Conscious Sedation Permit Evaluation

General Comments—Emergency Algorithms

These algorithms delineate appropriate responses to the simulated emergencies listed in Article 5, Section 1043.4c of the California Code of Regulations.

Each algorithm table lists initial scenario requirements to be used in describing the presenting signs and symptoms of the emergency. Beginning with recognition of the emergency, appropriate interventions are listed in the approximate order they should be taken. Failure of the intervention or interventions to resolve the problem then leads sequentially to subsequent interventions that must be taken.

Certain interventions, indicated by the word "may," are either (1) appropriate for some situations but not others, or (2) elective interventions that are not essential to management of the case.

Interventions identified by the word "consider" means that the intervention may be necessary for a given situation and that the examinee should indicate their possible use and simulate their performance if asked to do so by an examiner. The order of these interventions at the end of an algorithm is not mandatory.

Activating Emergency Medical Services (EMS) is always appropriate whenever the emergency is not self limiting and/or the dentist concludes that he/she may not be able to successfully manage the emergency. Activating EMS does not absolve the examinee from completing the rest of the algorithm.

The right-hand column provides spaces for the examiner to grade the examinee's response for each group of interventions and to provide an overall evaluation of the examinee's response for each simulated emergency. A comments section is available to indicate what deficiencies, if any, were noted in the examinee's performance. A comment must be included whenever an unsatisfactory grade is given for any part of the algorithm.

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Airway Obstruction—Foreign Body Algorithm

Scenario requirements	*Interventions*	*Examinee responses*

1. Patient should initially be responsive to verbal command
2. Sudden cessation of respiratory sounds
  a. may have breath-holding
  b. may have paradoxical breathing efforts
	1. Recognition of emergency
	  a. if foreign body not suspected and patient unconscious, move to Laryngospasm Algorithm step 2
	  b. if patient conscious, remove materials from mouth and perform Heimlich maneuver (chest thrusts in pregnant woman) to dislodge object until breathing restored or patient loses consciousness
		☐ Satisfactory
		
		☐ Unsatisfactory

Patient unconscious with known or suspected foreign body	2. Place patient in supine position
	  a. remove materials from mouth if not yet accomplished
	  b. may include attempts to remove object by finger sweep and/or to improve airway by head tilt–chin lift, jaw thrust, or tongue protraction and may include ventilation attempts with 100% oxygen
	3. Attempt to visualize hypopharynx and remove object
		☐ Satisfactory
		
		☐ Unsatisfactory

Response fails to resolve problem	4. Perform series of abdominal thrusts (chest thrusts in pregnant woman) to dislodge object followed by attempts to remove object and ventilate with 100% oxygen a. assess vital signs when possible	☐ Satisfactory ☐ Unsatisfactory
Response fails to resolve problem	5. Consider reversal agents 6. Consider cricothyroidotomy/trans-tracheal ventilation 7. Consider EMS	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Comments:

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Airway Obstruction—Laryngospasm Algorithm

Scenario requirements	*Interventions*	*Examinee responses*

1. Patient should initially be responsive to verbal command
2. Sudden cessation of respiratory sounds
    a. may have breath-holding
    b. may have paradoxical breathing efforts
	1. Recognition of emergency
	2. Place patient in the supine position
	    a. may leave patient in semisitting position if laryngospasm suspected
	    b. may include attempts to improve airway and/or waken patient by head tilt–chin lift, jaw thrust, or tongue protraction and may include ventilation attempts with 100% oxygen
		☐ Satisfactory
		
		☐ Unsatisfactory

Initial response fails to resolve problem	3. Remove materials from mouth a. may need to pack off active bleeding site(s) 4. Suction hypopharynx	☐ Satisfactory ☐ Unsatisfactory

Response fails to resolve problem	5. Positive pressure ventilation with 100% oxygen
	    a. place patient in supine position if not done previously
	    b. may include airway adjuncts
	    c. assess vital signs when possible
		☐ Satisfactory
		
		☐ Unsatisfactory

Response fails to resolve problem	6. Consider reversal agents 7. Consider cricothyroidotomy/trans-tracheal ventilation 8. Consider EMS	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Comments:

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Allergic Reaction Algorithm

Scenario requirements	*Interventions*	*Examinee responses*
1. Patient should initially be responsive to verbal command 2. Evidence of acute allergic reaction: flushing, urticaria, nausea, angioedema, wheezing, hypotension	1. Recognition of emergency 2. Place patient in comfortable position, supine position if hypotensive or unconscious 3. Remove materials from mouth 4. 100% oxygen 5. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate	☐ Satisfactory ☐ Unsatisfactory

Response based on presenting signs and symptoms	6. For anaphylaxis
	   a. administer epinephrine 0.01 mg/kg up to 0.3 to 0.5 mg IM, repeat q 10 minutes until stable
	   b. administer diphenhydramine 50 mg (0.5 mg/kg in children) IM or IV
	   c. administer IV fluids (20 mL/kg) if hypotensive
	   d. activate EMS
	7. For cutaneous reactions
	   a. administer diphenhydramine 50 mg (0.5 mg/kg in children) IM or IV
		☐ Satisfactory
		
		☐ Unsatisfactory

Secondary treatments for anaphylaxis	8. Consider ranitidine 1 mg/kg IV 9. Consider hydrocortisone Na^+ succinate 100 mg (2 mg/kg in children) IV 10. Consider albuterol inhalation for bronchospasm	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Notes: Multiple alternative antihistamines and corticosteroids are available; review proper use of candidate's emergency antiallergy drug(s) before emergency evaluation.

Comments:

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Angina—Myocardial Infarction Algorithm

Scenario requirements	*Interventions*	*Examinee responses*

1. Patient should initially be responsive to verbal command
2. Evidence of myocardial ischemia
   a. may have chest pain/pressure that may radiate to left arm, jaw, back
   b. may have nausea, dyspnea, palpitation, dizziness, anxiety, diaphoresis
	1. Recognition of emergency
	2. Place patient in comfortable position, supine if hypotensive or unconscious
	3. Remove materials from mouth
	4. 100% oxygen
	5. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate
		☐ Satisfactory
		
		☐ Unsatisfactory

Initial response fails to resolve problem	6. Administer nitroglycerin 0.4 mg SL by tablet or spray if systolic BP >90 mm Hg 7. Repeat nitroglycerin every 5 min x 2 if pain unresolved 8. Activate EMS if no history of angina, quality of pain different, or no relief after 3 doses	☐ Satisfactory ☐ Unsatisfactory
Response fails to resolve problem	9. Administer aspirin 162 to 325 mg chewed and swallowed with water 10. Consider morphine 2 mg IV q 5 min until pain relieved	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Comments:

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Bronchospasm Algorithm

Scenario requirements	*Interventions*	*Examinee responses*

1. Patient should initially be responsive to verbal command
2. Gradual to sudden development of inspiratory and/or expiratory wheezes
   a. may have increased respiratory efforts, hyperinflation of lungs
	1. Recognition of emergency
	   a. may include placement in sitting position for awake patient, attempts to improve airway by head tilt–chin lift, jaw thrust, tongue protraction
	2. Remove materials from mouth
	3. 100% oxygen
	4. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate
		☐ Satisfactory
		
		☐ Unsatisfactory

Initial response fails to resolve problem	5. Albuterol inhaler 1 to 14 puffs (90 μg each) depending on method of administration
	   a. may use spacer for child or sedated/unconscious adult
	   b. may use bag-valve-mask for controlled inflation
	6. For oversedated patients, positive pressure ventilation with 100% oxygen
		☐ Satisfactory
		
		☐ Unsatisfactory

Response fails to resolve problem	7. Administer parenteral bronchodilator
	   a. may use terbutaline 0.25 mg SC q 15 min x 2
	   b. may use 1:1000 epinephrine 0.01 mg/kg SC or IM up to 0.5 mg q 15 min
	   c. may use in adults 1:10,000 epinephrine 0.1 to 0.25 mg IV infused slowly
		☐ Satisfactory
		
		☐ Unsatisfactory

Response fails to resolve problem	8. Consider reversal agents, termination of anesthesia 9. Consider EMS	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Note: Multiple alternative antiasthmatic agents are available; review proper use of candidate's emergency antiasthmatic drug(s) before emergency evaluation.

Comments:

Conscious Sedation Permit Evaluation

Cardiac Arrest Algorithm

Scenario requirements	*Interventions*	*Examinee responses*

1. Initially, patient should initially be responsive to verbal command
2. Sudden loss of consciousness, respiration, pulse
	1. Recognition of emergency
	   a. call for AED, if available, as soon as loss of pulse identified
	2. Place patient in supine position
	3. Remove materials from mouth
	4. Head tilt–chin lift and assess ventilation
	5. Positive pressure ventilation x2 with 100% oxygen
	6. Check for pulse
	   a. carotid pulse
	   b. check pulse after every intervention
	7. Start CPR
	8. Activate EMS
		☐ Satisfactory
		
		☐ Unsatisfactory

Continue with primary survey	9. Attach AED, if available, and follow machine prompts 10. May use airway adjuncts	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Comments:

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Convulsions Algorithm

Scenario requirements	*Interventions*	*Examinee responses*
1. Patient should initially be responsive to verbal command 2. Evidence of generalized tonic-clonic or clonic seizure	1. Recognition of emergency 2. Place patient in supine position; protect patient against physical injury 3. Remove materials from mouth only if possible to do so safely 4. 100% oxygen 5. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate	☐ Satisfactory ☐ Unsatisfactory

Response based on subsequent signs and symptoms	6. For self-terminating seizure
	    a. reassure patient
	    b. assess patient for injuries
	    c. may continue with treatment based on patient history, sedative use, and operative need; otherwise monitor recovery
	7. For continuous or recurring seizures
	    a. activate EMS
		☐ Satisfactory
		
		☐ Unsatisfactory

Continue emergency management	8. Administer anticonvulsant
	    a. may administer midazolam 2 mg initially, then 1 mg/min IV (0.05 mg/kg, then 0.025 mg/kg/min in children)
	    b. may administer midazolam 0.075 (adults) to 0.15 mg/kg (children) IM up to a total dose of 10 mg
	    c. may administer diazepam 5 mg initially, then 1 mg/min IV (0.2 mg/kg, then 0.05 mg/kg/min up to a total dose of 0.5 mg/kg in children)
	9. Consider airway adjuncts if ventilation compromised
		☐ Satisfactory
		
		☐ Unsatisfactory

Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Notes: Alternative anticonvulsants (lorazepam, fosphenytoin, phenobarbital) may be acceptable treatments.

Comments:

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Emesis—Aspiration Algorithm

Scenario requirements	*Interventions*	*Examinee responses*

1. Patient should initially be responsive to verbal command
2. Evidence of active or passive regurgitation
	1. Recognition of emergency
	2. Place patient in proper position
	   a. if patient conscious, right lateral position
	   b. if patient unconscious, Trendelenberg position (also on right side if feasible)
	3. Immediate removal of materials in mouth and use high-speed suction
	4. Immediate cricoid pressure (Sellick's maneuver)
	5. 100% oxygen
	6. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate
	7. Auscultate lungs to detect altered breath sounds
		☐ Satisfactory
		
		☐ Unsatisfactory

Response based on presenting signs and symptoms	8. With no evidence of aspiration
	   a. consider termination of procedure and discharge after further monitoring
	9. With evidence of aspiration
	   a. consider reversal agents, termination of procedure
	   b. consider 100% oxygen with PEEP
	   c. consider going to Bronchospasm Algorithm step 5
	   d. consider EMS
	   e. ensure chest x-ray
		☐ Satisfactory
		
		☐ Unsatisfactory

Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Notes: Administration of antibiotics and steroids is not recommended.

Comments:

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Hypertension Algorithm

Scenario requirements	Interventions	Examinee responses
1. Patient should initially be responsive to verbal command 2. Hypertensive urgency when blood pressure above 220/120 and no signs or symptoms; hypertensive crisis with evidence of myocardial ischemia, neurological dysfunction, significant bradycardia, pulmonary edema, or visual disturbances	1. Recognition of emergency 2. Place patient in comfortable position 3. Remove materials from mouth 4. 100% oxygen 5. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate	☐ Satisfactory ☐ Unsatisfactory
Initial response fails to resolve problem	6. Look for specific cause of hypertension (e.g., anxiety, cardiovascular disease, drug interaction, full bladder, hypoxia, pain) 7. Treat specific cause (e.g., provide additional local anesthesia for pain control)	☐ Satisfactory ☐ Unsatisfactory
Response fails to resolve problem	8. EMS if hypertensive crisis 9. Consider immediate physician referral if hypertensive urgency	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Notes: Nonemergency hypertension may be treated without terminating procedure.

Comments:

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Hypoglycemia Algorithm

Scenario requirements	*Interventions*	*Examinee responses*
1. Patient should initially be responsive to verbal command 2. Evidence of hypoglycemia risk (e.g., history of insulin-dependent diabetes); signs include diaphoresis, confusion, eventual loss of consciousness	1. Recognition of emergency 2. Place patient in supine position 3. Remove materials from mouth 4. 100% oxygen 5. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate 6. Measure blood glucose if equipment available	☐ Satisfactory ☐ Unsatisfactory

Patient hypoglycemic or high suspicion of hypoglycemia based on history and presenting signs	7. If awake, may administer oral fluids containing sugar
	8. If consciousness impaired or lost
	   a. administer 50% dextrose 1 mL/kg IV up to 50 mL
	   b. or may give D_5W 10 mL/kg IV up to 500 mL
	   c. or may give glucagon 0.025 to 0.1 mg/kg IV/IM/SC up to 1 mg
	9. Monitor blood glucose if equipment available
	10. Activate EMS if consciousness not restored
		☐ Satisfactory
		
		☐ Unsatisfactory

Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Comments:

Conscious Sedation Permit Evaluation

Hypotension Algorithm

Scenario requirements	Interventions	Examinee responses
1. Patient should initially be responsive to verbal command 2. Blood pressure below 2/3 normal for patient or causing signs and symptoms of hypoperfusion	1. Recognition of emergency 2. Place patient in supine position with legs elevated 3. Remove materials from mouth 4. 100% oxygen 5. Monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate	☐ Satisfactory ☐ Unsatisfactory
Initial response fails to resolve problem	6. Look for specific cause of hypotension (e.g., anxiety, cardiovascular disease, hypovolemia, drugs, hypercarbia, hypoxia pain, postural change) 7. Treat specific cause (e.g., IV fluid challenge for hypovolemia)	☐ Satisfactory ☐ Unsatisfactory

Response fails to resolve problem	8. Administer drug to increase cardiac output and/or peripheral resistance
	    a. may administer 0.01 mg/kg atropine IV up to 0.5 mg if bradycardia; may repeat dose up to 4 times q 5 min
	    b. may administer ephedrine 5 to 10 mg q 5 min
	    c. may administer phenylephrine 0.1 mg q 5 min if tachycardia
		☐ Satisfactory
		
		☐ Unsatisfactory

Response fails to resolve problem	9. Consider reversal agents 10. Consider EMS	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Notes: Nonemergent hypotension may be treated without terminating procedure. Multiple alternative antihypotensive agents are available; review proper use of candidate's emergency antihypotensive drug(s) before emergency evaluation.

Comments:

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Respiratory Depression Algorithm

Scenario requirements	*Interventions*	*Examinee responses*
1. Patient should initially be responsive to verbal command 2. Evidence of respiratory depression by low pulse oximetry, low respiration rate/volume, and/or high end-tidal carbon dioxide tension	1. Recognition of emergency 2. Place patient in comfortable position, supine position if unconscious 3. 100% oxygen 4. Remove materials from mouth	☐ Satisfactory ☐ Unsatisfactory

Response based on presenting signs and symptoms	5. If patient conscious
	    a. encourage increased breathing efforts and assess vital signs
	6. If patient unconscious
	    a. attempt to improve airway by head tilt–chin lift, jaw thrust, tongue protraction
	    b. check pulse and assess vital signs when possible
		☐ Satisfactory
		
		☐ Unsatisfactory

Response fails to resolve problem	7. Positive pressure ventilation with 100% oxygen a. may include airway adjuncts	☐ Satisfactory ☐ Unsatisfactory
Response fails to resolve problem	8. Consider reversal agents 9. Consider EMS	☐ Satisfactory ☐ Unsatisfactory
Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Comments:

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Syncope Algorithm

Scenario requirements	*Interventions*	*Examinee responses*
1. Patient is initially awake/responsive to verbal command 2. Evidence sudden loss of consciousness	1. Recognition of emergency a. call for AED, if available and loss of pulse identified 2. Place patient in supine position 3. Remove materials from mouth 4. Head tilt–chin lift and assess ventilation	☐ Satisfactory ☐ Unsatisfactory

Response based on presenting signs and symptoms	5. If breathing, 100% oxygen and monitor blood pressure at least q 5 min; continuously monitor pulse oximetry, heart rate
	6. If not breathing, positive pressure ventilations x2 with 100% oxygen and check carotid pulse
	  a. if pulse, move to Respiratory Depression Algorithm step 7
	  b. if no pulse move to Cardiac Arrest Algorithm step 7
		☐ Satisfactory
		
		☐ Unsatisfactory

Continue emergency response	7. Search for cause of syncope (e.g., fear, hypotension, hypoxia, hypoglycemia, arrhythmia, stroke)
	  a. treat underlying cause if possible
	  b. EMS if underlying cause not treatable
		☐ Satisfactory
		
		☐ Unsatisfactory

Overall response to emergency scenario		☐ **Satisfactory** ☐ **Unsatisfactory**

Notes: May administer ammonia inhalants so long as use does not interfere with defined emergency response.

Comments: