2021 Q1-Q2 MOCA Minute® High-Priority Topic Areas by Content Outline Category

FUNDAMENTAL TOPICS IN ANESTHESIOLOGY

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
1	A heat and moisture exchange filter with a gas sampling port should be placed between the tracheal tube and the breathing circuit Y-piece to protect the anesthesia machine and the gas analyzer from viral particle contamination.	I.A.1 Components	Anesthesia Machines & Breathing Systems	3
2	As oxygen is consumed, remaining alveolar gases have higher relative concentrations. This effect is more pronounced in low-flow anesthesia.	I.A.1 Components	Anesthesia Machines & Breathing Systems	3
3	The oxygen analyzer is the only safety device that continuously monitors the integrity of the low-pressure circuit.	I.A.2 Safety Features	Anesthesia Machines & Breathing Systems	2
4	High-flow nasal cannula use facilitates the delivery of precise FiO_2 in patients with acute respiratory insufficiency.	I.B.3 Drug Delivery Systems	Mechanical or Assisted Ventilation	3
5	Persistent operating room fires should be extinguished with a carbon dioxide fire extinguisher.	I.D.2 Fire and Explosion Hazards	Electrical and Fire Safety	2

PHARMACOLOGY

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
6	Patients deficient in CYP2D6 enzymes can develop elevated blood levels of certain opioids.	II.A.1 Pharmacogenetics	General Concepts	6
7	Cyproheptadine is a direct serotonin antagonist and can be used to treat serotonin syndrome.	II.A.2 Drug Interactions	General Concepts	1
8	Dabigatran (Pradaxa) is the only available direct anticoagulant medication for which there is a specific reversal agent.	II.A.2 Drug Interactions	General Concepts	1

9	When co-administered, propofol attenuates the cerebral vasodilating effect of N_2O.	II.B.4 Drug Interactions	Anesthetic Gases and Vapors	0
10	Following succinylcholine administration, the combination of masseter muscle spasm and rigidity of other muscle groups suggests malignant hyperthermia, necessitating emergent intervention.	II.B.5 Side Effects and Toxicity	Anesthetic Gases and Vapors	0
11	Calcium hydroxide-based (Amsorb) carbon dioxide absorbents do not react with volatile agents to form carbon monoxide when desiccated compared to other absorbents.	II.B.5 Side Effects and Toxicity	Anesthetic Gases and Vapors	0
12	6-monoacetylmorphine is a unique metabolite to heroin and is not found in commercially available prescription opioids.	II.C.2 Pharmacokinetics	Intravenous Anesthetics: Opioid and Non-Opioid	3
13	In morbidly obese individuals, rocuronium and other non-depolarizing neuromuscular blocking agents are best dosed based on ideal body weight.	II.C.2 Pharmacokinetics	Intravenous Anesthetics: Opioid and Non-Opioid	3
14	Metabolism of propofol undergoes significant extrahepatic metabolism.	II.C.2 Pharmacokinetics	Intravenous Anesthetics: Opioid and Non-Opioid	3
15	Rapid intravenous bolus of dexmedetomidine causes activation of vascular smooth muscle alpha-2 receptors which leads to peripheral vasoconstriction and hypertension.	II.C.3 Pharmacodynamics	Intravenous Anesthetics: Opioid and Non-Opioid	1
16	Intravenous acetaminophen can cause clinically significant hypotension in critically ill patients.	II.C.5 Side Effects and Toxicity	Intravenous Anesthetics: Opioid and Non-Opioid	1
17	Patients with residual paralysis and a train-of-four ratio of less than 0.9 should be routinely reversed with a properly adjusted dose of anticholinesterase.	II.E.6 Reversal of Blockade	Neuromuscular Blocking Agents: Depolarizing and Non-Depolarizing	0
18	A quantitative train-of-four ratio of greater than 0.9 requires no pharmacologic reversal of neuromuscular blockade.	II.E.6 Reversal of Blockade	Neuromuscular Blocking Agents: Depolarizing and Non-Depolarizing	0
19	Nausea, vomiting, and pain are the most common adverse side effects associated with the administration of sugammadex.	II.E.6 Reversal of Blockade	Neuromuscular Blocking Agents: Depolarizing and Non-Depolarizing	0
20	Patients receiving nondepolarizing neuromuscular blockers and no reversal are at higher risk of postoperative weakness, respiratory dysfunction, and pneumonia.	II.E.6 Reversal of Blockade	Neuromuscular Blocking Agents: Depolarizing and Non-Depolarizing	0

CLINICAL SCIENCES

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
21	The STOP-Bang score can help identify patients with probable moderate to severe obstructive sleep apnea.	III.A.1 History and Physical Examination	Patient Evaluation and Preoperative Preparation	134
22	Patients who are able to exercise greater than 4 METS are generally considered to have low risk of perioperative cardiac risk and do not require further testing.	III.A.3 Standards and Guidelines	Patient Evaluation and Preoperative Preparation	19
23	In women with a viable fetus undergoing nonobstetric surgery, simultaneous fetal heart rate and contraction monitoring should be performed before and after the procedure.	III.A.3 Standards and Guidelines	Patient Evaluation and Preoperative Preparation	14
24	Patients who have had a total laryngectomy do not need to withhold oral intake before surgical procedures.	III.A.3 Standards and Guidelines	Patient Evaluation and Preoperative Preparation	14
25	Apixaban should be held for 72 hours prior to a high-bleeding risk elective surgery.	III.A.4 Preoperative Management of Chronic Medications	Patient Evaluation and Preoperative Preparation	11
26	Administration of cefazolin for antibiotic surgical prophylaxis is appropriate in patients with a history of a mild type IV allergic reaction to penicillin.	III.A.5 Premedication	Patient Evaluation and Preoperative Preparation	23
27	The placement of a magnet on implantable defibrillators will suspend tachytherapies and is required during procedures with a high likelihood of electromechanical interference.	III.A.6 Patients with Specific Disease States	Patient Evaluation and Preoperative Preparation	9
28	If electromagnetic interference is likely to occur, an implantable cardioverter-defibrillator's anti-tachyarrhythmia function should be suspended.	III.B.3 Cardiovascular System	Perioperative Management of Patients with Chronic Disease States	34
29	After transjugular intrahepatic shunt, there is a significant increase in venous return which can precipitate heart failure. Inotropes such as epinephrine may be required.	III.B.4 Gastrointestinal/Hepatic Systems	Perioperative Management of Patients with Chronic Disease States	12
30	Desmopressin can improve platelet function in patients with end-stage renal disease due to release of von Willebrand factor from endothelial cells.	III.B.5 Renal and Urinary Systems	Perioperative Management of Patients with Chronic Disease States	4
31	Central core disease is associated with malignant hyperthermia.	III.B.8 Neuromuscular Diseases	Perioperative Management of Patients with Chronic Disease States	4

32	Enoxaparin may be administered 4 hours after removal of an epidural catheter that was placed the previous day.	III.C.2 Neuraxial	Regional Anesthesia	4
33	Following a dural puncture, cranial nerve VI palsy is often refractory to an epidural blood patch, with diplopia commonly persisting for weeks to months.	III.C.2 Neuraxial	Regional Anesthesia	4
34	Brachial plexus blockade at the infraclavicular level provides complete anesthesia to the forearm and is not associated with pulmonary function changes.	III.C.3 Regional Blocks	Regional Anesthesia	3
35	To provide sensory anesthesia of the base of the tongue, epiglottis, aryepiglottic folds, and arytenoids for an awake intubation, a superior laryngeal nerve block is required.	III.D.2 Airway Management	General Anesthesia	58
36	Anesthesiologists should be able to classify and describe the states of sedation, analgesia, and anesthesia.	III.E.2 Levels of Sedation	Monitored Anesthesia Care and Sedation	2
37	Carbon monoxide (CO) poisoning occurs with carboxyhemoglobin levels greater than 15%. This can occur during general anesthesia when desiccated carbon dioxide (CO_2) absorbent reacts with volatile agents.	III.G.1 Types	Perioperative Complications: Types, Prevention, Treatment	31
38	Individuals with 4 risk factors for PONV have an 80% chance of developing the complication in the absence of tailored treatment.	III.G.2 Prevention and Treatment	Perioperative Complications: Types, Prevention, Treatment	13

ORGAN-BASED BASIC AND CLINICAL SCIENCES

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
39	Aerosol-generating procedures, such as administration of nebulized medications via face mask, should be avoided in patients with confirmed or suspected COVID-19 infection.	IV.B.4 Clinical Science	Respiratory System	8
40	Andexanet is a factor Xa inhibitor antidote that can be used to reverse the anticoagulant effects of rivaroxaban and apixaban.	IV.F.3 Pharmacology	Hematologic System	4
41	The serotonin release assay is a confirmatory test that detects the release of serotonin from the dense granules that occur with platelet activation in patients who have heparin-induced thrombocytopenia.	IV.F.4 Clinical Science	Hematologic System	12
42	Hypercalcemia resulting from hyperparathyroidism can antagonize the effects of non-depolarizing neuromuscular blockers and may require higher doses for clinical effect.	IV.G.3 Pharmacology	Endocrine and Metabolic Systems	2

CLINICAL SUBSPECIALTIES

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
43	The limbic system influences development of chronic pain via descending connections to the dorsal horn of the spinal cord where central sensitization occurs.	V.A.1 Pathophysiology	Chronic Pain Management	8
44	Pharmacologic therapy for CRPS I includes bisphosphonates.	V.A.3 Treatment of Painful Disease States	Chronic Pain Management	18
45	Maternal deaths in the United States are rising due to conditions that include cardiovascular disease and cerebrovascular accidents, while deaths due to hemorrhage, thrombosis, hypertensive disorders of pregnancy, and anesthetic-related complications are decreasing.	V.C.4 Special Considerations in Obstetric Anesthesia	Obstetric Anesthesia	31
46	Hypertensive disorders of pregnancy are a risk factor for the development of cardiac disease later in life.	V.C.4 Special Considerations in Obstetric Anesthesia	Obstetric Anesthesia	31
47	Phenylephrine is recommended over ephedrine for the treatment of hypotension caused by neuraxial anesthesia for obstetric patients because ephedrine administration is associated with fetal acidosis.	V.C.6 Maternal-Fetal Considerations	Obstetric Anesthesia	9
48	Adolescents undergoing scoliosis surgery demonstrate decreases in FEV_1 postoperatively that do not return to baseline values until 1-2 months after surgery.	V.H.2 Spinal Surgery	Orthopedic Anesthesia	5
49	For patients undergoing spine surgery, risk factors for ischemic optic neuropathy include male sex, obesity, Wilson frame use, longer anesthetic duration, greater estimated blood loss, and lower percent colloid administration.	V.H.2 Spinal Surgery	Orthopedic Anesthesia	5
50	As part of damage control resuscitation, hypothermia, coagulopathy, and acidosis should be treated aggressively in hemorrhaging trauma patients.	V.I.1 Primary Survey and Resuscitation	Trauma Anesthesia	16
51	Visualization of a lung point with ultrasound is a very specific sign of a pneumothorax.	V.I.1 Primary Survey and Resuscitation	Trauma Anesthesia	16
52	Maintaining MAP above 85 mmHg perioperatively and for 7 days after acute spinal cord injury improves perfusion to the spinal cord.	V.I.3 Organ System Trauma	Trauma Anesthesia	22
53	Brachial plexus blocks with the potential to cause hemiparesis of the diaphragm should be avoided in patients at significant risk for postoperative pulmonary complications.	V.J.2 Anesthetic Management	Anesthesia for Ambulatory Surgery	3

54	Local instillation analgesia after anterior cruciate ligament reconstruction decreases opioid consumption in the immediate postoperative period more effectively than femoral or adductor nerve blocks.	V.J.2 Anesthetic Management	Anesthesia for Ambulatory Surgery	3
55	Post-discharge nausea and vomiting has different risk factors than postoperative nausea and vomiting.	V.J.2 Anesthetic Management	Anesthesia for Ambulatory Surgery	3
56	Although sore throat following general anesthesia is a common symptom, injury to the uvula should be considered when the pain is severe.	V.J.3 Discharge Criteria and Postoperative Follow-Up	Anesthesia for Ambulatory Surgery	1
57	Risk factors for postoperative urinary retention include age, sex, administration of IV fluids greater than 750 mL, type of surgery, use of IV opioids and anticholinergic medications, and neuraxial anesthesia using long-acting local anesthetics and certain adjunct medications.	V.J.3 Discharge Criteria and Postoperative Follow-Up	Anesthesia for Ambulatory Surgery	1
58	Patients may be discharged shortly after placement of peripheral nerve block without need for prolonged monitoring.	V.J.3 Discharge Criteria and Postoperative Follow-Up	Anesthesia for Ambulatory Surgery	1
59	The ASA statement on non-operating room anesthetizing locations recommends that a reliable means of two-way communication be available in each location.	V.J.4 Office-Based Anesthesia	Anesthesia for Ambulatory Surgery	6
60	The 2017 Society for Ambulatory Anesthesia recommendations state that class B ambulatory facilities may carry succinylcholine, for emergency use only, without also carrying dantrolene.	V.J.4 Office-Based Anesthesia	Anesthesia for Ambulatory Surgery	6
61	A surgical mask should be placed on patients with COVID-19 receiving supplemental oxygen via a high-flow nasal cannula.	V.L.3 Respiratory Dysfunction/Failure	Critical Care Anesthesia	18
62	Low tidal volume and low-stretch ventilation improve survival in patients with ARDS.	V.L.3. Respiratory Dysfunction/Failure	Critical Care Anesthesia	18
63	Beta-adrenergic blockers either reduce or have no effect on cerebral blood flow and ICP.	V.M.2 Pharmacology	Neuroanesthesia	19
64	Chronic carbamazepine therapy causes an increased sensitivity to propofol and resistance to opioids and nondepolarizing neuromuscular blocking agents.	V.M.2 Pharmacology	Neuroanesthesia	19
65	An external ventricular drain is more accurate than an epidural sensor or subarachnoid bolt for measuring ICP.	V.M.3 Clinical Management of Disease States	Neuroanesthesia	14
66	In patients with Moyamoya disease the goal with controlled ventilation is to maintain normocarbia.	V.M.3 Clinical Management of Disease States	Neuroanesthesia	14

67	Hypocapnia should be avoided in patients with moyamoya disease due to the risk of cerebral ischemia.	V.M.3 Clinical Management of Disease States	Neuroanesthesia	14
68	Electromyography provides the most specific intraoperative monitoring for specific nerve root function.	V.M.4 Special Considerations in Neuroanesthesia	Neuroanesthesia	2
69	Lorazepam is the gold standard initial treatment for seizures lasting longer than 5 minutes because of its effectiveness and long redistribution half-life.	V.M.4 Special Considerations in Neuroanesthesia	Neuroanesthesia	2
70	During somatosensory evoked potential neuromonitoring, nitrous oxide causes a decrease in amplitude with no change in latency.	V.M.4 Special Considerations in Neuroanesthesia	Neuroanesthesia	2
71	Cholinergic crisis may cause muscle weakness in patients with myasthenia gravis.	V.N.3 Clinical Management of Disease States	Thoracic	2
72	The thoracic revised cardiac risk index (ThRCRI) may better predict perioperative cardiac risk than the original RCRI.	V.N.3 Clinical Management of Disease States	Thoracic	2
73	A protective lung ventilation strategy during one-lung ventilation can decrease alveolar injury.	V.N.4 Special Considerations in Thoracic Anesthesia	Thoracic	15
74	The LVAD pulsatility index is a measure of left ventricular contractility and is increased by increased preload and contractility and decreased pump flow.	V.O.4 Special Considerations in Cardiac Anesthesia	Cardiac	17
75	The Revised Cardiac Risk Index is a validated tool for estimation of perioperative risk of major cardiac complications with noncardiac surgery, based on 5 clinical variables and the type of surgery.	V.P.4 Special Considerations in Vascular Anesthesia	Vascular	1
76	Regional anesthesia reduces the incidence of shunt placement during carotid endarterectomy but does not reduce morbidity and mortality compared with general anesthesia.	V.P.4 Special Considerations in Vascular Anesthesia	Vascular	1
77	Low-dose unfractionated subcutaneous heparin can be administered immediately after epidural catheter placement or removal.	V.Q.3 Neuraxial Anesthesia	Regional Anesthesia	8
78	Stimulation of the phrenic nerve during an interscalene nerve block indicates that the needle should be moved posteriorly.	V.Q.4 Upper Extremity Regional Anesthesia	Regional Anesthesia	4
79	The use of a quadratus lumborum nerve block provides optimal analgesia for low transverse abdominal incisions.	V.Q.6 Truncal Regional Anesthesia	Regional Anesthesia	8
80	Enhanced vagal tone resulting from reduced preload after spinal anesthesia can progress to abrupt decompensation and cardiac arrest.	V.Q.7 Complications and Side Effects	Regional Anesthesia	14

81	Lipid emulsion reverses local anesthetic systemic toxicity by acting as a lipid sink for the local anesthetic molecules, but may also work by providing an energy source to intoxicated heart and brain tissue.	V.Q.7 Complications and Side Effects	Regional Anesthesia	14
82	Ultrasound wave velocity is affected by the acoustic impedance of tissue.	V.Q.8 Ultrasound-Guided Regional Anesthesia	Regional Anesthesia	3
83	Acoustic enhancement artifacts make structures behind blood vessels appear brighter on ultrasound than surrounding tissues, complicating nerve identification.	V.Q.8 Ultrasound-Guided Regional Anesthesia	Regional Anesthesia	3
84	Higher doses of opioids may be necessary to control pain in patients maintained on Suboxone (buprenorphine/naloxone), placing them at risk for respiratory depression in the immediate postoperative period.	V.R.1 Analgesic Pharmacology	Acute Pain Management	33
85	Codeine should be avoided in patients under 18 years old following tonsillectomy and/or adenoidectomy.	V.R.1 Analgesic Pharmacology	Acute Pain Management	33
86	Serious adverse effects of both codeine and tramadol can occur in patients with the ultra-rapid metabolizer phenotype of the cytochrome P450 enzyme CYP2D6.	V.R.1 Analgesic Pharmacology	Acute Pain Management	33
87	Sufentanil and hydromorphone have high-binding affinities to the mu-opioid receptor and achieve better analgesia than other opiates in patients receiving buprenorphine therapy.	V.R.1 Analgesic Pharmacology	Acute Pain Management	33
88	Ketorolac administration has not been shown to increase the risk of perioperative bleeding or hematoma formation in healthy patients undergoing plastic surgery.	V.R.1 Analgesic Pharmacology	Acute Pain Management	33
89	The erector spinae plane (ESP) block is an analgesic option for anticoagulated patients who present with acute pain from rib fractures.	V.R.3 Acute Pain Evaluation and Treatment	Acute Pain Management	1
90	A history of substance use disorder is the single strongest predictor of fatal and non-fatal respiratory events from prescription opioids.	V.R.4 Monitoring and Safety	Acute Pain Management	2

SPECIAL PROBLEMS OR ISSUES IN ANESTHESIOLOGY

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
91	Reactions to contrast media are more likely in patients with previous reactions to contrast media, multiple allergies, and a history of anaphylaxis, but the risk is not increased in patients with a shellfish allergy.	VI.C.2 MRI-Anesthetic Implications/Management	Radiologic Procedures	6

92	Anesthesiologists often care for complex patients in MRI suites and should be familiar with common devices and conditions that may require special accommodations or that may pose safety concerns.	VI.C.3 Anesthesia in Locations Outside the Operating Room	Radiologic Procedures	5
93	According to the 2018 ASA Practice Guidelines for Moderate Procedural Sedation and Analgesia, criteria for preoperative anesthesiologist consultation include an ASA Physical Status Classification of IV.	VI.E.7 Patient Safety	Ethics, Practice Management and Medicolegal Issues	139

PAIN MEDICINE

	Key Point	ABA Blueprint Code	Level 2 Blueprint Category	CME Activity Count
94	Long-term use of benzodiazepines is not generally recommended for ongoing treatment of chronic anxiety. This is pertinent in a pain management setting, where many patients have negative affect and run the risk of polypharmacy.	X.C.4 Miscellaneous Agents: Pharmacokinetics, Pharmacodynamics, Adverse Effects, Drug Interactions, Indications/Contraindications	Treatment of Pain: Pharmacokinetics, Pharmacodynamics, Adverse Effects, Drug Interactions, and Indications/Contraindications	3
95	The primary adverse effect of a buprenorphine transdermal patch is respiratory depression.	X.C.4 Miscellaneous Agents: Pharmacokinetics, Pharmacodynamics, Adverse Effects, Drug Interactions, Indications/Contraindications	Treatment of Pain: Pharmacokinetics, Pharmacodynamics, Adverse Effects, Drug Interactions, and Indications/Contraindications	3
96	A successful V1 block is carried out by blocking the gasserian ganglion, part of which resides within Meckel's cave.	X.G.2 Orofacial Pain (e.g., Trigeminal Neuralgia, Post Herpetic Neuralgia, Atypical Facial Pain)	Headache and Facial Pain	0
97	Musculoskeletal pain is the most common pain complaint in patients with spinal cord injury.	X.H.2 Central Pain Syndromes (e.g. Post Stroke Pain, Phantom Limb Pain, Pain after Spinal Cord Injury)	Neuropathic Pain	0