro (bulk)
DICLOFENAC SODIUM/BENZALKONIUM CHLORIDE	DS Prep Pak
DICLOFENAC SODIUM/CAPSAICIN	NuDiclo SoluPAK
DICLOFENAC SODIUM/CAPSAICIN	NuDiclo TabPAK
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	DermacinRx Lexitral
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	DermaSilkRx DicloPak
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	Diclotral
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	Inflammacin
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	PrevidolRx Plus Analgesic Pak
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	Sure Result DSS Premium Pack
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	Xelitral

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Generic Name	Brand Name
DICLOFENAC SODIUM/CAPSICUM OLEORESIN	Xenaflamm
DICLOFENAC SODIUM/KINESIOLOGY TAPE	Diclo Gel-Xrylix Sheet
DICLOFENAC SODIUM/KINESIOLOGY TAPE	Lexixryl
DICLOFENAC SODIUM/KINESIOLOGY TAPE	Xrylix
DICLOFENAC SODIUM/METHYL SALICYLATE/MENTHOL	DicloPR
DICLOFENAC SODIUM/METHYL SALICYLATE/MENTHOL/CAMPHOR	Inflamma-K
DICLOFENAC SODIUM/MISOPROSTOL	Arthrotec 50
DICLOFENAC SODIUM/MISOPROSTOL	Arthrotec 75
DICLOFENAC SODIUM/MISOPROSTOL	diclofenac-misoprostol
DICLOFENAC SUBMICRONIZED	Zorvolex
ETODOLAC	etodolac
ETODOLAC	etodolac (bulk)
ETODOLAC	Lodine
ETODOLAC	Lodine XL
FENOPROFEN CALCIUM	fenoprofen
FENOPROFEN CALCIUM	Fenortho
FENOPROFEN CALCIUM	Nalfon
FENOPROFEN CALCIUM	ProFeno
FENOPROFEN CALCIUM, DIHYDRATE	fenoprofen calcium dihyd(bulk)
FLURBIPROFEN	Ansaid
FLURBIPROFEN	flurbiprofen
FLURBIPROFEN SODIUM	flurbiprofen sodium
FLURBIPROFEN SODIUM	Ocufen
GATIFLOXACIN/PREDNISOLONE ACETATE/NEPAFENAC	gatifloxacin-prednisol-nepafen
HYDROCODONE/IBUPROFEN	hydrocodone-ibuprofen
HYDROCODONE/IBUPROFEN	Ibudone
HYDROCODONE/IBUPROFEN	Reprexain
HYDROCODONE/IBUPROFEN	Vicoprofen
HYDROCODONE/IBUPROFEN	Xylon 10
IBUPROFEN	Advanced Pain Relief
IBUPROFEN	Advil
IBUPROFEN	Advil Liqui-Gel
IBUPROFEN	Advil Migraine
IBUPROFEN	A-G Profen
IBUPROFEN	Bupranol FP
IBUPROFEN	Caldolor
IBUPROFEN	Cap-Profen
IBUPROFEN	Child Ibuprofen
IBUPROFEN	Children's Advil
IBUPROFEN	Children's Ibu-Drops
IBUPROFEN	Children's Ibuprofen
IBUPROFEN	Children's Medi-Profen

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Generic Name	Brand Name
IBUPROFEN	Children's Motrin
IBUPROFEN	Children's Motrin Jr Strength
IBUPROFEN	Children's Profen IB
IBUPROFEN	Childs Ibuprofen
IBUPROFEN	ElixSure IB Suspension
IBUPROFEN	Genpril
IBUPROFEN	IBU-200
IBUPROFEN	Ibu-Drops
IBUPROFEN	Ibupain-200
IBUPROFEN	Ibuprin
IBUPROFEN	ibuprofen
IBUPROFEN	ibuprofen (bulk)
IBUPROFEN	Ibuprofen IB
IBUPROFEN	Ibuprofen Jr Strength
IBUPROFEN	Ibuprofen M
IBUPROFEN	Ibutab
IBUPROFEN	IBU-Tab
IBUPROFEN	Infant's Advil
IBUPROFEN	Infants Ibu-Drops
IBUPROFEN	Infant's Ibuprofen
IBUPROFEN	Infant's Medi-Profen
IBUPROFEN	Infant's Motrin
IBUPROFEN	Infants ProfenIB
IBUPROFEN	I-Prin
IBUPROFEN	Medi-Profen
IBUPROFEN	Menadol
IBUPROFEN	Midol Max St Cramp Formula
IBUPROFEN	Motrin
IBUPROFEN	Motrin IB
IBUPROFEN	Motrin Junior Strength
IBUPROFEN	Motrin Migraine
IBUPROFEN	Nuprin
IBUPROFEN	Nuprin Menstrual Relief
IBUPROFEN	PediaCare Fever
IBUPROFEN	Profen IB
IBUPROFEN	Provil
IBUPROFEN	Q-Profen
IBUPROFEN	Tab-Profen
IBUPROFEN	Uni-Pro
IBUPROFEN	Wal-Profen
IBUPROFEN	Yaprofen
IBUPROFEN LYSINE/PF	ibuprofen lysine (PF)

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Generic Name	Brand Name
IBUPROFEN LYSINE/PF	NeoProfen (ibuprofen lysn)(PF)
IBUPROFEN/CAFFEINE/VITAMINS B1, B2, B6, & B12	IC400
IBUPROFEN/CAFFEINE/VITAMINS B1, B2, B6, & B12	IC800
IBUPROFEN/DIETARY SUPPLEMENT,MISC. CB.11	Theraprofen-60
IBUPROFEN/DIETARY SUPPLEMENT,MISC. CB.11	Theraprofen-90
IBUPROFEN/DIPHENHYDRAMINE CITRATE	Advil PM
IBUPROFEN/DIPHENHYDRAMINE CITRATE	Ibuprofen PM
IBUPROFEN/DIPHENHYDRAMINE CITRATE	ibuprofen-diphenhydramine citrate
IBUPROFEN/DIPHENHYDRAMINE CITRATE	Motrin PM
IBUPROFEN/DIPHENHYDRAMINE HCL	Advil PM Liqui-Gels
IBUPROFEN/DIPHENHYDRAMINE HCL	Ibuprofen PM
IBUPROFEN/DIPHENHYDRAMINE HCL	ibuprofen-diphenhydramine HCl
IBUPROFEN/FAMOTIDINE	Duexis
IBUPROFEN/IRRITANTS COUNTER-IRRITANTS COMBINATION NO.2	Comfort Pac-Ibuprofen
IBUPROFEN/OXYCODONE HCL	Combunox
IBUPROFEN/OXYCODONE HCL	ibuprofen-oxycodone
IBUPROFEN/PHENYLEPHRINE HCL	Advil Congestion Relief
IBUPROFEN/PHENYLEPHRINE HCL	Congestion Relief (ibuprof-PE)
IBUPROFEN/PSEUDOEPHEDRINE HCL	Advil Cold and Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Advil Flu and Body Ache
IBUPROFEN/PSEUDOEPHEDRINE HCL	Children's Advil Cold
IBUPROFEN/PSEUDOEPHEDRINE HCL	Children's Dimetapp Cold,Fever
IBUPROFEN/PSEUDOEPHEDRINE HCL	Children's Ibuprofen Cold
IBUPROFEN/PSEUDOEPHEDRINE HCL	Children's Motrin Cold
IBUPROFEN/PSEUDOEPHEDRINE HCL	Cold and Sinus Pain Relief
IBUPROFEN/PSEUDOEPHEDRINE HCL	Cold-Sinus Relief
IBUPROFEN/PSEUDOEPHEDRINE HCL	DayQuil Sinus Pressure/Pain
IBUPROFEN/PSEUDOEPHEDRINE HCL	Dristan Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Ibup Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Ibuprofen Cold
IBUPROFEN/PSEUDOEPHEDRINE HCL	Ibuprofen Cold-Sinus(with PSE)
IBUPROFEN/PSEUDOEPHEDRINE HCL	Iprin Cold and Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Medi-Profen
IBUPROFEN/PSEUDOEPHEDRINE HCL	Motrin Cold
IBUPROFEN/PSEUDOEPHEDRINE HCL	Motrin Cold and Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Motrin IB Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Nuprin Cold Relief
IBUPROFEN/PSEUDOEPHEDRINE HCL	Nuprin Flu Relief
IBUPROFEN/PSEUDOEPHEDRINE HCL	Profen IB Cold And Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	pseudoephedrine-ibuprofen
IBUPROFEN/PSEUDOEPHEDRINE HCL	Vicks DayQuil (pseudoeph-ibup)

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) and Current Procedural Terminology, Fourth Edition (CPT-4) Procedure Codes, and the Generic and Brand Drug Names Used to Define Health Care Characteristics of Interest in this Request

Generic Name	Brand Name
IBUPROFEN/PSEUDOEPHEDRINE HCL	Wal-Profen Cold-Sinus
IBUPROFEN/PSEUDOEPHEDRINE HCL	Wal-Profen D Cold and Sinus
INDOMETHACIN	Indocin
INDOMETHACIN	Indocin SR
INDOMETHACIN	indomethacin
INDOMETHACIN SODIUM	Indocin
INDOMETHACIN SODIUM	indomethacin sodium
INDOMETHACIN, SUBMICRONIZED	Tivorbex
KETOPROFEN	Actron
KETOPROFEN	ketoprofen
KETOPROFEN	Orudis
KETOPROFEN	Orudis KT
KETOPROFEN	Oruvail
KETOPROFEN, MICRONIZED	Frotek
KETOPROFEN, MICRONIZED	ketoprofen, micronized (bulk)
KETOROLAC TROMETHAMINE	Acular
KETOROLAC TROMETHAMINE	Acular LS
KETOROLAC TROMETHAMINE	Acular PF
KETOROLAC TROMETHAMINE	ketorolac
KETOROLAC TROMETHAMINE	ketorolac (bulk)
KETOROLAC TROMETHAMINE	ReadySharp ketorolac
KETOROLAC TROMETHAMINE	Sprix
KETOROLAC TROMETHAMINE	Toradol
KETOROLAC TROMETHAMINE/PF	Acuvail (PF)
KETOROLAC/NORFLURANE AND PENTAFLUOROPROPANE (HFC 245FA)	Toronova II SUIK
KETOROLAC/NORFLURANE AND PENTAFLUOROPROPANE (HFC 245FA)	Toronova SUIK
LANSOPRAZOLE/NAPROXEN	PREVACID NapraPAC
MECLOFENAMATE SODIUM	meclofenamate
MEFENAMIC ACID	mefenamic acid
MEFENAMIC ACID	mefenamic acid (bulk)
MEFENAMIC ACID	Ponstel
MELOXICAM	meloxicam
MELOXICAM	meloxicam (bulk)
MELOXICAM	Mobic
MELOXICAM, SUBMICRONIZED	Vivlodex
MELOXICAM/IRRITANTS COUNTER-IRRITANTS COMBINATION NO.2	Comfort Pac-Meloxicam
NABUMETONE	nabumetone
NABUMETONE	nabumetone (bulk)
NABUMETONE	Relafen
NABUMETONE, MICRONIZED	nabumetone, micronized (bulk)
NAPROXEN	EC-Naprosyn
NAPROXEN	Napro

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) and Current Procedural Terminology, Fourth Edition (CPT-4) Procedure Codes, and the Generic and Brand Drug Names Used to Define Health Care Characteristics of Interest in this Request

Generic Name	Brand Name
NAPROXEN	Naproderm
NAPROXEN	Naprosyn
NAPROXEN	naproxen
NAPROXEN	Romixen 500
NAPROXEN SODIUM	Aleve
NAPROXEN SODIUM	All Day Pain Relief
NAPROXEN SODIUM	Anaprox
NAPROXEN SODIUM	Anaprox DS
NAPROXEN SODIUM	Flanax (naproxen)
NAPROXEN SODIUM	Mediproxen
NAPROXEN SODIUM	Midol (naproxen)
NAPROXEN SODIUM	Naprelan
NAPROXEN SODIUM	Naprelan CR
NAPROXEN SODIUM	Naprelan CR Dose Card
NAPROXEN SODIUM	naproxen sodium
NAPROXEN SODIUM	Wal-Proxen
NAPROXEN SODIUM/DIPHENHYDRAMINE HCL	Aleve PM
NAPROXEN SODIUM/MENTHOL	NaproPak Cool
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Aleve Cold and Sinus
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Aleve Sinus and Headache
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Aleve-D Sinus and Cold
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Aleve-D Sinus and Headache
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	All Day Cold and Sinus
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	All Day Pain Relief Sinus,Cold
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Cold and Sinus
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Cold-Sinus Relief
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Sinus and Cold-D
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Sudafed 12 Hr Pressure-Pain
NAPROXEN SODIUM/PSEUDOEPHEDRINE HCL	Sudafed 12 Hr Sinus-Pain
NAPROXEN/CAPSAICIN/MENTHOL	NaproPax
NAPROXEN/CAPSAICIN/MENTHOL	NaproxenPax
NAPROXEN/CAPSAICIN/MENTHOL/METHYL SALICYLATE	Pain Relief Collection
NAPROXEN/DIETARY SUPPLEMENT,MISC. CB.11	Theraproxen
NAPROXEN/DIETARY SUPPLEMENT,MISC. CB.11	Theraproxen-90
NAPROXEN/ESOMEPRAZOLE MAGNESIUM	Vimovo
NAPROXEN/IRRITANT COUNTER-IRRITANT COMBINATION NO.2	Comfort Pac-Naproxen
NEPAFENAC	Ilevro
NEPAFENAC	Nevanac
OXAPROZIN	Daypro
OXAPROZIN	oxaprozin
PHENYLBUTAZONE	phenylbutazone (bulk)

Appendix E. List of Healthcare Common Procedure Coding System (HCPCS) and Current Procedural Terminology, Fourth Edition (CPT-4) Procedure Codes, and the Generic and Brand Drug Names Used to Define Health Care Characteristics of Interest in this Request

Generic Name	Brand Name
PHENYLEPHRINE HCL/KETOROLAC TROMETHAMINE	Omidria
PIROXICAM	Feldene
PIROXICAM	piroxicam
PIROXICAM	piroxicam (bulk)
PIROXICAM/DIETARY SUPPLEMENT,MISC. CB.11	Therafeldamine
PREDNISOLONE ACETATE/NEPAFENAC	prednisolone acetate-nepafenac
ROFECOXIB	Vioxx
ROPIVACAINE HCL/EPINEPHRINE/CLONIDINE HCL/KETOROLAC TROMETH	ropivacaine-epi-clonid-ketorol
SULINDAC	Clinoril
SULINDAC	sulindac
SUMATRIPTAN SUCCINATE/NAPROXEN SODIUM	Treximet
SUPROFEN	Profenal
TOLMETIN SODIUM	Tolectin
TOLMETIN SODIUM	Tolectin DS
TOLMETIN SODIUM	tolmetin
VALDECOXIB	Bextra

Appendix F. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Health Care Characteristics of Interest in this Request

Code	Description	Code Type
Pulmonary Arterial Hypertension		
I27.0	Primary pulmonary hypertension	ICD-10-CM
I27.2	Other secondary pulmonary hypertension	ICD-10-CM
I27.20	Pulmonary hypertension, unspecified	ICD-10-CM
I27.21	Secondary pulmonary arterial hypertension	ICD-10-CM
I27.22	Pulmonary hypertension due to left heart disease	ICD-10-CM
I27.23	Pulmonary hypertension due to lung diseases and hypoxia	ICD-10-CM
I27.24	Chronic thromboembolic pulmonary hypertension	ICD-10-CM
I27.29	Other secondary pulmonary hypertension	ICD-10-CM
I27.8	Other specified pulmonary heart diseases	ICD-10-CM
I27.81	Cor pulmonale (chronic)	ICD-10-CM
I27.82	Chronic pulmonary embolism	ICD-10-CM
I27.83	Eisenmenger's syndrome	ICD-10-CM
I27.89	Other specified pulmonary heart diseases	ICD-10-CM
I27.9	Pulmonary heart disease, unspecified	ICD-10-CM
Interstitial Lung Disease		
J84	Other interstitial pulmonary diseases	ICD-10-CM
J84.0	Alveolar and parieto-alveolar conditions	ICD-10-CM
J84.01	Alveolar proteinosis	ICD-10-CM
J84.02	Pulmonary alveolar microlithiasis	ICD-10-CM
J84.03	Idiopathic pulmonary hemosiderosis	ICD-10-CM
J84.09	Other alveolar and parieto-alveolar conditions	ICD-10-CM
J84.1	Other interstitial pulmonary diseases with fibrosis	ICD-10-CM
J84.10	Pulmonary fibrosis, unspecified	ICD-10-CM
J84.11	Idiopathic interstitial pneumonia	ICD-10-CM
J84.111	Idiopathic interstitial pneumonia, not otherwise specified	ICD-10-CM
J84.112	Idiopathic pulmonary fibrosis	ICD-10-CM
J84.113	Idiopathic non-specific interstitial pneumonitis	ICD-10-CM
J84.114	Acute interstitial pneumonitis	ICD-10-CM
J84.115	Respiratory bronchiolitis interstitial lung disease	ICD-10-CM
J84.116	Cryptogenic organizing pneumonia	ICD-10-CM
J84.117	Desquamative interstitial pneumonia	ICD-10-CM
J84.17	Other interstitial pulmonary diseases with fibrosis in diseases classified elsewhere	ICD-10-CM
J84.2	Lymphoid interstitial pneumonia	ICD-10-CM
J84.8	Other specified interstitial pulmonary diseases	ICD-10-CM
J84.81	Lymphangioleiomyomatosis	ICD-10-CM
J84.82	Adult pulmonary Langerhans cell histiocytosis	ICD-10-CM
J84.83	Surfactant mutations of the lung	ICD-10-CM
J84.84	Other interstitial lung diseases of childhood	ICD-10-CM
J84.841	Neuroendocrine cell hyperplasia of infancy	ICD-10-CM
J84.842	Pulmonary interstitial glycogenosis	ICD-10-CM
J84.843	Alveolar capillary dysplasia with vein misalignment	ICD-10-CM
J84.848	Other interstitial lung diseases of childhood	ICD-10-CM
J84.89	Other specified interstitial pulmonary diseases	ICD-10-CM

Appendix F. List of International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Health Care Characteristics of Interest in this Request

Code	Description	Code Type
J84.9	Interstitial pulmonary disease, unspecified	ICD-10-CM

Macrophage Activation Syndrome

D76.1	Hemophagocytic lymphohistiocytosis	ICD-10-CM
D76.2	Hemophagocytic syndrome, infection-associated	ICD-10-CM
D76.3	Other histiocytosis syndromes	ICD-10-CM

Appendix G. Specifications Defining Parameters for the Adult Cohort Used in this Request

This request used the Cohort Identification and Descriptive Analysis (CIDA) tool version 5.4.4 to calculate the proportion of pulmonary arterial hypertension, interstitial lung disease, and macrophage activation syndrome diagnoses among an adult population with adult onset still's disease after exposure to interleukin inhibitors in the Sentinel Distributed Database (SDD).

Query period: October 1, 2015 - March 31, 2018

Coverage: Medical and drug coverage

Enrollment required: 183 days

Enrollment gap: 45 days

Age groups: 17 to <65 years

Exposure		Inclusion Criteria				Baseline Covariates			Medical Care Utilization							
Scenario	Exposure	Washout period	Incident with respect to:	Cohort definition	Censor enrollment at evidence of	Encounter caresetting	Group	Criteria	Encounter caresetting	Criteria evaluation window relative to index	Code days: number of instances the criteria should be found in baseline period	Covariate	Covariate caresetting	Covariate evaluation window relative to index	Group	Evaluation window relative to index
IL-1/IL-6 INHIBITOR USERS IN THE AOSD COHORT																
9	Aggregate IL-1/IL-6 Inhibitors: Anakinumab, Canakinumab, Rilonacept, Sarilumab, Tocilizumab	--	--	First valid index date	Death, DP End Date, Query Period End Date	Any	AOSD	Inclusion	Any	Beginning of enrollment, 0	1	Pain medication use Glucocorticoid use	Any	Beginning of enrollment, -1	Inpatient hospital stays; Non-acute institutional stays; Emergency department visits; Ambulatory visits; Other ambulatory visits	-183, 0
							PAH ILD	Exclusion for the AOSD Inclusion criteria	Any	Beginning of enrollment, -1	1	PAH; ILD; MAS	Any	1, end of enrollment		

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), ICD-10-CM, Healthcare Common Procedure Coding System (HCPCS), and Current Procedural Terminology (CPT) codes are provided by Optum360. National Drug Codes (NDCs) are checked against First Data Bank's "National Drug Data File (NDDF®) Plus."

Appendix H. Specifications Defining Parameters for the Pediatric Cohort Used in this Request

This request used the Cohort Identification and Descriptive Analysis (CIDA) tool version 5.4.4 to calculate the proportion of pulmonary arterial hypertension, interstitial lung disease, and macrophage activation syndrome diagnoses among a pediatric population with systemic juvenile idiopathic arthritis after exposure to interleukin inhibitors in the Sentinel Distributed Database (SDD).

Query period: October 1, 2015 - March 31, 2018
 Coverage: Medical and drug coverage
 Enrollment required: 183 days
 Enrollment gap: 45 days
 Age groups: 6 months to <17 years

Scenario	Exposure			Inclusion Criteria				Baseline Covariates			Medical Care Utilization					
	Exposure	Washout period	Incident with respect to:	Cohort definition	Censor enrollment at evidence of	Encounter caresetting	Group	Criteria	Encounter caresetting	Criteria evaluation window relative to index	Code days: number of instances the criteria should be found in baseline period	Covariate	Covariate caresetting	Covariate evaluation window relative to index	Group	Evaluation window relative to index
IL-1/IL-6 INHIBITOR USERS IN THE SJIA COHORT																
9	Aggregate IL-1/IL-6 Inhibitors: Anakinumab, Canakinumab, Rilonacept, Sarilumab, Tocilizumab	--	--	First valid index date	Death, DP End Date, Query Period End Date	Any	SJIA	Inclusion	Any	Beginning of enrollment, 0	1	Pain medication use Glucocorticoid use	Any	Beginning of enrollment, -1	Inpatient hospital stays; Non-acute institutional stays; Emergency department visits; Ambulatory visits; Other ambulatory visits	-183, 0
							PAH ILD	Exclusion for the SJIA Inclusion criteria	Any	Beginning of enrollment, -1	1	PAH; ILD; MAS	Any	1, end of enrollment		

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), ICD-10-CM, Healthcare Common Procedure Coding System (HCPCS), and Current Procedural Terminology (CPT) codes are provided by Optum360. National Drug Codes (NDCs) are checked against First Data Bank's "National Drug Data File (NDDF*) Plus."