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All About the Babies! Neonatal Query Opportunities

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Learning Objectives

- At completion of this education activity, the learner will be able to:
 - Explain neonatal terminology and clinical concepts
 - Describe official coding guidelines that apply to neonates
 - Apply evidence found in the medical record to formulate a compliant query





Image: <https://commons.wikimedia.org/wiki/Category:Babies>


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Neonates

- A live birth with evidence of any of the following, regardless of the duration of the pregnancy
 - One breath
 - One heartbeat
 - Pulsation of the umbilical cord
 - Definite movement of voluntary muscle, whether the umbilical cord has been cut, or the placenta remains attached


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Neonatal Terminology

- Newborn/neonate
 - Age ranges from birth to 28 days
- Anomaly
 - Developmental deformity
- Congenital
 - Condition present at birth, however, may not manifest until later in life


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Neonatal Coding Guidelines

- Newborn/perinatal conditions are never reported on the mother's record, and likewise, pregnancy conditions are never reported on the neonate's record
- Perinatal/congenital conditions may be reported throughout the life of the patient if the condition continues to be present
- Additional codes may be used along with the perinatal codes to provide more specific detail about the condition being reported


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Neonatal Coding Guidelines

- Capture all neonatal conditions documented within the medical record
 - Capture signs and symptoms when a definitive diagnosis has not been established
- Code P96.89, Other specified condition originating in the perinatal period, may be used to report conditions that do not have a specific code in the coding index, along with any additional codes to provide further specificity about that condition


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Neonatal Coding Guidelines

- If a newborn develops a condition that is not designated as due to the birth process or community-acquired, the default for reporting is due to the birth process
 - Query opportunity for clarification
- The principal diagnosis (PDX) is a perinatal code when the condition meets the definition of PDX


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Neonatal Coding Guidelines

- Capture all clinically significant conditions as documented within the medical record. Clinically significant conditions are defined as:
 - Requiring any of the following:
 - Clinical evaluation
 - Therapeutic treatment
 - Diagnostic procedures
 - Greater length of stay in the hospital
 - Increased nursing care and/or monitoring
 - Having implications for the future healthcare needs of the patient
- Insignificant conditions or signs/symptoms that resolve without treatment are not captured for reporting


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Case Example

During a physical examination of a post-term newborn, an abnormal noise was heard in the L hip. The pediatrician would like to follow the patient after discharge, as a hip click can be an early sign of hip dysplasia. The newborn was delivered via cesarean @ 41 weeks.

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Case Example

- Z38.01 Single liveborn infant, delivered by cesarean
- P08.21 Post-term infant
- R29.4 Clicking hip

Principal Dx	Z38.01	Z38.01
Secondary Dx	P08.21	P08.21
		R29.4
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	640
SOI	1	1
ROM	1	1
RW	0.1033	0.1033


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Neonatal Coding Guidelines

- Code Z38- is assigned as PDx for neonates born at the hospital
 - Z38- is never assigned as a secondary dx, and is assigned only once to the newborn at the time of birth
- When a neonate is transferred to another facility, the PDx is the condition that necessitated the transfer at the receiving hospital
 - Examples include prematurity, respiratory distress syndrome

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Case Example

Newborn delivered via vaginal delivery in Hospital A, experienced meconium aspiration resulting in pneumonia, requiring transfer to Hospital B.

Hospital A reports:

Z38.00 Single liveborn infant, vaginal delivery

P24.01 Meconium aspiration with respiratory symptoms

Hospital B reports:

P24.01 Meconium aspiration with respiratory symptoms

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Case Example

No difference in DRG assignments:

	Hospital A	Hospital B
Principal Dx	Z38.00	P24.01
Secondary Dx	P24.01	
Medicare DRG	793	793
RW	3.6967	3.6967
3M APR-DRG	634	634
SOI	1	1
ROM	1	1
RW	0.5216	0.5216

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Neonatal Coding Guidelines

- P36 Bacterial sepsis of newborn includes congenital sepsis
 - Use additional codes when applicable to identify severe sepsis (R65.2-) and associated acute organ dysfunction(s)
- Subdivisions of code P36 allow for the capture of these specific organisms
 - Streptococci
 - Staphylococci
 - E. coli
 - Anaerobes
- If a P36 code does not include the causal organism, assign an additional code from category B96 to identify the organism
 - Specificity of the organism may impact severity of illness/risk of mortality

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Case Example

A full-term infant develops severe sepsis within 24 hours of discharge from the hospital and is readmitted; cultures identify Streptococcus, group B, as the infective agent.

- P36.0 Sepsis of newborn due to streptococcus, group B
- R65.20 Severe sepsis without septic shock

Medicare DRG	793
RW	3.6967
3M APR-DRG	636
SOI	1
ROM	1
RW	0.7059

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Neonatal Coding Guidelines

- Since providers may use different criteria in determining prematurity, capture only when documented by the physician
- Assignment of codes in categories P05, Disorders of newborn related to slow fetal growth and fetal malnutrition, and P07, Disorders of newborn related to short gestation and low birth weight, not elsewhere classified, should be based on the recorded birth weight and estimated gestational age
 - Codes from category P05 should not be assigned with codes from category P07
 - When both birth weight and gestational age are available, two codes from category P07 should be assigned, with the code for birth weight sequenced before the code for gestational age

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Maturity Levels

- Extreme immaturity: Less than 28 completed weeks of gestation
 - P07.20–P07.26
- Prematurity: 28 completed weeks or more but less than 37 completed weeks of gestation
 - P07.30–P07.39
- Full-term: Delivered 37–40 completed weeks of gestation
- Post-term: Delivered 40–42 completed weeks of gestation
 - P08.21
- Prolonged gestation of newborn (post-maturity): Delivered > 42 completed weeks of gestation
 - P08.22
- 5th character in P07.2 and P07.3 identifies gestational age


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Low Birth Weight & Immaturity Status

- Codes from category P07, Disorders of newborn related to short gestation and low birth weight, not elsewhere classified, are for use for a child or adult who was premature or had a low birth weight as a newborn and whose current health status is being affected by this condition

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Neonatal Coding Guidelines

- Assign a code from category Z05, Observation and evaluation of newborns and infants for suspected conditions ruled out, to identify those instances when a healthy newborn is evaluated for a suspected condition that is determined after study **not** to be present
 - Do not use a code from category Z05 when the patient has identified signs or symptoms of a suspected problem; in such cases, code the sign or symptom





Image: http://commons.wikimedia.org/wiki/File:Magnifying_glass


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Use of Codes From Chapter 16 After the Perinatal Period

- Conditions that originate in the perinatal period and continue throughout the life of the patient are reported with a perinatal code regardless of the patient's age

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Case Example

A 12-year-old patient with a history of birth injury that resulted in Erb's palsy is seen for subscapularis release.

P14.0 Erb's paralysis due to birth injury

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Chapter-Specific Coding Guidelines

- If a maternal condition has had an effect on the fetus or newborn, then a code from P00–P04, Maternal causes of perinatal morbidity and mortality, is captured on the newborn’s record
 - Code first any current condition in the newborn

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Case Example

A newborn is admitted following cesarean delivery and diagnosed with hypermagnesemia, due to the mother's treatment with magnesium sulfate for pregnancy-related eclampsia prior to delivery.

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Case Example

- Z38.01 Single liveborn infant, cesarean delivery
- P71.8 Other transitory neonatal disorders of calcium and magnesium metabolism
- P04.1 Newborn affected by other maternal medication

Principal Dx	Z38.01	Z38.01	Z38.01
Secondary Dx		P71.8	P71.8
			P04.1
Medicare DRG	795	793	793
RW	0.1771	3.6967	3.697
3M APR-DRG	640	639	639
SOI	1	1	2
ROM	1	1	1
RW	0.1033	0.4082	0.647

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Case Example

A newborn delivered of a mother addicted to cocaine shows no sign of dependence, but a drug screen is positive.

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Case Example

Z38.00 Single liveborn infant, vaginal delivery
P04.41 Newborn affected by maternal use of cocaine

Principal Dx	Z38.00	Z38.00
Secondary Dx		P04.41
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	640
SOI	1	2
ROM	1	1
RW	0.1033	0.1529

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Do Not Assign Codes P00–P04

The fact that the mother has a related medical condition or has experienced a complication of pregnancy, labor, or delivery does not warrant assignment of a code from these categories on the newborn's record. When a specific condition in the infant that resulted from the mother's condition is identified, a code for that condition is assigned, rather than a code from categories P00 through P04:

- Infants born to diabetic mothers sometimes experience transient abnormally low blood glucose level (hypoglycemia), classified to **P70.1, Syndrome of infant of a diabetic mother**
- Others may have a transient diabetic state (hyperglycemia), sometimes referred to as pseudodiabetes, which is coded as **P70.2, Neonatal diabetes mellitus**

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Case Example



- P70.1 Syndrome of infant of a diabetic mother
- P70.2 Neonatal diabetes mellitus

Principal Dx	Z38.00	Z38.00
Secondary Dx	P70.1	P70.2
Medicare DRG	794	793
RW	1.3084	3.697
3M APR-DRG	640	639
SOI	2	1
ROM	1	1
RW	0.1529	0.408

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Do Not Assign Codes P00–P04



- A living child born to a diabetic mother in a term birth and delivered by cesarean section is coded as
 - Z38.01, Single liveborn infant, delivered by cesarean
- No code from the series P00 through P04 is assigned because the medical record does not document a problem affecting the newborn

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Congenital Anomalies (Developmental Deformities)



- If any congenital anomaly is documented, assign the appropriate code from categories Q00–Q99 (**Congenital anomaly**). It is also appropriate to assign codes from other chapters to specify conditions associated with the anomaly, if applicable.
- The congenital anomaly may be sequenced as the principal or secondary diagnosis depending on the circumstances of admission.
- If there is no unique code assignment for the congenital anomaly, assign codes for any documented manifestations that are present.

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Congenital Anomalies (cont.)

- When there is a code that specifically identifies the anomaly, it is appropriate to assign codes for manifestations that are not inherent to the anomaly
 - However, do not assign codes for manifestations that are inherent to the congenital anomaly
- Congenital anomaly codes may be used throughout the life of the patient when documented by the physician
- If the congenital anomaly has been fully corrected, assign a personal history code for the anomaly

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Newborn MS-DRGs

Description	MS-DRG
Died or transferred to acute care facility	789
Extreme immaturity Respiratory distress syndrome	790
Major problem	
• Prematurity (27–36 weeks of gestation)	791
• Full-term	793
Other problem	
• Premature	792
• Full-term	794
Normal newborn	795

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Newborn APR-DRGs

Newborn APR-DRGs are impacted by

Transfer discharge disposition	ECMO
Birth weight	Gestational age
Major procedure	Respiratory distress syndrome, other major respiratory condition, or major anomaly
Other significant conditions	Major anomaly
Congenital or perinatal infections	Other problems
Major cardiovascular procedures	Major anomaly

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Prematurity or Full-Term Neonates with Major Problems

Major problems include

Bacteremia	Birth trauma such as epicranial subaponeurotic hemorrhage or subdural/cerebral hemorrhage
Electrolyte disturbances	Congenital pneumonia
Aspiration of blood, amniotic fluid, milk or regurgitated food, meconium	Congenital viral diseases such as rubella, cytomegalovirus, herpesviral
Persistent fetal circulation	Convulsions
Bacterial sepsis	Drug withdrawal syndrome
Respiratory failure	

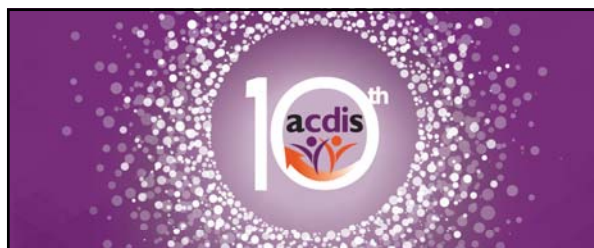
34

Other Significant Problems That Impact DRG Assignment


Includes other significant problems such as

ABO/Rh incompatibility	Hypo/hyperthermia
Bradycardia	Hypoperfusion
Fetal alcohol syndrome	Meconium passage during delivery or staining
Fetal distress	Newborn light or small for gestational age, less than 1,999 grams
Hypoxic ischemic encephalopathy, unspecified or mild	Patent ductus arteriosus

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Secondary Diagnoses
Query to capture these conditions to impact DRG or severity of illness/risk of mortality



Compliant Queries


- Present the evidence found within the record in the form of a question, and include:
 - Clinical evidence (signs, symptoms, lab results, x-ray findings, etc.) and where found within the record (use the entire record for clues)
 - Treatment plan, including
 - Monitoring (repeat labs, x-rays, etc.)
 - Treating (medications, therapies, etc.)
 - Evaluating (consultations, etc.)
 - OR
 - Impact on length of stay
 - Implications for future healthcare needs
 - Request a corresponding diagnosis be documented in the body of the medical record if appropriate, based on the physician's clinical judgement

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Newborn Severity Drivers



Neonatal Cardiac Severity Drivers

- **Bradycardia**
 - Normally a symptom of another condition (e.g., apnea, respiratory disorders, congenital heart defects, infection, etc.)
 - Treatment directed toward the underlying cause (e.g., apnea, anemia, respiratory disorders, or congenital heart defects)

Principal Dx	Z38.00	Z38.00
Secondary Dx		P29.12
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	640
SOI	1	1
ROM	1	1
RW	0.1033	0.1033

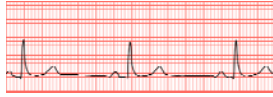



Image: https://commons.wikimedia.org/wiki/Category:ECG_graphs_of_bradycardia

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Neonatal Cardiac Severity Drivers


- **Hypoperfusion**
 - Common condition in the premature infant
 - Sometimes used in place of shock or hypotension
 - Found in nearly 1/3 of very low birth weight infants
 - Treatment with controlled fluid resuscitation and/or use of pressors
 - May be evidenced by elevated serum lactate or hyperkalemia
 - Even with poor perfusion, vascular tone is maintained, resulting in hypotension being a late presentation in a hypoperfused infant

Principal Dx	Z38.00	Z38.00
Secondary Dx		P96.89
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	640
SOI	1	2
ROM	1	1
RW	0.1033	0.1529

Other symptomatology

- Cool and mottled extremities
- Delayed capillary refill
- Tachycardia


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Neonatal Electrolyte Severity Drivers

- **Dehydration**
 - Newborns become easily dehydrated
 - Decreased inability to sweat
 - Poor thermoregulatory systems in the premature or large for gestational age infants
 - Other causes include poor feeding, diarrhea or excessive vomiting, and insensible loss through fever and prolonged phototherapy
 - Signs and symptoms include:
 - » Fever unexplained by other causes
 - » Weight loss greater than 10% in the first few days of life
 - » Lethargy and restlessness
 - » Hyperreflexia and seizures in more severe cases

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Neonatal Electrolyte Severity Drivers

- **Dehydration**

Principal Dx	Z38.00	Z38.00
Secondary Dx		P74.1
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	640
SOI	1	2
ROM	1	1
RW	0.1033	0.1529


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Neonatal Electrolyte Severity Drivers

- Acidosis**
 - Defined as one of the following:
 - pH < 2
 - Base deficit of > 5 on first day and > 4 thereafter
 - Anion gap > 15 in low birthweight and > 18 in extreme low birth weight
- Types:**
 - Respiratory acidosis**
 - Due to RDS, transient tachypnea of newborn (TTN), respiratory failure, etc.
 - Excludes note in ICD-9-CM not to capture with respiratory diagnoses. No excludes note in ICD-10-CM.

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Neonatal Electrolyte Severity Drivers

- Acidosis (cont.)**
 - Metabolic acidosis
 - Treatment primarily directed at correctly underlying cause
 - In more severe cases, treatment with bicarbonate or THAM solution (tromethamine, a parenteral systemic alkaliizer and fluid replenisher)
 - Causes include:
 - Hypovolemia, heart failure, hypoperfusion, anemia, infection, sepsis, hypothermia, bicarbonate loss from immature kidney or GI tract, administration of high protein formula, inborn errors of metabolism

Symptoms of Acidosis

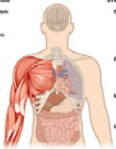
Central Nervous System
Irritability
Lethargy
Coma

Respiratory System
Respiratory distress
Coughing

Heart
Arrhythmia
Hypotension
Heart failure

Muscular System
Weakness
Tremors

Digestive System
Nausea
Vomiting
Diarrhea



Symptoms of Alkalosis

Central Nervous System
Confusion
Tetany
Seizures


Respiratory System
Hyperventilation
Rapid shallow breathing

Cardiovascular System
Hypotension
Arrhythmias

Muscular System
Tremors
Muscle cramps

Digestive System
Nausea
Vomiting

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Neonatal Electrolyte Severity Drivers


- Acidosis (cont.)**

Principal Dx	Z38.00	Z38.00	Principal Dx	Z38.00	Z38.00
Secondary Dx		P84.	Secondary Dx		P74.0
Medicare DRG	795	794	Medicare DRG	795	793
RW	0.1771	1.3084	RW	0.1771	3.6967
3M APR-DRG	640	639	3M APR-DRG	640	639
SOI	1	1	SOI	1	1
ROM	1	1	ROM	1	1
RW	0.1033	0.4082	RW	0.1033	0.4082

Acidosis, unspecified

Late metabolic acidosis of NB

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Neonatal Electrolyte Severity Drivers

- Hypocalcemia**
 - Serum total Ca⁺⁺ concentration < 8 mg/dL in term infants or < 7 mg/dL in preterm infants **or**
 - Ionized Ca⁺⁺ level < 3.0 to 4.4 mg/dL
 - Typically occurs in the first 2 days of life
 - Signs and symptoms include hypotonia, tachycardia, tachypnea, apnea, poor feeding, jitteriness, tetany, & seizures; do not usually appear until total serum Ca is < 7 mg/dL (ionized Ca < 3.0 mg/ dL)
 - Treatment includes administration of IV Ca⁺⁺ gluconate

Principal Dx	Z38.00	Z38.00
Secondary Dx		P71.1
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082

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Neonatal Electrolyte Severity Drivers

- Hypermagnesemia**
 - Neonates with hypermagnesemia whose mothers have received intravenous magnesium sulfate for pregnancy-induced hypertension may present with respiratory impairment, generalized hypotonia, and GI hypomotility mimicking intestinal obstruction

Principal Dx	Z38.00	Z38.00
Secondary Dx		P71.8
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082

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Neonatal Electrolyte Severity Drivers

- Hypoglycemia**
 - Often found in the newborn
 - When related to preexisting or gestational diabetes in the mother, it is considered an "other significant condition" and code P70.1, Syndrome of infant of a diabetic mother, is assigned instead of the neonatal hypoglycemia code P70.4
 - If underlying cause is iatrogenic, unknown/unspecified, or due to congenital diabetes, it is considered a "major problem"
 - Ensure it is clinically significant (or query for clinical significance)

Principal Dx	Z38.00	Z38.00
Secondary Dx		P70.4
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	640
SOI	1	2
ROM	1	1
RW	0.1033	0.1529

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Neonatal Gastrointestinal Severity Drivers

Necrotizing enterocolitis

- Affects approximately 10% of premature infants weighing less than 1,500 grams and has up to a 50% mortality rate
- Classified by stage:
 - Stage I: No pneumatosis or perforation
 - Stage II: Pneumatosis but no perforation
 - Stage III: Pneumatosis and perforation
- Usually appears within the first 2 weeks of life; symptoms include abdominal distension and discomfort, delayed gastric emptying, intolerance to feedings, decreased bowel sounds, change in stools (increase, decrease, or bloody), and abdominal redness
- Treatment includes bowel rest, hydration, IV antibiotics, nutrition, and frequent monitoring via abdominal series (bubbly gas pattern, free abdominal air, or peritonitis/abscess formation)




image: https://commons.wikimedia.org/wiki/File:Necrotizing_enterocolitis_202.jpg

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Neonatal Gastrointestinal Severity Drivers

Necrotizing enterocolitis

Principal Dx	Z38.00	Z38.00
Secondary Dx	P07.39	P77.2
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082

NEC with pneumatosis, but no perforation
Or Stage 2

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Neonatal Gastrointestinal Severity Drivers

Meconium staining of amniotic fluid (MSAF) (P96.83)

- Occurs due to fetal stress in utero that has occurred over a long time
- Staining found in fingernails, umbilical cord, or vernix
- Maternal common causes include placental insufficiency, hypertension, preeclampsia, oligohydramnios, and drug abuse

Meconium passage (P03.82)

- May indicate late fetal stress in labor
- Stratified into thin, moderate, or thick

Medicare DRG	795	794	794
RW	0.1771	1.3084	1.3084
3M APR-DRG	640	640	640
SOI	1	1	1
ROM	1	1	1
RW	0.1033	0.1033	0.1033

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Neonatal Infectious Severity Drivers

- **Cytomegalovirus infection**

- May be acquired prenatally or perinatally
- The most common congenital viral infection
- Most infants are asymptomatic, but others can have life-threatening illness and devastating long-term sequelae
- If acquired before birth, signs may include intrauterine growth restriction, prematurity, microcephaly, jaundice, petechiae, hepatosplenomegaly, periventricular calcifications, chorioretinitis, and pneumonitis
- If acquired later in infancy, signs may include sepsis-like syndrome, pneumonia, hepatosplenomegaly, hepatitis, thrombocytopenia, and atypical lymphocytosis

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Neonatal Infectious Severity Drivers

- **Cytomegalovirus infection**

Principal Dx	Z38.00	Z38.00
Secondary Dx		B25.9
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	636
SOI	1	1
ROM	1	1
RW	0.1033	0.7059

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Neonatal Infectious Severity Drivers

- **Neonatal sepsis**

- Associated with certain maternal perinatal and obstetric conditions including heavy colonization with Group B streptococcus, maternal bleeding (e.g., placenta previa, abruptio placentae), maternal infection, preeclampsia, precipitous delivery, premature rupture of membranes, and preterm delivery
- Late onset (> 7 days) neonatal sepsis causes include contaminated equipment, IV or enteral solutions, exposure to antibiotics (allowing for resistant bacterial strains), preterm delivery, prolonged use of intravascular catheters, or prolonged hospitalization
- Common signs and symptoms include diminished spontaneous activity, less vigorous sucking, apnea, bradycardia, temperature instability (hypothermia or hyperthermia), hypoperfusion, respiratory distress, seizures, jitteriness, vomiting, diarrhea, and abdominal distention

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Neonatal Infectious Severity Drivers

- Neonatal sepsis

Principal Dx	Z38.00	Z38.00
Secondary Dx		P36.9
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	636
SOI	1	1
ROM	1	1
RW	0.1033	0.7059


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Neonatal Infectious Severity Drivers

- Pneumonia
 - Early-onset pneumonia is part of generalized sepsis that first manifests at or within hours of birth
 - Late-onset pneumonia usually occurs after 7 days of age, most commonly in neonatal ICUs in infants who require prolonged endotracheal intubation because of lung disease
 - Organisms are acquired from the maternal genital tract or the nursery with common organisms being:
 - Gram-positive cocci (e.g., groups A and B streptococci, Staphylococcus aureus)
 - Gram-negative bacilli (e.g., Escherichia coli, klebsiella, and proteus)
 - Methicillin-resistant Staph aureus (MRSA) is common in late-onset hospital-acquired pneumonia
 - Viruses (e.g., respiratory syncytial virus [RSV] and cytomegalovirus [CMV]) or fungi cause some cases

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Neonatal Infectious Severity Drivers

- Pneumonia

Principal Dx	Z38.00	Z38.00
Secondary Dx		P23.9
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	634
SOI	1	1
ROM	1	1
RW	0.1033	0.5216


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Neonatal Hematological Severity Drivers

- **Anemia**
 - Common causes include:
 - Excessive blood draws
 - Fetal-maternal transfusion
 - Placental abruption or blood loss during labor
 - Hereditary causes of bone marrow failure
 - Infections acquired before or after birth
 - Placental abruption or blood loss during labor
 - Rh incompatibility
 - Twin-to-twin transfusions
 - Most infants with mild to moderate anemia have no symptoms, but moderate anemic infants may be sluggish or demonstrate poor feeding
 - With severe blood loss, infants may present with hypoperfusion or shock or jaundice

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Neonatal Hematological Severity Drivers

- **Anemia**

Principal Dx	Z38.00	Z38.00
Secondary Dx		P61.4
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082


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Neonatal Hematological Severity Drivers

- **Thrombocytopenia**
 - Incidence is less than 1% in well babies
 - Occurs in 18% to 35% of NICU patients, and in 73% of extremely low birth weight (ELBW) infants
 - About 75% of cases are considered mild (100,000–150,000/mcL) to moderately severe (50,000–100,000/mcL)
 - 25% are severe (less than 50,000/mcL)
 - The major mechanism (75% of cases) is impaired platelet production
 - Increased platelet consumption and/or sequestration are the chief mechanisms in the remainder of cases
 - More than 80% of neonates with confirmed infections become thrombocytopenic

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Neonatal Hematological Severity Drivers

- Thrombocytopenia**

Principal Dx	Z38.00	Z38.00	
Secondary Dx		P61.0	
Medicare DRG	795	793	
RW	0.1771	3.6967	
3M APR-DRG	640	639	
SOI	1	1	
ROM	1	1	
RW	0.1033	0.4082	


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Neonatal Neurological Severity Drivers

- Intraventricular hemorrhage (IVH)**
 - A condition of premature and even full-term infants where the blood vessels can be very fragile. Hemorrhage occurs in approximately 20% of premature infants.
- Subgaleal hemorrhage**
 - Usually associated with vacuum-assisted births and may be misdiagnosed. The hemorrhage is caused by rupture of emissary veins between the dural sinus and scalp veins.
- Hypotonicity**
 - Diminished tone of the skeletal muscles
- Hypertonicity**
 - Excessive tone of the skeletal muscles

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Neonatal Neurological Severity Drivers

- Intraventricular hemorrhage P52.3**
- Subgaleal hemorrhage P12.2**
- Hypotonicity P94.2**
- Hypertonicity P94.1**

Principal Dx	Z38.00	Z38.00	Z38.00
Secondary Dx		P52.3/P12.2	P94.2/P94.1
Medicare DRG	795	793	794
RW	0.1771	3.6967	1.3084
3M APR-DRG	640	639	640
SOI	1	1	2
ROM	1	1	1
RW	0.1033	0.4082	0.1529

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Neonatal Neurological Severity Drivers

- **Hypoxic ischemic encephalopathy (HIE)**
 - Brain injury due to asphyxia.
 - Characterized by hyper-alertness and excessive reaction to stimuli. Usually lasts 24 hours or less and symptoms may include:
 - Apnea
 - Bradycardia
 - Coma
 - Lethargy
 - Seizures
 - Stupor
 - Classified by severity:
 - Mild
 - Moderate
 - Severe

Principal Dx	Z38.00	Z38.00	Z38.00
Secondary Dx		P91.60	
Medicare DRG	795	794	
RW	0.1771	1.3084	
3M APR-DRG	640	640	
SOI	1	2	
ROM	1	1	
RW	0.1033	0.1529	

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Neonatal Respiratory Severity Drivers

- **Respiratory distress syndrome**
 - A condition that develops from a lack of surfactant lining the lungs. Without surfactant, the lung has no pliability to expand, thus becoming stiff. Without proper expansion, the infant has a minute amount of time before alveolar collapse occurs.
- **Classified by type:**
 - Type I
 - Type II or transient tachypnea of newborn

Principal Dx	Z38.00	Z38.00	Z38.00
Secondary Dx		P22.0	P22.1
Medicare DRG	795	790	794
RW	0.1771	5.2592	1.3084
3M APR-DRG	640	634	640
SOI	1	1	2
ROM	1	1	1
RW	0.1033	0.5216	0.1529

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Respiratory Distress Syndrome—Type I

- **Type I—respiratory distress syndrome (RDS)**
 - Affects primarily premature infants
 - Extremely premature babies (born prior to 28 weeks) are at the greatest risk for RDS
 - Caused primarily by deficiency of pulmonary surfactant in an immature lung
 - May not be evident immediately after birth if the infant has some circulating surfactant
 - Once the surfactant is used up (minutes to hours), the signs and symptoms become evident
 - Untreated RDS progressively worsens over the first 48 hours
 - Manifested by:
 - Profound cyanosis
 - Expiratory grunting
 - Moderate to severe intercostal, subxiphoid, and subcostal retractions
 - Nasal flaring
 - Tachypnea

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Respiratory Distress Syndrome—Type II

- **Type II—transitory tachypnea of newborn (TTN)**
 - Most commonly occurs in premature infants or after cesarean section
 - Common cause of respiratory distress in the immediate newborn period; at the time of birth and within two hours of delivery
 - Infants with mild to moderate TTN are symptomatic for 12 to 24 hours, but symptoms may persist as long as 72 hours in severe cases
 - Manifested by:
 - Mild cyanosis
 - Expiratory grunting
 - Increased work of breathing
 - Mild intercostal and subcostal retractions
 - Nasal flaring
 - Tachypnea (respiratory rate greater than 60 breaths per minute)

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Neonatal Respiratory Severity Drivers

- **Meconium aspiration syndrome (MAS)**
 - Respiratory distress not otherwise explained in infant born through meconium-stained fluid
 - Reported as with or without respiratory symptoms
 - Symptoms include marked tachypnea, cyanosis, retractions, grunting, nasal flaring, and streaky linear densities on CXR
 - Only neonatal hypertension may be coded along with MAS; other respiratory diagnoses are part of the syndrome

Principal Dx	Z38.00	Z38.00	Z38.00
Secondary Dx		P24.00	P24.01
Medicare DRG	795	793	793
RW	0.1771	3.6967	3.6967
3M APR-DRG	640	640	634
SOI	1	2	1
ROM	1	1	1
RW	0.1033	0.1529	0.5216

P24.00 MAS without respiratory symptoms

P24.01 MAS with respiratory symptoms

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Neonatal Respiratory Severity Drivers

- **Respiratory failure**
 - Found in neonates with:
 - Pulmonary conditions
 - Cardiac conditions (e.g., hypoplastic left heart, tetralogy of Fallot, transposition of the great vessels)
 - Metabolic abnormalities
 - Infections (e.g., pneumonia, meningitis, necrotizing enterocolitis)
 - Gastroenterological disorders (e.g., congenital diaphragmatic hernia)
 - Neurologic pathologic processes (e.g., IVH)

Principal Dx	Z38.00	Z38.00
Secondary Dx		P28.5
Medicare DRG	795	793
RW	0.1771	3.6967
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082

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Neonatal Respiratory Severity Drivers

Bronchopulmonary dysplasia

- Babies who still need oxygen at 4 weeks before their original due date are classified as having bronchopulmonary dysplasia
- Causes include
 - Lung immaturity (which causes the lungs to be more susceptible to damage from treatments such as oxygen; damaging lung tissue) and CPAP or mechanical ventilation (positive pressure may cause damage to alveoli) causing scarring
 - Infections and pneumonia
- Milder form of BPD is called chronic lung disease of prematurity (CLD)
- Diagnosis is not formally made until 2–4 weeks after birth via CXR, ABG results, and infant’s continued need for oxygen at time of original due date
- Treatment includes steroids to decrease scarring (used only in extreme cases due to side effects), diuretics, and bronchodilators




Image: https://commons.wikimedia.org/wiki/Category:Bronchopulmonary_dysplasia

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Neonatal Respiratory Severity Drivers

Bronchopulmonary dysplasia

Principal Dx	Z38.00	Z38.00
Secondary Dx		P27.1
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082

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Neonatal Respiratory Severity Drivers

Apnea


- Defined as lack of spontaneous breath for longer than 20 seconds and is caused by immaturity of the brain stem
- Diagnosed via monitoring of respiration, heart rate, and oxygen saturation levels for a period of 8–12 hours
- Vast majority of infants born prior to 30 weeks gestation are diagnosed with apnea
- In addition to close observation, infants are treated via tactile stimulation, administration of theophylline or caffeine, or use of CPAP

Other respiratory conditions

- Cyanosis
- Hypoxemia
- Respiratory distress

Principal Dx	Z38.00	Z38.00
Secondary Dx		P28.4
Medicare DRG	795	794
RW	0.1771	1.3084
3M APR-DRG	640	639
SOI	1	1
ROM	1	1
RW	0.1033	0.4082


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Neonatal Substance Disorders

- **Noxious influences affecting fetus or newborn via placenta or breast milk**
 - Positive drug screen via urine or meconium testing
 - No signs of withdrawal
 - Assign a code for the specific substance found
 - Review infant record for signs of withdrawal that would be assigned to neonatal abstinence syndrome
- **Fetal alcohol syndrome**
 - Not only includes short-term effects from alcohol exposure, but also denotes a child who has long-term effects such as:
 - Intellectual disabilities including poor memory, attention deficits, impulsive behavior, and poor cause-effect reasoning
 - Predispositions to mental health problems and drug addiction
 - Regardless of whether the infant shows signs of withdrawal, if infant/child has signs of fetal alcohol syndrome, only the code for the fetal alcohol syndrome is assigned

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Neonatal Substance Disorders

- **Noxious influences affecting fetus or newborn via placenta or breast milk**
- **Fetal alcohol syndrome**

Principal Dx	Z38.00	Z38.00	Z38.00
Secondary Dx		P04.9	Q86.0
Medicare DRG	795	794	794
RW	0.1771	1.3084	1.3084
3M APR-DRG	640	640	640
SOI	1	1	2
ROM	1	1	1
RW	0.1033	0.1033	0.1529


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Neonatal Weight-Related Severity Drivers

- **Abnormal weight loss**
 - Most infants lose between 5%–10% of their weight and regain their weight within the first two to three weeks of life
- **Failure to thrive** in newborn: Rare, but more common in extreme neonates

Principal Dx	Z38.00	Z38.00	Z38.00
Secondary Dx		R63.4	P92.6
Medicare DRG	795	794	794
RW	0.1771	1.3084	1.3084
3M APR-DRG	640	640	639
SOI	1	1	1
ROM	1	1	1
RW	0.1033	0.1033	0.4082



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Neonatal Weight-Related Severity Drivers



- **Feeding problems of the neonate** are common in infants less than 34 weeks gestation. Treatment and evaluation includes SLP or lactation consults. Common causes for all ages:
 - Ankyloglossia (restriction of tongue movement)
 - Craniofacial anomalies
 - Feeding intolerance
 - Poor suck
 - Hypotonia
 - Oromotor discoordination
 - Respiratory disorders
 - HIE (hypoxic ischemic encephalopathy)

Principal Dx	Z38.00	Z38.00
Secondary Dx		P92.9
Medicare DRG	795	795
RW	0.1771	0.1771
3M APR-DRG	640	640
SOI	1	2
ROM	1	1
RW	0.1033	0.1529

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Resources



- ICD-10-CM Official Guidelines for Coding and Reporting FY 2017
- ICD-10 and ICD-10-PCS Coding Handbook
- ICD-10 MS-DRG Definitions Manual
https://www.cms.gov/ICD10Manual/version34-fullcode-cms/fullcode_cms/P0001.html
- 3M HIS DRG Assurance™ Program Training Materials
- Images from Wikipedia Commons

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Thank you. Questions?

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