

Maternity Care Ratings 2013 Methodology

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Introduction

To help consumers evaluate and compare hospital performance in maternity care, Healthgrades analyzed patient outcome data for virtually every hospital in the 18 states that provide all-payer state data for years 2009 through 2011.

Maternity Care refers to care provided to mothers during and after childbirth or for the care of their newborn babies. It includes the period of time in which a woman is pregnant or has just given birth to a child. Healthgrades Maternity Care ratings are available at www.Healthgrades.com.

Data Source

Healthgrades purchased the initial patient-level data for all states that made their data available. The data represent three years of discharges (2009 – 2011). These data were chosen because they represent all discharges for the associated states. The 18 all-payer states evaluated were as follows:

- Arizona
- California
- Colorado
- Florida
- Iowa
- Maryland
- Massachusetts
- Nevada
- New Jersey
- New York
- Oregon
- Pennsylvania
- Rhode Island
- Texas
- Utah
- Virginia
- Washington
- Wisconsin

Determining Maternity Care Ratings

Maternity Care ratings are based on the analysis of four factors:

- Maternal complication rate among women undergoing single live-born vaginal deliveries
- Maternal complication rate among women undergoing single live-born C-section deliveries
- Newborn volume adjusted for low birth weight
- Newborn mortality risk-adjusted using eight birth weight categories and congenital risk factors developed by the Agency for Healthcare Research and Quality

Maternal Vaginal and C-section Deliveries

For the Healthgrades maternal complication rate calculations, only women with single live-born deliveries were considered. A list of the DRGs (Diagnosis Related Groups) and diagnosis codes used by Healthgrades to identify patients can be found in *Appendix A*. The following records were excluded from the analysis:

- Patients with a code of V23.7 Insufficient Prenatal Care
- Patients under the age of 18 or over the age of 55 (except for California*)
- Patients whose sex were listed as male or unknown (except for California*)
- Patients who left against medical advice, were still in the hospital, were transferred to another acute care facility, or whose discharge status was unknown

*California data were treated differently due to intentional data masking done by the state.

Maternal Complication Rate: Vaginal and C-section Single Live-Born Deliveries

For the patient population determined above, the rate of complications was calculated for both vaginal and C-section deliveries. A list of the complication codes analyzed can be found in *Appendix B*.

Percentiles were calculated for each measure (vaginal or C-section delivery complication rates). Lower complication rates correspond to lower percentiles.

Newborn Volume Adjusted for Birth Weight

To adjust for hospitals with specialized neonatal services that receive higher rates of low birth weight newborns, Healthgrades calculated a newborn birth weight-adjusted volume score for each hospital. For each hospital, a percentile was calculated based on the overall volume of single live-born deliveries and the percentage of neonates born into the 1,000 to 1,749 gram weight category. Higher volumes in both categories fall into lower percentiles.

This combination of birth weight and volume adjusts for hospitals that have more difficult cases. The measure was developed using "discriminant analysis" – a statistical method that, in this case, was used to create a prediction equation indicating the presence of a Newborn Intensive Care Unit. Hospitals with newborn intensive care units attract the most difficult pregnancies. With the discriminant analysis approach, numerous factors, including diagnoses and procedures, were included and only the factors that provided the best prediction remained. In this case, volume and neonates in the 1,000 to 1,749 gram weight category provided the best prediction of the presence of a newborn intensive care unit.

A percentile is calculated for each hospital based on the discriminant function, and hospitals with the greatest number of births and the highest percentages of neonates in the 1,000 to 1,749 gram category fall into the lowest percentile.

Newborn Risk-Adjusted Mortality

Healthgrades identified single live-born newborns that were not transferred in or out of the hospital. Codes are listed in *Appendix A*.

To preserve the integrity of the calculation for newborn mortality, Healthgrades conducted a series of data quality checks. Based on the results of these checks, Healthgrades excluded a limited number of cases because they were inappropriate for inclusion based on missing data or other reasons as listed below. Examples of excluded patient records for newborn mortality are:

- Patients over the age of 0 or whose age was unknown (except for California*)
- Patients who had multiple weights in two or more categories for the same admission
- Patients who left against medical advice, were still in the hospital, or whose discharge status was unknown
- Patients having diagnosis codes indicating congenital defects or other conditions that would be incompatible with a live birth (see *Appendix C*)
- Patients with birth weights less than 500 grams
- Patients who were transferred to another acute care facility or from any facility

*California data were treated differently due to intentional data masking done by the state.

Newborn risk-adjusted mortality rates were determined using a multivariate logistic regression model. We utilized eight neonate weight categories and congenital risk factor categories developed by the Agency for Healthcare Research and Quality (Risk Adjustment Coefficients for the PDI. Version 4.2, September 2010. Available at: http://www.qualityindicators.ahrq.gov/Modules/pdi_resources.aspx) as potential risk factors, and using logistic regression determined which of these potential risk factors were statistically important in predicting mortality.

Using the model above, a predicted probability of mortality was calculated for each newborn. The individual predicted probabilities were summed to get an overall predicted number of deaths for the hospital, and this was compared to the actual mortality. The z-score between the predicted and actual was calculated using the standard deviation, and then ordered from lowest to highest.

Newborn mortality outcomes are measured by Newborn Survival ratings:

- Better than expected – Fewer newborn mortalities than expected
- As expected – About the same newborn mortalities as expected
- Worse than expected – More newborn mortalities than expected

Low percentiles corresponded to the hospitals that had fewer deaths than expected, and the greatest statistical significance associated with this difference.

Assignment of Maternity Care Star Ratings

The four factors were weighted equally. Based upon each hospital's overall percentile, Healthgrades applied the following rating system.

- ★★★★★ **Better than Average** – Top 15% of all hospitals within 18 all-payer states
- ★★★ **Average** – Middle 70% of all hospitals within 18 all-payer states
- ★ **Worse than Average** – Bottom 15% of all hospitals within 18 all-payer states

The top 10% of hospitals were selected as Healthgrades Maternity Care Excellence Award™ recipients. For details on the Maternity Care Excellence Award™ methodology, see the Healthgrades Specialty Excellence Award and America's 100 Best Hospitals for Specialty Care™ 2013 Methodology on the Internet at www.Healthgrades.com

Limitations of the Data Analysis

While these analyses may be valuable in identifying hospitals that perform better than others, one should not use this information alone to determine the quality of care provided at each hospital. The analyses are limited by the following factors:

- Cases may have been coded incorrectly or incompletely by the hospital.
- Healthgrades conditions and procedures models can only account for risk factors that are coded into the billing data. Therefore, if a particular risk factor was not coded into the billing data (such as a patient's socioeconomic status and health behavior) then it was not accounted for.
- Although Healthgrades has taken steps to carefully compile these data, no techniques are infallible; therefore, some information may be missing, outdated or incorrect.

Please note that a high ranking for a particular hospital is not a recommendation or endorsement by Health Grades, Inc. of a particular hospital; it means that the data associated with a particular hospital has met the foregoing qualifications. Only individual patients can decide whether a particular hospital is suited for their unique needs.

Also note that if more than one hospital reported under a single provider ID, Healthgrades analyzed patient outcome data for those hospitals as a single unit. Throughout this document, therefore, "hospital" refers to one hospital or a group of hospitals reporting under a single provider ID.

Appendix A. Patient Cohorts and Related ICD-9-CM Codes

Cesarean Section with Single Birth

Inclusions

Diagnosis Related Groups: 765, 766

Exclusions

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 765, 766

Diagnoses (Primary or Secondary): 651.00, 651.01, 651.03, 651.10, 651.11, 651.13, 651.20, 651.21, 651.23, 651.30, 651.31, 651.33, 651.40, 651.41, 651.43, 651.50, 651.51, 651.53, 651.60, 651.61, 651.63, 651.70, 651.71, 651.73, 651.80, 651.81, 651.83, 651.90, 651.91, 651.93, 652.61, 660.50, 660.51, 660.53, 678.10, 678.11, 678.13, 996.8, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V23.7, V27.1, V27.2, V27.3, V27.4, V27.5, V27.6, V27.7, V27.9, V32.00, V32.01, V32.1, V32.2, V33.01, V33.1, V33.2, V34.00, V34.01, V34.1, V34.2, V35.00, V35.01, V35.1, V35.2, V36.00, V36.01, V36.1, V36.2, V37.00, V37.01, V37.1, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V91.00, V91.01, V91.02, V91.03, V91.09, V91.10, V91.11, V91.12, V91.19, V91.20, V91.21, V91.22, V91.29, V91.90, V91.91, V91.92, V91.99

Vaginal Delivery with Single Birth

Inclusions

Diagnosis Related Groups: 767, 768, 774, 775

Exclusions

Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63, 74.0, 74.1, 74.2, 74.4, 74.99, 767, 768, 774, 775

Diagnoses (Primary or Secondary): 651.00, 651.01, 651.03, 651.10, 651.11, 651.13, 651.20, 651.21, 651.23, 651.30, 651.31, 651.33, 651.40, 651.41, 651.43, 651.50, 651.51, 651.53, 651.60, 651.61, 651.63, 651.70, 651.71, 651.73, 651.80, 651.81, 651.83, 651.90, 651.91, 651.93, 652.61, 660.50, 660.51, 660.53, 678.10, 678.11, 678.13, 996.8, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V23.7, V27.1, V27.2, V27.3, V27.4, V27.5, V27.6, V27.7, V27.9, V32.00, V32.01, V32.1, V32.2, V33.01, V33.1, V33.2, V34.00, V34.01, V34.1, V34.2, V35.00, V35.01, V35.1, V35.2, V36.00, V36.01, V36.1, V36.2, V37.00, V37.01, V37.1, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V91.00, V91.01, V91.02, V91.03, V91.09, V91.10, V91.11, V91.12, V91.19, V91.20, V91.21, V91.22, V91.29, V91.90, V91.91, V91.92, V91.99

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Patient Cohorts and Related ICD-9-CM Codes (continued)

Newborn Mortality
Inclusions
Diagnoses (Primary or Secondary): 764.02, 764.03, 764.04, 764.05, 764.06, 764.07, 764.08, 764.09, 764.12, 764.13, 764.14, 764.15, 764.16, 764.17, 764.18, 764.19, 764.22, 764.23, 764.24, 764.25, 764.26, 764.27, 764.28, 764.29, 764.92, 764.93, 764.94, 764.95, 764.96, 764.97, 764.98, 764.99, 765.02, 765.03, 765.04, 765.05, 765.06, 765.07, 765.08, 765.09, 765.12, 765.13, 765.14, 765.15, 765.16, 765.17, 765.18, 765.19, V30.00, V30.01
Congenital Condition Exclusions
Central Nervous System: Excluding patients with diagnosis codes 740.0 Anencephalus, 740.1 Craniorachischis, 740.2 Inencephaly, 742.1 Microcephalus, 742.2 Reduction deformities of brain
Cardiac: Excluding patients with diagnosis codes 745.7 Cor biloculare, 746.7 Hypoplastic left heart syndrome, 746.82 Cor triatriatum, 747.22 Atresia & stenosis of aorta, 745.10 Complete transposition of great vessels
Renal: Excluding patients with diagnosis codes 753.0 Renal agenesis & dysgenesis (only if bilateral)
Chromosomal: Excluding patients with diagnosis codes 758.1 Patau's syndrome (trisomy 13), 758.2 Edward's syndrome (trisomy 18)
Respiratory: Excluding patients with diagnosis codes 748.5 Lung agenesis/Hypoplasia, Aplasia of lung, Hypoplasia of lung (lobe), Sequestration of lung. An argument can be made that not all are fatal (e.g., hypoplasia if unilateral). Due to the high frequency of associated malformations, the mortality rate is variable but high.
Multiple Birth Exclusions
Multiple Births - Diagnoses (Primary or Secondary): 759.4, V31.00, V31.01, V31.1, V31.2, V32.00, V32.01, V32.1, V32.2, V33.00, V33.01, V33.1, V33.2, V34.00, V34.01, V34.1, V34.2, V35.00, V35.01, V35.1, V35.2, V36.00, V36.01, V36.1, V36.2, V37.00, V37.01, V37.1
Other Exclusions
Procedures (Primary or Secondary): 37.51, 37.52, 37.53, 37.54, 37.62, 37.63 Diagnoses (Primary or Secondary): 764.00, 764.01, 764.10, 764.11, 764.20, 764.21, 764.90, 764.91, 765.00, 765.01, 765.10, 765.11, 996.8, 996.80, 996.81, 996.82, 996.83, 996.84, 996.85, 996.86, 996.87, 996.89, V42.0, V42.1, V42.4, V42.6, V42.7, V42.81, V42.82, V42.83, V42.84, V42.89, V42.9, V66.7

Appendix B. Maternity Care Complications

Maternity Care—Vaginal Delivery

038.0	STREPTOCOCCAL SEPTICEMIA	673.21	OB BLOOD-CLOT EMBOL-DEL
038.10	STAPH SEPTICEMIA NOS	673.22	OB BLD-CLOT EMBOL-DEL PP
038.11	MSSA SEPTICEMIA	673.23	OB BLOOD-CLOT EMBOL-AP
038.12	MRSA SEPTICEMIA	673.24	OB BLOOD-CLOT EMBOL-PP
038.19	STAPH SEPTICEMIA NEC	673.30	OB PYEMIC EMBOLISM-NOS
038.2	PNEUMOCOCCAL SEPTICEMIA	673.31	OB PYEMIC EMBOL-DEL
038.3	ANAEROBIC SEPTICEMIA	673.32	OB PYEMIC EMBOL-DEL PP
038.40	GRAM-NEG SEPTICEMIA NOS	673.33	OB PYEMIC EMBOL-AP
038.41	H. INFLUENZAE SEPTICEMIA	673.34	OB PYEMIC EMBOL-PP
038.42	E. COLI SEPTICEMIA	673.80	OB PULMON EMBOL NEC-NOS
038.43	PSEUDOMONAS SEPTICEMIA	673.81	OB PULMON EMBOL NEC-DEL
038.44	SERRATIA SEPTICEMIA	673.82	OB PULMON EMBOL-DEL PP
038.49	GRAM-NEG SEPTICEMIA NEC	673.83	OB PULMON EMBOL NEC-AP
038.8	SEPTICEMIA NEC	673.84	OB PULMON EMBOL NEC-PP
038.9	SEPTICEMIA NOS	785.51	CARDIOGENIC SHOCK
512.1	IATROGENIC PNEUMOTHORAX	785.59	SHOCK W/O TRAUMA NEC
518.4	ACUTE LUNG EDEMA NOS	996.31	MECH COMP URETHRAL CATH
518.7	TRALI	996.60	INFECT DUE TO DEVICE NOS
518.81	AC RESPIRATORY FAILURE	996.62	INFECT D/T VASC DEVICE
584.5	AC KF W TUBULAR NEPHR	997.00	NERV SYST SURG COMP NOS
584.8	ACUTE KIDNEY FAILURE NEC	997.01	CNS SURG COMP
584.9	ACUTE KIDNEY FAILURE NOS	997.02	IATROGEN CV INFARCT/HEM
664.21	DEL W 3 DEGREE LAC-DEL	997.09	NERV SYST SURG COMP NEC
664.31	DEL W 4 DEGREE LAC-DEL	997.1	SURG COMP-HEART
665.10	RUPTURE UTERUS NOS-NOS	997.3	SURG COMP-RESP NEC
665.11	RUPTURE UTERUS NOS-DEL	997.32	POSTPX ASP PNEUMONIA
665.22	INVERSION UTERUS-DEL PP	997.39	OTH SURG COMP-RESP
665.31	LACERATION OF CERVIX-DEL	997.4	SURG COMP-DIGESTIVE
665.41	HIGH VAGINAL LAC-DEL	997.5	SURG COMP-URINARY NEC
666.02	3RD STAGE PP HEMOR-DEL	997.91	SURG COMP-HYPERTENSION
666.04	3RD STAGE PP HEMOR-PP	998.0	POSTOPERATIVE SHOCK
666.10	IMMED PP HEMOR NEC-NOS	998.00	POSTOP SHOCK NOS
666.12	IMMED PP HEMOR NEC-DEL	998.01	POSTOP CARDIOGENIC SHOCK
666.14	IMMED PP HEMOR NEC-PP	998.02	POSTOP SEPTIC SHOCK
666.20	DELAYED PP HEMOR-NOS	998.09	POSTOP SHOCK NEC
666.22	DELAYED PP HEMOR-DEL PP	998.11	HEMORRHAGE COMP PX
666.24	DELAYED PP HEMOR-PP	998.2	ACCIDENTAL OP LACERATION
667.02	RET PLAC S HEMOR-DEL PP	998.3	WOUND DISRUPTION
668.02	ANES PULM COMP DEL-DELPP	998.4	FB LEFT DURING PROCEDURE
668.12	ANES CARD COMP DEL-DELPP	998.59	POSTOP INFECTION NEC
668.14	ANES CARD COMP DEL-PP	998.7	POSTOP FOREIGN SUBST RXN
668.22	ANES CNS COMP DEL-DEL PP	998.81	EMPHYSEMA DUE TO PX
668.82	ANES COMP DEL NEC-DEL PP	998.9	SURGICAL COMP NOS
669.12	OBSTETRIC SHOCK-DEL PP	999.1	AIR EMBOL COMP MED CARE
669.14	OBSTETRIC SHOCK-PP	999.2	VASC COMP MED CARE NEC
670.02	MAJ PP INFECT NOS-DEL PP	999.3	OTH INFECT COMP MED CARE
670.12	PP ENDOMETRITIS-DEL PP	999.31	INFECT NEC & NOS D/T CVC
670.14	PP ENDOMETRITIS-PP	999.32	BLOODSTREAM INF D/T CVC
670.22	PUERPERAL SEPSIS-DEL PP	999.34	AC INF POST TRANSFUSION
670.24	PUERPERAL SEPSIS-PP	999.39	INFECT COMP MED CARE NEC
670.32	PP SEPTIC TP-DEL PP	999.4	ANAPHYLACTIC RXN-SERUM
670.34	PP SEPTIC TP-PP	999.5	OTH SERUM REACTION NEC
670.82	MAJ PP INFECT NEC-DEL PP	999.6	ABOI RXN D/T TRANSFUSION
670.84	MAJ PP INFECT NEC-PP	999.7	RH/NON-ABOI RXN-TRANSFUS
673.00	OB AIR EMBOLISM-NOS	999.8	TRANSF/INFUS RXN NEC&NOS
673.01	OB AIR EMBOLISM-DEL	999.80	TRANSFUSION REACTION NOS
673.02	OB AIR EMBOLISM-DEL PP	999.83	HTR INCOMPATIBILITY NOS
673.03	OB AIR EMBOLISM-AP	999.84	AHTR INCOMPATIBILITY NOS
673.04	OB AIR EMBOLISM-PP	999.85	DHTR INCOMPATIBILITY NOS
673.20	OB BLOOD-CLOT EMBOL-NOS	999.9	COMP MED CARE NEC & NOS

Maternity Care—C-section Single Delivery

038.0	STREPTOCOCCAL SEPTICEMIA	673.30	OB PYEMIC EMBOLISM-NOS
038.10	STAPH SEPTICEMIA NOS	673.31	OB PYEMIC EMBOL-DEL
038.11	MSSA SEPTICEMIA	673.32	OB PYEMIC EMBOL-DEL PP
038.12	MRSA SEPTICEMIA	673.34	OB PYEMIC EMBOL-PP
038.19	STAPH SEPTICEMIA NEC	673.80	OB PULMON EMBOL NEC-NOS
038.2	PNEUMOCOCCAL SEPTICEMIA	673.81	OB PULMON EMBOL NEC-DEL
038.3	ANAEROBIC SEPTICEMIA	673.82	OB PULMON EMBOL-DEL PP
038.40	GRAM-NEG SEPTICEMIA NOS	673.83	OB PULMON EMBOL NEC-AP
038.41	H. INFLUENZAE SEPTICEMIA	673.84	OB PULMON EMBOL NEC-PP
038.42	E. COLI SEPTICEMIA	674.12	DISRUPT CD WND-DEL PP
038.43	PSEUDOMONAS SEPTICEMIA	674.32	OB SURG COMP NEC-DEL PP
038.44	SERRATIA SEPTICEMIA	785.50	SHOCK NOS
038.49	GRAM-NEG SEPTICEMIA NEC	785.51	CARDIOGENIC SHOCK
038.8	SEPTICEMIA NEC	785.59	SHOCK W/O TRAUMA NEC
038.9	SEPTICEMIA NOS	996.31	MECH COMP URETHRAL CATH
512.1	IATROGENIC PNEUMOTHORAX	996.60	INFECT DUE TO DEVICE NOS
518.4	ACUTE LUNG EDEMA NOS	996.62	INFECT D/T VASC DEVICE
518.7	TRALI	997.00	NERV SYST SURG COMP NOS
518.81	AC RESPIRATORY FAILURE	997.01	CNS SURG COMP
584.5	AC KF W TUBULAR NEPHR	997.02	IATROGEN CV INFARCT/HEM
584.8	ACUTE KIDNEY FAILURE NEC	997.09	NERV SYST SURG COMP NEC
584.9	ACUTE KIDNEY FAILURE NOS	997.1	SURG COMP-HEART
666.00	3RD STAGE PP HEMOR-NOS	997.3	SURG COMP-RESP NEC
666.02	3RD STAGE PP HEMOR-DEL	997.32	POSTPX ASP PNEUMONIA
666.04	3RD STAGE PP HEMOR-PP	997.39	OTH SURG COMP-RESP
666.10	IMMED PP HEMOR NEC-NOS	997.4	SURG COMP-DIGESTIVE
666.12	IMMED PP HEMOR NEC-DEL	997.5	SURG COMP-URINARY NEC
666.14	IMMED PP HEMOR NEC-PP	997.91	SURG COMP-HYPERTENSION
666.20	DELAYED PP HEMOR-NOS	998.0	POSTOPERATIVE SHOCK
666.22	DELAYED PP HEMOR-DEL PP	998.00	POSTOP SHOCK NOS
666.24	DELAYED PP HEMOR-PP	998.01	POSTOP CARDIOGENIC SHOCK
667.02	RET PLAC S HEMOR-DEL PP	998.02	POSTOP SEPTIC SHOCK
668.02	ANES PULM COMP DEL-DELPP	998.09	POSTOP SHOCK NEC
668.04	ANES PULM COMP DEL-PP	998.11	HEMORRHAGE COMP PX
668.12	ANES CARD COMP DEL-DELPP	998.2	ACCIDENTAL OP LACERATION
668.14	ANES CARD COMP DEL-PP	998.3	WOUND DISRUPTION
668.22	ANES CNS COMP DEL-DEL PP	998.4	FB LEFT DURING PROCEDURE
668.24	ANES CNS COMP DEL-PP	998.51	INFECTED POSTOP SEROMA
668.82	ANES COMP DEL NEC-DEL PP	998.59	POSTOP INFECTION NEC
669.42	OTH OB SURG COMP-DEL PP	998.7	POSTOP FOREIGN SUBST RXN
669.44	OTH OB SURG COMP-PP	998.81	EMPHYSEMA DUE TO PX
670.02	MAJ PP INFECT NOS-DEL PP	998.9	SURGICAL COMP NOS
670.12	PP ENDOMETRITIS-DEL PP	999.1	AIR EMBOL COMP MED CARE
670.14	PP ENDOMETRITIS-PP	999.2	VASC COMP MED CARE NEC
670.22	PUERPERAL SEPSIS-DEL PP	999.3	OTH INFECT COMP MED CARE
670.24	PUERPERAL SEPSIS-PP	999.31	INFECT NEC & NOS D/T CVC
670.32	PP SEPTIC TP-DEL PP	999.32	BLOODSTREAM INF D/T CVC
670.34	PP SEPTIC TP-PP	999.34	AC INF POST TRANSFUSION
670.82	MAJ PP INFECT NEC-DEL PP	999.39	INFECT COMP MED CARE NEC
670.84	MAJ PP INFECT NEC-PP	999.4	ANAPHYLACTIC RXN-SERUM
673.00	OB AIR EMBOLISM-NOS	999.5	OTH SERUM REACTION NEC
673.01	OB AIR EMBOLISM-DEL	999.6	ABOI RXN D/T TRANSFUSION
673.02	OB AIR EMBOLISM-DEL PP	999.7	RH/NON-ABOI RXN-TRANSFUS
673.03	OB AIR EMBOLISM-AP	999.8	TRANSF/INFUS RXN NEC&NOS
673.04	OB AIR EMBOLISM-PP	999.80	TRANSFUSION REACTION NOS
673.20	OB BLOOD-CLOT EMBOL-NOS	999.83	HTR INCOMPATIBILITY NOS
673.21	OB BLOOD-CLOT EMBOL-DEL	999.84	AHTR INCOMPATIBILITY NOS
673.22	OB BLD-CLOT EMBOL-DEL PP	999.85	DHTR INCOMPATIBILITY NOS
673.23	OB BLOOD-CLOT EMBOL-AP	999.9	COMP MED CARE NEC & NOS
673.24	OB BLOOD-CLOT EMBOL-PP		