2026 MAC Check Content Outline

The following outline serves as the assessment blueprint for the MAC Check. Examples are provided to help clarify topic content. *They are neither exhaustive nor all-inclusive*.

1. **Airway management (25%)**
   A. Physiological concepts
      1. Normal physiological concepts
         Examples: normal function and location of superior laryngeal nerve, recurrent laryngeal nerve, trigeminal nerve, glossopharyngeal nerve
      2. Variants in physiological concepts
         Examples: changes with head and neck due to radiation, trauma, vocal cord dysfunction
   B. Pathophysiological concepts
      1. Pathophysiological diseases impacting airway management
         Examples: supralaryngeal/infralaryngeal pathologies such as epiglottitis, tumor/lesion, subglottic strictures, abscess, rheumatoid arthritis
   C. Airway management concepts
      1. Airway assessment, including normal and variants in anatomic structure
         Examples: dentition, neck mobility, Mallampati class, Cormack and Lehane grade view, micrognathia, thyromental distance, mandibular mobility, macroglossia, previous tracheostomy
      2. Risks and benefits of airway techniques
         Examples: selection related to awake or asleep intubation, supraglottic airways, oropharyngeal airways, nasopharyngeal airways, flexible/fiberoptic techniques, endotracheal intubation, adjunct airway
      3. Situational indications and contraindications associated with the selection of various airway equipment
         Examples: full stomach/rapid-sequence induction, cervical spine precautions, tube exchange, failed cuff, known difficult airway, airway of obese or parturient patient
      4. Standard corrective actions of nonemergent airway management
         Examples: esophageal intubation, difficult mask ventilation, anterior airway, alternative airway techniques
      5. Identification and management of urgent and emergent airways
         Examples: angioedema, anaphylaxis, traumatic airway injuries, cricothyrotomy, aspiration
      6. Management of airway complications
         Examples: difficult airway algorithms, laryngospasm, airway edema, negative-pressure pulmonary edema, bronchospasm, trauma to the airway, emergency equipment

7. Emergence/extubation/reintubation
   Examples: neuromuscular blockade reversal/train-of-four, clinical extubation readiness criteria, causes for reintubation

2. Applied clinical pharmacology (25%)

A. Factors influencing medication selection, including pharmacokinetics, pharmacodynamics, pharmacogenetics of anesthetics and adjunct medications
   Examples: paralytics, opioids, sedatives/hypnotics, antihypertensives, antiemetics, vasodilators/vasopressors, anticoagulants, reversal agents, anticholinergics, inhalation agents, local anesthetics, nonopioid analgesics, fluids (normal saline, lactated Ringer's, albumin)
   1. Pathophysiological/comorbidity factors and anesthetic considerations
      Examples: neurological and cardiac disease, end-organ disease, malignant hyperthermia trigger/management, obstructive sleep apnea, seizures, age, fluid volume status, recreational drugs
   2. Utilization, actions, interactions, benefits, and side effects
      Examples: anticoagulant guidelines, anesthetic selection, considerations for substance use disorder, multimodal analgesia, chronic pain polypharmacy, posttraumatic stress disorder, cognitive dysfunction

B. Adverse pharmacological reactions and treatments
   Examples: anaphylaxis, local anesthetic systemic toxicity, hypotension, respiratory depression, protamine, bronchospasm/histamine release, chest wall rigidity, pseudocholinesterase deficiency

3. Applied physiology and pathophysiology (25%)

A. Cardiovascular
   1. Pathophysiologic disease processes and anesthetic considerations
      Examples: implanted devices, cardiac dysrhythmias, autoregulatory mechanisms such as blood pressure, coronary artery disease, low ejection fraction/heart failure, valvular disease and management, recent cardiac interventions

B. Respiratory
   1. Pathophysiologic disease processes and their anesthetic considerations
      Examples: ventilation strategies, ventilation-perfusion mismatch, effects of positioning (e.g., robotics, steep Trendelenburg), obstructive and restrictive diseases, aspiration pneumonitis, pulmonary hypertension, obstructive sleep apnea, bronchitis, acute respiratory distress syndrome (ARDS), vaping, pulmonary embolism

C. Neurological
   1. Pathophysiologic disease processes and anesthetic considerations
      Examples: placement and management of regional techniques, spinal cord injury, cerebrovascular accident, chronic pain, seizure disorders
   2. Nerve injury prevention
      Examples: tourniquet times for upper and lower extremities, compartment syndrome, positioning, surgery using robotics, prone positioning

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3. Neuromuscular diseases
   Examples: multiple sclerosis, Parkinson's disease, amyotrophic lateral sclerosis, myasthenia gravis, cerebral palsy, rheumatoid arthritis, Guillain-Barré syndrome

D. Renal/genitourinary
   1. Pathophysiologic disease processes and anesthetic considerations
      Examples: TURP syndrome, renal failure/dialysis, strategies for renal protection

E. Gastrointestinal
   1. Pathophysiologic disease processes and anesthetic considerations
      Examples: gastric bypass, bowel preparation/fluid management, NPO guidelines, gastroesophageal reflux disease, small bowel obstruction, gastroparesis, GLP-1 agonists, SGLT-2 inhibitors

F. Hematological
   1. Pathophysiologic disease processes and anesthetic considerations
      Examples: blood component therapy, altered coagulation states, sickle cell disease, anemia, thrombocytopenia, hemorrhage management

G. Endocrine
   1. Pathophysiologic disease processes and anesthetic considerations
      Examples: pheochromocytoma, diabetes, thyroid disorders, pituitary disorders, adrenal insufficiency

H. Regional and neuraxial anesthesia considerations and complications
   Examples: upper and lower extremities, fascial plane blocks, neuraxial blocks (spinal and epidural)

I. Factors influencing anesthetic approach, technique, and management
   1. Indications, contraindications, complications, and alternatives for special populations
      Examples: patients with sleep apnea, morbidly obese patients, older adults, obstetrics, pediatrics, delirium, gender-diverse care
   2. Assessment and interpretation of perioperative data including laboratory and diagnostic studies
      Examples: preoperative, postoperative, and discharge evaluation; perioperative laboratory studies; echocardiography; basic chest x-ray (tube placement); ECG (dysrhythmias, ST changes)

4. Anesthesia equipment, technology, and safety (25%)

A. Equipment and technology
   1. Proper function, malfunction, troubleshooting, indications
      Examples: anesthesia machine, airway equipment, ultrasonography, monitors, infusion devices, warming systems, carbon dioxide absorbent, supply gas failure, machine power failure, E-cylinder pressures, oxygen analyzer, $ETCO_2$ monitoring (altered waveforms)
   2. Assess, analyze, interpret intraoperative data
      Examples: selection of ventilatory modes, airway pressure monitoring, advanced hemodynamic monitoring (e.g., pulmonary artery catheter, noninvasive cardiac output monitoring)

B. Operating room safety

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1. Prevention and management of complications for high-risk populations and procedures
   Examples: malignant hyperthermia precautions, thermal regulation, electrical hazards, airway fire, shared airway procedures, implanted devices, alpha-galactosidase (tick bite), emboli (fat, air, carbon dioxide)

C. Non–operating room anesthesia (NORA) safety
   Examples: medications, monitoring, safety standards, equipment, E-cylinder pressures
D. Medication safety and infection prevention
   Examples: infection control guidelines, storage, multidose vials
E. Ethical/medicolegal issues
   Examples: AANA Standards of Practice, time-out procedure, impaired provider/diversion, provider wellness, quality improvement, evidence-based practice, culturally competent care

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