

Guidance document for processing PM-JAY packages

Chronic Neonatal Care Package

Procedures covered: 1

Specialty: Neo-natal Care

Package name	Procedures name	HBP 1.0 code	HBP 2.0 code	Package price (INR)
Chronic Care Package: If the baby requires stay beyond the upper limit of usual stay in Package no MN004A or MN005A for conditions like severe BPD requiring respiratory support, severe NEC requiring prolonged TPN support	Chronic Care Package: If the baby requires stay beyond the upper limit of usual stay in Package no MN004A or MN005A for conditions like severe BPD requiring respiratory support, severe NEC requiring prolonged TPN support	M300006	MN006A	3,000

ALOS: more than 30 (MN004A) - 45 (MN005A) days

Minimum qualification of the treating doctor:

Essential: DM/DNB/Equivalent (in Neonatology)

Special empanelment criteria/linkage to empanelment module: Care at Tertiary Hospital

Disclaimer:

ICMR has issued clinical guidelines for '**Feeds & fluids in Neonates**' to be followed in country. For monitoring and administering the claim management process of **Chronic Neonatal Care Package** NHA shall be following these guidelines. This document has been prepared for guidance of PROCESSING TEAM and TRANSACTION MANAGEMENT SYSTEM of AB PM-JAY for the claims of procedures mentioned above. The ICMR guidelines are also included in the document for better understanding of the SHA teams, Insurance companies and TPAs. The hospitals can also refer to this document so that they have the insight on how the claims will be processed. However, this document doesn't provide any guidance on clinical and therapeutic management of patient. In that respect the hospitals and physicians may refer to the ICMR poster and other relevant material as per the extant professional norms.

PART I: GUIDELINES FOR CLINICIANS AND HEALTHCARE PROVIDERS

1.1 Objective:

The purpose of this section is to act as a guidance & a clinical decision support tool for the clinicians in deciding the line of treatment, plan clinical management of patient and decide referral of cases to the appropriate level of care (as required) for treatment of patients under PMJAY and selection of corresponding Health Benefit Package.

It will also serve as a tool for hospitals to determine and submit the mandatory documents required for claiming reimbursement of health benefit package under PMJAY.

1.2 Clinical key pointers:

Indications for prolonged stay

- Necrotizing Enterocolitis
- Bronchopulmonary Dysplasia
- Meningitis/ Ventriculitis [Please review the relevant package for more details]
- Failure to thrive
- Post-surgical prolonged stay especially ileostomy for jejunal/ileal atresia
- Total parenteral nutrition requirement for above mentioned conditions

Necrotizing Enterocolitis (NEC)

Necrotizing enterocolitis (NEC) is one of the common gastrointestinal emergencies seen in the neonatal intensive care unit.

Risk factors:

Prematurity (more than 90% occur in preterm infants), hypoxia, sepsis, abnormal colonization of the bowel, ischemic-reperfusion injury, umbilical arterial catheterization, H blockers, broad spectrum antibiotics, and 2 antenatally detected umbilical artery blood flow abnormalities (absent/reversed end-diastolic flow) are the common risk factors of NEC.

Clinical features

NEC commonly presents as a fulminant and rapidly progressive illness; however, it may also present as a slow, paroxysmal illness with abdominal distension and features of sepsis and ileus (Table 23.1). In extreme preterm neonates, a high index of suspicion is required for early diagnosis. The age of onset is inversely related to the postmenstrual age (PMA) at birth, with a mean of around 12 days and PMA of 29 to 31 weeks.

The common clinical features are:

Systemic features: These include respiratory distress with increased episodes of apnea/bradycardia and temperature instability; others include lethargy or irritability with poor feeding, decreased peripheral perfusion and pallor, acidosis, hypo/hyperglycemia, oliguria and bleeding diathesis.

Abdominal signs (usually predominate): These include increased gastric aspirates, abdominal distention or tenderness, blood in stools, peritonitis, abdominal wall erythema, vomiting (bile or blood-stained) and ascites.

Staging of NEC (modified Bell's staging)*

Stage	Systemic signs	Local signs	Radiological signs	Treatment
Stage I	Temperature instability, apnea, bradycardia	Increased pre-feed residuals, mild abdominal distention and, occult blood in stool (stage IA) or gross blood in stool (stage IB)	Normal or mild ileus	NPO; consider antibiotics for 3 days pending culture report
Stage IIA	Same as stage I	Same as I plus absent bowel sounds, prominent abdominal distention, abdominal tenderness	Ileus, pneumatosis intestinalis	NPO, antibiotics for 7-10 days
Stage IIB	Same as stage I plus mild metabolic acidosis and thrombocytopenia	Same as IIA plus abdominal wall edema with palpable loops and tenderness	Same as IIA plus portal venous gas , with or without ascites	NPO, antibiotics for 14 days
Stage III A	Same as IIB plus hypotension bradycardia, mixed acidosis, DIC	Same as II with worsening abdominal wall edema, erythema and induration (signs of generalized peritonitis), marked tenderness	Same as IIB with definite ascites	Same as above; may require fluids upto 200ml/kg/d, inotropes, assisted ventilation, abdominal paracentesis
Stage III B	Same as IIIA with worsening shock, deterioration in laboratory values and vital signs	Same as IIIA	Same as IIB plus pneumoperitoneum	Same as above plus surgical intervention

*Adapted from Gordon et al³

Medical Management

- All neonates with suspect/established NEC should be kept nil per oral with continuous gastric aspiration; volume-by volume replacement of aspirates should be done with N/2 saline
- Total parenteral nutrition may be required, particularly in stage II/III NEC
- Remove umbilical arterial or venous catheters, if any (to prevent on going mesenteric intestinal ischemia)
- Appropriate respiratory support in form of CPAP or mechanical ventilation
- Circulatory support: If there are features of shock, appropriate management with normal saline bolus and inotropes with monitoring of arterial blood pressure
- Metabolic derangements like acidosis and electrolyte imbalances should be corrected
- Blood cultures must be sent broad spectrum antibiotics as per NICU protocol (with anaerobic cover) when there is evidence of peritonitis or bowel perforation
- Pain control and minimal handling of the neonate are recommended
- Maintain hematocrit; arrange PRP and FFP if evidence of DIC
- Renal function monitoring: Monitor urine output, urea, creatinine, serum electrolytes and fluid management as indicated
- Serial monitoring with abdominal X-rays and abdominal girth monitoring are recommended
- Consultation with a pediatric surgeon for further management

Surgical Management

Absolute indications for surgery:

1. Pneumoperitoneum (indicating bowel perforation)
2. Presence of necrotic bowel (severe and persistent metabolic acidosis and/or thrombocytopenia, persistent fixed loop on serial x-rays with lack of response to medical management)

The surgical options include laparotomy and primary peritoneal drainage (PPD).

Bronchopulmonary dysplasia/Chronic lung disease

Chronic lung disease (CLD) or bronchopulmonary dysplasia (BPD) occurs in preterm infants who require mechanical ventilation and/or oxygen therapy for a primary lung disorder. Definition of BPD – the use of need of oxygen for > 28 days and at 36 weeks PMA to identify the severity.

CLD has a multifactorial etiology. Most important factor is prematurity. The other risk factors include oxygen therapy, mechanical ventilation, infection, patent ductus arteriosus. Arrested lung development and reduced gas exchange surface area are hallmarks of “new” BPD. Contributing factors include inflammation and lung injury from oxygen toxicity and mechanical ventilation induced barotrauma.

Definition of BPD³

A premature infant (<32 weeks' gestational age) with BPD has persistent parenchymal lung disease, radiographic confirmation of parenchymal lung disease, and at 36 weeks PMA requires 1 of the following FiO₂ ranges/oxygen levels/O₂ concentrations for ≥3 consecutive days to maintain arterial oxygensaturation in the 90%-95%.

Grades	Invasive IPPV*	N-CPAP, NIPPV, or nasalcannula ≥3 L/min	Nasal cannula flow of 1-3 L/min or Hood O ₂	Nasal cannula flow of <1 L/min
I	-	21	22-29	22-70
II	21	22-29	>30	>70
III	>21	>30		

III(A) Early death (between 14 days of postnatal age and 36 weeks) owing to persistent parenchymal lung disease and respiratory failure that cannot be attributable to other neonatal morbidities (eg, necrotizing enterocolitis, intraventricular hemorrhage, redirection of care, episodes of sepsis, etc).

*Excluding infants ventilated for primary airway disease or central respiratory control conditions. (CPAP, continuous positive airway pressure; IPPV, intermittent positive pressure ventilation; N-CPAP, nasal continuous positive airway pressure; NIPPV, noninvasive positive pressure ventilation)

Clinical and radiological features

- Respiratory signs in infants with CLD include fast but shallow breathing, retractions and paradoxical breathing. Rales and coarse rhonchi are usually heard on auscultation.

- Radiographic features show only haziness reflecting diffuse loss of lung volume or increased lung fluid. Occasionally they have dense areas of segmental or lobar atelectasis or pneumonia infiltrates, but they do not show severe hyperinflation.

Treatment of evolving/established BPD

Management of evolving or established BPD		
	Evolving BPD (2-4 wk age)	Established BPD (>4 wk age)
Ventilator strategies	<ul style="list-style-type: none"> • Minimizing ventilator support (e.g. using nCPAP whenever possible) • Tolerating slightly higher PaCO₂ (45-55 mm Hg provided pH >7.25) • Target SpO₂: 90-93% • If on IMV: <ul style="list-style-type: none"> ◦ Use PTV, if possible ◦ Slow rates (25-40/min) ◦ Moderate PEEP (4-5 cm H₂O) ◦ Moderate Ti (0.35-0.45 sec) ◦ Low tidal volume (3-6 mL/kg) ◦ Early extubation to CPAP 	<ul style="list-style-type: none"> • Minimizing ventilator support • Tolerating higher PaCO₂ (55-60 mm Hg provided pH >7.25) • Target SpO₂: 90-95% • If on IMV: <ul style="list-style-type: none"> ◦ Use PTV if possible ◦ Slow rates (20-40/min) ◦ Moderate PEEP (4-8 cm H₂O) ◦ Longer Ti (0.4-0.7 sec) ◦ Larger tidal volume (5-8 mL/kg)
Pharmacological strategies	<ul style="list-style-type: none"> • Methylxanthines to facilitate extubation • Steroids: Consider in ELBW infants on ventilator support even after 10-14 days of age. Specific management: <ul style="list-style-type: none"> ◦ Diuretics for features of pulmonary edema ◦ Bronchodilators for bronchospasm 	<ul style="list-style-type: none"> • Specific management: <ul style="list-style-type: none"> ◦ Bronchodilators for bronchospasm ◦ Sedation and muscle relaxation for 'BPD spells' ◦ Consider Sildenafil for established pulmonary arterial hypertension
Others	<ul style="list-style-type: none"> • Nutrition: <ul style="list-style-type: none"> ◦ Increase daily calorie intake to 120 to 150 Kcal/kg/d ◦ Give expressed breast milk fortified with HMF ◦ Give multivitamin supplements to meet RDA 	<ul style="list-style-type: none"> • Same as for evolving BPD

(nCPAP, nasal continuous positive airway pressure; IMV, intermittent mandatory ventilation; PTV, patient triggered ventilation; PEEP, positive end expiratory pressure; Ti, Inspiratory time; HMF, human milk fortifier; MCT, medium chain triglycerides; RDA, recommended dietary allowance; iNO, Inhaled nitric oxide)

Management of BPD

Antenatal period	Antenatal corticosteroids
At birth	If resuscitation required, avoid excessive pressure (i.e. avoid excessive chest rise); delay cord clamping and ensure optimal FRC
Birth to 24 hrs	<ul style="list-style-type: none"> • Early CPAP, try to avoid intubation • If surfactant is to be used, use early surfactant • Fluids: 60-80 mL/kg/d • Nutrition: oral feeds - breast milk (MEN/ full feeds) to be initiated in stable infants • If on ventilator: <ul style="list-style-type: none"> ◦ Early rescue surfactant and early extubation ◦ Settings: fast rates (50-60/min), moderate PEEP (4-6 cm H₂O), Short Ti (0.25-0.4 s). Consider Volume targeted ventilation ◦ Target values: SpO₂: 91-95%; PaCO₂ 45-55 mm Hg; pH: 7.25-7.35 ◦ Use Methylxanthines to facilitate extubation
24 hrs to 1 week	<ul style="list-style-type: none"> • Fluids: daily increment of 15-20 mL/kg/d to reach a maximum of 140-150 mL/kg/d by day 7 • Nutrition: <ul style="list-style-type: none"> ◦ Parenteral: TPN for ELBW infants till full enteral feeds are achieved ◦ Enteral: Gradually increase feed volume by 20-30 mL/kg/d if accepting well; give only breast milk; fortify with HMF after reaching 100 mL/kg/d • If on ventilator: <ul style="list-style-type: none"> ◦ Settings and target values as above ◦ Extubate to CPAP/ NIPPV as early as possible ◦ Methylxanthines to facilitate extubation • For ELBW infants on oxygen or ventilator support at 24 hrs: Inj. vitamin A 5000 units IM thrice weekly for 4 weeks • Initiate developmentally supportive care
2 to 4 weeks	<ul style="list-style-type: none"> • Fluids: 150 to 160 mL/kg/d • Nutrition: Fortify breast milk with HMF; Increase calorie intake to 120 to 150 Kcal/kg/d • If on ventilator: <ul style="list-style-type: none"> ◦ Settings: PTV mode; slow rates (25-40/min), moderate PEEP (4-5 cm H₂O), moderate Ti (0.35-0.45 s), low tidal volume (3-6 mL/kg) ◦ Target values: SpO₂: 88-93%; PaCO₂ 45-55 mm Hg; pH: 7.25-7.35 • Steroids: Consider in ELBW infants on ventilator support even after 10-14 days of age • Diuretics for features of pulmonary edema • Bronchodilators for bronchospasm • Diagnose and treat pulmonary hypertension, gastroesophageal reflux
> 4 weeks	<ul style="list-style-type: none"> • Fluids: 150 to 160 mL/kg/d • Nutrition: Fortify breast milk with HMF; add more calories if needed • If on ventilator: <ul style="list-style-type: none"> ◦ Settings: PTV mode; slow rates (20-40/min), moderate PEEP (4-8 cm H₂O), longer Ti (0.4-0.7 s), larger tidal volume (5-8 mL/kg) ◦ Target values: SpO₂: 89-94%; PaCO₂ 55-60 mm Hg; pH > 7.25 • Bronchodilators for bronchospasm • Sedation and muscle relaxation for 'BPD spells'

Flow-chart for management of BPD

(BMV, bag and mask ventilation; CPAP, continuous positive airway pressure; PEEP, positive end expiratory pressure; MEN, Minimal enteral nutrition; ELBW, extremely low birth weight infants; TPN, total parenteral nutrition; HMF, human milk fortifier; PTV, patient triggered ventilation; Ti, Inspiratory time)

1.3 STANDARD TREATMENT WORKFLOW (DHR-ICMR STW)ⁱ- For clinicians/ treating doctor

<https://stw.icmr.org.in/stws>

1.4 Mandatory documents- For healthcare providers

Following documents should be uploaded by the concerned hospital staff at the time of pre-authorization and claims submission:

Mandatory document	Chronic Neonatal Care Package
i. At the time of Pre-authorization	
Clinical notes including evaluation findings and planned line of management	Yes
Necrotizing Enterocolitis Complete blood count Arterial Blood Gas (ABG) Analysis Serum Electrolytes Occult stool test Abdominal X-ray (AP & lateral decubitus) USG Abdomen	Yes
Bronchopulmonary dysplasia Chest X-ray	Yes
ii. At the time of claim submission	
Detailed Indoor case papers (ICPs)	Yes
Investigations reports (if done)	Yes
Detailed Procedure notes and indication (if any)	Yes
Detailed discharge summary	Yes

PART II: GUIDELINES FOR PROCESSING TEAM

PART III: GUIDELINES FOR IT

3.1 Objective: To enable setting up of cross check mechanisms / rule engines within the IT platform (TMS) to ensure compliance with STGs and to prevent fraud / abuse of the Health Benefit Package.

3.2 Below mentioned are the scenarios where a provision would be built in TMS for pop-ups:



- a. Did the hospitalization stay requirement more than the days mentioned in packages (MN004A/MN005A) documented? Yes

AND

Necrotizing Enterocolitis (NEC)

- a. Was the imaging indicative of surgery and long-term requirement of Total parenteral nutrition (TPN) documented? Yes/Not Applicable
- b. Was the documented gestation age < 32 weeks/preterm? Yes/Not Applicable

OR

Bronchopulmonary Dysplasia

- a. Was the oxygen requirement >28 days documented? Yes/Not Applicable

Till the time the functionality is being developed, the processing doctors shall check the above manually.

References

1. Ramesh Agarwal, Ashok Deorari, Vinod K Paul, et al. AIIMS Protocols in Neonatology. Volume I & II. Second Edition. 2019

Acknowledgment:

^[1] Standard Treatment Workflows of India. 2019 Edition, vol. 1, New Delhi, Indian council of Medical Research, Department of Health Research, Ministry of Health and Family Welfare, Government of India. These STWs have been prepared by national experts of India with feasibility considerations for various levels of healthcare system in the country. These broad guidelines are advisory and are based on expert opinions and available scientific evidence. There may be variations in the management of an individual patient based on his/her specific condition, as decided by the treating physician. There will be no indemnity for direct or indirect consequences. Kindly visit the web portal (stw.icmr.org.in) for more information. © Indian Council of Medical Research and Department of Health Research, Ministry of Health & Family Welfare, Government of India.