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# Live Born Infants

## Guidelines (V0005RDS2023)

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**Definitions:**

The following represent the four new definitions of 'term' deliveries:

1. Early Term: Between 37 weeks 0 days and 38 weeks 6 days
2. Full Term: Between 39 weeks 0 days and 40 weeks 6 days
3. Late Term: Between 41 weeks 0 days and 41 weeks 6 days
4. Post term: Between 42 weeks 0 days and beyond

### 1 Routine baby charges

Neonatal screening tests shall be performed for the baby as per UAE applicable Federal Laws and local regulations, this include but not limited to:

1. Laboratory neonatal screening test (heel prick test/ Guthrie test)
2. Neonatal Hearing Screening (not covered under insurance).
3. Critical Congenital Heart Disease (CCHD) screen.

As per DHA guide lines for coverage of routine baby charges, including Vitamin K, BCG, Hepatitis B and neo-natal screening test (Phenylketonuria, Congenital hypothyroidism, sickle cell screening, congenital adrenal hyperplasia).

\*Respiratory syncytial Virus (RSV) Vaccination for preterm babies.

**Coding for routine baby charges:**

As per current practice in emirate of Dubai, services for routine baby charges are covered under DRG requests for Dubai provider and fee for service for northern emirates.

The DRG coding is dependent on each baby birth weight, presented in 4 DRGs as follows:

- DRG 158031 neonate, birthWT <1000 grams,
- DRG 158111 neonate, birthWT 1000-1499grams.
- DRG 158121 neonate, BirthWT 1500-1999 grams.
- DRG 158131 neonate, BirthWT 2000-2499 grams.
- DRG 158171 neonate, BirthWT >2500 grams.

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# Live Born Infants

## ICD-10 codes:

Z38.0 single liveborn infant, delivered vaginally.

Z38.01 single liveborn infant delivered cesarean.

Z38.30 twin liveborn infant, born in hospital

P07.0 low birth weight codes.

P07.3 preterm[premature] newborn.

## 2 Neonatal Respiratory distress syndrome (NRDS):

### Definitions:

NRDS is an acute lung disease caused by surfactant deficiency, which leads to alveolar collapse and noncompliant lungs.

RDS raises shortly after birth <24 hours, and severity increase during first 48 hours.

Prematures younger than 32 weeks are more affected, incidence of RDS inversely proportional to gestational Age.

Risk factors for development and severity: maternal DM, CS delivery, 2nd born of twins, peri-natal asphyxia, peri-natal infection and patent ductus arteriosus.

### Signs & Symptoms

- Apnea.
- Cyanosis.
- Expiratory Grunting.
- inspiratory stridor.
- nasal flaring.
- poor feeding.
- tachypnea (more than 60 breaths per minute).
- retractions in the intercostal, subcostal, or supracostal spaces.
- Changes in color of lips, fingers and toes.
- Hypothermia

### Work up:

1-blood test oxygen saturation and infection (ABG, VBG, CBC, LFTs, KFT, CRP. etc.).

2-CXR, certain criteria are present: bell shaped thorax, under-aeration of lung fields, reduced lung volume, fine granular appearance of lung parenchyma.

In moderate RDS: reticulogranular pattern (ground glass) is more prominent, uniformly distributed, hypo-aerated lung.

In severe RDS: reticulo-granular opacities are present all over both lung fields, prominent bronchogram, total obstruction of cardiac silhouette, other signs can include: cystic changes in Rt lung, dilated alveoli, interstitial emphysema. CXR of 3 phases attached.

### Expected complication (for coding of secondary, diagnosis):

- pneumothorax.
- internal bleeding.
- lung scarring. (bronchopulmonary dysplasia (BPD).

### Management:

#### Pre-natal care:

for high risk mothers, course of corticosteroids should be offered after 24 weeks.

#### Stabilization at delivery room:

delay cord clamping to allow placental-fetal transfusion, CPAP at least 6 cmH<sub>2</sub>O to stabilize neonate.

surfactant should be administered to babies in whom stabilization done via intubation.

#### Surfactant therapy:

The use of early rescue surfactant should be standard policy, but occasions exist, including when intubation is required for stabilization, in which surfactant should be administered in the delivery suite

#### Non-invasive respiratory support:

CPAP is initial with babies with no need for intubation, Optimally, infants with RDS should be treated with CPAP with early rescue surfactant.

#### Mechanical ventilation:

clinical team decision, after 1-2-weeks of intubation, facilitating extubation should be considered with course of low or very low dexamethasone.

#### Persistent ductus arteriosus:

Indomethacin, ibuprofen, or paracetamol can be employed in light of a decision to attempt therapeutic closure of a persistent ductus arteriosus.

### Differential diagnosis:

#### A. Meconium aspiration syndrome.

May result from aspiration of amniotic fluid, blood, or meconium; aspiration syndrome is observed in more mature infants and is differentiated by obtaining a history and by viewing the chest radiographs.

#### B. Transient tachypnea of the newborn (TTN).

A condition with similar presentation, to be differentiated from RDS, below is description and table of differences for ease of evaluation.

# Live Born Infants

## C. Neonatal pneumonia.

Usually secondary to group B beta-hemolytic streptococci and often coexists with respiratory distress syndrome

## D. Pulmonary hemorrhage.

Evident by CXR and other clinical findings.

Maternal guidelines to avoid post-natal infection: Detailed anomaly scan should be conducted between 18-20 weeks of gestation, and screening for Group B-hemolytic streptococcus infection by low vaginal swab between 35-37 weeks of gestation. For further details and information

## Transient tachypnea of the newborn (TTN).

- I. Usually occurs in term or near-term neonates, often after cesarean delivery; the chest radiograph of an infant with transient tachypnea shows good lung expansion and, often, fluid in the horizontal fissure, (TTN) results from delayed absorption of fetal lung fluid following delivery.

A main finding is ABGs that do not reflect carbon dioxide retention

generally, it is self-resolving disorder with excellent prognosis. It frequently resolves over a 24-hour to 72-hour period.

### II. Complication of TTN:

Some infants may develop hypoxia, respiratory fatigue, and acidosis. Occasionally, air leaks (e.g., a small pneumothorax or pneumomediastinum) may be seen in infants who have increased work of breathing

Few biochemical markers have been shown to be effective in predicting the severity of transient tachypnea of the newborn, such as lactate, lactate dehydrogenase (LDH), and plasma N-terminal pro-B-type natriuretic peptide (NT-proBNP).

### III. CXR:

The characteristic findings include prominent perihilar streaking, which correlates with the engorgement of the lymphatic system with retained lung fluid, and fluid in the fissures. Small pleural effusions may be seen. Patchy infiltrates have also been described.

## References

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|                | RDS  | TTN   |
|----------------|--|---|
| Age (maturity) | Mostly immature  | Full term /mature                             |
| Onset          | Progressive signs of distress symptoms.                                      | Within the first few hours of life            |
| Severity       | Mild to moderate to severe   | Mild to moderate                              |
| Intubation     | May be needed  | Not needed                                    |
| Pco2           | According to severity  | Maintained within normal                      |
| CXR            | Ground glass appearance, cardiac shadow changes, progressive disease course. | Good lung expansion, fluid horizontal fissure |
| Delivery       | NVD /CS  | CS mostly                                     |
| Surfactant     | Needed   | Not needed                                    |
| Duration       | Unknown  | Usually resolve within 72 hours               |
| Etiology       | Surfactant deficiency  | Delayed absorption of fluids                  |
| Complication   | Common   | Rare  |

(Compiled by Dr. Ahmed Eldarawi/ Almadallah 2023, The above table is intended for Health Insurance claim evaluation only)