CAPQuaM PQMP Perinatal MEASURE 2

A.   **Description**

Describes the timeliness of the initial temperature taken after arrival to the Level 2 or higher nursery in the first 24 hours of life for infants under 2500 grams.

B.   **Eligible Population**

Numerator: Live-born neonates with a birthweight less than 2500 grams (as identified by ICD-9-CM Principal or Other Diagnosis Codes in Table 1) admitted to a Level 2 or higher nursery who have their body temperature taken within 15 minutes of arrival to the nursery and for whom this temperature is documented in the medical record.

Denominator: Live-born neonates with a birthweight less than 2500 grams (as identified from either the medical record or by ICD-9-CM Principal or Other Diagnosis Codes in Table 1) admitted to a level 2 or higher nursery within 24 hours of birth. Children identified as having received Level 2 care either via medical record review and/or via revenue code 172, 173, or 174 shall be eligible for the denominator.

Exclusions are noted below.

Table 1. Included Populations:ICD-9-CM Principal or Other Diagnosis Code Low Birthweight diagnosis codes

76400	LIGHT-FOR-DATES WTNOS	76490	FET GROWTH RETARD WTNOS
76401	LIGHT-FOR-DATES <500G	76491	FET GROWTH RETARD <500G
76402	LT-FOR-DATES 500-749G	76492	FET GROWTH RET 500-749G
76403	LT-FOR-DATES 750-999G	76493	FET GROWTH RET 750-999G
76404	LT-FOR-DATES 1000-1249G	76494	FET GRWTH RET 1000-1249G
76405	LT-FOR-DATES 1250-1499G	76495	FET GRWTH RET 1250-1499G
76406	LT-FOR-DATES 1500-1749G	76496	FET GRWTH RET 1500-1749G
76407	LT-FOR-DATES 1750-1999G	76497	FET GRWTH RET 1750-1999G
76408	LT-FOR-DATES 2000-2499G	76498	FET GRWTH RET 2000-2499G
76410	LT-FOR-DATE W/MAL WTNOS	76500	EXTREME IMMATUR WTNOS
76411	LT-FOR-DATE W/MAL <500G	76501	EXTREME IMMATUR <500G
76412	LT-DATE W/MAL 500-749G	76502	EXTREME IMMATUR 500-749G
76413	LT-DATE W/MAL 750-999G	76503	EXTREME IMMATUR 750-999G
76414	LT-DATE W/MAL 1000-1249G	76504	EXTREME IMMAT 1000-1249G
76415	LT-DATE W/MAL 1250-1499G	76505	EXTREME IMMAT 1250-1499G
76416	LT-DATE W/MAL 1500-1749G	76506	EXTREME IMMAT 1500-1749G
76417	LT-DATE W/MAL 1750-1999G	76507	EXTREME IMMAT 1750-1999G
76418	LT-DATE W/MAL 2000-2499G	76508	EXTREME IMMAT 2000-2499G
76420	FETAL MALNUTRITION WTNOS	76510	PRETERM INFANT NEC WTNOS
76421	FETAL MALNUTRITION <500G	76511	PRETERM NEC <500G
76422	FETAL MALNUTR 500-749G	76512	PRETERM NEC 500-749G
76423	FETAL MAL 750-999G	76513	PRETERM NEC 750-999G
76424	FETAL MAL 1000-1249G	76514	PRETERM NEC 1000-1249G
76425	FETAL MAL 1250-1499G	76515	PRETERM NEC 1250-1499G
76426	FETAL MAL 1500-1749G	76516	PRETERM NEC 1500-1749G
76427	FETAL MALNUTR 1750-1999G	76517	PRETERM NEC 1750-1999G
76428	FETAL MALNUTR 2000-2499G	76518	PRETERM NEC 2000-2499G

For codes 76400, 76410, 76420, 76490, 76500, birth weights should be verified from the medical record prior to including in measure.

EXCLUSIONS

Neonates who do not survive until the time limit of the measure (15 minutes after arrival to the Level 2 or higher nursery)

Neonates with anencephaly ICD-9-CM 740

Neonates for whom the hospital provides documentation that at the time of arrival to the NICU and before the temperature was taken the infant had been identified as meeting written institutional criteria for the initiation of therapeutic hypothermia and such therapy was begun or planned [OPTIONAL EXCLUSION]

Neonates with comfort care (requires all of the features below):

Died within 48 hours of birth; AND

Received no respiratory support after arrival to the Level 2 or higher nursery other than blow by oxygen (i.e., did not receive CPAP, intubation, or CPR after arrival at Level 2 or higher nursery)

C.   DATA SOURCES

A. Medical record (paper or electronic), may be utilized to identify:
    i.   Date and time of birth
    ii. Date and time of arrival to a Level 2 or higher nursery;
    iii. Date and time of first temperature upon arrival to that nursery;
    iv. Temperature and units of measurement
    v.   Race/ethnicity (preferred data source)
    vi. Mother's State and County of Residence and or zip code (preferred data source)
    vii. Born in medical facility or transferred in (preferred data source)
    viii. 5 minute Apgar score
    ix. Birthweight (preferred data source)
    x.   Documentation if child met local criteria for hypothermia and time so identified
    xi. Documentation if hypothermia was planned or initiated before temperature taken
    xii. Insurance type (optional data source)

B. Administrative data with revenue, billing and diagnosis codes may be utilized to identify:
    i.   ICD-9 codes (to identify low birthweight infants and presence of anencephaly)
    ii. Revenue codes indicating care in Level 2, 3, or 4 nursery (172, 173, 174)
    iii. OPTIONAL source for:
        i.   Date of birth
        ii. Race/ethnicity
        iii. Home zip code

   iv. Whether child was inborn or transferred in
   v. Birthweight range
   vi. Insurance type and benefit plan (preferred data source}

C. "CALCULATION" and Reporting

Step 1: Identify all live-born neonates with a birthweight less than 2500 grams using the aforementioned codes or recorded birthweights when practical.

Step 2: Identify all neonates from Step 1 who were admitted to Level 2or higher nursery).

Step 3: Record relevant attributes:

a. Record ICD-9 comorbid diagnoses.
 EXCLUDE those with anencephaly (ICD-9-CM 740xx).
b. Record:

  i. Date and time of birth.
  ii. Birthweight.
  iii. 5 minute Apgar score
  iv. Date and time of arrival to Level 2 or higher nursery.
  v. If child was admitted to the Level 2 or higher nursery from regular newborn care
  vi. If child was inborn or transferred to Level 2 or higher nursery from another facility.

Step 4: Record the following additional data elements for all eligible neonates:

 i. Race
 ii. Ethnicity
 iii. Insurance type (Medicaid, commercial, uninsured)
 iv. Benefit type (if insured): HMO, PPO, Medicaid Primary Care Management Plan, Fee for service, Other
 v. Mother's State and County of Residence and or zip code. Record FIPS if available
 vi. Evidence child received comfort care only (when appropriate). **EXCLUDE** if so.
 vii. Documentation child was eligible for and received therapeutic hypothermia (when appropriate). **EXCLUDE** if so.

Step 5: Identify and record:

  i. Time of first documented temperature taken in the nursery
  ii. Value of first temperature taken in the nursery

      iii.   Units that temperature was recorded in. If in Fahrenheit calculate Celsius as C=(F-32)*5/9
      iv.   Record infant age at time of ARRIVAL temperature

Step 6: Calculate how long after the child arrived at the nursery that the ARRIVAL temperature was taken.

Step 7: Note whether or not the ARRIVAL temperature occurred within 15 minutes of arrival to the nursery.

Step 8: Calculate the percent of ARRIVAL temperatures that are taken within 15 minutes of arrival to the Level 2 or higher nursery as 100* numerator events/denominator. Report to 2 decimal places.

Step 9. Using eligible births and qualified temperatures, repeat steps 7 and 8 for each stratification category listed below using the following data elements:

    i.   Birthweight (3 categories: <999 grams, 1000-1499 grams, 1500-2499 grams)
        a. ii. (etc.) Race and ethnicity (Using White non Hispanic, Black non Hispanic, Hispanic, Asian/Pacific Islander, other)
        b. Insurance type (Public/Medicaid, Commercial, None, Other)
        c. Admission source (inborn, transported, transferred from newborn nursery)
        d. Location of delivery (operating room, labor and delivery/ birthing room , other)

Location of delivery
APPLY THESE RULES IN ORDER. STOP WHEN CATEGORIZED

    i. Categorize location of delivery as birthing room if:
1. Location was identified as delivery room on the labor and delivery suite but was not an operating room
OR
2. Location was identified as a birthing room or equivalent OR
3. Infant was a vaginal delivery other than a multiple gestation AND Operating Room or equivalent (c-section room would be an example of an equivalent to an operating room) is not specified as location.

    ii. Otherwise categorize location as OPERATING ROOM if:
1. Location was identified as an operating room or equivalent, OR
2. If neonate was delivered by c-section, OR
3. If infant was a multiple gestation (and location is unspecified) OR
4. If location is identified as Emergency Department OR other

e. Benefit category (HMO, PPO, Medicaid Primary Care Management Plan, Fee for service, Other)
f. 5 minute Apgar (Apgar of 5 or less, Apgar of 6 or more)

g. Urban Influence Code (1) (UIC). (2013 urban influence codes available at: http://www.ers.usda.gov/data-products/urban-influence-codes.aspx#.UZUvG2cVoj8 .

Use mother's place of residence to determine UIC. State and County names can be linked or looked up directly or zip codes can be linked to County indirectly, using the Missouri Census Data Center (http://mcdc.missouri.edu/).

h. Level of Poverty in the County of Residence. The percent of all residents in poverty by county are available from the US Department of Agriculture at http://www.ers.usda.gov/data-products/county-level-data-sets/download-data.aspx . Our stratification standards are based on 2011 US population data that we have analyzed with SAS 9.3.

Using Mother's state and county of residence (or equivalent) or FIPS code, use the variable PCTPOVALL_2011 to categorize into one of 5 stratification categories:

       i. Lowest Quartile of Poverty if percent in poverty is <=12.5%

      ii. Second Quartile of Poverty if percent in poverty is >12.5% and <=16.5%

     iii. Third Quartile of poverty if percent in poverty is >16.5% and <=20.7%

     iv. First upper quartile (75th-90th) if percent in poverty is >20.7% and <=25.7%

      v. Second upper quartile (>90th percentile) if percent in poverty exceeds 25.7%

ii. Repeat stratifications a-h within birthweight categories