ARDMS®
American Registry for Diagnostic Medical Sonography

Pediatric Sonography Examination Content Outline

(Outline Summary)

#	Domain	Subdomain	Percentage
1	**Anatomy and Physiology**	Normal Anatomy Developmental Changes Perfusion and Function	**26%**
2	**Congenital Variants, Pathology, and Pathophysiology**	Neonatal Brain **|** Head and Neck **|** Chest Gastrointestinal **|** Hepatobiliary Adrenal Glands, Pancreas, and Retroperitoneum Spleen and Peritoneal Cavity **|** Genitourinary System Musculoskeletal, Superficial Structures, and Hernias Neonatal Spine **|** Vascular and Transplants	**45%**
3	**Data and Protocols**	Outside Data (clinical assessment, history and physical [H&P], lab values) Clinical Standards and Guidelines Measurement Techniques	**19%**
4	**Physics and Instrumentation**	Imaging Instruments	**5%**
5	**Treatment and Emerging Technologies**	Managing Medical Emergencies and Traumatic Injury Interventional Procedures Disinfection Emerging Technology	**5%**

(Detailed Outline)

1.	**Anatomy and Physiology 26%**
1.A.	***Normal Anatomy***
1.A.1.	Evaluate anatomy of the neonatal brain and skull
1.A.2.	Evaluate anatomy of the neck and head (e.g., parotid glands, submandibular glands, thyroid)
1.A.3.	Evaluate anatomy of the chest (e.g., pleural space, lung, thymus, diaphragm)
1.A.4.	Evaluate anatomy of the gastrointestinal tract (e.g., esophagus, pylorus, stomach, bowel, appendix)
1.A.5.	Evaluate anatomy of abdominal organs (e.g., liver, gallbladder, biliary tract, adrenal glands, pancreas, spleen)
1.A.6.	Evaluate anatomy of genitourinary system (e.g., kidneys, bladder, uterus, ovaries, scrotum)
1.A.7.	Evaluate musculoskeletal anatomy (e.g., hips, joints)
1.A.8.	Evaluate anatomy of superficial structures (e.g., breast, abdominal wall, soft tissue)
1.A.9.	Evaluate anatomy of the neonatal spine
1.B.	***Developmental Changes***
1.B.1.	Identify normal age-specific changes
1.C.	***Perfusion and Function***
1.C.1.	Evaluate peripheral vascular anatomy
1.C.2.	Evaluate abdominal vascular anatomy
1.C.3.	Evaluate intracranial vascular anatomy
1.C.4.	Evaluate transplants
2.	**Congenital Variants Pathology & Pathophysiology 45%**
2.A.	***Neonatal Brain***
2.A.1.	Evaluate for congenital intracranial abnormalities (e.g., Dandy-Walker malformation, holoprosencephaly, callosal agenesis)
2.A.2.	Evaluate for neurocutaneous syndromes (e.g., tuberous sclerosis, Von Hippel-Lindau, Sturge-Weber)
2.A.3.	Evaluate for hydrocephalus/ventriculomegaly
2.A.4.	Evaluate for findings of hypoxic-ischemic insults in preterm and term infants
2.A.5.	Evaluate for intracranial hemorrhage, infection, and masses
2.A.6.	Evaluate for findings related to sickle cell disease
2.B.	***Head and Neck***
2.B.1.	Evaluate for neck abnormalities (e.g., thyroglossal duct cyst, brachial cleft cyst, fibromatosis colli)
2.B.2.	Evaluate for thyroid abnormalities (e.g., goiter, nodules, masses, enlargement)
2.C.	***Chest***
2.C.1.	Evaluate for chest abnormalities (e.g., pleural effusion, sequestration, congenital pulmonary airway malformation, masses)
2.C.2.	Evaluate for congenital diaphragmatic hernia and diaphragmatic paralysis (M-mode)

2.D.	***Gastrointestinal***
2.D.1.	Evaluate for gastrointestinal abnormalities (e.g., appendicitis, volvulus, pyloric stenosis, necrotizing enterocolitis, intussusception, masses)
2.E.	***Hepatobiliary***
2.E.1.	Evaluate for hepatobiliary disease (e.g., infection, obstruction, parenchymal liver disease, biliary atresia, hepatoblastoma)
2.F.	***Adrenal Glands, Pancreas, and Retroperitoneum***
2.F.1.	Evaluate adrenal glands for abnormalities (e.g., neuroblastoma, hyperplasia, hemorrhage)
2.F.2.	Evaluate for pancreatic abnormalities (e.g., pancreatitis, cystic fibrosis, congenital anomalies, fatty replacement)
2.F.3.	Evaluate retroperitoneum for masses (e.g., lymphadenopathy)
2.G.	***Spleen and Peritoneal Cavity***
2.G.1.	Evaluate for splenic abnormalities (e.g., polysplenia, infection, masses)
2.G.2.	Evaluate for peritoneal cavity abnormalities (e.g., ascites, abscess)
2.H.	***Genitourinary System***
2.H.1.	Evaluate for congenital renal abnormalities (e.g., horseshoe, duplication anomalies, cystic diseases)
2.H.2.	Evaluate for acquired renal abnormalities (e.g., obstruction, infection, masses)
2.H.3.	Evaluate for ureter and bladder abnormalities (e.g., infection, ureterocele, urachal anomalies, obstruction, vesicoureteral reflux, masses)
2.H.4.	Evaluate female genital tract for abnormalities (e.g., hematometrocolpos, torsion, masses)
2.H.5.	Evaluate male genital tract for abnormalities (e.g., infection, hydroceles, cryptorchidism, torsion)
2.I.	***Musculoskeletal, Superficial Structures, and Hernias***
2.I.1.	Evaluate the hip for developmental dysplasia
2.I.2.	Evaluate for joint effusion in hips or other joints
2.I.3.	Evaluate tendons and synovium for abnormalities (e.g., tenosynovitis, synovial hypertrophy)
2.I.4.	Evaluate superficial structures for abnormalities (e.g., foreign bodies, infections, masses)
2.I.5.	Evaluate glands and soft tissues for abnormalities (e.g., infection, lymph nodes, masses)
2.I.6.	Evaluate for hernias (e.g., direct, indirect, inguinal)
2.J.	***Neonatal Spine***
2.J.1	Evaluate for spinal malformations (e.g., tethered cord, myelomeningocele, caudal regression)
2.K.	***Vascular and Transplants***
2.K.1.	Evaluate for peripheral vascular malformations
2.K.2.	Evaluate for abdominal vascular malformations
2.K.3.	Evaluate for intracranial vascular malformations
2.K.4.	Evaluate vessels and intravascular lines for abnormalities (e.g., thrombosis, pseudoaneurysm, stenosis)
2.K.5.	Evaluate transplant complications (e.g., thrombus, stenosis)

3.	**Data and Protocols 19%**
3.A.	***Outside Data (clinical assessment, history and physical [H&P], lab values)***
3.A.1.	Verify appropriateness of the order and obtain pertinent clinical history from the patient and/ or medical records (including previous imaging)
3.A.2.	Assess relevant patient signs and symptoms for examination being performed
3.A.3.	Explain examination requirements to patient (positioning, gel application, transducer pressure)
3.B.	***Clinical Standards and Guidelines***
3.B.1.	Communicate examination preparation requirements (e.g., fasting, bladder filling)
3.B.2.	Modify imaging protocols based on clinical history and/or sonographic findings (e.g., premature, critically ill, uncooperative patients)
3.B.3.	Utilize multiple patient positions
3.B.4.	Utilize appropriate acoustic windows and scanning planes
3.B.5.	Communicate ultrasound findings and relevant patient information to interpreting healthcare provider
3.C.	***Measurement Techniques***
3.C.1.	Obtain appropriate measurements
3.C.2.	Obtain Doppler velocities and measurements
4.	**Physics and Instrumentation 5%**
4.A.	***Imaging Instruments***
4.A.1.	Select appropriate examination techniques (e.g., M-mode, B-mode, Doppler, harmonic imaging)
4.A.2.	Adjust console settings to optimize images (e.g., depth settings, artifact recognition, artifact correction when appropriate)
4.A.3.	Apply as low as reasonably achievable (ALARA) principle (e.g., thermal index, mechanical index)
5.	**Treatment and Emerging Technology 5%**
5.A.	***Managing Medical Emergencies and Traumatic Injury***
5.A.1.	Recognize findings that require immediate attention
5.A.2.	Evaluate for abnormalities due to traumatic events
5.B.	***Interventional Procedures***
5.B.1.	Assist/support ultrasound guidance during interventional procedures
5.B.2.	Evaluate for post-procedure changes
5.C.	***Disinfection***
5.C.1.	Maintain infection control (e.g., low-level disinfection techniques, high-level disinfection techniques, sterile techniques)
5.D.	***Emerging Technology***
5.D.1.	Recognize emerging technology applications (e.g., elastography, contrast)