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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_wp187

Request ID: cder_mpl1r_wp187_nsdv_v01

Request Description: In this report we examined counts of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD).

Sentinel Modular Program Tool Used: Cohort Identification and Descriptive Analysis (CIDA) tool, version 9.7.0

Data Source: We distributed this request to six Sentinel Data Partners on October 7, 2020 including data from January 1, 2010 to February 29, 2020. See Appendix A for a list of dates of available data for each Data Partner.

Study Design: We estimated the proportion of women with live birth or stillbirth delivery among women with evidence of HF diagnosed in the pre-pregnancy period or in the first trimester. We also estimated the proportion of women with HF among eligible women enrolled in the Sentinel Distributed Database (SDD). We reported results overall and by year of delivery and maternal age at delivery. This is a Type 1 analysis in the Query Request Package (QRP) documentation.

Cohort Eligibility Criteria: We included women aged 15-54 years in the analysis and used the following age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, and 50-54 years. We required eligible women to be continuously enrolled in health plans with medical and drug coverage for at least 480 days during which gaps in coverage of up to 45 days were allowed. We excluded women with a prior recorded live birth or stillbirth delivery in the 301 days before index event (live birth or stillbirth delivery). Women were able to contribute multiple cohort qualifying index events in the study period.

Heart Failure Inclusion Criteria: We required eligible women to have evidence of at least one qualifying HF diagnosis prior to index event (live birth or stillbirth delivery), including any of the following. We set evaluation windows to approximately define HF diagnosis in the 180 days prior to pregnancy or within the first trimester.

---A) 1 HF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to index event;

---B) 2 HF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to index event;

---C) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to index event; or

---D) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to index event and an oral HF-related medication dispensed within (+/- 60) days of HF diagnosis.

See Appendix B for a 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 to define HF. See Appendix C for a list of generic and brand names used to define oral HF-related medications.

Reduced Ejection Fraction Heart Failure: We explored a sensitivity analysis to identify eligible women with reduced ejection fraction heart failure (HFrEF) using the same algorithm outlined above (algorithm parts A-D). We defined HFrEF as a qualifying diagnosis of left or systolic HF:

---Left HF: No evidence of a co-occurring diagnosis of systolic, diastolic, or combined systolic/diastolic HF on the date of left HF diagnosis; or

---Systolic HF: No evidence of a co-occurring diagnosis of left, diastolic, or combined systolic/diastolic HF on the date of systolic HF diagnosis.

See Appendix D for a list of ICD-9-CM and ICD-10-CM diagnosis codes used to defined HFrEF.

Live Birth or Stillbirth Delivery Index Event: We identified the proportion of eligible women with a recording of live birth delivery in any diagnostic position of the inpatient care setting or with stillbirth delivery in any care setting. See Appendix E for a list of ICD-9-CM and ICD-10-CM diagnosis codes used to define pregnancy.

Please refer to Appendix F for detailed specifications of parameters and Appendix G for a design diagram.

Limitations: Algorithms used to define heart failure and to estimate live birth or stillbirth delivery events 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 (info@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) Module***

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

*all terms may not be used in this report

Table 1a. Total Number of Live Birth or Stillbirth Deliveries among Women with Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020

Characteristic	Number
Live Birth Deliveries	
Total number of women with live birth deliveries	813
Total number of live birth deliveries	822
Proportion of women with live birth deliveries per 1,000 women with heart failure*	5.6
Stillbirth Deliveries	
Total number of women with stillbirth deliveries	37
Total number of stillbirth deliveries	38
Proportion of women with stillbirth deliveries per 1,000 women with heart failure*	0.3
Total Deliveries	
Total number of women with live birth or stillbirth deliveries	836
Total number of live birth or stillbirth deliveries	846
Proportion of women with live birth or stillbirth deliveries per 1,000 women with heart failure*	5.8
Total Women with Heart Failure	
Total number of women with heart failure*	144,162
Total number of eligible women enrolled in the database**	29,535,188
	Percent
Women with heart failure* among eligible women enrolled in the database**	0.5%

*Among women aged 15-54 years and continuously enrolled for at least 480 days, we required at least one qualifying diagnosis of heart failure (HF) that met any of the following criteria: A) 1 HF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; B) 2 HF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; C) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to live birth or stillbirth delivery; or D) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery and an oral HF-related medication dispensed within (+/- 60) days of HF diagnosis.

**Total eligible women in the database included those aged 15-54 years and continuously enrolled for 480 days on at least one day of the query period, January 1, 2010 to February 29, 2020.

Table 1b. Total Number of Live Birth or Stillbirth Deliveries among Women with Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020, by Year of Delivery

	Year of Delivery***										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Live Birth Deliveries											
Total number of women with live birth deliveries	84	94	78	72	83	88	91	84	72	72	4
Total number of live birth deliveries	84	94	78	72	83	88	91	84	72	72	4
Proportion of women with live birth deliveries per 1,000 women with heart failure*	2.9	3.5	3.1	2.9	3.1	3.0	2.9	2.6	2.5	2.6	0.5
Stillbirth Deliveries											
Total number of women with stillbirth deliveries	3	3	3	4	6	6	5	0	3	5	0
Total number of stillbirth deliveries	3	3	3	4	6	6	5	0	3	5	0
Proportion of women with stillbirth deliveries per 1,000 women with heart failure*	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.0	0.1	0.2	0.0
Total Deliveries											
Total number of women with live birth or stillbirth deliveries	87	96	79	73	86	92	96	84	74	75	4
Total number of live birth or stillbirth deliveries	87	96	79	73	86	92	96	84	74	75	4
Proportion of women with live birth or stillbirth deliveries per 1,000 women with heart failure*	3.0	3.6	3.1	3.0	3.2	3.2	3.1	2.6	2.6	2.7	0.5
Total Women with Heart Failure											
Total number of women with heart failure*	28,772	26,969	25,475	24,680	26,571	29,132	31,321	31,827	28,371	27,637	8,116
Total number of eligible women enrolled in the database**	9,417,397	8,951,714	8,647,256	8,546,556	9,189,860	9,667,980	9,899,429	10,133,960	9,658,004	9,248,525	3,875,117

Table 1b. Total Number of Live Birth or Stillbirth Deliveries among Women with Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020, by Year of Delivery

	Year of Delivery***											
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
Total Women with Heart Failure												
Percent (%) of women with heart failure* among eligible women enrolled in the database**	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.2%

*Among women aged 15-54 years and continuously enrolled for at least 480 days, we required at least one qualifying diagnosis of heart failure (HF) that met any of the following criteria: A) 1 HF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; B) 2 HF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; C) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to live birth or stillbirth delivery; or D) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery and an oral HF-related medication dispensed within (+/- 60) days of HF diagnosis.

**Total eligible women in the database included those aged 15-54 years and continuously enrolled for 480 days on at least one day of each given year between January 1, 2010 to February 29, 2020.

***Women with heart failure were able to contribute multiple pregnancies in the query period. Therefore, a qualifying woman with heart failure may be categorized in multiple calendar years.

Table 1c. Total Number of Live Birth or Stillbirth Deliveries among Women with Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020, by Maternal Age of Delivery

	Maternal Age of Delivery (Years)***							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
Live Birth Deliveries								
Total number of women with live birth deliveries	11	80	171	246	210	64	21	15
Total number of live birth deliveries	11	81	171	247	211	65	21	15
Proportion of women with live birth deliveries per 1,000 women with heart failure*	6.3	25.5	34.7	26.8	14.1	2.6	0.5	0.2
Stillbirth Deliveries								
Total number of women with stillbirth deliveries	0	7	2	10	8	5	1	4
Total number of stillbirth deliveries	0	7	2	11	8	5	1	4
Proportion of women with stillbirth deliveries per 1,000 women with heart failure*	0.0	2.2	0.4	1.1	0.5	0.2	0.0	0.1
Total Deliveries								
Total number of women with live birth or stillbirth deliveries	11	83	172	253	214	67	22	19
Total number of live birth or stillbirth deliveries	11	84	172	255	215	68	22	19
Proportion of women with live birth or stillbirth deliveries per 1,000 women with heart failure*	6.3	26.5	34.9	27.6	14.4	2.7	0.5	0.3
Total Women with Heart Failure								
Total number of women with heart failure*	1,735	3,133	4,932	9,177	14,853	24,418	42,013	69,710
Total number of eligible women enrolled in the database**	4,651,623	5,033,406	5,673,276	5,514,271	5,477,578	5,518,878	5,780,940	5,885,323
Percent (%) of women with heart failure* among eligible women enrolled in the database**	0.0%	0.1%	0.1%	0.2%	0.3%	0.4%	0.7%	1.2%

*Among women aged 15-54 years and continuously enrolled for at least 480 days, we required at least one qualifying diagnosis of heart failure (HF) that met any of the following criteria: A) 1 HF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; B) 2 HF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; C) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to live birth or stillbirth delivery; or D) 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery and an oral HF-related medication dispensed within (+/- 60) days of HF diagnosis.

**Total eligible women in the database included those in each age category between 15-54 years and continuously enrolled for 480 days on at least one day of the query period, January 1, 2010 to February 29, 2020.

***Women with heart failure were able to contribute multiple pregnancies in the query period. Therefore, a qualifying woman with heart failure may be categorized in multiple age groups.

Table 2a. Total Number of Live Birth or Stillbirth Deliveries among Women with Reduced Ejection Fraction Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020

Characteristic	Number
Live Birth Deliveries	
Total number of women with live birth deliveries	216
Total number of live birth deliveries	218
Proportion of women with live birth deliveries per 1,000 women with reduced ejection fraction heart failure*	5.4
Stillbirth Deliveries	
Total number of women with stillbirth deliveries	7
Total number of stillbirth deliveries	7
Proportion of women with stillbirth deliveries per 1,000 women with reduced ejection fraction heart failure*	0.2
Total Deliveries	
Total number of women with live birth or stillbirth deliveries	221
Total number of live birth or stillbirth deliveries	223
Proportion of women with live birth or stillbirth deliveries per 1,000 women with heart failure*	5.5
Total Women with Reduced Injection Fraction Heart Failure	
Total number of women with reduced ejection fraction heart failure*	39,844
Total number of eligible women enrolled in the database**	29,535,188
	Percent
Percent (%) of women with reduced ejection fraction heart failure* among eligible women enrolled in the database**	0.1%

*Among women aged 15-54 years and continuously enrolled for at least 480 days, we required at least one qualifying diagnosis of reduced ejection fraction heart failure (HFrEF) that met any of the following criteria: A) 1 HFrEF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; B) 2 HFrEF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; C) 1 HFrEF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to live birth or stillbirth delivery; or D) 1 HFrEF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery and an oral heart failure-related medication dispensed within (+/- 60) days of HFrEF diagnosis.

**Total eligible women in the database included those aged 15-54 years and continuously enrolled for 480 days on at least one day of the query period, January 1, 2010 to February 29, 2020.

Table 2b. Total Number of Live Birth or Stillbirth Deliveries among Women with Reduced Ejection Fraction Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020, by Year of Delivery

	Year of Delivery***										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Live Birth Deliveries											
Total number of women with live birth deliveries	21	22	17	20	18	12	23	31	24	27	3
Total number of live birth deliveries	21	22	17	20	18	12	23	31	24	27	3
Proportion of women with live birth deliveries per 1,000 women with reduced ejection fraction heart failure*	3.3	3.5	2.9	3.5	2.9	1.8	2.7	3.1	2.6	2.9	1.1
Stillbirth Deliveries											
Total number of women with stillbirth deliveries	0	0	0	1	2	1	2	0	1	0	0
Total number of stillbirth deliveries	0	0	0	1	2	1	2	0	1	0	0
Proportion of women with stillbirth deliveries per 1,000 women with reduced ejection fraction heart failure*	0.0	0.0	0.0	0.2	0.3	0.1	0.2	0.0	0.1	0.0	0.0
Total Deliveries											
Total number of women with live birth or stillbirth deliveries	21	22	17	20	19	13	25	31	25	27	3
Total number of live birth or stillbirth deliveries	21	22	17	20	19	13	25	31	25	27	3
Proportion of women with live birth or stillbirth deliveries per 1,000 women with reduced ejection fraction heart failure*	3.3	3.5	2.9	3.5	3.1	1.9	2.9	3.1	2.7	2.9	1.1
Total Women with Reduced Injection Fraction Heart Failure											
Total number of women with reduced ejection fraction heart failure*	6,408	6,248	5,909	5,755	6,112	6,743	8,631	10,116	9,296	9,350	2,789

Table 2b. Total Number of Live Birth or Stillbirth Deliveries among Women with Reduced Ejection Fraction Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020, by Year of Delivery

	Year of Delivery***										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Total Women with Reduced Injection Fraction Heart Failure											
Total number of eligible women enrolled in the database**	9,417,397	8,951,714	8,647,256	8,546,556	9,189,860	9,667,980	9,899,429	10,133,960	9,658,004	9,248,525	3,875,117
Percent (%) of women with reduced ejection fraction heart failure* among eligible women enrolled in the database**	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%

*Among women aged 15-54 years and continuously enrolled for at least 480 days, we required at least one qualifying diagnosis of reduced ejection fraction heart failure (HFrEF) that met any of the following criteria: A) 1 HFrEF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; B) 2 HFrEF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; C) 1 HFrEF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to live birth or stillbirth delivery; or D) 1 HFrEF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery and an oral heart failure-related medication dispensed within (+/- 60) days of HFrEF diagnosis.

**Total eligible women in the database included those aged 15-54 years and continuously enrolled for 480 days on at least one day of each given year between January 1, 2010 to February 29, 2020.

***Women with heart failure were able to contribute multiple pregnancies in the query period. Therefore, a qualifying woman with heart failure may be categorized in multiple calendar years.

Table 2c. Total Number of Live Birth or Stillbirth Deliveries among Women with Reduced Ejection Fraction Heart Failure* in the Sentinel Distributed Database (SDD) between January 1, 2010 and February 29, 2020, by Maternal Age of Delivery

	Maternal Age of Delivery (Years)***							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
Live Birth Deliveries								
Total number of women with live birth deliveries	1	24	51	59	56	13	8	5
Total number of live birth deliveries	1	24	51	59	56	14	8	5
Proportion of women with live birth deliveries per 1,000 women with reduced ejection fraction heart failure*	2.4	26.0	33.6	21.2	13.0	1.9	0.7	0.3
Stillbirth Deliveries								
Total number of women with stillbirth deliveries	0	2	0	4	1	0	0	0
Total number of stillbirth deliveries	0	2	0	4	1	0	0	0
Proportion of women with stillbirth deliveries per 1,000 women with reduced ejection fraction heart failure*	0.0	2.2	0.0	1.4	0.2	0.0	0.0	0.0
Total Deliveries								
Total number of women with live birth or stillbirth deliveries	1	25	51	62	57	13	8	5
Total number of live birth or stillbirth deliveries	1	25	51	62	57	14	8	5
Proportion of women with live birth or stillbirth deliveries per 1,000 women with reduced ejection fraction heart failure*	2.4	27.1	33.6	22.3	13.2	1.9	0.7	0.3
Total Women with Reduced Injection Fraction Heart Failure								
Total number of women with reduced ejection fraction heart failure*	416	922	1,520	2,781	4,317	6,800	11,350	18,459
Total number of eligible women enrolled in the database**	4,651,623	5,033,406	5,673,276	5,514,271	5,477,578	5,518,878	5,780,940	5,885,323
Percent (%) of women with heart failure* among eligible women enrolled in the database**	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.2%	0.3%

*Among women aged 15-54 years and continuously enrolled for at least 480 days, we required at least one qualifying diagnosis of reduced ejection fraction heart failure (HFrEF) that met any of the following criteria: A) 1 HFrEF diagnosis in any diagnostic position of the inpatient (IP/IS) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; B) 2 HFrEF diagnoses in the outpatient (AV/OA) care setting both recorded in the (-480 to -180) days prior to live birth or stillbirth delivery; C) 1 HFrEF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days and 1 HF diagnosis in the outpatient (AV/OA) care setting recorded in the (-179 to -1) days prior to live birth or stillbirth delivery; or D) 1 HFrEF diagnosis in the outpatient (AV/OA) care setting recorded in the (-480 to -180) days prior to live birth or stillbirth delivery and an oral heart failure-related medication dispensed within (+/- 60) days of HFrEF diagnosis.

**Total eligible women in the database included those in each age category between 15-54 years and continuously enrolled for 480 days on at least one day of the query period, January 1, 2010 to February 29, 2020.

***Women with heart failure were able to contribute multiple pregnancies in the query period. Therefore, a qualifying woman with heart failure may be categorized in multiple age groups.

Appendix A. Dates of Available Data for Each Data Partner (DP) as of Request Distribution Date (October 7, 2020)

DP ID	Data Partner Start Date*	Data Partner End Date*
DP01	01/01/2006	01/31/2020
DP02	01/01/2000	07/31/2019
DP03	01/01/2000	12/31/2017
DP04	01/01/2007	10/31/2019
DP05	01/01/2008	09/30/2019
DP06	01/01/2008	02/29/2020

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

Appendix B. List of 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 to Define Heart Failure

Code	Description	Code Category	Code Type
Heart Failure			
39891	Rheumatic heart failure (congestive)	Diagnosis	ICD-9-CM
40201	Malignant hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
40211	Benign hypertensive heart disease with heart failure	Diagnosis	ICD-9-CM
40291	Hypertensive heart disease, unspecified, with heart failure	Diagnosis	ICD-9-CM
40401	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
40403	Hypertensive heart and chronic kidney disease, malignant, with heart failure and with chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
40411	Hypertensive heart and chronic kidney disease, benign, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
40413	Hypertensive heart and chronic kidney disease, benign, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
40491	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and with chronic kidney disease stage I through stage IV, or unspecified	Diagnosis	ICD-9-CM
40493	Hypertensive heart and chronic kidney disease, unspecified, with heart failure and chronic kidney disease stage V or end stage renal disease	Diagnosis	ICD-9-CM
4280	Congestive heart failure, unspecified	Diagnosis	ICD-9-CM
4281	Left heart failure	Diagnosis	ICD-9-CM
4282	Systolic heart failure	Diagnosis	ICD-9-CM
42820	Unspecified systolic heart failure	Diagnosis	ICD-9-CM
42821	Acute systolic heart failure	Diagnosis	ICD-9-CM
42822	Chronic systolic heart failure	Diagnosis	ICD-9-CM
42823	Acute on chronic systolic heart failure	Diagnosis	ICD-9-CM
4283	Diastolic heart failure	Diagnosis	ICD-9-CM
42830	Unspecified diastolic heart failure	Diagnosis	ICD-9-CM
42831	Acute diastolic heart failure	Diagnosis	ICD-9-CM
42832	Chronic diastolic heart failure	Diagnosis	ICD-9-CM
42833	Acute on chronic diastolic heart failure	Diagnosis	ICD-9-CM
4284	Combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
42840	Unspecified combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
42841	Acute combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
42842	Chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
42843	Acute on chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
4289	Unspecified heart failure	Diagnosis	ICD-9-CM
I0981	Rheumatic heart failure	Diagnosis	ICD-10-CM
I110	Hypertensive heart disease with heart failure	Diagnosis	ICD-10-CM
I130	Hypertensive heart and chronic kidney disease with heart failure and stage 1 through stage 4 chronic kidney disease, or unspecified chronic kidney disease	Diagnosis	ICD-10-CM
I132	Hypertensive heart and chronic kidney disease with heart failure and with stage 5 chronic kidney disease, or end stage renal disease	Diagnosis	ICD-10-CM
I501	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
I5020	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5021	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM

Appendix B. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) and International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) Diagnosis Codes Used to Define Heart Failure

Code	Description	Code Category	Code Type
I5022	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5023	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5030	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5031	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5032	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5033	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5040	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5042	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
I50810	Right heart failure, unspecified	Diagnosis	ICD-10-CM
I50811	Acute right heart failure	Diagnosis	ICD-10-CM
I50812	Chronic right heart failure	Diagnosis	ICD-10-CM
I50813	Acute on chronic right heart failure	Diagnosis	ICD-10-CM
I50814	Right heart failure due to left heart failure	Diagnosis	ICD-10-CM
I5082	Biventricular heart failure	Diagnosis	ICD-10-CM
I5083	High output heart failure	Diagnosis	ICD-10-CM
I5084	End stage heart failure	Diagnosis	ICD-10-CM
I5089	Other heart failure	Diagnosis	ICD-10-CM
I509	Heart failure, unspecified	Diagnosis	ICD-10-CM

Appendix C. List of Generic and Brand Names of Medical Products Used to Define Oral Heart Failure-Related Medications

Generic Name	Brand Name
Aldosterone	
eplerenone	eplerenone
eplerenone	Inspira
spironolactone	Aldactone
spironolactone	CaroSpir
spironolactone	spironolactone
spironolactone/hydrochlorothiazide	Aldactazide
spironolactone/hydrochlorothiazide	spironolacton-hydrochlorothiaz
Angiotensin II Receptor Blockers	
aliskiren/valsartan	Valturna
amlodipine besylate/olmesartan medoxomil	amlodipine-olmesartan
amlodipine besylate/olmesartan medoxomil	Azor
amlodipine besylate/valsartan	amlodipine-valsartan
amlodipine besylate/valsartan	Exforge
amlodipine besylate/valsartan/hydrochlorothiazide	amlodipine-valsartan-hcthiiazid
amlodipine besylate/valsartan/hydrochlorothiazide	Exforge HCT
azilsartan medoxomil	Edarbi
azilsartan medoxomil/chlorthalidone	Edarbyclor
candesartan cilexetil	Atacand
candesartan cilexetil	candesartan
candesartan cilexetil/hydrochlorothiazide	Atacand HCT
candesartan cilexetil/hydrochlorothiazide	candesartan-hydrochlorothiazid
eprosartan mesylate	eprosartan
eprosartan mesylate	Teveten
eprosartan mesylate/hydrochlorothiazide	Teveten HCT
irbesartan	Avapro
irbesartan	irbesartan
irbesartan/hydrochlorothiazide	Avalide
irbesartan/hydrochlorothiazide	irbesartan-hydrochlorothiazide
losartan potassium	Cozaar
losartan potassium	losartan
losartan potassium/hydrochlorothiazide	Hyzaar
losartan potassium/hydrochlorothiazide	losartan-hydrochlorothiazide
nebivolol HCl/valsartan	Byvalson
olmesartan medoxomil	Benicar
olmesartan medoxomil	olmesartan
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	olmesartan-amlodipin-hcthiiazid
olmesartan medoxomil/amlodipine besylate/hydrochlorothiazide	Tribenzor
olmesartan medoxomil/hydrochlorothiazide	Benicar HCT
olmesartan medoxomil/hydrochlorothiazide	olmesartan-hydrochlorothiazide
telmisartan	Micardis
telmisartan	telmisartan
telmisartan/amlodipine besylate	telmisartan-amlodipine

Appendix C. List of Generic and Brand Names of Medical Products Used to Define Oral Heart Failure-Related Medications

Generic Name	Brand Name
telmisartan/amlodipine besylate	Twynsta
telmisartan/hydrochlorothiazide	Micardis HCT
telmisartan/hydrochlorothiazide	telmisartan-hydrochlorothiazid
valsartan	Diovan
valsartan	valsartan
valsartan/hydrochlorothiazide	Diovan HCT
valsartan/hydrochlorothiazide	valsartan-hydrochlorothiazide
Angiotensin-Converting-Enzyme Inhibitors	
amlodipine besylate/benazepril HCl	amlodipine-benazepril
amlodipine besylate/benazepril HCl	Lotrel
benazepril HCl	benazepril
benazepril HCl	Lotensin
benazepril HCl/hydrochlorothiazide	benazepril-hydrochlorothiazide
benazepril HCl/hydrochlorothiazide	Lotensin HCT
captopril	Capoten
captopril	captopril
captopril/hydrochlorothiazide	captopril-hydrochlorothiazide
enalapril maleate	enalapril maleate
enalapril maleate	Epaned
enalapril maleate	Vasotec
enalapril maleate/hydrochlorothiazide	enalapril-hydrochlorothiazide
enalapril maleate/hydrochlorothiazide	Vaseretic
fosinopril sodium	fosinopril
fosinopril sodium	Monopril
fosinopril sodium/hydrochlorothiazide	fosinopril-hydrochlorothiazide
lisinopril	lisinopril
lisinopril	Prinivil
lisinopril	Qbrelis
lisinopril	Zestril
lisinopril/dietary supplement,comb.10	Lytensopril
lisinopril/dietary supplement,comb.10	Lytensopril-90
lisinopril/hydrochlorothiazide	lisinopril-hydrochlorothiazide
lisinopril/hydrochlorothiazide	Prinzide
lisinopril/hydrochlorothiazide	Zestoretic
moexipril HCl	moexipril
moexipril HCl	Univasc
moexipril HCl/hydrochlorothiazide	moexipril-hydrochlorothiazide
moexipril HCl/hydrochlorothiazide	Uniretic
perindopril arginine/amlodipine besylate	Prestalia
perindopril erbumine	Aceon
perindopril erbumine	perindopril erbumine
quinapril HCl	Accupril
quinapril HCl	quinapril
quinapril HCl/hydrochlorothiazide	Accuretic
quinapril HCl/hydrochlorothiazide	quinapril-hydrochlorothiazide

Appendix C. List of Generic and Brand Names of Medical Products Used to Define Oral Heart Failure-Related Medications

Generic Name	Brand Name
quinapril HCl/hydrochlorothiazide	Quinaretic
ramipril	Altace
ramipril	ramipril
trandolapril	Mavik
trandolapril	trandolapril
trandolapril/verapamil HCl	Tarka
trandolapril/verapamil HCl	trandolapril-verapamil
Angiotensin Receptor-Neprilysin Inhibitors	
sacubitril/valsartan	Entresto
Beta Blockers	
acebutolol HCl	acebutolol
acebutolol HCl	Sectral
atenolol	atenolol
atenolol	Tenormin
atenolol/chlorthalidone	atenolol-chlorthalidone
atenolol/chlorthalidone	Tenoretic 100
atenolol/chlorthalidone	Tenoretic 50
betaxolol HCl	betaxolol
betaxolol HCl	Kerlone
bisoprolol fumarate	bisoprolol fumarate
bisoprolol fumarate	Zebeta
bisoprolol fumarate/hydrochlorothiazide	bisoprolol-hydrochlorothiazide
bisoprolol fumarate/hydrochlorothiazide	Ziac
carvedilol	carvedilol
carvedilol	Coreg
carvedilol phosphate	carvedilol phosphate
carvedilol phosphate	Coreg CR
labetalol HCl	labetalol
labetalol HCl	Trandate
metoprolol succinate	Kaspargo Sprinkle
metoprolol succinate	metoprolol succinate
metoprolol succinate	Toprol XL
metoprolol succinate/hydrochlorothiazide	Dutoprol
metoprolol succinate/hydrochlorothiazide	metoprolol su-hydrochlorothiaz
metoprolol tartrate	Lopressor
metoprolol tartrate	metoprolol tartrate
metoprolol tartrate/dietary supplement,comb.10	Hypertensolol
metoprolol tartrate/hydrochlorothiazide	Lopressor HCT
metoprolol tartrate/hydrochlorothiazide	metoprolol ta-hydrochlorothiaz
nadolol	Corgard
nadolol	nadolol
nadolol/bendroflumethiazide	Corzide
nadolol/bendroflumethiazide	nadolol-bendroflumethiazide
nebivolol HCl	Bystolic
nebivolol HCl/valsartan	Byvalson

Appendix C. List of Generic and Brand Names of Medical Products Used to Define Oral Heart Failure-Related Medications

Generic Name	Brand Name
pindolol	pindolol
propranolol HCl	Hemangeol
propranolol HCl	Inderal LA
propranolol HCl	Inderal XL
propranolol HCl	InnoPran XL
propranolol HCl	propranolol
propranolol HCl/hydrochlorothiazide	propranolol-hydrochlorothiazid
sotalol HCl	Betapace
sotalol HCl	Betapace AF
sotalol HCl	Sorine
sotalol HCl	sotalol
sotalol HCl	Sotalol AF
sotalol HCl	Sotylize
timolol maleate	timolol maleate
Digoxin	
digoxin	Digitek
digoxin	Digox
digoxin	digoxin
digoxin	Lanoxin
Hydralazine and Nitrates	
hydralazine HCl	hydralazine
hydralazine HCl/hydrochlorothiazide	Hydra-Zide
isosorbide dinitrate	Dilatrate-SR
isosorbide dinitrate	ISOCHRON
isosorbide dinitrate	IsoDitrate
isosorbide dinitrate	Isordil
isosorbide dinitrate	Isordil Titradoso
isosorbide dinitrate	isosorbide dinitrate
isosorbide dinitrate/hydralazine HCl	BiDil
isosorbide mononitrate	Imdur
isosorbide mononitrate	Ismo
isosorbide mononitrate	isosorbide mononitrate
isosorbide mononitrate	Monoket
Loop Diuretics	
bumetanide	bumetanide
ethacrynic acid	Edecrin
ethacrynic acid	ethacrynic acid
furosemide	furosemide
furosemide	Lasix
toremide	Demadex
toremide	toremide

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 to Define Reduced Ejection Fraction Heart Failure

Cohort Definition	Code Definition	Code	Description	Code Category	Code Type
Reduced Ejection Fraction Heart Failure					
Left heart failure	Index-defining	4281	Left heart failure	Diagnosis	ICD-9-CM
Left heart failure	Index-defining	I501	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	4282	Systolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42820	Unspecified systolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42821	Acute systolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42822	Chronic systolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42823	Acute on chronic systolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	I5020	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5021	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5022	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5023	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	4283	Diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42830	Unspecified diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42831	Acute diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42832	Chronic diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42833	Acute on chronic diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	I5030	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5031	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5032	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5033	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	4284	Combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42840	Unspecified combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42841	Acute combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42842	Chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	42843	Acute on chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Left heart failure	Exclusion on index date	I5040	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5042	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Left heart failure	Exclusion on index date	I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Index-defining	4282	Systolic heart failure	Diagnosis	ICD-9-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 to Define Reduced Ejection Fraction Heart Failure

Cohort Definition	Code Definition	Code	Description	Code Category	Code Type
Systolic heart failure	Index-defining	42820	Unspecified systolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Index-defining	42821	Acute systolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Index-defining	42822	Chronic systolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Index-defining	42823	Acute on chronic systolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Index-defining	I5020	Unspecified systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Index-defining	I5021	Acute systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Index-defining	I5022	Chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Index-defining	I5023	Acute on chronic systolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	4281	Left heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	I501	Left ventricular failure, unspecified	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	4283	Diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42830	Unspecified diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42831	Acute diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42832	Chronic diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42833	Acute on chronic diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	I5030	Unspecified diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	I5031	Acute diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	I5032	Chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	I5033	Acute on chronic diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	4284	Combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42840	Unspecified combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42841	Acute combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42842	Chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	42843	Acute on chronic combined systolic and diastolic heart failure	Diagnosis	ICD-9-CM
Systolic heart failure	Exclusion on index date	I5040	Unspecified combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	I5041	Acute combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	I5042	Chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM
Systolic heart failure	Exclusion on index date	I5043	Acute on chronic combined systolic (congestive) and diastolic (congestive) heart failure	Diagnosis	ICD-10-CM

Appendix E. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS), and Current Procedural Terminology, Fourth Edition (CPT-4) Diagnosis and Procedure Codes Used to Define Live Birth and Stillbirth Delivery

Code	Care Setting	Description	Code Category	Code Type
Live Birth Delivery				
0W8NXZZ	Inpatient	Division of Female Perineum, External Approach	Procedure	ICD-10-PCS
10900ZC	Inpatient	Drainage of Amniotic Fluid, Therapeutic from Products of Conception, Open Approach	Procedure	ICD-10-PCS
10903ZC	Inpatient	Drainage of Amniotic Fluid, Therapeutic from Products of Conception, Percutaneous Approach	Procedure	ICD-10-PCS
10904ZC	Inpatient	Drainage of Amniotic Fluid, Therapeutic from Products of Conception, Percutaneous Endoscopic Approach	Procedure	ICD-10-PCS
10907ZC	Inpatient	Drainage of Amniotic Fluid, Therapeutic from Products of Conception, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10908ZC	Inpatient	Drainage of Amniotic Fluid, Therapeutic from Products of Conception, Via Natural or Artificial Opening Endoscopic	Procedure	ICD-10-PCS
10D00Z0	Inpatient	Extraction of Products of Conception, Classical, Open Approach	Procedure	ICD-10-PCS
10D00Z1	Inpatient	Extraction of Products of Conception, Low Cervical, Open Approach	Procedure	ICD-10-PCS
10D00Z2	Inpatient	Extraction of Products of Conception, Extraperitoneal, Open Approach	Procedure	ICD-10-PCS
10D07Z3	Inpatient	Extraction of Products of Conception, Low Forceps, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10D07Z4	Inpatient	Extraction of Products of Conception, Mid Forceps, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10D07Z5	Inpatient	Extraction of Products of Conception, High Forceps, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10D07Z6	Inpatient	Extraction of Products of Conception, Vacuum, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10D07Z7	Inpatient	Extraction of Products of Conception, Internal Version, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10D07Z8	Inpatient	Extraction of Products of Conception, Other, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
10E0XZZ	Inpatient	Delivery of Products of Conception, External Approach	Procedure	ICD-10-PCS
10S07ZZ	Inpatient	Reposition Products of Conception, Via Natural or Artificial Opening	Procedure	ICD-10-PCS
O1002	Inpatient	Pre-existing essential hypertension complicating childbirth	Diagnosis	ICD-10-CM
O1012	Inpatient	Pre-existing hypertensive heart disease complicating childbirth	Diagnosis	ICD-10-CM
O1022	Inpatient	Pre-existing hypertensive chronic kidney disease complicating childbirth	Diagnosis	ICD-10-CM
O1032	Inpatient	Pre-existing hypertensive heart and chronic kidney disease complicating childbirth	Diagnosis	ICD-10-CM
O1042	Inpatient	Pre-existing secondary hypertension complicating childbirth	Diagnosis	ICD-10-CM
O1092	Inpatient	Unspecified pre-existing hypertension complicating childbirth	Diagnosis	ICD-10-CM
O114	Inpatient	Pre-existing hypertension with pre-eclampsia, complicating childbirth	Diagnosis	ICD-10-CM
O1204	Inpatient	Gestational edema, complicating childbirth	Diagnosis	ICD-10-CM
O1214	Inpatient	Gestational proteinuria, complicating childbirth	Diagnosis	ICD-10-CM
O1224	Inpatient	Gestational edema with proteinuria, complicating childbirth	Diagnosis	ICD-10-CM
O134	Inpatient	Gestational [pregnancy-induced] hypertension without significant proteinuria, complicating childbirth	Diagnosis	ICD-10-CM
O1404	Inpatient	Mild to moderate pre-eclampsia, complicating childbirth	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O1414	Inpatient	Severe pre-eclampsia complicating childbirth	Diagnosis	ICD-10-CM
O1424	Inpatient	HELLP syndrome, complicating childbirth	Diagnosis	ICD-10-CM
O1494	Inpatient	Unspecified pre-eclampsia, complicating childbirth	Diagnosis	ICD-10-CM
O164	Inpatient	Unspecified maternal hypertension, complicating childbirth	Diagnosis	ICD-10-CM
O2402	Inpatient	Pre-existing type 1 diabetes mellitus, in childbirth	Diagnosis	ICD-10-CM
O2412	Inpatient	Pre-existing type 2 diabetes mellitus, in childbirth	Diagnosis	ICD-10-CM
O2432	Inpatient	Unspecified pre-existing diabetes mellitus in childbirth	Diagnosis	ICD-10-CM
O24420	Inpatient	Gestational diabetes mellitus in childbirth, diet controlled	Diagnosis	ICD-10-CM
O24424	Inpatient	Gestational diabetes mellitus in childbirth, insulin controlled	Diagnosis	ICD-10-CM
O24425	Inpatient	Gestational diabetes mellitus in childbirth, controlled by oral hypoglycemic drugs	Diagnosis	ICD-10-CM
O24429	Inpatient	Gestational diabetes mellitus in childbirth, unspecified control	Diagnosis	ICD-10-CM
O2482	Inpatient	Other pre-existing diabetes mellitus in childbirth	Diagnosis	ICD-10-CM
O2492	Inpatient	Unspecified diabetes mellitus in childbirth	Diagnosis	ICD-10-CM
O252	Inpatient	Malnutrition in childbirth	Diagnosis	ICD-10-CM
O2662	Inpatient	Liver and biliary tract disorders in childbirth	Diagnosis	ICD-10-CM
O2672	Inpatient	Subluxation of symphysis (pubis) in childbirth	Diagnosis	ICD-10-CM
O6012X0	Inpatient	Preterm labor second trimester with preterm delivery second trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O6012X1	Inpatient	Preterm labor second trimester with preterm delivery second trimester, fetus 1	Diagnosis	ICD-10-CM
O6012X2	Inpatient	Preterm labor second trimester with preterm delivery second trimester, fetus 2	Diagnosis	ICD-10-CM
O6012X3	Inpatient	Preterm labor second trimester with preterm delivery second trimester, fetus 3	Diagnosis	ICD-10-CM
O6012X4	Inpatient	Preterm labor second trimester with preterm delivery second trimester, fetus 4	Diagnosis	ICD-10-CM
O6012X5	Inpatient	Preterm labor second trimester with preterm delivery second trimester, fetus 5	Diagnosis	ICD-10-CM
O6012X9	Inpatient	Preterm labor second trimester with preterm delivery second trimester, other fetus	Diagnosis	ICD-10-CM
O6013X0	Inpatient	Preterm labor second trimester with preterm delivery third trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O6013X1	Inpatient	Preterm labor second trimester with preterm delivery third trimester, fetus 1	Diagnosis	ICD-10-CM
O6013X2	Inpatient	Preterm labor second trimester with preterm delivery third trimester, fetus 2	Diagnosis	ICD-10-CM
O6013X3	Inpatient	Preterm labor second trimester with preterm delivery third trimester, fetus 3	Diagnosis	ICD-10-CM
O6013X4	Inpatient	Preterm labor second trimester with preterm delivery third trimester, fetus 4	Diagnosis	ICD-10-CM
O6013X5	Inpatient	Preterm labor second trimester with preterm delivery third trimester, fetus 5	Diagnosis	ICD-10-CM
O6013X9	Inpatient	Preterm labor second trimester with preterm delivery third trimester, other fetus	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O6014X0	Inpatient	Preterm labor third trimester with preterm delivery third trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O6014X1	Inpatient	Preterm labor third trimester with preterm delivery third trimester, fetus 1	Diagnosis	ICD-10-CM
O6014X2	Inpatient	Preterm labor third trimester with preterm delivery third trimester, fetus 2	Diagnosis	ICD-10-CM
O6014X3	Inpatient	Preterm labor third trimester with preterm delivery third trimester, fetus 3	Diagnosis	ICD-10-CM
O6014X4	Inpatient	Preterm labor third trimester with preterm delivery third trimester, fetus 4	Diagnosis	ICD-10-CM
O6014X5	Inpatient	Preterm labor third trimester with preterm delivery third trimester, fetus 5	Diagnosis	ICD-10-CM
O6014X9	Inpatient	Preterm labor third trimester with preterm delivery third trimester, other fetus	Diagnosis	ICD-10-CM
O6022X0	Inpatient	Term delivery with preterm labor, second trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O6022X1	Inpatient	Term delivery with preterm labor, second trimester, fetus 1	Diagnosis	ICD-10-CM
O6022X2	Inpatient	Term delivery with preterm labor, second trimester, fetus 2	Diagnosis	ICD-10-CM
O6022X3	Inpatient	Term delivery with preterm labor, second trimester, fetus 3	Diagnosis	ICD-10-CM
O6022X4	Inpatient	Term delivery with preterm labor, second trimester, fetus 4	Diagnosis	ICD-10-CM
O6022X5	Inpatient	Term delivery with preterm labor, second trimester, fetus 5	Diagnosis	ICD-10-CM
O6022X9	Inpatient	Term delivery with preterm labor, second trimester, other fetus	Diagnosis	ICD-10-CM
O6023X0	Inpatient	Term delivery with preterm labor, third trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O6023X1	Inpatient	Term delivery with preterm labor, third trimester, fetus 1	Diagnosis	ICD-10-CM
O6023X2	Inpatient	Term delivery with preterm labor, third trimester, fetus 2	Diagnosis	ICD-10-CM
O6023X3	Inpatient	Term delivery with preterm labor, third trimester, fetus 3	Diagnosis	ICD-10-CM
O6023X4	Inpatient	Term delivery with preterm labor, third trimester, fetus 4	Diagnosis	ICD-10-CM
O6023X5	Inpatient	Term delivery with preterm labor, third trimester, fetus 5	Diagnosis	ICD-10-CM
O6023X9	Inpatient	Term delivery with preterm labor, third trimester, other fetus	Diagnosis	ICD-10-CM
O632	Inpatient	Delayed delivery of second twin, triplet, etc	Diagnosis	ICD-10-CM
O670	Inpatient	Intrapartum hemorrhage with coagulation defect	Diagnosis	ICD-10-CM
O678	Inpatient	Other intrapartum hemorrhage	Diagnosis	ICD-10-CM
O679	Inpatient	Intrapartum hemorrhage, unspecified	Diagnosis	ICD-10-CM
O68	Inpatient	Labor and delivery complicated by abnormality of fetal acid-base balance	Diagnosis	ICD-10-CM
O690XX0	Inpatient	Labor and delivery complicated by prolapse of cord, not applicable or unspecified	Diagnosis	ICD-10-CM
O690XX1	Inpatient	Labor and delivery complicated by prolapse of cord, fetus 1	Diagnosis	ICD-10-CM
O690XX2	Inpatient	Labor and delivery complicated by prolapse of cord, fetus 2	Diagnosis	ICD-10-CM
O690XX3	Inpatient	Labor and delivery complicated by prolapse of cord, fetus 3	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O690XX4	Inpatient	Labor and delivery complicated by prolapse of cord, fetus 4	Diagnosis	ICD-10-CM
O690XX5	Inpatient	Labor and delivery complicated by prolapse of cord, fetus 5	Diagnosis	ICD-10-CM
O690XX9	Inpatient	Labor and delivery complicated by prolapse of cord, other fetus	Diagnosis	ICD-10-CM
O691XX0	Inpatient	Labor and delivery complicated by cord around neck, with compression, not applicable or unspecified	Diagnosis	ICD-10-CM
O691XX1	Inpatient	Labor and delivery complicated by cord around neck, with compression, fetus 1	Diagnosis	ICD-10-CM
O691XX2	Inpatient	Labor and delivery complicated by cord around neck, with compression, fetus 2	Diagnosis	ICD-10-CM
O691XX3	Inpatient	Labor and delivery complicated by cord around neck, with compression, fetus 3	Diagnosis	ICD-10-CM
O691XX4	Inpatient	Labor and delivery complicated by cord around neck, with compression, fetus 4	Diagnosis	ICD-10-CM
O691XX5	Inpatient	Labor and delivery complicated by cord around neck, with compression, fetus 5	Diagnosis	ICD-10-CM
O691XX9	Inpatient	Labor and delivery complicated by cord around neck, with compression, other fetus	Diagnosis	ICD-10-CM
O692XX0	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, not applicable or unspecified	Diagnosis	ICD-10-CM
O692XX1	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, fetus 1	Diagnosis	ICD-10-CM
O692XX2	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, fetus 2	Diagnosis	ICD-10-CM
O692XX3	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, fetus 3	Diagnosis	ICD-10-CM
O692XX4	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, fetus 4	Diagnosis	ICD-10-CM
O692XX5	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, fetus 5	Diagnosis	ICD-10-CM
O692XX9	Inpatient	Labor and delivery complicated by other cord entanglement, with compression, other fetus	Diagnosis	ICD-10-CM
O693XX0	Inpatient	Labor and delivery complicated by short cord, not applicable or unspecified	Diagnosis	ICD-10-CM
O693XX1	Inpatient	Labor and delivery complicated by short cord, fetus 1	Diagnosis	ICD-10-CM
O693XX2	Inpatient	Labor and delivery complicated by short cord, fetus 2	Diagnosis	ICD-10-CM
O693XX3	Inpatient	Labor and delivery complicated by short cord, fetus 3	Diagnosis	ICD-10-CM
O693XX4	Inpatient	Labor and delivery complicated by short cord, fetus 4	Diagnosis	ICD-10-CM
O693XX5	Inpatient	Labor and delivery complicated by short cord, fetus 5	Diagnosis	ICD-10-CM
O693XX9	Inpatient	Labor and delivery complicated by short cord, other fetus	Diagnosis	ICD-10-CM
O694XX0	Inpatient	Labor and delivery complicated by vasa previa, not applicable or unspecified	Diagnosis	ICD-10-CM
O694XX1	Inpatient	Labor and delivery complicated by vasa previa, fetus 1	Diagnosis	ICD-10-CM
O694XX2	Inpatient	Labor and delivery complicated by vasa previa, fetus 2	Diagnosis	ICD-10-CM
O694XX3	Inpatient	Labor and delivery complicated by vasa previa, fetus 3	Diagnosis	ICD-10-CM
O694XX4	Inpatient	Labor and delivery complicated by vasa previa, fetus 4	Diagnosis	ICD-10-CM
O694XX5	Inpatient	Labor and delivery complicated by vasa previa, fetus 5	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O694XX9	Inpatient	Labor and delivery complicated by vasa previa, other fetus	Diagnosis	ICD-10-CM
O695XX0	Inpatient	Labor and delivery complicated by vascular lesion of cord, not applicable or unspecified	Diagnosis	ICD-10-CM
O695XX1	Inpatient	Labor and delivery complicated by vascular lesion of cord, fetus 1	Diagnosis	ICD-10-CM
O695XX2	Inpatient	Labor and delivery complicated by vascular lesion of cord, fetus 2	Diagnosis	ICD-10-CM
O695XX3	Inpatient	Labor and delivery complicated by vascular lesion of cord, fetus 3	Diagnosis	ICD-10-CM
O695XX4	Inpatient	Labor and delivery complicated by vascular lesion of cord, fetus 4	Diagnosis	ICD-10-CM
O695XX5	Inpatient	Labor and delivery complicated by vascular lesion of cord, fetus 5	Diagnosis	ICD-10-CM
O695XX9	Inpatient	Labor and delivery complicated by vascular lesion of cord, other fetus	Diagnosis	ICD-10-CM
O6981X0	Inpatient	Labor and delivery complicated by cord around neck, without compression, not applicable or unspecified	Diagnosis	ICD-10-CM
O6981X1	Inpatient	Labor and delivery complicated by cord around neck, without compression, fetus 1	Diagnosis	ICD-10-CM
O6981X2	Inpatient	Labor and delivery complicated by cord around neck, without compression, fetus 2	Diagnosis	ICD-10-CM
O6981X3	Inpatient	Labor and delivery complicated by cord around neck, without compression, fetus 3	Diagnosis	ICD-10-CM
O6981X4	Inpatient	Labor and delivery complicated by cord around neck, without compression, fetus 4	Diagnosis	ICD-10-CM
O6981X5	Inpatient	Labor and delivery complicated by cord around neck, without compression, fetus 5	Diagnosis	ICD-10-CM
O6981X9	Inpatient	Labor and delivery complicated by cord around neck, without compression, other fetus	Diagnosis	ICD-10-CM
O6982X0	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, not applicable or unspecified	Diagnosis	ICD-10-CM
O6982X1	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, fetus 1	Diagnosis	ICD-10-CM
O6982X2	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, fetus 2	Diagnosis	ICD-10-CM
O6982X3	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, fetus 3	Diagnosis	ICD-10-CM
O6982X4	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, fetus 4	Diagnosis	ICD-10-CM
O6982X5	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, fetus 5	Diagnosis	ICD-10-CM
O6982X9	Inpatient	Labor and delivery complicated by other cord entanglement, without compression, other fetus	Diagnosis	ICD-10-CM
O6989X0	Inpatient	Labor and delivery complicated by other cord complications, not applicable or unspecified	Diagnosis	ICD-10-CM
O6989X1	Inpatient	Labor and delivery complicated by other cord complications, fetus 1	Diagnosis	ICD-10-CM
O6989X2	Inpatient	Labor and delivery complicated by other cord complications, fetus 2	Diagnosis	ICD-10-CM
O6989X3	Inpatient	Labor and delivery complicated by other cord complications, fetus 3	Diagnosis	ICD-10-CM
O6989X4	Inpatient	Labor and delivery complicated by other cord complications, fetus 4	Diagnosis	ICD-10-CM
O6989X5	Inpatient	Labor and delivery complicated by other cord complications, fetus 5	Diagnosis	ICD-10-CM
O6989X9	Inpatient	Labor and delivery complicated by other cord complications, other fetus	Diagnosis	ICD-10-CM
O699XX0	Inpatient	Labor and delivery complicated by cord complication, unspecified, not applicable or unspecified	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O699XX1	Inpatient	Labor and delivery complicated by cord complication, unspecified, fetus 1	Diagnosis	ICD-10-CM
O699XX2	Inpatient	Labor and delivery complicated by cord complication, unspecified, fetus 2	Diagnosis	ICD-10-CM
O699XX3	Inpatient	Labor and delivery complicated by cord complication, unspecified, fetus 3	Diagnosis	ICD-10-CM
O699XX4	Inpatient	Labor and delivery complicated by cord complication, unspecified, fetus 4	Diagnosis	ICD-10-CM
O699XX5	Inpatient	Labor and delivery complicated by cord complication, unspecified, fetus 5	Diagnosis	ICD-10-CM
O699XX9	Inpatient	Labor and delivery complicated by cord complication, unspecified, other fetus	Diagnosis	ICD-10-CM
O700	Inpatient	First degree perineal laceration during delivery	Diagnosis	ICD-10-CM
O701	Inpatient	Second degree perineal laceration during delivery	Diagnosis	ICD-10-CM
O7020	Inpatient	Third degree perineal laceration during delivery, unspecified	Diagnosis	ICD-10-CM
O7021	Inpatient	Third degree perineal laceration during delivery, IIIa	Diagnosis	ICD-10-CM
O7022	Inpatient	Third degree perineal laceration during delivery, IIIb	Diagnosis	ICD-10-CM
O7023	Inpatient	Third degree perineal laceration during delivery, IIIc	Diagnosis	ICD-10-CM
O703	Inpatient	Fourth degree perineal laceration during delivery	Diagnosis	ICD-10-CM
O704	Inpatient	Anal sphincter tear complicating delivery, not associated with third degree laceration	Diagnosis	ICD-10-CM
O709	Inpatient	Perineal laceration during delivery, unspecified	Diagnosis	ICD-10-CM
O740	Inpatient	Aspiration pneumonitis due to anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O741	Inpatient	Other pulmonary complications of anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O742	Inpatient	Cardiac complications of anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O743	Inpatient	Central nervous system complications of anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O744	Inpatient	Toxic reaction to local anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O745	Inpatient	Spinal and epidural anesthesia-induced headache during labor and delivery	Diagnosis	ICD-10-CM
O746	Inpatient	Other complications of spinal and epidural anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O747	Inpatient	Failed or difficult intubation for anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O748	Inpatient	Other complications of anesthesia during labor and delivery	Diagnosis	ICD-10-CM
O749	Inpatient	Complication of anesthesia during labor and delivery, unspecified	Diagnosis	ICD-10-CM
O750	Inpatient	Maternal distress during labor and delivery	Diagnosis	ICD-10-CM
O751	Inpatient	Shock during or following labor and delivery	Diagnosis	ICD-10-CM
O755	Inpatient	Delayed delivery after artificial rupture of membranes	Diagnosis	ICD-10-CM
O7581	Inpatient	Maternal exhaustion complicating labor and delivery	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O7582	Inpatient	Onset (spontaneous) of labor after 37 completed weeks of gestation but before 39 completed weeks gestation, with delivery by (planned) cesarean section	Diagnosis	ICD-10-CM
O7589	Inpatient	Other specified complications of labor and delivery	Diagnosis	ICD-10-CM
O759	Inpatient	Complication of labor and delivery, unspecified	Diagnosis	ICD-10-CM
O76	Inpatient	Abnormality in fetal heart rate and rhythm complicating labor and delivery	Diagnosis	ICD-10-CM
O770	Inpatient	Labor and delivery complicated by meconium in amniotic fluid	Diagnosis	ICD-10-CM
O778	Inpatient	Labor and delivery complicated by other evidence of fetal stress	Diagnosis	ICD-10-CM
O779	Inpatient	Labor and delivery complicated by fetal stress, unspecified	Diagnosis	ICD-10-CM
O80	Inpatient	Encounter for full-term uncomplicated delivery	Diagnosis	ICD-10-CM
O82	Inpatient	Encounter for cesarean delivery without indication	Diagnosis	ICD-10-CM
O8802	Inpatient	Air embolism in childbirth	Diagnosis	ICD-10-CM
O8812	Inpatient	Amniotic fluid embolism in childbirth	Diagnosis	ICD-10-CM
O8822	Inpatient	Thromboembolism in childbirth	Diagnosis	ICD-10-CM
O8832	Inpatient	Pyemic and septic embolism in childbirth	Diagnosis	ICD-10-CM
O8882	Inpatient	Other embolism in childbirth	Diagnosis	ICD-10-CM
O9802	Inpatient	Tuberculosis complicating childbirth	Diagnosis	ICD-10-CM
O9812	Inpatient	Syphilis complicating childbirth	Diagnosis	ICD-10-CM
O9822	Inpatient	Gonorrhea complicating childbirth	Diagnosis	ICD-10-CM
O9832	Inpatient	Other infections with a predominantly sexual mode of transmission complicating childbirth	Diagnosis	ICD-10-CM
O9842	Inpatient	Viral hepatitis complicating childbirth	Diagnosis	ICD-10-CM
O9852	Inpatient	Other viral diseases complicating childbirth	Diagnosis	ICD-10-CM
O9862	Inpatient	Protozoal diseases complicating childbirth	Diagnosis	ICD-10-CM
O9872	Inpatient	Human immunodeficiency virus [HIV] disease complicating childbirth	Diagnosis	ICD-10-CM
O9882	Inpatient	Other maternal infectious and parasitic diseases complicating childbirth	Diagnosis	ICD-10-CM
O9892	Inpatient	Unspecified maternal infectious and parasitic disease complicating childbirth	Diagnosis	ICD-10-CM
O9902	Inpatient	Anemia complicating childbirth	Diagnosis	ICD-10-CM
O9912	Inpatient	Other diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism complicating childbirth	Diagnosis	ICD-10-CM
O99214	Inpatient	Obesity complicating childbirth	Diagnosis	ICD-10-CM
O99284	Inpatient	Endocrine, nutritional and metabolic diseases complicating childbirth	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
O99314	Inpatient	Alcohol use complicating childbirth	Diagnosis	ICD-10-CM
O99324	Inpatient	Drug use complicating childbirth	Diagnosis	ICD-10-CM
O99334	Inpatient	Smoking (tobacco) complicating childbirth	Diagnosis	ICD-10-CM
O99344	Inpatient	Other mental disorders complicating childbirth	Diagnosis	ICD-10-CM
O99354	Inpatient	Diseases of the nervous system complicating childbirth	Diagnosis	ICD-10-CM
O9942	Inpatient	Diseases of the circulatory system complicating childbirth	Diagnosis	ICD-10-CM
O9952	Inpatient	Diseases of the respiratory system complicating childbirth	Diagnosis	ICD-10-CM
O9962	Inpatient	Diseases of the digestive system complicating childbirth	Diagnosis	ICD-10-CM
O9972	Inpatient	Diseases of the skin and subcutaneous tissue complicating childbirth	Diagnosis	ICD-10-CM
O99814	Inpatient	Abnormal glucose complicating childbirth	Diagnosis	ICD-10-CM
O99824	Inpatient	Streptococcus B carrier state complicating childbirth	Diagnosis	ICD-10-CM
O99834	Inpatient	Other infection carrier state complicating childbirth	Diagnosis	ICD-10-CM
O99844	Inpatient	Bariatric surgery status complicating childbirth	Diagnosis	ICD-10-CM
O9A12	Inpatient	Malignant neoplasm complicating childbirth	Diagnosis	ICD-10-CM
O9A22	Inpatient	Injury, poisoning and certain other consequences of external causes complicating childbirth	Diagnosis	ICD-10-CM
O9A32	Inpatient	Physical abuse complicating childbirth	Diagnosis	ICD-10-CM
O9A42	Inpatient	Sexual abuse complicating childbirth	Diagnosis	ICD-10-CM
O9A52	Inpatient	Psychological abuse complicating childbirth	Diagnosis	ICD-10-CM
P030	Inpatient	Newborn affected by breech delivery and extraction	Diagnosis	ICD-10-CM
P032	Inpatient	Newborn affected by forceps delivery	Diagnosis	ICD-10-CM
P033	Inpatient	Newborn affected by delivery by vacuum extractor [ventouse]	Diagnosis	ICD-10-CM
P034	Inpatient	Newborn affected by Cesarean delivery	Diagnosis	ICD-10-CM
P035	Inpatient	Newborn affected by precipitate delivery	Diagnosis	ICD-10-CM
P0700	Inpatient	Extremely low birth weight newborn, unspecified weight	Diagnosis	ICD-10-CM
P0701	Inpatient	Extremely low birth weight newborn, less than 500 grams	Diagnosis	ICD-10-CM
P0702	Inpatient	Extremely low birth weight newborn, 500-749 grams	Diagnosis	ICD-10-CM
P0703	Inpatient	Extremely low birth weight newborn, 750-999 grams	Diagnosis	ICD-10-CM
P0710	Inpatient	Other low birth weight newborn, unspecified weight	Diagnosis	ICD-10-CM
P0714	Inpatient	Other low birth weight newborn, 1000-1249 grams	Diagnosis	ICD-10-CM
P0715	Inpatient	Other low birth weight newborn, 1250-1499 grams	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
P0716	Inpatient	Other low birth weight newborn, 1500-1749 grams	Diagnosis	ICD-10-CM
P0717	Inpatient	Other low birth weight newborn, 1750-1999 grams	Diagnosis	ICD-10-CM
P0718	Inpatient	Other low birth weight newborn, 2000-2499 grams	Diagnosis	ICD-10-CM
P0720	Inpatient	Extreme immaturity of newborn, unspecified weeks of gestation	Diagnosis	ICD-10-CM
P0721	Inpatient	Extreme immaturity of newborn, gestational age less than 23 completed weeks	Diagnosis	ICD-10-CM
P0722	Inpatient	Extreme immaturity of newborn, gestational age 23 completed weeks	Diagnosis	ICD-10-CM
P0723	Inpatient	Extreme immaturity of newborn, gestational age 24 completed weeks	Diagnosis	ICD-10-CM
P0724	Inpatient	Extreme immaturity of newborn, gestational age 25 completed weeks	Diagnosis	ICD-10-CM
P0725	Inpatient	Extreme immaturity of newborn, gestational age 26 completed weeks	Diagnosis	ICD-10-CM
P0726	Inpatient	Extreme immaturity of newborn, gestational age 27 completed weeks	Diagnosis	ICD-10-CM
P0730	Inpatient	Preterm newborn, unspecified weeks of gestation	Diagnosis	ICD-10-CM
P0731	Inpatient	Preterm newborn, gestational age 28 completed weeks	Diagnosis	ICD-10-CM
P0732	Inpatient	Preterm newborn, gestational age 29 completed weeks	Diagnosis	ICD-10-CM
P0733	Inpatient	Preterm newborn, gestational age 30 completed weeks	Diagnosis	ICD-10-CM
P0734	Inpatient	Preterm newborn, gestational age 31 completed weeks	Diagnosis	ICD-10-CM
P0735	Inpatient	Preterm newborn, gestational age 32 completed weeks	Diagnosis	ICD-10-CM
P0736	Inpatient	Preterm newborn, gestational age 33 completed weeks	Diagnosis	ICD-10-CM
P0737	Inpatient	Preterm newborn, gestational age 34 completed weeks	Diagnosis	ICD-10-CM
P0738	Inpatient	Preterm newborn, gestational age 35 completed weeks	Diagnosis	ICD-10-CM
P0739	Inpatient	Preterm newborn, gestational age 36 completed weeks	Diagnosis	ICD-10-CM
P0821	Inpatient	Post-term newborn	Diagnosis	ICD-10-CM
P0822	Inpatient	Prolonged gestation of newborn	Diagnosis	ICD-10-CM
Z370	Inpatient	Single live birth	Diagnosis	ICD-10-CM
Z372	Inpatient	Twins, both liveborn	Diagnosis	ICD-10-CM
Z373	Inpatient	Twins, one liveborn and one stillborn	Diagnosis	ICD-10-CM
Z3750	Inpatient	Multiple births, unspecified, all liveborn	Diagnosis	ICD-10-CM
Z3751	Inpatient	Triples, all liveborn	Diagnosis	ICD-10-CM
Z3752	Inpatient	Quadruplets, all liveborn	Diagnosis	ICD-10-CM
Z3753	Inpatient	Quintuplets, all liveborn	Diagnosis	ICD-10-CM
Z3754	Inpatient	Sextuplets, all liveborn	Diagnosis	ICD-10-CM

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Code	Care Setting	Description	Code Category	Code Type
Z3759	Inpatient	Other multiple births, all liveborn	Diagnosis	ICD-10-CM
Z3760	Inpatient	Multiple births, unspecified, some liveborn	Diagnosis	ICD-10-CM
Z3761	Inpatient	Triplets, some liveborn	Diagnosis	ICD-10-CM
Z3762	Inpatient	Quadruplets, some liveborn	Diagnosis	ICD-10-CM
Z3763	Inpatient	Quintuplets, some liveborn	Diagnosis	ICD-10-CM
Z3764	Inpatient	Sextuplets, some liveborn	Diagnosis	ICD-10-CM
Z3769	Inpatient	Other multiple births, some liveborn	Diagnosis	ICD-10-CM
Z379	Inpatient	Outcome of delivery, unspecified	Diagnosis	ICD-10-CM
Z3800	Inpatient	Single liveborn infant, delivered vaginally	Diagnosis	ICD-10-CM
Z3801	Inpatient	Single liveborn infant, delivered by cesarean	Diagnosis	ICD-10-CM
Z381	Inpatient	Single liveborn infant, born outside hospital	Diagnosis	ICD-10-CM
Z382	Inpatient	Single liveborn infant, unspecified as to place of birth	Diagnosis	ICD-10-CM
Z3830	Inpatient	Twin liveborn infant, delivered vaginally	Diagnosis	ICD-10-CM
Z3831	Inpatient	Twin liveborn infant, delivered by cesarean	Diagnosis	ICD-10-CM
Z384	Inpatient	Twin liveborn infant, born outside hospital	Diagnosis	ICD-10-CM
Z385	Inpatient	Twin liveborn infant, unspecified as to place of birth	Diagnosis	ICD-10-CM
Z3861	Inpatient	Triplet liveborn infant, delivered vaginally	Diagnosis	ICD-10-CM
Z3862	Inpatient	Triplet liveborn infant, delivered by cesarean	Diagnosis	ICD-10-CM
Z3863	Inpatient	Quadruplet liveborn infant, delivered vaginally	Diagnosis	ICD-10-CM
Z3864	Inpatient	Quadruplet liveborn infant, delivered by cesarean	Diagnosis	ICD-10-CM
Z3865	Inpatient	Quintuplet liveborn infant, delivered vaginally	Diagnosis	ICD-10-CM
Z3866	Inpatient	Quintuplet liveborn infant, delivered by cesarean	Diagnosis	ICD-10-CM
Z3868	Inpatient	Other multiple liveborn infant, delivered vaginally	Diagnosis	ICD-10-CM
Z3869	Inpatient	Other multiple liveborn infant, delivered by cesarean	Diagnosis	ICD-10-CM
Z387	Inpatient	Other multiple liveborn infant, born outside hospital	Diagnosis	ICD-10-CM
Z388	Inpatient	Other multiple liveborn infant, unspecified as to place of birth	Diagnosis	ICD-10-CM
59400	Inpatient	Routine obstetric care including antepartum care, vaginal delivery (with or without episiotomy, and/or forceps) and postpartum care	Procedure	CPT-4
59409	Inpatient	Vaginal delivery only (with or without episiotomy and/or forceps);	Procedure	CPT-4
59410	Inpatient	Vaginal delivery only (with or without episiotomy and/or forceps); including postpartum care	Procedure	CPT-4

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Code	Care Setting	Description	Code Category	Code Type
59510	Inpatient	Routine obstetric care including antepartum care, cesarean delivery, and postpartum care	Procedure	CPT-4
59514	Inpatient	Cesarean delivery only;	Procedure	CPT-4
59515	Inpatient	Cesarean delivery only; including postpartum care	Procedure	CPT-4
59610	Inpatient	Routine obstetric care including antepartum care, vaginal delivery (with or without episiotomy, and/or forceps) and postpartum care, after previous cesarean delivery	Procedure	CPT-4
59612	Inpatient	Vaginal delivery only, after previous cesarean delivery (with or without episiotomy and/or forceps);	Procedure	CPT-4
59614	Inpatient	Vaginal delivery only, after previous cesarean delivery (with or without episiotomy and/or forceps); including postpartum care	Procedure	CPT-4
59618	Inpatient	Routine obstetric care including antepartum care, cesarean delivery, and postpartum care, following attempted vaginal delivery after previous cesarean delivery	Procedure	CPT-4
59620	Inpatient	Cesarean delivery only, following attempted vaginal delivery after previous cesarean delivery;	Procedure	CPT-4
59622	Inpatient	Cesarean delivery only, following attempted vaginal delivery after previous cesarean delivery; including postpartum care	Procedure	CPT-4
650	Inpatient	Normal delivery	Diagnosis	ICD-9-CM
7630	Inpatient	Fetus or newborn affected by breech delivery and extraction	Diagnosis	ICD-9-CM
7632	Inpatient	Fetus or newborn affected by forceps delivery	Diagnosis	ICD-9-CM
7633	Inpatient	Fetus or newborn affected by delivery by vacuum extractor	Diagnosis	ICD-9-CM
7634	Inpatient	Fetus or newborn affected by cesarean delivery	Diagnosis	ICD-9-CM
7636	Inpatient	Fetus or newborn affected by precipitate delivery	Diagnosis	ICD-9-CM
7680	Inpatient	Fetal death from asphyxia or anoxia before onset of labor or at unspecified time	Diagnosis	ICD-9-CM
7681	Inpatient	Fetal death from asphyxia or anoxia during labor	Diagnosis	ICD-9-CM
64101	Inpatient	Placenta previa without hemorrhage, with delivery	Diagnosis	ICD-9-CM
64111	Inpatient	Hemorrhage from placenta previa, with delivery	Diagnosis	ICD-9-CM
64121	Inpatient	Premature separation of placenta, with delivery	Diagnosis	ICD-9-CM
64131	Inpatient	Antepartum hemorrhage associated with coagulation defects, with delivery	Diagnosis	ICD-9-CM
64181	Inpatient	Other antepartum hemorrhage, with delivery	Diagnosis	ICD-9-CM
64191	Inpatient	Unspecified antepartum hemorrhage, with delivery	Diagnosis	ICD-9-CM
64201	Inpatient	Benign essential hypertension with delivery	Diagnosis	ICD-9-CM
64202	Inpatient	Benign essential hypertension, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64211	Inpatient	Hypertension secondary to renal disease, with delivery	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
64212	Inpatient	Hypertension secondary to renal disease, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64221	Inpatient	Other pre-existing hypertension, with delivery	Diagnosis	ICD-9-CM
64222	Inpatient	Other pre-existing hypertension, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64231	Inpatient	Transient hypertension of pregnancy, with delivery	Diagnosis	ICD-9-CM
64232	Inpatient	Transient hypertension of pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64241	Inpatient	Mild or unspecified pre-eclampsia, with delivery	Diagnosis	ICD-9-CM
64242	Inpatient	Mild or unspecified pre-eclampsia, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64251	Inpatient	Severe pre-eclampsia, with delivery	Diagnosis	ICD-9-CM
64252	Inpatient	Severe pre-eclampsia, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64261	Inpatient	Eclampsia, with delivery	Diagnosis	ICD-9-CM
64262	Inpatient	Eclampsia, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64271	Inpatient	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery	Diagnosis	ICD-9-CM
64272	Inpatient	Pre-eclampsia or eclampsia superimposed on pre-existing hypertension, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64291	Inpatient	Unspecified hypertension, with delivery	Diagnosis	ICD-9-CM
64292	Inpatient	Unspecified hypertension, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64301	Inpatient	Mild hyperemesis gravidarum, delivered	Diagnosis	ICD-9-CM
64311	Inpatient	Hyperemesis gravidarum with metabolic disturbance, delivered	Diagnosis	ICD-9-CM
64321	Inpatient	Late vomiting of pregnancy, delivered	Diagnosis	ICD-9-CM
64381	Inpatient	Other vomiting complicating pregnancy, delivered	Diagnosis	ICD-9-CM
64391	Inpatient	Unspecified vomiting of pregnancy, delivered	Diagnosis	ICD-9-CM
64421	Inpatient	Early onset of delivery, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64501	Inpatient	Prolonged pregnancy, with delivery	Diagnosis	ICD-9-CM
64511	Inpatient	Post term pregnancy, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64521	Inpatient	Prolonged pregnancy, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64601	Inpatient	Papyraceous fetus, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64611	Inpatient	Edema or excessive weight gain in pregnancy, with delivery, with or without mention of antepartum complication	Diagnosis	ICD-9-CM
64612	Inpatient	Edema or excessive weight gain in pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64621	Inpatient	Unspecified renal disease in pregnancy, with delivery	Diagnosis	ICD-9-CM
64622	Inpatient	Unspecified renal disease in pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
64631	Inpatient	Pregnancy complication, recurrent pregnancy loss, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64641	Inpatient	Peripheral neuritis in pregnancy, with delivery	Diagnosis	ICD-9-CM
64642	Inpatient	Peripheral neuritis in pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64651	Inpatient	Asymptomatic bacteriuria in pregnancy, with delivery	Diagnosis	ICD-9-CM
64652	Inpatient	Asymptomatic bacteriuria in pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64661	Inpatient	Infections of genitourinary tract in pregnancy, with delivery	Diagnosis	ICD-9-CM
64662	Inpatient	Infections of genitourinary tract in pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64671	Inpatient	Liver and biliary tract disorders in pregnancy, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64681	Inpatient	Other specified complication of pregnancy, with delivery	Diagnosis	ICD-9-CM
64682	Inpatient	Other specified complications of pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64691	Inpatient	Unspecified complication of pregnancy, with delivery	Diagnosis	ICD-9-CM
64701	Inpatient	Maternal syphilis, complicating pregnancy, with delivery	Diagnosis	ICD-9-CM
64702	Inpatient	Maternal syphilis, complicating pregnancy, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64711	Inpatient	Maternal gonorrhea with delivery	Diagnosis	ICD-9-CM
64712	Inpatient	Maternal gonorrhea, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64721	Inpatient	Other maternal venereal diseases with delivery	Diagnosis	ICD-9-CM
64722	Inpatient	Other maternal venereal diseases with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64731	Inpatient	Maternal tuberculosis with delivery	Diagnosis	ICD-9-CM
64732	Inpatient	Maternal tuberculosis with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64741	Inpatient	Maternal malaria with delivery	Diagnosis	ICD-9-CM
64742	Inpatient	Maternal malaria with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64751	Inpatient	Maternal rubella with delivery	Diagnosis	ICD-9-CM
64752	Inpatient	Maternal rubella with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64761	Inpatient	Other maternal viral disease with delivery	Diagnosis	ICD-9-CM
64762	Inpatient	Other maternal viral disease with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64781	Inpatient	Other specified maternal infectious and parasitic disease with delivery	Diagnosis	ICD-9-CM
64782	Inpatient	Other specified maternal infectious and parasitic disease with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64791	Inpatient	Unspecified maternal infection or infestation with delivery	Diagnosis	ICD-9-CM
64792	Inpatient	Unspecified maternal infection or infestation with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64801	Inpatient	Maternal diabetes mellitus with delivery	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
64802	Inpatient	Maternal diabetes mellitus with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64811	Inpatient	Maternal thyroid dysfunction with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64812	Inpatient	Maternal thyroid dysfunction with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64821	Inpatient	Maternal anemia, with delivery	Diagnosis	ICD-9-CM
64822	Inpatient	Maternal anemia with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64831	Inpatient	Maternal drug dependence, with delivery	Diagnosis	ICD-9-CM
64832	Inpatient	Maternal drug dependence, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64841	Inpatient	Maternal mental disorders, with delivery	Diagnosis	ICD-9-CM
64842	Inpatient	Maternal mental disorders, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64851	Inpatient	Maternal congenital cardiovascular disorders, with delivery	Diagnosis	ICD-9-CM
64852	Inpatient	Maternal congenital cardiovascular disorders, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64861	Inpatient	Other maternal cardiovascular diseases, with delivery	Diagnosis	ICD-9-CM
64862	Inpatient	Other maternal cardiovascular diseases, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64871	Inpatient	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery	Diagnosis	ICD-9-CM
64872	Inpatient	Bone and joint disorders of maternal back, pelvis, and lower limbs, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64881	Inpatient	Abnormal maternal glucose tolerance, with delivery	Diagnosis	ICD-9-CM
64882	Inpatient	Abnormal maternal glucose tolerance, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64891	Inpatient	Other current maternal conditions classifiable elsewhere, with delivery	Diagnosis	ICD-9-CM
64892	Inpatient	Other current maternal conditions classifiable elsewhere, with delivery, with current postpartum complication	Diagnosis	ICD-9-CM
64901	Inpatient	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64902	Inpatient	Tobacco use disorder complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
64911	Inpatient	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64912	Inpatient	Obesity complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
64921	Inpatient	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
64922	Inpatient	Bariatric surgery status complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
64931	Inpatient	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64932	Inpatient	Coagulation defects complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
64941	Inpatient	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64942	Inpatient	Epilepsy complicating pregnancy, childbirth, or the puerperium, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
64951	Inpatient	Spotting complicating pregnancy, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64961	Inpatient	Uterine size date discrepancy, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64962	Inpatient	Uterine size date discrepancy, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
64971	Inpatient	Cervical shortening, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64981	Inpatient	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	Inpatient	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
65101	Inpatient	Twin pregnancy, delivered	Diagnosis	ICD-9-CM
65111	Inpatient	Triplet pregnancy, delivered	Diagnosis	ICD-9-CM
65121	Inpatient	Quadruplet pregnancy, delivered	Diagnosis	ICD-9-CM
65131	Inpatient	Twin pregnancy with fetal loss and retention of one fetus, delivered	Diagnosis	ICD-9-CM
65141	Inpatient	Triplet pregnancy with fetal loss and retention of one or more, delivered	Diagnosis	ICD-9-CM
65151	Inpatient	Quadruplet pregnancy with fetal loss and retention of one or more, delivered	Diagnosis	ICD-9-CM
65161	Inpatient	Other multiple pregnancy with fetal loss and retention of one or more fetus(es), delivered	Diagnosis	ICD-9-CM
65171	Inpatient	Multiple gestation following (elective) fetal reduction, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
65181	Inpatient	Other specified multiple gestation, delivered	Diagnosis	ICD-9-CM
65191	Inpatient	Unspecified multiple gestation, delivered	Diagnosis	ICD-9-CM
65201	Inpatient	Unstable lie of fetus, delivered	Diagnosis	ICD-9-CM
65211	Inpatient	Breech or other malpresentation successfully converted to cephalic presentation, delivered	Diagnosis	ICD-9-CM
65221	Inpatient	Breech presentation without mention of version, delivered	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
65231	Inpatient	Transverse or oblique fetal presentation, delivered	Diagnosis	ICD-9-CM
65241	Inpatient	Fetal face or brow presentation, delivered	Diagnosis	ICD-9-CM
65251	Inpatient	High fetal head at term, delivered	Diagnosis	ICD-9-CM
65261	Inpatient	Multiple gestation with malpresentation of one fetus or more, delivered	Diagnosis	ICD-9-CM
65271	Inpatient	Prolapsed arm of fetus, delivered	Diagnosis	ICD-9-CM
65281	Inpatient	Other specified malposition or malpresentation of fetus, delivered	Diagnosis	ICD-9-CM
65291	Inpatient	Unspecified malposition or malpresentation of fetus, delivered	Diagnosis	ICD-9-CM
65301	Inpatient	Major abnormality of bony pelvis, not further specified, delivered	Diagnosis	ICD-9-CM
65311	Inpatient	Generally contracted pelvis in pregnancy, delivered	Diagnosis	ICD-9-CM
65321	Inpatient	Inlet contraction of pelvis in pregnancy, delivered	Diagnosis	ICD-9-CM
65331	Inpatient	Outlet contraction of pelvis in pregnancy, delivered	Diagnosis	ICD-9-CM
65341	Inpatient	Fetopelvic disproportion, delivered	Diagnosis	ICD-9-CM
65351	Inpatient	Unusually large fetus causing disproportion, delivered	Diagnosis	ICD-9-CM
65361	Inpatient	Hydrocephalic fetus causing disproportion, delivered	Diagnosis	ICD-9-CM
65371	Inpatient	Other fetal abnormality causing disproportion, delivered	Diagnosis	ICD-9-CM
65381	Inpatient	Fetal disproportion of other origin, delivered	Diagnosis	ICD-9-CM
65391	Inpatient	Unspecified fetal disproportion, delivered	Diagnosis	ICD-9-CM
65401	Inpatient	Congenital abnormalities of pregnant uterus, delivered	Diagnosis	ICD-9-CM
65402	Inpatient	Congenital abnormalities of pregnant uterus, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65411	Inpatient	Tumors of body of uterus, delivered	Diagnosis	ICD-9-CM
65412	Inpatient	Tumors of body of uterus, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65421	Inpatient	Previous cesarean delivery, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
65431	Inpatient	Retroverted and incarcerated gravid uterus, delivered	Diagnosis	ICD-9-CM
65432	Inpatient	Retroverted and incarcerated gravid uterus, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65441	Inpatient	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered	Diagnosis	ICD-9-CM
65442	Inpatient	Other abnormalities in shape or position of gravid uterus and of neighboring structures, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65451	Inpatient	Cervical incompetence, delivered	Diagnosis	ICD-9-CM
65452	Inpatient	Cervical incompetence, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65461	Inpatient	Other congenital or acquired abnormality of cervix, with delivery	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
65462	Inpatient	Other congenital or acquired abnormality of cervix, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65471	Inpatient	Congenital or acquired abnormality of vagina, with delivery	Diagnosis	ICD-9-CM
65472	Inpatient	Congenital or acquired abnormality of vagina, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65481	Inpatient	Congenital or acquired abnormality of vulva, with delivery	Diagnosis	ICD-9-CM
65482	Inpatient	Congenital or acquired abnormality of vulva, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65491	Inpatient	Other and unspecified abnormality of organs and soft tissues of pelvis, with delivery	Diagnosis	ICD-9-CM
65492	Inpatient	Other and unspecified abnormality of organs and soft tissues of pelvis, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
65501	Inpatient	Central nervous system malformation in fetus, with delivery	Diagnosis	ICD-9-CM
65511	Inpatient	Chromosomal abnormality in fetus, affecting management of mother, with delivery	Diagnosis	ICD-9-CM
65521	Inpatient	Hereditary disease in family possibly affecting fetus, affecting management of mother, with delivery	Diagnosis	ICD-9-CM
65531	Inpatient	Suspected damage to fetus from viral disease in mother, affecting management of mother, with delivery	Diagnosis	ICD-9-CM
65541	Inpatient	Suspected damage to fetus from other disease in mother, affecting management of mother, with delivery	Diagnosis	ICD-9-CM
65551	Inpatient	Suspected damage to fetus from drugs, affecting management of mother, delivered	Diagnosis	ICD-9-CM
65561	Inpatient	Suspected damage to fetus from radiation, affecting management of mother, delivered	Diagnosis	ICD-9-CM
65571	Inpatient	Decreased fetal movements, affecting management of mother, delivered	Diagnosis	ICD-9-CM
65581	Inpatient	Other known or suspected fetal abnormality, not elsewhere classified, affecting management of mother, delivery	Diagnosis	ICD-9-CM
65591	Inpatient	Unspecified fetal abnormality affecting management of mother, delivery	Diagnosis	ICD-9-CM
65601	Inpatient	Fetal-maternal hemorrhage, with delivery	Diagnosis	ICD-9-CM
65611	Inpatient	Rhesus isoimmunization affecting management of mother, delivered	Diagnosis	ICD-9-CM
65621	Inpatient	Isoimmunization from other and unspecified blood-group incompatibility, affecting management of mother, delivered	Diagnosis	ICD-9-CM
65631	Inpatient	Fetal distress affecting management of mother, delivered	Diagnosis	ICD-9-CM
65641	Inpatient	Intrauterine death affecting management of mother, delivered	Diagnosis	ICD-9-CM
65651	Inpatient	Poor fetal growth, affecting management of mother, delivered	Diagnosis	ICD-9-CM
65661	Inpatient	Excessive fetal growth affecting management of mother, delivered	Diagnosis	ICD-9-CM
65671	Inpatient	Other placental conditions affecting management of mother, delivered	Diagnosis	ICD-9-CM
65681	Inpatient	Other specified fetal and placental problems affecting management of mother, delivered	Diagnosis	ICD-9-CM
65691	Inpatient	Unspecified fetal and placental problem affecting management of mother, delivered	Diagnosis	ICD-9-CM
65701	Inpatient	Polyhydramnios, with delivery	Diagnosis	ICD-9-CM
65801	Inpatient	Oligohydramnios, delivered	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
65811	Inpatient	Premature rupture of membranes in pregnancy, delivered	Diagnosis	ICD-9-CM
65821	Inpatient	Delayed delivery after spontaneous or unspecified rupture of membranes, delivered	Diagnosis	ICD-9-CM
65831	Inpatient	Delayed delivery after artificial rupture of membranes, delivered	Diagnosis	ICD-9-CM
65841	Inpatient	Infection of amniotic cavity, delivered	Diagnosis	ICD-9-CM
65881	Inpatient	Other problem associated with amniotic cavity and membranes, delivered	Diagnosis	ICD-9-CM
65891	Inpatient	Unspecified problem associated with amniotic cavity and membranes, delivered	Diagnosis	ICD-9-CM
65901	Inpatient	Failed mechanical induction of labor, delivered	Diagnosis	ICD-9-CM
65911	Inpatient	Failed medical or unspecified induction of labor, delivered	Diagnosis	ICD-9-CM
65921	Inpatient	Unspecified maternal pyrexia during labor, delivered	Diagnosis	ICD-9-CM
65931	Inpatient	Generalized infection during labor, delivered	Diagnosis	ICD-9-CM
65941	Inpatient	Grand multiparity, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
65951	Inpatient	Elderly primigravida, delivered	Diagnosis	ICD-9-CM
65961	Inpatient	Elderly multigravida, delivered, with mention of antepartum condition	Diagnosis	ICD-9-CM
65971	Inpatient	Abnormality in fetal heart rate or rhythm, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
65981	Inpatient	Other specified indication for care or intervention related to labor and delivery, delivered	Diagnosis	ICD-9-CM
65991	Inpatient	Unspecified indication for care or intervention related to labor and delivery, delivered	Diagnosis	ICD-9-CM
66001	Inpatient	Obstruction caused by malposition of fetus at onset of labor, delivered	Diagnosis	ICD-9-CM
66011	Inpatient	Obstruction by bony pelvis during labor and delivery, delivered	Diagnosis	ICD-9-CM
66021	Inpatient	Obstruction by abnormal pelvic soft tissues during labor and delivery, delivered	Diagnosis	ICD-9-CM
66031	Inpatient	Deep transverse arrest and persistent occipitoposterior position during labor and deliver, delivered	Diagnosis	ICD-9-CM
66041	Inpatient	Shoulder (girdle) dystocia during labor and deliver, delivered	Diagnosis	ICD-9-CM
66051	Inpatient	Locked twins, delivered	Diagnosis	ICD-9-CM
66061	Inpatient	Unspecified failed trial of labor, delivered	Diagnosis	ICD-9-CM
66071	Inpatient	Unspecified failed forceps or vacuum extractor, delivered	Diagnosis	ICD-9-CM
66081	Inpatient	Other causes of obstructed labor, delivered	Diagnosis	ICD-9-CM
66091	Inpatient	Unspecified obstructed labor, with delivery	Diagnosis	ICD-9-CM
66101	Inpatient	Primary uterine inertia, with delivery	Diagnosis	ICD-9-CM
66111	Inpatient	Secondary uterine inertia, with delivery	Diagnosis	ICD-9-CM
66121	Inpatient	Other and unspecified uterine inertia, with delivery	Diagnosis	ICD-9-CM
66131	Inpatient	Precipitate labor, with delivery	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
66141	Inpatient	Hypertonic, incoordinate, or prolonged uterine contractions, with delivery	Diagnosis	ICD-9-CM
66191	Inpatient	Unspecified abnormality of labor, with delivery	Diagnosis	ICD-9-CM
66201	Inpatient	Prolonged first stage of labor, delivered	Diagnosis	ICD-9-CM
66211	Inpatient	Unspecified prolonged labor, delivered	Diagnosis	ICD-9-CM
66221	Inpatient	Prolonged second stage of labor, delivered	Diagnosis	ICD-9-CM
66231	Inpatient	Delayed delivery of second twin, triplet, etc., delivered	Diagnosis	ICD-9-CM
66301	Inpatient	Prolapse of cord, complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66311	Inpatient	Cord around neck, with compression, complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66321	Inpatient	Other and unspecified cord entanglement, with compression, complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66331	Inpatient	Other and unspecified cord entanglement, without mention of compression, complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66341	Inpatient	Short cord complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66351	Inpatient	Vasa previa complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66361	Inpatient	Vascular lesions of cord complicating labor and delivery, delivered	Diagnosis	ICD-9-CM
66381	Inpatient	Other umbilical cord complications during labor and delivery, delivered	Diagnosis	ICD-9-CM
66391	Inpatient	Unspecified umbilical cord complication during labor and delivery, delivered	Diagnosis	ICD-9-CM
66401	Inpatient	First-degree perineal laceration, with delivery	Diagnosis	ICD-9-CM
66411	Inpatient	Second-degree perineal laceration, with delivery	Diagnosis	ICD-9-CM
66421	Inpatient	Third-degree perineal laceration, with delivery	Diagnosis	ICD-9-CM
66431	Inpatient	Fourth-degree perineal laceration, with delivery	Diagnosis	ICD-9-CM
66441	Inpatient	Unspecified perineal laceration, with delivery	Diagnosis	ICD-9-CM
66451	Inpatient	Vulvar and perineal hematoma, with delivery	Diagnosis	ICD-9-CM
66461	Inpatient	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	Inpatient	Other specified trauma to perineum and vulva, with delivery	Diagnosis	ICD-9-CM
66491	Inpatient	Unspecified trauma to perineum and vulva, with delivery	Diagnosis	ICD-9-CM
66501	Inpatient	Rupture of uterus before onset of labor, with delivery	Diagnosis	ICD-9-CM
66511	Inpatient	Rupture of uterus during labor, with delivery	Diagnosis	ICD-9-CM
66522	Inpatient	Inversion of uterus, delivered with postpartum complication	Diagnosis	ICD-9-CM
66531	Inpatient	Laceration of cervix, with delivery	Diagnosis	ICD-9-CM
66541	Inpatient	High vaginal laceration, with delivery	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
66551	Inpatient	Other injury to pelvic organs, with delivery	Diagnosis	ICD-9-CM
66561	Inpatient	Damage to pelvic joints and ligaments, with delivery	Diagnosis	ICD-9-CM
66571	Inpatient	Pelvic hematoma, with delivery	Diagnosis	ICD-9-CM
66572	Inpatient	Pelvic hematoma, delivered with postpartum complication	Diagnosis	ICD-9-CM
66581	Inpatient	Other specified obstetrical trauma, with delivery	Diagnosis	ICD-9-CM
66582	Inpatient	Other specified obstetrical trauma, delivered, with postpartum	Diagnosis	ICD-9-CM
66591	Inpatient	Unspecified obstetrical trauma, with delivery	Diagnosis	ICD-9-CM
66592	Inpatient	Unspecified obstetrical trauma, delivered, with postpartum complication	Diagnosis	ICD-9-CM
66602	Inpatient	Third-stage postpartum hemorrhage, with delivery	Diagnosis	ICD-9-CM
66612	Inpatient	Other immediate postpartum hemorrhage, with delivery	Diagnosis	ICD-9-CM
66622	Inpatient	Delayed and secondary postpartum hemorrhage, with delivery	Diagnosis	ICD-9-CM
66632	Inpatient	Postpartum coagulation defects, with delivery	Diagnosis	ICD-9-CM
66702	Inpatient	Retained placenta without hemorrhage, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
66712	Inpatient	Retained portions of placenta or membranes, without hemorrhage, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
66801	Inpatient	Pulmonary complications of the administration of anesthesia or other sedation in labor and delivery, delivered	Diagnosis	ICD-9-CM
66802	Inpatient	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	Inpatient	Cardiac complications of the administration of anesthesia or other sedation in labor and delivery, delivered	Diagnosis	ICD-9-CM
66812	Inpatient	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	Inpatient	Central nervous system complications of the administration of anesthesia or other sedation in labor and delivery, delivered	Diagnosis	ICD-9-CM
66822	Inpatient	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	Inpatient	Other complications of the administration of anesthesia or other sedation in labor and delivery, delivered	Diagnosis	ICD-9-CM
66882	Inpatient	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	Inpatient	Unspecified complication of the administration of anesthesia or other sedation in labor and delivery, delivered	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
66892	Inpatient	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	Inpatient	Maternal distress, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66902	Inpatient	Maternal distress, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
66911	Inpatient	Shock during or following labor and delivery, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66912	Inpatient	Shock during or following labor and delivery, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
66921	Inpatient	Maternal hypotension syndrome, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66922	Inpatient	Maternal hypotension syndrome, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
66932	Inpatient	Acute kidney failure following labor and delivery, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
66941	Inpatient	Other complications of obstetrical surgery and procedures, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66942	Inpatient	Other complications of obstetrical surgery and procedures, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
66951	Inpatient	Forceps or vacuum extractor delivery without mention of indication, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66961	Inpatient	Breech extraction, without mention of indication, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66971	Inpatient	Cesarean delivery, without mention of indication, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66981	Inpatient	Other complication of labor and delivery, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66982	Inpatient	Other complication of labor and delivery, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
66991	Inpatient	Unspecified complication of labor and delivery, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
66992	Inpatient	Unspecified complication of labor and delivery, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67002	Inpatient	Major puerperal infection, unspecified, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67012	Inpatient	Puerperal endometritis, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67022	Inpatient	Puerperal sepsis, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67032	Inpatient	Puerperal septic thrombophlebitis, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67082	Inpatient	Other major puerperal infection, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67101	Inpatient	Varicose veins of legs, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67102	Inpatient	Varicose veins of legs, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67111	Inpatient	Varicose veins of vulva and perineum, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67112	Inpatient	Varicose veins of vulva and perineum, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67121	Inpatient	Superficial thrombophlebitis with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
67122	Inpatient	Superficial thrombophlebitis with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67131	Inpatient	Deep phlebothrombosis, antepartum, with delivery	Diagnosis	ICD-9-CM
67142	Inpatient	Deep phlebothrombosis, postpartum, with delivery	Diagnosis	ICD-9-CM
67151	Inpatient	Other phlebitis and thrombosis with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67152	Inpatient	Other phlebitis and thrombosis with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67181	Inpatient	Other venous complication, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67182	Inpatient	Other venous complication, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67191	Inpatient	Unspecified venous complication, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67192	Inpatient	Unspecified venous complication, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67202	Inpatient	Puerperal pyrexia of unknown origin, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67301	Inpatient	Obstetrical air embolism, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67302	Inpatient	Obstetrical air embolism, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67311	Inpatient	Amniotic fluid embolism, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67312	Inpatient	Amniotic fluid embolism, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67321	Inpatient	Obstetrical blood-clot embolism, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67322	Inpatient	Obstetrical blood-clot embolism, with mention of postpartum complication	Diagnosis	ICD-9-CM
67331	Inpatient	Obstetrical pyemic and septic embolism, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67332	Inpatient	Obstetrical pyemic and septic embolism, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67381	Inpatient	Other obstetrical pulmonary embolism, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67382	Inpatient	Other obstetrical pulmonary embolism, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67401	Inpatient	Cerebrovascular disorder, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67402	Inpatient	Cerebrovascular disorder, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67412	Inpatient	Disruption of cesarean wound, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67422	Inpatient	Disruption of perineal wound, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67432	Inpatient	Other complication of obstetrical surgical wounds, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67442	Inpatient	Placental polyp, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67451	Inpatient	Peripartum cardiomyopathy, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67452	Inpatient	Peripartum cardiomyopathy, delivered, with mention of postpartum condition	Diagnosis	ICD-9-CM
67482	Inpatient	Other complication of puerperium, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67492	Inpatient	Unspecified complications of puerperium, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
67501	Inpatient	Infection of nipple associated with childbirth, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67502	Inpatient	Infection of nipple associated with childbirth, delivered with mention of postpartum complication	Diagnosis	ICD-9-CM
67511	Inpatient	Abscess of breast associated with childbirth, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67512	Inpatient	Abscess of breast associated with childbirth, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67521	Inpatient	Nonpurulent mastitis, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67522	Inpatient	Nonpurulent mastitis, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67581	Inpatient	Other specified infection of the breast and nipple associated with childbirth, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67582	Inpatient	Other specified infection of the breast and nipple associated with childbirth, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67591	Inpatient	Unspecified infection of the breast and nipple, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67592	Inpatient	Unspecified infection of the breast and nipple, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67601	Inpatient	Retracted nipple, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67602	Inpatient	Retracted nipple, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67611	Inpatient	Cracked nipple, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67612	Inpatient	Cracked nipple, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67621	Inpatient	Engorgement of breasts, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67622	Inpatient	Engorgement of breasts, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67631	Inpatient	Other and unspecified disorder of breast associated with childbirth, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67632	Inpatient	Other and unspecified disorder of breast associated with childbirth, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67641	Inpatient	Failure of lactation, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67642	Inpatient	Failure of lactation, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67651	Inpatient	Suppressed lactation, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67652	Inpatient	Suppressed lactation, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67661	Inpatient	Galactorrhea, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67662	Inpatient	Galactorrhea, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67681	Inpatient	Other disorder of lactation, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67682	Inpatient	Other disorder of lactation, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
67691	Inpatient	Unspecified disorder of lactation, with delivery, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
72	Inpatient	Forceps, vacuum, and breech delivery	Procedure	ICD-9-CM
73	Inpatient	Other procedures inducing or assisting delivery	Procedure	ICD-9-CM
720	Inpatient	Low forceps operation	Procedure	ICD-9-CM
721	Inpatient	Low forceps operation with episiotomy	Procedure	ICD-9-CM
722	Inpatient	Mid forceps operation	Procedure	ICD-9-CM
723	Inpatient	High forceps operation	Procedure	ICD-9-CM
724	Inpatient	Forceps rotation of fetal head	Procedure	ICD-9-CM
725	Inpatient	Breech extraction	Procedure	ICD-9-CM
726	Inpatient	Forceps application to aftercoming head	Procedure	ICD-9-CM
727	Inpatient	Vacuum extraction	Procedure	ICD-9-CM
728	Inpatient	Other specified instrumental delivery	Procedure	ICD-9-CM
729	Inpatient	Unspecified instrumental delivery	Procedure	ICD-9-CM
730	Inpatient	Artificial rupture of membranes	Procedure	ICD-9-CM
731	Inpatient	Other surgical induction of labor	Procedure	ICD-9-CM
732	Inpatient	Internal and combined version and extraction	Procedure	ICD-9-CM
733	Inpatient	Failed forceps	Procedure	ICD-9-CM
734	Inpatient	Medical induction of labor	Procedure	ICD-9-CM
735	Inpatient	Manually assisted delivery	Procedure	ICD-9-CM
736	Inpatient	Episiotomy	Procedure	ICD-9-CM
738	Inpatient	Operations on fetus to facilitate delivery	Procedure	ICD-9-CM
739	Inpatient	Other operations assisting delivery	Procedure	ICD-9-CM
740	Inpatient	Classical cesarean section	Procedure	ICD-9-CM
741	Inpatient	Low cervical cesarean section	Procedure	ICD-9-CM
742	Inpatient	Extraperitoneal cesarean section	Procedure	ICD-9-CM
744	Inpatient	Cesarean section of other specified type	Procedure	ICD-9-CM
749	Inpatient	Cesarean section of unspecified type	Procedure	ICD-9-CM
7221	Inpatient	Mid forceps operation with episiotomy	Procedure	ICD-9-CM
7229	Inpatient	Other mid forceps operation	Procedure	ICD-9-CM
7231	Inpatient	High forceps operation with episiotomy	Procedure	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
7239	Inpatient	Other high forceps operation	Procedure	ICD-9-CM
7251	Inpatient	Partial breech extraction with forceps to aftercoming head	Procedure	ICD-9-CM
7252	Inpatient	Other partial breech extraction	Procedure	ICD-9-CM
7253	Inpatient	Total breech extraction with forceps to aftercoming head	Procedure	ICD-9-CM
7254	Inpatient	Other total breech extraction	Procedure	ICD-9-CM
7271	Inpatient	Vacuum extraction with episiotomy	Procedure	ICD-9-CM
7279	Inpatient	Other vacuum extraction	Procedure	ICD-9-CM
7301	Inpatient	Induction of labor by artificial rupture of membranes	Procedure	ICD-9-CM
7309	Inpatient	Other artificial rupture of membranes	Procedure	ICD-9-CM
7321	Inpatient	Internal and combined version without extraction	Procedure	ICD-9-CM
7322	Inpatient	Internal and combined version with extraction	Procedure	ICD-9-CM
7351	Inpatient	Manual rotation of fetal head	Procedure	ICD-9-CM
7359	Inpatient	Other manually assisted delivery	Procedure	ICD-9-CM
7391	Inpatient	External version to assist delivery	Procedure	ICD-9-CM
7392	Inpatient	Replacement of prolapsed umbilical cord	Procedure	ICD-9-CM
7393	Inpatient	Incision of cervix to assist delivery	Procedure	ICD-9-CM
7394	Inpatient	Pubiotomy to assist delivery	Procedure	ICD-9-CM
7399	Inpatient	Other operations to assist delivery	Procedure	ICD-9-CM
7499	Inpatient	Other cesarean section of unspecified type	Procedure	ICD-9-CM
67692	Inpatient	Unspecified disorder of lactation, with delivery, with mention of postpartum complication	Diagnosis	ICD-9-CM
67801	Inpatient	Fetal hematologic conditions, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67811	Inpatient	Fetal conjoined twins, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67901	Inpatient	Maternal complications from in utero procedure, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67902	Inpatient	Maternal complications from in utero procedure, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
67911	Inpatient	Fetal complications from in utero procedure, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
67912	Inpatient	Fetal complications from in utero procedure, delivered, with mention of postpartum complication	Diagnosis	ICD-9-CM
V27	Inpatient	Outcome of delivery	Diagnosis	ICD-9-CM
V270	Inpatient	Outcome of delivery, single liveborn	Diagnosis	ICD-9-CM
V272	Inpatient	Outcome of delivery, twins, both liveborn	Diagnosis	ICD-9-CM
V273	Inpatient	Outcome of delivery, twins, one liveborn and one stillborn	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
V275	Inpatient	Outcome of delivery, other multiple birth, all liveborn	Diagnosis	ICD-9-CM
V276	Inpatient	Outcome of delivery, other multiple birth, some liveborn	Diagnosis	ICD-9-CM
V277	Inpatient	Outcome of delivery, other multiple birth, all stillborn	Diagnosis	ICD-9-CM
V279	Inpatient	Outcome of delivery, unspecified	Diagnosis	ICD-9-CM
V30	Inpatient	Single liveborn	Diagnosis	ICD-9-CM
V300	Inpatient	Single liveborn, born in hospital	Diagnosis	ICD-9-CM
V3000	Inpatient	Single liveborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3001	Inpatient	Single liveborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V301	Inpatient	Single liveborn, born before admission to hospital	Diagnosis	ICD-9-CM
V302	Inpatient	Single liveborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V31	Inpatient	Twin birth, mate liveborn	Diagnosis	ICD-9-CM
V310	Inpatient	Twin, mate liveborn, born in hospital	Diagnosis	ICD-9-CM
V3100	Inpatient	Twin, mate liveborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3101	Inpatient	Twin, mate liveborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V311	Inpatient	Twin birth, mate liveborn, born before admission to hospital	Diagnosis	ICD-9-CM
V312	Inpatient	Twin birth, mate liveborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V32	Inpatient	Twin birth, mate stillborn	Diagnosis	ICD-9-CM
V320	Inpatient	Twin, mate stillborn, born in hospital	Diagnosis	ICD-9-CM
V3200	Inpatient	Twin, mate stillborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3201	Inpatient	Twin, mate stillborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V321	Inpatient	Twin birth, mate stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V322	Inpatient	Twin birth, mate stillborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V33	Inpatient	Twin birth, unspecified whether mate liveborn or stillborn	Diagnosis	ICD-9-CM
V330	Inpatient	Twin, unspecified, born in hospital	Diagnosis	ICD-9-CM
V3300	Inpatient	Twin, unspecified whether mate stillborn or liveborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3301	Inpatient	Twin, unspecified whether mate stillborn or liveborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V331	Inpatient	Twin birth, unspecified whether mate liveborn or stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V332	Inpatient	Twin birth, unspecified whether mate liveborn or stillborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V34	Inpatient	Other multiple birth (three or more), mates all liveborn	Diagnosis	ICD-9-CM
V340	Inpatient	Other multiple, mates all liveborn, born in hospital	Diagnosis	ICD-9-CM

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Code	Care Setting	Description	Code Category	Code Type
V3400	Inpatient	Other multiple, mates all liveborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3401	Inpatient	Other multiple, mates all liveborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V341	Inpatient	Other multiple birth (three or more), mates all liveborn, born before admission to hospital	Diagnosis	ICD-9-CM
V342	Inpatient	Other multiple birth (three or more), mates all liveborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V36	Inpatient	Other multiple birth (three or more), mates liveborn and stillborn	Diagnosis	ICD-9-CM
V360	Inpatient	Other multiple, mates liveborn and stillborn, born in hospital	Diagnosis	ICD-9-CM
V3600	Inpatient	Other multiple, mates liveborn and stillborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3601	Inpatient	Other multiple, mates liveborn and stillborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V361	Inpatient	Other multiple birth (three or more), mates liveborn and stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V362	Inpatient	Other multiple birth (three or more), mates liveborn and stillborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V37	Inpatient	Other multiple birth (three or more), unspecified whether mates liveborn or stillborn	Diagnosis	ICD-9-CM
V370	Inpatient	Other multiple, unspecified whether mates stillborn or liveborn, born in hospital	Diagnosis	ICD-9-CM
V3700	Inpatient	Other multiple, unspecified whether mates stillborn or liveborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3701	Inpatient	Other multiple, unspecified whether mates stillborn or liveborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V371	Inpatient	Other multiple birth (three or more), unspecified whether mates liveborn or stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V372	Inpatient	Other multiple birth (three or more), unspecified whether mates liveborn or stillborn, born outside of hospital	Diagnosis	ICD-9-CM
V39	Inpatient	Liveborn, unspecified whether single, twin, or multiple	Diagnosis	ICD-9-CM
V390	Inpatient	Other liveborn, unspecified whether single, twin, or multiple, born in hospital	Diagnosis	ICD-9-CM
V3900	Inpatient	Liveborn infant, unspecified whether single, twin, or multiple, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3901	Inpatient	Liveborn infant, unspecified whether single, twin, or multiple, born in hospital, delivered by cesarean	Diagnosis	ICD-9-CM
V391	Inpatient	Liveborn, unspecified whether single, twin or multiple, born before admission to hospital	Diagnosis	ICD-9-CM
V392	Inpatient	Liveborn, unspecified whether single, twin or multiple, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
Stillbirth Delivery				
64600	Any	Papyraceous fetus, unspecified as to episode of care	Diagnosis	ICD-9-CM
64601	Any	Papyraceous fetus, delivered, with or without mention of antepartum condition	Diagnosis	ICD-9-CM
64603	Any	Papyraceous fetus, antepartum	Diagnosis	ICD-9-CM
6564	Any	Intrauterine death affecting management of mother	Diagnosis	ICD-9-CM

Appendix E. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS), and Current Procedural Terminology, Fourth Edition (CPT-4) Diagnosis and Procedure Codes Used to Define Live Birth and Stillbirth Delivery

Code	Care Setting	Description	Code Category	Code Type
65640	Any	Intrauterine death affecting management of mother, unspecified as to episode of care	Diagnosis	ICD-9-CM
65641	Any	Intrauterine death affecting management of mother, delivered	Diagnosis	ICD-9-CM
65643	Any	Intrauterine death affecting management of mother, antepartum	Diagnosis	ICD-9-CM
768	Any	Fetal death from asphyxia or anoxia before onset of labor/at unspecified time	Diagnosis	ICD-9-CM
7681	Any	Fetal death from asphyxia or anoxia during labor	Diagnosis	ICD-9-CM
V271	Any	Outcome of delivery, single stillborn	Diagnosis	ICD-9-CM
V273	Any	Outcome of delivery, twins, one liveborn and one stillborn	Diagnosis	ICD-9-CM
V274	Any	Outcome of delivery, twins, both stillborn	Diagnosis	ICD-9-CM
V276	Any	Outcome of delivery, other multiple birth, some liveborn	Diagnosis	ICD-9-CM
V277	Any	Outcome of delivery, other multiple birth, all stillborn	Diagnosis	ICD-9-CM
V32	Any	Twin birth, mate stillborn	Diagnosis	ICD-9-CM
V320	Any	Twin, mate stillborn, born in hospital	Diagnosis	ICD-9-CM
V3200	Any	Twin, mate stillborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3201	Any	Twin, mate stillborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V321	Any	Twin birth, mate stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V322	Any	Twin birth, mate stillborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
V35	Any	Other multiple birth (three or more), mates all stillborn	Diagnosis	ICD-9-CM
V350	Any	Other multiple, mates all stillborn, born in hospital	Diagnosis	ICD-9-CM
V3500	Any	Other multiple, mates all stillborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3501	Any	Other multiple, mates all stillborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V351	Any	Other multiple birth (three or more), mates all stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V352	Any	Other multiple birth (three or more), mates all stillborn, born outside of hospital and not hospitalized	Diagnosis	ICD-9-CM
V36	Any	Other multiple birth (three or more), mates liveborn and stillborn	Diagnosis	ICD-9-CM
V360	Any	Other multiple, mates liveborn and stillborn, born in hospital	Diagnosis	ICD-9-CM
V3600	Any	Other multiple, mates liveborn and stillborn, born in hospital, delivered without mention of cesarean delivery	Diagnosis	ICD-9-CM
V3601	Any	Other multiple, mates liveborn and stillborn, born in hospital, delivered by cesarean delivery	Diagnosis	ICD-9-CM
V361	Any	Other multiple birth (three or more), mates liveborn and stillborn, born before admission to hospital	Diagnosis	ICD-9-CM
V362	Any	Other multiple birth (three or more), mates liveborn and stillborn, born outside hospital and not hospitalized	Diagnosis	ICD-9-CM
O3100X0	Any	Papyraceous fetus, unspecified trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O3100X1	Any	Papyraceous fetus, unspecified trimester, fetus 1	Diagnosis	ICD-10-CM

Appendix E. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS), and Current Procedural Terminology, Fourth Edition (CPT-4) Diagnosis and Procedure Codes Used to Define Live Birth and Stillbirth Delivery

Code	Care Setting	Description	Code Category	Code Type
O3100X2	Any	Papyraceous fetus, unspecified trimester, fetus 2	Diagnosis	ICD-10-CM
O3100X3	Any	Papyraceous fetus, unspecified trimester, fetus 3	Diagnosis	ICD-10-CM
O3100X4	Any	Papyraceous fetus, unspecified trimester, fetus 4	Diagnosis	ICD-10-CM
O3100X5	Any	Papyraceous fetus, unspecified trimester, fetus 5	Diagnosis	ICD-10-CM
O3100X9	Any	Papyraceous fetus, unspecified trimester, other fetus	Diagnosis	ICD-10-CM
O3102X0	Any	Papyraceous fetus, second trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O3102X1	Any	Papyraceous fetus, second trimester, fetus 1	Diagnosis	ICD-10-CM
O3102X2	Any	Papyraceous fetus, second trimester, fetus 2	Diagnosis	ICD-10-CM
O3102X3	Any	Papyraceous fetus, second trimester, fetus 3	Diagnosis	ICD-10-CM
O3102X4	Any	Papyraceous fetus, second trimester, fetus 4	Diagnosis	ICD-10-CM
O3102X5	Any	Papyraceous fetus, second trimester, fetus 5	Diagnosis	ICD-10-CM
O3102X9	Any	Papyraceous fetus, second trimester, other fetus	Diagnosis	ICD-10-CM
O3103X0	Any	Papyraceous fetus, third trimester, not applicable or unspecified	Diagnosis	ICD-10-CM
O3103X1	Any	Papyraceous fetus, third trimester, fetus 1	Diagnosis	ICD-10-CM
O3103X2	Any	Papyraceous fetus, third trimester, fetus 2	Diagnosis	ICD-10-CM
O3103X3	Any	Papyraceous fetus, third trimester, fetus 3	Diagnosis	ICD-10-CM
O3103X4	Any	Papyraceous fetus, third trimester, fetus 4	Diagnosis	ICD-10-CM
O3103X5	Any	Papyraceous fetus, third trimester, fetus 5	Diagnosis	ICD-10-CM
O3103X9	Any	Papyraceous fetus, third trimester, other fetus	Diagnosis	ICD-10-CM
O364	Any	Maternal care for intrauterine death	Diagnosis	ICD-10-CM
O364XX0	Any	Maternal care for intrauterine death, not applicable or unspecified	Diagnosis	ICD-10-CM
O364XX1	Any	Maternal care for intrauterine death, fetus 1	Diagnosis	ICD-10-CM
O364XX2	Any	Maternal care for intrauterine death, fetus 2	Diagnosis	ICD-10-CM
O364XX3	Any	Maternal care for intrauterine death, fetus 3	Diagnosis	ICD-10-CM
O364XX4	Any	Maternal care for intrauterine death, fetus 4	Diagnosis	ICD-10-CM
O364XX5	Any	Maternal care for intrauterine death, fetus 5	Diagnosis	ICD-10-CM
O364XX9	Any	Maternal care for intrauterine death, other fetus	Diagnosis	ICD-10-CM
P95	Any	Stillbirth (may be on newborn record, not mother's)	Diagnosis	ICD-10-CM
Z371	Any	Single stillbirth	Diagnosis	ICD-10-CM
Z373	Any	Twins, one liveborn and one stillborn, pregnancy resulting from both spontaneous ovulation and conception	Diagnosis	ICD-10-CM

Appendix E. List of International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM), International Classification of Diseases, Tenth Revision, Procedure Coding System (ICD-10-PCS), and Current Procedural Terminology, Fourth Edition (CPT-4) Diagnosis and Procedure Codes Used to Define Live Birth and Stillbirth Delivery

Code	Care Setting	Description	Code Category	Code Type
Z374	Any	Twins, both stillborn	Diagnosis	ICD-10-CM
Z376	Any	Other multiple births, some liveborn	Diagnosis	ICD-10-CM
Z3760	Any	Multiple births, unspecified, some liveborn	Diagnosis	ICD-10-CM
Z3761	Any	Triplets, some liveborn	Diagnosis	ICD-10-CM
Z3762	Any	Quadruplets, some liveborn	Diagnosis	ICD-10-CM
Z3763	Any	Quintuplets, some liveborn	Diagnosis	ICD-10-CM
Z3764	Any	Sextuplets, some liveborn	Diagnosis	ICD-10-CM
Z377	Any	Other multiple births, all stillborn	Diagnosis	ICD-10-CM

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

Query period: January 1, 2010 - February 29, 2020
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest				Inclusion Criteria							
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
1	Live birth delivery	Inpatient hospital stay (IP*)	Any diagnostic position	All valid index dates during query period	301	Live birth or Stillbirth delivery	Death; Data Partner End Date	Heart failure diagnosis (broad definition)	1	Inpatient (IP/IS)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	2	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								<u>AND</u> Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)	Any diagnostic position	(-179, -1) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								<u>AND</u> Dispensing of oral heart failure-related medication	1	Outpatient pharmacy dispensing	N/A	(+/- 60 days) of HF diagnosis

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

Query period: January 1, 2010 - February 29, 2020
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest				Inclusion Criteria							
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
2	Stillbirth delivery	Any care setting	Any diagnostic position	All valid index dates during query period	301	Live birth or Stillbirth delivery	Death; Data Partner End Date	Heart failure diagnosis (broad definition)	1	Inpatient (IP/IS)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	2	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								<u>AND</u> Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)	Any diagnostic position	(-179, -1) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								<u>AND</u> Dispensing of oral heart failure-related medication	1	Outpatient pharmacy dispensing	N/A	(+/- 60 days) of HF diagnosis

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

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Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest				Inclusion Criteria							
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
3	Live birth delivery	Inpatient hospital stay (IP*)	Any diagnostic position	All valid index dates during query period	301	Live birth or Stillbirth delivery	Death; Data Partner End Date	Heart failure diagnosis (broad definition)	1	Inpatient (IP/IS)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Heart failure diagnosis (broad definition)	2	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
	Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)					Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery			
	<u>AND</u> Heart failure diagnosis (broad definition)	1	Outpatient (AV/OA)					Any diagnostic position	(-179, -1) prior to live birth or stillbirth delivery			
	<u>OR</u> Still birth delivery	Any care setting	Heart failure diagnosis (broad definition)					1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery	
			<u>AND</u> Dispensing of oral heart failure-related medication					1	Outpatient pharmacy dispensing	N/A	(+/- 60 days) of HF diagnosis	

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

Query period: January 1, 2010 - February 29, 2020
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest					Inclusion Criteria						
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
4	Live birth delivery	Inpatient hospital stay (IP*)	Any diagnostic position	All valid index dates during query period	301	Live birth or Stillbirth delivery	Death; Data Partner End Date	Reduced ejection fraction heart failure diagnosis	1	Inpatient (IP/IS)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	2	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								AND Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-179, -1) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								AND Dispensing of oral heart failure-related medication	1	Outpatient pharmacy dispensing	N/A	(+/- 60 days) of HF diagnosis

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

Query period: January 1, 2010 - February 29, 2020
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest						Inclusion Criteria					
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
5	Stillbirth delivery	Any care setting	Any diagnostic position	All valid index dates during query period	301	Live birth or Stillbirth delivery	Death; Data Partner End Date	Reduced ejection fraction heart failure diagnosis	1	Inpatient (IP/IS)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	2	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								AND Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-179, -1) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								AND Dispensing of oral heart failure-related medication	1	Outpatient pharmacy dispensing	N/A	(+/- 60 days) of HF diagnosis

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

Query period: January 1, 2010 - February 29, 2020
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest						Inclusion Criteria					
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
6	Live birth delivery	Inpatient hospital stay (IP*)	Any diagnostic position	All valid index dates during query period	301	Live birth or Stillbirth delivery	Death; Data Partner End Date	Reduced ejection fraction heart failure diagnosis	1	Inpatient (IP/IS)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	2	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
								Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
	AND Reduced ejection fraction heart failure diagnosis	1						Outpatient (AV/OA)	Any diagnostic position	(-179, -1) prior to live birth or stillbirth delivery		
	OR Still birth delivery	Any care setting						Reduced ejection fraction heart failure diagnosis	1	Outpatient (AV/OA)	Any diagnostic position	(-480, -180) prior to live birth or stillbirth delivery
	AND Dispensing of oral heart failure-related medication							1	Outpatient pharmacy dispensing	N/A	(+/- 60 days) of HF diagnosis	

Appendix F. Specifications Defining Cohort Entry for this Request

This request contains estimates of live birth or stillbirth delivery among women with heart failure (HF) in the Sentinel Distributed Database (SDD)

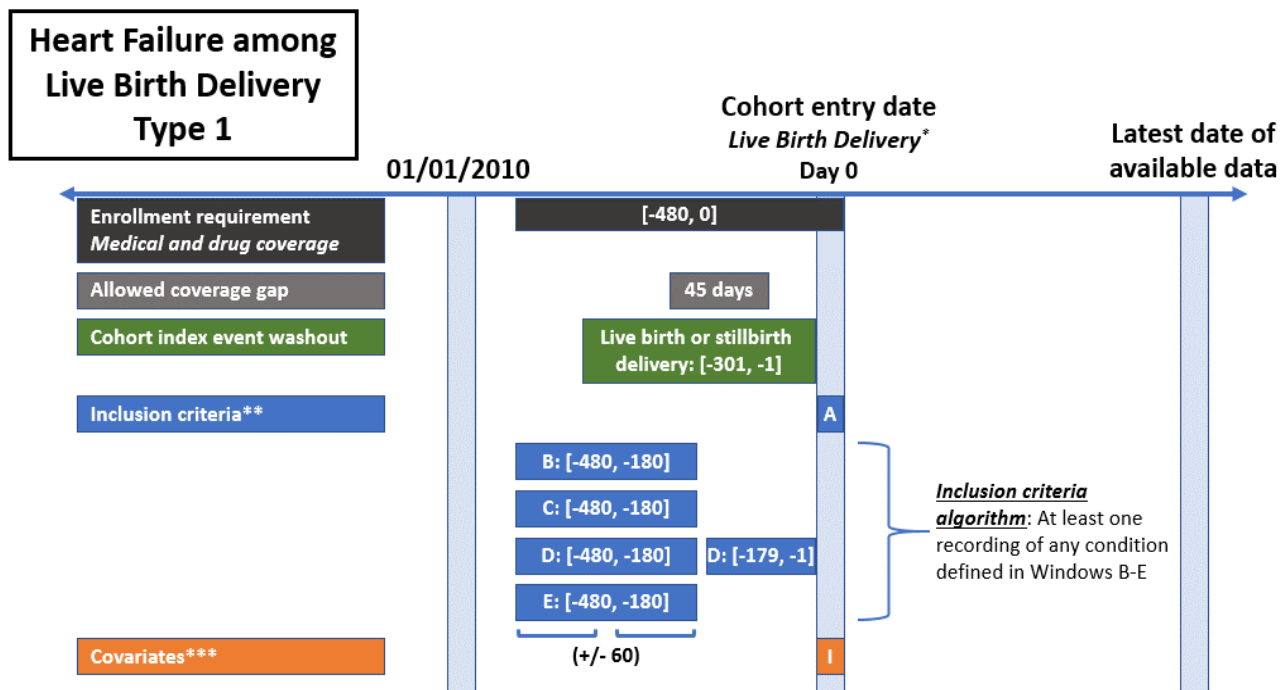
Query period: January 1, 2010 - February 29, 2020
Coverage requirement: Medical & Drug Coverage
Pre-index enrollment requirement: 480 days
Enrollment gap: 45 days
Age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54 years
Stratifications: Age group, Calendar year

Scenario	Index Event of Interest				Inclusion Criteria							
	Index Event	Care setting	Principal diagnosis position	Cohort definition	Washout period (days)	Incident with respect to:	Censor enrollment at evidence of	Condition	Number of instances required to define condition	Care setting	Principal diagnosis position	Evaluation period prior to delivery (days)
7	Live birth delivery	Inpatient hospital stay (IP*)	Any diagnostic position	All valid index dates during query period	N/A	N/A	Death; Data Partner End Date	N/A	N/A	N/A	N/A	N/A
8	Stillbirth delivery	Any care setting	Any diagnostic position	All valid index dates during query period	N/A	N/A	Death; Data Partner End Date	N/A	N/A	N/A	N/A	N/A
9	Live birth delivery OR Still birth delivery	Inpatient hospital stay (IP*) Any care setting	Any diagnostic position	All valid index dates during query period	N/A	N/A	Death; Data Partner End Date	N/A	N/A	N/A	N/A	N/A

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

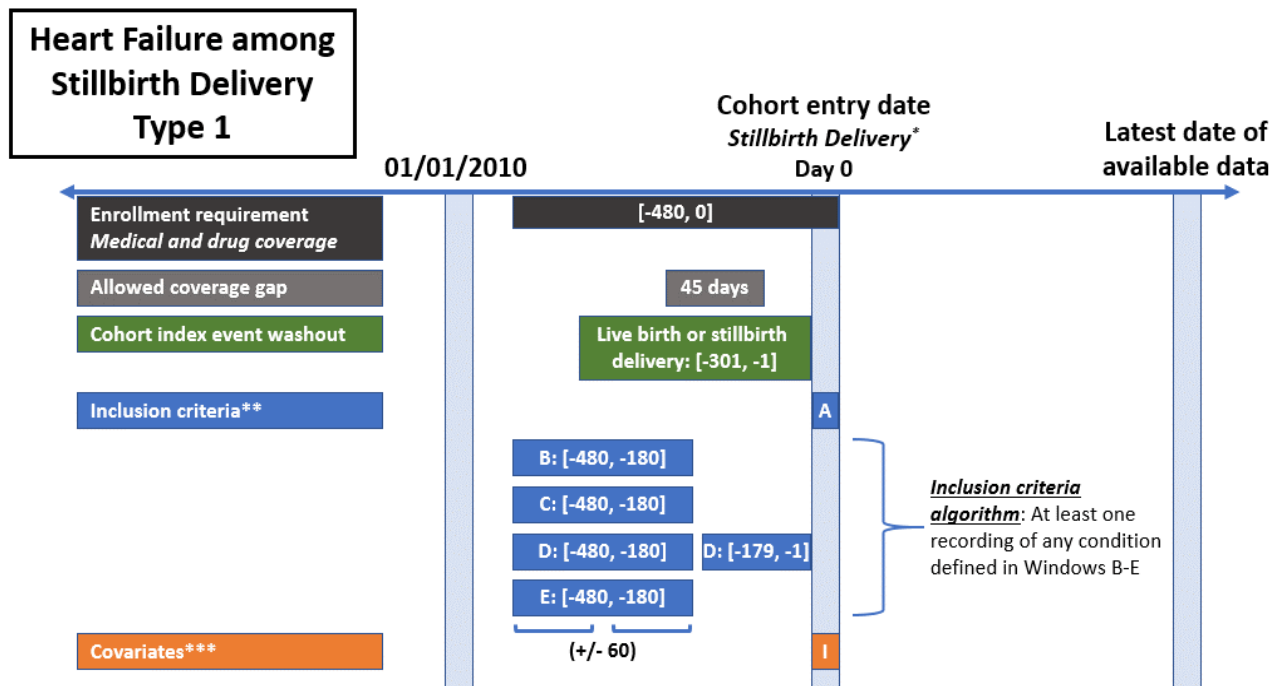
National Drug Codes (NDC) are checked against First Data Bank's "FDB MedKnowledge®."

Appendix G. Diagrams Detailing the Design of the Request



*Index Care Setting	**Inclusion Criteria	***Covariates:
Inpatient (IP), any diagnostic position	Window A: Female sex; aged 15-54 years	Window I: Age, Year
	Window B: 1 inpatient (IP/IS) HF diagnosis <u>OR</u>	
	Window C: 2 outpatient (AV/OA) HF diagnoses <u>OR</u>	
	Window D: 1 outpatient (AV/OA) HF diagnosis in both evaluation windows <u>OR</u>	
	Window E: 1 outpatient (AV/OA) HF diagnosis and an oral HF-related medication dispensed (+/- 60 days) of diagnosis	

Appendix G. Diagrams Detailing the Design of the Request



***Index Care Setting**
Any care setting

****Inclusion Criteria**
Window A: Female sex; aged 15-54 years

*****Covariates:**
Window I: Age, Year

Window B: 1 inpatient (IP/IS) HF diagnosis *OR*

Window C: 2 outpatient (AV/OA) HF diagnoses *OR*

Window D: 1 outpatient (AV/OA) HF diagnosis in both evaluation windows *OR*

Window E: 1 outpatient (AV/OA) HF diagnosis and an oral HF-related medication dispensed (+/- 60 days) of diagnosis