The chart shows the percentage distribution of questions on the Neonatal Pediatric Transport exam across the major content categories covered on the examination.
**EXAM OUTLINE**

Areas of knowledge to be tested on the Neonatal Pediatric Transport examination are listed in the following outline. This list is not intended as an all-inclusive review. It is provided only to help candidates evaluate their own practice.

Percentages identified for the topic areas represent the number of test questions assigned to each content area. These percentages do not necessarily reflect the content of future examinations.

<table>
<thead>
<tr>
<th>10.00</th>
<th>Transport Core Knowledge (48%)</th>
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<tbody>
<tr>
<td></td>
<td>Regulation, Legal and Ethical</td>
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<tr>
<td></td>
<td>Safety, Communication and Environment</td>
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<td></td>
<td>Procedures and Management of Invasive Devices</td>
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<tr>
<td></td>
<td>Pharmacology</td>
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<td></td>
<td>Respiratory Physiology</td>
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<td></td>
<td>Principles of Mechanical Ventilation</td>
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<td>Thermoregulation</td>
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<td>Resuscitation and Stabilization</td>
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<td>Flight Physiology</td>
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<td>Fluid and Electrolytes</td>
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<td>History and Physical assessment</td>
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<tr>
<th>11.00</th>
<th>Clinical Issues in Neonatal Transport (26%)</th>
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<td>Pulmonary</td>
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<tr>
<td></td>
<td>Cardiovascular</td>
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<td></td>
<td>Glucose and Electrolyte Management</td>
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<td>Neurological</td>
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<td>Surgical Emergencies</td>
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<td>Extremely Low Birth Weight Neonate</td>
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<tr>
<th>12.00</th>
<th>Clinical Issues in Pediatric Transport (26%)</th>
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<td>Pulmonary</td>
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<tr>
<td></td>
<td>Cardiovascular</td>
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<tr>
<td></td>
<td>Metabolic and Hematologic</td>
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<tr>
<td></td>
<td>Neurological</td>
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<td></td>
<td>Exposure to Drugs, Poisons and Toxins</td>
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<td></td>
<td>Accidental and Non-accidental Trauma (e.g. burns and smoke inhalation, penetrating, blunt and submersion injuries)</td>
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</tbody>
</table>
ASSOCIATED COMPETENCIES

- Obtain and interpret a pertinent history
- Systematically assess all body systems utilizing physical examination, developmental assessment and neurobehavioral assessment
- Utilize biophysical monitoring techniques to identify body system alterations.
- Identify life-threatening states and initiate appropriate interventions for the neonatal and pediatric patient.
- Recognize normal lab values and deviations in clinical laboratory and diagnostic data and identify potential significance.
- Formulate and implement a plan of care in collaboration with physicians and other health care professionals.
- Evaluate benefits and risks of diagnostic and therapeutic interventions
- Understand the impact of transport physiology on both the neonatal/pediatric patient population and the accompanying transport team members.
- Evaluate and document responses to interventions
- Apply safety principles of transport as applicable to both the neonatal/pediatric patient population and the accompanying transport team members.
- Integrate legal and ethical principles into neonatal and pediatric transport.
- Recognize the psychosocial aspects of pediatric/neonatal transport and potential impact on the family.
STUDY GUIDE

TRANSPORT CORE KNOWLEDGE
(content is applicable to both neonatal & pediatric transport situation and/or population)

I. Regulation, Legal and Ethical
• Scope of practice of all team members
• Federal regulations regarding transport
  EMATAKA
  FAA
• Informed consent
• Documentation

II. Safety, Communication and Environment
• Environmental Influences
  Barometric pressure effects
  Gravitational forces
  Noise
  Thermal & humidity effects
  Vibration
• Safety
  Scene safety
  Evacuation protocols
  Survival training
  Disaster planning
• Crew Stressors
  Environmental
  Physical
  Psychological
• Communication
  Peer to peer
  Patient (age appropriate)
  Parents & family members

III. Procedures and Management of Invasive Devices
• Special Skills
  Intubation
  Laryngeal mask airway
  Needle cricothyroidotomy
  Intravenous /intraosseous Access
  Insert UVC/UAC
  Needle aspiration/chest tube insertion
  Pericardiocentesis
  Troubleshooting

IV. Pharmacology
• Pain management
• Sedation
• Antibiotics
• Cardiovascular drugs

V. Respiratory Physiology

VI. Principles of Mechanical Ventilation
• Principles of mechanical ventilation support during transport

VII. Thermoregulation
• Thermal Management
  Hypothermia
  Hyperthermia

VIII. Resuscitation and Stabilization
• Cardiopulmonary Arrest
  (NRP & PALS)
  Airway
  Breathing
  Circulation

IX. Flight Physiology
• Physiologic impacts
  Fluid dynamics
  Gas changes
  Laws of science
    Boyle
    Charles
    Dalton
  Oxygen consumption
  Spatial changes
  Third spacing

X. Fluid and Electrolytes
• Fluid & electrolyte therapy
  Dehydration
  Fluid overload
  Electrolyte abnormalities

XI. History and Physical assessment
• Physical assessment
  Anatomic abnormalities
• Developmental/behavioral status
CLINICAL ISSUES IN NEONATAL TRANSPORT

I. Pulmonary

• Upper Airway
  Congenital anomalies
  Choanal atresia
  Pierre Robin syndrome

• Lower Airway
  Chronic lung disease
  Parenchymal
  Aspiration
  Pneumonia/pneumonitis

• Respiratory distress syndrome
  Air leak syndrome
  Respiratory Failure

II. Cardiovascular

• Congenital heart conditions
  Cyanotic
  Ductal dependent lesions
  Left-to-right shunting
  Persistent pulmonary hypertension of newborn (PPHN)

Shock States
  Anaphylactic
  Cardiogenic
  Distributive (septic)
  Hypovolemic

• Congestive heart failure
  Pericarditis
  Dysrhythmias
  Bradycardia
  Tachycardia

Supraventricular tachycardia (SVT)

III. Glucose and Electrolyte Management

• Hypoglycemia
• Altered electrolyte balance

IV. Neurological

• Seizures
• Perinatal substance abuse
• Increased intracranial hemorrhage

V. Surgical Emergencies

• Diaphragmatic hernia
• Gastrochisis
• Omphalocele
• Necrotizing enterocolitis
• Tracheoesophageal fistula

VI. Extremely Low Birth Weight Neonate
Clinical Issues in Pediatric Transport

I. Pulmonary
- Upper Airway
  Croup (laryngotracheobronchitis)
  Epiglottis
- Lower Airway
  Asthma
  bronchiolitis
  Parenchymal
  Pneumonia/pneumonitis
- Foreign Body Obstruction

II. Cardiovascular
- Congenital Heart
  Late presentation
  Long term complications
  Postoperative cardiovascular procedure
  Hypertension
- Shock States
  Anaphylactic
  Cardiogenic
  Distributive (septic)
  Hypovolemic
- Congestive heart failure
  Pericarditis
  Dysrhythmias
  Bradycardia
  Tachycardia
  Supraventricular tachycardia (SVT)

III. Metabolic and Hematologic
- Anemia
- Sickle cell crisis
- Diabetic ketoacidosis
- Altered electrolyte balance

IV. Neurological
- Increased intracranial pressure
- Status epilepticus
- Coma
- Meningitis
- Intracranial hemorrhage

V. Exposure to Drugs, Poisons and Toxins
- Bites (Poisonous and non-poisonous)
- Ingestions/Poisoning
- Disaster-Related
  Hazardous materials

VI. Accidental and Non-accidental Trauma (e.g. burns and smoke inhalation, penetrating, blunt and submersion injuries)
- Accidental
- Non-accidental
- Near drowning
- Hypothermia/Hyperthermia
- Burns and smoke inhalation
STUDY RESOURCES

The following references are used by content team members and outside item writers to generate test questions for the NPT examination. This list is not intended as an all-inclusive list of references, nor does it imply that items on the current examinations were necessarily referenced from any of these publications.

JOURNALS
- Advances in Neonatal Care
- Air Medical Journal
- Clinics in Perinatology
- Newborn and Infant Nursing Reviews
- Paediatrics and Child Health
- Pediatric Clinics of North America
- Pediatrics
- Respiratory Clinics of North America
- Seminars in Perinatology
- The Journal of Perinatal & Neonatal Nursing

BOOKS
- AHA 2015 Guidelines for CPR & ECC: Supplement Circulation, AHA, 2020
- Walls, et. al., Rosen’s Emergency Medicine: Concepts and Clinical Practice, Elsevier, 2018
- Walsh et al., Neonatal and Pediatric Respiratory Care, Elsevier, 2019.