



Improving the quality of
NICU care using state of the art
collaborative Quality Improvement
Methods

CPQCC Network Database

Manual of Definitions For Infants Born in 2017

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CPQCC Manual of Definitions For Infants Born in 2017

This current Manual of Definitions reflects information gathered from collaboration with the Vermont Oxford Network (VON) and an on-going dialogue between our membership and committees. The Data Center would like to thank the Data Center Advisory Group, Data Contacts, doctors, nurses and others who have given us feedback.

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II. MISSION AND GOALS

The California Perinatal Quality Care Collaborative (CPQCC) is an outgrowth of an initiative proposed by the California Association of Neonatologists and supported by the David and Lucile Packard Foundation and the State of California Department of Health Services, Maternal, Child and Adolescent Health Branch. The Collaborative aims to improve the health of pregnant women, infants and children by collecting high quality information on perinatal outcomes and resource utilization, which will then allow for performance improvement and benchmarking processes in perinatal care and neonatal intensive care units (NICUs) throughout California.

III. CPQCC AND VERMONT OXFORD NETWORK

The CPQCC Data System builds upon Vermont Oxford Network's (VON) neonatal system for very low birth weight babies (VLBW). CPQCC selected the VON system because of its unique history of data collection, analysis, and quality improvement efforts utilizing simple forms and uniform definitions. All members of CPQCC are members of the Vermont Oxford Network with full access to Vermont Oxford Network services including Annual Quality Management Reports and the Nightingale internet reporting system. The CPQCC Data Center is also working with experts in California to link the current CPQCC database to several existing California perinatal data systems on statewide births and deaths, maternal and newborn discharges, hospitalization rates, and the costs of care. This manual contains copyrighted material of the Vermont Oxford Network, which is used, with the permission of the Vermont Oxford Network.

IV. DATA COLLECTION

Starting with infants born in 2005, the previous two CPQCC datasets (i.e., the Small Baby Dataset with birth weight 401-1500 grams and the Big Baby Dataset with selected infants with birth weights >1500 grams) have been combined into one new dataset for all CPQCC eligible infants. Since 2013, CPQCC expanded the Small Baby database to include infants who have the gestational age between 30 0/7 to 31 6/7 in order to accurately capture the study population mandated by the Joint Commission for measure PC-03 Antenatal Steroid Administration. Therefore, any infant with the birth weight of 401-1500 grams and/or gestational age of 22 0/7 to 31 6/7 will be eligible for the CPQCC Network Database.

In addition, expanding the Small Baby database eligibility will also allow CPQCC to align with the CCS HRIF Small Baby eligibility criteria which currently includes infants with "birth weight less than or equal to 1500 grams or the gestational age at birth was less than 32 weeks." Since 2013, CPQCC has expanded the Big Baby database to include infants who are admitted to your NICU by Day 28 and have a diagnosis of suspected encephalopathy or suspected perinatal asphyxia and/or receive active therapeutic hypothermia. The rationale for adding these criteria result from recent findings from the analysis of the 2010 CPeTS database that a fair number of babies being cooled did not meet the HIE definition.⁴ In addition, expanding the Big Baby database eligibility will allow CPQCC to align with the CCS HRIF Big Baby selection criteria for HIE.

We would like to encourage our members to utilize the on-line CCS Supplemental Form as an added data validation tool.

On our web site, www.cpqcc.org, you will find updates to this Manual, a list of participating hospitals, a list of Data Contacts with contact information, OSHPD codes, and electronic versions of the data collection forms.

On our website, www.cpqccdata.org, you can access a secure and comprehensive database management tool regardless if you choose to submit data via electronic data submission or on-line.

On our web site, www.cpqccreport.org, you can access the CPQCC Annual Quality Management Reports starting with Birth Year 2002.

V. 2017 ADMISSION/ DISCHARGE FORM

Data Forms. Since 2005, Big Baby or Small Baby data forms are no longer used for CPQCC. There is only one form, the 2017 Admission/Discharge Form, which should be used on all infants that are eligible for inclusion in the 2017 dataset. This is an on-line form found by logging on to the www.cpqccdata.org site.

Data Submission. All data submission is done on-line or by Electronic Data Submission (EDS) at the time of admission or discharge. There is no longer a 28-Day form as was used previously with the Small Baby dataset.

Assignment of IDs. For the current dataset, the unit of analysis is unique infants cared for at your center, whether over one admission or multiple admissions. All data forms are updated to include information from the first readmission ONLY. New ID numbers are not assigned when infants are readmitted to your center from another hospital.

In summary, any Small Baby infant is automatically eligible into the CPQCC database. However, any Small Baby infant who was previously discharged home from a hospital will not be forwarded to VON.

➤ **Note:**

Reassignment of New IDs for infants discharged home then readmitted back to your center. New ID Numbers MUST be assigned if a baby is discharged home from your center, AND THEN readmitted back to your center. For the situation in which a baby is born at your center, then sent home and then after the home discharge is re-admitted to your center, you need to: 1) Fill out a new form and assign a new network ID number 2) check the baby as Outborn (Item 7a), 3) check the age in days at the re-admission (Item 7b), and 4) check your own center as the location of birth (Item 7c). Refer to XII. Procedures for Completing Forms and XIV. Definitions of Data Items for specific instructions.

➤ **Note:**

Deletion of IDs. If an ineligible infant is incorrectly entered into the database, the particular ID will be deleted. Once this ID is deleted, it cannot be re-used or re-assigned to another infant if the original ID number was used for a Small Baby. However, if the original ID number was used for a Big Baby then you MUST contact the Data Center to delete the ID so that it is reusable. A list of deleted IDs is reflected in your Error and Warning Reports. Refer to Section X. How the Database Works, CPQCC ID Numbers and Logs.

Web-based Data Entry System. Since 2006 we have provided value to our Members by providing access to the Web-based Data Entry System, a secure and comprehensive database management tool regardless if you choose to submit data through electronic data submission, or on-line. Each CPQCC Member is assigned a username and password to access the secure CPQCC website www.cpqccdata.org. As of 2007, paper submissions are no longer accepted.

Data definitions developed by CPQCC are consistent with the VLBW definitions developed by VON wherever feasible. CPQCC and VON are committed to using the identical data definitions to the greatest possible extent, to promote database compatibility.

Please use this CPQCC Manual of Operations for instructions in completing the 2017 Admission/Discharge data forms. Also, please note that for 2017, all data must be recorded onto the new CPQCC 2017 Admission/Discharge on-line form, which is available at the CPQCC web site (www.cpqcc.org). Any forms released by VON or old 2008 data forms will not be compatible with the 2017 CPQCC data entry system, and should not be used.

If your center submits data electronically, please submit a Help Desk Ticket at cpqccsupport.org for more information regarding 2017 EDS data specifications and procedures or visit www.cpqcc.org to download the 2017 Member Instructions for Electronic Data Submission.

If your center reports data using the web-based data-entry system, please submit a Help Desk ticket via www.cpqccsupport.org, for more information regarding 2017 procedures or visit www.cpqcc.org to download the Member Instructions for the On-line Web-based Data Entry System.

VI. NEW AND REVISED DATA ITEMS

The CPQCC Data System builds upon Vermont Oxford Network's (VON) neonatal system for very low birth weight babies (VLBW). As a result of recent changes made by VON to their dataset, the following new and revised data items have been implemented for infants in 2017. The following list highlights these revisions to our forms and Manual for 2017. Exact definitions of new items are provided in Section XIII. Definitions of Data Items.

I. CPQCC Eligibility Criteria

There will be no mandated changes to the CPQCC Eligibility Criteria for the 2017 CPQCC Network Database.

II. New and Revised Items for the CPeTS Transport Form

Starting in 2017 CPeTS has mandated the following changes:

1. Changed "**Referral**" to "**Patient Diagnosis**" this change will be on the paper form and online form.
2. Changed "**Patient Identification/History**" to "**Critical Background Information**" this change will be on the paper form ONLY.
3. ~~Item C.2 Indication for Transport [T_TRANSCODE]~~ "**Convalescent**" added as an answer choice to the online and paper form.

2 = Medical Services

3 = Surgery

4 = Convalescent

6 = Insurance

8 = Bed Availability

Select **Medical services** if the infant was transported for medical problems that require acute resolution.

Select **Surgery** if the infant was transported primarily for major invasive surgery (requiring general anesthesia or its equivalent).

Select **Convalescent** if the infant was transported for convalescent or hospice care.

Select **Insurance** if the infant was transported for insurance purposes.

Select **Bed Availability** if the infant was transported due to bed availability issues at the referring facility.

4. Moved **Item C3b. Birth Head Circumference [BHEADCIR]** next to **Item C.3a Birth Weight [T_BWGT]** this change will be on the paper form ONLY

5. **Item C.7a Maternal Gravida [T_GRAVIDA]**, will be removed from the paper and online form. **"Prolonged Rupture of Membranes (> 18 hours)"** will replace this item on the paper form ONLY.

Select **Yes** if the rupture of the membranes is more than 18 hours prior to birth of the infant.

Select **No** if the rupture of the membranes is not more than 18 hours prior to birth of the infant.

Select **Unknown** if this information cannot be obtained.

6. **Item C.7b Labor Type** will be replaced by **Item C.7b Delivery Mode [DELMOD]**. This will be added to the paper form ONLY.

Select **Spontaneous Vaginal** for a Normal Vaginal delivery. This is any vaginal delivery for which instruments were not used. This includes cases where manual rotations or other head or shoulder maneuvers were used, provided instruments were not also used.

Select **Operative Vaginal** for any vaginal delivery for which any instrumentation (forceps, vacuum) was used. Episiotomies are not considered operative deliveries.

Select **Cesarean** for any abdominal delivery.

Select **Unknown** if this information cannot be obtained.

7. **Item C.8b Steroids [ASTER]**, changed to **"Antenatal Steroids"**. This change will be on the paper form ONLY.

Select **Yes** if corticosteroids were administered IM or IV to the mother during pregnancy at any time prior to delivery. Corticosteroids include betamethasone, dexamethasone, and hydrocortisone.

Select **No** if antenatal corticosteroids were not administered to the mother during

pregnancy at any time prior to delivery or if there is no documentation in the medical record that antenatal steroid therapy was initiated before delivery.

Select **Unknown** if this information cannot be obtained (e.g. missing records from a referring hospital).

8. **Item C.9 Surfactant Given [T_SURFX]**, removed from the paper form ONLY. This information will be collected in **Item C.13 Surfactant First Dose [T_SURFXDATETIME]** on the paper form.

9. **Item C.11 Last Antenatal Steroid Administration (last dose) [T_ASTERDATETIME]** has been removed from the paper form, this is greyed out on the online form.

10. **Item C.21c Method of Cooling for HIE [T_COOLING1], [T_COOLING2], [T_COOLING3]**, definition changed from “**Selective Body**” to “**Whole Body**” for the paper form ONLY.

1=Passive

2=Selective Head

3=Whole Body

4=Other

9=Unknown

Select **Passive** if cooling was intentionally withholding standard temperature maintenance strategies for the purpose of achieving low temperature. If passive cooling is only used until head or body cooling is started, please select either head or body cooling.

Select **Selective Head** if active cooling was restricted to the head and brain as an intervention to reduce the temperature by exposing the head to lower than environmental temperature. Specially designed head cooling devices, other cooling devices and ice packs applied to the head would be considered active cooling of the head and brain. Passive exposure to environmental temperature or cooling of the face for the treatment of supraventricular tachycardia is not considered active cooling of the head and brain.

Select **Whole Body** if active cooling of the body that is not restricted to the head and brain as an intervention to reduce the core body temperature and temperature of the brain by exposing the body to lower than environmental temperature. Whole body cooling may include cooling of the head in addition to the rest of the body. Cooling blankets, other cooling devices and ice packs applied to the body would be considered active cooling of the whole body. Passive exposure to environmental temperature is not considered active cooling of the whole body.

Select **Other** if cooling is actively administered in some other way that is not provided as an option.

11. **Item C.23 Respiratory Rate [T_RESPRATE1], [T_RESPRATE2], [T_RESPRATE3]:** for clarification High Frequency Oscillatory Ventilation equal to 400 "HFOV = 400" has been added to the definition on the paper form ONLY.

12. **Item C.27 Respiratory Support [T_VENTMODE1], [T_VENTMODE2], [T_VENTMODE3],** added "**Blowby**" to "**Hood/Nasal Cannula**". This change will be applied to the online and paper form.

0 = None

1 = Hood/Nasal Cannula, Blowby

2 = Nasal Continuous Positive Airway Pressure

3 = Endotracheal Tube

Select **None** if none of the methods of respiratory support listed below were used.

Select **Hood/Nasal Cannula (NC), Blowby** if the infant had spontaneous breathing and was supported using an oxygen hood, nasal cannula, or blowby.

Select **Nasal CPAP (NCPAP)** if the infant was provided with continuous positive airway pressure (CPAP) using nasal CPAP.

Select **Endotracheal Tube (ETT)** if the infant was ventilated using an endotracheal tube (ETT). Do not enter ETT if an endotracheal tube was placed only for suctioning and assisted ventilation was not given through the tube.

13. The following items have been renumbered (for the paper form only):

- **Item C.21a. Temperature [T_TEMP1], [T_TEMP2], [T_TEMP2]:** Too Low to register
- **Item C.21b. Temperature [T_COOLING1], [T_COOLING2], [T_COOLING3]:** Was the infant cooled?
- **Item C.21c. Temperature [T_COOLINGMETHOD1], [T_COOLINGMETHOD2], [T_COOLINGMETHOD3]:** Method of cooling
- **Item C.28a. Blood Pressure [T_BPSYS1], [T_BPSYS2], [T_BPSYS3]:** Too low to register

14. Under "**Referral Process**" the following fields have been added/updated on the paper form only:

- Sending Hospital Nursing Contact Information Name/Telephone
- Transport Information Names/Telephone Numbers
- Extra line for "Comments"

III. **New and Revised Items for the CPQCC Admission/Discharge and DRD Form:**

15. In 2017, **Item 22 Temperature and Cooling** will include "**for Hypoxic-Ischemic Encephalopathy (HIE)**" so that it is clear that the cooling was for Hypoxic-Ischemic Encephalopathy (HIE).

Item 22 Temperature and Cooling for Hypoxic-Ischemic Encephalopathy (HIE):
(a) Was the Temperature Measured within the First Hour after Admission to Your NICU [ATEMPM]

1=Yes
0=No
7=N/A
9=Unknown

Select **Yes** if the infant's core body temperature was measured and recorded within the first hour after admission to your NICU. Core body temperature may be measured by taking a rectal, esophageal, tympanic or axillary temperature.

Select **No** if the infant's core body temperature was not measured and recorded within the first hour after admission to your NICU.

Select **Not Applicable** if the infant is eligible but was never admitted to your NICU.

➤ **Notes:**

This item applies to the temperature of the infant during the first hour after admission to your NICU. For out born infants, do not record temperature measurements taken at the transporting center.

If an attempt was made to measure temperature during the first hour after admission to your NICU, and the temperature of the infant was lower than what the thermometer could measure, Select 'Yes' and check 'Too low to register' in item 22b. If the infant's core body temperature was not measured within the first hour after admission to your NICU, item 22b. is not applicable.

For infants not undergoing cooling during the transport process, this item propagates the same variable in the CPeTS on-line form (Item C.21 c at NICU admission).

(b) First Temperature at Admission to Your NICU [ATEMP]

0, 20.0 to 45.0, 999.9 = ATEMP
777.7=N/A
888.8=Too Low to Register
999.9=Unknown

If the infant's core body temperature was measured and recorded within the first hour of the initial admission to your NICU, enter the infant's temperature in degrees centigrade to the nearest tenth of a degree. If the infant's temperature is measured multiple times within the first hour after admission to your NICU, enter the value of the first temperature measurement. Use rectal temperature or, if not available, esophageal temperature, tympanic temperature or axillary temperature, in that order. Check the option Too Low to Register for situations in which the infant's temperature is too low to register on the thermometer used. Temperatures may be entered in degrees Celsius or Fahrenheit. Item 22b. applies to the first temperature measured within an

hour of the initial admission to your NICU, even if the baby is being readmitted.

(c) Cooling for HIE [ACOOLING]

0=No Cooling for HIE
1=Cooling Started for HIE
2=Cooling Continued for Transfer-In for HIE
7=N/A
9=Unknown

Select **No Cooling for HIE** if no attempt for cooling / administration of hypothermic therapy was done at any time during the first admission to your NICU.

Select **Cooling Started for HIE** if the first attempt for cooling / administration of hypothermic therapy was started during the first admission to your NICU.

Select **Cooling Continued for Transport-in for HIE** if the first attempt for cooling / administration of hypothermic therapy was started at another hospital prior to admission to your NICU, and then continued during the first admission to your NICU. The option Cooling Continued for Transport-in is not applicable for inborn infants and will not be displayed on the on-line form for inborn infants.

Select **Unknown** if this information cannot be obtained.

➤ **Note:**

Item 22c applies only to the first admission to your NICU. If the infant is transported out and re-admitted to your NICU, do not update this item.

(d) Cooling Method for HIE [ACOOLINGMETHOD]

1=Passive,
2>Selective Head
3=Whole Body
4=Other
7=N/A
9=Unknown

If an infant was cooled for Hypoxic-Ischemic Encephalopathy (HIE) at any time during the initial admission to your NICU, record the last type of hypothermic therapy administered during the initial NICU admission.

Select **Passive** if cooling was intentionally withholding standard temperature maintenance strategies for the purpose of achieving low temperature. If passive cooling is only used until head or body cooling is started, please select either head or body cooling.

Select **Selective Head** if active cooling was restricted to the head and brain as an intervention to reduce the temperature by exposing the head to lower

than environmental temperature. Specially designed head cooling devices, other cooling devices and ice packs applied to the head would be considered active cooling of the head and brain. Passive exposure to environmental temperature or cooling of the face for the treatment of supraventricular tachycardia is not considered active cooling of the head and brain.

Select **Whole Body** if active cooling of the body that is not restricted to the head and brain as an intervention to reduce the core body temperature and temperature of the brain by exposing the body to lower than environmental temperature. Whole body cooling may include cooling of the head in addition to the rest of the body. Cooling blankets, other cooling devices and ice packs applied to the body would be considered active cooling of the whole body. Passive exposure to environmental temperature is not considered active cooling of the whole body.

Select **Other** if cooling is actively administered in some other way that is not provided as an option.

Select **Unknown** if this information cannot be obtained.

➤ **Notes:**

If an infant is administered several methods of hypothermic therapy during the NICU admission, record the last type of hypothermic therapy administered during the first admission to your NICU. Item 22d applies only to the first admission to your NICU. If the infant is transported out and re-admitted to your NICU, do not update this item. This item is Not Applicable if the infant was not cooled.

16. Starting in 2016, we will add a note to Item 40b, Necrotizing Enterocolitis [NEC] to clarify when to select "Yes Here and Elsewhere".

Determine whether an infant has (a) Necrotizing Enterocolitis (NEC) diagnosed at surgery, or (b) NEC diagnosed at postmortem examination, or (c) NEC diagnosed clinically and radiographically using the following criteria:

- 1) One or more of the following clinical signs present:
 - Bilious gastric aspirate or emesis;
 - Abdominal distension;
 - Occult or gross blood in stool with no apparent rectal fissure.

AND

- 2) One or more of the following radiographic findings present:
 - Pneumatosis intestinalis;
 - Hepato-biliary gas;
 - Pneumoperitoneum.

Select **Yes, Here** if NEC occurred at your hospital prior to initial disposition or following readmission after initial transport.

Select **Yes, Elsewhere** if NEC occurred at another hospital.

Select **Yes, Here and Elsewhere** if NEC occurred BOTH at your hospital AND at another hospital as defined above.

➤ **Note:**

Only select "Yes Here and Elsewhere" if NEC happened elsewhere prior to your hospital and then at your hospital, after a week of full feedings, NEC happened again.

Select **No** if the infant did not satisfy the above definition of NEC.

Select **Unknown** if this information cannot be obtained.

➤ **Notes:**

- Infants who satisfy the definition of Necrotizing Enterocolitis below but are found at surgery or post-mortem examination for that episode to have a "Focal Gastrointestinal Perforation" should be coded as having "focal gastrointestinal perforation," not as having NEC. There may also be infants who have an isolated perforation unassociated with clinical NEC; these cases should not be classified as having NEC.
- When infants transport to your hospital or are readmitted to your hospital after initial transport, NEC will be considered to have occurred at another hospital in the following situations: 1. NEC was diagnosed at the other hospital prior to admission to your hospital or prior to readmission following initial transport. 2. NEC was diagnosed within 4 hours of admission to your hospital.
- Recurrence or recrudescence of NEC that had previously occurred at another hospital will not be considered to be NEC that occurred at your hospital unless the original case of NEC had resolved and the infant had been on full feedings for 1 week or more.

IV. New and Revised Items for the CCS Supplemental Form and the CCS Report

- 1) Starting in 2017 the title of Section E will be changed to: Average Daily Census in your NICU, Newborn Antibiotic Exposures (NAE) and Antibiotic Use Rate (AUR).**
- 2) Starting in 2017, a new item Newborn antibiotic exposures (NAE) will be added in Section E: Average Daily Census in your NICU, Newborn Antibiotic Exposures (NAE) and Antibiotic Use Rate (AUR).**

Enter the total number of Newborn Antibiotic Exposures (NAE) in 2017 for all newborns (inborn infants) in the hospital, including those elsewhere than the NICU.

Item Definition: This new measure is the count of all newborns – in any location in your hospital - who have received an antibiotic exposure. Knowing this value enables newborn care teams to know how many

newborns they are treating in relation to the number of newborns with proven infection. The newborn antibiotic exposures (NAE) count is operationally defined as follows:

A newborn is considered to have experienced an antibiotic exposure if he/she received one or more doses of an antibacterial or antifungal agent administered intravenously or intramuscularly in any location in the hospital during the inpatient stay associated with maternal delivery. Thus, each newborn will be counted as either a "0" – if there were no such medication exposures, or a "1" – if there were any such medication exposures (number of doses/number of days does not matter).

➤ **Note:**

"Satellite NICUs" are asked to report the total # of live births at the hospital in which they operate because it provides important contextual information. For the same reason, CCS will request the NAE for the hospital in which the "satellite" operates – because such contextual information is necessary to make sense of, and evaluate, pertinent resource use and outcomes in the NICU serving that birth population. For Children's Hospitals with no inborns, all they need to do is enter "0".

Recommended Data Collection Process: Hospitals that plan to run a database query of a their order entry system for the NAE data element, should note that the specifications for generating the NICU antibiotic use rate (AUR, a CCS reporting variable since 2013) numerator are closely related to the specifications for counting newborn antibiotic exposures.

- The modifications entail expanding the specification of hospital location to cover all newborns in the hospital, including those elsewhere than the NICU, and changing from seeking a count of the number of days treated with antibiotics to a categorical a "yes/no" "0/1" response depending on whether an antibiotic was received. The query would then compute the arithmetic sum of all "0" and "1" values.
- In circumstances where a staff member must review each newborn medical record to obtain the NAE count the following process flow should be helpful.
 - Step 1: Generate a list of all newborn admissions in your facility. This includes infants in mother/baby units, the NICU, and newborns born outside the hospital but brought to the hospital for initial medical evaluation after birth.
 - Step 2: Review physician orders or medication administration record to determine if the newborn received an antibacterial or antifungal medication by the intravenous (IV) or intramuscular (IM) route of administration. You will want to obtain a list of the medications in these categories used for newborns by the physicians in your facility. Most commonly,

they will include ampicillin and gentamicin, but expect to find other medications on your facility's list too.

- o Step 3: If the newborn received no such medication, then assign a 0 as the count for that newborn. If the newborn received one or more doses of such medication – and the actual number of doses does not matter – then assign a 1 as the count for that newborn.
- o Step 4: After all newborn medical records have been so reviewed, compute the arithmetic sum of all “0” and “1” values. That sum is the value for your hospital's NAE.
- o Step 5: Enter that computed arithmetic sum as your hospital's NAE value.

3) Starting in 2017, the Antibiotic Use Rate item will be moved from Section F. Central line-Associated Bloodstream Infections (CLABSI) of Infants born by Birth Weight to **Section E: Average Daily Census in your NICU, Newborn Antibiotic Exposures (NAE) and Antibiotic Use Rate (AUR)** after the new item **Newborn antibiotic exposures (NAE)**.

4) From the CCS perspective, the Unknown option is insufficient. We will make the following changes starting with the AUR metric in the 2016 CCS Supplemental Form and then will continue applying these changes for the NAE and AUR metrics in the 2017 CCS Supplemental Form:

- a) Remove the “Unknown” check box, and comment box. If a center has not filled in a value for antibiotic use by 4/15, the center will be contacted by the data center.
- b) Add a Note after NAE and AUR: “This is a required variable for maintaining CCS approval. A missing response is considered an **“Incomplete Submission – Required Data Element.”** CCS will follow-up with your Center if this data is not provided.
- c) The Data Center will maintain the current programming where the Unknown variable (now labeled **“Incomplete Submission – Required Data Element”**) would trigger Dr. Schulman's contact information if a NICU is challenged with this requirement (instead of the current text box field).
- d) After the April 1st Data Finalization deadline, the CPQCC Data Center will send CCS a list of Centers who do not have an AUR by April 15. CCS will follow-up with the Centers to submit complete and accurate data by June 1st.
- e) After the June 1st Data Finalization deadline, Centers who confirm their CCS Report with NAE and/or AUR are **“Incomplete Submission – Required Data Element”** will be followed-up by CCS.
- f) Starting with the 2016 CCS Supplemental Form, an alert will be created for the logical range for AUR that will be incorporated in the CPQCC Data Reports: the Detailed Data Submission Summary Report, and the Error and Warnings Report:

WARNING: You have submitted data indicating an extraordinary Antibiotic Use Rate value, either below 5% or above 85%. Please confirm that the Number of NICU Days of IM or IV antibiotic

exposure for any purpose in all infants AND the Total Number of Patient Days, which you submitted, are indeed correct.

- g) The description for Antibiotic Use Rate (AUR) will be updated to clarify antibacterial or antifungal are accepted antibiotics for AUR. Antiviral is not.

Antibacterial or antifungal. Antiviral is not counted.
Any exposure on a given day counts as one day.

- 5) Starting in 2017, the following items will be deleted from Section F. Central Line Associated Bloodstream Infections (CLABSI):

1. Does your NICU use DHCS-approved best practices for Central Lines, i.e. Insertion and Maintenance Bundles?

1a. Were Insertion and Maintenance Bundles used for the entire year 2015?

1b. Were Insertion and Maintenance Bundles used for the entire year 2015?

- 6) For the 2017 CCS Report, the title for Section M will be revised as follows:

M. Central line-Associated Bloodstream Infections (CLABSI), Rates by Birth Weight and NICU Best Practices

V. New and Revised Items for HRIF

The new CCS HRIF medical eligibility criteria "Congenital heart disease requiring surgery or minimally invasive intervention" will be added to the HRIF-QCI Reporting System Referral/Registration entry screen effective December 1, 2016. The HRIF-QCI Manual of Definitions and the Referral/Registration (RR) Form will be released on December 5, 2016 and available for download at <https://www.cpqcc.org/perinatal-programs/ccscpqcc-hrif-qci/resource-corner>.

Program Letter (P.L.) 01-1016 updates the medical eligibility criteria for HRIF under Section III, HRIF Eligibility, and reiterates policy and guidance for the HRIF Program's diagnostic services, provider responsibilities, reporting requirements, and procedures for billing authorized services provided to HRIF-eligible neonates, infants, and children. This letter supersedes HRIF P.L. 01-1113, dated November 22, 2013. **(Please download and review the updated Program Letter HERE)**

We have received questions during the annual data training regarding who will be responsible for identifying and referring these cardiac patients, and was informed that some counties do not consider a "CVICU" the same as a "PICU". If you have any questions or concerns about the new congenital heart disease medical criteria, please submit a help ticket at <https://www.cpqccsupport.org/>.

VII. TECHNICAL SUPPORT

The CPQCC Data Center Staff provides technical support for data collection, and for interpreting our reports. Please direct all of your questions and comments regarding data submission and reports to our staff. The help desk is our preferred method of communication for urgent and non-urgent data issues.

Please contact us at the **CPQCC Help Desk at cpqccsupport.org** for ALL data related questions or concerns. Please note that by using this method, each request can be reviewed by the entire Data center staff, which makes our response time faster and easier for you. The input of member center contacts is very important to us and we welcome your comments.

For urgent issues, please contact our staff:

Grace Villarin Dueñas, MPH CPQCC Program Manager Phone: 650-721-1841	Fulani Davis CPQCC Program Coordinator Phone: 650-721-1844
Renee Triolo Program Assistant Phone: 650-721-6540	Janella Parucha CPQCC Program Coordinator Phone: 650-497-4658

VIII. MEMBERSHIP INFORMATION

2017 Membership Fees

CPQCC membership fees for 2017 will be \$10,000 for full membership. Full membership is necessary for participation in the CPQCC-CCS Reporting Program. CCS-approved units are advised that participation in the CPQCC-CCS Reporting Program is a condition of continuing or new CCS-approval, effective January 1, 2004. Membership agreements and fees are processed at the CPQCC Program Office, located at Stanford University.

Please submit membership-related questions at the CPQCC Help Desk at www.cpqccsupport.org. If you are new to the CPQCC Help Desk, please register and then submit membership questions selecting the topics: Membership (Invoices) OR New Members/ Name Change.

CPQCC - CCS Reporting Program

Since 2000, CPQCC has produced static annual data reports to CCS for approved NICUs who are full members of CPQCC. To participate in this reporting program, a center must have a CCS-approved NICU, or must be in the process of applying for CCS-approval. Full participation in the CPQCC Network is also necessary. Effective for Birth Year 2004, CCS is requiring that centers fully participate in CPQCC and report their CCS data through this program as a condition of approval (reporting deadline for completion of the on-line CCS Supplemental Form: April 1st).

We welcome the opportunity to assist centers as they meet this requirement. To complete a center's CCS report, we need a small amount of specific supplemental information describing the total NICU census and total birth cohort for each center. These

supplemental data are merged with the center's eligible infant data to produce a comprehensive report for CCS. This arrangement has resulted in a standardized reporting format and improved data quality for CCS. Instructions on how to collect the supplemental data elements are included in the on-line CPQCC-CCS Form for the Data Contact to use with 2017 data. For any remaining questions, please contact the Data Center staff via CPQCC Help Desk at cpqccsupport.org.

IX. HOW THE DATABASE WORKS

A.) Participating Institutions:

Membership

CPQCC is a franchise and group member of the Vermont Oxford Network (VON), and is partnering with VON to collect and analyze data on newborns admitted to neonatal intensive care units in California. When a hospital joins CPQCC, it automatically becomes a member of VON and is entitled to the benefits of both organizations. Please visit www.cpqcc.org and click on "Membership – (sub menu) Member Hospitals" to see a list of participating members alphabetically, or refer to Appendix F, OSHPD Facility Codes where all CPQCC affiliated hospitals are listed in bold italics to better identify them. For new members please click on "Membership – (sub menu) New Members" to download the CPQCC Membership Contract Agreement, the CPQCC/VON Contact Report and the CPQCC Membership Fee Notification Letter. Please see the site's page for further instructions.

Contact Information

When membership documents are filled out, the following Contact information from your Center should be designated for 2017.

All contacts will receive informational emails regarding the CPQCC Data Center and the program as a whole. Please keep the Data Center informed of any changes to your center's contact information. To update your contact information please refer to the 2017 Data Finalization Guidelines under April 1st Deliverables.

CPQCC Report Contact – Receives ALL reports that are sent out to your Center via e-mail or postal mail including all report related correspondence. If this contact changes, please submit a CPQCC Help Ticket at www.cpqccsupport.com.

Data Contact #1– Enters ALL data and keeps in constant contact with the Data Center regarding all aspects related to their Center's data.

Data Contact #2 – Designated secondary contact to the above.

Neonatologist Contact – Designated Neonatologist Contact for your Center.

Transport Contact #1 – Primarily responsible for all transport data for your center.

Transport Contact #2 – Second person responsible for all transport data for your center.

QI Contact #1– Primarily responsible for quality improvement for your Center's data.

QI Contact #2 CNS/Nursing Educator– Second person responsible for quality improvement for your center's data.

Invoice (Payment) Contact – Responsible invoicing for your Center.

You can view CPQCC's Data Contact Roster as a downloadable Adobe PDF file that includes all member contact information alphabetically by hospital. Logon onto www.cpqccdata.org and click on the CPQCC/HRIF-QCI Directory link.

CPQCC Center Number and OSHPD Hospital Numbers

At the time of joining, each member center is assigned a unique, confidential Center Number. This number is used to identify the Center on all data forms and on all reports.

Codes assigned to California hospitals by the Office of Statewide Health Planning and Development (OSHPD) are used to reference transporting hospital sites. These non-confidential codes assist us in identifying babies who have been transported from member and non-member hospitals, in linking databases, and in facilitating hospital audits conducted by CPQCC. The OSHPD Codes are supplied for your reference in Appendix F.

B.) CPQCC ID Numbers and Logs:

CPQCC ID Numbers

Each eligible infant's name and medical record number are entered into the Patient Log at the hospital. The corresponding 5-digit CPQCC Network ID Number is assigned to the infant, beginning with 00001 and continuing in sequence. Do not begin the next year reusing 00001 or other numbers previously used.

➤ Note:

~~Since 2009, all CPQCC members are advised to no longer skip 10 IDs between submission years. Instead you are to continue with the following sequential number (i.e. current year last submitted 1501, upcoming year, first submission 1502). If you start a new year of submissions BEFORE you end the previous and are therefore unsure of what the last submitted ID will be, you may skip 10 IDs ONLY, to ensure that no ID Number overlaps from the previous year. If you are unsure about your Starting ID Number, please submit a CPQCC Help Ticket via www.cpqccsupport.org.~~

Patient Log

This log is used to assign a unique CPQCC Network ID Number to each infant eligible for inclusion in the Database, to record admission status, document and track the submission of the necessary data forms, and to provide the Center with a way to associate the CPQCC Network ID Number with the patient's name. Use of this log or a facsimile is required. CPQCC staff will request to see a copy at the time of any data quality audits of your Center.

Transport Log

This log is used to identify and track individual patients who have been transported. The infant's CPQCC Network ID Number assigned on the Patient Log is to be used in completing the Transport Log.

Pending Eligibility Log (Optional)

This worksheet is used to track potentially eligible infants who do NOT initially meet the eligibility criteria at admission to the NICU but might become eligible. For example, infants at risk for respiratory problems may be listed here and, if assisted ventilation for greater than four continuous hours occurs, added to the Patient Log.

NICU Activity Log (Optional)

This worksheet is used to track all infants born in your hospital and to track potentially eligible infants for the CPQCC and/or the California Children's Services High-Risk Infant Follow-up

(CCS HRIF) Program. Use this log to enumerate and validate data for completing the Annual CCS Supplemental Form.

We recommend that you keep your logs in a safe and secure place. Make copies of each completed log for your records.

C.) Collecting Data:

Data Collection System.

Each participating member must create a system for collecting, submitting, editing and tracking data that works effectively and efficiently for the Center's unique environment. The member's system must be designed to guarantee that:

All eligible infants are identified.

Data are collected and submitted for all eligible infants.
Data conform to the definitions described in the CPQCC Manual.
Data submissions are complete, timely, and accurate.
Forms requiring correction are promptly corrected and resubmitted.

Data collection can be accomplished in a number of different ways. Individual patient forms are optimally completed as close to discharge as possible. Retrospective review of the medical record can also be done, but may be less accurate, and less efficient. Whichever approach is used, it is critical that all eligible infants are identified and included, and that the data conform to the definitions provided in this Manual of Definitions. We recommend that one individual at each participating Center be responsible for verifying that all eligible infants are included and that the data reported comply with our definitions.

Tracking Eligible Patients

Participating members will submit data for select infants who meet the eligibility criteria described in Section X. It is possible to identify some infants for eligibility at admission. Others will only be identified as eligible as certain events occur during the course of admission (e.g. assisted ventilation for greater than four hours, surgery) or at discharge (e.g. transport-out, death). To help you keep track of these infants, we have provided a Pending Eligibility Log (Appendix B) and a NICU Activity Log (Appendix B).

Check your NICU admissions, discharges, and Pending Eligibility Log regularly. When you determine that an infant is eligible for entry into the database, enter the infant's name on the Patient Log, and assign the next consecutive CPQCC ID Number. Use your Patient Log to keep track of eligible infants, and fill out and submit an Admission / Discharge Form or Delivery Room Death Form after the infant is discharged. If the infant is transported out to another in-patient facility, add the CPQCC Network ID to the Transport Log. Review the Transport Log periodically to obtain the ultimate disposition status of infants transported to other hospitals.

As of 2010, CPQCC Members are no longer required to submit the Eligibility Verification Plan. CPQCC Data Center staff provides technical support to CPQCC Centers. All technical questions and correspondence regarding data collection/submission and inquiries about reports should be made to the CPQCC Data Center by phone or by submitting a ticket through cpqccsupport.org.

We encourage members to submit data in a timely manner and ask you to refer to Appendix A for the calendar of data submission deadlines. Data received after the quarterly deadlines will not be included in the corresponding quarterly report. When data are received after the annual closeout deadline, this jeopardizes production of the CPQCC Annual Quality Management Report. For this reason, centers that are chronically late in meeting closeout deadlines may be left out of the Annual Report.

D. Two Ways to Submit Data:

Participating centers can submit data to the CPQCC Data Center in two ways: (1) electronically, through a data entry and export program that uploads files to the CPQCC Data Center, and (2) through a web-based data entry system. This manual is a user's guide for centers that enter their own data in real-time directly onto the web and for centers that choose to submit data electronically. It provides background information, instructions and reference information that you will need regardless of which method you choose for submitting data.

If your center chooses to submit data electronically, you will want to consult the separately published 2017 Member Instructions for Electronic Data Submission which is available on the CPQCC website, www.cpqcc.org.

If your center chooses to submit data via web-based data entry, you will want to consult the separately published 2017 Member Instructions for the Web-Based Data Entry Program which are also available on the CPQCC website, www.cpqcc.org.

Please note CPQCC does not support the VON eNICQ electronic data entry and submission system.

Starting in 2007, CPQCC no longer supports faxed or mailed in paper submission forms.

1. Data Forms

Paper Data Collection forms will available to all members for INTERNAL USE ONLY. These paper forms are NOT to be submitted to the Data Center for any reason. Electronic versions of the forms will be available for all members on-line at www.cpqcc.org. The forms that will be available are below:

2017 Admission / Discharge Form
2017 Transport / Post-Transport Form
2017 Delivery Room Death Form

2. Electronic Data Submission (EDS)

Some existing CPQCC member centers submit data electronically. Centers who elect to do this are usually those with existing internal databases used for tracking clinical events and outcomes in the NICU. At such centers, electronic files suitable for submission to CPQCC can often be extracted via a database query or other programming code that is customized to read in the existing data and to output files that are in compliance with the separately published 2017 Member Instructions for Electronic Data Submission, available on the CPQCC website, www.cpqcc.org.

- **Important Note:** *Only centers with existing electronic databases and available programming staff for building and testing data extract procedures are encouraged*

to participate in EDS. Please contact the Data Center if you are interested in submitting data electronically.

3. Web-Based Data Entry System

The CPQCC website, www.cpqccdata.org, offers members a way to update forms on-line, view data reports, as well as fill out and submit their CCS data via the on-line CCS Supplemental Form all on the web. We strongly encourage ALL Members to take the time to orient themselves to this site since it was designed as a secure and comprehensive database management tool regardless if you choose to submit data via electronic data submission or on-line.

The on-line form has been created to facilitate consistency when entering and submitting data. For example, data items that are not applicable (N/A) due to previous responses will automatically set to this response (e.g., if an infant is inborn, the birth location and admission history are automatically set to N/A as these items only need to be answered for Outborn babies). Furthermore, after entering the date of birth, the website will automatically provide relevant dates based on the date of birth (e.g., date of Day 28, date of Day 3). Upon entering date of birth and gestational age in weeks and days, the day of week 36 is also provided. These dates appear next to the items that they are relevant for.

In addition to being able to enter data, other features the Web-based Data Entry System include the following:

Change Password. Members can change their password. A user password has to fulfill the following requirements:

1. At least 8 positions long.
2. At least 1 upper case character.
3. At least 1 lower case character.
4. At least 1 number.

Forgot Password/Resend Credentials. If you forgot your password, you have three options:

1. Resend credentials: You can have your user credentials re-sent via secure e-mail. This e-mail includes your user ID, first and last name of user registered, a new password and the access rights associated with your user ID.
2. Have a password-reset link sent: You can have a reset link sent to your e-mail address. The reset link allows you to specify a new password. You are allowed 3 password resets in a 24-hour period. If you request a password reset more than 3 times, you will have to contact the CPQCC data center for help.
3. Contact the CPQCC Data Center: The CPQCC data center can re-send your credentials via secure or regular e-mail, and they have a password reset link sent to you even if you have exceeded your reset requests.

Upload EDS File. EDS files can be uploaded through the link on the navigation bar 'Upload EDS File'. Centers have to be approved for EDS uploads; otherwise clicking on this option will display a message that the NICU is not approved for EDS uploads.

Add New Data. When logging in to the website, you can add new records for the current data year. Note that there will be a series of eligibility options to determine the eligibility of the infant you want to include into the database. If the infant does not meet any of the eligibility options, then the infant will NOT qualify as a CPQCC infant. If the infant is eligible, enter all of the necessary information click the “Check For Errors” button and then the “Submit Data” button to save and submit your updates.

Edit Data. The website allows editing of already submitted data, in any year, even if the data were previously submitted to CPQCC via Electronic Data Submission (EDS). Just select the year and then the ID number of the record that you would like to edit. Once your edits are complete, click the “Check For Errors” button and then the “Submit Data” button to save and submit your updates.

Custom Query. The website allows you to custom query any infant records entered into the CPQCC database for your hospital.

Edit CCS Form. The website allows you to view, edit and save your center's CCS Supplemental Form for the current data collection year. You can also view your CCS Supplemental Form from previous years as well.

View CCS Report. The website allows you to view your center's CCS Report for the current year as well as previous years.

Data Reports. Obtain a current database report in real-time that includes: the completeness of all forms records and electronic records submitted to CPQCC:

- A detailed Error Report Only
- Error and Warning Report
- Detailed Data Submission Report
- Review/Confirmation of IDs Submitted & Confirmation of CPQCC Conditions
- Data Consistency Report
- A list of Incomplete Items/Variables that are unknown for more than 1% of submitted records, a summary of CPQCC Network IDs with large percentage of missing or unknown items on submitted forms, a summary of CPQCC Network ID numbers submitted so far, and specifically a list of CPQCC Network ID numbers skipped or rejected and a summary of your submission statistics.
- Review of Descriptions entered: Birth Defect, Fetal Complications, Device on Discharge, Vital Infections, Transport Type Description, Other Surgery, Obstetrical Complications, Early Infections, Surgical Complication, Maternal Complications, Cesarean Indicators, Late Infections, Other Hemorrhage.
- HRIF/CPQCC Match Status Report
- Pending Items Report, which shows a list of variables that are currently pending, their percentage and the ID numbers affected.
- Quarterly Reports on-line. All reports must be selected by year.
- CPQCC Form Burden Summary Report for cpqccdata.org.
- Web-based Data Entry Activity Report for cpqccdata.org.

E-mail Reports/Data. Send a complete zipped and password protected copy of your center's reports or data to the designated Report Contact or Data Contact in the format of your choice and by the year of your choice. Note that this option is particularly useful if you

want to make sure that the version of your data matches our data after you have made changes to your data on-line.

NICU Settings. The option "NICU settings" was added to the navigation bar. The information displayed upon clicking on NICU settings provides a quick summary of the current NICU settings.

Close-Out Check List. The close-out check lists all of the deliverables due for CPQCC data finalization.

Activity Summary. By clicking on Activity Summary on the navigation bar, a summary of cpqccdata.org activities for the user currently logged on is shown. A report with information on the form burden of the A/D, DRD and CPeTS continues to be available in the Data Reports section.

Calculator. In order to help you fill out the portions of the form that require calculations that are dependent on birth date, admission date, and discharge date, we are providing a calculator that will enable you to obtain these results locally on your computer.

CPQCC/HRIF-QCI Directory. CPQCC Members can find contact information for other CPQCC Members in the CPQCC/HRIF-QCI Directory.

To access the website, a center-specific username and password will be provided to all our members. We strongly encourage all CPQCC member hospitals to consider submitting their 2017 data via the Web-Based Data Entry System.

If your center chooses to submit data via web-based data entry, you will want to consult the separately published Member Instructions for the Web-Based Data Entry System, which are also available on the CPQCC website, www.cpqcc.org.

E. CPQCC Reports:

Data Quality Reports (also known as Error and Warning Reports)

These reports provide a list of potential data errors, identified in your Center's data, for your review and correction. For accurate reporting, we check all submitted forms/files for missing or questionable data. Questionable data items are those that are out of the plausible range or are inconsistent with other data reported in an infant's form or record. Data contacts are expected to review all records identified in the Error and Warning Report, to make necessary corrections, and to submit the corrections to the Data Center.

Quarterly Reports

These reports provide a profile of your center's year-to-date NICU case mix, morbidity and mortality, based on the data submitted each quarter in close to real time.

The Quarterly Reports give frequencies and percentages of all of our data elements as reported by your NICU, along with the Year-to-Date totals for the entire CPQCC Network. Quarterly Reports are e-mailed to the designated Report Contact at your Center upon request by logging into www.cpqccdata.org.

To maintain the comparability of the 2017 dataset to previous years, we have divided the report into two parts:

- Infants with a Birth Weight of 401 to 1500 grams OR Gestational Age 22 weeks 0 days and 31 weeks 6 days (inclusive)

AND

- Selected Infants with Birth Weight of over 1,500 grams.

The Report is intended to provide you with a cross-sectional view of what is happening in your hospital compared with the network of CPQCC hospitals for eligible infants born in 2017. The Report is also intended to show how the 2017 experience compares with the entire previous year. Please note that the Year-End report will have a more comprehensive presentation of the data, including birth weight-specific categories, risk adjusted outcomes, and appropriate figures.

Annual Quality Management Reports

The CPQCC Annual Quality Management Report is available on-line at www.cpqccreport.org. This extensive, confidential Report includes detailed Tables and Figures documenting the rates of specific outcomes and interventions at your center.

Additionally, the report gives summary data for the aggregate CPQCC network for each outcome and intervention. The interactive report allows the viewer to stratify the population by infant birth weight category, gestational age category, and source of admissions category. For assistance in interpreting your center's report, please contact the Data Center.

To be eligible to receive an Annual Quality Management Report, a Center must have:

- Membership Dues Paid
- Confirmation of receipt of e-announcement of data finalization guidelines
- Completion of all records for infants born in the previous year who were SIH at the current year's closeout.
- Submission of ID confirmation form.
- All CPeTS items for acute transfers into your NICU, all DRD items and all A/D items should be submitted to CPQCC completely. For infants born in 2016 and still in-house all items not related to discharge should be submitted to CPQCC completely.
- Submission of error-free CCS form without pending items.
- Submission of VON/CPQCC Contact Report for your NICU.
- Submission of VON Membership Survey.
- All CPeTS items for acute transfers into your NICU, all DRD items and all A/D items should be submitted to CPQCC completely and 100% error-free. For infants born and still in-house all items not related to discharge should be submitted to CPQCC completely and 100% error-free.
- Followed-up all warnings listed in the CPQCC Errors and Warnings Report.
- Addressed and resolved all inconsistencies listed in the DCR
- HRIF registration is 100% of VLBW infants, infants < 32 completed weeks gestation, infants with HIE/Cooling, or infants with ECMO born and discharged home from reporting NICU.

- Confirmation of CCS report.

F. CPQCC Data Quality Audits:

Chart audits are an important strategy for improving the quality of data submitted to the CPQCC Database. Audits in 2017 will include review of infant records from your 2017 database. Your team will be contacted if your Center is chosen for a site visit and audit.

X. ELIGIBILITY

An infant is eligible for inclusion in the database upon meeting both the Population Criteria and the Selection Criteria as described below.

Population Criteria: The population under consideration consists of all live born infants who either (1) die in the delivery room (or initial resuscitation area) within 12 hours of birth and prior to NICU admission, or (2) are admitted as a NICU infant on or before day 28 of life.

Note: Any infant (inborn or outborn) whose birth weight is between 401 and 1,500 grams OR whose gestational age is between 22 weeks 0 days and 31 weeks 6 days (inclusive) is eligible, regardless of where in your hospital the infant receives care.

Live born infant:

- Note:
Since 2011, the definition of live born was updated to use the standard terminology recommendation of The Committee on Fetus and Newborn of the American Academy of Pediatrics: "A live born infant is one who breathes or has any evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscle, regardless of whether the umbilical has been cut or the placenta is attached. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps."

Delivery Room Death. Any eligible inborn infant who dies in the delivery room or at any other location in your hospital within 12 hours after birth and prior to admission to your NICU is defined as a "Delivery Room Death." These other locations may include the mother's room or resuscitation rooms, or any location other than the NICU in your hospital.

- Note: Outborn infants and infants who are admitted to the NICU should not be classified as Delivery Room Deaths. Do not use a Delivery Room Death Booklet for these infants, regardless of when or where death occurs.

NICU infant: A NICU infant is any baby cared for by the neonatology service in your NICU or other unit in your Center, other than the delivery room.

- Note:
Use the calendar date of birth as Day 1 regardless of the time of birth. Thus, for an infant born at 23:59 PM on September 1, Day 28 occurs on September 28. If this infant were transported to your NICU at 12:01 am on September 29 (the 29th day), the infant would not satisfy the Population criteria as defined. The Population criteria must be satisfied on or before day 28.

Selection Criteria:

The selection criteria in the 2017 CPQCC dataset is as follows:

- A. Any infant who is born at your hospital and whose birth weight is between 401 and 1,500 grams OR whose gestational age is between 22 weeks 0 days and 31 6 days (inclusive) is eligible, regardless of where in your hospital the infant receives care.
- B. Any outborn infant who is admitted to any location in your hospital within 28 days, and whose birth weight is between 401 and 1,500 grams OR whose gestational age is between 22 weeks 0 days and 31 6 days (inclusive) is eligible, regardless of where in your hospital the infant receives care.

In summary, any Small Baby infant is automatically eligible into the CPQCC database. However, any Small Baby infant who was previously discharged home from a hospital will not be forwarded to VON.

Any infant who is born at or admitted to your hospital within 28 days of birth, with a birth weight that is greater than 1500 grams MUST also meet one of the following 10 criteria: 1) Death, 2) Acute Transport-In, 3) Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) for greater than four continuous hours (for 2009 and later), 4) Intubated Assisted Ventilation for greater than four continuous hours, 5) Early Bacterial Sepsis, 6) Major surgery requiring anesthesia, 7) Previously Discharged Home and Readmitted to your hospital for Total Serum Bilirubin => 25 mg/dL (427 micromols/Liter) and/or exchange transfusion, 8) Acute Transport-Out of your NICU, 9) Suspected Encephalopathy or suspected perinatal asphyxia, 10) Active therapeutic hypothermia.

➤ **Note:**

Any Big Baby infant is eligible into the CPQCC database if the infant is admitted to your NICU within 28 days of birth, and then fulfill one of the 8 above criteria during the episode of care in your NICU. For criteria 7 (hyperbilirubinemia/ exchange transfusion), the infant may or may not be admitted to your NICU.

Death: Check **Yes** if the infant died in your Center. Check **No** if the infant did not die in your center. If the infant died in the delivery room or resuscitation room, do not fill out an Admission / Discharge Form, fill out a Delivery Room Death Form.

Acute Transport-In: Check **Yes** if the infant was an acute transport-in to your facility for this admission. If not, check **No**.

Acute: An acute transport is movement of an infant from one in-patient setting to another in-patient setting for a higher level of care on or before Day 28 of life (i.e. medical, diagnostic, or surgical therapy that is not provided, or that cannot be provided due to temporary staffing/census issues, or due to insurance restrictions at the referring hospital).

Non-Acute: A non-acute transport is a transport of an infant at any age for any category other than a need of acute care (i.e. back transport or transport to a lower level of care).

➤ **Notes:**

- Infants moved from one unit to another within your hospital are not considered to have been transported or discharged.

- In 2008, we clarified that an infant born in the host facility and then admitted to imbedded NICUs (e.g., a NICU-owned and managed by another hospital) is not considered a CPeTS Acute Inter-facility Transport-In and does not require submission of the (TRS form) for the purpose of the Transport Data System for the Second Quarter systems upgrade. However, this infant may be CPQCC-eligible because of meeting one of the 10 criteria, requiring submission of the Admission/Discharge form.

Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) for greater than four hours (for 2009 or later): Starting in 2009, we have added a new High Acuity Criterion for eligibility in the Big Baby database - Nasal IMV/SIMV for greater than four continuous hours. In 2010 this modality was updated to "Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation)" for greater than four continuous hours.

➤ Notes:

- The time that an infant is on this modality should not be recorded as ventilation time in Item 25b.
- Non-intubated assisted ventilation is defined as a mechanically produced breath. CPAP alone doesn't qualify as non-intubated assisted ventilation. However, CPAP with a back-up rate whether administered through the nose, face mask, etc. that is triggered as a back-up rate or intermittently would qualify. Check Yes to Nasal IMV/SIMV in Item 23e, but do not include these hours in calculating the duration of intubated assisted ventilation (Item 25b.)
- If a Big Baby infant is on CPAP with a back-up rate for greater than four continuous hours, then this infant qualifies under the Big Baby selection criteria of nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) greater than four continuous hours.

Intubated Assisted Ventilation > 4 hrs. Check **Yes** if an infant requires intubated assisted ventilation, using a cycled or triggered mechanical ventilator, via an endotracheal tube or other interface (such as nasal prongs or a secured face mask), for greater than four continuous hours (including duration of ventilation during transport or surgery). Check No if the infant did not require ventilation. CPAP alone via endotracheal tube or any other delivery system does not qualify regardless of oxygen concentration.

➤ Important Note:

We have clarified the definition for Item 25b. Use of Intubated Assisted Ventilation. If Greater than four continuous hours, specify ventilation time. Starting in 2009, for an infant treated with intubated conventional ventilation or intubated HIFI ventilation for greater than four continuous hours, record infant's initial episode of ventilation, during the initial stay at your hospital for any reason (surgery or the need for controlled sedation to perform imaging studies are included. However, for those infants who are ventilated for more than four continuous hours, then transported out, and then readmitted while still ventilated, include the days and hours at the transported to hospital as well. However, if this same infant is transported out and never readmitted, you only include the days/hours at your hospital. Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) should not be included in

the length of time on ventilation for Item 25b. CPAP alone should also not be included in the length of time on ventilation for Item 25b.

Conventional Ventilation (Con Vent) is defined for any infant given intermittent positive pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute). Note: Intermittent positive pressure ventilation (IPPV) via nasal prongs is not considered conventional ventilation. Synchronized intermittent positive pressure ventilation (SIMV) via nasal prongs is not considered conventional ventilation.

High Frequency Ventilation (HIFI Vent) is defined for any infant given high frequency ventilation (IMV rate \geq 240/minute). Note: High frequency ventilation via nasal prongs is not considered high frequency ventilation.

Early Bacterial Sepsis. Check **Yes** if the infant had a positive blood or CSF culture obtained on day 1, 2 or 3 of life, which grew out a bacterial pathogen. Check **No** if the infant did not.

➤ **Note:**

If an infant who was transported into your center, is being treated for early bacterial sepsis because of a positive culture drawn at the referring hospital, this infant qualifies, even if a repeat culture drawn at your center is negative. However, if an infant who was transported into your center was diagnosed with early sepsis but is no longer septic (due to treatment at the referring hospital), this infant does not qualify.

Major Surgery requiring anesthesia. Check **Yes** if the infant had major invasive surgery (requiring general anesthesia, or its equivalent) during this admission. Check **No** if the infant did not.

➤ **Notes:**

- The following surgeries are not considered surgical procedures for eligibility purposes: Pyloromyotomy, unilateral or bilateral inguinal hernia repair, central line placement or circumcision. If you are not sure whether a procedure qualifies, please consult our FAQ, found on the Data Center page of our website (www.cpqcc.org). If you are still undecided, please submit a CPQCC Help Ticket at www.cpqccsupport.org.
- Only conditions that require general anesthesia or anesthesia techniques felt by your neonatologist to be equivalent to general anesthesia qualify. Most of these procedures involve opening a cavity (head, chest, abdomen, etc.). A hernia or insertion of a central line may or may not qualify depending on the use of general anesthesia or anesthesia techniques felt by your neonatologist to be equivalent to general anesthesia. Circumcision is not a qualifying surgery for Big Babies.

Acute Transport-Out. Check **Yes** if the infant was an acute transport from your facility upon discharge. If the infant was not an acute transport-out, check **No**.

Acute: An acute transport is movement of an infant from one in-patient setting to another in-patient setting for a higher level of care on or before Day 28 of life. (i.e. medical, diagnostic, or surgical therapy that is not provided, or that cannot be provided due to temporary staffing/census issues, or due to insurance restrictions at the referring hospital).

Non-Acute: A non-acute transport is a transport of an infant at any age for any category other than a need of acute care (i.e. back transport or transport to a lower level of care).

- Note:
Infants moved from one unit to another within your hospital are not considered to have been transported or discharged.

Hyperbilirubinemia. Starting in 2007:

Check **Yes** if the infant was previously discharged home and readmitted to any location in your hospital on or before Day 28 of life for Total Serum Bilirubin => 25 mg/dL (427 micromols/Liter) and/or exchange transfusion.

- Note:
This is the only Big Baby selection criterion where an infant does NOT have to be under the care of a neonatologist or the NICU service.

Suspected encephalopathy or suspected perinatal asphyxia. Starting in 2013:

Check **Yes** if the infant had suspected encephalopathy or suspected perinatal asphyxia, defined by cardiorespiratory depression at birth signified by any one (or more) of the following: (1) pH less than 7.0 on an umbilical blood sample or a blood gas obtained within one hour of life, (2) 5-minute Apgar score of less than or equal to 3, or (3) 10-minute Apgar score of less than or equal to 4.

Check **No** if the infant does not meet any of the above criteria.

- Notes:
 - This definition of suspected encephalopathy or suspected perinatal asphyxia is different from the criteria for hypoxic ischemic encephalopathy (HIE), defined later in Item 48 (i.e., not all patients meeting eligibility criteria under suspected encephalopathy or suspected perinatal asphyxia will have HIE according to the HIE definition).
 - If a baby has ever been diagnosed with suspected encephalopathy or suspected perinatal asphyxia or hypoxic ischemic encephalopathy (HIE) and transferred in within 28 days of life, this baby would be eligible for CPQCC.

Active therapeutic hypothermia.

Check **Yes** if the infant was actively cooled (received hypothermia therapy) during the admission to your NICU. Active cooling includes selective head cooling or whole body cooling.

Check **No** if the infant was not actively cooled.

- Note:
Passive exposure to environmental temperature or intentionally withholding standard temperature maintenance does not qualify as active cooling.

XI. PROCEDURES FOR COMPLETING FORMS

2017 Admission / Discharge Form

For an infant who is admitted to your NICU, or is under the care of the neonatology service in any inpatient unit, and is not a delivery room death, complete all items on the 2017 Admission / Discharge Form.

If an infant is moved from your NICU to another unit within your Center (Step-Down Unit, Well Baby Nursery, Pediatrics Ward, Intermediate Care Nursery, PICU, etc.), continue collecting data until discharge to home, transport to another hospital, or death.

Outborn Infants

For infants admitted to your hospital within 28 days of life who meet the other eligibility criteria, events that occur prior to admission to your hospital and while in your hospital should be recorded. For example, if an infant had a cranial ultrasound exam at the transporting hospital, answer this item "Yes" on the 28 Day Form and record the worst grade of PIH; if an infant received indomethacin at the transporting hospital, check this data item "Yes" on the Discharge Form. Data for this infant, regardless of the reason for admission or the length of stay at your hospital.

The form is divided into the following sections:

Section of Form	Item Numbers
Identification and Demographics	1 – 8
Maternal History	9 – 18
Delivery Room and First Hour after Birth	19 – 21
Post-Delivery Room Diagnoses and Interventions – Respiratory	22 – 35
Post-Delivery Room Diagnoses and Interventions - Infections	36 – 38
Post-Delivery Room Diagnoses and Interventions - Other Diagnoses, Surgeries and Surgical Complications	39 – 44
Post-Delivery Room Diagnoses and Interventions - Neurological	45 – 48
Post-Delivery Room Diagnoses and Interventions – Congenital Malformations	49
Post-Delivery Room Diagnoses and Interventions – Hyperbilirubinemia	50 – 52
Initial Disposition	53 – 57
Transport Information	58 – 64

Information in the Identification and Delivery and Maternal History sections may be filled out upon admission or when eligibility criteria are first met. Information in the Post-Delivery

Diagnoses and Interventions sections may be completed during the course of stay at your Center. Refer to the Definitions section of this Manual for exact coding rules.

2017 Transport / Post-Transport Form

- Note:
Refer to Section XIV. Definitions of Data Items for specific instructions on how to update the Transport Information (Items 55-61).

The Transport/Post-Transport Form is completed for any infant who is transported out of your center for acute care. An acute transport is defined as follows:

Acute: An acute transport is movement of an infant from one in-patient setting to another in-patient setting for a higher level of care on or before Day 28 of life. (i.e. medical, diagnostic, or surgical therapy that is not provided, or that cannot be provided due to temporary staffing/census issues, or due to insurance restrictions at the referring hospital).

Non-Acute: A non-acute transport is a transport of an infant at any age for any category other than a need of acute care (i.e. back transport or transport to a lower level of care).

- Note:
Infants moved from one unit to another within your hospital are not considered to have been transported or discharged.

Whenever an acute transport occurs, enter the patient's name, CPQCC ID Number, and date of transport-in the Transport Log. Periodically check with the hospitals to which you transport patients to determine the status of patients transported from your unit. For assistance in identifying who to speak to at the receiving units, please consult the CPQCC/HRIF-QCI Directory on www.cpqccdata.org. It is the transporting hospital's responsibility to obtain this information to complete the Transport Form. When the post-transport disposition and weight are available, enter them on the Transport Log and the Transport Form.

2017 Delivery Room Death Form

This form is used to record data for inborn infants who die in the delivery room or at any other location in your hospital within 12 hours after birth and prior to admission to the NICU. Check the delivery room records regularly to identify any infants who have died. There may be infants who are born in the delivery room and die prior to admission to the NICU in locations within your Center other than the delivery room. These locations may include the mother's room and resuscitation room. These locations are also considered part of the delivery room. A Delivery Room Death Form should be used for these infants. Once an infant is admitted and becomes a NICU Infant a Delivery Room Death Form should not be used regardless of where the infant dies. Use the Admission / Discharge Form.

The Delivery Room Death Form differs from the Admission / Discharge Form only in that several items have been omitted which are not applicable. Please use the definitions for the Admission / Discharge Form when completing the Delivery Room Death Form. This is the only form submitted in the case of a delivery room death. These infants should be recorded and assigned an ID number on the Patient Log.

- **Note:**
Outborn infants and infants who are admitted to the NICU should not be classified as Delivery Room Deaths. Do not use a Delivery Room Death Booklet for these infants, regardless of when or where death occurs.

XII. PROCEDURES FOR SUBMITTING DATA

Data Submission

In previous years, the CPQCC Membership submitted paper forms to the Data Center. Starting in 2007, the submission of paper forms was phased out. The only available options are on-line submission by logging onto www.cpqccdata.org or Electronic Data Submission (EDS). For more information or instructions on EDS or on-line submission, please go to <https://www.cpqcc.org/perinatal-programs/cpqcc-data-center/downloads>.

XIII. DEFINITIONS OF DATA ITEMS

This year's Manual has been revised and expanded based on the recommendations of the Data Center Advisory Group (DCAG), a representative group of Data Contacts affiliated with the project. When clinical situations emerge that do not correspond neatly with our coding instructions, we ask that you consult our on-line FAQ, or please submit a CPQCC Help Ticket at www.cpqccsupport.com.

ADMISSION/ DISCHARGE FORM

Before filling out an Admission/Discharge Form, be sure that the infant meets at least one of the Selection Criteria, based on events during the current admission. Before coding any of the Data Items, enter your Center Number and the infant's CPQCC ID Number (from your Patient Log) in the space on the top of each page of the form.

IDENTIFICATION AND DEMOGRAPHICS

Item 1. Birth weight [BWGT]

Record the birth weight in grams. Since many weights may be obtained on an infant shortly after birth, enter the weight from the Labor and Delivery record if available and judged to be accurate. If unavailable or judged to be inaccurate, use the weight on admission to the neonatal unit or lastly, the weight obtained on autopsy (if the infant expired within 24 hours of birth). Do not use a comma separator as in 1,224. Use only numbers as in 1224.

Item 2. Head Circumference at Birth [BHEADCIR]

Enter the head circumference to the nearest tenth of a centimeter as recorded in the chart or clinical flow sheets on the day of birth. If the head circumference is not recorded on the day of birth, record the first head circumference measurement on the following day. If the head circumference is not measured on the day of birth or on the following day, record as unknown. The head circumference entries allowed should be between 10.0 cm and 70.0 cm.

Specify **Unknown** if this information cannot be obtained, or if the head circumference was measured on the day of birth or the following day.

Item 3. Best Estimate of Gestational Age [GAWEEKS, GADAYS]

Record the best available estimate of gestational age in weeks and days. Where sources disagree, use the following hierarchy:

- 1) Obstetric measures, based on last menstrual period, obstetrical parameters, or prenatal ultrasound as recorded in the maternal chart.
- 2) Neonatologist's estimate, based on physical or neurologic examination, combined physical and gestational age exam (Ballard/Dubowitz), or examination of the lens.

Record gestational age in weeks and days. In cases when the best estimate of gestational age is an exact number of weeks, enter the number of weeks in the space provided for weeks and enter 0 in the space provided for days. Do not leave the number of days blank.

Check **Unknown** if this information cannot be obtained.

➤ Note:

Entering or updating gestational age in days will affect the collection of several items on this form. For instance, item 48 (HIE) will only be unlocked if an infant's gestational age has been entered.

Item 4. Birth Date [BDATE] will be re-numbered Item 4a. Birth Date [BDATE]. Item 4b Birth Time [BTIME] will be added.

Item 4a. Date of Birth [BDATE]

Enter the date of birth using MM/DD. Birth Year is pre-filled because it must be the current year.

The date of birth is used in subsequent portions of the form to determine the date of Day 3, date of Day 28, the date of Week 36 adjusted gestational age, initial length of stay and total length of stay for infants who are transported out.

Item 4b. Time of Birth [BTIME]

For acute transports to your center, this item will propagate to and from the TRS form.

Enter the infant's time of birth.

The time of birth is used to obtain the number of hours/minutes to first surfactant treatment. For infants who are acutely transported to your NICU, the value for time of birth is propagated from / to the CPeTS form.

For EDS Submitters, please code Item 4. **[BDATETIME]** as the following:

{01-12}/ {01-31}/ {2017} {00-23}: {00-59} = Date & Time of Birth if time of birth is known

{01-12}/ {01-31}/ {2017} {99:99} = Date & Time of birth if time of birth is unknown

Item 5. Sex [SEX]

Check **"Male"** or **"Female."**

Check **Unknown** if sex cannot be determined.

Item 6. Died in Delivery Room [DELDIE]

Check **Yes** if the infant was born in your center, was never admitted to the NICU, and died in the delivery room or at any other location in your hospital within 12 hours after birth and use the Delivery Room Death Form instead. These locations may include the mother's room, resuscitation rooms or any location other than the NICU in your hospital.

- Note:
 - a. Hospital policies vary concerning the physical placement of a non-viable infant for the purpose of providing "comfort care." These infants may be physically cared for in a variety of locations including the delivery room, the OB recovery room, and the mother's room or even the Nursery or NICU. If a hospital policy dictates that this type of infant be formally admitted to the NICU for end-of-life care, then an Admission/Discharge form must be completed on this infant. If hospital policy dictates that the infant is NOT formally admitted to the NICU for end-of-life care, a Delivery Room Death form should be completed.
 - b. The on-line form does not allow you to change the delivery room death check box. Whether or not the infant died in the delivery room must be established prior to this screen.
 - c. On 11/1/2011 VON has updated the definition of live birth. The Delivery Room Death definition includes a note that reads:
The definition of live born was updated to use the standard terminology recommendation of The Committee on Fetus and Newborn of the American Academy of Pediatrics: "A live born infant is one who breathes or has any evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscle, regardless of whether the umbilical has been cut or the placenta is attached. Heartbeats are to be distinguished from transient cardiac contractions; respirations are to be distinguished from fleeting respiratory efforts or gasps."

Check **No** if the infant did not die in the delivery room or at any other location in your hospital within 12 hours after birth and prior to admission to the NICU. Check **No** for all outborn infants. If No, continue to complete the Admission/Discharge Form.

- Note:
The goal of Items 7a-7c, 8a and 8b is to understand where the infant was born and whether the infant was discharged home prior to the current admission.

Item 7a. Location of Birth [LOCATE]

Check **Inborn** if the infant was born in your Center. This includes any location within your center; e.g., Labor & Delivery, Antepartum Unit, Emergency Room AND was never sent home after birth. If inborn, items 7c, 8a and 8b are all Not Applicable. For Satellite NICUs the Inborn option cannot be selected.

Check **Outborn** if the infant was born in another facility OR at any location outside your Center OR home at any time after birth. Any infant requiring ambulance transport will be considered outborn. When completing the Admission/Discharge data forms for outborn infants, use all information available from the hospital that transported the infant to your center as well as from your own hospital.

The following information is for **Satellite NICUs ONLY:**

Check **Born at Co-Located Hospital (Satellite NICUs Only)** if an infant was born at the co-located hospital where a satellite NICU is located. If your center is a satellite NICU and the infant was delivered in the co-located hospital. This includes any location within the co-located hospital, e.g., Labor & Delivery, Antepartum unit, Emergency Room. For non-satellite NICUs the option (Born at Co-located Hospital) cannot be selected.

This response will only be shown for Satellite NICUs and will be grayed out for all other NICUs.

➤ Notes:

- a. Data must be collected on all inborn infants meeting the eligibility criteria, including infants who were live born, but died in the delivery room or prior to NICU admission.
- b. For the situation in which a baby is born at your center, then sent home and then after the home discharge is re-admitted to your center, you need to:
 1. Fill out a new form and assign a new network ID number.
 2. Check the baby as Outborn.
 3. Check the age in days at the re-admission (Item 7b).
 4. Check your own center as the location of birth (Item 7c).
- c. The prior situation also applies to Satellite NICUs. In other words, if an infant was previously home, this infant should always be coded as Outborn. The logic is the same as for Centers who have an infant who was initially admitted to their NICU after birth and then re-admitted from home; this Center would have to enter this infant as Outborn as well.
- d. For Satellite NICUs, infants who are delivered at the Main NICU and then transferred to the Main NICU's Satellite NICU are considered Outborn infants.

Item 7b. Age in Days at Admission to your NICU (For Inborn >1500 grams or Outborn Infants Only) [DAYADMISS]

If Inborn If 1500 grams, skip to question 9.

For Inborn >1500 grams OR Outborn infants only, Day of Admission is the day of life on which the infant is admitted to the NICU. The Date of Birth is day 1.

For example, if an outborn infant is born on June 1, and admitted to your hospital's NICU on June 1, the Day of Admission would be 1. If that same infant were admitted on June 3, the Day of Admission would be 3.

To determine the Day of Admission to the NICU for Outborn infants you must know the Date of Birth and the Date of Admission to the NICU. The time of birth does not matter. If the infant is born at 11:30 PM and admitted to your hospital at 11:59 PM on the same day, the Day of Admission is 1, since the infant was admitted on the Date of Birth.

➤ Note:

- a. This item applies only to Inborn babies weighing greater than 1500 grams OR Outborn infants. The acceptable range for Day of Admission is from 1 (for infants admitted on their Date of Birth) to 28, (since Outborn infants admitted more than 28 days after birth are not eligible for the database).
- b. For babies with birth weights of 1,500 grams or less or a gestational age of 22 to 29 weeks of gestation, this item defaults to 1 which means that these infants are assumed to be admitted to the NICU on the day of birth.
- c. The definition of this variable differs slightly from the one used in 2005 to accommodate the situation of babies with birth weights higher than 1,500 grams who were inborn, but NOT admitted to the NICU on the day of birth.

Item 7c. Hospital Location of Birth (For Outborn Infants Only) [BIRTHLOCATION]

If Inborn, skip to question 8.

For **outborn** infants only or for infants who were previously sent home, and then re-admitted within 28 days of birth, select the birth hospital from the selection list. If **Outborn**, Enter the 6-digit OSHPD code corresponding to the birth location in the space provided. (See Appendix F for a roster of OSHPD facility codes for California.)

The list on the online form is sorted in alphabetical order by hospital name. You can use the "Narrow List" filter to only show hospitals in the list that include the characters in the white box next to the green "Narrow List" button. You can reset the list of hospitals to the full list by using the green Reset button.

➤ Notes:

- a. Once you select "Born at Co-located Hospital", the system will automatically set the hospital of birth to the Hosting Hospital's OSHPD ID number. The birth location will be grayed and cannot be changed.
- b. If the baby was born in your center, then sent home and re-admitted to your center, the birth location is your center.

Item 8. Hospital Admission History (For Outborn Infants Only)

(a) Previously Discharged Home [PDH]

We have clarified the response choices for this item (for Outborn infants). The response choices are as follows:

Check **Never Discharged Home** if the infant has never been discharged to home from a hospital location since birth.

➤ Note:

A home birth does NOT qualify for checking "Previously Discharged Home from a Hospital after Birth." A home birth that was admitted to your NICU should be coded as "Never home after birth," unless the infant was admitted to a hospital after the home birth, then discharged, and then readmitted to the NICU.

Check **Was Previously Discharged Home from a Hospital after Birth** if the infant has been discharged to home since birth.

➤ Notes:

- a. A home birth that was admitted to your NICU should be coded as "Never home after birth," unless the infant was admitted to a hospital after the home birth, then discharged, and then readmitted to the NICU.
- b. This item is Not Applicable for inborn infants or infants born at the co-located hospital for satellite centers.

(b) Re-Admission After Previous Discharge Home [READMIT]

Admission Order [READMIT] (Only answer this section if the infant was home after birth.)

Check **First Admission to this NICU** if this admission is the first time the infant has been in your NICU.

Check **Readmission to this NICU** if the infant has previously been in your NICU.

Check **Not Applicable** if this information is not applicable.

➤ Notes:

- a. For a hyperbilirubinemia / exchange transfusion infant, the infant can be admitted or re-admitted to any location in your hospital.
- b. This item is Not Applicable if the infant is inborn / born at the co-located hospital for satellite centers, or outborn and never previously discharged home.

DELIVERY AND MATERNAL HISTORY

Item 9. Maternal Date of Birth [MDATE]

Enter the mother's birth date as mm-dd-yyyy. Note that the on-line form allows "short" date entries and tries to convert them to the correct date. For instance, entering 12111989 will be converted to 12-11-1989.

Provided a correct maternal birth date is provided, the corresponding maternal age at the time of the delivery will be auto-populated using information entered on infant's date of birth.

Check **Unknown** if the mother's date of birth is unknown.

➤ Notes:

- a. For the Delivery and Maternal History section, enter maternal and perinatal data on the woman who delivered the infant even if she is a gestational carrier.
- b. For 2012, CPQCC has mandated a new item, Maternal Date of Birth [MDATE] to replace Mother's Age at Infant's Birth Age Last Birthday [MAGE]. This variable improves data linkage between the CMQCC Maternal Database with the CPQCC Network Database and the CCS HRIF CQI Program Database.
- c. The data item applies to infants born in 2012 and later; they do not apply to infants born prior to 2012. For our members' convenience, we will keep the variable [MAGE] on the on-line and hard copy forms. If the Maternal Date of Birth is known, then [MAGE] will be auto-populated. But if the Maternal Date of Birth is unknown, then the Data Contact can enter the Mother's Age at the Time of Delivery.

Maternal Age

If the mother's date of birth is unknown, but the mother's age at the time of the delivery is known, enter the mother's age at time of delivery. Give her age in completed years; meaning that a woman who is 30 years and 364 days old should be recorded as 30 years old, not 31.

Check **Unknown** if the mother's age at time of the delivery is unknown.

Item 10. Maternal Race / Ethnicity

(a) Is Mother of Hispanic Origin? [HISP]

Check **Yes** if the biological mother is a person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.

Check **No** if the biological mother's ethnicity is not of Hispanic or Latino origin as defined above.

Check **Unknown** if this information cannot be obtained.

(b) Maternal Race [MATRACE] Choose only one of the following race categories.

Check **Black or African American** if the biological mother is a person having origins in any of the black racial groups of Africa.

Check **White** if the biological mother is a person having origins in any of the original peoples of Europe, the Middle East, or North Africa.

Check **Asian** if the biological mother is a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.

Check **American Indian or Alaskan Native** if the biological mother is a person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.

Check **Native Hawaiian or Other Pacific Islander** if the biological mother is a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Check **Other** if none of the categories above applies to the biological mother.

Check **Unknown** if race cannot be obtained.

➤ Notes:

- a. Ethnic and racial data help us to monitor differences in perinatal risks and outcomes in California, and to adjust for these differences when comparing hospitals with diverse populations. The CPQCC race classification scheme for the current year follows that used by Vermont Oxford Network, which combines Asian and Pacific Islander groups, includes a residual "Other" category, and allows for only a single choice.
- b. Finding Race and Ethnicity Data. The Automated Vital Statistics System (AVSS) is now used in all birthing hospitals in California to produce paper and electronic birth certificates. It is important for CPQCC Data Collectors to understand that the AVSS system is probably used in your Center and that it collects ethnicity and race data in a manner consistent with new State and Federal standards for multiple race reporting. CPQCC encourages members to use their Center's AVSS system as the primary source of maternal race and ethnicity information.
- c. Self-identification. Maternal Ethnicity and Race should be completed by or with direct assistance of the informant. Appearance, language, or other personal attributes do not necessarily determine ethnicity or race. A woman who speaks Spanish, was born in Mexico, and says that she is not Hispanic, but claims to be a Native American, should be recorded as non-Hispanic Native American. The

responses for the Ethnicity and Race (Item 9a and 9b) should be obtained by review of the birth certificate or personal interview with the mother (see information above about AVSS), if possible. Obtaining the information from a review of medical records is less preferable.

- d. Coding multiple maternal race. Many hospitals now record multiple Maternal races in their database systems. Since 2012, in cases where multiple maternal races have been recorded, use the following hierarchy: Black (code=1), Asian (code=4), Native Hawaiian or Pacific Islander (code=6), American Indian or Alaska Native (code=5), White (code=3), Other (code=7), Unknown (code=99). From the multiple races reported, choose the race that appears first in the above hierarchy. For example, a mother recorded as Black, Asian, and White should be coded as Black. A Mother recorded, as American Indian and White should be coded as American Indian. Do not code a multi-race mother as "Other" or "Unknown." These categories are reserved for mothers who claim a race not represented in the available codes, and for situations in which information on race is truly unknown.
- e. We want to emphasize the importance of Self-identification. Maternal Ethnicity and Race should be completed by or with direct assistance of the informant. Appearance, language, or other personal attributes do not necessarily determine ethnicity or race. A woman who speaks Spanish, was born in Mexico, and says that she is not Hispanic, but claims to be an American Indian, should be recorded as non-Hispanic American Indian. The responses for the Ethnicity and Race (Item 9a and 9b) should be obtained by review of the birth certificate or personal interview with the mother (see information above Page 35 of 168 about AVSS), if possible. Obtaining the information from a review of medical records is less preferable.

Item 11. Prenatal Care [PCARE]

Check **Yes** if the mother received any prenatal obstetrical care prior to the admission during which birth occurred. (Note: One visit is counted as prenatal care.)

Check **No** if the mother did not receive any prenatal obstetrical care.

Check **Unknown** if this information cannot be obtained.

➤ Notes:

For the Delivery and Maternal History section, enter maternal and perinatal data on the woman who delivered the infant even if she is a gestational carrier.

Item 12. Group B Strep Positive [GROUPEBSTREP]

Check **Yes** if maternal vaginal or anal culture is positive for Group B Streptococcus (GBS).

Check **No** if maternal vaginal or anal culture is negative for Group B Streptococcus (GBS).

Check **Not Done** if the test was not performed.

Check **Unknown** if this information cannot be obtained.

- Note:
Item 12. Group B Strep Positive accounted for a high percentage of unknowns. Upon further investigation, it became apparent that a significant number of Centers do not perform this test on moms until 34 weeks of gestational age. To capture this situation, we have changed N/A to Not Done.

Item 13a. Antenatal Steroids [ASTER]

Starting from 2014, CPQCC will be renumbering Item 13. Antenatal Steroids to Item 13a and revising the definition as recommended by CMQCC. The revision is based on the Joint Commission (JC) Measure PC-03 (Version 2014A)

Please abstract the Antenatal Steroids information for all newborns <32 weeks gestational age, not just those <1500 grams. This allows for the calculation of both VON and JC measures. The JC measure is defined: Of the mothers giving birth at your hospital to an infant that is 24 to under 32 weeks of gestation at birth, how many received at least one dose of antenatal steroids at any time prior to birth? The VON measure is defined: Of the inborn and outborn babies in your NICU from 401 grams to <1500 grams birth weight, how many infants' mothers received at least one dose of antenatal steroids at any time prior to birth? Note, one metric is gestational age based and the other is birth weight based; one is mother-centric and the other is baby-centric; but the same database can calculate both measures. If you have no mothers at your facility, only the VON measure is used. The JC measure is only used for mothers giving birth at your hospital. We have revised the question stem and definition as follows:

Check **Yes** if corticosteroids were administered IM or IV to the mother during pregnancy at any time prior to delivery.

- Note:
Corticosteroids include betamethasone, dexamethasone, and hydrocortisone.

Check **No** if antenatal corticosteroids were NOT administered to the mother during pregnancy at any time prior to delivery OR if there is no documentation in the medical record that antenatal steroid therapy was initiated before delivery

Check **Unknown** if this information cannot be obtained (e.g. missing records from a referring hospital).

- Notes:
 - a. The Joint Commission will exclude all cases marked as "Yes" from the numerator/denominator so there is advantage to find this documentation if present.
 - b. When determining whether there is a reason documented by a physician/ Advanced Practice Nurse/Physician's Assistant/Certified Nurse Midwife for not initiating antenatal steroid therapy, reasons must be explicitly documented (e.g., "patient had an adverse reaction to the medication - unable to initiate antenatal steroid therapy") or clearly implied (i.e., there is documentation the delivery occurred before antenatal steroid therapy could be initiated, or there is documentation the fetus has anomalies which are not compatible with life).
 - c. Starting from 2013, this item is only applicable and optional for inborn infants who are <32 weeks gestational age.

- d. This item is Not Applicable (NA) if the infant was ≥ 32 weeks gestational age at birth or if the mother did receive antenatal steroids.

Item 13b. Antenatal Steroids Documentation [ASTERDOCUMENT]

Since 2013, CPQCC has mandated the addition of a new OPTIONAL item for inborn infants. Item 13b. Is there documentation in the medical record for reasons for NOT initiating antenatal steroid therapy before delivery? (Note: Starting from 2013, this item is only applicable and OPTIONAL for inborn infants who are <32 weeks gestational age.)

Check **Yes** if there is documentation by a physician/Advanced Practice Nurse/Physician's Assistant/Certified Nurse Midwife that the patient has one or more reasons for not initiating antenatal steroid therapy before delivery.

Check **No** if there is no documentation by physician/ Advanced Practice Nurse/Physician's Assistant/Certified Nurse Midwife of a reason for not initiating antenatal steroid therapy before delivery or unable to determine from medical record documentation.

Check **Unknown** if this information cannot be obtained.

- Note:
- a. The Joint Commission (JC) will exclude all cases marked as YES from the numerator/denominator so there is advantage to find this documentation if present.
 - b. When determining whether there is a reason documented by a physician/ Advanced Practice Nurse/Physician's Assistant/Certified Nurse Midwife for not initiating antenatal steroid therapy, reasons must be explicitly documented (e.g., "patient had an adverse reaction to the medication - unable to initiate antenatal steroid therapy") or clearly implied (i.e., there is documentation the delivery occurred before antenatal steroid therapy could be initiated, or there is documentation the fetus has anomalies which are not compatible with life, or there is documentation that the patient has chorioamnionitis). If reasons are not mentioned in the context of antenatal steroid administration, do not make inferences.
 - c. Starting from 2013, this item is only applicable and optional for inborn infants who are <32 weeks gestational age.
 - d. This item is Not Applicable (NA) if the infant was ≥ 32 weeks gestational age at birth or if the mother did receive antenatal steroids.

Item 13c. Antenatal Steroids Reason [ASTERREASON]

Check **Chorioamnionitis** if it includes infections of the amniotic sac and fluid (amnionitis) and those of the uterine wall (endometritis).

Check **Other active infection** if sepsis, pyelonephritis, active herpes or similar infection was given as the reason.

Check **Immediate delivery** if the mother is admitted with advanced cervical dilation or fetal/maternal condition requiring immediate delivery.

Check **Fetus** has anomalies incompatible with life if only comfort measures are to be provided

Check **Unknown** if this information cannot be obtained.

Note: This is an optional field and would only be used if your hospital has a high rate of excluded cases to understand why. The reason should be found in the same spot as Item 13b.

➤ Note:

Since 2013, CPQCC has mandated the addition of a new OPTIONAL item for inborn infants. Item 13c. If yes, what was the documented reason for NOT administering antenatal steroids? (NOTE: Starting from 2013, this item is only applicable and OPTIONAL for inborn infants who are <32 weeks gestational age.)

Item 14. Spontaneous Labor [SPLABOR]

Labor is defined as the presence of strong, regular, and painful contractions causing cervical change.

Check **Yes** if mother went into labor on her own (spontaneous labor). Prior to delivery. Cases where the mother begins labor spontaneously, but the labor is subsequently augmented (e.g. administration of Pitocin) spontaneous labor should be checked **Yes**.

Check **No** if mother did not go into labor on her own. Select **No** if labor is induced (e.g. administration of Pitocin or cervical ripening agent), but no labor was evident prior to induction. Select **No** if the patient had a scheduled cesarean delivery.

Check **Unknown** if this information cannot be obtained.

➤ Notes:

- Cases where the mother begins labor spontaneously, but the labor is subsequently augmented (e.g. administration of Pitocin) should be checked Yes. Check No if labor is induced (e.g. administration of Pitocin or cervical ripening agent), but no labor was evident prior to induction. Check No if the patient had a scheduled cesarean delivery.
- For the Delivery and Maternal History section, enter maternal and perinatal data on the woman who delivered the infant even if she is a gestational carrier.

Item 15. Multiple Gestation

(a) Multiple Births or Gestation [MULT]

Check **Yes** if two or more live fetuses were documented at any time during the pregnancy that resulted in the birth of the infant. Note that this count might include fetuses that have been re-absorbed in utero by the time of delivery.

Check **No** for a single fetal gestation.

Check **Unknown** if the information is not known.

➤ Notes:

- a. For Item 15a, enter "Yes" if at any time during this pregnancy there was more than one fetus documented, no matter how many of these resulted in a birth, stillborn or live born.

- b. For the Delivery and Maternal History section, enter maternal and perinatal data on the woman who delivered the infant even if she is a gestational carrier.

(b) Number of Infants Delivered [NBIRTHS] If Multiple Gestation is answered Yes, enter the number of infants delivered (count both live born and still born infants) For example, if twins were delivered, enter "2"; if triplets were delivered enter "3". Do NOT count fetuses, which have been reabsorbed in utero and were not delivered. This item is Not Applicable (NA) if the infant is not a multiple gestation.

Select **Unknown** if the information is not known.

(c) Birth Order for Multiple Births [BIRTHORDER] If multiple gestation is answered Yes, enter the birth order of the infant for the set of multiples. For instance, if the infant was the second of a set of triplets delivered, enter 2. Note that it is necessary to answer items 14a and 14b before the on-line form lets you answer 14c. The reason is that this item should only be filled in if the infant was a multiple. Item 14b is then constrained to the number of multiples delivered.

➤ Note:

For the case, when two or more live fetuses were documented at any time during the pregnancy that resulted in the birth of only one infant because the other fetuses were reabsorbed in utero and not delivered, enter "Yes" in Item 15a. and enter 1 in Item 15b. If two infants were delivered, enter 2 in Item 15b.

Check **Unknown** if this information cannot be obtained.

Item 16. Delivery Mode [DELMOD]

For this item, we have revised the hard copy form to match the format of the on-line form while maintaining the EDS Coding. Choose only one of the following responses:

Check **Spontaneous Vaginal** for a Normal Vaginal delivery. This is any vaginal delivery for which instruments were not used. This includes cases where manual rotations or other head or shoulder maneuvers were used, provided instruments were not also used.

Check **Operative Vaginal** for any vaginal delivery for which any instrumentation (forceps, vacuum) was used. Episiotomies are not considered operative deliveries.

Check **Cesarean** for any cesarean delivery (elective or emergent).

Check **Unknown** if this information cannot be obtained.

Item 17. Antenatal Conditions

This question focuses on antenatal events that may affect the pregnancy and/or delivery of the infant. In each column (Maternal, Fetal, Obstetrical), check all conditions in the category, which were present in the antenatal period for each column, check **none** if none of the listed conditions was present. For each column, check Unknown if the information is not obtainable.

Maternal Antenatal Conditions

This question focuses on antenatal events that may affect the pregnancy and/or delivery of the infant. Select all maternal conditions which were present in the antenatal period. Check None if none of the listed conditions was present. Check Unknown if the information is not obtainable.

None [ANCMNONE]. No maternal antenatal complications.

➤ **Note:**

The issues identified under "Maternal" conditions refer to the mother's medical problems/history. Check "None" only if you have access to a reliable and complete prenatal/medical record or history. If a mother presents with no prenatal care and no available medical history, this section should be marked, "Unknown." If a mother presents with no prenatal care, but there is a medical history present on her chart, applicable items may be selected as appropriate.

Antenatal Magnesium Sulfate [ANCMAMAGSULF]. VON has mandated the addition of a new item Antenatal Magnesium Sulfate. The new data item applies to infants born in 2012 and later; they do not apply to infants born prior to 2012. In addition, CPQCC has also added a note to clarify the definition of this item. The definition for this new item is given below:

Check **the box if Magnesium Sulfate was administered intravenously to the mother during pregnancy at any time prior to delivery. Do NOT check the box if Magnesium Sulfate was not administered intravenously to the mother during pregnancy or at any time prior to delivery.**

➤ **Note:**

Check the box if antenatal magnesium sulfate was administered at any time prior to delivery, for any reason.

Hypertension [ANCMHYP]. if the maternal or infant medical record states the diagnosis of hypertension, chronic or pregnancy-induced, eclampsia, preeclampsia, seizures, toxemia, HELLP syndrome, with or without edema and proteinuria, or if a maternal blood pressure above 140 systolic or 90 diastolic was recorded prior to or during the current pregnancy.

Chorioamnionitis [ANCMCHORIO]. if the maternal medical record gives evidence of infections of the amniotic sac and fluid (amnionitis) and those of the uterine wall (endometritis).

Other Infection [ANCMOINF]. Other maternal non-intrauterine infections which complicate the pregnancy or delivery. Includes Herpes, HIV, or other sexually transmitted diseases (STD).

Diabetes [ANCMDIA]. Maternal diabetes of any type and severity.

Previous cesarean [ANCMCES]. If mother has delivered by cesarean prior to this delivery.

Other maternal [ANCMOTH]. If another antenatal maternal complication affecting the infant's health or the course of delivery was diagnosed. Specify the complication in the space provided.

Description of Other [ANCMDESC]. Specify the complication in the space provided.

Unknown [ANCMUNK]. Information not obtainable.

Fetal Antenatal Conditions

This question focuses on antenatal events that may affect the pregnancy and/or delivery of the infant. Select all fetal conditions which were present in the antenatal period. Check None if none of the listed conditions was present. Check Unknown if the information is not obtainable.

➤ **Note:**

The issues identified under "Fetal" conditions refer to problems, issues or concerns pertaining to the fetus prior to birth. Check "None" only if you have access to a reliable and complete prenatal record or history that includes fetal evaluation. If a mother presents with no prenatal care and no available medical history, this section should be marked, "Unknown". If a mother presents with no prenatal care, but there is a prenatal history that includes fetal evaluation present on her chart, applicable items may be selected as appropriate.

None [ANCFNONE]. No fetal antenatal complications.

Intrauterine growth restriction/IUGR [ANCFIUGR]. Include symmetric or asymmetric IUGR.

Distress [ANCFDIS]. The medical record should state the diagnosis of fetal distress, poor biophysical profile, or non-reassuring (abnormal) stress test or fetal monitoring or fetal status. The following situations are also often associated with fetal distress (but do not in themselves constitute fetal distress, unless accompanied by documentation as noted above): decrease in amniotic fluid (low AFI, oligohydramnios), decreased blood flow or oxygenation to the infant, cord entanglement; cord prolapse, decreased fetal movement, fetal arrhythmia or fetal bradycardia.

Anomaly [ANCFANO]. Check if anomalies are diagnosed prior to birth.

Other Fetal/placental problems [ANCFOTH]. if other fetal problems affecting the infant's health or the course of delivery were present. Specify the complication in the space provided.

Description of Other [ANCFDESC]. Specify any other fetal/placental complications affecting the infant's health or the course of delivery not listed in the space provided.

Unknown [ANCFUNK]. Check unknown if the information is not obtainable.

Obstetrical Conditions

This question focuses on antenatal events that may affect the pregnancy and/or delivery of the infant. Select all obstetrical conditions which were present in the antenatal period. Check None if none of the listed conditions was present. Check Unknown if the information is not obtainable.

➤ Note:

The issues identified under "Obstetrical" conditions refer to problems, issues or concerns pertaining to the current pregnancy and delivery. This information should be readily available on the mother's delivery record. If you have access to the delivery record, you should be able to select all appropriate, applicable items. If the delivery record is NOT available, you may not select "None," and should choose "Unknown" instead.

None [ANCONONE]. No obstetrical antenatal complications.

Preterm Labor (<37 weeks) (regular contractions in the context of cervical change)

[ANCOLABOR]. Preterm labor is defined by regular contractions in the context of cervical change. If preterm (< 37 wks) regular contractions in the context of cervical change occurred.

Check **Preterm Labor** if any of the following apply:

- Contractions led to preterm vaginal birth.
- Tocolytic drugs were used to stop/treat preterm contractions.
- A cesarean section was performed due to preterm contractions.

Preterm Premature Rupture of Membranes (ROM) (<37 wks) [ANCOPREPROM]. For 2011, Preterm Premature Rupture of Membranes (PPROM) is defined as Premature Rupture of Membranes (PROM) at a gestational age of less than 37 completed weeks of gestation.

Term Premature Rupture of Membranes (rupture BEFORE the onset of labor, not premature gestation) [ANCOPREROM]. Since 2014, we have re-labeled Item 17. Antenatal Conditions – Obstetrical, Premature ROM (rupture BEFORE the one set of labor, not premature gestation), to Term Premature ROM (rupture BEFORE the onset of labor, not premature gestation).

Prolonged Rupture of Membranes (>18 hours) [ANCOPROM]. If prolonged rupture of the membranes, rupture of the membranes more than 18 hours prior to birth of the infant, occurred..

Malpresentation/Breech [ANCOMAL]. If fetal presentation other than vertex, including frank breech, footling breech, transverse and compound presentation.

Bleeding/Abruption/Previa [ANCOBLEED]. If bleeding related to complications with the placenta. Placental abruption refers to premature detachment of the placenta from the uterine wall. Placenta previa refers to low implementation of the placenta in the uterus, usually over the cervix.

Other Obstetrical Complications [ANCOOTH]. if any other obstetrical complication occurred. Specify the complication in the space provided.

Other Obstetrical Complications (Describe) [ANCODESC]. Specify the obstetrical complication in the space provided.

Unknown [ANCOUNK]. Check unknown if the information is unobtainable.

➤ Notes:

- a. Only one of "Preterm (< 37 wks) Premature ROM" or "Term (≥ 37 wks) Premature ROM" can apply.
"Term (≥ 37 wks) Premature ROM" is not applicable and grayed out if an infant was born prior to 37 completed weeks gestation.
- b. For the Delivery and Maternal History section, enter maternal and perinatal data on the woman who delivered the infant even if she is a gestational carrier.

Item 18. Indications for Cesarean Section

Indicate why a cesarean section was done. Check as many indications as apply.

Check **Not Applicable [INDCESNA]** if no cesarean section was performed to deliver this infant.

Check **Malpresentation/Breech [INDCESBR]** if the infant has an unfavorable presentation (breech, oblique, transverse, or compound lie).

Check **Multiple gestation [INDCESMG]** if a reason for cesarean delivery was a multiple gestation pregnancy.

Check **Fetal Distress [INDCESFD]** if fetal distress was a reason why a cesarean section was performed.

Check **Elective [INDCESER]** if the cesarean section was elected over vaginal birth by physician or patient preference and no other indication is specified. Includes elective repeats.

Check **Dystocia/Failure to Progress [INDCESDY]** if a cesarean section was performed for either of the following reasons: (1) uterine contractions were insufficient to open the cervix; (2) the pelvis and/or birth canal was too small or was obstructed, preventing clear passage of the infant; (3) failure to progress. Also, include as dystocia, cases of failed induction, unengaged fetus, cephalopelvic disproportion, and suspected or pending macrosomia.

Check **Placental Problems [INDCESPP]** if problems related to the placenta indicated a cesarean section had been performed. This includes placenta previa, antepartum bleeding, and abruption.

Check **Hypertension [INDCESHTN]** if hypertension was a reason why a cesarean section was performed. The medical record should state the diagnosis of hypertension, eclampsia, preeclampsia, seizures, toxemia or HELLP Syndrome.

Check **Other [INDCESOTH]** if another maternal, fetal, or obstetrical problem was a reason why a cesarean section was performed.

If **Other [INDCESDESC]** was checked, then specify indication in the given space if another maternal, fetal, or obstetrical problem was a reason why a cesarean section was performed.

Check **Unknown [INDCESUNK]** if either (a) the mode of delivery is unknown, or (b) a cesarean section was performed, but the reasons for choosing cesarean over vaginal delivery are not known.

Item 19a. Apgar Scores at 1", 5" and 10" [AP1, AP5, AP10]

Enter the Apgar score at 1 minute [AP1] and at 5 minutes [AP5] as noted in the Labor and Delivery record. Enter the 10-minute Apgar score [AP10], if available.

Check **Unknown [=99]** for any score that is unknown. If a 10-minute Apgar score was not done, select **Not Done [=77]**.

➤ Note:

In general, Apgar scores are repeated every 5 minutes until the infant's score is greater than or equal to 7, or the infant has been moved to the NICU for ongoing resuscitation and critical care. If you do not see a 10-minute Apgar score on the infant's chart, but the 5-minute Apgar score is 7 or higher, you can assume that a 10-minute Apgar score was not done, and mark "Not Done" on the form. If the 5-minute Apgar score is less than 7, there should have been a 10-minute Apgar score done. If you are unable to find it in the record, mark "Unknown."

Item 19b. Suspected Encephalopathy or Suspected Perinatal Asphyxia [PA] or Low 5-min and/or 10min Apgar Score.

➤ Note:

The at items 19c-19e apply only to infants > 1,500 grams that meet at least one of the following criteria:

Since 2014, CPQCC has mandated the addition of a new Item 19b. Suspected Encephalopathy or Suspected Perinatal Asphyxia [PA]. (Note: Answer only if greater than 1500grams). This item will allow us to screen for suspected encephalopathy or suspected perinatal asphyxia and to validate the Big Baby selection criteria

Check **Yes** if the infant had suspected encephalopathy or suspected perinatal asphyxia, along with cardiorespiratory depression at birth signified by any one (or more) of the following: (1) pH less than 7.00 on an umbilical blood sample or a blood gas obtained within one hour of life, (2) 5-minute Apgar score of less than or equal to 3, or (3) 10-minute Apgar score of less than or equal to 4.

Check **No** if the infant does not meet any of the above criteria.

Check **Unknown** if this information cannot be obtained.

➤ Note:

This definition of suspected encephalopathy or suspected perinatal asphyxia is different from the criteria for hypoxic ischemic encephalopathy (HIE), defined later in Item 48 (i.e., not all patients meeting eligibility criteria under suspected encephalopathy or suspected perinatal asphyxia will have HIE according to the HIE definition).

Item 19c. Is there an umbilical cord blood gas or a baby blood gas in the first hour of life available? [GAS]

Since 2014, CPQCC has mandated the addition of a new item on umbilical cord blood gas or baby blood gas in the first hour of life (mmol/L) for predicting the likelihood of neonatal encephalopathy.

➤ Note:

The at items 19c-19e apply only to infants > 1,500 grams that meet at least one of the following criteria:

1. admitted with suspected encephalopathy (Yes to item 19b)
2. admitted with suspected perinatal asphyxia (Yes to item 19b)
3. 5-minute Apgar ≤ 3 or 10-minute Apgar ≤ 4 (Yes to item 19b)
4. received active hypothermia (Selective or Whole Body to item 22d)
5. diagnosis of HIE (Yes to item 48)

Check **Yes** if there is an umbilical cord blood gas or a baby blood gas was obtained within the first hour of life. (Note: If Yes to Item 19c, then answer Items 19d, 19e, and 19f.)

Check **No** if an umbilical cord blood gas or a baby blood gas was not obtained within the first hour of life.

Check **NA** if Not Applicable.

Check **Unknown** if this information cannot be obtained

- The umbilical cord or the first baby blood gas value is important to identify these newborns as it is one of the eligibility criteria. The severity and the timing of the perinatal insult may be evident based on the pH and the base deficit in these newborns. All studies and recommendations related to therapeutic cooling have a physiological criteria based on pH and base deficit. Hence, collecting these values are important to compare outcomes of newborns with HIE whether they did or did not undergo therapeutic cooling.

Item 19d. Source of the blood gas [GASSOURCE]

This item only applies to infants >1,500 grams who also meet at least one of the following criteria:

- admitted with suspected encephalopathy (Yes to Item 19b)
- admitted with suspected perinatal asphyxia (Yes to Item 19b),
- 5-minute Apgar ≤ 3 or 10-minute Apgar ≤ 4 (Yes to item 19b),
- received active hypothermia (Selective or Whole Body Cooling to Item 22d), or
- diagnosis of HIE (Yes to Item 48).

➤ Note:

If Yes to Item 19d, then ask Items 19e, 19f
Cord umbilical arterial (UA)
Cord umbilical venous (UV)
Arterial baby gas
Venous baby gas
Capillary baby gas

- 7. NA
- 9. Unknown

Check **the source where the infant's blood gas was obtained**. The umbilical arterial (UA) cord blood gas is preferred over the umbilical venous (UV) blood gas. Any umbilical cord gas (UA or UV) is preferred over any baby gas. If no cord blood gas is available, then use the first blood gas that was obtained from the baby.

Check **NA** if Not Applicable.

Check **Unknown** if this information cannot be obtained.

Item 19e. pH within one hour of life. [GASPH]: ____ . ____ ____

This item only applies to infants >1,500 grams who also meet at least one of the following criteria:

- *admitted with suspected encephalopathy (Yes to Item 19b)*
- *admitted with suspected perinatal asphyxia (Yes to Item 19b),*
- *5-minute Apgar \leq 3 or 10-minute Apgar \leq 4 (Yes to item 19b),*
- *received active hypothermia (Selective or Whole Body Cooling to Item 22d), or*
- *diagnosis of HIE (Yes to Item 48).*

Range: 6.00-8.00, NA, Unknown. Record the pH to 2 decimal places from the source listed in Item 19c. above.

Check **NA** if Not Applicable.

Check **Unknown** if this information cannot be obtained.

Item 19f. Base Deficit [GASBD]: _____

This item only applies to infants >1,500 grams who also meet at least one of the following criteria:

- *admitted with suspected encephalopathy (Yes to Item 19b)*
- *admitted with suspected perinatal asphyxia (Yes to Item 19b),*
- *5-minute Apgar \leq 3 or 10-minute Apgar \leq 4 (Yes to item 19b),*
- *received active hypothermia (Selective or Whole Body Cooling to Item 22d), or*
- *diagnosis of HIE (Yes to Item 48).*

Range: 0.0 to 40.0, NA, Unknown. Record the base deficit to 1 decimal place from the source listed in Item 19c.

Check **NA** if Not Applicable.

Check **Unknown** if this information cannot be obtained.

➤ Notes:

Base deficit is defined in such a way that it is usually talking about a negative number, but expressed as positive. Some places call it base excess in which case it is actually written negative. So, a base excess of "-17.7" is equivalent to a base deficit of "e;17.7".

Item 20. Delivery Room Resuscitation

Check **Yes or No** for each of the following interventions.

(a) Supplemental Oxygen [DROX]:

Check **Yes** if infant received any supplemental oxygen in the delivery room or during the initial resuscitation performed immediately after birth.

Check **No** if infant did not receive supplemental oxygen in the delivery room or during the initial resuscitation performed immediately after birth.

Check **Unknown** if this information cannot be obtained.

➤ Note:

21% oxygen is room air. This is not considered supplemental oxygen, no matter how administered.

(b) Nasal CPAP [DRCPAP]:

Check **Yes** if the infant was given continuous positive airway pressure (CPAP) in the delivery room.

➤ Note:

CPAP administered through a face mask covering the nose without the administration of intermittent breaths is considered nasal CPAP for the purpose of this definition. If this item is answered as "Yes" item 24b is applicable.

Check **No** if infant did not receive continuous positive airway pressure (CPAP) in the delivery room.

Check **Unknown** if this information cannot be obtained.

(c) Bag/Mask Ventilation [DRBM]:

Check **Yes** if the infant received any positive pressure breaths with a bag and face mask in the delivery room or during the initial resuscitation performed immediately after birth. Positive pressure may be administered using a resuscitation bag or other device that generates intermittent positive pressure.

Check **No** if the infant did not receive any positive pressure breaths with a bag and face mask in the delivery room or during the initial resuscitation performed immediately after birth.

Check **No** if a bag and facemask were only used to administer CPAP (continuous positive airway pressure) and no positive pressure breaths were given.

Check **Unknown** if this information cannot be obtained.

(d) Endotracheal Tube Ventilation [DRET]:

Check **Yes** if the infant was ventilated using an endotracheal tube in the delivery room or during the initial resuscitation performed immediately after birth.

Check **No** if the infant did not receive ventilation through an endotracheal tube in the delivery room or during the initial resuscitation performed immediately after birth. If an

endotracheal tube was placed only for suctioning and assisted ventilation was not given through the tube, check **No**.

Check **Unknown** if this information cannot be obtained.

(e) Epinephrine [DREP]:

Check **Yes** if epinephrine was given in the delivery room or during the initial resuscitation performed immediately after birth via intravenous, intracardiac or intratracheal (through an endotracheal tube) routes.

Check **No** if epinephrine was not given in the delivery room or during the initial resuscitation performed immediately after birth via intravenous, intracardiac or intratracheal (through an endotracheal tube) routes.

Check **Unknown** if this information cannot be obtained.

(f) Cardiac Compression [DRCC]:

Check **Yes** if external cardiac massage was given in the delivery room or during the initial resuscitation performed immediately after birth.

Check **No** if external cardiac massage was not given in the delivery room or during the initial resuscitation performed immediately after birth.

Check **Unknown** if this information cannot be obtained.

(g) NIPPV Nasal Intermittent Positive Pressure Ventilation [DRNIPPV]:

Check **Yes** if the infant was given nasal intermittent positive pressure ventilation (NIPPV) in the delivery room or during the initial resuscitation performed immediately after birth. Positive pressure breaths through nasal prongs may be administered using a resuscitation bag or other device that generates intermittent positive pressure breaths.

- Note:
This is different than bag/mask PPV.

Check **No** if infant did not receive nasal intermittent positive pressure ventilation (NIPPV) in the delivery room. Check **No** if nasal prongs were only used to administer continuous positive airway pressure (CPAP) and no positive pressure breaths were given.

Check **Unknown** if this information cannot be obtained.

- Note:
In 2006, the description of the Delivery Room Resuscitation items (Item 23) has been modified to clarify that these interventions may be performed in the Delivery Room or in an Initial Resuscitation Area immediately following birth and prior to the admission to the NICU. There are situations in which infants receive their initial neonatal resuscitation in locations other than a "delivery room." These include cases in which birth occurs outside of a "delivery room" (home, automobile, ambulance, hospital room, antepartum unit, emergency room, etc.) and in cases in which resuscitation is provided in locations adjacent to or close-by the delivery room. In such situations, the responses to the Initial Resuscitation items should be based on

the initial resuscitation provided immediately after birth, regardless of where the resuscitation took place. In such situations, the responses to Item 19. Delivery Room Resuscitation should be based on the initial resuscitation provided immediately after birth, regardless of where the resuscitation took place. The Initial Resuscitation Area is the term used below to indicate an area where stabilization occurs immediately after birth and prior to NICU admission, including the delivery room or other location where initial resuscitation and stabilization are performed.

Item 21. Surfactant Treatment

a) Surfactant in the Delivery Room [DRSURF]

Check **Yes** if surfactant was administered to the infant in the delivery room or as part of the stabilization immediately after birth, even if that occurred in a location other than the delivery room.

- **Note:** Include this information even if it occurred at the birth hospital prior to transport to your center.

Check **No** if surfactant was not administered when the infant was in the delivery room or as part of the stabilization immediately after birth.

Check **Unknown** if this information cannot be obtained.

- **Note:**

The initial resuscitation and stabilization of infants immediately after birth may occur in locations other than a delivery room. These may include a designated resuscitation area, hospital room, emergency room, operating room, ambulance, etc. If surfactant is administered during stabilization and resuscitation immediately following birth, the answer to this question is Yes regardless of location. If the stabilization immediately after birth occurs in a delivery room, resuscitation room or other location and the infant is then transported to the NICU for further stabilization during which surfactant is administered, check No.

b) Surfactant at Any Time [SURFX]

Check **Yes** if the infant received an exogenous surfactant at any time. Include this information even if it occurred at the birth hospital prior to transport to your center. If the answer to Item 21a is Yes, then Item 21b must also be answered Yes.

Check **No** if the infant never received an exogenous surfactant.

Check **Unknown** if this information cannot be obtained.

c) If Yes to 21a or 21b, Enter Age at First Dose [SURF1DHR], [SURF1DMIN]

If *Surfactant at Any Time* has been answered yes, enter age in hours and minutes of first dose. Do not answer this item if the answer to *Surfactant At Any Time* is No. Starting from 2016, the AD form includes the ability to enter the date/time of first surfactant treatment. If the date/time of birth is also provided, the time from birth to surfactant in hours and minutes is calculated for the user and populates the respective form fields. The date/time of surfactant is **not** committed to the CPQCC database. The AD form will propagate the date/time of first surfactant treatment to the CPeTS form if the date/time of first surfactant treatment has not been entered on

the CPeTS form, and if the date/time of first surfactant treatment occurred prior to an infant's NICU admission at the receiving NICU.

Item 21c will be modified to include the option to enter date and time of the first dose of surfactant. If date/time of birth and date/time of surfactant are both provided on the A/D form, the form will calculate the age at first dose.

➤ Note:

The EDS submissions will not be modified to include date/time of the first dose of surfactant; EDS submissions will continue to include only the age at first dose of surfactant.

If surfactant was given at any time, enter the infant's postnatal age in hours and minutes at the time when the first dose of surfactant was administered. For inborn infants, the first dose may have occurred prior to or after NICU admission. For outborn infants, the first dose may have occurred before transport, during transport or at your hospital. Do not answer this item if the answer to Surfactant at Any Time is No.

The postnatal age at first dose is the interval in hours and minutes, to the nearest minute, between the date and time of birth and the date and time at which the first dose was given.

If the postnatal age at the time of the first dose was exact in hours, a "0" should be entered in the "minutes" portion of this item. Do not leave hours or minutes blank. If the precise age at first dose is unknown, but an estimated age at first dose can be reliably determined to the nearest 15 minutes, please record this estimate. If the best estimate of age at first dose to the nearest 15 minutes cannot be determined, check Unknown next to the hours and minutes, for paper form submissions, or use the appropriate unknown code for electronic data submissions.

- EXAMPLE 1: An infant is born at 15:30 hours on October 1 in your hospital. The first dose of surfactant is given at 15:45 hours on October 1 in the delivery room. The postnatal age at first dose is 0 hours and 15 minutes.
- EXAMPLE 2: An infant is born at 15:30 hours on October 1 in an outlying hospital. The first dose of surfactant is given at 15:45 hours on October 1 in the delivery room at that hospital. The infant is subsequently transported to your hospital. The postnatal age at first dose is 0 hours and 15 minutes.
- EXAMPLE 3: An infant is born at 15:30 hours on October 1. The first dose of surfactant is given at 15:00 hours on October 4. The age at first dose is 71 hours and 30 minutes.
- EXAMPLE 4: An infant is born at 15:30 hours on October 1. The first dose of surfactant is given at 16:30 hours on October 1. The age at first dose is 1 hour and 0 minutes. (Please record as 1 hour and 0 minutes, rather than 0 hours and 60 minutes.)

➤

POST-DELIVERY DIAGNOSES AND INTERVENTIONS – RESPIRATORY

Item 22. Temperature and Cooling for Hypoxic – Ischemic Encephalopathy (HIE)

(a) Temperature Measured within the First Hour after Admission to Your NICU [ATEMPM]

➤ Note:

This item applies to the temperature of the infant during the first hour after admission to your NICU. Do not record temperature measurements taken at the transporting center for outborn infants.

Check **Yes** if the infant's core body temperature was measured and recorded within the first hour after admission to your NICU. Core body temperature may be measured by taking a rectal, esophageal, tympanic or axillary temperature.

➤ Note:

If an attempt was made to measure temperature during the first hour after admission to your NICU, and the temperature of the infant was lower than what the thermometer could measure, Check "Yes" and record the lowest temperature on the thermometer in Item 20b. If the infant's core body temperature was not measured within the first hour after admission to your NICU, Item 20b. Is not applicable.

Check **No** if the infant's core body temperature was not measured and recorded within the first hour after admission to your NICU.

Check **N/A** if the infant is eligible but was never admitted to your NICU.

- Note: As of the 2011 Second Quarter systems upgrade, this item can now propagate the same variable in the CPeTS on-line form (Item C.21, previously T.23).

(b) First Temperature within one hour of NICU Admission [ATEMP]

For Temperature at Admission to Your NICU (in Degrees Centigrade to the nearest 10th of a Degree), we have added the choice Too Low to Register (code=888.8) as a check box answer. The CPQCC Data Center Advisory Group felt strongly that this is clinically very significant of acuity/outcome, and very different from Unknown (Not Done), which is currently the only way to reflect this answer.

If the infant's core body temperature was measured and recorded within the first hour after admission to your NICU, enter the infant's temperature in degrees centigrade to the nearest tenth of a degree. If the infant's temperature is measured multiple times within the first hour after admission to your NICU, enter the value of the first temperature measurement. For centers that measure temperature in degrees Celsius or Fahrenheit, a Fahrenheit-to-Centigrade conversion table is provided in Appendix K. Use rectal temperature or, if not available, esophageal temperature, tympanic temperature or axillary temperature, in that order.

➤ Note:

The definition for Item 22b has been amended to clarify that the item applies to the first temperature measured within an hour of the initial admission to your NICU, even if the baby is being readmitted. The temperature has to be entered even if the infant continued cooling in your NICU or started cooling prior to the first temperature.

(c) Cooling for HIE [ACOOING]

If an infant was cooled (administered hypothermic therapy) at any time during the first admission to your NICU, specify the occurrence below.

Check **No Cooling for HIE** if no attempt for cooling was done.

Check **Cooling Started for HIE** if the first attempt for cooling was started during the admission to your NICU.

Check **Cooling Continued for Transport-in for HIE** if the first attempt for cooling was started at another hospital prior to admission to your NICU, and then continued during admission to your NICU.

➤ Note:

The option Cooling Continued for Transport-in is not applicable for inborn infants.

(d) Cooling Method for HIE [ACoolingMethod].

- 1=Passive,
- 2>Selective Head
- 3=Whole Body
- 4=Other
- 7=N/A
- 9=Unknown

If an infant was cooled **Hypoxic – Ischemic Encephalopathy (HIE)** at any time during admission to your NICU, record the last type of hypothermic therapy administered during the NICU admission.

Check **Passive** if cooling was intentionally withholding standard temperature maintenance strategies for the purpose of achieving low temperature. If passive cooling is only used until head or body cooling is started, please select either head or body cooling.

Check **Selective Head** if active cooling was restricted to the head and brain as an intervention to reduce the temperature by exposing the head to lower than environmental temperature. Specially designed head cooling devices, other cooling devices and ice packs applied to the head would be considered active cooling of the head and brain. Passive exposure to environmental temperature or cooling of the face for the treatment of supraventricular tachycardia is not considered active cooling of the head and brain.

Check **Whole Body** if active cooling of the body that is not restricted to the head and brain as an intervention to reduce the core body temperature and temperature of the brain by exposing the body to lower than environmental temperature. Whole body cooling may include cooling of the head in addition to the rest of the body. Cooling blankets, other cooling devices and ice packs applied to the body would be considered active cooling of the whole body. Passive exposure to environmental temperature is not considered active cooling of the whole body.

Check **Other** if cooling is actively administered in some other way than what has already been listed.

Check **Not Applicable** if the answer to 22c. was “No” and the infant was not cooled.

➤ Note:

If an infant is administered several methods of hypothermic therapy during the NICU admission, record the last type of hypothermic therapy administered.

Item 23. Respiratory Support (After leaving DR)

➤ Note:

The initial resuscitation and stabilization of infants immediately after birth may occur in locations other than a delivery room. These may include a designated resuscitation area, hospital room, emergency room, operating room, ambulance, etc. The Initial Resuscitation Area is the term used below to indicate an area where stabilization occurs immediately after birth and prior to NICU admission, including the delivery room or other location where initial resuscitation and stabilization are performed.

(a) Supplemental Oxygen [OXY]

Check **Yes** if the infant was given supplemental oxygen at any time after leaving the delivery room or the Initial Resuscitation Area. Include this information even if it occurred at the birth hospital prior to transport to your center.

Check **No** if the infant was never given supplemental oxygen after leaving the delivery room or the initial resuscitation area.

Check **Unknown** if this information cannot be obtained.

- Note: 21% oxygen is room air. This is not considered supplemental oxygen, no matter how administered.

(b) Intubated Conventional Ventilation (Intubated Conventional Vent) [VENT]

In 2010 we clarified Item 23b. Conventional Ventilation as “Intubated Conventional Ventilation”.

Check **Yes** if the infant was given intermittent positive pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at any time after leaving the delivery room or the Initial Resuscitation Area. Include this information even if it occurred at the birth hospital prior to transport to your center.

Check **No** if the infant was never given intermittent positive pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) after leaving the delivery room or the Initial Resuscitation Area.

Check **Unknown** if this information cannot be obtained.

➤ Note:

Intermittent positive pressure ventilation (IPPV) via nasal prongs is NOT considered conventional ventilation. Synchronized intermittent positive pressure ventilation (SIMV) via nasal prongs is NOT considered conventional ventilation.

(c) Intubated High Frequency Ventilation (Intubated HIFI Vent) [HFV]

Check **Yes** if the infant received intubated high frequency ventilation (IMV rate >240/minute) at any time after leaving the delivery room or the Initial Resuscitation Area. Include this information even if it occurred at the birth hospital prior to transport to your center.

➤ Note:

Intubated High frequency ventilation via nasal prongs is NOT considered intubated high frequency ventilation for Item 23c.

Check **No** if the infant never received intubated high frequency ventilation (IMV rate >240/minute) after leaving the delivery room or the Initial Resuscitation Area.

Check **Unknown** if this information cannot be obtained.

(d) High Flow Nasal Cannula [HFNC]

Check **Yes** if the infant received air or oxygen (any FiO₂) at a flow rate of one liter per minute or more via nasal cannula at any time after leaving the delivery room or the Initial Resuscitation Area.

Check **No** if the infant did not receive air or oxygen (any FiO₂) at a flow rate of one liter per minute or more via nasal cannula at any time after leaving the delivery room or the Initial Resuscitation Area.

Check **Unknown** if this information cannot be obtained.

(e) Nasal IMV or SIMV (or any other form of non-intubated assisted ventilation) [NIMV]

For Nasal IMV or SIMV (or any other form of non-intubated assisted ventilation) for greater than 4 hours, we have revised the answer choices from Yes/No to the following options. This revision will allow us to validate the Big Baby eligibility criteria for Nasal IMV/SIMV.

Check **≤ 4 hours (Less than or equal to 4 continuous hours)** if the infant received the intermittent positive pressure ventilation (intermittent mandatory ventilation or synchronized intermittent mandatory ventilation) via nasal prongs or other nasal device at any time after leaving the Initial Resuscitation Area for less than or equal to 4 continuous hours.

Check **> 4 hours (Greater than 4 continuous hours)** if the infant received the intermittent positive pressure ventilation (intermittent mandatory ventilation or synchronized intermittent mandatory ventilation) via nasal prongs or other nasal device at any time after leaving the Initial Resuscitation Area for greater than 4 continuous hours.

➤ Notes:

- Non-intubated assisted ventilation is defined as a mechanically-produced breath. CPAP alone doesn't qualify as non-intubated assisted ventilation. However, CPAP with a back-up rate whether administered through the nose, face mask, etc. that is triggered as a back-up rate or intermittently would qualify. Check Yes to Nasal IMV in Item 23e, but do not include these hours in calculating the duration of the initial episode of intubated assisted ventilation (Item 25b).

- If a Big Baby infant is on CPAP with a back-up rate for greater than four continuous hours, then this infant qualifies under the Big Baby selection criteria of Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) greater than four continuous hours.
- A failed or unsuccessful discontinuation of non-intubated assisted ventilation occurs when non-intubated assisted ventilation is discontinued, the infant does not tolerate this change, and non-intubated assisted ventilation is restarted within 24 hours.

Check **None** if the infant did not receive intermittent positive pressure ventilation via nasal prongs or other nasal device at any time after leaving the Initial Resuscitation Area.

- Note:
This item should be coded "Yes" if the infant receives positive pressure patterns that include two or more levels of positive pressure such as "BiPAP" or "SiPAP."

Intermittent positive pressure ventilation (IPPV) via nasal prongs is not considered conventional ventilation. Synchronized intermittent positive pressure ventilation (SIMV) via nasal prongs is not considered conventional ventilation.

Check **Unknown** if this information cannot be obtained.

Item 24. Nasal CPAP

Nasal CPAP [CPAP]

Check **Yes** if the infant was given continuous positive airway pressure applied through the nose at any time after leaving the delivery room or the Initial Resuscitation Area.

Check **No** if the infant was never given continuous positive airway pressure applied through the nose after leaving the delivery room or the Initial Resuscitation Area.

Check **Unknown** if this information cannot be obtained.

- Note:
If a Big Baby infant is on CPAP with a back-up rate for greater than four continuous hours, then this infant qualifies under the Big Baby selection criteria of Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) greater than four continuous hours. CPAP alone doesn't qualify as non-intubated assisted ventilation.
- Note:
High flow nasal cannula oxygen is NOT considered nasal CPAP for the purpose of this definition.

Item 24b. Nasal CPAP prior to ETT Ventilation [CPAPES]

If yes to either 20b or 24a, was NCPAP first used before any ETT Ventilation [CPAPES] VON has mandated the following changes to Nasal CPAP before ETT Ventilation Item 24b. [CPAPES]. The item was re-labeled for 2013: Nasal CPAP before or without ever having received ETT Ventilation. CPAPES was formerly applicable only if Nasal CPAP after Initial Resuscitation [CPAP] was answered Yes, but beginning in 2013, CPAPES must be answered if either CPAP or Nasal CPAP during Initial Resuscitation (DRCPAP) is answered Yes. CPAPES is still answered Yes if the infant received CPAP (either during or after initial resuscitation) and never received ETT ventilation.

CPQCC also implemented a new logic check in the www.cpqccdata.org site: "If Initial Resuscitation – Endotracheal Tube Ventilation (Item 20d. DRET) =No and Post DR Respiratory Support – Intubated Conventional Ventilation (Item 23b. VENT) =No and Post DR Respiratory Support – Intubated HIFI Ventilation (Item 23c. HFV) =No and Post DR Respiratory Support – CPAP of any type (Item 24a. CPAP) =Yes and Nasal CPAP before ETT Ventilation (Item 24b. CPAPES) =No," which generates a warning:

"WARNING: Nasal CPAP before ETT Ventilation: Because ETT Ventilation during Initial Resuscitation, Conventional Ventilation after Initial Resuscitation and High-Flow Ventilation after Initial Resuscitation were all answered NO, check to see whether this infant received ETT. If the infant was never given ETT ventilation, this item should be answered YES."

Check **Yes** if the infant was given continuous positive airway pressure applied through the nose without having previously received intermittent positive pressure breaths through an endotracheal tube.

➤ Note:

Intermittent positive pressure breaths refer to assisted breaths given through an endotracheal tube using a mechanical ventilator or by using a bag. If an infant was intubated in the delivery room solely for suctioning meconium, this does not count as prior intubation when responding to Item 24b. Thus, for an infant suctioned for meconium via an endotracheal tube who had the tube removed immediately after the suctioning was completed and who was later treated with Nasal CPAP the response to Item 24b would be Yes.

Check **No** if the infant received intermittent positive pressure breaths through an endotracheal tube before being given continuous positive airway pressure applied through the nose.

Check **Unknown** if this information cannot be obtained.

➤ Note:

Item 24b is only completed when the answer to Item 24a is Yes. When responding to Item 24b, the important point is whether the Nasal CPAP was given before or after assisted positive pressure breaths through an endotracheal tube. If an infant was first treated with Nasal CPAP and later was intubated and ventilated, the response to Item 24a would be Yes. If an infant was treated with Nasal CPAP and was never subsequently intubated, the response to Item 24b would also be Yes. If an infant was intubated and given intermittent positive pressure breaths through the endotracheal tube and then later received Nasal CPAP, the response to Item 24b would be No.

Item 25. Use of Intubated Assisted Ventilation [DURVENT]

Length of Intubated Assisted Ventilation [DURVENT]

Important Note: In 2010 Item 25a. Use of Assisted Ventilation was clarified as "Use of Intubated Assisted Ventilation".

➤ Notes:

As of 2011 data collection no longer captures intubated assisted ventilation time as days and hours. Instead ventilation time in days only needs to be provided. The on-line Admission/Discharge has an entry field for the total number of hours ventilated

for your convenience. You may enter the total number of hours ventilated. The number of hours entered will be converted to the correct number of days required for form completion.

In most cases this item pertains to the infant's initial episode of intubated assisted ventilation, during the initial stay at your hospital for any reason (surgery or the need for controlled sedation to perform imaging studies are included). However, for those infants who are ventilated for greater than four continuous hours, then transported out, and then readmitted while still ventilated, include the days and hours at the transported to hospital as well. However, if this same infant is transported out and never readmitted, you only include the ventilation time at your hospital.

If the infant was transported into your center at the initial admission, do NOT include prior ventilation episodes when assessing this item.

Check **None** if infant did not receive intubated assisted ventilation.

Check **Vent < 4 hrs.** if intubated assisted ventilation occurred for less than or equal to 4 continuous hours during the current admission. If Vent <4hrs is selected, it is not necessary to report ventilation days.

Check **Vent > 4 hrs.** if infant received intubated assisted ventilation or intubated high frequency ventilation for greater than four continuous hours for any reason (surgery or the need for controlled sedation to perform imaging studies are included). Intubated assisted ventilation includes intubated conventional ventilation and intubated High Frequency / Jet ventilation. Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) is not considered intubated assisted ventilation and should NOT be included in ventilation time for Item 25b. CPAP alone should also not be included in the length of time in ventilation for Item 25b.

Check **Unknown** if the number of days with intubated assisted ventilation cannot be determined.

Specify time in Days of Intubated Assisted Ventilation **[VENTDAYS]**, **[VENTHOURS]**.

➤ Important Note:

Starting in 2010 Item 25b. Days Ventilated and Hours Ventilated has been clarified as "Days of Intubated Assisted Ventilation". If Greater than four continuous hours, specify ventilation time. In 2010, for infants who treated with intubated conventional ventilation or intubated HIFI ventilation for greater than four continuous hours, we have revised this data element by only requiring the ventilation time in days. We would like to clarify that an answer of 1 day=Less than 24 hours, 2 days=24 hours to less than 48 hours, etc. We do not require the ventilation time in hours. We have placed a calculator on the on-line form that lets members enter the total number of hours ventilated. The calculator will convert the hours to the correct number of days. Starting in 2009, for an infant treated with intubated conventional ventilation or intubated HIFI ventilation for greater than four continuous hours record infant's initial episode of ventilation, during the initial stay at your hospital for any reason (surgery or the need for controlled sedation to perform imaging studies are included). However, for those infants who are ventilated for greater than four continuous hours,

then transported out, and then readmitted while still ventilated, include the days and hours at the transported to hospital as well. However, if this same infant is transported out and never readmitted, you only include the days/hours at your hospital. If the infant was transported into your center at the initial admission, do NOT include prior ventilation episodes when assessing this item.

- In 2010, Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) for greater than four continuous hours is not considered a form of intubated assisted ventilation. CPAP alone is not considered a form of intubated assisted ventilation.
- Conventional Ventilation (Con Vent) is defined for any infant given intermittent positive pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute). NOTE: Intermittent positive pressure ventilation (IPPV) via nasal prongs is not considered conventional ventilation. Synchronized intermittent positive pressure ventilation (SIMV) via nasal prongs is not considered conventional ventilation.
- High Frequency Ventilation (HIFI Vent) is defined for any infant given high frequency ventilation (IMV rate \geq 240/minute). NOTE: High frequency ventilation via nasal prongs is not considered high frequency ventilation.
- If Vent > 4 hrs., enter the total Days at which an infant that was treated with intubated assisted ventilation first began and in which there was greater than four continuous hours of ventilation during the day.
- Note:
A failed or unsuccessful discontinuation of intubated assisted ventilation occurs when intubated assisted ventilation is discontinued, the infant does not tolerate this change, and intubated assisted ventilation is restarted within 24 hours.

EXAMPLE 1: Infant receives intubated assisted ventilation for 6 hours and then weaned to NCPAP. The infant does not tolerate the change, and is placed back on intubated assisted ventilation 12 hours later at 18 hours of life. She remains intubated assisted ventilation for the next 36 hours, and is then successfully weaned to NCPAP. – The duration of intubated assisted ventilation is 2 Days and 6 Hours which should be entered as 3 days in the Admissions Discharge form.

EXAMPLE 2: Infant receives intubated assisted ventilation for 6 hours and is then weaned to NCPAP. The infant does well for the next 36 hours, but then experiences a set-back and is re-intubated and placed back on intubated assisted ventilation. – The duration of intubated assisted ventilation is 0 days and 6 hours that should be entered as 1 day in the Admissions Discharge form.

- Note:
When recording ventilation time always round up.

EXAMPLE 1: An infant was ventilated for 4 hours 1 minute round up to 1 day.

EXAMPLE 2: An infant was ventilated for 25 hours 3 minutes round up to 2 days.

- Note:
If an infant had multiple episodes of intubated assisted ventilation each lasting more than 4 hours, use the initial start and stop time of the first episode when answering this question.

Item 26. Did Infant Die Within 12 Hours of Admission to the NICU [DIE12].

Check **Yes** if the infant died 12 hours or less from the time of admission to your NICU.

- Note:
There may be eligible infants who die without ever having been admitted to your NICU. For eligible inborn infants who are never admitted to your NICU and who die within 12 hours of birth, use the Delivery Room Death Form rather than the Admission/Discharge Form. For eligible outborn infants who are never admitted to your NICU, check **Yes** to Item 24 if they die within 12 hours of admission to your hospital and complete all Items on the Admission/Discharge Form.

Check **No** if the infant did not die 12 hours or less from the time of admission to your NICU.

Item 27. Respiratory Distress Syndrome [RDS]

Check **Yes** if the infant had respiratory distress syndrome (RDS), defined as:

PaO₂ <50 mmHg in room air, central cyanosis in room air, a requirement for supplemental oxygen to maintain PaO₂ >50 mmHg, or a requirement for supplemental oxygen to maintain a pulse oximeter saturation over 85% within the first 24 hours of life.

AND

A chest radiograph consistent with RDS (for example, reticulogranular appearance to lung fields with or without low lung volumes and air bronchograms) within the first 24 hours of life.

Check **No** if the infant did not satisfy both of the criteria A and B above.

Item 28. Pneumothorax [PNTX]

In 2008, CPQCC has improved the assignment of Quality Metrics to the NICU of Occurrence. Revisions to the definitions and coding rules were implemented to better track where an event occurred for the following conditions:

Check **Yes Here** if the infant had extrapleural air diagnosed by chest radiograph or needle aspiration (thoracentesis) at your hospital prior to Initial Disposition or following readmission after initial transport. This includes infants who had thoracic surgery and then later developed extrapleural air diagnosed by CXR or needle thoracentesis.

Check **Yes Elsewhere** if the infant had extrapleural air diagnosed by chest radiograph or needle aspiration (thoracentesis) at another hospital. This includes infants who had thoracic surgery and then later developed extrapleural air diagnosed by CXR or needle thoracentesis.

Check **Yes Here and Elsewhere** if the infant had extrapleural air diagnosed by chest radiograph or needle aspiration (thoracentesis) both at your hospital AND another hospital. This includes infants who had thoracic surgery and then later developed extrapleural air diagnosed by CXR or needle thoracentesis.

Check **No** if the infant did not have extrapleural air as defined above.

For infants who had thoracic surgery and a chest tube was placed at the time of surgery OR if free air was only present on a CXR taken immediately after thoracic surgery and was not treated with a chest tube, check No.

Check **Unknown** if this information cannot be obtained.

Item 29. Meconium Aspiration Syndrome [MECONIUM]

Check **Yes** if all five of the following criteria are satisfied:

- Presence of meconium-stained amniotic fluid at birth.
- Respiratory distress with onset within 1 hour of birth. Respiratory distress will be defined as the presence of one of the following signs: tachypnea, grunting, nasal flaring or intercostal retractions.
- A PaO₂<50 mmHg in room air, central cyanosis in room air or a requirement for supplemental oxygen to maintain PaO₂>50 mmHg.
- Abnormal chest x-ray compatible with the diagnosis of meconium aspiration. Findings may include coarse, irregular, or nodular pulmonary densities, areas of diminished aeration or consolidation alternating with areas of hyperinflation, and generalized hyperinflation.
- Absence of culture-proven early onset bacterial sepsis or pneumonia. The diagnosis of culture-proven, early-onset, bacterial sepsis or pneumonia requires a positive blood culture obtained within 72 hours of birth.

Check **No** if the criteria for Meconium Aspiration Syndrome did not apply.

Check **Unknown** if this information cannot be obtained.

Item 30. Inhaled Nitric Oxide [NITRICO]

Check **Yes Here** if infant received Inhaled Nitric Oxide (iNO) at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if infant received Inhaled Nitric Oxide (iNO) at another hospital.

➤ Note:

iNO will be considered to be given at another hospital in the following situations:

- iNO is given before being admitted to your hospital.
- iNO is given prior to readmission to your hospital after initial transport.

Check **Yes Here and Elsewhere** if infant received Inhaled Nitric Oxide (iNO) both at your hospital and another hospital as defined above.

Check **No** if infant did not receive Inhaled Nitric Oxide (iNO) during this admission or during transport from a referring hospital.

Check **Unknown** if this information cannot be obtained.

Item 31. ECMO [ECMO]

Check **Yes Here** if infant received Extra-Corporeal Membrane Oxygenation (ECMO) at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if infant received Extra-Corporeal Membrane Oxygenation (ECMO) at another hospital.

Check **Yes Here and Elsewhere** if infant received Extra-Corporeal Membrane Oxygenation (ECMO) both at your hospital AND another hospital.

Check **No** if infant did not receive ECMO.

Check **Unknown** if this information cannot be obtained.

Item 32. Postnatal Steroids [POSTSTER]

Postnatal systemic corticosteroids [POSTSTER]

Check **Yes** if postnatal systemic corticosteroids were given after birth. Do not include inhaled or topical steroids.

Check **No** if no postnatal systemic corticosteroids were given after birth.

Check **Unknown** if it is not known whether postnatal systemic corticosteroids were given after birth.

Indications for steroid treatment

If postnatal systemic corticosteroids were given, select the following for all indications. You may select multiple indications:

CLD (chronic lung disease) [POSTERCLD]. Check if steroids were administered to treat or prevent bronchopulmonary dysplasia (BPD) or chronic lung disease.

- Note:
CPQCC has improved the assignment of Quality Metrics to the NICU of Occurrence. Revisions to the definitions and coding rules were implemented to better track where an event occurred for the following conditions:
If Yes to CLD, please check location:
Check Given Here if postnatal systemic corticosteroids were given at your hospital.
Check Given Elsewhere if postnatal systemic corticosteroids were given at another hospital.

Check **Given Here and Elsewhere** if postnatal systemic corticosteroids were given both at your hospital AND another hospital.

- Note:
Inhaled corticosteroids are not considered systemic corticosteroids. Thus, if an infant received inhaled corticosteroids but did not receive systemic corticosteroids after birth to treat or prevent bronchopulmonary dysplasia or chronic lung disease, then the answer to Item 32 is No.

Extubation [POSTEREX]

Check if steroids were given to ease trauma or irritation to the endotracheal tube (e.g. glottic edema).

Blood pressure [POSTERBP]

Check if steroids were administered to treat hypotension.

Other [POSTEROTH]

Check if systemic steroids were given for reasons other than those listed above. Exclude inhaled or topical steroids.

Unknown

Check if post-natal steroids were given, but the indication is unknown.

Item 33. Supplemental Oxygen on Day 28 [NEWOX28]

Check **Continuous** if the infant was hospitalized and received continuous supplemental oxygen on day 28. This does not include "blow-by" oxygen.

Check **Intermittent** if the infant was hospitalized and received any supplemental oxygen on day 28, but did not receive continuous oxygen during that day. Examples include oxygen given only with feeds or occasional apneic spells. "Blow-by" oxygen qualifies as intermittent supplemental oxygen.

Check **None** if the infant was hospitalized on day 28 and did not receive supplemental oxygen on that date.

Check **N/A**:

- If the infant is discharged home or dies prior to the Date of Day 28.
- If the infant is transported from your center to another hospital prior to the Date of Day 28 and either, is NOT readmitted to your center before discharge home, death or first birthday, or is transported a second time before the Date of Day 28.

Check **Unknown** if this information cannot be obtained.

Please refer to Appendix H in this manual for calculating Day 28.

Item 34a. Oxygen at 36 Weeks Adjusted GA [OX36]

To find the Date of Week 36, add the number of days needed to reach 36 Weeks, 0 Days to the infant's gestational age at birth. A calculator will be available to calculate the Date of Week 36 for infants born in 2017 this will be available by 1/1/2017 from www.vtoxford.org/downloads. This calculator should only be used for 2017 births. Births in 2014 should continue to use the current calculation in the 2014 Manual of Operations. Though this item is not submitted to VON, the calculated date is used to answer the Respiratory Support at 36 Weeks data items. The CPQCC calculator, which is accessible on the navigation bar on cpqccdata.org, has been updated to reflect the updated Date of Week 36 calculations.

To calculate the Date of Week 36:

- Identify the infant's gestational age (GA, weeks and days) from the 28 Day Form.
- If the infant's gestational age at birth is greater than or equal to 37 weeks, 0 days, the Date of Week 36 is not applicable.

- If the infant's gestational age at birth is from 36 weeks, 0 days to 36 weeks, 6 days, the
- Date of Week 36 is the infant's date of birth. [Prior to 2015, round the GA to the nearest week. If value 4-6, round the no. of weeks to value of GA wks. plus 1.]
- If the infant's gestational age at birth is 35 weeks, 6 days or less:
 1. Subtract the infant's gestational age at birth in weeks from 36 to calculate the number of weeks to Week 36.
 2. Multiply the number of weeks by 7 and subtract the infant's gestation age at birth in days to calculate the number of days to Week 36.
 3. Add that number of days to the infant's birth date.

Example: An infant is born on 1/1/2017 at 32 weeks, 5 days.

1. $36 - 32 = 4$

2. $(4 \times 7) - 5 = 23$

3. $1/1/2017 + 23 \text{ days} = 1/24/2017$, the Date of Week 36

As background information for this variable, in 2011 VON mandated the addition of five new items for Respiratory Support at 36 weeks post-menstrual age. The five new items include Conventional Ventilation at 36 Weeks (Item 34b. VENT36); High Frequency Ventilation at 36 Weeks (Item 34c. HFV36); High Flow Nasal Cannula at 36 Weeks (Item 34d. HNC36); Nasal IMV or SIMV at 36 Weeks (Item 34e. NIMV36; and Nasal CPAP at 36 Weeks (Item 34f. CPAP36). In 2012, VON has clarified the definition of Respiratory Support at 36 Weeks Adjusted GA (Items 34 a-f) to include an infant's rounded gestational age of less than or equal to 36 weeks.

Check **Continuous** if the infant was hospitalized and received 4 or more hours of continuous supplemental oxygen on date of week 36. This does not include "blow-by" oxygen.

Check **Intermittent** if the infant was hospitalized and received any supplemental oxygen on date of week 36, but did not receive continuous oxygen during that day. Examples include oxygen given only with feeds or occasional apneic spells. "Blow-by" oxygen qualifies as intermittent supplemental oxygen.

Check **None** if the infant was hospitalized on date of week 36 and did not receive supplemental oxygen on that date.

Check **N/A**:

- If the infant's gestational age in rounded weeks is greater than 36 weeks.
- The infant is discharged home or dies prior to the Date of Week 36.
- The infant is transported from your center to another hospital prior to the Date of Week 36 and either is NOT readmitted to your center before discharge home, death or first birthday, or is transported a second time before the Date of Week 36.

Check **Unknown** if this information cannot be obtained.

Please refer to Appendix I in this manual for calculating week 36.

Item 34b. Conventional Ventilation at 36 Weeks Adjusted GA [VENT36]

Check **Yes** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant was given intermittent positive pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at any time on the date of week 36.

Check **No** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant was not given intermittent positive pressure ventilation through an endotracheal tube with a conventional ventilator (IMV rate <240/minute) at any time on the date of week 36.

Check **N/A** if the item is not applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks.

➤ Note:

Intermittent positive pressure ventilation (IPPV) via nasal prongs is not considered conventional ventilation. Synchronized intermittent positive pressure ventilation (SIMV) via nasal prongs is not considered conventional ventilation.

Item 34c. High Frequency Ventilation at 36 Weeks Adjusted GA [HFV36].

Check **Yes** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant received high frequency ventilation (IMV rate \geq 240/minute) at any time on the date of week 36.

Check **No** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant did not receive high frequency ventilation (IMV rate \geq 240/minute) at any time on the date of week 36.

Check **N/A** if the item is not applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks.

Item 34d. High Flow Nasal Cannula at 36 weeks Adjusted GA [HFNC36]

Check **Yes** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant received air or oxygen (any FiO₂) at a flow rate of one liter per minute or more via nasal cannula at any time on the date of week 36.

Check **No** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant did not receive air or oxygen (any FiO₂) at a flow rate of one liter per minute or more via nasal cannula at any time on the date of

Check **N/A** if the item is not applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks.

Item 34e. Nasal IMV or SIMV at 36 Weeks Adjusted GA [NIMV36]

Check **Yes** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant received intermittent positive pressure ventilation (intermittent mandatory ventilation or synchronized intermittent mandatory ventilation) via nasal prongs or other nasal device at any time on the date of week 36.

Check **No** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant did not receive intermittent positive pressure ventilation via nasal prongs or other nasal device at any time on the date of week 36.

Check **N/A** if the item is not applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks.

➤ Note:

Nasal IMV or Nasal SIMV should be coded "Yes" if the infant receives positive pressure patterns that include two or more levels of positive pressure such as "BiPAP" or "SiPAP". Intermittent positive pressure ventilation (IPPV) via nasal prongs is not considered conventional ventilation. Synchronized intermittent positive pressure ventilation (SIMV) via nasal prongs is not considered conventional ventilation.

Item 34f. Nasal CPAP at 36 weeks Adjusted GA [CPAP36]

Check **Yes** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks, and the infant was given continuous positive airway pressure applied through the nose on the date of week 36. If Nasal IMV or Nasal SIMV is answered "Yes", Nasal CPAP should also be checked "Yes".

Check **No** if the item is applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks and the infant was never given continuous positive airway pressure applied through the nose on the date of week 36.

➤ Note:

Nasal IMV (intermittent mandatory ventilation) and nasal SIMV (synchronized intermittent mandatory ventilation) are both considered forms of nasal CPAP for the purpose of this definition. High flow nasal cannula oxygen is NOT considered nasal CPAP for the purpose of this definition.

Check **NA** if the item is not applicable based on the Eligibility Criteria for Respiratory Support at 36 Weeks.

Item 35. Respiratory Support at Discharge

➤ Note:

- When completing these items, "Discharge" refers to initial disposition in most cases. If an infant is transported from your center to another hospital and readmitted to your center following transport, update these items based on whether the infant was on respiratory support at the time of discharge after readmission.
- If by the June 1st close-out date, an infant is Still In the Hospital at Initial Disposition (Item 54) and has not been transported, leave items 35, 53-64 blank.

(a) Apnea or Cardio-Respiratory Monitor [ACFINAL]

For infants who went home or were transported, check Yes if the infant was discharged on an Apnea Monitor or Cardio-Respiratory Monitor. If arrangements were made to provide Apnea or Cardio-Respiratory monitoring at home following discharge, check Yes even if the infant was not actually on the monitor at the time he/she left your Center.

➤ Note:

A pulse oximeter is considered a cardio-respiratory monitor.

Check **No** if the infant was not discharged on an Apnea or Cardio-Respiratory Monitor.

For infants who remained in your Center on his/her first birthday, check Yes if the infant was on an Apnea Monitor or Cardio-Respiratory Monitor on the date of the infant's first birthday. Check No if the infant was not on an Apnea or Cardio-Respiratory Monitor on his/her first birthday.

For infants who died prior to discharge, check Yes if infant was on an Apnea Monitor or Cardio-Respiratory Monitor at any time on the day of death. Check No if the infant was not on an Apnea or Cardio-Respiratory Monitor at any time on the day of death.

Check **Unknown** if this information cannot be obtained.

(b) Oxygen [OXFINAL]

For infants who went home or were transported, check Yes if the infant was discharged on supplemental oxygen.

Check **No** if the infant was not discharged on supplemental oxygen.

Check **Unknown** if this information cannot be obtained.

For infants who remained in your Center on their first birthday, check Yes if the infant was on supplemental oxygen on the date of the infant's first birthday. Check No if the infant was not on supplemental oxygen on his/her first birthday.

For infants who died prior to discharge, check Yes if the infant received supplemental oxygen at any time on the day of death. Check No if the infant did not receive supplemental oxygen at any time on the day of death.

➤ Note:

21% oxygen is room air. This is not considered supplemental oxygen, no matter how administered.

(c) Intubated Mechanical Ventilation [SUCFINAL]

In 2010, we clarified Item 35b. Respiratory Support at Discharge –Mechanical Ventilation as “Intubated Mechanical Ventilation.”

For infants who went home or were transported, check Yes if the infant was discharged on intubated mechanical ventilation.

➤ Note:

- NCAP does NOT count as a form of intubated mechanical ventilation for the purpose of this data set.
- Intubated mechanical ventilation includes intubated conventional ventilation or intubated High Frequency/Jet ventilation. Nasal IMV/SIMV (or any other form of non-intubated assisted ventilation) does NOT count as intubated mechanical

ventilation for the purpose of this dataset. This item refers to intubated mechanical ventilation through an endotracheal tube only.

Check **No** if the infant was not discharged on assisted ventilation.

Check **Unknown** if this information cannot be obtained.

For infants who remained in your Center on their first birthday, check Yes if the infant was on intubated mechanical ventilation on the date of the infant's first birthday. Check No if the infant was not on intubated mechanical ventilation on his/her first birthday.

For infants who died prior to discharge, check Yes if the infant received intubated mechanical ventilation at any time on the day of death. Check No if the infant did not receive intubated mechanical ventilation at any time on the day of death.

(d) Other [OTHFINAL] (Specify) [OTHFINALDESC]

For infants who went home or were transported, check Yes if the infant was discharged with another device or protocol (e.g., CPAP). Specify the device in the space provided.

Check **No** if there were no other devices or protocols.

Check **Unknown** if this information cannot be obtained.

Item 36. Early Sepsis / Meningitis (On or before Day 3) [EBSEPS, EBSEPSDESC]

➤ Note:

- The date of birth counts as Day 1 regardless of the time of birth. For an infant born at 11:59 PM on September 1, Day 3 will be September 3.
- If an infant is transported into your center, is being treated for early bacterial sepsis because of a positive blood and/or cerebrospinal fluid culture drawn at the referring hospital, this infant qualifies, even if a repeat culture drawn at your center is negative. However, if an infant is transported into your center, was diagnosed with early sepsis but is no longer septic (due to treatment at the referring hospital), this infant does not qualify.

Check **GBS** if group B streptococcus is recovered from a blood and/or cerebrospinal fluid culture obtained on Day 1, 2 or 3 of life.

Check **E. coli** if Escherichia coli is recovered from a blood and/or cerebrospinal fluid culture obtained on Day 1, 2 or 3 of life.

Check **Other** if a bacterial pathogen from the list in Appendix C other than group B streptococcus is recovered from a blood and/or cerebrospinal fluid culture obtained on Day 1, 2 or 3 of life. Specify the organism in the space provided.

Check **No** if a bacterial pathogen from the list in Appendix C was not recovered from a blood and/or cerebrospinal fluid culture, obtained on Day 1, 2 or 3 of life or if no blood or cerebrospinal fluid cultures were obtained on Day 1, 2 or 3.

Check **Unknown** if this information cannot be obtained.

Item 37. Late Sepsis / Meningitis (After Day 3)

We have clarified the difference in the definition used for the CPQCC Network Database and for the Perinatal Quality Care Collaborative (PQIP) initiatives.

Note: Each of the late infection items is based on whether the infant had the infection after Day 3 of life. In determining the date of Day 3, the date of birth counts as Day 1 regardless of the time of birth. For an infant born at 11:59 PM on September 1, Day 3 will be September 3.

➤ Notes:

For the CPQCC Network Database, we are using the most common general definition to screen for nosocomial infection. In comparison, CPQCC's Perinatal Quality Care Collaborative (PQIP) utilizes very specific metrics required for quality improvement practices.

The three late infections are not applicable if:

- The infant is discharged home or dies on or before Day 3, or
- The infant is transported from your center to another hospital on or before Day 3 and either,
- Is not readmitted to your Center before discharge home, death or first birthday, or
- Is transported a second time on or before Day 3

Otherwise the item is applicable.

(a) Bacterial Pathogen [LBPATH, LBPATHDESC]:

- Note: If the infant has multiple infections during an episode of care, only record the first bacterial pathogen recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life from your hospital. If more than one organism is simultaneously recovered, rank order the following: 1) GBS, 2) E. coli, 3) Other
- If an infant is transported to your hospital with a bacterial pathogen from another hospital, and develops an infection from a different bacterial pathogen from your hospital, only record the pathogen acquired from your hospital.

For example, an infant is transported to your hospital with GBS infection detected at another hospital AND E. coli from your hospital, only record E. coli here.

If an infant is readmitted to your hospital and has two different bacterial pathogens recovered from your hospital AND another hospital, then upon readmission only update the record with the first infection that occurred in your hospital. You are not required to report the infection that occurred at the other hospital unless it was the same infection that first occurred at your hospital.

For example, an infant develops E. coli infection at your hospital, is transported to another hospital where the infant acquires GBS infection (in addition to E. coli infection), and then is readmitted with both E. coli and GBS infections, you would only record E. Coli Here and Elsewhere.

- Note:
CPQCC has improved the assignment of Quality Metrics to the NICU of Occurrence. Revisions to the definitions and coding rules were implemented to better track where an event occurred for the following conditions:

If GBS is checked, then:

Check location of occurrence: **Here** if group B streptococcus GBS is recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life in your hospital prior to initial disposition or following readmission after initial transport.

Check location of occurrence: **Elsewhere** if group B streptococcus GBS is recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life in another hospital prior to initial disposition or following readmission after initial transport.

Check location of occurrence: **Here and Elsewhere** if group B streptococcus GBS is recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life both at your hospital AND another hospital prior to initial disposition or following readmission after initial transport.

If E. coli is checked, then:

Check location of occurrence: **Here if Escherichia coli (E. coli)** is recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life at your hospital prior to initial disposition or following readmission after initial transport.

Check location of occurrence: **Elsewhere if Escherichia coli (E. coli)** is recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life at another hospital prior to initial disposition or following readmission after initial transport.

Check location of occurrence: **Here and Elsewhere if Escherichia coli (E. coli)** is recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life both at your hospital AND another hospital prior to initial disposition or following readmission after initial transport.

If **Other** is checked, then:

Check location of occurrence: **Here** if a bacterial pathogen from the list of bacterial pathogens above other than group B streptococcus or E. coli, was recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life at your hospital prior to initial disposition or following readmission after initial transport.

Check location of occurrence: **Elsewhere** if a bacterial pathogen from the list of bacterial pathogens above other than group B streptococcus or E. coli, was recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life at another hospital prior to initial disposition or following readmission after initial transport.

Check location of occurrence: **Here and Elsewhere** if a bacterial pathogen from the list of bacterial pathogens above other than group B streptococcus or E. coli, was recovered from a blood and/or cerebrospinal fluid culture obtained after Day 3 of life both at your

hospital AND another hospital prior to initial disposition or following readmission after initial transport.

Check **No** if a bacterial pathogen from the list of pathogens provided above or Group B Streptococcus or E. coli was not recovered from a blood and/or cerebrospinal fluid culture, or if no blood or cerebrospinal fluid cultures were obtained after Day 3

Check **N/A** for any of the following if:

- The infant is discharged home or dies on or before Day 3.
- The infant is transported from your center to another hospital on or before day 3 and either is not readmitted to your center before discharge home, death or first birthday or, is transported a second time on or before Day 3.

Check **Unknown** if this information cannot be obtained.

➤ Note:

If a bacterial pathogen and coagulase negative staph are recovered during the same sepsis workup performed after Day 3, check only Bacterial Pathogen for that episode. If a bacterial pathogen is recovered during one episode of sepsis after Day 3, and coagulase negative staphylococcus is recovered during another episode of sepsis after Day 3 (associated with the three clinical criteria listed below) check both "Bacterial Pathogen" and "Coagulase Negative Staph".

(b) Coagulase Negative Staphylococci [CNEGSTAPH]:

Check **Yes** if the infant has all 3 of the following after Day 3 of life:

Coagulase Negative Staphylococcus is recovered from a blood culture obtained from either a central line, or peripheral blood sample, and/or is recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain.

AND

Signs of generalized infection (such as apnea, temperature instability, feeding intolerance, worsening respiratory distress or hemodynamic instability).

AND

Treatment with 5 or more days of intravenous antibiotics after the above cultures were obtained. If the infant died, was discharged or transported prior to the completion of 5 days of intravenous antibiotics, this condition would still be met if the intention was to treat for 5 or more days.

Check **Yes Here** if Coagulase Negative Staph occurred at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if Coagulase Negative Staph occurred at another hospital.

➤ Notes:

- When infants are transported to your hospital or are readmitted to your hospital after the initial transport, Coagulase Negative Staph will be considered to have occurred at another hospital in the following situations:
 1. Coagulase negative staph was diagnosed at the other hospital prior to admission to your hospital or prior to readmission following the initial transport.
 2. Coagulase negative staph was diagnosed within 4 hours of admission to your hospital.
- Recurrence or recrudescence of a coagulase negative staph infection that had previously occurred at another hospital will not be considered to be a coagulase negative staph infection that occurred at your hospital unless the original case of coagulase negative staph infection had resolved and the infant had been off of antibiotics for 1 week or more.

Check **Yes Here and Elsewhere** if Coagulase Negative Staph occurred both at your hospital AND another hospital.

Check **No** if any of the above are not true.

Check **N/A** for any of the following if:

- The infant is discharged home or dies on or before Day 3.
- The infant is transported from your center to another hospital on or before Day 3 and either is not readmitted to your center before discharged home, death or first birthday or is transported a second time on or before Day 3.

Check **Unknown** if this information cannot be obtained.

(c) Fungal [FUNGAL]:

Check **Yes Here** if a fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample and/or is recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain after Day 3 of life at your hospital prior to initial disposition or following readmission after the initial transport.

Check **Yes Elsewhere** if a fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample and/or is recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain after Day 3 of life at another hospital.

Check **Yes Here and Elsewhere** if a fungus was recovered from a blood culture obtained from either a central line or peripheral blood sample and/or is recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain after Day 3 of life both at your hospital AND another hospital.

Check **No** if a fungus was not recovered from a blood culture obtained from either a central line or peripheral blood sample or if no blood cultures were obtained after Day 3. Also, check No if a fungus was not recovered from cerebrospinal fluid obtained by lumbar puncture, ventricular tap or ventricular drain after Day 3.

Check **N/A** for any of the following if:

- The infant is discharged home or dies on or before Day 3.
- The infant is transported from your center to another hospital on or before day 3 and either is not readmitted to your center before discharge home, death or first birthday or is transported a second time on or before Day 3.

Check **Unknown** if this information cannot be obtained.

Item 38. Congenital Viral Infection [VIRAL, VIRALDESC]

Check **Yes** if infant had any congenital viral infection, documented by a positive viral culture at any time since birth, or a positive PCR, for CMV, HSV, HIV, or any other vertically transmitted viral pathogen. If Yes is selected, please specify which pathogen in the space provided.

Check **No** if infant did not meet above criteria.

Check **Unknown** if this information cannot be obtained.

POST-DELIVERY DIAGNOSES AND INTERVENTIONS – OTHER DIAGNOSES, SURGERIES, AND SURGICAL COMPLICATIONS

Item 39. (a) Patent Ductus Arteriosus [PDA]

For Patent Ductus, Arteriosus (Item 39a. PDA), CPQCC has mandated the revision of the definition and coding rules as follows:

Check **“No PDA”** if the infant does not satisfy the VON definition or CPQCC definition.

In 2011 the definition for Patent Ductus Arteriosus (PDA) has been revised. The modified definition is as follows:

Check **“PDA meeting revised VON definition”** if at least one of the following findings is present:

- Left to Right or bidirectional ductal shunt on Doppler echo
- Systolic or continuous murmur

And

- At least two of the following findings are present:
- Hyperdynamic precordium
- Bounding pulses
- Wide pulse pressure
- Pulmonary vascular congestion, cardiomegaly or both

PDA diagnosis based on echo and/or clinical evidence or was treated for PDA, but not meeting all VON 2011 criteria.

Check **“PDA diagnosis based on echo and/or clinical evidence or was treated for PDA, but not meeting all VON 2011 criteria”** if the infant doesn't meet the VON 2011 revised definition

of PDA, BUT was treated with Indomethacin for PDA, OR was treated with Ibuprofen for PDA, OR underwent a PDA ligation, OR had a PDA ascertained via an echocardiographic or clinical diagnosis.]

Check **Unknown** if this information cannot be obtained.

(b) Indomethacin for any reason [INDOMETH]

Check **Yes** if Indomethacin was administered after birth for any reason. The answer to this question may be Yes even if the infant did not meet the definition of PDA given in Item 39a.

Check **No** If Indomethacin was not administered.

- Note:
Ibuprofen should not be counted as Indomethacin.

Check **Unknown** if this information cannot be obtained.

(c) Ibuprofen for PDA [IBUPROFEN]

Check **Yes** if Ibuprofen was administered at any time after birth for the prevention or treatment of PDA. The answer to this question may be "Yes" even if an infant did not meet the definition given for Patent Ductus Arteriosus (PDA) in Item 39a.

Check **No** If Ibuprofen was not administered after birth for the prevention or treatment of PDA.

- Note:
Ibuprofen used for other than the prevention or treatment of PDA should not be coded as "Yes" for this item.

Check **Unknown** if this information cannot be obtained.

(d) PDA Ligation [SRGLIG]

CPQCC has improved the assignment of Quality Metrics to the NICU of Occurrence. Revisions to the definitions and coding rules were implemented to better track where an event occurred for the following conditions:

Check **Yes Here** if surgical ligation of the ductus arteriosus was attempted either in the operating room or NICU at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if surgical ligation of the ductus arteriosus was attempted either in the operating room or NICU at another hospital.

- Note:
PDA Ligation will be considered to be done at another hospital in the following situations:
 1. PDA Ligation is done before being admitted to your hospital.
 2. PDA Ligation is done prior to readmission to your hospital after initial transport.

Check **Yes Here and Elsewhere** if surgical ligation of the ductus arteriosus was attempted either in the operating room or NICU both at your hospital AND another hospital.

- Note:
Isolated PDA ligation is coded using item 39d. If PDA ligation is performed as an isolated procedure for PDA, do not enter a surgery code in Item 43 (only check "Yes" to Item 39d). If the PDA is ligated as a component of the repair or palliation of congenital heart disease, use code S504.

Check **No** if surgical ligation of the ductus arteriosus was not attempted either in the operating room or NICU.

Check **Unknown** if this information cannot be obtained.

(e) PDA Closure by Catheterization [PDACLOSE]

In 2015, CPQCC is mandating the addition of a new variable Item 39e. To capture the two forms of surgical therapy for PDA: the traditional surgical approach, which entails a thoracotomy (or alternatively, thoracoscopy), and catheter closure.

Item 39e. PDA Closure by Catheterization [PDACLOSE]

- 0. No
- 7. Not Applicable (only if [PDA]=0)
- 9. Unknown
- 11. Yes, here
- 12. Yes, elsewhere
- 13. Yes, here and elsewhere

Select Yes, here if closure by catheterization of the ductus arteriosus was attempted anywhere at YOUR hospital prior to initial disposition or following readmission after initial transport.

Select Yes, elsewhere if closure by catheterization of the ductus arteriosus was attempted anywhere at ANOTHER hospital.

Select Yes, here and elsewhere if closure by catheterization of the ductus arteriosus was attempted anywhere BOTH at your hospital and another hospital.

Select No if closure by catheterization of the ductus arteriosus was not attempted anywhere.

Select Unknown if this information cannot be obtained.

Notes:

PDA closure by catheterization includes catheter-based procedures or transcatheter device closure, which may include using the Rashkind device, or Gianturco coils. For the purposes of the VON database, PDA Closure by Catheterization is **NOT** considered a form of PDA Ligation and requires a documentation of a description in Other Surgery S600 code. Therefore, for the purpose of the VON submission, a response of Yes to the item PDA Closure by Catheterization will result in reporting Other Surgery S600 code description = **PDA Closure by Catheterization, and will NOT be counted as a VON PDA Ligation.** In summary, if [PDACLOSE] = {11, 12, 13} then to result in and [SRGOTH]=1, [SRGCD1-10] = {S600H | E | B} and [SRGOTHDES]= {PDA Closure By Catheterization}. For the CPQCC Reports, we will distinguish between a VON PDA Ligation (includes PDA Catheterization) from a CPQCC PDA Ligation and a CPQCC PDA Closure by Catheterization.

Item 40. (a) Probiotics [PROBIOTICS]

VON has mandated the addition of a new item Probiotics (Item 40a. PROBIOTICS). The new data item applies to infants born in 2012 and later; they do not apply to infants born prior to 2012. In addition, CPQCC has also added a note to clarify the definition of this item. The definition for this new item is given below. Subsequently, the definition of Item 30 has been modified to clarify what are to be considered probiotics.

Check **Yes** if and only if the infant received probiotics containing live bacteria. This may include formulas containing probiotics or probiotic supplements added to formula or breast milk feeds. Yogurt is not considered a probiotic supplement.

Check **No** if the infant did not receive any probiotics.

➤ Notes:

Probiotics must contain live microorganisms administered enterally with feedings or as feeding supplements. Probiotics are to be distinguished from prebiotics, which are non-digestible carbohydrates meant to encourage proliferation of desirable gut flora. Yogurt should not be considered a probiotic for this question. VON will not be providing a list of accepted probiotics because the range of options is growing so quickly, but only pharmaceutical preparations should be included for the purposes of this data item.

(b) Necrotizing Enterocolitis [NEC]

➤ Note:

Infants who satisfy the definition of Necrotizing Enterocolitis below but are found at surgery or post-mortem examination for that episode to have a "Focal Gastrointestinal Perforation" should be coded as having "focal gastrointestinal perforation", not as having NEC. There may also be infants who have an isolated perforation unassociated with clinical NEC; these cases should not be classified as having NEC.

Determine if the infant had (a) Necrotizing Enterocolitis (NEC) diagnosed at surgery, or (b) NEC diagnosed at postmortem examination, or (c) NEC diagnosed clinically and radiographically using the following criteria:

A. One or more of the following clinical signs present:

1. Bilious gastric aspirate or emesis
2. Abdominal distention
3. Occult or gross blood in stool with no apparent rectal fissure.

AND

B. One or more of the following radiographic findings present:

1. Pneumatosis intestinalis
2. Hepato-biliary gas
3. Pneumoperitoneum

Check **Yes Here** if NEC occurred at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if NEC occurred at another hospital.

Check **Yes Here and Elsewhere** if NEC occurred both at your hospital AND at another hospital as defined above.

- Note: Starting in 2016, we will add a note to Item 40b. Necrotizing Enterocolitis [NEC] to clarify when to select "Yes Here and Elsewhere". Only select "Yes Here and Elsewhere" if NEC happened elsewhere prior to your hospital and then at your hospital, after a week of full feedings, NEC happened again.

Check **No** if the infant did not satisfy the above definition of NEC.

Check **Unknown** if this information cannot be obtained.

- Note:
 - When infants are transported to your hospital or are readmitted to your hospital after initial transport, NEC will be considered to have occurred at another hospital in the following situations:
 1. NEC was diagnosed at the other hospital prior to admission to your Hospital or prior to readmission following initial transport.
 2. NEC was diagnosed within 4 hours of admission to your hospital.
 - Recurrence or recrudescence of NEC that had previously occurred at another hospital will not be considered to be NEC that occurred at your hospital unless the original case of NEC had resolved and the infant had been on full feedings for 1 week or more.

(c) NEC Surgery [SRGNEC]

Check Yes if an infant had NEC and underwent one or more of the following procedures: laparotomy, laparoscopy, bowel resection or intraperitoneal drain placement.

- Notes:
 - If NEC Surgery is answered "Yes", at least one of the following surgery codes must be entered in Item 43:
 - S302 Laparoscopy (diagnostic, with/without fistula creation)
 - S303 Laparotomy (diagnostic or exploratory, with/without biopsy)
 - S307 Jejunostomy ileostomy, colonoscopy for intestinal diversion (with/without fistula creation)
 - S308 Small bowel resection
 - S309 Large bowel resection
 - S333 Primary peritoneal drainage for NEC, suspected NEC or intestinal perforation (If infant subsequently has other applicable surgical procedures, code those also.)
 - If the surgery code S307 is recorded and the infant has a bowel resection, codes S308 and/or S309 should also be recorded.
 - This item is Not Applicable and grayed out if the infant was not diagnosed with NEC.

- Note:
CPQCC has improved the assignment of Quality Metrics to the NICU of Occurrence. Revisions to the definitions and coding rules were implemented to better track where an event occurred for the following conditions:
If Yes to Item 40a:

Check **Yes Here** if one of the above procedures was performed at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if one of the above procedures was performed at another hospital.

Check **Yes Here and Elsewhere** if one of the above procedures was performed both at your hospital AND another hospital.

Check **No** if none of the following procedures: laparotomy, laparoscopy, bowel resection or intraperitoneal drain placement were performed for necrotizing enterocolitis, suspected necrotizing enterocolitis, or bowel perforation.

Check **Unknown** if this information cannot be obtained.

Item 41. Focal Intestinal Perforation [GIPERF]

The diagnosis for Focal Gastrointestinal Perforation is separate from Necrotizing Enterocolitis. This diagnosis will be based on visual inspection of the bowel at the time of surgery or post-mortem examination that demonstrates a single focal perforation with the remainder of the bowel appearing normal.

Check **Yes Here** if Focal Gastrointestinal Perforation (as defined above) occurred at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if Focal Gastrointestinal Perforation (as defined above) occurred at another hospital.

- Note:
When infants are transported to your hospital or are readmitted to your hospital after initial transport, GI Perforation will be considered to have occurred at another hospital in the following situations:
 1. GI Perforation was diagnosed at the other hospital prior to admission to your hospital or prior to readmission following initial transport.

Check **Yes Here and Elsewhere** if Focal Gastrointestinal Perforation (as defined above) occurred both at your hospital AND another hospital.

Check **No** if the infant did not have a Focal Gastrointestinal Perforation as defined above.

Check **Unknown** if this information cannot be obtained.

Item 42. Retinopathy of Prematurity [ROP]

Starting from 2013, the Retinopathy of Prematurity section, Item 42a. Retinal Exam [EYEX], Item 42b. Worst Stage of ROP [ISTAGE], Item 42c. Treatment of ROP with Anti-VEGF Drug

[VEGF] and Item 42d. ROP Surgery [SRGROP] is only applicable for infants 401 to 1500 grams or 22 to 31 completed weeks of gestation.

(a) Retinal Examination Performed [EYEX]

Check **Yes** if an indirect ophthalmologic examination for retinopathy of prematurity (ROP) was performed at any time.

Check **No** if an indirect ophthalmologic examination for ROP was not performed.

Check **Unknown** if this information cannot be obtained.

(b) If Yes to (a), enter Worst Stage of ROP [ISTAGE]

If a retinal examination was performed, enter the worst stage documented on any exam in the eye with the most advanced stage 1. Do not answer this item if the answer to “Was a Retinal Examination Performed” is No.

Stage 0: No evidence of ROP

Stage 1: Presence of demarcation line (+/- abnormal vascularization)

Stage 2: Presence of intraretinal ridge

Stage 3: Presence of a ridge with extraretinal fibrovascular proliferation

Stage 4: Partial retinal detachment

Stage 5: Total retinal detachment

➤ Note:

Code immature eyes with no evidence of ROP is as Stage 0.

An International Committee for the Classification of Retinopathy of Prematurity: The International Classification of Retinopathy of Prematurity Revisited. Arch Ophthalmol 2005; 123:991-999.

(c) Treatment of ROP with Anti-VEGF Drug [VEGF]

VON has mandated the addition of a new item Treatment of ROP with Anti-VEGF Drug. The new data item applies to infants born in 2012 and later; they do not apply to infants born prior to 2012. The definition for this new item is given below.

Check **Yes** if the infant received bevacizumab (Avastin) or other anti-vascular endothelial growth factor (VEGF) drug in one or both eyes for the treatment of retinopathy of prematurity (ROP).

Check **No** if the infant did not receive bevacizumab (Avastin) or other anti-VEGF in one or both eyes for the treatment of retinopathy of prematurity (ROP).

(d) ROP Surgery [SRGROP]

CPQCC has improved the assignment of Quality Metrics to the NICU of Occurrence. Revisions to the coding rules will be implemented to better track where an event occurred for the following conditions:

Check **Yes Here** if retinal cryosurgery and/or laser surgery were performed for ROP at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes Elsewhere** if retinal cryosurgery and/or laser surgery were performed for ROP at another hospital.

Check **Yes Here and Elsewhere** if retinal cryosurgery and/or laser surgery were performed for ROP both at your hospital AND another hospital.

Check **No** if retinal cryosurgery and/or laser surgery were not performed for ROP.

Check **Unknown** if this information cannot be obtained.

Item 43. Surgery [SRGOTH]

➤ Note:

For infants born after 2008, data are collected for some surgeries which were specifically excluded in previous years. See Appendix E.

Check **Yes** if a surgical procedure included in Appendix E was performed for the infant. In the spaces provided, you may enter as many as ten code numbers of Surgery Codes listed in Appendix E. If the specific surgical procedure is not listed in Appendix E, and the procedure was performed under general or spinal anesthesia, use the code for other surgery in that category (for example, S100, S200, etc.) and provide a description in the text field.

a. Clarifications to procedures for submitting surgery codes:

- Central lines are not considered surgery. Please do not record any of the following as surgery: Broviac catheters, percutaneous venous catheters, central venous catheters, PICC lines, umbilical artery lines, umbilical venous lines, or any other intravascular catheter. We recognize that some of these lines may be placed while the infant is under anesthesia for other procedures. Do not code any lines as surgery even if they are placed under general or spinal anesthesia.
- If a specific procedure is not on the list of surgical codes, do not use codes S100, S200, S300, S400, S500, S700, S800, or S900 unless the procedure is performed under general or spinal anesthesia. These "other" codes require that the procedure was done under general or spinal anesthesia.
- Do not use "other" codes to further describe surgical procedures that are on the list or to indicate why procedures are performed. Codes for "other" procedures like S100, S200, S300, etc., should only be used to identify procedures for which there is no specific code and when general or spinal anesthesia are used for the procedure. Do not use these "other" surgery codes to add a description of how or why the procedures are done. For

example, do not use S500 to add a description for the S504 procedure or to explain why heart surgery was performed.

- ECMO, ECMO cannulation, ECMO decannulation are not considered surgery. Please do not code ECMO, ECMO cannulation, or decannulation as surgery even if the procedures are performed under anesthesia.
- Peritoneal dialysis and placement or removal of peritoneal dialysis catheters are not considered surgery.
- Chest tube placement is not considered surgery.
- Cardiac surgery for the repair or palliation of congenital heart disease is coded as S504. Please do not use code S500 to further describe the details of that surgery.
- Isolated PDA ligation is coded using item 39d. If PDA ligation is performed as an isolated procedure for PDA, do not enter a surgery code in Item 43 (only check 'Yes' to Item 39d). If the PDA is ligated as a component of the repair or palliation of congenital heart disease, use code S504.

b. If NEC Surgery (Item 40b) is answered Yes, at least one of the following surgery code(s) from Appendix E must be entered in Item 43:

S302,
S303
S307
S308
S309
S333.

This includes other abdominal procedures performed under general or spinal anesthesia. Note: If an infant ONLY had either PDA Ligation (Item 39c) or ROP Surgery (Item 42c), answer No to Item 43.

Check **No** if a surgical procedure included in Appendix E was not performed for the infant. Answer No to Item 43 if the infant only had PDA Ligation (Item 39c) or ROP Surgery (Item 42c).

Description of Surgical Codes [SRGCD1 – 10]

The following Surgery Codes in Appendix E require a description in the space provided for Item 43 on the Discharge Form. If the infant had one or more of the surgical procedures listed below, record the applicable code(s) in the spaces provided and describe the surgery in the space labeled 'Description'. Only provide a description for Item 43 if one or more of the codes below is reported.

Code Description

S100 Other head and neck surgery requiring general or spinal anesthesia
S200 Other thoracic surgery requiring general or spinal anesthesia
S300 Other abdominal surgery requiring general or spinal anesthesia
S400 Other genitourinary surgery requiring general or spinal anesthesia

S500 Other open heart or vascular surgery requiring general or spinal anesthesia
S600 Other interventional catheterization whether or not anesthesia was required
(description required)

➤ Note:

Record procedures for other cardiac catheterization (S600) whether or not the infant received general or regional anesthesia.

S700 Skin or soft tissue surgery requiring general or spinal anesthesia
S800 Other musculoskeletal surgery requiring general or spinal anesthesia
S900 Other central nervous system surgery requiring general or spinal anesthesia
S1000 Fetal surgery at your hospital
S1001 Fetal surgery at another hospital

Check all surgeries that apply. Multiple surgeries in a specific surgery category should be checked if more than one surgery was required for a condition or its complications. This includes both unplanned and planned repeat surgeries.

Item 44. Surgical Complications [SRGCOMP]

Starting in 2013, CCS has mandated the deletion of Item 44. Complications of Surgery [SRGCOMP], and Item 44. Describe Surgical Complications [SURGCOMPDESC]. These items will be grayed out starting with the 2014 forms. Proceeding items will not be renumbered.

Item 45. Intracranial Hemorrhage

(a) Neural Imaging Done on or before Day 28 [IMAGE28]

For purposes of this question, neural imaging is defined as any modality used to image the brain, including a cranial ultrasound, CT scan or MRI.

Check **Yes** if at least one neural imaging (as defined above) was performed on or before day 28.

Check **No** if no neural imaging (as defined above) was performed on or before day 28. If No skip items 45b - 45d.

Check **Unknown** if this information cannot be obtained.

➤ Note:

Use the date from the Patient Identification Worksheet, Item W6, (Date of Day 28) when completing this question.

(b) If Yes to Cranial Imaging, enter Worst Grade of PIH (0-4) [IGRADE]

If a cranial ultrasound, CT scan or MRI was performed on or before day 28, enter grade based on the criteria below. Do not answer Worst Grade if the answer to 45a is "No."

Grade 0: No subependymal or intraventricular hemorrhage

Grade 1: Subependymal germinal matrix hemorrhage only

Grade 2: Intraventricular blood, no ventricular dilation

Grade 3: Intraventricular blood, ventricular dilation

Grade 4: Intraparenchymal hemorrhage

- Note:
If multiple neural imaging were done on or before day 28, record the most severe grade.

(c) If Periventricular – Intraventricular Hemorrhage, PIH (Grades 1 to 4) where first occurred [PIHHEMLOC]

If the infant had a Periventricular-Intraventricular Hemorrhage (PIH grades 1 to 4) documented on an ultrasound, CT, or MRI on or before day 28, indicate where a PIH first occurred. Note that this item does not ask where the worst grade occurred but rather where any PIH (grades 1 to 4) first occurred.

Check **Yes and First Here** if PIH (grades 1 to 4 as defined above) first occurred at your hospital prior to initial disposition or following readmission after initial transport.

Check **Yes and First Elsewhere** if PIH (grades 1 to 4 as defined above) first occurred at another hospital.

Check **None** if no PIH occurred.

Check **N/A** if no ultrasound, CT or MRI was done on or before day 28 or if no PIH occurred.

Check **Unknown** if this information cannot be obtained.

(d) Shunt Placed for Bleed [SHUNT]

Check **Yes** if a shunt was placed for an acquired post-hemorrhagic hydrocephalus.

Check **No** if no shunt was placed, there was no hemorrhage present, or neural imaging was not performed.

- Note:
A shunt placed for congenital hydrocephalus, not due to cranial hemorrhage, should be coded No.

Check **Unknown** if this information cannot be obtained.

(e) Other Intracranial Hemorrhage (on or before Day 28) [OTHEM, OTHHEMDESC]

Check **Yes** if neural imaging (either ultrasound, CT scan, MRI scan) showed evidence of intracranial hemorrhage other than PIH grades 1–4. Includes subdural, epidural, subarachnoid bleeds and parenchymal hemorrhage not related to P/IVH. Do not include extracranial bleeds such as subgaleal hemorrhages or cephalhematomas. Specify the type of intracranial hemorrhage in the given space.

Check **No** if no other evidence of hemorrhage was found or no imaging was performed.

Check **Unknown** if this information cannot be obtained.

Item 46. Cystic Periventricular Leukomalacia

(a) Neural Imaging Performed [PVLIMAG]

Check **Yes** if neural imaging (either ultrasound, CT scan, MRI scan) was performed at any time.

Check **No** if no neural imaging (either ultrasound, CT scan, MRI scan) was performed at any time.

Check **Unknown** if this information cannot be obtained.

(b) If Yes to 46a), was there evidence of CPVL [PVL]

Check **Yes** if the infant has evidence of cystic periventricular leukomalacia (CPVL) on a Cranial Ultrasound, CT, or MRI scan obtained at any time.

Check **No** if there was no evidence of CPVL on any Cranial Ultrasound, CT, or MRI and at least one cranial imaging study (ultrasound, CT, or MRI) was done.

Check **N/A** if no cranial image study (Ultrasound, CT, or MRI) was ever done.

Check **Unknown** if this information cannot be obtained.

➤ Note:

To be considered cystic periventricular leukomalacia there must be multiple small periventricular cysts identified. Periventricular echogenicity without cysts should not be coded as cystic periventricular leukomalacia. A porencephalic cyst in the area of previously identified intraparenchymal hemorrhage should not be coded as cystic periventricular leukomalacia. Periventricular abnormalities on CT or MI should not be coded as cystic periventricular leukomalacia unless multiple small periventricular cysts are identified.

Item 47. Seizures, EEG or Clinical [SEIZURE]

Check **Yes** if there is compelling clinical evidence of seizures, or of focal or multifocal clonic or tonic seizures. Also, check Yes if there is EEG evidence of seizures regardless of clinical status.

Check **No** if there is no evidence of seizures.

Check **Unknown** if this information cannot be obtained.

Item 48. Hypoxic Ischemic Encephalopathy [HIE]

➤ Note:

The definition of encephalopathy or perinatal asphyxia to select infants into the Big Baby database is different from the criteria for hypoxic ischemic encephalopathy (HIE) defined in Item 48 (i.e., not all patients meeting eligibility criteria under encephalopathy or perinatal asphyxia will have HIE according to the HIE definition).

Check **Severe** if the infant was diagnosed with Hypoxic-Ischemic Encephalopathy (HIE) as defined below, and the worst stage observed during the 168 hours (7 days) following birth is

that the infant is in deep stupor or coma. Infants in this category are not arousable in response to arousal maneuvers.

Check **Moderate** if the infant was diagnosed with Hypoxic-Ischemic Encephalopathy (HIE) as defined below, and the worst stage observed during the 168 hours (7 days) following birth is that the infant is lethargic or in mild stupor. Infants in this category are arousable but have a diminished response to arousal maneuvers.

Check **Mild** if the infant was diagnosed with Hypoxic-Ischemic Encephalopathy (HIE) as defined below, and the worst stage observed during the 168 hours (7 days) following birth is that the infant is alert or hyperalert, with either a normal or exaggerated response to arousal.

Check **None** if the infant was not diagnosed with Hypoxic-Ischemic Encephalopathy.

Check **N/A** if the infant has a gestational age at birth of less than 36 weeks.

Check **Unknown** if this information cannot be obtained.

HIE Diagnosis. The diagnosis of Hypoxic-Ischemic Encephalopathy requires the presence of all three of the following criteria:

1. The presence of a clinically recognized encephalopathy within 72 hours of birth. Encephalopathy is defined as the presence of 3 or more of the following findings within the first 72 hours after birth.

- Abnormal level of consciousness: hyperalertness, lethargy, stupor or coma
- Abnormal muscle tone: hypertonia, hypotonia or flaccidity
- Abnormal deep tendon reflexes: increased, depressed or absent seizures: subtle, multifocal or focal clonic
- Abnormal Moro reflex: exaggerated, incomplete or absent
- Abnormal suck: weak or absent
- Abnormal respiratory pattern: periodic, ataxic or apneic
- Aculomotor or pupillary abnormalities: skew deviation, absent or reduced Doll's eyes or fixed unreactive pupils

AND

2. Three or more supporting findings from the following list:

- arterial cord pH <7.00
- APGAR score at 5 minutes of 5 or less
- evidence of multiorgan system dysfunction (see below)
- evidence of fetal distress on antepartum monitoring: persistent late decelerations, reversal of end-diastolic flow on Doppler flow studies of the umbilical artery or a biophysical profile of 2 or less
- evidence on CT, MRI, technetium or ultrasound brain scan performed within 7 days of birth of diffuse or multifocal ischemia or of cerebral edema
- abnormal EEG: low amplitude and frequency, periodic, paroxysmal or isoelectric

AND

3. The absence of an infectious cause, a congenital malformation of the brain or an inborn error of metabolism, which could explain the encephalopathy.

Multiorgan system dysfunction requires evidence of dysfunction of one or more of the following systems within 72 hours of birth:

- Renal: oliguria or acute renal failure
- GI: necrotizing enterocolitis, hepatic dysfunction
- Hematologic: Thrombocytopenia, disseminated intravascular coagulopathy
- Endocrine: hypoglycemia, hyperglycemia, hypercalcemia, syndrome of inappropriate ADH secretion (SIADH)
- Pulmonary: persistent pulmonary hypertension
- Cardiac: myocardial dysfunction, tricuspid insufficiency

POST-DELIVERY DIAGNOSES AND INTERVENTIONS -- CONGENITAL MALFORMATIONS

Item 49. Major Birth Defects / Congenital anomalies [CMAL]

Check **Yes** if the infant had one or more of the birth defects listed in Appendix D. In the spaces provided, you may enter as many as five 3-digit code numbers of birth defects from the list.

Check **Yes** if the infant had birth defects not listed in Appendix D, which were lethal, or life threatening. In this case, use the defect code of "100" (in addition to any other applicable code) and describe the defects in detail in the space provided for description. Be specific. Do not use general descriptions such as "multiple congenital anomalies" or "complex congenital heart disease". To be considered as lethal or life threatening a birth defect must either:

1) be the primary cause of death, or 2) be treated prior to discharge with specific surgical or medical therapy to correct a major anatomic defect or a life threatening physiologic dysfunction.

Check **No** if an infant was not diagnosed as having one or more of the birth defects listed in Appendix D and did not have an unlisted birth defect, which was lethal or life threatening.

Check **Unknown** if this information cannot be obtained.

The following Birth Defect Codes [BCD1 – 5] require a detailed description in the space provided for Item 49 on the Admission / Discharge Form:

- 504 Other Chromosomal Anomaly
- 601 Skeletal Dysplasia
- 605 Inborn Error of Metabolism
- 100 Other Lethal or Life Threatening Central Nervous System Defects
- 200 Other Lethal or Life Threatening Congenital Heart Defects
- 300 Other Lethal or Life Threatening Gastro-Intestinal Defects
- 400 Other Lethal or Life Threatening Genito-Urinary Defects
- 800 Other Lethal or Life Threatening Pulmonary Malformation
- 100 Other Lethal or Life Threatening Defects not listed in Appendix C

The following conditions should NOT be coded as Major Birth Defects:

Cleft Lip without Cleft Palate
Club Feet
Congenital Dislocation of the Hips
Congenital CMV
Cystic Fibrosis
Extreme Prematurity
Fetal Alcohol Syndrome
Hypospadias
Hypothyroidism
Intrauterine Growth Retardation
Intrauterine Infection
Limb Abnormalities
Patent Ductus Arteriosus
Persistent Pulmonary Hypertension (PPHN)
Polydactyly
Pulmonary Hypoplasia (use code 401 for bilateral renal agenesis or 604 for oligohydramnios sequence, if applicable)
Small Size for Gestational Age
Syndactyly

POST-DELIVERY DIAGNOSES AND INTERVENTIONS -- HYPERBILIRUBINEMIA

The following questions (50-52) pertain to ANY infant that was previously discharged home and readmitted to ANY location in your hospital on or before day 28 of life.

➤ Note:

The Hyperbilirubinemia Items 50 to 52 are activated ONLY IF the infant was outborn (Item Home after Birth (Item 8a)).

Item 50. The maximum level of Bilirubin (<25, 25-<30, ≥30 mg/dL) [BILILEVEL]

Enter the level of Bilirubin [BHD] (mg/dL) found on THIS Readmission.

Item 51. Infant received an Exchange Transfusion during THIS Readmission [EXCHANGE]

Check Yes if infant received an Exchange Transfusion during THIS readmission.

Check **No** if infant did NOT receive an Exchange Transfusion during THIS readmission.

Item 52. Hospital that discharged the infant to home (prior to THIS readmission)

[LASTHOSPITAL]

Enter the OSHPD code of the hospital that discharged the infant to home (prior to THIS readmission).

➤ Note:

Please check Appendix F for OSHPD codes.

INITIAL DISPOSITION

The Initial Disposition section of the Discharge Form consists of Items 53 through 57. These items are to be completed based on the infant's status at initial disposition. For infants who are transported from your hospital to another hospital and then are readmitted to your hospital following the FIRST transport,

Update Items 21, 23-25, and 27-53 based on the Admission/Discharge Form based on events following transport AFTER Readmission.

Do NOT update Items 54 through 57 based on events following transport AFTER Readmission.

Item 53. Enteral Feeding at Discharge [ENTFEED]

➤ Note:

When completing this item, "Discharge" refers to initial disposition in most cases. If an infant is transported from your center to another hospital and readmitted to your center following transport, update this item based on the infant's enteral feeding status at the time of discharge after readmission

Complete the item, Enteral Feeding at Discharge, based on enteral feedings received during the 24-hour period prior to discharge, transport, or death. For infants who remained in your hospital on their first birthday, complete the item, Enteral Feeding at Discharge, based on enteral feedings received on that day.

Enteral feedings may be given by any method including breast, bottle, gavage tube, gastrostomy tube, feeding cup, etc. Formula milk includes all standard newborn formulas, premature formulas, and special formulas. Please answer this question based only on the enteral feedings at discharge. Do not consider parenteral feedings when answering this item. For example, if an infant was discharged on IV TPN as well as human milk, the correct response would be Human Milk Only since human milk was the only enteral feeding. If an infant was discharged on IV TPN alone, the correct response would be None since the infant was not receiving any enteral feedings.

If an infant was discharged only on sterile water or glucose water, the correct response would be None since the infant was not receiving either formula milk or human milk

➤ Note:

If by the June 1st close-out date, an infant is Still in the Hospital at Initial Disposition (Item 54) and has not been transported, leave items 35, 53-64 blank.

Check **None** if the infant was not receiving any enteral feedings with either formula milk or human milk at discharge.

Check **Human Milk Only** if the infant was discharged receiving human milk as their only enteral feeding, either by being breastfed and/or by receiving pumped human milk.

Check **Formula Only** if the infant was discharged receiving formula milk as their only enteral feeding.

Check **Human Milk in Combination with Either Fortifier or Formula** if the infant was discharged receiving human milk, plus human milk fortifier and/or formula milk.

Check **Unknown** if this information cannot be obtained.

Item 54. Initial Disposition from Your Hospital [FDISP]

Item 54 refers to the first time that the infant was discharged or transported from your hospital to another hospital. Discharge occurs when an infant leaves your hospital, not when he or she leaves the NICU. Do not change this item based on later dispositions following transport or readmission.

➤ Note:

Since 2012, we have added clarification to the definitions of Item 54. Initial Disposition From Your Hospital [FDISP], Item 60. Post-Transport Disposition [F2DISP], Item 62. Disposition after Re-admission [F3DISP], and Item 63. Ultimate Disposition of Infant [UDISP]. The additional notes instruct that Foster Care or Medical Foster Care should be coded as Home, and that Convalescent Care or Hospice Care when at a facility should be coded as Transported to Another Hospital. In the cases where Convalescent Care or Hospice Care is given at the home, it should be coded as Home.

Check the appropriate category that reflects the infant's initial disposition at discharge from your hospital. Initial Disposition refers to the first time an infant was discharged from your hospital.

Check **Home** if the infant was discharged to home on or before his/her first birthday from your hospital without ever being transported to another hospital. Complete Items 52, 53 and 54; data collection stops at this point. Do not complete the Transport/ Post-Transport section of the form. NOTE: Check "Home" if the infant was discharged to Foster Care or Medical Foster Care.

Check **Died** if the infant died on or before his/her first birthday at your hospital prior to being discharged home or transported. Complete Items 55, 56 and 57; data collection stops at this point. Do not complete the Transport/ Post-Transport Form.

Check **Transported to Another Hospital** if the infant was transported to another hospital or chronic care facility on or before his/her first birthday and before going home. Complete Items 52, 53 and 54 of the form. Note: Infants transported from one unit to another within your hospital are not considered transports. NOTE: Check "Transported to Another Hospital" if the infant was transported to Convalescent Care or Hospice Care.

➤ Note:

- Infants transported from one unit to another within your hospital are not considered transports. Continue collecting data until the first birthday for all eligible infants who have not been discharged and who remain anywhere within your hospital.
- If by the June 1st close-out date, an infant transported from your Center to another hospital and is still in the "transported to" hospital, submit items 1-59, mark Item 54 as transported, and leave items 60 – 64 blank.

Check **Still Hospitalized as of First Birthday** if the infant was still at your center on the date of the infant's first birthday. Complete Items 55, 56 and 57; data collection stops at this point. Do not complete the Transport/ Post-Transport Form.

Check **Unknown** if this information cannot be obtained.

➤ Note:

If by the June 1st close-out date, an infant is Still In the Hospital at Initial Disposition (Item 54) and has not been transported, leave items 35, 53-64 blank.

Item 55. Weight at Initial Disposition [DWGT]

Item 55 refers to the first discharge or transport from your hospital. Do not change this item based on later dispositions following transport or readmission.

Enter the weight in grams obtained on the Date of Initial Discharge, Transport or Death (Item W8 on the Patient Identification Worksheet).

If the answer to Initial Disposition from Your Hospital (Item 54) is Still Hospitalized as of First Birthday, enter the infant's weight in grams on the infant's first birthday. If the infant was not weighed on the date of his/her first birthday, enter the weight in grams from the previous day.

Check **Unknown** if this information cannot be obtained.

➤ Note:

- If by the June 1st close-out date, an infant is Still In the Hospital at Initial Disposition (Item 54) and has not been transported, leave items 35, 53-64 blank.
- If by the June 1st close-out date, an infant transported from your Center to another hospital and is still in the "transported to" hospital, submit items 1-59, mark Item 54 as transported, and leave items 60 – 64 blank.

Item 56. Head Circumference at Initial Disposition [HEADCIRC]

Enter the head circumference as recorded in the chart or clinical flow sheets on the Date of Initial Disposition (Item W8 on the Patient Identification Worksheet). If the head circumference is not recorded on the Date of Initial Disposition, record the most recent head circumference measured on the day prior to discharge.

Record the head circumference at discharge (transport, death, home or 1st birthday) to the nearest tenth of a centimeter. Record 31.24 as "31.2", Record 31.25 as "31.3". You must not leave the tenth of a centimeter box blank. If the medical record states that the head circumference is 32 centimeters, please enter "32.0" on the data form.

Check **Unknown** if this information cannot be obtained or if the head circumference noted in the chart is at any other time rather than at discharge.

➤ Notes:

- If by the June 1st close-out date, an infant is Still In the Hospital at Initial Disposition (Item 54) and has not been transported, leave items 35, 53-64 blank.

- If by the June 1st close-out date, an infant transported from your Center to another hospital and is still in the “transported to” hospital, submit items 1-59, mark Item 54 as transported, and leave items 60 – 64 blank.

Item 57. Initial Length of Stay [LOS1]

Item 57 refers to the first discharge or transport from your hospital. VON has mandated the coding change for Item 57. Initial Length of Stay [LOS1]. Per VON, the change will not be visible to users, but will change the way Initial Length of Stay [LOS1] is answered for infants who die in delivery. In the past, if Died in Delivery [DELDIE] was answered Yes, LOS1 was answered N/A (777). Starting in 2014, if DELDIE=1 (Yes), LOS1 must be 1 (1 day). Do not change this item based on later dispositions following transport or readmission.

Initial Length of Stay is not applicable to infants who meet Delivery Room Death Criteria. For all other infants, enter the Initial Length of Stay, Item L1, from Part A on the Length of Stay Calculation Worksheet.

➤ **Note:**

A new calendar feature was added for Initial Length of Stay. This field has been replaced by a calendar box. This new feature requires a calendar date (mm/dd/yyyy). Please click in the text box and the calendar window will appear. Select month, day and year for date of initial discharge.

Once the network ID is submitted, Initial Length of Stay will be automatically calculated and visible in the “Report Status” of the current record.

Initial Length of Stay is the number of days from the date the infant was admitted to your hospital (Item W5 on the Patient Identification Worksheet) until the Date of Initial Discharge, Transport or Death (Item W8 on the Patient Identification Worksheet). Calculate the Initial Length of Stay as ([Date of Initial Discharge, Transport or Death] minus [Date of Admission] plus one). Infants who die on the Day of birth, other than those who meet Delivery Room Death Criteria, will have an Initial Length of Stay of 1 day. The maximum value of Initial Length of Stay is 366 (or 367 if leap day must be added) because tracking ends on the infant's first birthday.

Check **Unknown** if this information cannot be obtained.

➤ **Note:**

- For inborn infants, the Date of Admission is the Date of Birth. For outborn infants, the Date of Admission is the date the infant was admitted to your center. If the Date of Initial Discharge, Transport or Death is “Unknown,” Initial Length of Stay will also be “Unknown.” If an infant is still in your hospital on his or her first birthday, and has not transported or been home, use the date of the infant's first birthday as the Date of Initial Discharge, Transport or Death.
- If by the June 1st close-out date, an infant transported from your Center to another hospital and is still in the “transported to” hospital, submit items 1-59, mark Item 54 as transported, and leave items 60 – 64 blank.

TRANSPORT/ POST-TRANSPORT FORM

Use the Transport/ Post-Transport Form to collect data for infants who transport from your center to another hospital. The Transport Log is a useful tool for tracking infants who transport. See Appendix B.

- Note:
Infants who are transported from one unit to another unit within your hospital are not considered transports. Do not use the Transport/ Post-Transport Form for these infants. The Transport/ Post-Transport Form is used only for infants who transport-out of your center to another hospital.

INSTRUCTIONS FOR TRANSPORTS

Complete Items 58-60 for infants who were transported from your center to another hospital if all three of the following conditions are true:

The infant was not discharged home prior to transport from your center.

The infant was not previously transported from your center.

The infant was less than a year old when transported from your center.

- Note:
If infant transports more than once, do not update Items 58-60 based on events occurring after the initial transport.

Item 58. Reason for Transport-out (Check only one) [TRANSCODE]

Check **only one answer**, the primary reason for transporting the infant to another facility.

- Notes:
 - Acute An acute transport is movement of an infant from one in-patient setting to another in-patient setting for a higher level of care on or before Day 28 of life.
 - Non-Acute: A non-acute transport is a transport of an infant at any age for any category other than a need of acute care (i.e. back transport or transport to a lower level of care).
 - Infants moved from one unit to another within your hospital are not considered to have been transported or discharged.

Growth/Discharge Planning. Check if an infant is transported to another hospital for continuing care in preparation for eventual discharge home. This category includes "back transports" to a hospital closer to the parents' home. This may include cases where the transport is to a tertiary care facility, as long as the purpose of the transport is not the provision of surgical, medical or diagnostic services, or of long-term chronic care, which were unavailable at your hospital.

Medical/Diagnostic Services. Check if the infant was transported to another hospital to receive medical care or diagnostic tests, which are not available at your Center. If an infant is transported to have a diagnostic work-up and the work-up results in surgery, the reason for transport is still "Medical/Diagnostic Services".

Surgery. Check if an infant is transported to another hospital specifically to have surgery even if surgery is not actually performed after the transport.

Check **"ECMO"** if the infant is transported to another hospital for extracorporeal membrane oxygenation.

Chronic Care. Check if the infant is transported to an institution for long term chronic care. For these infants, follow up is required only through age one year. At that time, if status has not changed, the record is considered final.

Insurance. Check if the infant is transported primarily because of restrictions or contractual arrangements with an insurance plan.

Other. Check if the reason for transport does not meet any of the above criteria.

Check **Unknown** if this information cannot be obtained.

Item 59. Hospital Location the Infant was Transported to [XFERLOCATION]

Starting from 2008, please select the hospital location the infant was transported to from the selection list provided. Enter the OSHPD code of the hospital that discharged the infant to home (prior to THIS readmission).

- Note:
Please check Appendix F for OSHPD codes.

This item is **N/A** for infants who were not initially transported.

Check **Unknown** if this information cannot be obtained.

Item 60. Post-Transport Disposition [F2DISP]

Check **Home** if the infant was discharged to home on or before his/her first birthday from the hospital to which he/she was transported. If this answer is checked, Items 58-60 on this Form are not applicable; only complete Item 61 of this Form.

- Note:
We have added clarification to the definitions of Item 54. Initial Disposition From Your Hospital [FDISP], Item 60. Post-Transport Disposition [F2DISP], Item 62. Disposition after Re-admission [F3DISP], and Item 63. Ultimate Disposition of Infant [UDISP]. The additional notes instruct that Foster Care or Medical Foster Care should be coded as Home, and that Convalescent Care or Hospice Care when at a facility should be coded as Transported to Another Hospital. In the cases where Convalescent Care or Hospice Care is given at the home, it should be coded as Home.

Check **Transported Again to Another Hospital** if the infant was transported again to another hospital or to a chronic care facility from the hospital to which he/she was originally transported. If this answer is checked, Items 58-59 of this Form are not applicable; complete Items 60-61 of this Form.

Check **Died** if the infant died on or before his/her first birthday at the hospital to which he/she was transported. If this answer is checked, Items 58-60 on this Form are not applicable; only complete Item 61 of this Form.

Check **Readmitted to Any Location in Your Hospital** if an infant is readmitted on or before his/her first birthday (before ever having gone home) to any location in your hospital such as the neonatal intensive care unit, a step-down unit, newborn nursery, intermediate care, pediatric intensive care unit, pediatric ward, etc. If this answer is checked, continue with item 58 on this form.

Check **Still Hospitalized as of First Birthday** if infant was still in the "Transported To" hospital on his/her first birthday. If this answer is checked, Items 58-60 on this Form are not applicable; only complete Item 61 of this Form.

Check **Unknown** if this information cannot be obtained.

➤ Note:

- If by the June 1st close-out date, an infant transported from your Center to another hospital and was transported to a third hospital (no readmission), and is still in the "transported to" hospital, submit items 1-59, mark Items 54 and 60 as transported, and leave items 61 – 64 blank.
- If by the June 1st close-out date, an infant transported from your Center to another hospital and was readmitted to your hospital and is still in-house, submit items 1-59, mark Item 54 as transported, mark Item 60 as readmitted, and leave items 61 – 64 blank.

Instructions for Readmits

Complete Items 61-62 if an infant is readmitted to any location in your hospital and the infant:

- Is less than a year old on the date of readmission.
- Has not been previously discharged home.
- Has not been previously readmitted to your hospital.
- Has not transported to other hospitals more than once.

These include infants who were readmitted on or before Day 28, as well as, infants readmitted after Day 28 of life. For these infants, it is also necessary to update Items 21, 23-25, 27-53 with information obtained from the episode of care at the hospital the infant was transported to and the care upon re-admission to your center.

Locations in your hospital to which the infant may be readmitted include the neonatal intensive care unit, a step-down unit, newborn nursery, intermediate care area, pediatric intensive care unit, pediatric ward, or any other location where care is given. Check these locations as necessary to collect data on all readmissions.

If Items 61 and 62 are applicable to an infant based on the above criteria, continue to collect data until Disposition after Readmission occurs (Item 62). If new events occur after transport from your hospital for infants who are readmitted to your hospital, update Items 21, 23-25, 27-53 to reflect events at the "transported-to" hospital, as well as events at your hospital. Do not change Items 54-57 based on events following transport or readmission.

Items 54-57 should reflect the Status of Initial Disposition prior to transport from your center. Do not continue to update items on the Admission/ Discharge Form if the infant is transported again following readmission.

- Note:
Reassignment of New IDs for Big Baby infants discharged home then readmitted back to your center. New ID Numbers MUST be assigned if a baby is discharged home from your center, AND THEN readmitted back to your center. For the situation in which a baby is born at your center, then sent home and then after the home discharge is re-admitted to your center, you need to: 1) Fill out a new form and assign a new network ID number 2) check the baby as Outborn (Item 7a), 3) check the age in days at the re-admission (Item 7b), and 4) check your own center as the location of birth (Item 7c). Refer to XII. Procedures for Completing Forms and XIV. Definitions of Data Items for specific instructions.

Item 61. Weight at Disposition After Readmission [F3WGT]

Enter the weight in grams obtained on the date at which the Disposition after Readmission, Item 62, occurred. If the infant was not weighed on the day of death, enter the weight in grams from the previous day. If the answer to Disposition after Readmission (Item 62) is "Still Hospitalized as of First Birthday," enter the infant's weight on his or her first birthday. If the infant was not weighed on the date of the first birthday, enter the weight in grams from the previous day.

Check **Unknown** if this information cannot be obtained.

Item 62. Disposition After Readmission [F3DISP]

Check **Home** if the infant was discharged to home on or before his/her first birthday from any location in your hospital after readmission. If this answer is checked, Item 59 of this Form is not applicable; complete Item 60 of this Form.

- Note:
We have added clarification to the definitions of Item 54. Initial Disposition From Your Hospital [FDISP], Item 60. Post-Transport Disposition [F2DISP], Item 62. Disposition after Re-admission [F3DISP], and Item 63. Ultimate Disposition of Infant [UDISP]. The additional notes instruct that Foster Care or Medical Foster Care should be coded as Home, and that Convalescent Care or Hospice Care when at a facility should be coded as Transported to Another Hospital. In the cases where Convalescent Care or Hospice Care is given at the home, it should be coded as Home. Check Transported Again to Another Hospital if the infant was transported again to another hospital or to a chronic care facility on or before his/her first birthday after readmission. If this answer is checked, complete Items 59-60 of this Form.

Check **Died** if the infant died on or before his/her first birthday at any location in your hospital after readmission. If this answer is checked, Item 59 of this Form is not applicable; complete Item 60 of this Form.

Check **Still Hospitalized as of First Birthday** if infant was still in your hospital as of his/her first birthday. If this answer is checked, Item 59 of this Form is not applicable; complete Item 60 of this Form.

Check **Unknown** if this information cannot be obtained.

➤ Note:

If by the June 1st close-out date, an infant transports again following initial transport from and readmission to your Center, submit items 1-62, mark Item 54 as transported, mark Item 60 as readmitted, mark Item 62 as Readmitted, and leave items 63 – 64 blank.

Instructions for Infants Transported More than Once

Complete Item 60 for all infants who transport more than once, i.e., those infants whose Post-Transport Disposition (Item 60) is checked “Transported Again to Another Hospital,” or infants whose Disposition After Readmission (Item 62) is checked “Transported Again to Another Hospital.”

Periodically check with hospitals to which infants are transported to determine their disposition. When the Ultimate Disposition (Item 60) is known, Complete Items 60-61 and submit the Form to Vermont Oxford Network.

Item 63. Ultimate Disposition [UDISP]

Check **Home** if the infant ultimately went home on or before the first birthday.

➤ Note:

We have added clarification to the definitions of Item 54. Initial Disposition From Your Hospital [FDISP], Item 60. Post-Transport Disposition [F2DISP], Item 62. Disposition after Re-admission [F3DISP], and Item 63. Ultimate Disposition of Infant [UDISP]. The additional notes instruct that Foster Care or Medical Foster Care should be coded as Home, and that Convalescent Care or Hospice Care when at a facility should be coded as Transported to Another Hospital. In the cases where Convalescent Care or Hospice Care is given at the home, it should be coded as Home.

Check **Died** if the infant ultimately died on or before the first birthday.

Check **Still Hospitalized as of First Birthday** if the infant was still hospitalized on his/her first birthday, without ever having gone home.

Check **Unknown** if this information cannot be obtained.

➤ Note:

- If by the June 1st close-out date, an infant is Still In the Hospital where s/he was transported to (item 57), answer up to Item 56, then leave Items 57-61 blank.
- If by the June 1st close-out date, an infant is Still In the Hospital after being readmitted (Item 59), Items 59-61 should be left blank.

Item 64. Total Length of Stay [LOSTOT]

➤ Note:

A new calendar feature added to Length of Stay.

Use the Length of Stay Calculation Worksheet to calculate the Total Length of Stay for infants who transport from your center, from their first admission to your center until discharge home, death or first birthday, whichever occurs first.

➤ Note:

A new calendar feature was added for Total Length of Stay. This field has been replaced by a calendar box. This new feature requires a calendar date (mm/dd/yyyy). Please click in the text box and the calendar window will appear. Select month, day and year for date of final discharge.

Once the network ID is submitted, Total Length of Stay will be automatically calculated and visible in the "Report Status" of the current record.

The Total Length of Stay is the number of days from the date the infant was first admitted to your hospital (Item W5 on the Patient Identification Worksheet) until the date of Final Discharge or Death (Item W9 on the Patient Identification Worksheet). Calculate the Total Length of Stay as ([Date of Final Discharge or Death] minus [Date of Admission] plus one). The maximum value of Total Length of Stay is 366 (or 367 if leap day must be added), because tracking ends on the infant's first birthday.

➤ Note:

For inborn infants, the Date of Admission is the Date of Birth. For outborn infants, the Date of Admission is the date the infant was admitted to your center. If the Date of Final Discharge or Death is "Unknown," Total Length of Stay will also be "Unknown." If an infant who transports is still hospitalized on his or her first birthday, and has not been home, use the date of the infant's first birthday as the Date of Final Discharge or Death.

Enter Total Length of Stay, Item L2, From Part B on the Length of Stay Calculation Worksheet, in days.

Check **Unknown** if this information cannot be obtained.

➤ Note:

If by the June 1st close-out date, an infant is Still In the Hospital where s/he was transported to (item 57), answer up to Item 56, then leave Items 57-61 blank.

➤ Note:

If by the June 1st close-out date, an infant is Still In the Hospital after being readmitted (Item 59), Items 59-61 should be left blank.

DELIVERY ROOM DEATH FORM

Only complete this form for infants born in your Center who have died prior to admission to your NICU.

These may include:

- Infants born in the Delivery Room who die in the Delivery Room;

- Infants born in the Delivery Room who die in other locations prior to admission to the NICU (e.g. Resuscitation Room, Mother's Room, Well Baby Nursery);
Infants not born in the Delivery Room but in another location in your Center (e.g. Emergency Room) who die prior to admission to the NICU.

➤ Note:

- Hospital policies vary concerning the physical placement of a non-viable infant for the purpose of providing "comfort care". These infants may be physically cared for in a variety of locations including the delivery room, the OB recovery room, the mother's room or even the Nursery or NICU. If a hospital policy dictates that this type of infant be formally admitted to the NICU for end-of-life care, then an Admission/Discharge form must be completed on this infant. If hospital policy dictates that the infant is NOT formally admitted to the NICU for end-of-life care, a Delivery Room Death form should be completed.
- To complete the Delivery Room Death Form, please refer to the coding instructions for the Admission / Discharge Form. For the subset of items, which appear on the Delivery Room Death form, questions are numbered identically and the definitions are the same.
- To assist you in maintaining patient confidentiality we ask that you write or emboss the patient's name, medical record number and any other confidential identifying information on the backside of the data form. You will no longer have to remove this information when you send us copies of your data form. You will only send one-sided copies of the data forms

Appendices

Appendix	A Data Submission Timeline
Appendix	B Logs
Appendix	C Bacterial Pathogens
Appendix	D Birth Defect Codes for Item 49
Appendix	E Surgery Codes for Item 43
Appendix	F OSHPD FACILITY CODES
Appendix	G Calculation Charts for Date of Day 28
Appendix	H Calculation Charts for Date of Week 36 (please use new calculator tool)
Appendix	I Day Number Chart
Appendix	J Fahrenheit to Centigrade Conversion Table
Appendix	K HRIF Medical Eligibility Criteria
Appendix	L CPQCC Satellite NICU MEMO

Appendices G-J was adapted from a log developed by Vermont Oxford Network