Modular Program Report

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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_wp057_nsdp_v01

Request ID: cder_mpl1r_wp057_nsdp_v01

Request Description: This report contains estimates of use of five tumor necrosis factor (TNF)-alpha inhibitors, etanercept, adalimumab, infliximab, certolizumab, and golimumab, that occurred during a pregnancy resulting in a liveborn delivery, or within 90 days prior to the estimated start of pregnancy.

Sentinel Modular Program Tool Used: Cohort Identification and Descriptive Analysis (CIDA) tool, Version 3.0.3

Data Source: The query was run against the Sentinel Distributed Database (SDD) for the time period of January 1, 2004 to September 30, 2015. This request was distributed to 16 Data Partners on June 27, 2017. See Appendix A for a list of the dates of available data for each Data Partner.

Cohort Eligibility Criteria: Females in the following age groups were included in the cohort: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-54 years. Eligible females were required to be enrolled in plans with medical and drug coverage for 480 days before their delivery date, with gaps in coverage of up to 45 days. Cohorts of all eligible pregnant females were identified with and without evidence of the following indications in the 183 days prior to pregnancy start date: rheumatoid arthritis (RA), psoriatic arthritis (PsA), juvenile rheumatoid arthritis (JRA), psoriasis (PsO), Crohn's disease (CD), ulcerative colitis (UC), and ankylosing spondylitis (AS). Please see Appendix B for codes defining these indications.

Pregnancy Episode Creation: A claims-based algorithm previously validated in the Medication Exposure in Pregnancy Risk Evaluation Program (MEPREP) was used to identify pregnancies ending in a live birth. This algorithm used pre-/post-term delivery codes that occurred within seven days of a delivery date in the inpatient care setting to determine a pregnancy duration. In absence of pre-/post-term codes, pregnancy duration was set to 273 days. Pregnancies were excluded from the cohort if there was evidence of a prior delivery in the 183 days before the delivery date of interest. Please see Appendix C for more details about this algorithm and for a list of delivery codes defined using International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnosis codes and Current Procedural Terminology, Fourth Edition (CPT-4) procedure codes.

Exposure Identification During Pregnancy: Prevalent TNF-alpha inhibitor use (etanercept, adalimumab, infliximab, certolizumab, and golimumab) was identified and defined using National Drug Codes (NDCs), Healthcare Common Procedure Coding System (HCPCS) codes, and CPT-4 codes (please see Appendix D).

Results: The baseline characteristics of the pregnancy cohort are provided by calendar year of delivery admission, age at delivery (years), pre- and post-term birth, and indication. The total number of pregnancies and the number of pregnancies with prevalent TNF-alpha inhibitor use are provided. Results are stratified by pregnancy period (e.g., trimesters), year of delivery, maternal age at delivery, and indication.

Limitations: Algorithms used to define pregnancy start and exposure use are imperfect; thus, it is possible that there may be misclassification.

Please see *Appendix E* for the specifications of parameters used in this query request.

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

Table of Contents

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. This is equivalent to the "RxAmt" value in the Sentinel Common Data Model.

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) 01: Cohort includes only the first valid treatment episode during the query period; (2) 02: Cohort includes all valid treatment episodes during the query period; (3) 03: Cohort includes all valid treatment episodes during

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.

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

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

Event Deduplication - specifies how events are counted by the MP algorithm: (0) 0: Counts all occurrences of an HOI during an exposure episode; (1) 1: de-duplicates occurrences of the same HOI code and code type on the same day; (2) 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 (pre-existing condition) - 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

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.

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 observation of the incident query code during follow-up requires truncation of valid treatment episodes. A value of Y indicates that the treatment episodes should be truncated at the first occurrence of an incident query code. A value of N indicates that the treatment episodes should not be truncated at the occurrence of the incident query code.

Users - number of members with exposure during the query period. Member must have no evidence of exposure(s) of interest (defined by incidence criteria) in the prior washout period. A user may only be counted once in a query period.

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

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

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

*all terms may not be used in this report

**incident treatment episodes must be incident to both the exposure and the event

Table 1: Baseline Characteristics of Pregnancies Ending in Live Birth

	Pregnancy cohorts (n)	Percent of Pregnancy Episodes
Total unique women	1,870,237	
Total unique episodes	2,220,332	100%
Calendar year of delivery admission		
2004	61,434	2.77%
2005	64,400	2.90%
2006	68,043	3.06%
2007	121,015	5.45%
2008	145,748	6.56%
2009	245,176	11.04%
2010	275,745	12.42%
2011	267,679	12.06%
2012	258,539	11.64%
2013	263,792	11.88%
2014	256,783	11.57%
2015	191,978	8.65%
Age at delivery (years)		
15-19	114,428	5.15%
20–24	287,814	12.96%
25–29	576,279	25.95%
30–34	742,696	33.45%
35–39	397,441	17.90%
40–44	91,435	4.12%
45–54	10,239	0.46%
Pre/postterm		
Any code for preterm birth	163,516	7.36%
Any code for postterm birth	322,521	14.53%
Indication		
Rheumatoid Arthritis (RA)	4,047	0.18%
Psoriatic Arthritis (PsA)	633	0.03%
Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	418	0.02%
Psoriasis (PsO)	6,791	0.31%
Crohn's disease (CD)	3,748	0.17%
Ulcerative Colitis (UC)	3,690	0.17%
Ankylosing Spondylitis (AS)	354	0.02%

Table 2: Prevalence of Tumor Necrosis Factor-Alpha Inhibitor Biologics Use among Pregnancies Ending in Live Birth by Indication and Pregnancy Period

Drug	Indication	Number of pregnancies with indication	Any drug use in the 90 days before pregnancy	Any drug use during pregnancy	Any drug use during first trimester	Any drug use during second trimester	Any drug use during third trimester
All valid pregnancy episodes			2,220,332	2,220,332	2,220,332	2,220,332	2,219,962
Etanercept	Rheumatoid Arthritis (RA)	4,047	541	494	475	205	181
Etanercept	Psoriatic Arthritis (PsA)	633	132	121	117	45	43
Etanercept	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	418	67	56	53	21	23
Etanercept	Psoriasis (PsO)	6,791	261	233	224	77	71
Etanercept	Crohn's disease (CD)	3,748	8	7	7	3	1
Etanercept	Ulcerative Colitis (UC)	3,690	7	4	4	1	0
Etanercept	Ankylosing Spondylitis (AS)	354	53	45	43	20	19
Adalimumab	Rheumatoid Arthritis (RA)	4,047	219	186	176	60	52
Adalimumab	Psoriatic Arthritis (PsA)	633	76	58	56	23	19
Adalimumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	418	19	16	15	9	9
Adalimumab	Psoriasis (PsO)	6,791	157	131	127	50	42
Adalimumab	Crohn's disease (CD)	3,748	291	308	288	258	239
Adalimumab	Ulcerative Colitis (UC)	3,690	69	75	69	57	55
Adalimumab	Ankylosing Spondylitis (AS)	354	36	28	27	10	8
Infliximab	Rheumatoid Arthritis (RA)	4,047	124	103	102	45	34
Infliximab	Psoriatic Arthritis (PsA)	633	32	28	27	10	8
Infliximab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	418	12	9	9	7	6
Infliximab	Psoriasis (PsO)	6,791	40	42	41	22	21
Infliximab	Crohn's disease (CD)	3,748	527	542	523	441	427
Infliximab	Ulcerative Colitis (UC)	3,690	216	236	224	193	191
Infliximab	Ankylosing Spondylitis (AS)	354	20	15	15	5	3
Certolizumab	Rheumatoid Arthritis (RA)	4,047	37	42	40	24	22
Certolizumab	Psoriatic Arthritis (PsA)	633	6	6	5	2	2
Certolizumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	418	2	1	1	0	0
Certolizumab	Psoriasis (PsO)	6,791	6	10	8	7	8
Certolizumab	Crohn's disease (CD)	3,748	90	115	95	94	97
Certolizumab	Ulcerative Colitis (UC)	3,690	15	20	16	17	16
Certolizumab	Ankylosing Spondylitis (AS)	354	5	4	4	2	2
Golimumab	Rheumatoid Arthritis (RA)	4,047	31	28	26	11	10
Golimumab	Psoriatic Arthritis (PsA)	633	6	5	5	2	2
Golimumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	418	4	4	4	3	2
Golimumab	Psoriasis (PsO)	6,791	3	2	2	1	1
Golimumab	Crohn's disease (CD)	3,748	3	3	3	2	2
Golimumab	Ulcerative Colitis (UC)	3,690	7	10	9	5	4
Golimumab	Ankylosing Spondylitis (AS)	354	4	3	3	1	0

*Please note that pregancies can be included in more than one cell

Table 3: Prevalence of Tumor Necrosis Factor-Alpha Inhibitor Biologics Use among Pregnancies Ending in Live Birth by Indication and Year

Drug	Indication	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
All valid pregnancy episodes by year		61,434	64,400	68,043	121,015	145,748	245,176	275,745	267,679	258,539	263,792	256,783	191,978
	Rheumatoid Arthritis (RA)	68	89	94	196	256	474	510	514	489	537	462	358
	Psoriatic Arthritis (PsA)	5	15	12	25	55	54	75	80	78	74	100	60
	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	9	9	10	23	23	56	50	42	42	60	52	42
	Psoriasis (PsO)	129	144	149	335	423	742	889	797	828	894	843	618
	Crohn's disease (CD)	56	71	72	159	213	405	492	492	466	471	503	348
	Ulcerative Colitis (UC)	49	62	67	144	226	403	507	473	423	493	474	369
	Ankylosing Spondylitis (AS)	3	4	5	16	18	39	43	45	50	35	48	48
Etanercept	Rheumatoid Arthritis (RA)	4	8	12	21	32	59	62	69	57	67	60	43
Etanercept	Psoriatic Arthritis (PsA)	1	4	4	9	9	10	13	14	9	13	20	15
Etanercept	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	0	1	4	1	6	6	2	13	11	5	7
Etanercept	Psoriasis (PsO)	1	7	6	8	24	23	31	36	29	23	30	15
Etanercept	Crohn's disease (CD)	0	0	0	0	1	0	1	3	0	1	1	0
Etanercept	Ulcerative Colitis (UC)	0	0	0	0	0	1	1	0	0	1	1	0
Etanercept	Ankylosing Spondylitis (AS)	0	0	1	1	3	7	7	3	11	6	3	3
Adalimumab	Rheumatoid Arthritis (RA)	0	0	2	7	6	25	24	38	28	22	16	18
Adalimumab	Psoriatic Arthritis (PsA)	0	0	0	0	4	3	9	10	9	6	13	4
Adalimumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	0	0	0	0	2	1	6	0	1	3	3
Adalimumab	Psoriasis (PsO)	0	0	1	1	6	11	18	11	17	28	27	11
Adalimumab	Crohn's disease (CD)	0	0	1	0	5	23	37	53	51	46	49	43
Adalimumab	Ulcerative Colitis (UC)	0	0	0	0	1	9	6	7	5	12	21	14
Adalimumab	Ankylosing Spondylitis (AS)	0	0	0	0	0	4	0	8	3	6	2	5
Infliximab	Rheumatoid Arthritis (RA)	2	3	1	5	3	20	18	16	7	13	9	6
Infliximab	Psoriatic Arthritis (PsA)	0	0	0	2	1	3	6	3	4	3	3	3
Infliximab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	1	0	0	1	1	1	2	1	0	0	2
Infliximab	Psoriasis (PsO)	1	0	1	2	1	6	6	7	3	4	5	6
Infliximab	Crohn's disease (CD)	5	5	12	14	26	62	75	75	76	82	67	43
Infliximab	Ulcerative Colitis (UC)	1	0	0	2	6	27	40	33	35	35	37	20
Infliximab	Ankylosing Spondylitis (AS)	0	2	0	0	1	1	1	1	3	0	3	3
Certolizumab	Rheumatoid Arthritis (RA)	0	0	0	0	0	0	1	2	3	8	18	10
Certolizumab	Psoriatic Arthritis (PsA)	0	0	0	0	0	0	1	1	0	1	1	2
Certolizumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	0	0	0	0	0	0	0	0	0	1	0
Certolizumab	Psoriasis (PsO)	0	0	0	0	0	0	1	2	2	0	2	3
Certolizumab	Crohn's disease (CD)	0	0	0	0	0	3	12	9	19	17	32	23
Certolizumab	Ulcerative Colitis (UC)	0	0	0	0	0	0	2	2	3	3	6	4
Certolizumab	Ankylosing Spondylitis (AS)	0	0	0	0	0	0	1	0	0	0	1	2
Golimumab	Rheumatoid Arthritis (RA)	0	0	0	0	0	0	0	5	4	7	6	6
Golimumab	Psoriatic Arthritis (PsA)	0	0	0	0	0	0	0	1	1	0	0	3
Golimumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	0	0	0	0	0	0	0	1	2	1	0
Golimumab	Psoriasis (PsO)	0	0	0	0	0	0	0	0	1	0	0	1
Golimumab	Crohn's disease (CD)	0	0	0	0	0	0	0	1	1	0	0	1
Golimumab	Ulcerative Colitis (UC)	0	0	0	0	0	0	0	1	1	0	2	6
Golimumab	Ankylosing Spondylitis (AS)	0	0	0	0	0	0	0	1	1	0	1	0

*Please note that pregancies can be included in more than one cell

Table 4: Prevalence of Tumor Necrosis Factor-Alpha Inhibitor Biologics Use among Pregnancies Ending in Live Birth by Indication and Maternal Age at Delivery

Drug	Indication	15-19 Years	20-24 Years	25-29 Years	30-34 Years	35-39 Years	40-44 Years	45-54 Years
All valid pregnancy episodes by age at delivery		114,428	287,814	576,279	742,696	397,441	91,435	10,239
	Rheumatoid Arthritis (RA)	49	263	905	1502	1022	250	56
	Psoriatic Arthritis (PsA)	5	31	116	240	186	50	5
	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	42	70	107	140	47	12	0
	Psoriasis (PsO)	137	463	1533	2639	1611	375	33
	Crohn's disease (CD)	77	334	942	1483	743	144	25
	Ulcerative Colitis (UC)	55	221	900	1467	821	206	20
	Ankylosing Spondylitis (AS)	2	22	85	126	96	19	4
Etanercept	Rheumatoid Arthritis (RA)	2	17	101	195	136	36	7
Etanercept	Psoriatic Arthritis (PsA)	0	6	17	50	35	12	1
Etanercept	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	5	4	13	26	7	1	0
Etanercept	Psoriasis (PsO)	5	13	57	78	62	17	1
Etanercept	Crohn's disease (CD)	0	0	0	3	3	1	0
Etanercept	Ulcerative Colitis (UC)	0	0	2	0	1	1	0
Etanercept	Ankylosing Spondylitis (AS)	0	2	10	17	14	1	1
Adalimumab	Rheumatoid Arthritis (RA)	1	11	40	71	52	10	1
Adalimumab	Psoriatic Arthritis (PsA)	0	1	14	16	22	5	0
Adalimumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	2	1	8	3	1	1	0
Adalimumab	Psoriasis (PsO)	3	7	33	44	35	7	2
Adalimumab	Crohn's disease (CD)	5	24	86	136	50	4	3
Adalimumab	Ulcerative Colitis (UC)	0	2	19	38	14	2	0
Adalimumab	Ankylosing Spondylitis (AS)	0	2	10	7	7	2	0
Infliximab	Rheumatoid Arthritis (RA)	1	3	27	30	32	7	3
Infliximab	Psoriatic Arthritis (PsA)	0	2	9	8	6	2	1
Infliximab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	2	2	4	1	0	0
Infliximab	Psoriasis (PsO)	0	4	11	17	9	0	1
Infliximab	Crohn's disease (CD)	13	48	144	216	102	17	2
Infliximab	Ulcerative Colitis (UC)	4	16	53	102	50	9	2
Infliximab	Ankylosing Spondylitis (AS)	0	0	4	6	5	0	0
Certolizumab	Rheumatoid Arthritis (RA)	0	3	11	13	10	5	0
Certolizumab	Psoriatic Arthritis (PsA)	0	0	2	1	3	0	0
Certolizumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	0	0	1	0	0	0
Certolizumab	Psoriasis (PsO)	0	0	5	2	3	0	0
Certolizumab	Crohn's disease (CD)	0	3	34	45	29	2	2
Certolizumab	Ulcerative Colitis (UC)	0	0	3	9	5	2	1
Certolizumab	Ankylosing Spondylitis (AS)	0	0	1	1	2	0	0
Golimumab	Rheumatoid Arthritis (RA)	0	2	7	11	7	1	0
Golimumab	Psoriatic Arthritis (PsA)	0	0	1	0	3	1	0
Golimumab	Juvenile Rheumatoid/Idiopathic Arthritis (JRA/JIA)	0	1	1	2	0	0	0
Golimumab	Psoriasis (PsO)	0	0	0	0	2	0	0
Golimumab	Crohn's disease (CD)	0	0	1	0	2	0	0
Golimumab	Ulcerative Colitis (UC)	1	1	3	2	3	0	0
Golimumab	Ankylosing Spondylitis (AS)	0	1	1	1	0	0	0

*Please note that pregancies can be included in more than one cell

Appendix A: Dates of Available Data for Each Data Partner (DP) up to Request End Date (9/30/2015)

Masked ID	DP Start Date	DP End Date
DP001	1/1/2008	9/30/2015
DP002	1/1/2012	9/30/2015
DP003	1/1/2006	9/30/2015
DP004	1/1/2000	9/30/2015
DP005	1/1/2000	9/30/2015
DP006	1/1/2000	5/31/2015
DP007	1/1/2000	10/31/2014
DP008	6/1/2007	9/30/2015
DP009	1/1/2000	9/30/2015
DP010	1/1/2000	9/30/2015
DP011	1/1/2005	9/30/2015
DP012	1/1/2000	9/30/2015
DP013	1/1/2000	9/30/2015
DP014	1/1/2004	9/30/2015
DP015	1/1/2008	9/30/2015
DP016	1/1/2000	9/30/2015

Appendix B: List of Diagnosis Codes used to Define Inclusion Criteria in this Request

Inclusion Criteria	Code	Code Category	Code Type	Description
Rheumoatoid arthritis	714	Diagnosis	ICD-9-CM	Rheumatoid arthritis and other inflammatory polyarthropathies
Rheumoatoid arthritis	714.0	Diagnosis	ICD-9-CM	Rheumatoid arthritis
Rheumoatoid arthritis	714.2	Diagnosis	ICD-9-CM	Other rheumatoid arthritis with visceral or systemic involvement
Psoriatic arthritis	696.0	Diagnosis	ICD-9-CM	Psoriatic arthropathy
Juvenile rheumatoid arthritis	714.30	Diagnosis	ICD-9-CM	Polyarticular juvenile rheumatoid arthritis, chronic or unspecified
Juvenile rheumatoid arthritis	714.31	Diagnosis	ICD-9-CM	Polyarticular juvenile rheumatoid arthritis, acute
Juvenile rheumatoid arthritis	714.32	Diagnosis	ICD-9-CM	Pauciarticular juvenile rheumatoid arthritis
Juvenile rheumatoid arthritis	714.33	Diagnosis	ICD-9-CM	Monoarticular juvenile rheumatoid arthritis
Juvenile rheumatoid arthritis	714.1	Diagnosis	ICD-9-CM	Felty's syndrome
Psoriasis	696	Diagnosis	ICD-9-CM	Psoriasis and similar disorders
Psoriasis	696.1	Diagnosis	ICD-9-CM	Other psoriasis
Crohn's disease	555.0	Diagnosis	ICD-9-CM	Regional enteritis of small intestine, including duodenum, ileum, and jejunum (regional ileitis);
Crohn's disease	555.1	Diagnosis	ICD-9-CM	Regional enteritis of large intestine (regional colitis);
Crohn's disease	555.2	Diagnosis	ICD-9-CM	Regional enteritis of small intestine with large intestine (regional ileocolitis)
Crohn's disease	555.9	Diagnosis	ICD-9-CM	Regional enteritis of unspecified site (regional enteritis, not otherwise specified).
Ulcerative colitis	556.0	Diagnosis	ICD-9-CM	Ulcerative (chronic) enterocolitis
Ulcerative colitis	556.1	Diagnosis	ICD-9-CM	Ulcerative (chronic) ileocolitis
Ulcerative colitis	556.2	Diagnosis	ICD-9-CM	Ulcerative (chronic) procotitis
Ulcerative colitis	556.3	Diagnosis	ICD-9-CM	Ulcerative (chronic) proctosigmoiditis
Ulcerative colitis	556.4	Diagnosis	ICD-9-CM	Pseudopolyposis of colon
Ulcerative colitis	556.5	Diagnosis	ICD-9-CM	Left-side ulcerative (chronic) colitis
Ulcerative colitis	556.6	Diagnosis	ICD-9-CM	Universal ulcerative (chronic) colitis
Ulcerative colitis	556.8	Diagnosis	ICD-9-CM	Other ulcerative colitis
Ulcerative colitis	556.9	Diagnosis	ICD-9-CM	Ulcerative colitis, unspecified
Ankylosing spondylitis	720.11	Diagnosis	ICD-9-CM	Ankylosing Spondylitis

Appendix C: List of Diagnosis and Procedure Codes used to Define Liveborn Deliveries in this Request

			Preterm and Post-term Delivery Codes*				
Code Category	Code Type	Code	Description	Pre-term Code	Post-term Code	Priority	Duration of Pregnancy (Days)
Diagnosis	ICD-9-CM	644.21	Early onset of delivery, delivered, with or without mention of antepartum condition	Yes	No	8	245
Diagnosis	ICD-9-CM	645.10	Post term pregnancy, unspecified as to episode of care or not applicable	No	Yes	2	287
Diagnosis	ICD-9-CM	645.1	Post term pregnancy	No	Yes	2	287
Diagnosis	ICD-9-CM	645.11	Post term pregnancy, delivered, with or without mention of antepartum condition	No	Yes	2	287
Diagnosis	ICD-9-CM	645.13	Post term pregnancy, antepartum condition or complication	No	Yes	2	287
Diagnosis	ICD-9-CM	645.20	Prolonged pregnancy, unspecified as to episode of care or not applicable	No	Yes	1	294
Diagnosis	ICD-9-CM	645.2	Prolonged pregnancy	No	Yes	1	294
Diagnosis	ICD-9-CM	645.21	Prolonged pregnancy, delivered, with or without mention of antepartum condition	No	Yes	1	294
Diagnosis	ICD-9-CM	645.23	Prolonged pregnancy, antepartum condition or complication	No	Yes	1	294
Diagnosis	ICD-9-CM	765.0	Extreme fetal immaturity	Yes	No	5	196
Diagnosis	ICD-9-CM	765.00	Extreme fetal immaturity, unspecified (weight)	Yes	No	5	196
Diagnosis	ICD-9-CM	765.01	Extreme fetal immaturity, less than 500 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.02	Extreme fetal immaturity, 500-749 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.03	Extreme fetal immaturity, 750-999 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.04	Extreme fetal immaturity, 1,000-1,249 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.05	Extreme fetal immaturity, 1,250-1,499 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.06	Extreme fetal immaturity, 1,500-1,749 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.07	Extreme fetal immaturity, 1,750-1,999 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.08	Extreme fetal immaturity, 2,000-2,499 grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.09	Extreme fetal immaturity, 2,500 or more grams	Yes	No	5	196
Diagnosis	ICD-9-CM	765.1	Other preterm infants	Yes	No	8	245
Diagnosis	ICD-9-CM	765.10	Other preterm infants, unspecified (weight)	Yes	No	8	245
Diagnosis	ICD-9-CM	765.11	Other preterm infants, less than 500 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.12	Other preterm infants, 500-749 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.13	Other preterm infants, 750-999 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.14	Other preterm infants, 1,000-1,249 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.15	Other preterm infants, 1,250-1,499 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.16	Other preterm infants, 1,500-1,749 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.17	Other preterm infants, 1,750-1,999 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.18	Other preterm infants, 2,000-2,499 grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.19	Other preterm infants, 2,500 or more grams	Yes	No	8	245
Diagnosis	ICD-9-CM	765.20	Unspecified weeks of gestation	Yes	No	8	245
Diagnosis	ICD-9-CM	765.21	Less than 24 completed weeks of gestation	Yes	No	7	168
Diagnosis	ICD-9-CM	765.22	24 completed weeks of gestation	Yes	No	7	168

			Preterm and Post-term Delivery Codes*					
Code Category	Code Type	Code	Description	Pre-term Code	Post-term Code	Priority	Duration of Pregnancy (Days)
Diagnosis	ICD-9-CM	765.23	25-26 completed weeks of gestation	Yes	No	6	182
Diagnosis	ICD-9-CM	765.24	27-28 completed weeks of gestation	Yes	No	5	196
Diagnosis	ICD-9-CM	765.25	29-30 completed weeks of gestation	Yes	No	4	210
Diagnosis	ICD-9-CM	765.26	31-32 completed weeks of gestation	Yes	No	3	224
Diagnosis	ICD-9-CM	765.27	33-34 completed weeks of gestation	Yes	No	2	238
Diagnosis	ICD-9-CM	765.28	35-36 completed weeks of gestation	Yes	No	1	252
Diagnosis	ICD-9-CM	766.21	Post-term infant	No	Yes	2	287
Diagnosis	ICD-9-CM	766.22	Prolonged gestation of infant	No	Yes	1	294

*Each pre-/post-term code is assigned an associated pregnancy duration and priority. If a pre-term or post-term code is observed within a requester-defined window before and after delivery, the duration associated with the code is used to calculate pregnancy duration. If multiple codes are observed, priority is used to determine appropriate duration. If no codes are observed, the requester defines the number of days used to define pregnancy duration.

Note that the default algorithm always assigns priority to observed pre-term codes; that is, if both a pre-term and post-term code

			Full Term Delivery Codes
Code Category	Code Type	Code	Description
Procedure	CPT4	59409	Vaginal delivery only (with or without episiotomy and/or forceps);
Procedure	CPT4	59410	Vaginal delivery only (with or without episiotomy and/or forceps); including postpartum care
Procedure	CPT4	59510	Routine obstetric care including antepartum care, cesarean delivery, and postpartum care
Procedure	CPT4	59514	Cesarean delivery only;
Procedure	CPT4	59515	Cesarean delivery only; including postpartum care
Procedure	CPT4	59610	Routine obstetric care including antepartum care, vaginal delivery (with or without episiotomy, and/or forceps) and postpartum care, after previous cesarean delivery
Procedure	CPT4	59612	Vaginal delivery only, after previous cesarean delivery (with or without episiotomy and/or forceps);
Procedure	CPT4	59614	Vaginal delivery only, after previous cesarean delivery (with or without episiotomy and/or forceps); including postpartum care

			Full Term Delivery Codes
Code Category	Code Type	Code	Description
Procedure	CPT4	59618	Routine obstetric care including antepartum care, cesarean delivery, and postpartum care, following attempted vaginal delivery after previous cesarean delivery
Procedure	CPT4	59620	Cesarean delivery only, following attempted vaginal delivery after previous cesarean delivery;
Procedure	CPT4	59622	Cesarean delivery only, following attempted vaginal delivery after previous cesarean delivery; including postpartum care
Diagnosis	ICD-9-CM	64101	Placenta previa without hemorrhage, with delivery
Diagnosis	ICD-9-CM	64111	Hemorrhage from placenta previa, with delivery
Diagnosis	ICD-9-CM	64121	Premature separation of placenta, with delivery
Diagnosis	ICD-9-CM	64131	Antepartum hemorrhage associated with coagulation defects, with delivery
Diagnosis	ICD-9-CM	64181	Other antepartum hemorrhage, with delivery
Diagnosis	ICD-9-CM	64191	Unspecified antepartum hemorrhage, with delivery
Diagnosis	ICD-9-CM	64201	Benign essential hypertension with delivery
Diagnosis	ICD-9-CM	64202	Benign essential hypertension, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64211	Hypertension secondary to renal disease, with delivery
Diagnosis	ICD-9-CM	64212	Hypertension secondary to renal disease, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64221	Other pre-existing hypertension, with delivery
Diagnosis	ICD-9-CM	64222	Other pre-existing hypertension, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64231	Transient hypertension of pregnancy, with delivery
Diagnosis	ICD-9-CM	64232	Transient hypertension of pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64241	Mild or unspecified pre-eclampsia, with delivery
Diagnosis	ICD-9-CM	64242	Mild or unspecified pre-eclampsia, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64251	Severe pre-eclampsia, with delivery
Diagnosis	ICD-9-CM	64252	Severe pre-eclampsia, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64261	Eclampsia, with delivery
Diagnosis	ICD-9-CM	64262	Eclampsia, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64271	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery
Diagnosis	ICD-9-CM	64272	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64291	Unspecified hypertension, with delivery

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Diagnosis	ICD-9-CM	64292	Unspecified hypertension, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64301	Mild hyperemesis gravidarum, delivered
Diagnosis	ICD-9-CM	64311	Hyperemesis gravidarum with metabolic disturbance, delivered
Diagnosis	ICD-9-CM	64321	Late vomiting of pregnancy, delivered
Diagnosis	ICD-9-CM	64381	Other vomiting complicating pregnancy, delivered
Diagnosis	ICD-9-CM	64391	Unspecified vomiting of pregnancy, delivered
Diagnosis	ICD-9-CM	64421	Early onset of delivery, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64501	Prolonged pregnancy, with delivery
Diagnosis	ICD-9-CM	64511	Post term pregnancy, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64521	Prolonged pregnancy, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64601	Papyraceous fetus, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64611	Edema or excessive weight gain in pregnancy, with delivery, with or without mention of antepartum complication
Diagnosis	ICD-9-CM	64612	Edema or excessive weight gain in pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64621	Unspecified renal disease in pregnancy, with delivery
Diagnosis	ICD-9-CM	64622	Unspecified renal disease in pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64631	Pregnancy complication, recurrent pregnancy loss, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64641	Peripheral neuritis in pregnancy, with delivery
Diagnosis	ICD-9-CM	64642	Peripheral neuritis in pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64651	Asymptomatic bacteriuria in pregnancy, with delivery
Diagnosis	ICD-9-CM	64652	Asymptomatic bacteriuria in pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64661	Infections of genitourinary tract in pregnancy, with delivery
Diagnosis	ICD-9-CM	64662	Infections of genitourinary tract in pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64671	Liver and biliary tract disorders in pregnancy, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64681	Other specified complication of pregnancy, with delivery
Diagnosis	ICD-9-CM	64682	Other specified complications of pregnancy, with delivery, with current postpartum complication

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Diagnosis	ICD-9-CM	64691	Unspecified complication of pregnancy, with delivery
Diagnosis	ICD-9-CM	64701	Maternal syphilis, complicating pregnancy, with delivery
Diagnosis	ICD-9-CM	64702	Maternal syphilis, complicating pregnancy, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64711	Maternal gonorrhea with delivery
Diagnosis	ICD-9-CM	64712	Maternal gonorrhea, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64721	Other maternal venereal diseases with delivery
Diagnosis	ICD-9-CM	64722	Other maternal venereal diseases with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64731	Maternal tuberculosis with delivery
Diagnosis	ICD-9-CM	64732	Maternal tuberculosis with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64741	Maternal malaria with delivery
Diagnosis	ICD-9-CM	64742	Maternal malaria with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64751	Maternal rubella with delivery
Diagnosis	ICD-9-CM	64752	Maternal rubella with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64761	Other maternal viral disease with delivery
Diagnosis	ICD-9-CM	64762	Other maternal viral disease with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64781	Other specified maternal infectious and parasitic disease with delivery
Diagnosis	ICD-9-CM	64782	Other specified maternal infectious and parasitic disease with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64791	Unspecified maternal infection or infestation with delivery
Diagnosis	ICD-9-CM	64792	Unspecified maternal infection or infestation with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64801	Maternal diabetes mellitus with delivery
Diagnosis	ICD-9-CM	64802	Maternal diabetes mellitus with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64811	Maternal thyroid dysfunction with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64812	Maternal thyroid dysfunction with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64821	Maternal anemia, with delivery
Diagnosis	ICD-9-CM	64822	Maternal anemia with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64831	Maternal drug dependence, with delivery
Diagnosis	ICD-9-CM	64832	Maternal drug dependence, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64841	Maternal mental disorders, with delivery

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	64842	Maternal mental disorders, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64851	Maternal congenital cardiovascular disorders, with delivery
Diagnosis	ICD-9-CM	64852	Maternal congenital cardiovascular disorders, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64861	Other maternal cardiovascular diseases, with delivery
Diagnosis	ICD-9-CM	64862	Other maternal cardiovascular diseases, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64871	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery
Diagnosis	ICD-9-CM	64872	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64881	Abnormal maternal glucose tolerance, with delivery
Diagnosis	ICD-9-CM	64882	Abnormal maternal glucose tolerance, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64891	Other current maternal conditions classifiable elsewhere, with delivery
Diagnosis	ICD-9-CM	64892	Other current maternal conditions classifiable elsewhere, with delivery, with current postpartum complication
Diagnosis	ICD-9-CM	64901	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64902	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	64911	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64912	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	64921	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64922	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	64931	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64932	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	64941	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Diagnosis	ICD-9-CM	64942	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	64951	Spotting complicating pregnancy, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64961	Uterine size date discrepancy, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64962	Uterine size date discrepancy, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	64971	Cervical shortening, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64981	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	64982	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	650	Normal delivery
Diagnosis	ICD-9-CM	65101	Twin pregnancy, delivered
Diagnosis	ICD-9-CM	65111	Triplet pregnancy, delivered
Diagnosis	ICD-9-CM	65121	Quadruplet pregnancy, delivered
Diagnosis	ICD-9-CM	65131	Twin pregnancy with fetal loss and retention of one fetus, delivered
Diagnosis	ICD-9-CM	65141	Triplet pregnancy with fetal loss and retention of one or more, delivered
Diagnosis	ICD-9-CM	65151	Quadruplet pregnancy with fetal loss and retention of one or more, delivered
Diagnosis	ICD-9-CM	65161	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), delivered
Diagnosis	ICD-9-CM	65171	Multiple gestation following (elective) fetal reduction, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	65181	Other specified multiple gestation, delivered
Diagnosis	ICD-9-CM	65191	Unspecified multiple gestation, delivered
Diagnosis	ICD-9-CM	65201	Unstable lie of fetus, delivered
Diagnosis	ICD-9-CM	65211	Breech or other malpresentation successfully converted to cephalic presentation, delivered
Diagnosis	ICD-9-CM	65221	Breech presentation without mention of version, delivered
Diagnosis	ICD-9-CM	65231	Transverse or oblique fetal presentation, delivered
Diagnosis	ICD-9-CM	65241	Fetal face or brow presentation, delivered

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	65251	High fetal head at term, delivered
Diagnosis	ICD-9-CM	65261	Multiple gestation with malpresentation of one fetus or more, delivered
Diagnosis	ICD-9-CM	65271	Prolapsed arm of fetus, delivered
Diagnosis	ICD-9-CM	65281	Other specified malposition or malpresentation of fetus, delivered
Diagnosis	ICD-9-CM	65291	Unspecified malposition or malpresentation of fetus, delivered
Diagnosis	ICD-9-CM	65301	Major abnormality of bony pelvis, not further specified, delivered
Diagnosis	ICD-9-CM	65311	Generally contracted pelvis in pregnancy, delivered
Diagnosis	ICD-9-CM	65321	Inlet contraction of pelvis in pregnancy, delivered
Diagnosis	ICD-9-CM	65331	Outlet contraction of pelvis in pregnancy, delivered
Diagnosis	ICD-9-CM	65341	Fetopelvic disproportion, delivered
Diagnosis	ICD-9-CM	65351	Unusually large fetus causing disproportion, delivered
Diagnosis	ICD-9-CM	65361	Hydrocephalic fetus causing disproportion, delivered
Diagnosis	ICD-9-CM	65371	Other fetal abnormality causing disproportion, delivered
Diagnosis	ICD-9-CM	65381	Fetal disproportion of other origin, delivered
Diagnosis	ICD-9-CM	65391	Unspecified fetal disproportion, delivered
Diagnosis	ICD-9-CM	65401	Congenital abnormalities of pregnant uterus, delivered
Diagnosis	ICD-9-CM	65402	Congenital abnormalities of pregnant uterus, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65411	Tumors of body of uterus, delivered
Diagnosis	ICD-9-CM	65412	Tumors of body of uterus, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65421	Previous cesarean delivery, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	65431	Retroverted and incarcerated gravid uterus, delivered
Diagnosis	ICD-9-CM	65432	Retroverted and incarcerated gravid uterus, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65441	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered
Diagnosis	ICD-9-CM	65442	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65451	Cervical incompetence, delivered
Diagnosis	ICD-9-CM	65452	Cervical incompetence, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65461	Other congenital or acquired abnormality of cervix, with delivery
Diagnosis	ICD-9-CM	65462	Other congenital or acquired abnormality of cervix, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65471	Congenital or acquired abnormality of vagina, with delivery

			Full Term Delivery Codes
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	65472	Congenital or acquired abnormality of vagina, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65481	Congenital or acquired abnormality of vulva, with delivery
Diagnosis	ICD-9-CM	65482	Congenital or acquired abnormality of vulva, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65491	Other and unspecified abnormality of organs and soft tissues of pelvis, with delivery
Diagnosis	ICD-9-CM	65492	Other and unspecified abnormality of organs and soft tissues of pelvis, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	65501	Central nervous system malformation in fetus, with delivery
Diagnosis	ICD-9-CM	65511	Chromosomal abnormality in fetus, affecting management of mother, with delivery
Diagnosis	ICD-9-CM	65521	Hereditary disease in family possibly affecting fetus, affecting management of mother, with delivery
Diagnosis	ICD-9-CM	65531	Suspected damage to fetus from viral disease in mother, affecting management of mother, with delivery
Diagnosis	ICD-9-CM	65541	Suspected damage to fetus from other disease in mother, affecting management of mother, with delivery
Diagnosis	ICD-9-CM	65551	Suspected damage to fetus from drugs, affecting management of mother, delivered
Diagnosis	ICD-9-CM	65561	Suspected damage to fetus from radiation, affecting management of mother, delivered
Diagnosis	ICD-9-CM	65571	Decreased fetal movements, affecting management of mother, delivered
Diagnosis	ICD-9-CM	65581	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, delivery
Diagnosis	ICD-9-CM	65591	Unspecified fetal abnormality affecting management of mother, delivery
Diagnosis	ICD-9-CM	65601	Fetal-maternal hemorrhage, with delivery
Diagnosis	ICD-9-CM	65611	Rhesus isoimmunization affecting management of mother, delivered
Diagnosis	ICD-9-CM	65621	Isoimmunization from other and unspecified blood-group incompatibility, affecting management of mother, delivered
Diagnosis	ICD-9-CM	65631	Fetal distress affecting management of mother, delivered
Diagnosis	ICD-9-CM	65641	Intrauterine death affecting management of mother, delivered
Diagnosis	ICD-9-CM	65651	Poor fetal growth, affecting management of mother, delivered
Diagnosis	ICD-9-CM	65661	Excessive fetal growth affecting management of mother, delivered
Diagnosis	ICD-9-CM	65671	Other placental conditions affecting management of mother, delivered

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Diagnosis	ICD-9-CM	65681	Other specified fetal and placental problems affecting management of mother, delivered
Diagnosis	ICD-9-CM	65691	Unspecified fetal and placental problem affecting management of mother, delivered
Diagnosis	ICD-9-CM	65701	Polyhydramnios, with delivery
Diagnosis	ICD-9-CM	65801	Oligohydramnios, delivered
Diagnosis	ICD-9-CM	65811	Premature rupture of membranes in pregnancy, delivered
Diagnosis	ICD-9-CM	65821	Delayed delivery after spontaneous or unspecified rupture of membranes, delivered
Diagnosis	ICD-9-CM	65831	Delayed delivery after artificial rupture of membranes, delivered
Diagnosis	ICD-9-CM	65841	Infection of amniotic cavity, delivered
Diagnosis	ICD-9-CM	65881	Other problem associated with amniotic cavity and membranes, delivered
Diagnosis	ICD-9-CM	65891	Unspecified problem associated with amniotic cavity and membranes, delivered
Diagnosis	ICD-9-CM	65901	Failed mechanical induction of labor, delivered
Diagnosis	ICD-9-CM	65911	Failed medical or unspecified induction of labor, delivered
Diagnosis	ICD-9-CM	65921	Unspecified maternal pyrexia during labor, delivered
Diagnosis	ICD-9-CM	65931	Generalized infection during labor, delivered
Diagnosis	ICD-9-CM	65941	Grand multiparity, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	65951	Elderly primigravida, delivered
Diagnosis	ICD-9-CM	65961	Elderly multigravida, delivered, with mention of antepartum condition
Diagnosis	ICD-9-CM	65971	Abnormality in fetal heart rate or rhythm, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	65981	Other specified indication for care or intervention related to labor and delivery, delivered
Diagnosis	ICD-9-CM	65991	Unspecified indication for care or intervention related to labor and delivery, delivered
Diagnosis	ICD-9-CM	66001	Obstruction caused by malposition of fetus at onset of labor, delivered
Diagnosis	ICD-9-CM	66011	Obstruction by bony pelvis during labor and delivery, delivered
Diagnosis	ICD-9-CM	66021	Obstruction by abnormal pelvic soft tissues during labor and delivery, delivered
Diagnosis	ICD-9-CM	66031	Deep transverse arrest and persistent occipitoposterior position during labor and deliver, delivered
Diagnosis	ICD-9-CM	66041	Shoulder (girdle) dystocia during labor and deliver, delivered
Diagnosis	ICD-9-CM	66051	Locked twins, delivered
Diagnosis	ICD-9-CM	66061	Unspecified failed trial of labor, delivered

Full Term Delivery Codes

Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	66071	Unspecified failed forceps or vacuum extractor, delivered
Diagnosis	ICD-9-CM	66081	Other causes of obstructed labor, delivered
Diagnosis	ICD-9-CM	66091	Unspecified obstructed labor, with delivery
Diagnosis	ICD-9-CM	66101	Primary uterine inertia, with delivery
Diagnosis	ICD-9-CM	66111	Secondary uterine inertia, with delivery
Diagnosis	ICD-9-CM	66121	Other and unspecified uterine inertia, with delivery
Diagnosis	ICD-9-CM	66131	Precipitate labor, with delivery
Diagnosis	ICD-9-CM	66141	Hypertonic, incoordinate, or prolonged uterine contractions, with delivery
Diagnosis	ICD-9-CM	66191	Unspecified abnormality of labor, with delivery
Diagnosis	ICD-9-CM	66201	Prolonged first stage of labor, delivered
Diagnosis	ICD-9-CM	66211	Unspecified prolonged labor, delivered
Diagnosis	ICD-9-CM	66221	Prolonged second stage of labor, delivered
Diagnosis	ICD-9-CM	66231	Delayed delivery of second twin, triplet, etc., delivered
Diagnosis	ICD-9-CM	66301	Prolapse of cord, complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66311	Cord around neck, with compression, complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66321	Other and unspecified cord entanglement, with compression, complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66331	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66341	Short cord complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66351	Vasa previa complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66361	Vascular lesions of cord complicating labor and delivery, delivered
Diagnosis	ICD-9-CM	66381	Other umbilical cord complications during labor and delivery, delivered
Diagnosis	ICD-9-CM	66391	Unspecified umbilical cord complication during labor and delivery, delivered
Diagnosis	ICD-9-CM	66401	First-degree perineal laceration, with delivery
Diagnosis	ICD-9-CM	66411	Second-degree perineal laceration, with delivery
Diagnosis	ICD-9-CM	66421	Third-degree perineal laceration, with delivery
Diagnosis	ICD-9-CM	66431	Fourth-degree perineal laceration, with delivery
Diagnosis	ICD-9-CM	66441	Unspecified perineal laceration, with delivery
Diagnosis	ICD-9-CM	66451	Vulvar and perineal hematoma, with delivery
Diagnosis	ICD-9-CM	66461	Anal sphincter tear complicating delivery, not associated with third-degree perineal laceration, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66481	Other specified trauma to perineum and vulva, with delivery
Diagnosis	ICD-9-CM	66491	Unspecified trauma to perineum and vulva, with delivery
Diagnosis	ICD-9-CM	66501	Rupture of uterus before onset of labor, with delivery

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Diagnosis	ICD-9-CM	66511	Rupture of uterus during labor, with delivery
Diagnosis	ICD-9-CM	66522	Inversion of uterus, delivered with postpartum complication
Diagnosis	ICD-9-CM	66531	Laceration of cervix, with delivery
Diagnosis	ICD-9-CM	66541	High vaginal laceration, with delivery
Diagnosis	ICD-9-CM	66551	Other injury to pelvic organs, with delivery
Diagnosis	ICD-9-CM	66561	Damage to pelvic joints and ligaments, with delivery
Diagnosis	ICD-9-CM	66571	Pelvic hematoma, with delivery
Diagnosis	ICD-9-CM	66572	Pelvic hematoma, delivered with postpartum complication
Diagnosis	ICD-9-CM	66581	Other specified obstetrical trauma, with delivery
Diagnosis	ICD-9-CM	66582	Other specified obstetrical trauma, delivered, with postpartum
Diagnosis	ICD-9-CM	66591	Unspecified obstetrical trauma, with delivery
Diagnosis	ICD-9-CM	66592	Unspecified obstetrical trauma, delivered, with postpartum complication
Diagnosis	ICD-9-CM	66602	Third-stage postpartum hemorrhage, with delivery
Diagnosis	ICD-9-CM	66612	Other immediate postpartum hemorrhage, with delivery
Diagnosis	ICD-9-CM	66622	Delayed and secondary postpartum hemorrhage, with delivery
Diagnosis	ICD-9-CM	66632	Postpartum coagulation defects, with delivery
Diagnosis	ICD-9-CM	66702	Retained placenta without hemorrhage, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	66712	Retained portions of placenta or membranes, without hemorrhage, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66801	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered
Diagnosis	ICD-9-CM	66802	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66811	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered
Diagnosis	ICD-9-CM	66812	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66821	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered
Diagnosis	ICD-9-CM	66822	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66881	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered

			Full Term Delivery Codes
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	66882	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66891	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered
Diagnosis	ICD-9-CM	66892	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66901	Maternal distress, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66902	Maternal distress, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	66911	Shock during or following labor and delivery, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66912	Shock during or following labor and delivery, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	66921	Maternal hypotension syndrome, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66922	Maternal hypotension syndrome, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	66932	Acute kidney failure following labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66941	Other complications of obstetrical surgery and procedures, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66942	Other complications of obstetrical surgery and procedures, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	66951	Forceps or vacuum extractor delivery without mention of indication, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66961	Breech extraction, without mention of indication, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66971	Cesarean delivery, without mention of indication, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66981	Other complication of labor and delivery, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	66982	Other complication of labor and delivery, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	66991	Unspecified complication of labor and delivery, with delivery, with or without mention of antepartum condition

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	66992	Unspecified complication of labor and delivery, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67002	Major puerperal infection, unspecified, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67012	Puerperal endometritis, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67022	Puerperal sepsis, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67032	Puerperal septic thrombophlebitis, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67082	Other major puerperal infection, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67101	Varicose veins of legs, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67102	Varicose veins of legs, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67111	Varicose veins of vulva and perineum, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67112	Varicose veins of vulva and perineum, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67121	Superficial thrombophlebitis with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67122	Superficial thrombophlebitis with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67131	Deep phlebothrombosis, antepartum, with delivery
Diagnosis	ICD-9-CM	67142	Deep phlebothrombosis, postpartum, with delivery
Diagnosis	ICD-9-CM	67151	Other phlebitis and thrombosis with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67152	Other phlebitis and thrombosis with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67181	Other venous complication, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67182	Other venous complication, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67191	Unspecified venous complication, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67192	Unspecified venous complication, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67202	Puerperal pyrexia of unknown origin, delivered, with mention of postpartum complication

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Diagnosis	ICD-9-CM	67301	Obstetrical air embolism, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67302	Obstetrical air embolism, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67311	Amniotic fluid embolism, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67312	Amniotic fluid embolism, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67321	Obstetrical blood-clot embolism, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67322	Obstetrical blood-clot embolism, with mention of postpartum complication
Diagnosis	ICD-9-CM	67331	Obstetrical pyemic and septic embolism, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67332	Obstetrical pyemic and septic embolism, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67381	Other obstetrical pulmonary embolism, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67382	Other obstetrical pulmonary embolism, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67401	Cerebrovascular disorder, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67402	Cerebrovascular disorder, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67412	Disruption of cesarean wound, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67422	Disruption of perineal wound, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67432	Other complication of obstetrical surgical wounds, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67442	Placental polyp, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67451	Peripartum cardiomyopathy, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67452	Peripartum cardiomyopathy, delivered, with mention of postpartum condition
Diagnosis	ICD-9-CM	67482	Other complication of puerperium, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67492	Unspecified complications of puerperium, with delivery, with mention of postpartum complication

			Full Term Delivery Codes
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	67501	Infection of nipple associated with childbirth, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67502	Infection of nipple associated with childbirth, delivered with mention of postpartum complication
Diagnosis	ICD-9-CM	67511	Abscess of breast associated with childbirth, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67512	Abscess of breast associated with childbirth, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67521	Nonpurulent mastitis, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67522	Nonpurulent mastitis, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67581	Other specified infection of the breast and nipple associated with childbirth, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67582	Other specified infection of the breast and nipple associated with childbirth, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67591	Unspecified infection of the breast and nipple, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67592	Unspecified infection of the breast and nipple, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67601	Retracted nipple, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67602	Retracted nipple, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67611	Cracked nipple, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67612	Cracked nipple, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67621	Engorgement of breasts, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67622	Engorgement of breasts, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67631	Other and unspecified disorder of breast associated with childbirth, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67632	Other and unspecified disorder of breast associated with childbirth, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67641	Failure of lactation, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67642	Failure of lactation, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67651	Suppressed lactation, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67652	Suppressed lactation, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67661	Galactorrhea, with delivery, with or without mention of antepartum condition

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	67662	Galactorrhea, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67681	Other disorder of lactation, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67682	Other disorder of lactation, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67691	Unspecified disorder of lactation, with delivery, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67692	Unspecified disorder of lactation, with delivery, with mention of postpartum complication
Diagnosis	ICD-9-CM	67801	Fetal hematologic conditions, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67811	Fetal conjoined twins, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67901	Maternal complications from in utero procedure, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67902	Maternal complications from in utero procedure, delivered, with mention of postpartum complication
Diagnosis	ICD-9-CM	67911	Fetal complications from in utero procedure, delivered, with or without mention of antepartum condition
Diagnosis	ICD-9-CM	67912	Fetal complications from in utero procedure, delivered, with mention of postpartum complication
Procedure	ICD-9-CM	72	Forceps, vacuum, and breech delivery
Procedure	ICD-9-CM	720	Low forceps operation
Procedure	ICD-9-CM	721	Low forceps operation with episiotomy
Procedure	ICD-9-CM	722	Mid forceps operation
Procedure	ICD-9-CM	7221	Mid forceps operation with episiotomy
Procedure	ICD-9-CM	7229	Other mid forceps operation
Procedure	ICD-9-CM	723	High forceps operation
Procedure	ICD-9-CM	7231	High forceps operation with episiotomy
Procedure	ICD-9-CM	7239	Other high forceps operation
Procedure	ICD-9-CM	724	Forceps rotation of fetal head
Procedure	ICD-9-CM	725	Breech extraction
Procedure	ICD-9-CM	7251	Partial breech extraction with forceps to aftercoming head
Procedure	ICD-9-CM	7252	Other partial breech extraction
Procedure	ICD-9-CM	7253	Total breech extraction with forceps to aftercoming head
Procedure	ICD-9-CM	7254	Other total breech extraction
Procedure	ICD-9-CM	726	Forceps application to aftercoming head

			Full Term Delivery Codes
Code Category	**Code Type**	**Code**	**Description**
Procedure	ICD-9-CM	727	Vacuum extraction
Procedure	ICD-9-CM	7271	Vacuum extraction with episiotomy
Procedure	ICD-9-CM	7279	Other vacuum extraction
Procedure	ICD-9-CM	728	Other specified instrumental delivery
Procedure	ICD-9-CM	729	Unspecified instrumental delivery
Procedure	ICD-9-CM	73	Artificial rupture of membranes
Procedure	ICD-9-CM	730	Other procedures inducing or assisting delivery
Procedure	ICD-9-CM	7301	Induction of labor by artificial rupture of membranes
Procedure	ICD-9-CM	7309	Other artificial rupture of membranes
Procedure	ICD-9-CM	731	Other surgical induction of labor
Procedure	ICD-9-CM	732	Internal and combined version and extraction
Procedure	ICD-9-CM	7321	Internal and combined version without extraction
Procedure	ICD-9-CM	7322	Internal and combined version with extraction
Procedure	ICD-9-CM	733	Failed forceps
Procedure	ICD-9-CM	734	Medical induction of labor
Procedure	ICD-9-CM	735	Manually assisted delivery
Procedure	ICD-9-CM	7351	Manual rotation of fetal head
Procedure	ICD-9-CM	7359	Other manually assisted delivery
Procedure	ICD-9-CM	736	Episiotomy
Procedure	ICD-9-CM	738	Operations on fetus to facilitate delivery
Procedure	ICD-9-CM	739	Other operations assisting delivery
Procedure	ICD-9-CM	7391	External version to assist delivery
Procedure	ICD-9-CM	7392	Replacement of prolapsed umbilical cord
Procedure	ICD-9-CM	7393	Incision of cervix to assist delivery
Procedure	ICD-9-CM	7394	Pubiotomy to assist delivery
Procedure	ICD-9-CM	7399	Other operations to assist delivery
Procedure	ICD-9-CM	740	Classical cesarean section
Procedure	ICD-9-CM	741	Low cervical cesarean section
Procedure	ICD-9-CM	742	Extraperitoneal cesarean section
Procedure	ICD-9-CM	744	Cesarean section of other specified type
Procedure	ICD-9-CM	749	Cesarean section of unspecified type
Procedure	ICD-9-CM	7499	Other cesarean section of unspecified type
Diagnosis	ICD-9-CM	7630	Fetus or newborn affected by breech delivery and extraction
Diagnosis	ICD-9-CM	7632	Fetus or newborn affected by forceps delivery
Diagnosis	ICD-9-CM	7633	Fetus or newborn affected by delivery by vacuum extractor
Diagnosis	ICD-9-CM	7634	Fetus or newborn affected by cesarean delivery
Diagnosis	ICD-9-CM	7636	Fetus or newborn affected by precipitate delivery

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	7680	Fetal death from asphyxia or anoxia before onset of labor or at unspecified time
Diagnosis	ICD-9-CM	7681	Fetal death from asphyxia or anoxia during labor
Diagnosis	ICD-9-CM	V27	Outcome of delivery
Diagnosis	ICD-9-CM	V270	Outcome of delivery, single liveborn
Diagnosis	ICD-9-CM	V271	Outcome of delivery, single stillborn
Diagnosis	ICD-9-CM	V272	Outcome of delivery, twins, both liveborn
Diagnosis	ICD-9-CM	V273	Outcome of delivery, twins, one liveborn and one stillborn
Diagnosis	ICD-9-CM	V274	Outcome of delivery, twins, both stillborn
Diagnosis	ICD-9-CM	V275	Outcome of delivery, other multiple birth, all liveborn
Diagnosis	ICD-9-CM	V276	Outcome of delivery, other multiple birth, some liveborn
Diagnosis	ICD-9-CM	V277	Outcome of delivery, other multiple birth, all stillborn
Diagnosis	ICD-9-CM	V279	Outcome of delivery, unspecified
Diagnosis	ICD-9-CM	V30	Single liveborn
Diagnosis	ICD-9-CM	V300	Single liveborn, born in hospital
Diagnosis	ICD-9-CM	V3000	Single liveborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3001	Single liveborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V301	Single liveborn, born before admission to hospital
Diagnosis	ICD-9-CM	V302	Single liveborn, born outside hospital and not hospitalized
Diagnosis	ICD-9-CM	V31	Twin birth, mate liveborn
Diagnosis	ICD-9-CM	V310	Twin, mate liveborn, born in hospital
Diagnosis	ICD-9-CM	V3100	Twin, mate liveborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3101	Twin, mate liveborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V311	Twin birth, mate liveborn, born before admission to hospital
Diagnosis	ICD-9-CM	V312	Twin birth, mate liveborn, born outside hospital and not hospitalized
Diagnosis	ICD-9-CM	V32	Twin birth, mate stillborn
Diagnosis	ICD-9-CM	V320	Twin, mate stillborn, born in hospital
Diagnosis	ICD-9-CM	V3200	Twin, mate stillborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3201	Twin, mate stillborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V321	Twin birth, mate stillborn, born before admission to hospital
Diagnosis	ICD-9-CM	V322	Twin birth, mate stillborn, born outside hospital and not hospitalized
Diagnosis	ICD-9-CM	V33	Twin birth, unspecified whether mate liveborn or stillborn
Diagnosis	ICD-9-CM	V330	Twin, unspecified, born in hospital

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	V3300	Twin, unspecified whether mate stillborn or liveborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3301	Twin, unspecified whether mate stillborn or liveborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V331	Twin birth, unspecified whether mate liveborn or stillborn, born before admission to hospital
Diagnosis	ICD-9-CM	V332	Twin birth, unspecified whether mate liveborn or stillborn, born outside hospital and not hospitalized
Diagnosis	ICD-9-CM	V34	Other multiple birth (three or more), mates all liveborn
Diagnosis	ICD-9-CM	V340	Other multiple, mates all liveborn, born in hospital
Diagnosis	ICD-9-CM	V3400	Other multiple, mates all liveborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3401	Other multiple, mates all liveborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V341	Other multiple birth (three or more), mates all liveborn, born before admission to hospital
Diagnosis	ICD-9-CM	V342	Other multiple birth (three or more), mates all liveborn, born outside hospital and not hospitalized
Diagnosis	ICD-9-CM	V35	Other multiple birth (three or more), mates all stillborn
Diagnosis	ICD-9-CM	V350	Other multiple, mates all stillborn, born in hospital
Diagnosis	ICD-9-CM	V3500	Other multiple, mates all stillborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3501	Other multiple, mates all stillborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V351	Other multiple birth (three or more), mates all stillborn, born before admission to hospital
Diagnosis	ICD-9-CM	V352	Other multiple birth (three or more), mates all stillborn, born outside of hospital and not hospitalized
Diagnosis	ICD-9-CM	V36	Other multiple birth (three or more), mates liveborn and stillborn
Diagnosis	ICD-9-CM	V360	Other multiple, mates liveborn and stillborn, born in hospital
Diagnosis	ICD-9-CM	V3600	Other multiple, mates liveborn and stillborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3601	Other multiple, mates liveborn and stillborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V361	Other multiple birth (three or more), mates liveborn and stillborn, born before admission to hospital

Full Term Delivery Codes			
Code Category	Code Type	Code	Description
Diagnosis	ICD-9-CM	V362	Other multiple birth (three or more), mates liveborn and stillborn, born outside hospital and not hospitalized
Diagnosis	ICD-9-CM	V37	Other multiple birth (three or more), unspecified whether mates liveborn or stillborn
Diagnosis	ICD-9-CM	V370	Other multiple, unspecified whether mates stillborn or liveborn, born in hospital
Diagnosis	ICD-9-CM	V3700	Other multiple, unspecified whether mates stillborn or liveborn, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3701	Other multiple, unspecified whether mates stillborn or liveborn, born in hospital, delivered by cesarean delivery
Diagnosis	ICD-9-CM	V371	Other multiple birth (three or more), unspecified whether mates liveborn or stillborn, born before admission to hospital
Diagnosis	ICD-9-CM	V372	Other multiple birth (three or more), unspecified whether mates liveborn or stillborn, born outside of hospital
Diagnosis	ICD-9-CM	V39	Liveborn, unspecified whether single, twin, or multiple
Diagnosis	ICD-9-CM	V390	Other liveborn, unspecified whether single, twin, or multiple, born in hospital
Diagnosis	ICD-9-CM	V3900	Liveborn infant, unspecified whether single, twin, or multiple, born in hospital, delivered without mention of cesarean delivery
Diagnosis	ICD-9-CM	V3901	Liveborn infant, unspecified whether single, twin, or multiple, born in hospital, delivered by cesarean
Diagnosis	ICD-9-CM	V391	Liveborn, unspecified whether single, twin or multiple, born before admission to hospital
Diagnosis	ICD-9-CM	V392	Liveborn, unspecified whether single, twin or multiple, born outside hospital and not hospitalized

Appendix D: List of Generic and Brand Name Drugs and Procedure Codes Used to Define Exposures in this Request

Generic and Brand Names

Brand Name	Generic Name
Enbrel	ETANERCEPT
Humira	ADALIMUMAB
Remicade	INFLIXIMAB
Simponi	GOLIMUMAB
Cimza	CERTOLIZUMAB

Procedure Codes

Code Category	Code Type	Description
Procedure	HCPCS	Administration of Enbrel
Procedure	HCPCS	Administration of Humira
Procedure	HCPCS	Administration of Remicade
Procedure	CPT-4	Infusion of Remicade
Procedure	HCPCS	Administration of Golimumab
Procedure	HCPCS	Administration of Certolizumab
Procedure	CPT-4	Administration of Certolizumab

Appendix E: Specifications for Anti-Tumor Necrosis Factor Use during Pregnancy Request

Using the Sentinel pregnancy tool, women aged 15-54 years who delivered a liveborn infant between January 2004 and September 2015 were identified. The distribution of five TNF-alpha inhibitor biologics' use 90 days prior to, and during, pregnancy were assessed in this population. TNF-alpha inhibitor use (for each drug) was evaluated by trimester, calendar year, and maternal age at delivery, stratified by indication of use.

Enrollment Gap	45 Days	
Age Groups	15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-54	
Query Period (Binds Delivery Date)	January 1, 2004 - September 30, 2015	
Coverage Requirement	Medical and Drug	
Enrollment Requirement	480 Days	

			Pregnancy Episode Creation				Exposure Episode Creation			Inclusion/Exclusion Criteria			
Scenario	Delivery Definition	Delivery Washout Period	Pregnancy Duration Definition (Pre/PostTerm Codes)	Pregnancy Duration in Absence of Pre/PostTerm Codes	Pre/PostTerm Evaluation Window		Incident exposure	Incident w/ respect to:	Washout (days)	Inclusion Criteria	Care Setting/PDX	Lookback Period Start (from start of pregnancy)	Lookback Period End (from start of pregnancy)
1	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	None			
2	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Adalimumab	N/A	0	None			
3	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Infliximab	N/A	0	None			
4	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Certolizumab	N/A	0	None			
5	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Golimumab	N/A	0	None			
6	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Rheumatoid Arthritis	Any	-183	-1
7	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Psoriatic Arthritis	Any	-183	-1
8	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Juvenile Rheumatoid Arthritis	Any	-183	-1
9	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Psoriasis	Any	-183	-1
10	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Crohn's Disease	Any	-183	-1
11	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Ulcerative Colitis	Any	-183	-1
12	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Etanercept	N/A	0	Ankylosing Spondylitis	Any	-183	-1
13	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Adalimumab	N/A	0	Rheumatoid Arthritis	Any	-183	-1
14	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Adalimumab	N/A	0	Psoriatic Arthritis	Any	-183	-1
15	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Adalimumab	N/A	0	Juvenile Rheumatoid Arthritis	Any	-183	-1
16	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7		Adalimumab	N/A	0	Psoriasis	Any	-183	-1

17	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Adalimumab	N/A	0	Crohn's Disease	Any	-183	-1
18	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Adalimumab	N/A	0	Ulcerative Colitis	Any	-183	-1
19	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Adalimumab	N/A	0	Ankylosing Spondylitis	Any	-183	-1
20	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Rheumatoid Arthritis	Any	-183	-1
21	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Psoriatic Arthritis	Any	-183	-1
22	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Juvenile Rheumatoid Arthritis	Any	-183	-1
23	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Psoriasis	Any	-183	-1
24	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Crohn's Disease	Any	-183	-1
25	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Ulcerative Colitis	Any	-183	-1
26	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Infliximab	N/A	0	Ankylosing Spondylitis	Any	-183	-1
27	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Rheumatoid Arthritis	Any	-183	-1
28	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Psoriatic Arthritis	Any	-183	-1
29	Use Algorithm Codes*	184	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Juvenile Rheumatoid Arthritis	Any	-183	-1
30	Use Algorithm Codes*	185	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Psoriasis	Any	-183	-1
31	Use Algorithm Codes*	186	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Crohn's Disease	Any	-183	-1
32	Use Algorithm Codes*	187	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Ulcerative Colitis	Any	-183	-1
33	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Certolizumab	N/A	0	Ankylosing Spondylitis	Any	-183	-1
34	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Rheumatoid Arthritis	Any	-183	-1
35	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Psoriatic Arthritis	Any	-183	-1
36	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Juvenile Rheumatoid Arthritis	Any	-183	-1
37	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Psoriasis	Any	-183	-1
38	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Crohn's Disease	Any	-183	-1
39	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Ulcerative Colitis	Any	-183	-1
40	Use Algorithm Codes*	183	Use Algorithm Codes*	273	7	Golimumab	N/A	0	Ankylosing Spondylitis	Any	-183	-1