



STATE OF IDAHO

EMS PHYSICIAN COMMISSION

STATEWIDE PROTOCOLS & PROCEDURES*

Corresponding to Idaho EMS Scope of Practice 2016-1

* Including EMSPC required Protocols and Procedures

Published July 1, 2016

2016 Revisions Include;

- Updated "Patient Destination: Trauma Triage" Protocol C-9.
- Added Physical Restraints procedure.
- Updated "Suspected Stroke" Protocol M-13.
- Updated "Chest Pain: Cardiac & STEMI" Protocol C-5
- Updated "Asystole & PEA" Protocol C-1
- Removed Atropine minimum 0.1mg dosage.
- Added CPAP as an OM for EMT-2011.
- Missing Procedures Added

Adopted by _____ (Agency Name)

Medical Director Name _____

Medical Director Signature _____ Date _____



Introduction

ACKNOWLEDGMENTS

The Idaho Emergency Medical Services Physician Commission (EMSPC) is dedicated to serving the EMS system and providers throughout Idaho with EMS specific medical expertise and through open communication. The EMSPC continues to add resources for improved patient care with the development of the “**Statewide Protocols**”. The protocols were developed with the expertise of the physicians assigned to the protocol subcommittee of the EMSPC, adhoc subcommittee members with extensive clinical and field experience, and the support of the Idaho Bureau of EMS & Preparedness. The protocol subcommittee utilized professionally recognized resources for content while focusing on the skills and interventions available to Idaho licensed providers according to the most current (2014-1) scope of practice adopted by the EMSPC. The treatments outlined in these protocols were developed from the latest evidence-guided recommendations from EMS and medical organizations which include the National Association of EMS Physicians (NAEMSP), American Heart Association (AHA), American Stroke Association (ASA), American College of Cardiology (ACC), and the American College of Surgeons Committee on Trauma (ACS-COT). A special thanks for the countless hours, expertise, and commitment to quality the following individuals contributed to the project:

David Kim, M.D. Initial Subcommittee Chair and project lead.

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INTRODUCTION TO STATEWIDE TREATMENT PROTOCOLS

The EMSPC is pleased to provide these protocols for use by EMS providers of Idaho. The protocols may be adopted by the EMS agency medical director for use within their agency or system. Specific protocols that are identified in the EMSPC standards manual as required to be used for specific interventions are identified and included in this publication. The protocols represent an acceptable standard of care for managing patient injuries or illness in a manner consistent with the scope of practice established by the EMSPC. The protocols work collectively to guide treatment decisions for rapid interventions to ultimately deliver the patient to the receiving hospitals in an improved clinical state whenever possible. Each protocol has an entry or starting point which is followed by defined steps to guide decision making. The protocols are a guide to assist the sound clinical judgment of the provider. The EMSPC has taken extreme caution to ensure all information is accurate and in accordance with professional standards in effect at the time of publication. Since written protocols cannot feasibly address all patient care situations that may develop, the EMSPC expects EMS providers to use their training and judgment regarding any protocol-driven care and consider that some interventions could be harmful to a patient. When the EMS provider believes that following a protocol is not in the best interest of the patient or themselves, the provider should contact an online medical control physician if possible. Cases where deviation from protocols are justified are rare. The reasons for any deviation should be documented and reviewed by the agency medical director. Changes to the protocols can be requested by agency medical directors by submitting a written description of the change directly to the EMSPC by email at EMSPPhysicianComm@dhw.idaho.gov. EMS providers are also encouraged to provide feedback and recommendations to the EMSPC at any time. The EMSPC will review the protocols on a regular basis to incorporate changes as the scope of practice or clinical interventions continue to evolve in EMS. The most current version of the protocols will be maintained on the EMSPC web site through the Bureau web site at www.IdahoEMS.org. EMS providers are responsible for knowing the interventions allowed within their scope of practice and which their medical director has credentialed them to perform. Providers should be familiar with the use of these protocols as adopted by their agency medical director.

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Idaho EMSPC Protocol Legend

These flow chart style protocols utilize standardized symbols, letters, colors, shapes, and formatting to provide the reader with a significant amount of information. The following definitions are to be applied to the protocol content for consistency and accuracy of interpretation.

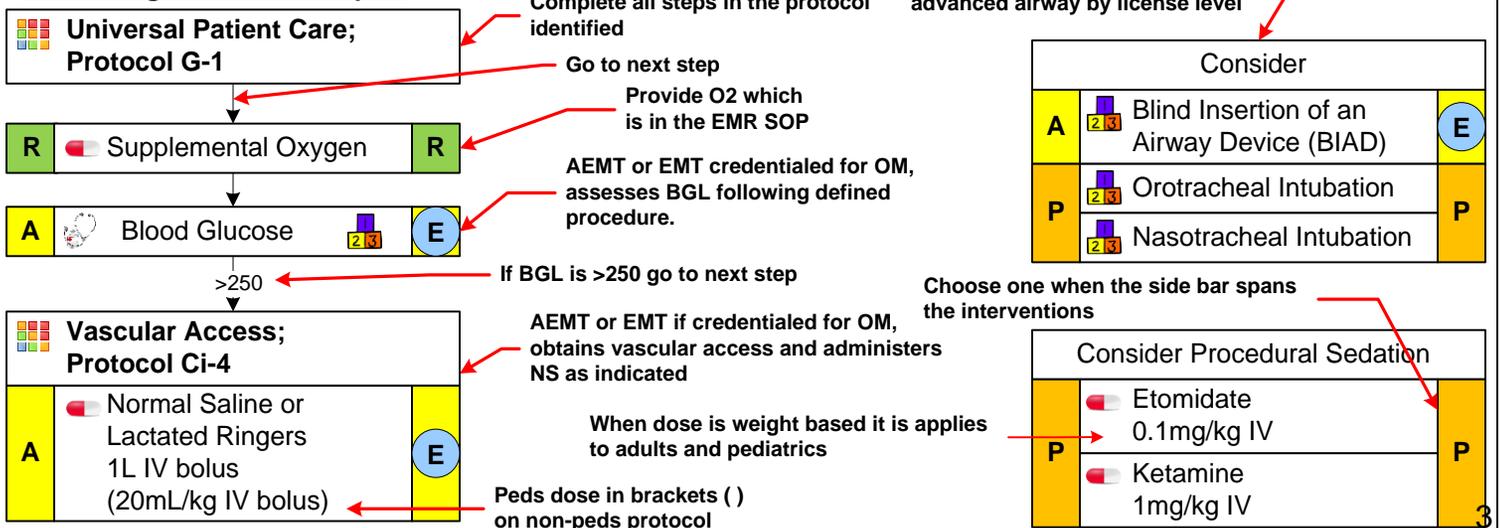
Symbol Definitions

- The stethoscope requires an assessment which can be focused or general in nature.
- The question mark identifies a targeted assessment finding.
- The pill symbolizes a medication intervention.
- The stacked blocks indicate a procedural intervention.
- An arrow points to the next step in a sequence.
- An arrow with a qualifier such as "Yes", "No", ">60", or other qualifiers points to a conditional step if the condition is present.
- The square grid identifies a box as a protocol.
- The exclamation mark identifies a protocol or procedure that is required to be followed for SOP interventions designated with a **"Requires EMSPC Protocol - 4"** in the EMSPC standards manual.

Color and Shape Definitions

- The square green side bar with an "R" indicates the intervention is within the floor scope of practice (SOP) of an Idaho Emergency Medical Responder (EMR) – 2011.
- The round green shape with an "R" indicates the intervention is an optional module (OM) available to an EMR – 2011 which has additional requirements for use.
- The square blue shape with an "E" indicates an intervention is within the floor SOP for an Idaho Emergency Medical Technician (EMT) – 2011.
- The round blue shape indicates the intervention is an OM available to an EMT – 2011 which has additional requirements for use. This is also a floor SOP for Advanced EMT-85 who has also transitioned to EMT – 2011.
- The yellow side bar with the "A" indicates the intervention is within the floor scope of practice of an Idaho Advanced EMT – 2011.
- The round yellow shape with an "A" indicates the intervention is an OM available to an Advanced EMT – 2011.
- The gold side bar with a "P" indicates the intervention is within the floor SOP of an Idaho Paramedic – 2011.
- The dark blue round shape with a "P" indicates that the intervention is an optional module available to a Paramedic – 2011.
- The grey side bar with a white circle indicates the intervention is an OM for all levels of Idaho personnel.
- The red side bar with an "M" indicates an intervention requires contacting medical control.

Formatting Definition Samples



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Procedures Legend

The procedures listed below have been coded to be consistent with the Idaho EMSPC SOP 2016-1 for each level of provider including "Optional Modules". It is the responsibility of each provider to know which interventions they are licensed, authorized, and credentialed to perform by their medical director. Some of the procedures referenced are included in this manual while EMS training programs and education publishers also provide comprehensive resources. The procedures with an **!** are required to be used for specific optional modules as adopted by the EMSPC.

Assessment Procedures

R	Adult Assessment		R
R	Pediatric Assessment		R
R	Pain Scale		R
E	Pulse Oximetry		E
R	Temperature		R
R	Cincinnati Stroke Screen		R
A	Blood Glucose !		E
A	Verification of Tube Placement		E
A	Continuous ETCO2 !		E

Trauma Procedures

R	Wound Care – General	R
R	Hemorrhage Control	R
E	Extremity Splinting	R
E	Selective C-Spine	R
E	Pelvic Immobilization Device	E
R	Eye Irrigation	R
R	Active External Rewarming	R
R	Passive External Rewarming	R
P	Morgan Lens Irrigation	P
P	Stinger Removal	P
P	Active Internal Rewarming	P

Airway Procedures

R	Foreign Body Obstruction	R
R	Ventilation - BVM	R
R	Oral Airway	R
E	Nasal Airway	E
R	Upper Airway Suction	R
A	Blind Inserted Airway Device - Adult	E
P	Blind Inserted Airway Device - Pediatric	P
P	Continuous Positive Airway Pressure	E
P	Direct Laryngoscopy	P
P	Nasotracheal Intubation	P
P	Nasal/Oral Gastric Tube	P
P	Tracheal Suctioning	P
P	Percutaneous Needle Cricothyrotomy	P
P	Needle-Chest Decompression	P
P	Intubation- Medication Assisted	P
P	Surgical Cricothyrotomy	P

Drug Administration Procedures

E	Epi Auto Injector !		R
A	Sub-Q & IM Injection !		R
A	Nebulized Bronchodilator		E
P	Lidocaine IO !		E
P	Tranexamic Acid		P

Cardiac Procedures

R	CPR	R
R	Automated defibrillation	R
P	Manual Defibrillation	P
P	Transcutaneous Pacing	P
P	12-Lead EKG	E
P	Cardiac Monitor	P
P	Vagal Maneuvers	P
P	Targeted Temperature Management	P

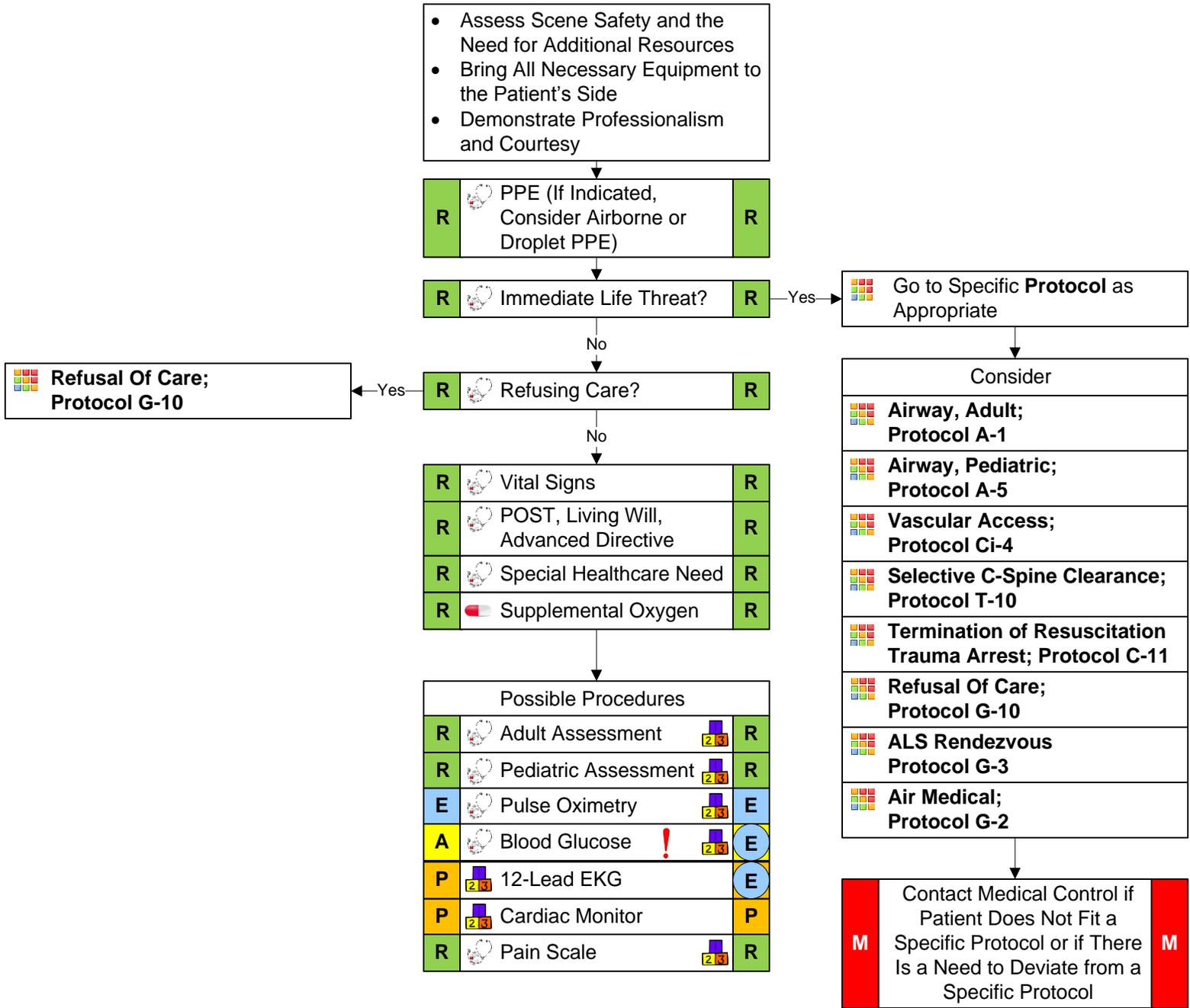
Miscellaneous Procedures

R	Childbirth - Normal	R
E	Childbirth - Complicated	E
R	Cooling Measures	R
E	Physical Restraints	E
R	Safe Haven	R
O	Taser Barb Removal	O

IV Access Procedures

A	Peripheral IV	E
A	Intraosseous Infusion, Pediatric	E
A	Intraosseous Infusion, Adult	E
A	External Jugular IV	E

Universal Patient Care



Pearls

- All patient contacts require completion of a patient care report (PCR); including refusals of care, treat-and-releases, and other scenarios that result in non-transport by EMS.
- Pulse oximetry and temperature documentation is dependent on the specific complaint.
- The patient is considered pediatric if they are < 12 years of age or they fit on the Broselow-Luten tape. If a patient does not fit either criteria, they are considered an adult for the purposes of these protocols.
- The timing of a transport should be based on the patient's clinical condition.
- 12-lead EKG acquisition should not delay stabilization of the ABCs or patient transport.
- Never hesitate to contact Medical Control for the patient who refuses transport.
- Ask if the patient has a Medical Emergency Health Care Information form, especially if they have special healthcare needs.
- Does the patient have a POST, Living Will, or other Advance Directive?

Protocol G-1 – 2016 Universal Patient Care

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ALS Rendezvous



History

- “High Risk” patients include:
 - Extremes in age
 - Significant trauma
 - Significant / complex medical issues

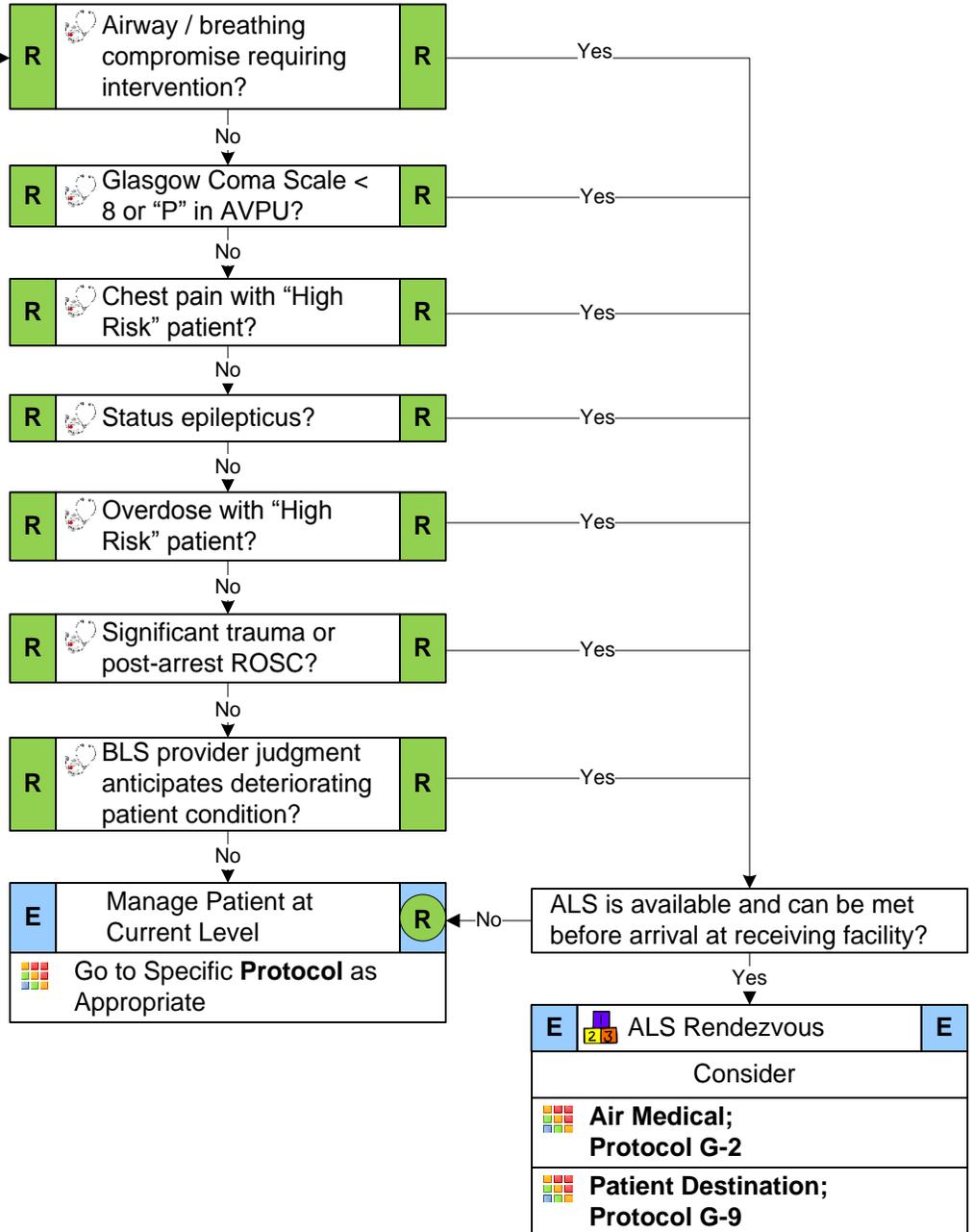
Signs & Symptoms

- Airway compromise
- Shock
- Chest pain (suspicious of cardiac etiology)
- Combative behavior or altered level of consciousness

Differential

- None

Universal Patient Care; Protocol G-1



Pearls

- DO NOT delay patient transportation on-scene; begin the transport and set up a rendezvous location while en route.
- ALS rendezvous agreements should be established and integrated with dispatch procedures.
- Consider a preemptive ALS rendezvous early in the call rather than waiting for the patient’s condition to deteriorate.

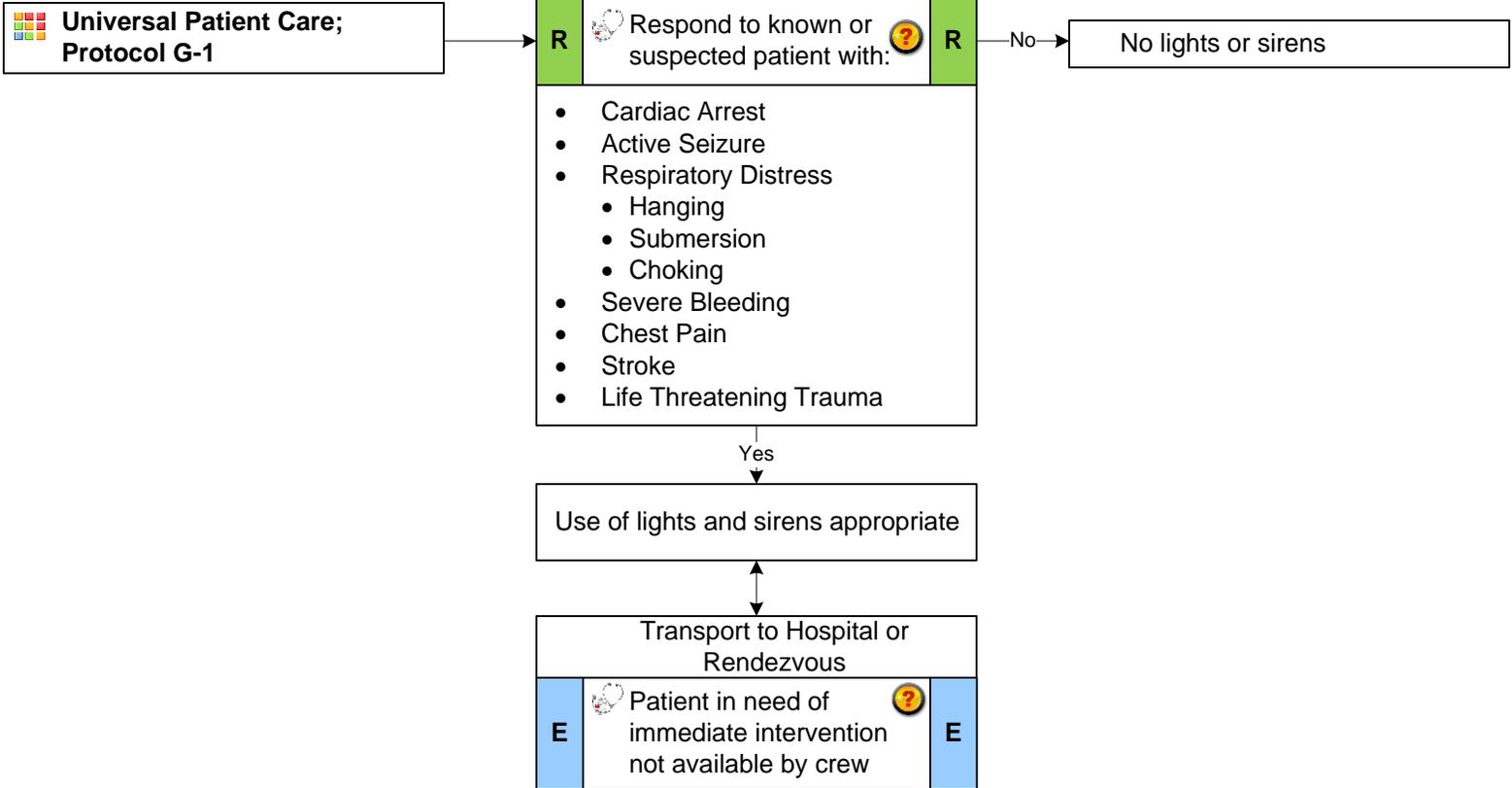
Performance Improvement Suggestions

- Correct utilization of an ALS rendezvous dependent upon the patient condition
- Patient care needs correlate to dispatch protocols (run reviews)

Protocol G-3 – 2016 ALS Rendezvous

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Use of Lights and Sirens



Pearls

- Use of lights and sirens creates a greater risk of motor vehicle crashes to responders and public.

Performance Improvement Suggestions

- Review of patient conditions for appropriate use

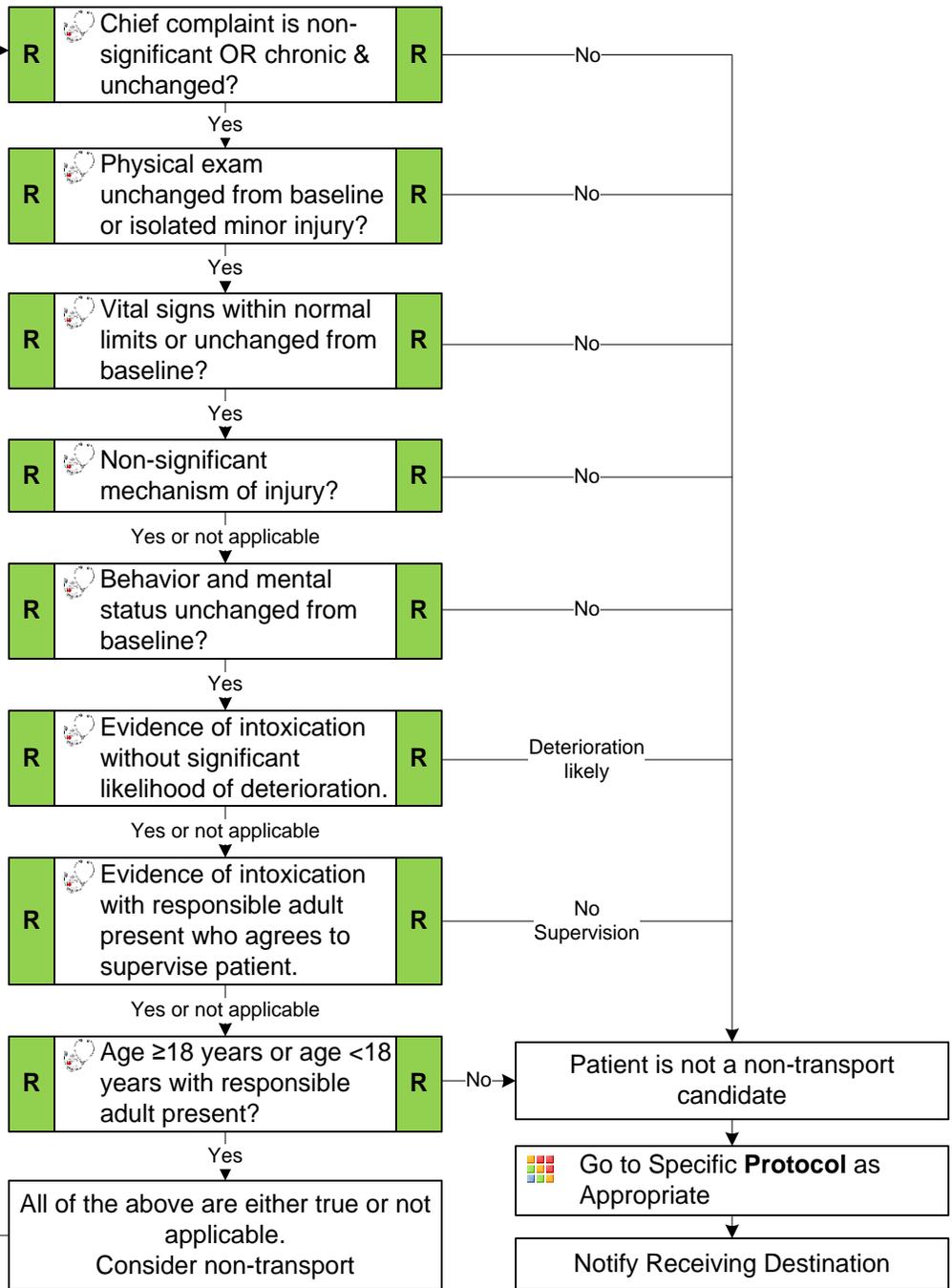
Protocol G-4 – 2016 Use of Lights and Sirens

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Non-Transport



Universal Patient Care; Protocol G-1



M Consider **Medical Control** **M**

Pearls

- This protocol does not apply to a patient-initiated refusal of care.
- In general, a person becomes a patient when he/she or another responsible party requests an EMS response. This request implies consent for assessment and treatment. When a person is unconscious or is otherwise incapable of providing consent, EMS may initiate an assessment if a reasonable person would ordinarily consent to assessment and treatment under similar circumstances.
- At times, EMS may be dispatched to a medical or trauma scene where multiple persons are present and it's unclear for whom EMS was requested. A person who declines EMS at such a scene (e.g., "I'm okay but you should check that person over there.") is not considered a patient as long as that person is well-appearing and appears capable of medical decision-making.
- Consider medical control prior to non-transport to help reduce the likelihood of not transporting a patient with potentially serious illness or injury.
- Non-transported minors must be released to a responsible adult.

Performance Improvement Suggestions

- Documentation of applicable non-transport criteria

Protocol G-5 – 2016 Non-Transport

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Pain Management, Adult



History

- Age
- Location of pain
- Duration
- Severity (0-10)
- Past medical history
- Current medications
- Drug allergies

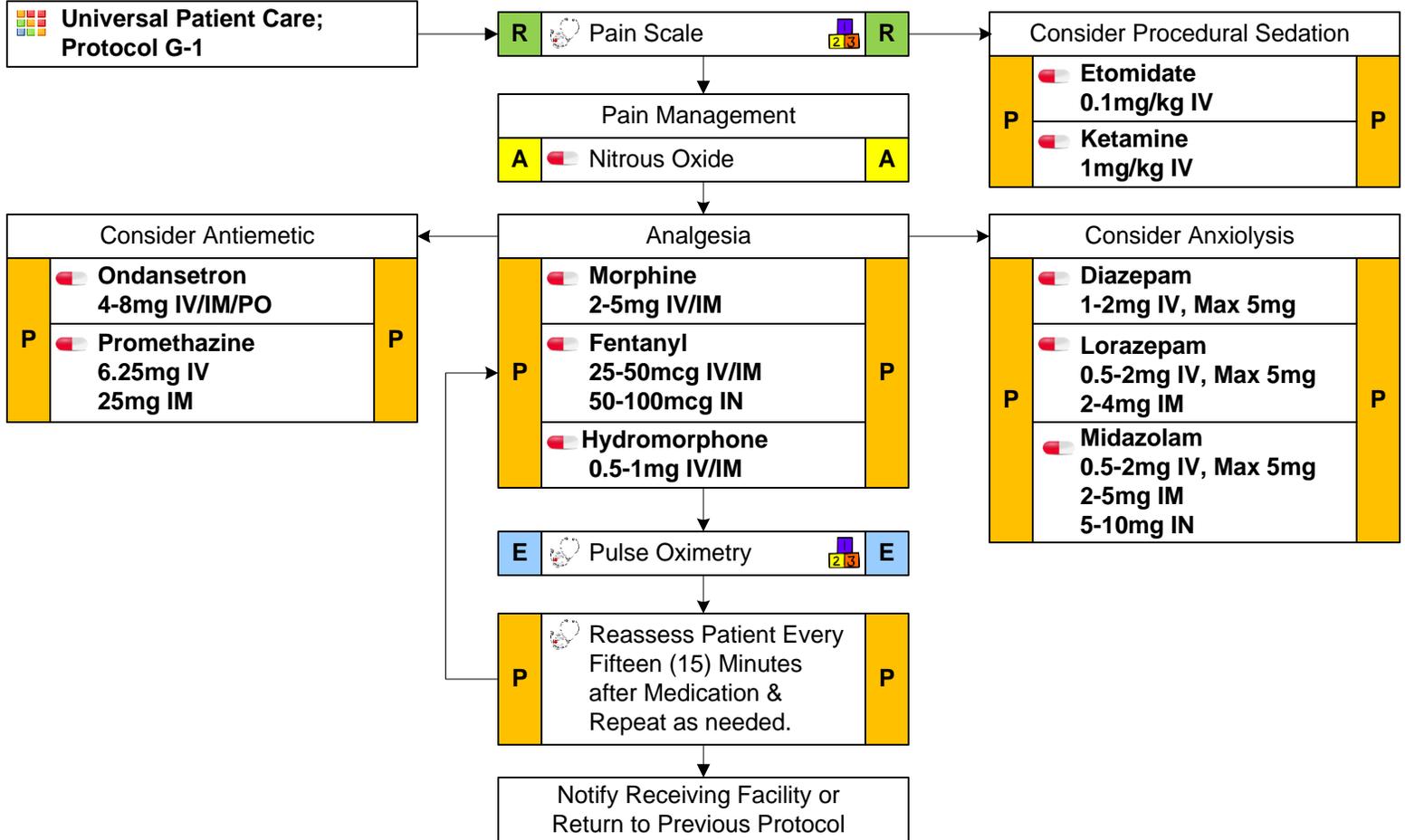
Signs & Symptoms

- Quality (sharp, dull, etc.)
- Radiation
- Relation to movement & respiration
- Increased with palpation of area

Differential

- Per the specific protocol
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural (respiratory)
- Neurogenic
- Renal (kidneys)

Universal Patient Care; Protocol G-1



Pearls

- Prioritize patient care – the stabilization of ABCs is more important than pain management.
- Pain severity (on a scale of 0-10) is a vital sign to be recorded at disposition and pre- and post-medication delivery.
- Administer narcotics with caution in patients presenting with hypotension or an altered mental status.
- All patients should have drug allergies documented prior to administering pain medications.
- The onset of pain relief may be delayed after narcotic IM administration as compared to IV administration. Alternately, the duration of action of IM-administered drugs may be prolonged as compared to those administered via IV.
- The administration of a narcotic medication in combination with a benzodiazepine may result in synergistic or excessive sedation and/or respiratory depression. The narcotic should be administered first and its effects assessed prior to benzodiazepine administration.
- Limit IN medications to 1mL per nostril; if more than 2mL is required, additional medications may be given IN after 10 minutes.
- If needed, Narcan (Naloxone) should be carefully titrated to reverse respiratory depression without completely reversing analgesia.
- Ondansetron (Zofran) is the primary medication for the treatment of nausea. Promethazine (Phenergan) may result in excessive sedation and may cause soft tissue necrosis when given via IV.
- Consider procedural sedation for short-term events that may cause extreme pain (e.g. splinting, extrication, etc.).

Performance Improvement Suggestions

- Documentation of pain severity
- Need for narcotic reversal

Protocol G-6 – 2016 Pain Management, Adult

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Pain Management, Pediatric



History

- Age
- Location of pain
- Duration
- Severity (0-10)
- Past medical history
- Current medications
- Drug allergies

Signs & Symptoms

- Quality (sharp, dull, etc.)
- Radiation
- Relation to movement & respiration
- Increased with palpation of area

Differential

- Per the specific protocol
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural (respiratory)
- Neurogenic
- Renal (kidneys)

Universal Patient Care; Protocol G-1

R Pain Scale **R**

Pain Management
A Nitrous Oxide **A**

Analgesia
P Morphine 0.1mg/kg IV/IM
P Fentanyl 1-2mcg/kg IV/IM 2mcg/kg IN
P Hydromorphone (> 6 mos) 0.01-0.02mg/kg IV/IM

E Pulse Oximetry **E**

P Reassess Patient Every Fifteen (15) Minutes after Medication & Repeat as needed. **P**

Notify Receiving Facility or Return to Previous Protocol

Consider Procedural Sedation

P Ketamine 1mg/kg IV 4mg/kg IM **P**
P Etomidate 0.1mg/kg IV **P**

Consider Antiemetic
P Ondansetron 0.1mg/kg IV/IM/PO **P**

Pearls

- Prioritize patient care – the stabilization of ABCs is more important than pain management.
- The pediatric pain scale is a vital sign to be recorded pre- and post-medication delivery and at disposition.
- Administer narcotics with caution in patients presenting with hypotension or an altered mental status.
- All patients should have drug allergies documented prior to administering pain medications.
- The onset of pain relief may be delayed after narcotic IM administration as compared to IV administration. Additionally, the duration of action of IM administered drugs may be prolonged as compared to those administered via IV.
- The administration of a narcotic in combination with a benzodiazepine may result in synergistic or excessive sedation and/or respiratory depression. The narcotic should be administered first and its effects assessed prior to benzodiazepine administration.
- Limit IN medications to 1mL per nostril; if more than 2mL is required, additional medications may be given IN after 10 minutes.
- If needed, Narcan (Naloxone) should be carefully titrated to reverse respiratory depression without completely reversing analgesia.
- Ondansetron (Zofran) is the primary medication for the treatment of nausea. Promethazine (Phenergan) may result in excessive sedation and may cause soft tissue necrosis when given via IV.
- Consider procedural sedation for short-term events that may cause extreme pain (e.g. splinting, extrication, etc.).

Performance Improvement Suggestions

- Documentation of pain severity
- Need for narcotic reversal

Protocol G-7 – 2016 Pain Management, Pediatric

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Police Custody



History

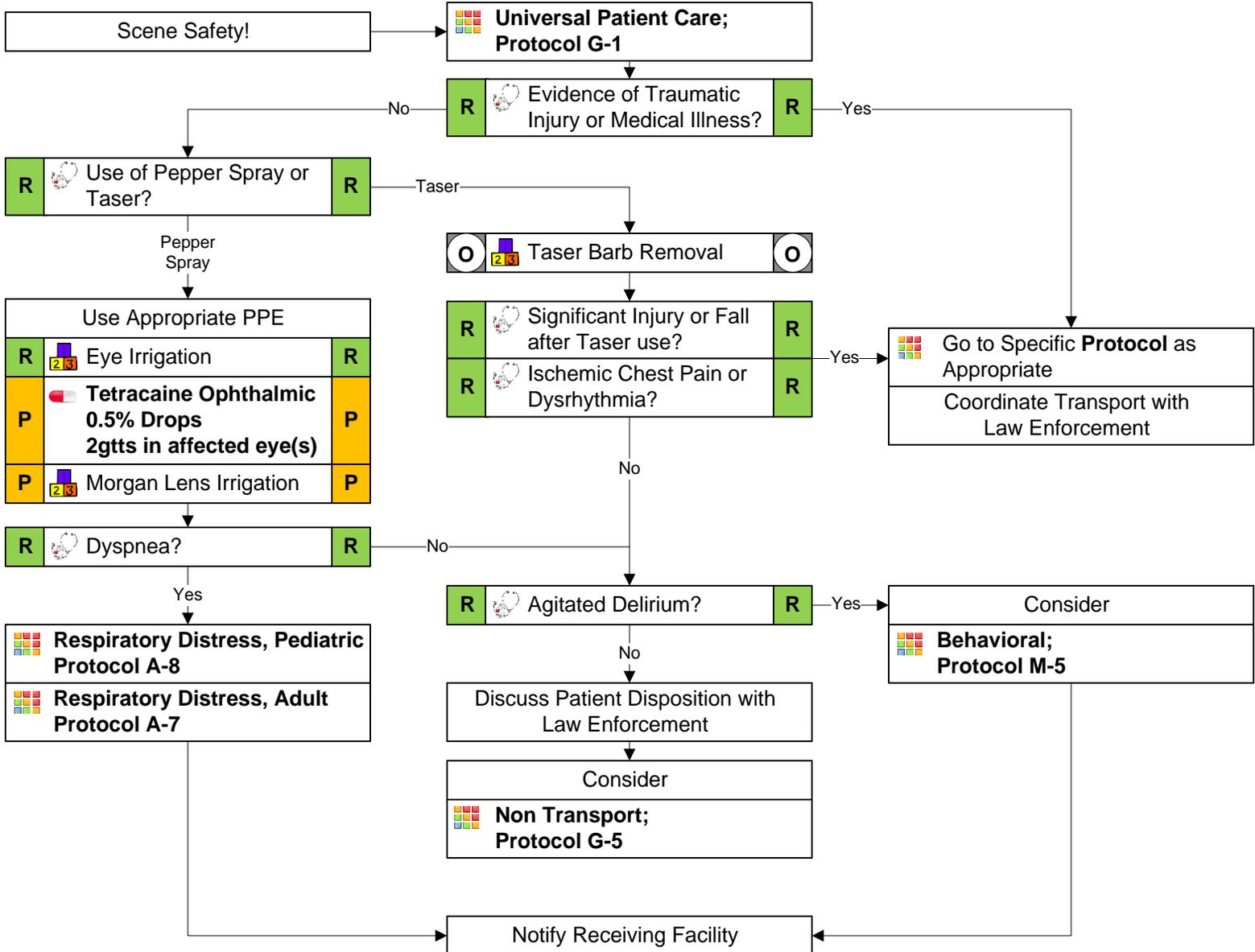
- Traumatic injury
- Drug abuse
- Cardiac history
- History of asthma
- Psychiatric history

Signs & Symptoms

- External signs of trauma
- Palpitations
- Shortness of breath
- Wheezing
- Altered mental status
- Agitation

Differential

- Agitated delirium
- Substance abuse
- Traumatic injury
- Closed head injury
- Asthma exacerbation
- Cardiac dysrhythmia



Pearls

- This protocol may also be used when a patient is not in police custody or when a patient is not under arrest.
- Agitated delirium is characterized by marked restlessness, irritability and/or high fever. Patients exhibiting these signs are at higher risk for sudden death and should be transported to the hospital - avoid prone positioning.
- Patients restrained by law enforcement devices may not be transported in the ambulance without a law enforcement officer in the patient compartment who is capable of removing the devices.

Performance Improvement Suggestions

- Documentation of taser probe location
- Documentation of eye irrigation duration & volume of eye irritant

Protocol G-8 – 2016 Police Custody

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Patient Destination



Universal Patient Care; Protocol G-1

R Trauma Patient? **R**

Patient Destination: Trauma Triage; Protocol T-9

No

P STEMI? **E**

- STEMI present on 12-lead EKG
- Transport time (air or ground) to PCI-capable facility <60 minutes

Transport to PCI-capable facility

No

E Brain Attack? **E**

- Positive Cincinnati Stroke Scale
- Time from last seen normal to arrival at stroke center <3 hours for IV TPA
- Time from last seen normal to arrival at stroke center <3-6 hours for IA TPA or mechanical thrombectomy

Transport to Stroke Center

No

E Immediately Life-Threatening Condition? **E**

Transport to Closest Appropriate Facility

No

E Mass Casualty Incident? **E**

Transport Determined by Incident Commander or Designee

No

E Special Patient or System Considerations? **E**

- Pediatric Patient
- High-Risk Obstetric Patient

Transport to Closest Appropriate Facility

No

E Patient Preference? **E**

Transport in Accordance to Patient Preference

No

Transport to Closest Appropriate Facility

M Contact Medical Control when the closest appropriate facility is unclear. **M**

Pearls

- The window for IV TPA may be extended to 4.5 hours for certain brain attack patients. Consult with your local stroke center for specific patient criteria.
- Consult with your local stroke center to determine their brain attack capabilities (e.g., IV TPA, IA TPA, mechanical thrombectomy).
- If the patient requests transport to a facility not consistent with this protocol, honor the request only after informing the patient why the EMS system recommends another facility (e.g., available medical capability or capacity, shorter transport time, "time is muscle") and after the patient verbalizes understanding (informed refusal). If the patient demonstrates impairment of judgment related to injury, shock, drug effects, or emotional instability, act in the patient's best interest and transport the patient to the most appropriate facility as determined by this protocol.
- EMS may decline transport to the patient's preferred facility when transport time or distance will adversely effect local EMS resource availability. Additional EMS system or geopolitical considerations (e.g, county boundaries) may also preclude transport to the patient's preferred facility.

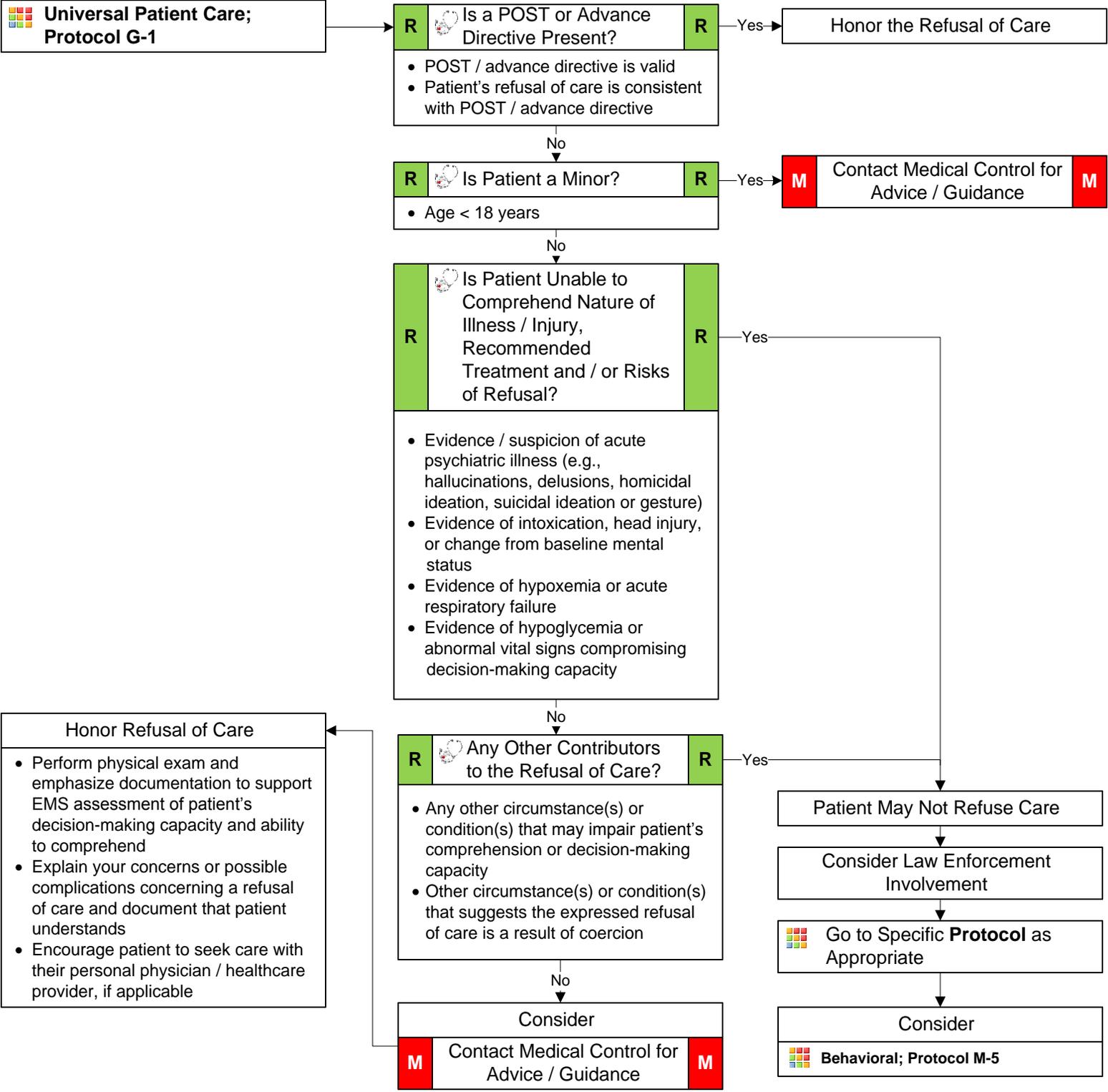
Performance Improvement Suggestions

- Documentation of criteria used to determine patient destination
- Documentation of informed refusal, if applicable
- For STEMI's and brain attacks, EMS transport time to receiving facility and door-to-reperfusion time at receiving facility

Protocol G-9 – 2016 Patient Destination

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Refusal of Care



Pearls

- A patient who refuses care must be able to receive information, process the received information, and demonstrate understanding of the information as well as the consequences of refusing care.
- A patient's denial of illness, financial constraints, and/or fear of hospitalization may contribute to a refusal of care.
- Enlist family, coworkers, friends, and/or medical control to help convince patients to receive appropriate care and transport.
- Voluntary consent to treatment is greatly preferred over conflict, law enforcement involvement, or physical restraint.

Performance Improvement Suggestions

- Documentation that patient understands risk of refusing care
- Documentation of law enforcement's participation, if applicable

Protocol G-10 – 2016 Refusal of Care

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Targeted Temperature Management

History

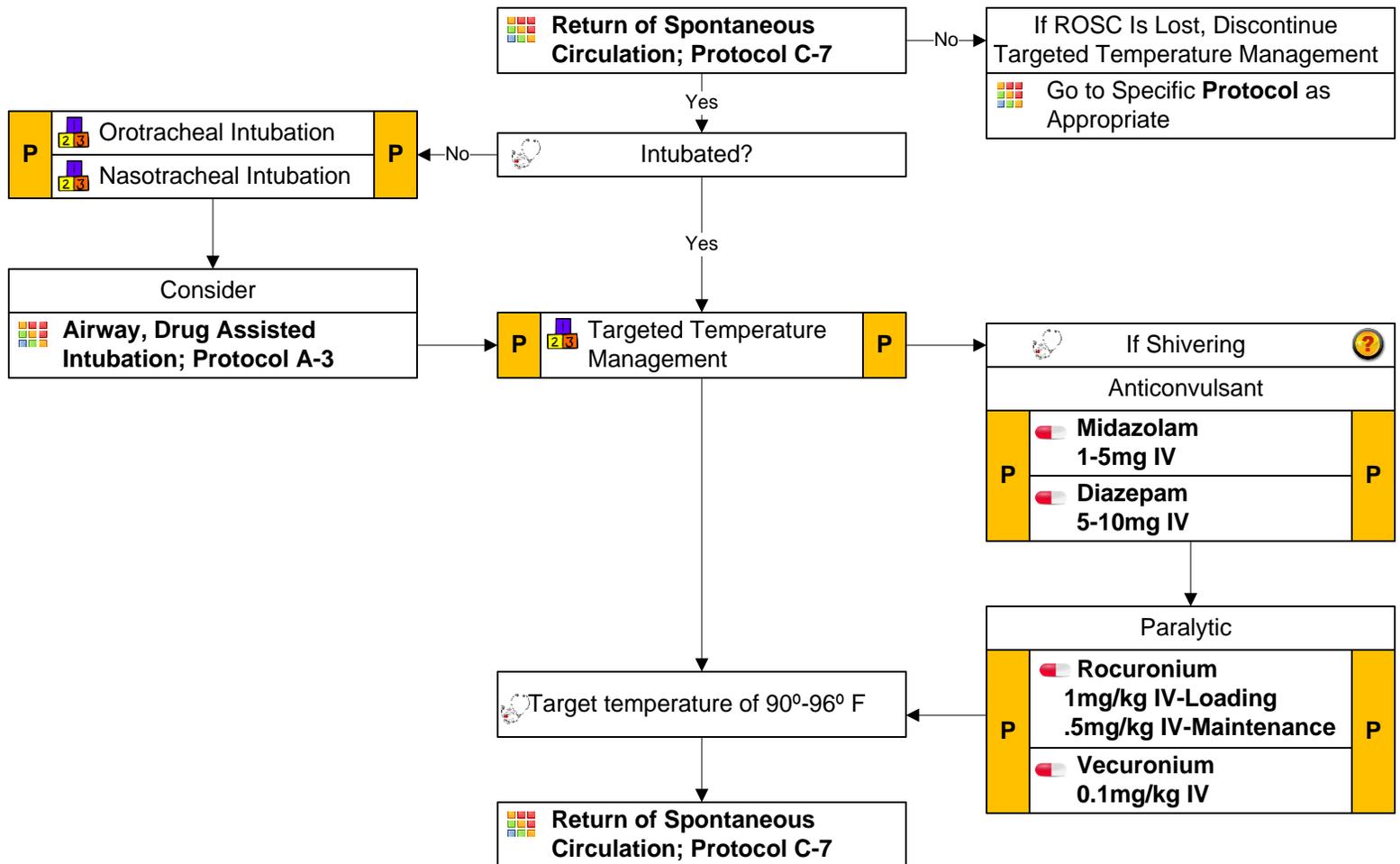
- Non-traumatic cardiac arrest with return of spontaneous circulation
- Adult > 16 years of age
- Initial temperature > 93°F / 33.9°C

Signs & Symptoms

- Glasgow Coma Scale < 8
- No purposeful response to pain

Differential

- Continue to address specific differentials associated with the original dysrhythmia



Pearls

- Overcooling is common and should be avoided.
- Avoid hyperventilation; keep the EtCO₂ at 40.
- Do not delay transport for cooling.
- External cooling measures are preferred over chilled saline.

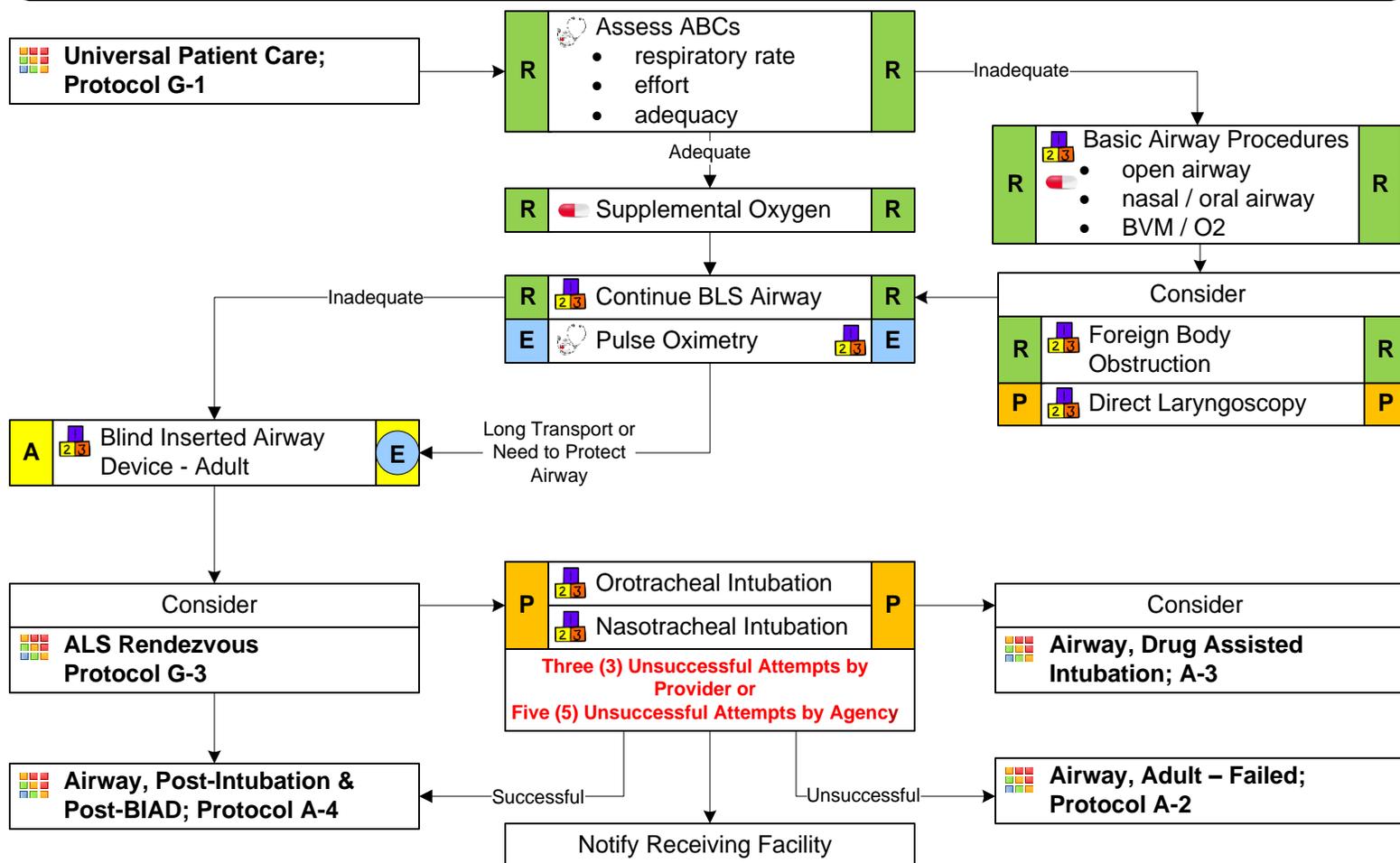
Performance Improvement Suggestions

- Documentation of temperature on arrival

Protocol G-11 – 2016 Targeted Temperature Management

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Airway, Adult



Pearls

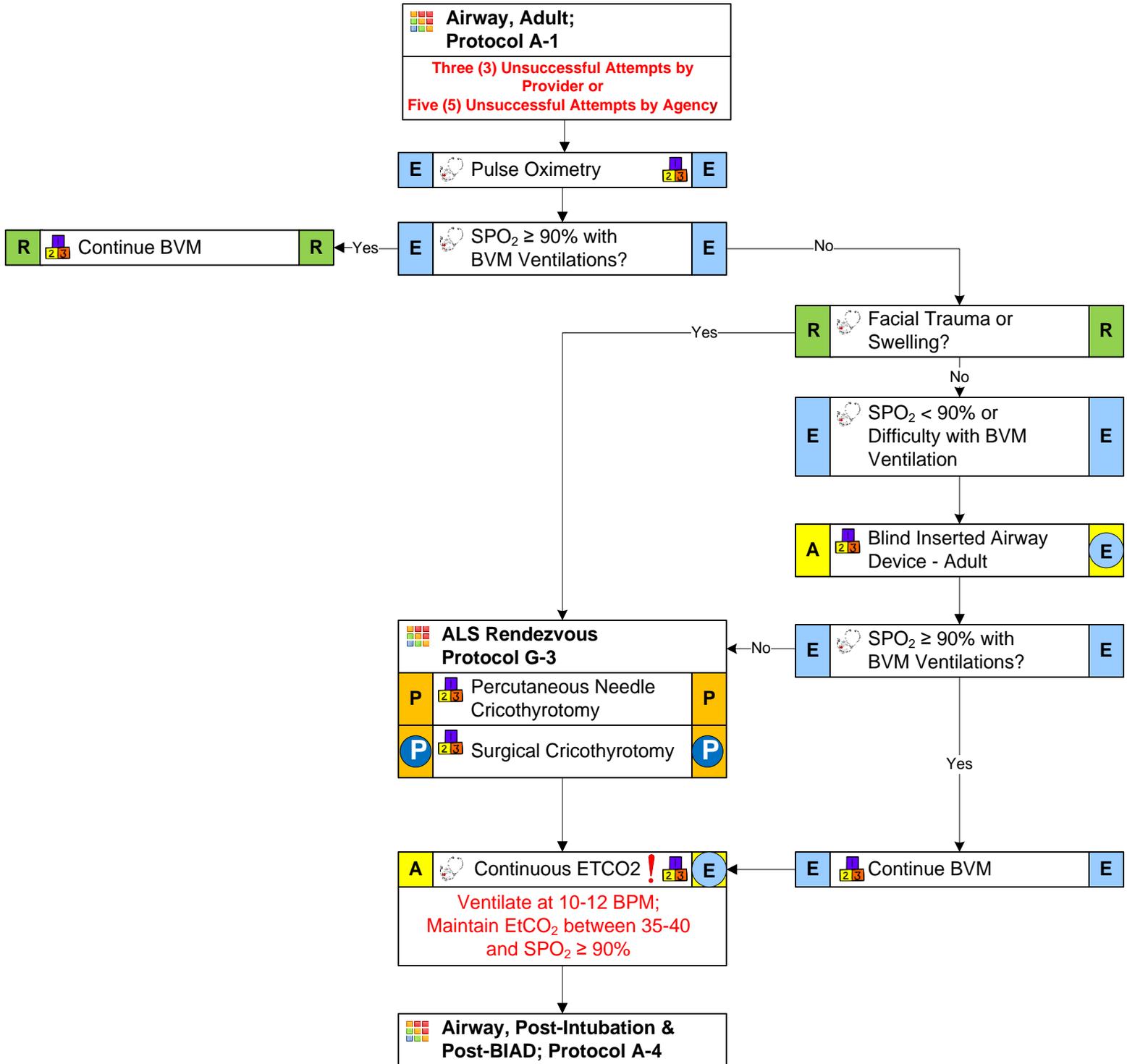
- For the purposes of this protocol, a secure airway is when the patient is receiving appropriate oxygenation and ventilation.
- Do not assume hyperventilation is psychogenic – use oxygen, not a paper bag.
- If an effective airway is being maintained by BVM with continuous pulse oximetry values of ≥ 90 , it is acceptable to continue with basic airway measures instead of using a BIAD or intubation.
- An 'intubation attempt' is defined as insertion of the laryngoscope blade into the mouth or insertion of the endotracheal tube through the nares.
- Paramedics should consider using a BIAD rather than intubation if a difficult airway is anticipated.
- Paramedics should consider drug-assisted intubation in patients that are awake as well as patients who, despite sedation, are persistently combative.
- Ear-to-sternal notch patient positioning will improve your laryngoscopic view; however, maintain C-spine immobilization for patients with a suspected spinal injury.
- Sellick's maneuver, BURP maneuver (Back [posterior], Up, and to pt's Right Pressure), and/or external laryngeal manipulation should be used to assist with difficult intubations.
- Although EtCO₂ detection is the preferred method to confirm ETT and BIAD placement, multiple methods must be used such as an esophageal tube detector device, auscultation of breath sounds, absence of epigastric sounds, ETT misting, chest rise, and patient response (e.g., pulse oximetry, skin color, heart rate).
- If first intubation attempt fails, make an adjustment and try again:
 - Use a different laryngoscope blade size/type or a different ETT size
 - Apply external laryngeal manipulation: e.g. BURP maneuver
 - Gum Elastic Bougie
 - Change head positioning to achieve ear-to-sternal notch patient positioning (unless c-spine immobilization indicated)
- It is important to secure the ETT and BIAD well; consider a C-collar to better maintain placement.
- If breath sounds are decreased on the left side after intubation, check your ETT depth & consider right mainstem intubation.

Performance Improvement Suggestions

- Documentation of ventilatory rate
- Documentation of pulse oximetry

Protocol A-1 – 2016 Airway, Adult

Airway, Adult – Failed



Pearls

- Continuous EtCO₂ monitoring should be initiated in all patients with an ETT or BIAD.
- Notify receiving facility AS EARLY AS POSSIBLE when you encounter a difficult or failed airway.

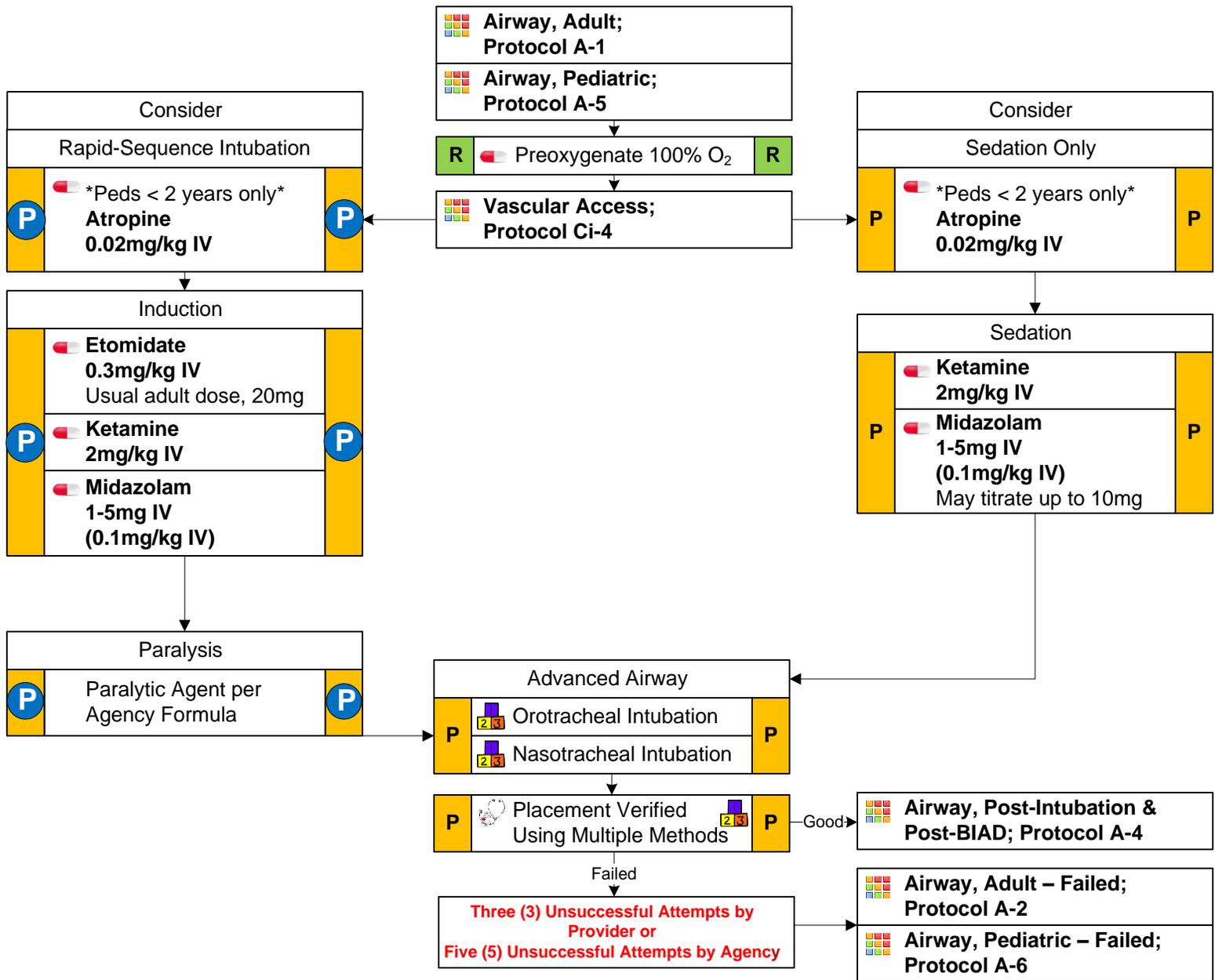
Performance Improvement Suggestions

- Number of intubation attempts prior to BIAD or cricothyrotomy
- Cricothyrotomy success rate
- Incidence of inappropriate hyperventilation
- Documentation of pulse oximetry

Protocol A-2 – 2016 Airway, Adult - Failed

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Airway, Drug Assisted Intubation



Pearls

- Once a patient has been given a paralytic drug, **YOU ARE RESPONSIBLE FOR VENTILATIONS AND ADEQUATE SEDATION!**
- All equipment, including suction, must be in place and ready for use prior to administering any drugs.
- Prepare rescue airway device when you anticipate a difficult airway.
- Each patient may only receive one dose of succinylcholine. Rocuronium may be repeated.
- Although EtCO₂ detection is the preferred method to confirm ETT and BIAD placement, multiple methods must be used such as an esophageal tube detector device, auscultation of breath sounds, absence of epigastric sounds, ETT misting, chest rise, and patient response (e.g., pulse oximetry, skin color, heart rate).
- If 1st intubation attempt fails, make an adjustment and try again:
 - Use a different laryngoscope blade size/type or a different ETT size
 - Apply external laryngeal manipulation: e.g. BURP maneuver
 - Gum elastic bougie
 - Change head positioning to achieve ear-to-sternal notch patient positioning (unless C-spine immobilization indicated).
- If breath sounds are decreased on the left side after intubation, check your ETT depth & consider right mainstem intubation.

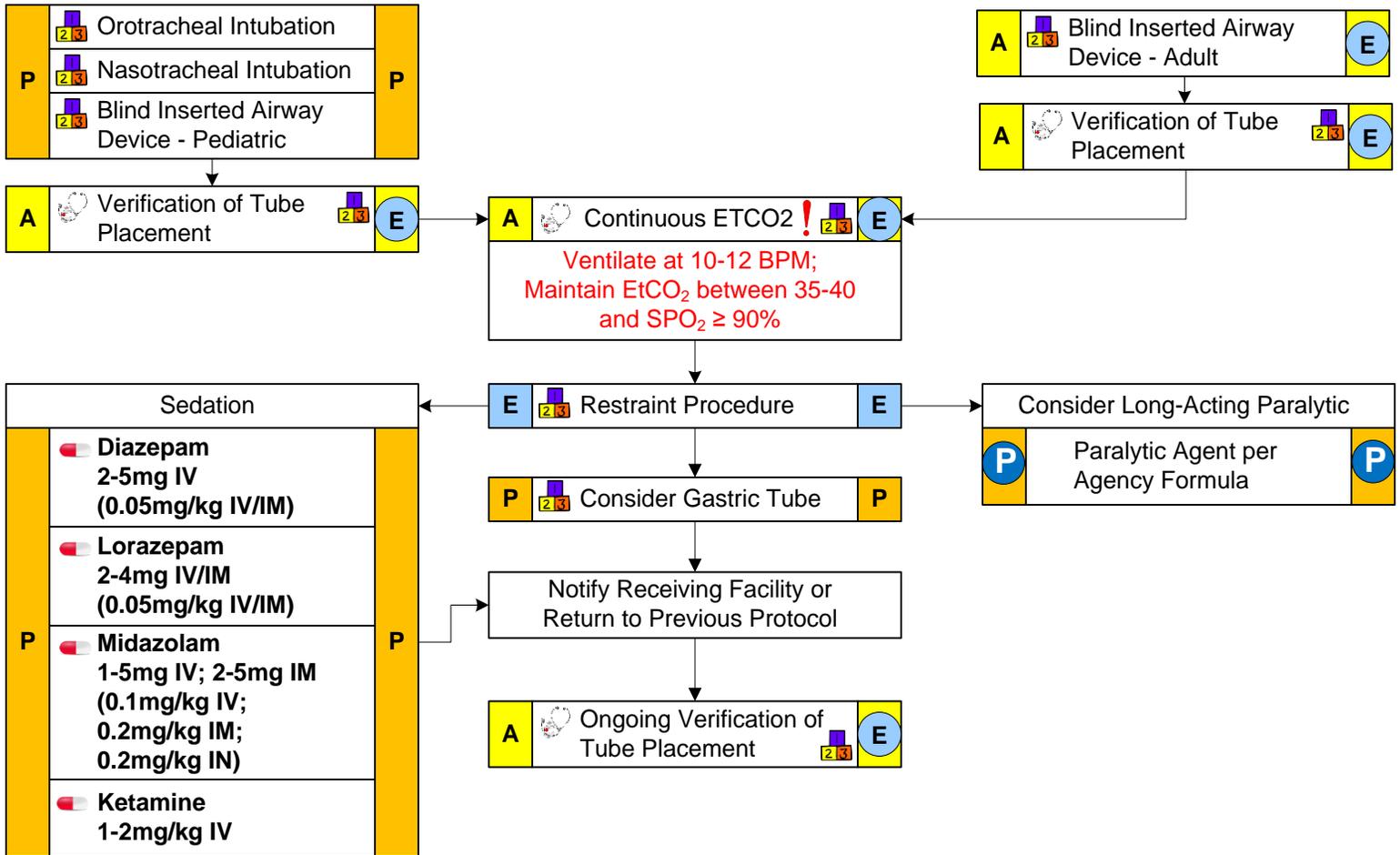
Performance Improvement Suggestions

- Number of Provider/EMS Agency attempts prior to Airway, Adult – Failed; Protocol A-2 -OR- Airway, Pediatric – Failed; Protocol A-6
- Placement verified with EtCO₂ detection & multiple methods

Protocol A-3 – 2016 Airway, Drug Assisted Intubation

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Airway, Post-Intubation & Post-BIAD



Pearls

- Although EtCO₂ detection is the preferred method to confirm ETT and BIAD placement, multiple methods must be used such as an esophageal tube detector device, auscultation of breath sounds, absence of epigastric sounds, ETT misting, chest rise, and patient response (e.g., pulse oximetry, skin color, heart rate).
- Continuous EtCO₂ capnography and pulse oximetry are strongly recommended for the monitoring of all patients with a BIAD or ETT.
- Initial ventilatory rates should be 10-12/minute to maintain an EtCO₂ of 35-40. (Peds: 30/minute, age < 1 yr; 25/minute, 1-5 yrs; 20/minute, 6-12 yrs). Avoid hyperventilation except in cases of impending herniation - in cases of impending herniation, maintain an EtCO₂ between 25-30. (Peds: 35/minute, age < 1 yr; 30/minute 1-5 yrs; 25/minute 6-12 yrs.)
- An orogastric or nasogastric tube will reduce the risk of aspiration and may improve oxygenation and ventilation. Gastric tube placement should be considered in all intubated and BIAD patients, if available.
- Long-acting paralytics may be needed post-intubation and post-BIAD insertion to protect the patient from self-extubation and to improve ventilation.
- Chemical paralysis precludes a neurologic assessment at the receiving destination, which may adversely affect patient management, especially for patients with a head injury. Chemical paralysis will also delay the recognition of seizures. For these and other reasons, long-acting paralytics should not be used routinely.
- Perform and document a neurologic exam prior to the administration of a long-acting paralytic.
- Once a patient has been give a paralytic drug, YOU ARE RESPONSIBLE FOR VENTILATIONS AND ADEQUATE SEDATION!**
- It is important to secure the ETT or BIAD well; consider a C-collar to better maintain placement.
- If breath sounds are decreased on one side, recheck your ETT depth; the ETT may have migrated into a mainstem bronchus.
- An intubated patient (especially one who has been paralyzed) needs appropriate sedation.

Performance Improvement Suggestions

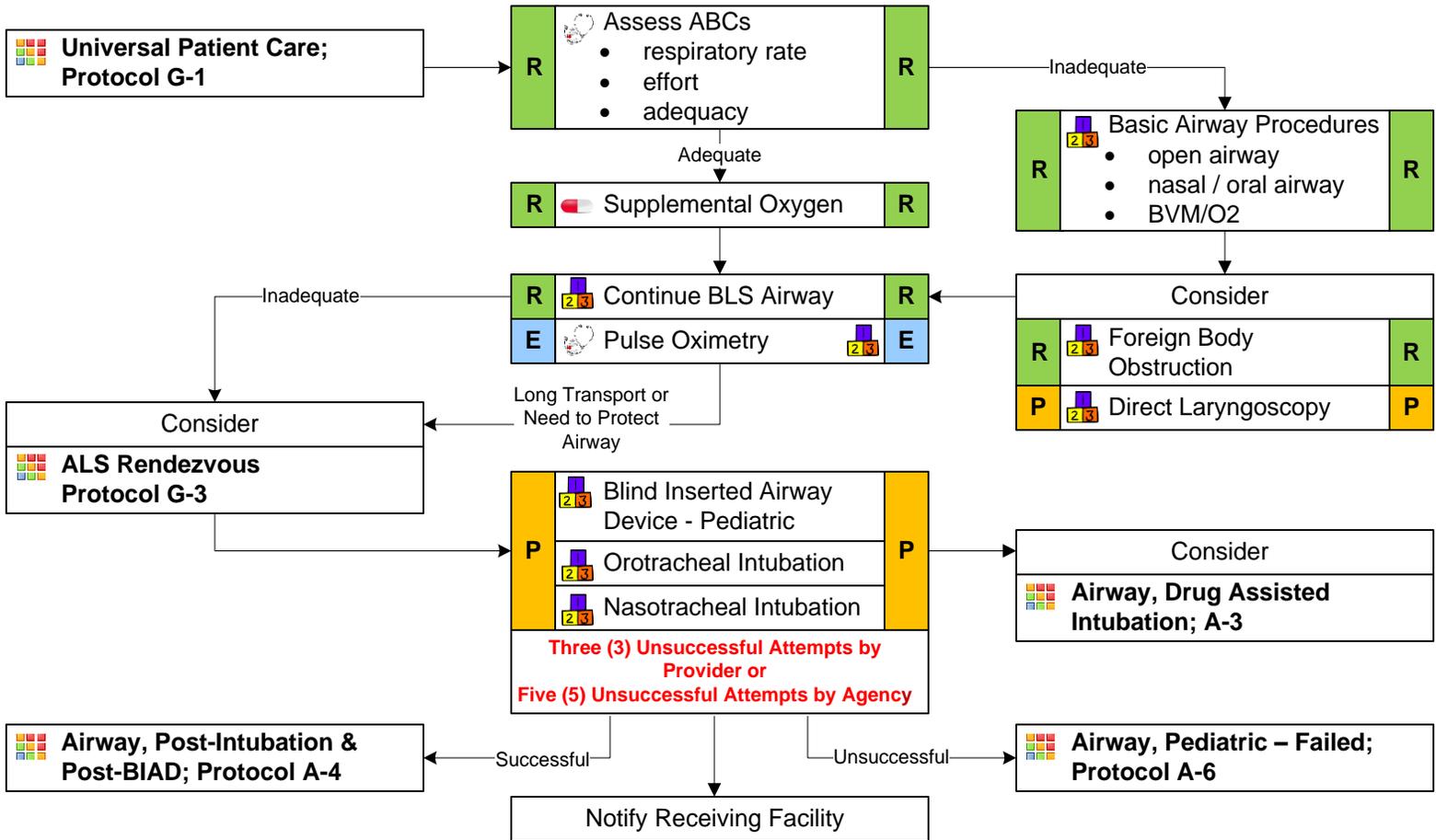
- Documentation of the indication for a long-acting paralytic
- Administration of sedation when a patient is chemically paralyzed
- Verification of ETT & BIAD position after patient transfers
- Incidence of inappropriate hyperventilation

Protocol A-4 – 2016 Airway, Post-Intubation & Post-BIAD

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20

Airway, Pediatric



Pearls

- For the purposes of this protocol, pediatric is defined as < 12 years of age or any patient who can be measured on the Broselow-Luten tape and a secure airway is when the patient is receiving appropriate oxygenation and ventilation.
- Do not assume hyperventilation is psychogenic – use oxygen, not a paper bag.
- If an effective airway is being maintained by BVM with continuous pulse oximetry values of ≥ 90 , it is acceptable to continue with basic airway measures instead of using a BIAD or intubation.
- An ‘intubation attempt’ is defined as insertion of the laryngoscope blade into the mouth or insertion of the endotracheal tube through the nares.
- Paramedics should consider using a BIAD rather than intubation if a difficult airway is anticipated.
- Paramedics should consider drug-assisted intubation in patients that are awake as well as patients who, despite sedation, are persistently combative.
- Ear-to-sternal notch patient positioning will improve your laryngoscopic view; however, maintain C-spine immobilization for patients with a suspected spinal injury.
- Sellick’s maneuver, BURP maneuver (Back [posterior], Up, and to pt’s Right Pressure), and/or external laryngeal manipulation should be used to assist with difficult intubations.
- Although EtCO₂ detection is the preferred method to confirm ETT and BIAD placement, multiple methods must be used such as an esophageal tube detector device, auscultation of breath sounds, absence of epigastric sounds, ETT misting, chest rise, and patient response (e.g., pulse oximetry, skin color, heart rate).
- If first intubation attempt fails, make an adjustment and try again:
 - Use a different laryngoscope blade size/type or a different ETT size
 - Apply external laryngeal manipulation: e.g. BURP maneuver
 - Gum elastic bougie
 - Change head positioning to achieve ear-to-sternal notch patient positioning (unless c-spine immobilization indicated)
 - It is important to secure the ETT and BIAD well; consider a C-collar to better maintain placement.
- If breath sounds are decreased on the left side after intubation, check your ETT depth & consider right main stem intubation.

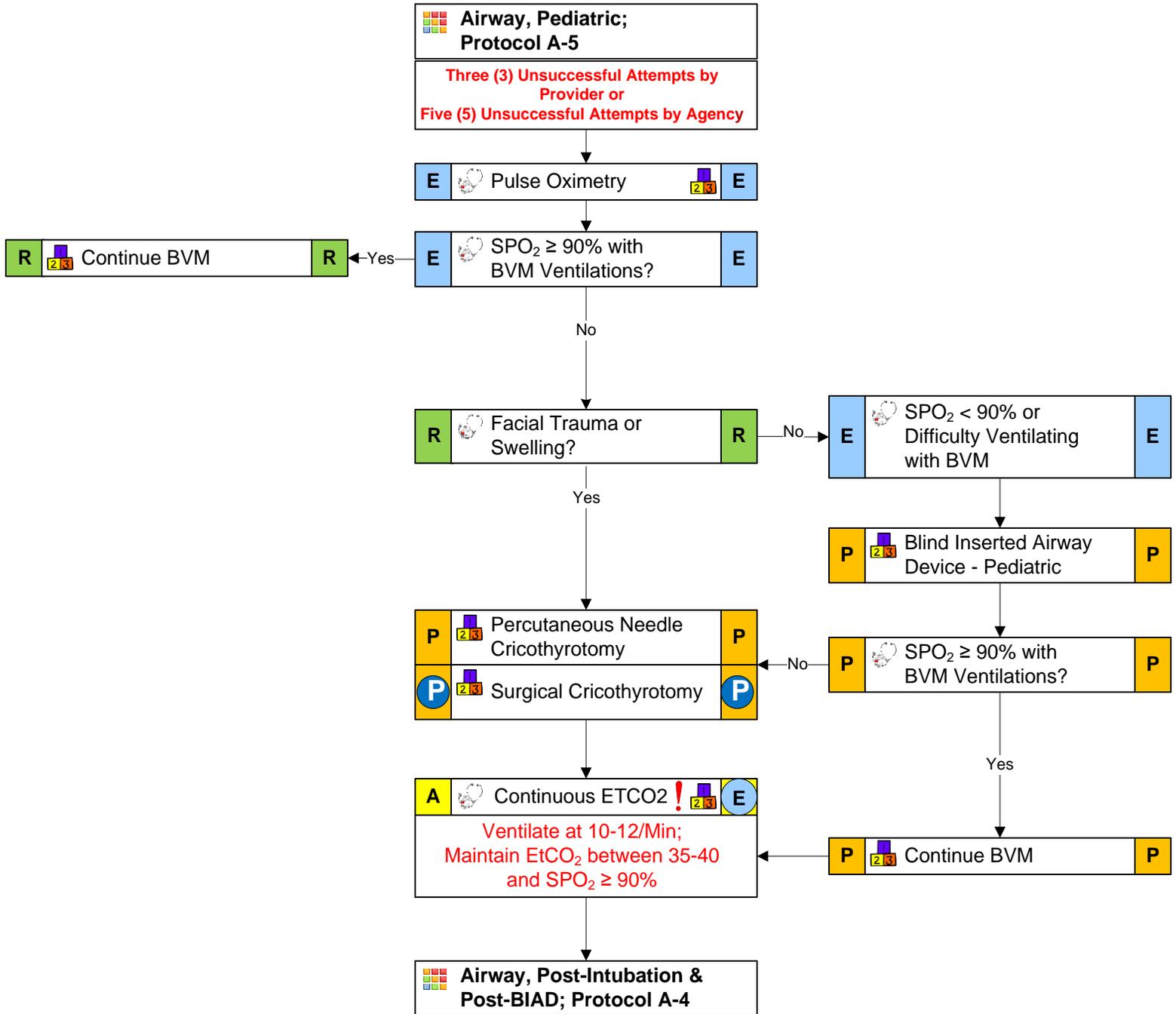
Performance Improvement Suggestions

- Documentation of pulse oximetry
- Documentation of ventilatory rate

Protocol A-5 – 2016 Airway, Pediatric

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Airway, Pediatric – Failed



Pearls

- Continuous EtCO₂ monitoring should be initiated in all patients with an ETT or BIAD.
- Notify receiving facility AS EARLY AS POSSIBLE when you encounter a difficult or failed airway.
- Initial ventilatory rate should be:
 - < 1 yr: 30/minute
 - 1-5 yrs: 25/minute
 - 6-12 yrs: 20/minute

Performance Improvement Suggestions

- Number of intubation attempts prior to BIAD or cricothyrotomy
- Documentation of pulse oximetry
- Cricothyrotomy success rate
- Incidence of inappropriate hyperventilation

Protocol A-6 – 2016 Airway, Pediatric – Failed

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Respiratory Distress, Adult



History

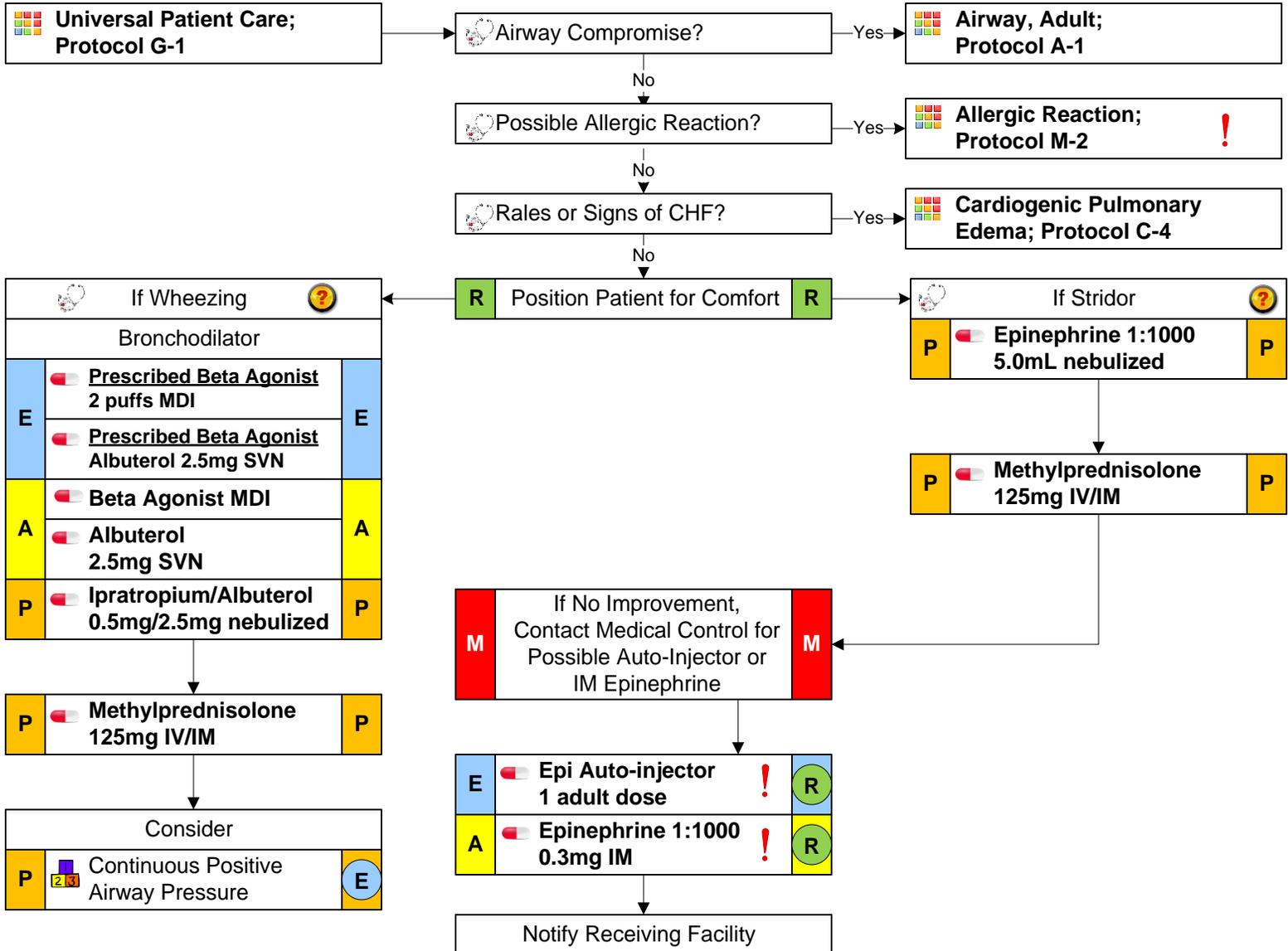
- Asthma, emphysema, congestive heart failure, COPD/chronic bronchitis
- Home treatment (oxygen, nebulizer)
- Medications
 - Theophylline
 - Steroids
 - Inhalers
- Toxin / smoke inhalation
- Trauma

Signs & Symptoms

- Shortness of breath
- Pursed lip breathing
- Decreased ability to speak
- Increased respiratory rate & effort
- Wheezing, rhonchi
- Use of accessory muscles
- Fever, cough
- Tachycardia
- Tripod position
- Sniffing position

Differential

- Asthma / Allergy / Anaphylaxis
- Foreign body / epiglottitis
- Aspiration
- COPD (emphysema, bronchitis)
- Pleural effusion
- Pneumothorax
- Pneumonia / pulmonary embolus
- Cardiac (MI or CHF)
- Pericardial tamponade
- Hyperventilation
- Toxin / smoke inhalation



Pearls

- A silent chest in respiratory distress is a sign of pre-respiratory arrest.
- When the patient presents with stridor, anticipate the patient having a difficult airway.
- Congestive heart failure may present with wheezing.

Performance Improvement Suggestions

- Documentation of reassessment after nebulizer treatment
- Documentation of pulse oximetry

Protocol A-7 – 2016 Respiratory Distress, Adult

! Required protocol for the use of Adrenaline or epi auto-injector designated as 4.OM

Respiratory Distress, Pediatric



History

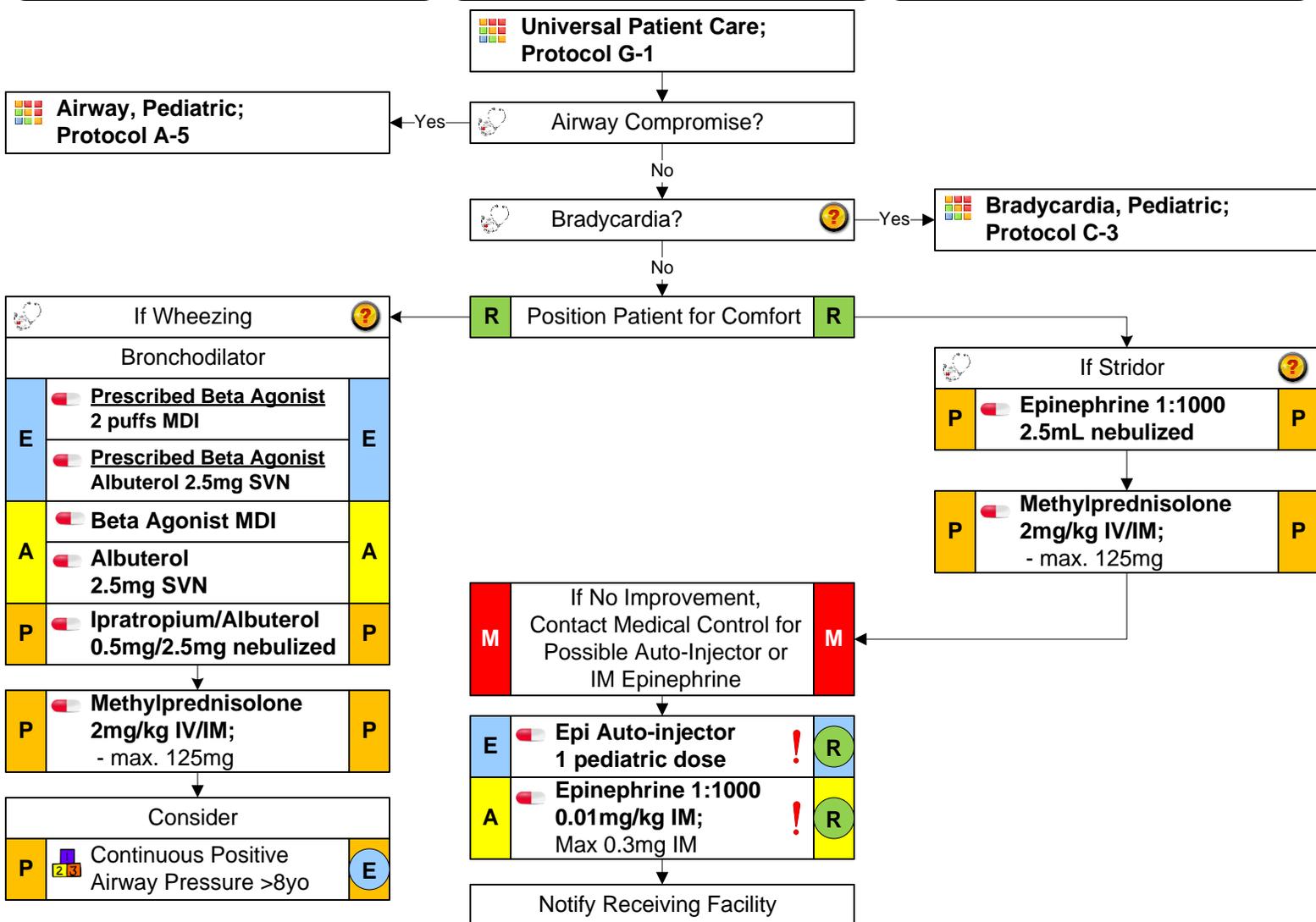
- Time of onset
- Possibility of foreign body in airway
- Past medical history
- Medications
- Fever or respiratory infection
- Ill siblings / family members
- History of trauma

Signs & Symptoms

- Wheezing or stridor
- Respiratory retractions
- Increased heart rate
- Altered level of consciousness
- Anxious appearance
- Nasal flaring
- Drooling
- Tripod or sniffing position

Differential

- Allergic reaction
- Asthma
- Foreign body airway obstruction
- Aspiration
- Infection
 - Pneumonia
 - Croup
 - Epiglottitis
- Congenital heart disease
- Inhaled toxin
- Pneumothorax



Pearls

- Never force a conscious child into a position; they will protect their airway by their body position.
- Avoid unnecessary agitation in a pediatric patient in respiratory distress; agitation (i.e. IV initiation) may worsen an airway obstruction.
- Airway control is the most important component of treatment for respiratory distress.
- Transmitted upper airway sounds may mimic wheezing and rhonchi.
- Bradycardia is defined as < 80 bpm for infants up to the age of 1 year; < 60 bpm for children ages 1-8.

Performance Improvement Suggestions

- Documentation of pulse oximetry
- Documentation of post-nebulizer treatment assessment

Protocol A-8 – 2016 Respiratory Arrest, Pediatric

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Asystole & Pulseless Electrical Activity



History

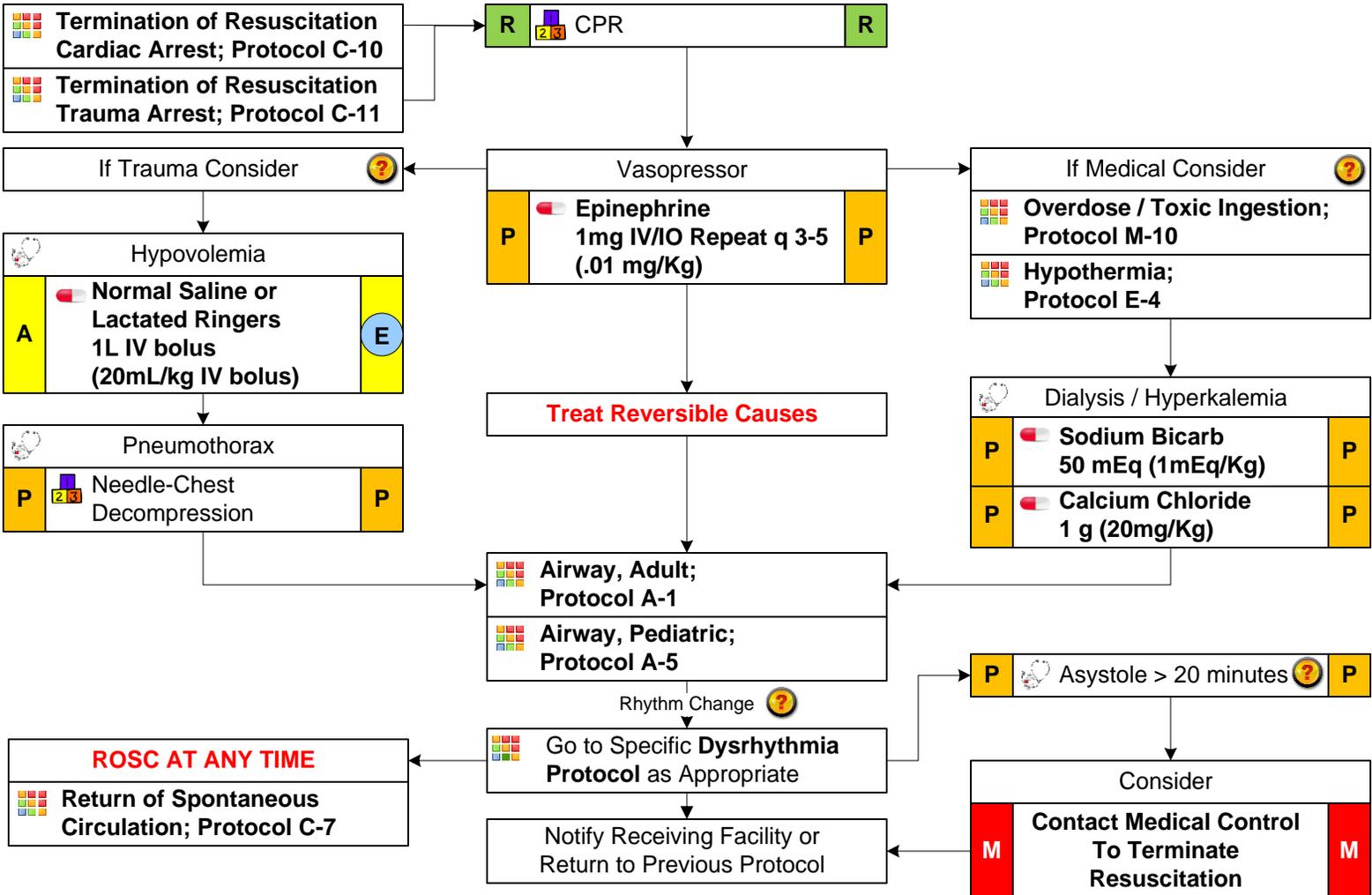
- Age
- Past medical history
- Medications
- Events leading to arrest
- End-stage renal disease
- Estimated "downtime"
- Suspected hypothermia
- Suspected overdose
- DNR or POST form

Signs & Symptoms

- Pulseless
- Apneic
- EKG rhythm
- No auscultated heart tones

Differential

- Medical or trauma
- Hypoxia
- Potassium levels (hypo- / hyper-)
- Drug overdose
- Acidosis
- Hypothermia
- Device / lead error
- Death



Pearls

- Always confirm asystole in more than one lead.
- Application of a mechanical CPR device should not delay the initiation of CPR or delay chest compressions.
- Airway management should not interrupt CPR. High quality CPR and defibrillation are the priority in resuscitation.
- Successful resuscitation of asystole or PEA requires the identification and correction of a reversible cause such as:
 - Acidosis
 - Hypoxia
 - Tension Pneumothorax
 - Hypovolemia
 - Tamponade
 - Hypothermia
 - Hyperkalemia
 - Overdose (narcotics, tricyclic antidepressants, calcium channel blockers, beta blockers)

Performance Improvement Suggestions

- Administration of Epinephrine every 3-5 minutes
- Documentation of EKG rhythm & rhythm strip present

Protocol C-1 – 2016 Asystole & Pulseless Electrical Activity

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Bradycardia, Adult



History

- Past medical history
- Medications
 - Beta-blockers
 - Calcium channel blockers
 - Clonidine
 - Digoxin
- Pacemaker
- Insecticide exposure
- Renal failure / dialysis

Signs & Symptoms

- Heart rate < 60 bpm
- Hypotension
- Acute altered mental status
- Chest pain
- Acute congestive heart failure
- Syncope
- Respiratory distress

Differential

- Acute myocardial infarction
- Hypoxia
- Pacemaker failure
- Hypothermia
- Sinus bradycardia
- Athleticism
- Elevated intracranial pressure (head injury, stroke)
- Spinal cord injury
- Heart block
- Overdose
- Hyperkalemia

Universal Patient Care; Protocol G-1

P Cardiac Monitor **P**

Heart Rate < 60 bpm causing:

- Hypotension
- Acute altered mental status
- Chest pain
- Acute CHF

P Monitor Heart Rate & Reassess **P**

P Cardiopulmonary Compromise? **P**

Consider
 Chest Pain: Cardiac & STEMI; Protocol C-5

STEMI

P 12-Lead EKG **E**

P **Atropine 0.5mg IV**
May repeat q 3-5 min;
Maximum 3mg **P**

P Heart Rate < 60 bpm? **P**

P Transcutaneous Pacing **P**

Dialysis / Hyperkalemia

P **Sodium Bicarb 50 mEq (1mEq/Kg)** **P**

P **Calcium Chloride 1 g (20mg/Kg)** **P**

P **Normal Saline or Lactated Ringers 500mL IV bolus** **P**

P **Dopamine 2-10mcg/kg/min IV**
 Epinephrine 2-10mcg/min IV **P**

Consider
 Overdose / Toxic Ingestion; Protocol M-10

Notify Receiving Facility

Pearls

- Treatment of bradycardia is based upon the presence or absence of symptoms. If the patient is symptomatic, treat them; if the patient is asymptomatic, monitor them.
- In a dialysis patient with a wide complex bradycardia, consider hyperkalemia. Contact medical control for possible treatment with Calcium and Sodium Bicarbonate.

Performance Improvement Suggestions

- Documentation of the presence / absence of overdose, toxic exposure, or dialysis
- Documentation of response to treatment
- Documentation of pacing energy level at capture

Protocol C-2 – 2016 Bradycardia, Adult

Bradycardia, Pediatric



History

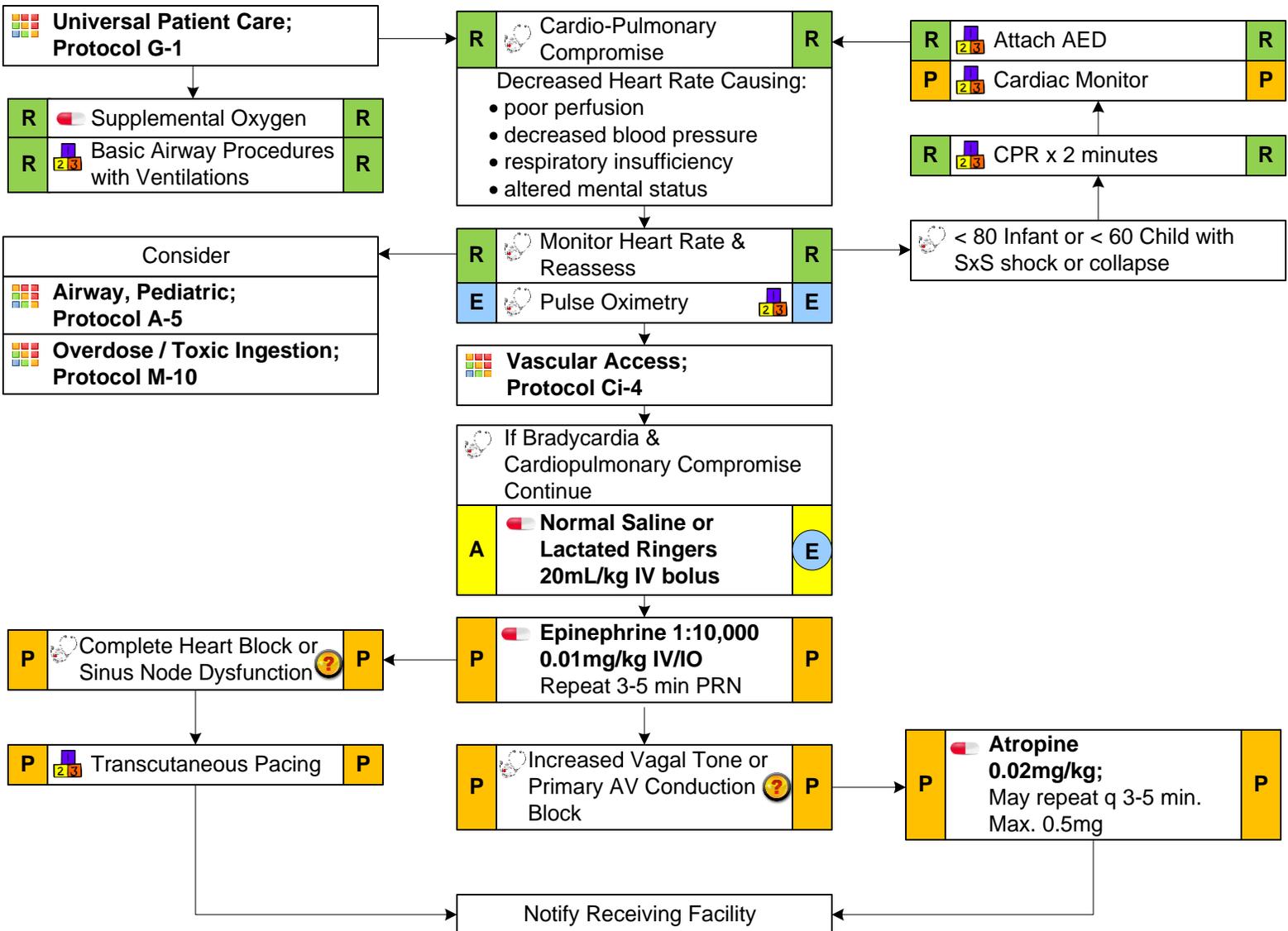
- Past medical history
- Respiratory distress or arrest
- Suspected choking victim
- Apnea
- Possible toxic or poison exposure
- Congenital disease
- Medication (maternal or infant)

Signs & Symptoms

- Decreased heart rate
- Delayed capillary refill / cyanosis
- Mottled, cool skin
- Hypotension
- Altered level of consciousness

Differential

- Respiratory failure:
 - Foreign body airway obstruction
 - Secretions
 - Infection (croup, epiglottitis)
- Hypovolemia (dehydration)
- Congenital heart disease
- Trauma
- Tension pneumothorax
- Hypothermia
- Toxin or medication reaction



Pearls

- Bradycardia in pediatric patients is usually due to airway problems and hypoxia.
- Use the Broselow-Luten tape for drug dosages and normal range of vital signs.

Performance Improvement Suggestions

- Documentation of the presence / absence of overdose or toxic exposure
- Documentation of response to treatment
- Documentation of pacing energy level at capture

Protocol C-3 – 2016 Bradycardia, Pediatric

Cardiogenic Pulmonary Edema



History

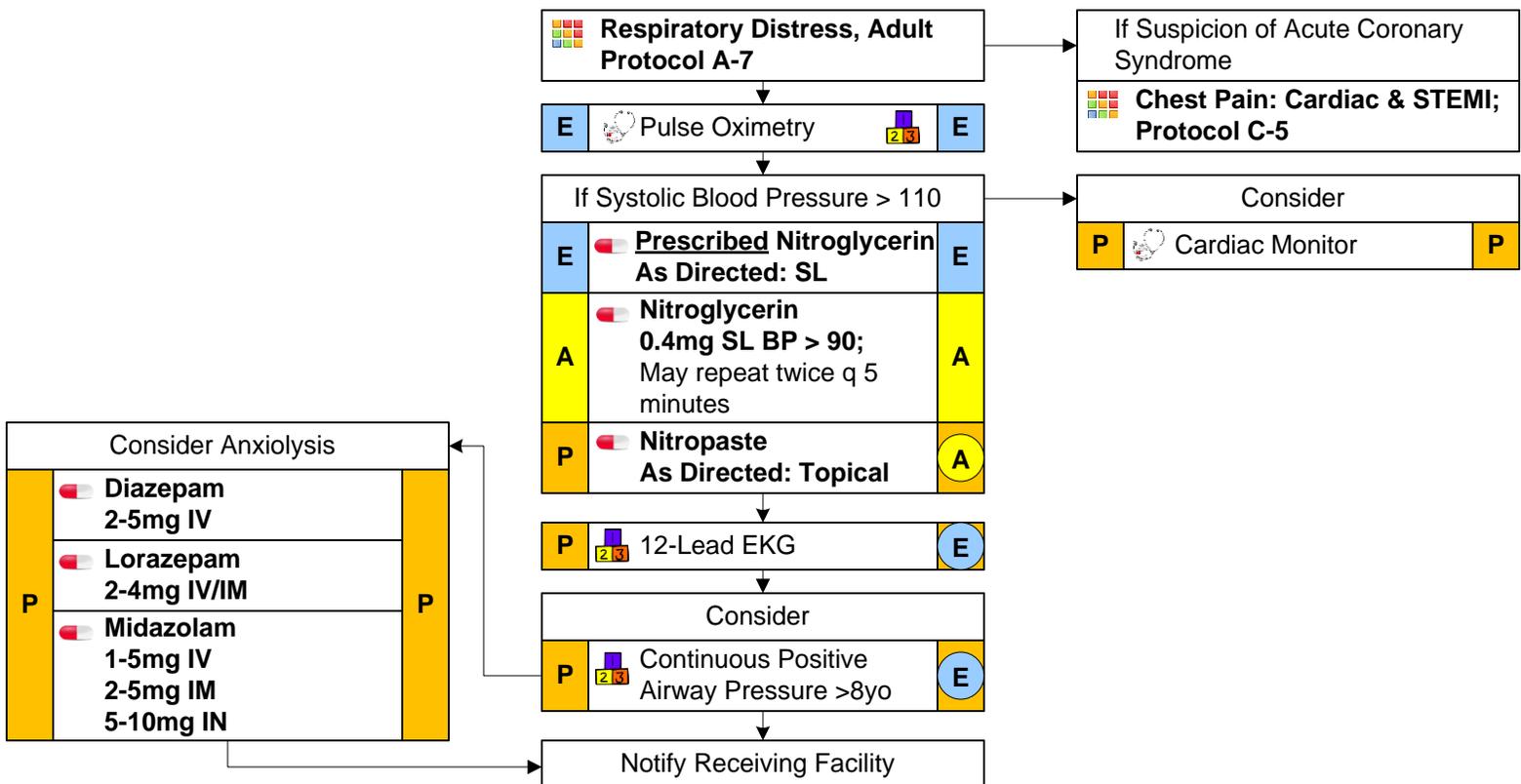
- History of congestive heart failure or pulmonary edema
- History of hypertension
- History of myocardial infarction
- Past medical history
- Medications
 - Lasix
 - Digoxin
- Viagra, Levitra, or Cialis use

Signs & Symptoms

- Respiratory distress
- Bilateral rales
- Orthopnea
- Jugular vein distention
- Pink, frothy sputum
- Peripheral edema
- Diaphoresis
- Hypotension / shock
- Chest pain
- Apprehension

Differential

- Myocardial infarction
- Congestive heart failure
- Asthma
- Anaphylaxis
- Aspiration
- COPD
- Pleural effusion
- Pneumonia
- Pulmonary embolus
- Pericardial tamponade
- Toxic exposure
- Non-cardiogenic pulmonary edema
- Renal failure / dialysis



Pearls

- Due to potential severe hypotension, avoid Nitroglycerin for any patient who has used Viagra or Levitra in the past 24 hours or Cialis in the past 36 hours.
- Even though it has historically been a mainstay of EMS treatment, Furosemide and narcotics have NOT been shown to improve the outcomes of prehospital patients with pulmonary edema and are no longer recommended for treatment.
- If a patient has taken Nitroglycerin without relief, consider the potency of the medication.
- Consider the risk of myocardial infarction in patients presenting with pulmonary edema; diabetics and geriatric patients often present with atypical pain or only have generalized complaints.
- Carefully monitor the level of consciousness, blood pressure, and respiratory status with any interventions used.
- Discontinue the use of sublingual Nitroglycerin if Nitropaste is used.
- Allow the patient to be in their position of comfort in order to maximize their breathing efforts.
- Remove Nitropaste if the patient's systolic blood pressure is < 100.
- Limit IV fluids in patients presenting with pulmonary edema.

Performance Improvement Suggestions

- Documentation of rate of intubation upon hospital arrival
- Documentation of blood pressure after each Nitroglycerin dose

Protocol C-4 – 2016 Cardiogenic Pulmonary Edema

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Chest Pain: Cardiac & STEMI



History

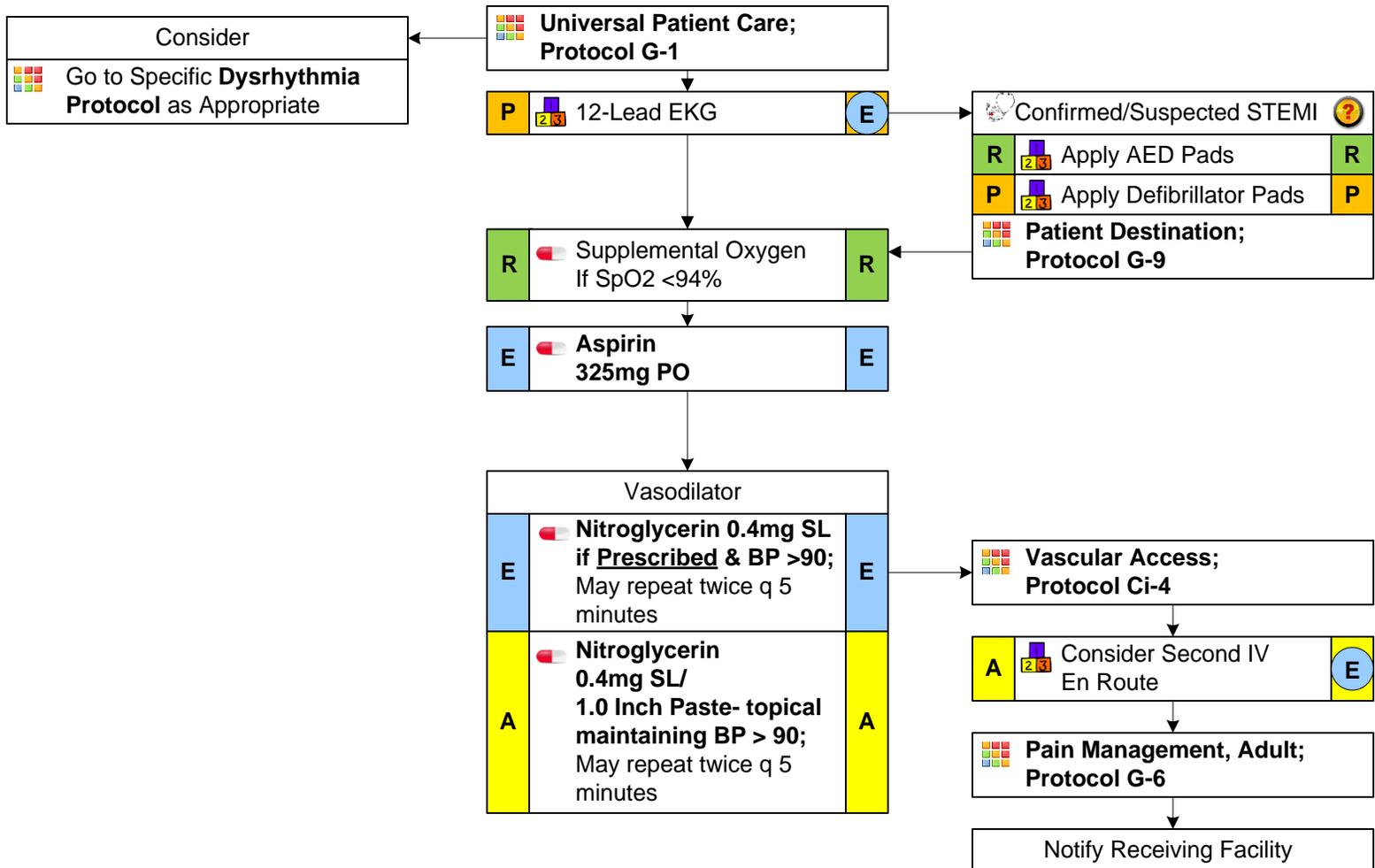
- Age
- Cardiac risk factors
- Recent physical exertion
- Palliation / provocation
- Quality (crampy, constant, sharp, dull, etc.)
- Region / radiation / referred
- Severity (1-10 pain scale)
- Time (onset, duration, repetition)

Signs & Symptoms

- Chest pain or discomfort
- Location (substernal, epigastric, arm, jaw, neck, shoulder)
- Pale, diaphoretic
- Shortness of breath
- Nausea / vomiting

Differential

- Angina versus myocardial infarction
- Pericarditis / pneumothorax
- Pulmonary embolism
- Asthma / COPD
- Aortic dissection or aneurysm
- GE reflux / hiatal hernia
- Esophageal spasm
- Chest wall injury or pain
- Pleural pain / pleurisy
- Cocaine or methamphetamine use



Pearls

- Due to potential severe hypotension, avoid Nitroglycerin for any patient with suspected inferior MI or who has used Viagra or Levitra in the past 24 hours or Cialis in the past 36 hours.
- Patients with ST-Elevation Myocardial Infarction (STEMI) should be transported to the appropriate destination based on the regional EMS STEMI Plan. Depending on local capabilities, the treatment and transport of STEMI patients may be optimized for either percutaneous coronary intervention (PCI) or thrombolytic therapy. The Plan may also incorporate air medical transport to ensure timely reperfusion.
- Diabetic, geriatric, and female patients may have atypical pain or only generalized complaints such as weakness.
- Notify the receiving facility as soon as feasible after STEMI identification.
- Use Morphine with caution. Titrate oxygen to maintain SpO2 at 94% or higher.

Performance Improvement Suggestions

- Documentation of time to first 12-lead EKG
- Accuracy of STEMI identification on 12-lead EKG

Protocol C-5 – 2016 Chest Pain: Cardiac and STEMI

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Pulseless Arrest, Pediatric



History

- Past medical history
- Time of arrest
- Medications
- Possibility of foreign body in airway
- Hypothermia

Signs & Symptoms

- Unresponsive
- Apneic
- Pulseless

Differential

- Respiratory failure:
 - Foreign body airway obstruction
 - Secretions
 - Infection (croup, epiglottitis)
- Congenital heart disease
- Non-accidental trauma
- Child abuse

Termination of Resuscitation Cardiac Arrest; Protocol C-10

R	CPR	R
R	Automated Defibrillation	R
P	Cardiac Monitor	P

Shock Advised?
Ventricular Fibrillation / Tachycardia

No → Asystole / PEA

Yes ↓

R	Defibrillate: 1x @ AED Peds Setting	R
P	Defibrillate: 1x @ 2J/Kg	P
R	CPR x 2 minutes	R

Vascular Access; Protocol Ci-4		
P	Epinephrine 1: 10,000 0.01mg/kg IV/IO; max 1mg May repeat q 3-5 min.	P
R	CPR x 2 minutes	R

Airway, Pediatric; Protocol A-5

Vascular Access; Protocol Ci-4

P	Defibrillate: 1x @ 4J/Kg	P
P	Epinephrine 1: 10,000 0.01mg/kg IV/IO; max 1mg May repeat q 3-5 min.	P
R	CPR x 2 minutes	R

Treat Reversible Causes

P	Asystole in 3 Leads	P
P	Asystole > 20 minutes	P

P	Amiodarone 5mg/kg IV/IO; max 300mg May repeat x2	P
---	--	---

P	Defibrillate: 1x @ > 4J/Kg max 10J/Kg or adult dose, whichever lower	P
---	--	---

R	Chest Compressions by EMS 20 Minutes; BVM AED Advises No Shock	R
---	--	---

ROSC AT ANY TIME

Return of Spontaneous Circulation; Protocol C-7

Rhythm Change
 Go to Specific **Dysrhythmia Protocol** as Appropriate

Termination of Resuscitation Cardiac Arrest; Protocol C-10

Pearls

- AEDs may have a pediatric attenuating system that should be used for infants and children up to 25kg (approximately 8 years of age). If an attenuator is not available, use an AED with standard electrodes.
- For manual defibrillators, use the largest paddles or self-adhering electrodes that will fit on the chest without touching each other. When possible, leave approximately 3cm between the paddles or electrodes.
- Monophasic and biphasic waveform defibrillators should use the same energy levels noted above.
- Successful resuscitation of asystole or PEA requires the identification and correction of a reversible cause such as:
 - Acidosis
 - Hypovolemia
 - Hyperkalemia
 - Hypoxia
 - Tamponade
 - Overdose (narcotics, tricyclic antidepressants, calcium channel blockers, beta blockers)
 - Tension Pneumothorax
 - Hypothermia

Performance Improvement Suggestions

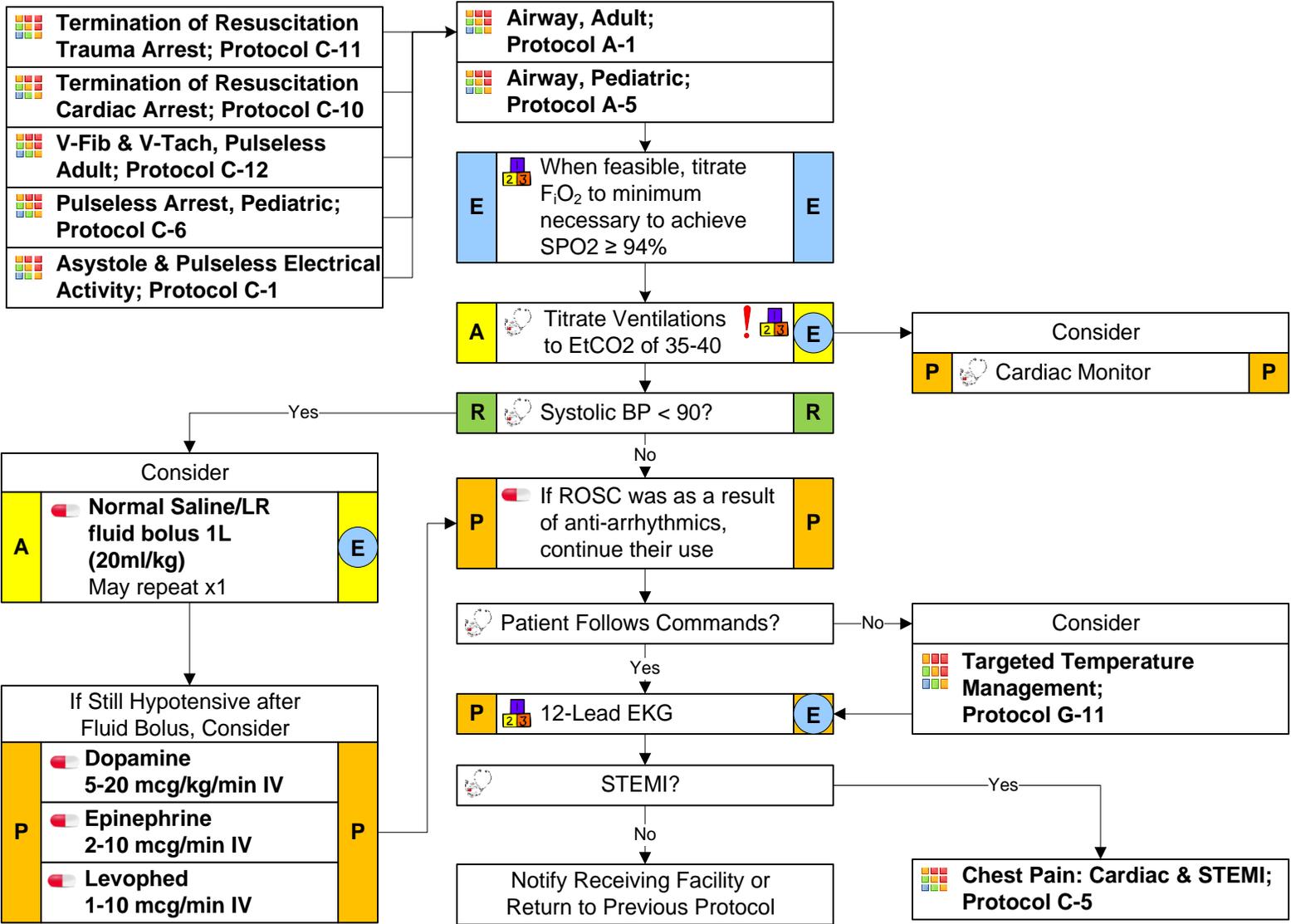
- Documentation of timeline: dispatch, patient contact, decision to transport, and termination of resuscitation (if applicable)

Protocol C-6 – 2016 Pulseless Arrest, Pediatric

Return of Spontaneous Circulation



History <ul style="list-style-type: none"> Respiratory arrest Cardiac arrest 	Signs & Symptoms <ul style="list-style-type: none"> Return of pulse 	Differential <ul style="list-style-type: none"> Continue to address specific differentials associated with the original dysrhythmia
---	---	---



- Pearls**
- Hyperventilation is a significant cause of hypotension and recurrence of cardiac arrest in the post-resuscitation phase and must be avoided!
 - The condition of post-resuscitation patients fluctuates rapidly and continuously; they will require close monitoring. Stabilize the patient prior to transport. Vital signs should be checked at least every five minutes.
 - Common causes of post-resuscitation hypotension include hyperventilation, hypovolemia, pneumothorax, and medication reaction(s) to ALS drugs.
 - Documentation of initial rhythm, witnessed arrest, bystander CPR and total down time of patient may facilitate receiving facility in making treatment decisions.

- Performance Improvement Suggestions**
- Documentation of vital signs every 5 minutes
 - Documentation of 12-lead EKG, if obtained
 - Documentation of treatment of hypotension

Protocol C-7 – 2016 Return of Spontaneous Circulation

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Tachycardia With Pulse, Adult



History

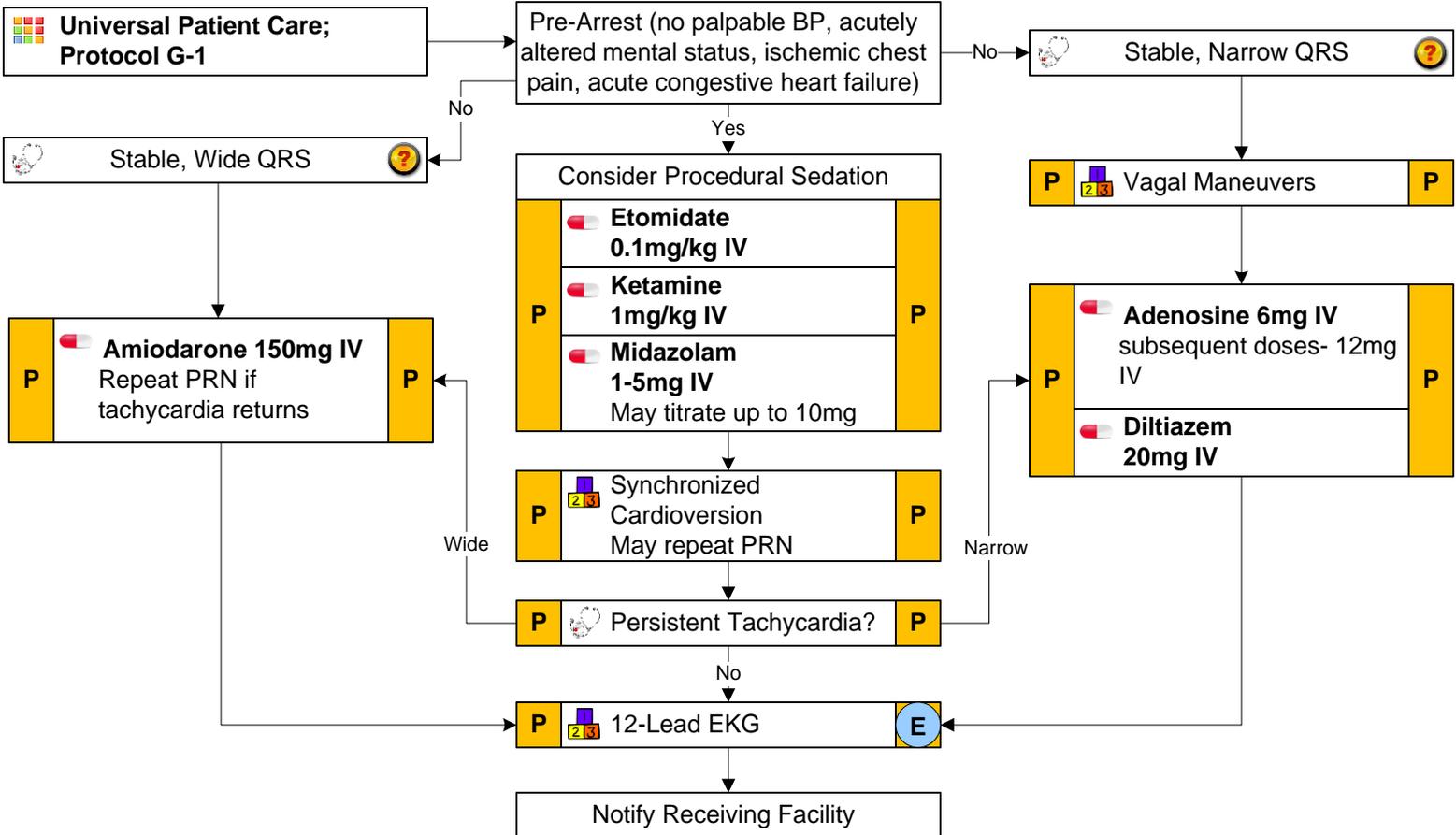
- Stimulant use
 - Medications
 - Diet (caffeine, energy drinks)
 - Drugs (nicotine, cocaine)
- Previous myocardial infarction / stents/coronary artery bypass grafting
- History of palpitations / heart racing / atrial fibrillation / supraventricular tachycardia / Wolff-Parkinson-White syndrome
- Pacemaker / Automatic Implantable Cardioverter Defibrillator
- Syncope / near syncope
- Cardiomyopathy / congestive heart failure

Signs & Symptoms

- Heart rate > 150/minute
- QRS duration
- Lightheadedness
- Chest pain
- Dyspnea

Differential

- Sinus tachycardia
- Ventricular tachycardia
- Supraventricular tachycardia
 - Atrial fibrillation / flutter
 - Wolff-Parkinson-White syndrome
 - Multifocal atrial tachycardia
- Myocardial infarction
- Electrolyte imbalance
- Hypoxia / pulmonary embolism
- Hypovolemia / anemia
- Drug effect / overdose
- Thyroid storm



Pearls

- Apply an AED if the patient becomes pulseless or unconscious.
- If the patient has a history of Wolff-Parkinson-White (WPW), **DO NOT** administer Adenosine or a calcium channel blocker (e.g. Diltiazem) without first contacting Medical Control.
- Adenosine may not be effective in atrial fibrillation / flutter, yet it is not harmful.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Polymorphic ventricular tachycardia (Torsades de Pointes) may benefit from Magnesium Sulfate – contact Medical Control first.

Performance Improvement Suggestions

- Documentation of initial rhythm with a rhythm strip
- Documentation of response to treatment

Protocol C-8 – 2016 Tachycardia With Pulse, Adult

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Tachycardia With Pulse, Pediatric



History

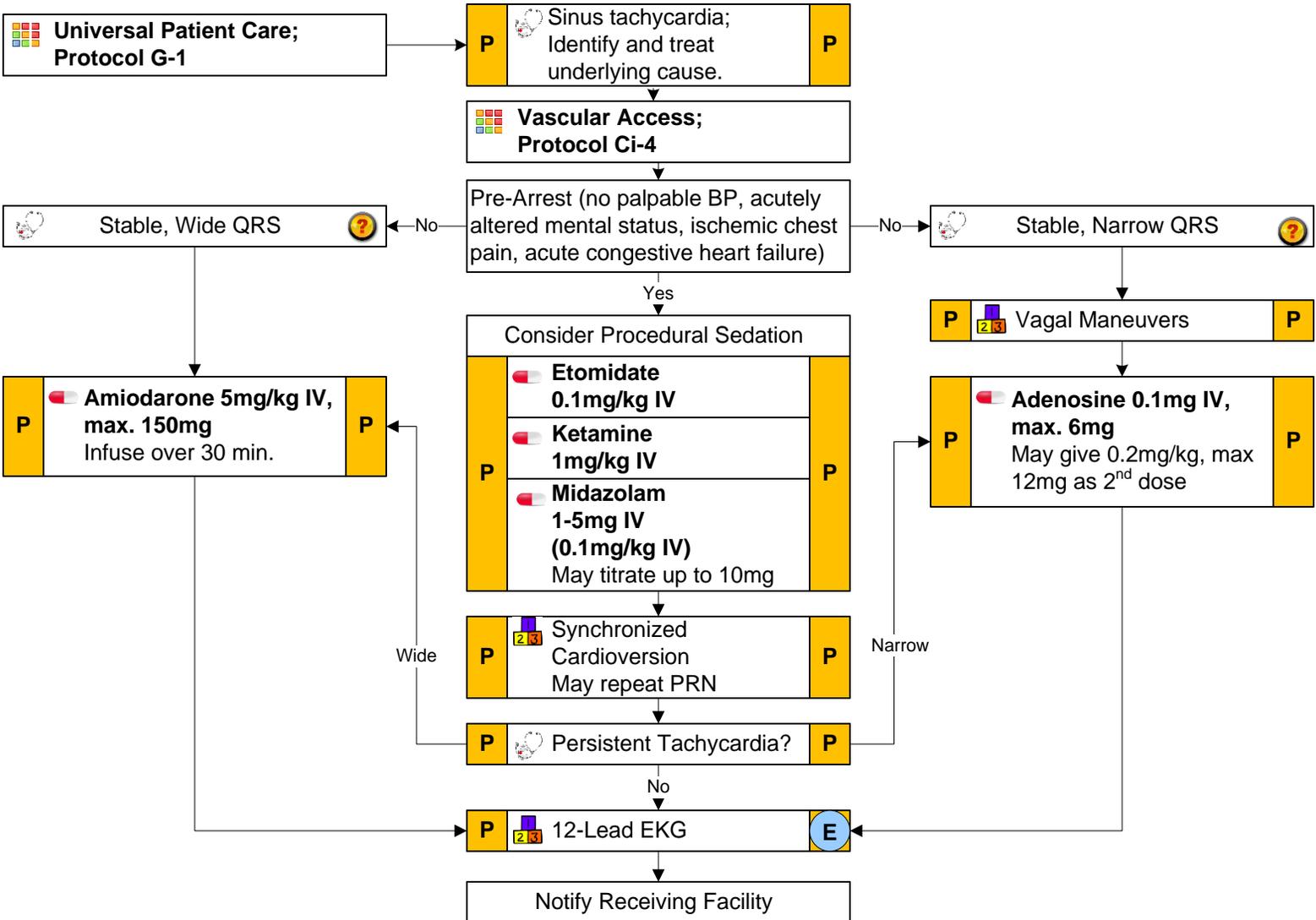
- Stimulants
 - Medications
 - Diet (caffeine, energy drinks)
 - Drugs (nicotine, cocaine)
- History of heart disease / murmur
- Syncope / near syncope
- Fever
- Vomiting / diarrhea

Signs and Symptoms

- Infant HR ≥ 220 /min
- Child HR ≥ 180 /min
- QRS duration
- Lightheadedness
- Tachypnea
- Poor perfusion

Differential

- Sinus tachycardia
- Supraventricular tachycardia
 - Atrial fib / flutter
 - SVT / WPW / MAT
- Ventricular tachycardia
- Electrolyte imbalance
- Hypoxia / PE / pneumothorax
- Hypovolemia or anemia
- Drug effect / overdose
- Fever / infection / sepsis
- Anxiety / pain / emotional stress



Pearls

- Apply an AED if patient becomes pulseless or unconscious.
- 12 lead ECG may assist with rhythm identification but should not delay treatment.
- If patient has history of Wolfe Parkinson White (WPW), DO NOT administer adenosine without contacting Medical Control.
- Document all rhythm changes with monitor strips and obtain monitor strips with each therapeutic intervention.
- Polymorphic ventricular tachycardia (Torsades de Pointes) may benefit from magnesium sulfate - contact Medical Control first.

Performance Improvement Suggestions

- Documentation of initial rhythm with a rhythm strip
- Documentation of response to treatment

Protocol C-9 – 2016 Tachycardia with Pulse, Pediatric

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Termination of Resuscitation: Cardiac Arrest



History

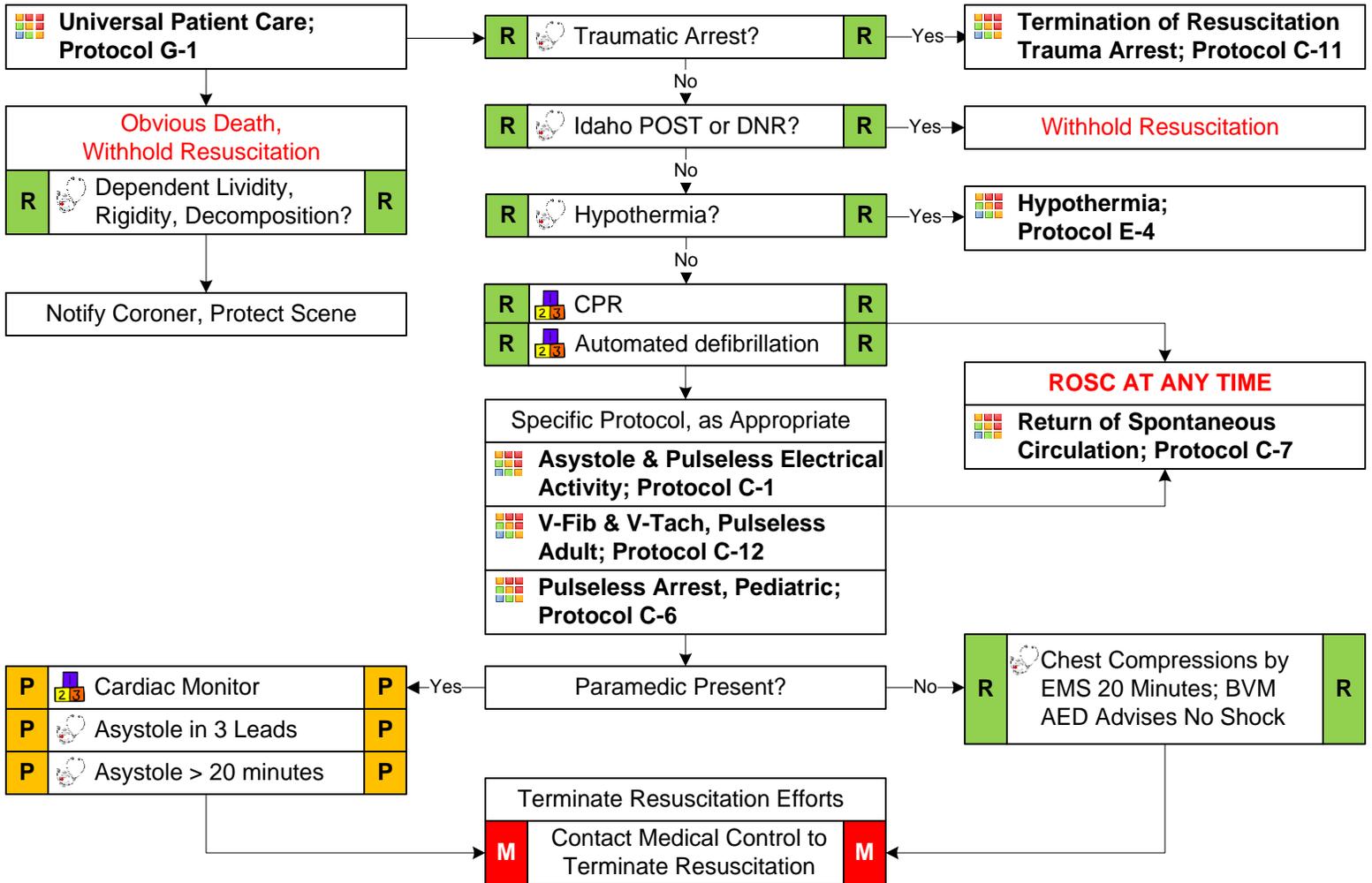
- Events leading up to arrest
- Estimated down-time
- Past medical history & medications
- Existence of terminal illness
- DNR, POST, Living Will, Durable Power of Attorney for Health Care
- Bystander CPR

Signs & Symptoms

- Unresponsive
- Apneic
- Pulselessness

Differential

- Medical versus trauma
- Ventricular fibrillation versus pulseless ventricular tachycardia
- Asystole
- Pulseless electrical activity (PEA)



Pearls

- During treatment of traumatic arrest patients, neither rescuers nor bystanders should be at risk.
- The decision to transport is influenced by the mechanism of injury, proximity to the hospital, and the patient's age.
- Manual chest compressions in a moving ambulance are generally ineffective and potentially hazardous to the rescuer(s).
- Special circumstances (i.e. family needs, victim location, maternal arrest) may necessitate transport without the return of spontaneous circulation (ROSC).

Performance Improvement Suggestions

- If resuscitation efforts are terminated, documentation of all required criteria
- Documentation of the timeline: dispatch, patient contact, and decision to terminate resuscitation
- Documentation of asystole confirmed in multiple leads
- Documentation of the application of an AED

Protocol C-10 – 2016 Termination of Resuscitation: Cardiac Arrest

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Termination of Resuscitation: Trauma Arrest



History

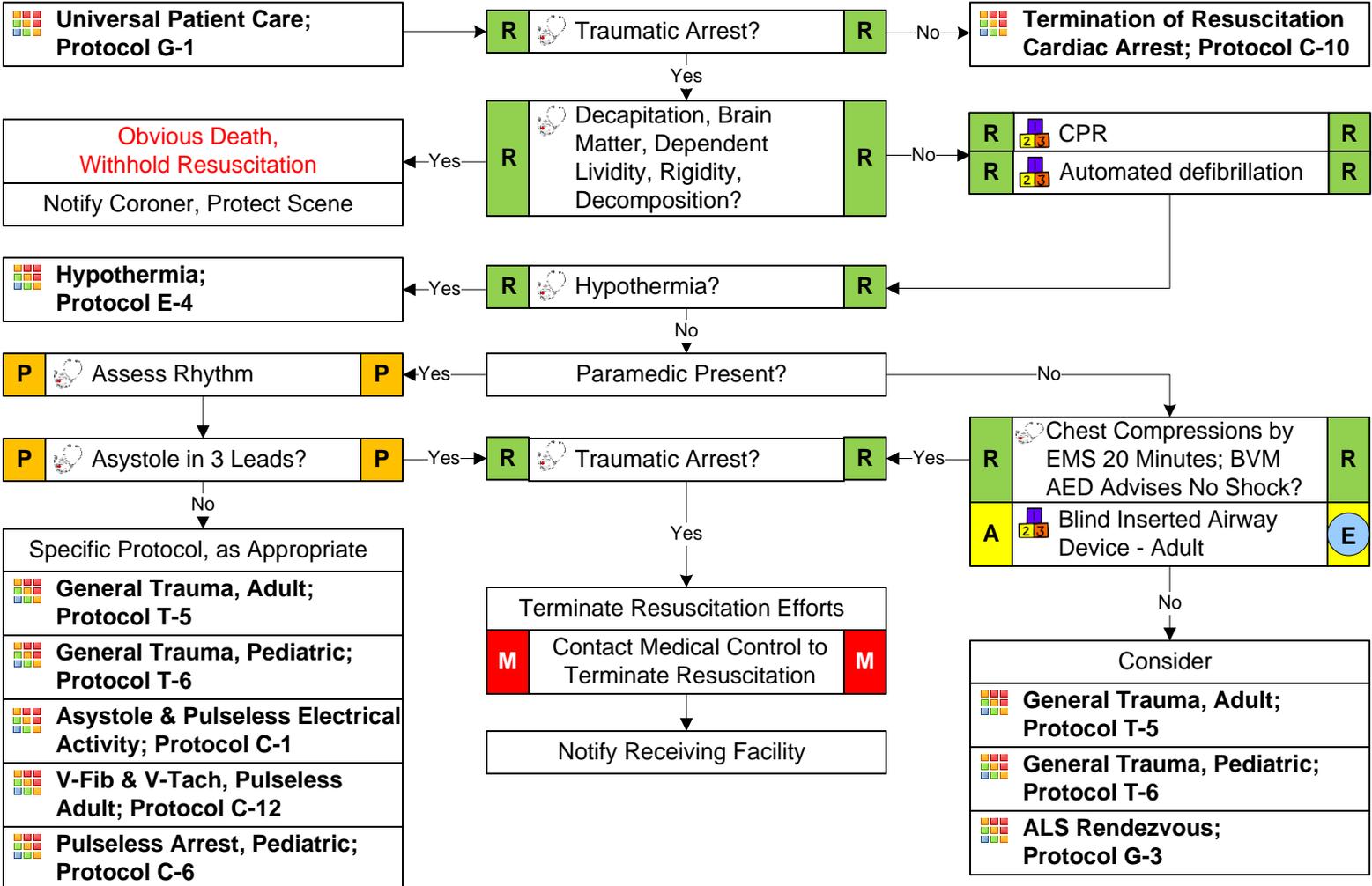
- Events leading up to arrest
- Estimated down-time
- Past medical history
- Medications
- Existence of terminal illness
- DNR, POST, Living Will, Durable Power of Attorney for Health Care
- Bystander CPR

Signs & Symptoms

- Unresponsive
- Apneic
- Pulseless

Differential

- Medical versus trauma
- Ventricular fibrillation versus pulseless ventricular tachycardia
- Asystole
- Pulseless electrical activity (PEA)



Pearls

- Survival from traumatic arrest is rare.
- During treatment of traumatic arrest patients, neither rescuers nor bystanders should be at risk.
- The decision to transport is influenced by the mechanism of injury, proximity to the hospital, and the patient's age.
- Manual chest compressions in a moving ambulance are generally ineffective and potentially hazardous to the rescuer(s).
- Special circumstances (i.e. family needs, victim location, maternal arrest) may necessitate transport without the return of spontaneous circulation (ROSC).

Performance Improvement Suggestions

- If resuscitation efforts are terminated, documentation of all required criteria
- Documentation of the timeline: dispatch, patient contact, and decision to terminate resuscitation
- Documentation of asystole confirmed in multiple leads
- Documentation of the application of an AED

Protocol C-11 – 2016 Termination of Resuscitation: Trauma Arrest

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Ventricular Fibrillation/Tachycardia Pulseless, Adult



History

- Past medical history
- Time of arrest
- Medications
- Possibility of foreign body in airway
- Hypothermia
- Electrocutation
- Drowning
- DNR

Signs & Symptoms

- Unresponsive
- Apneic
- Pulseless

Differential

- Medical vs. Trauma
- Artifact or monitor failure
- Asystole

Termination of Resuscitation Cardiac Arrest; Protocol C-10

R	CPR	R
R	Attach AED	R
P	Cardiac Monitor	P

Shockable Rhythm?
Ventricular Fibrillation/Tachycardia

R	Automated Defibrillation	R
P	Manual Defibrillation	P
R	CPR x 2 minutes	R

Epinephrine 1mg IV/IO;
repeat q 3-5 min.

Shockable Rhythm?

No		
Yes	Automated Defibrillation	R
	Manual Defibrillation	P
	CPR x 2 minutes	R

Amiodarone
300mg IV/IO;
Repeat 150 mg

Lidocaine
1.5mg/kg IV
Repeat x1 q 5 min

Notify Receiving Facility

Repeat if
Unchanged

Consider

Airway, Adult;
Protocol A-1

Vascular Access;
Protocol Ci-4

Return of Spontaneous
Circulation; Protocol C-7

Consider

ROSC AT ANY TIME

Termination of Resuscitation
Cardiac Arrest; Protocol C-10

Go to Specific Dysrhythmia
Protocol as Appropriate

Pearls

- For manual defibrillators, use the largest paddles or self-adhering electrodes that will fit on the chest without touching each other. When possible, leave approximately 3cm between the paddles or electrodes.
- Application of a mechanical CPR device should not delay the initiation of CPR or delay chest compressions.

Performance Improvement Suggestions

- Documentation of timeline: dispatch, patient contact, decision to transport, and termination of resuscitation (if applicable)

Protocol C-12 – 2016 Ventricular Fibrillation/Tachycardia Pulseless, Adult

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Hypertension



History

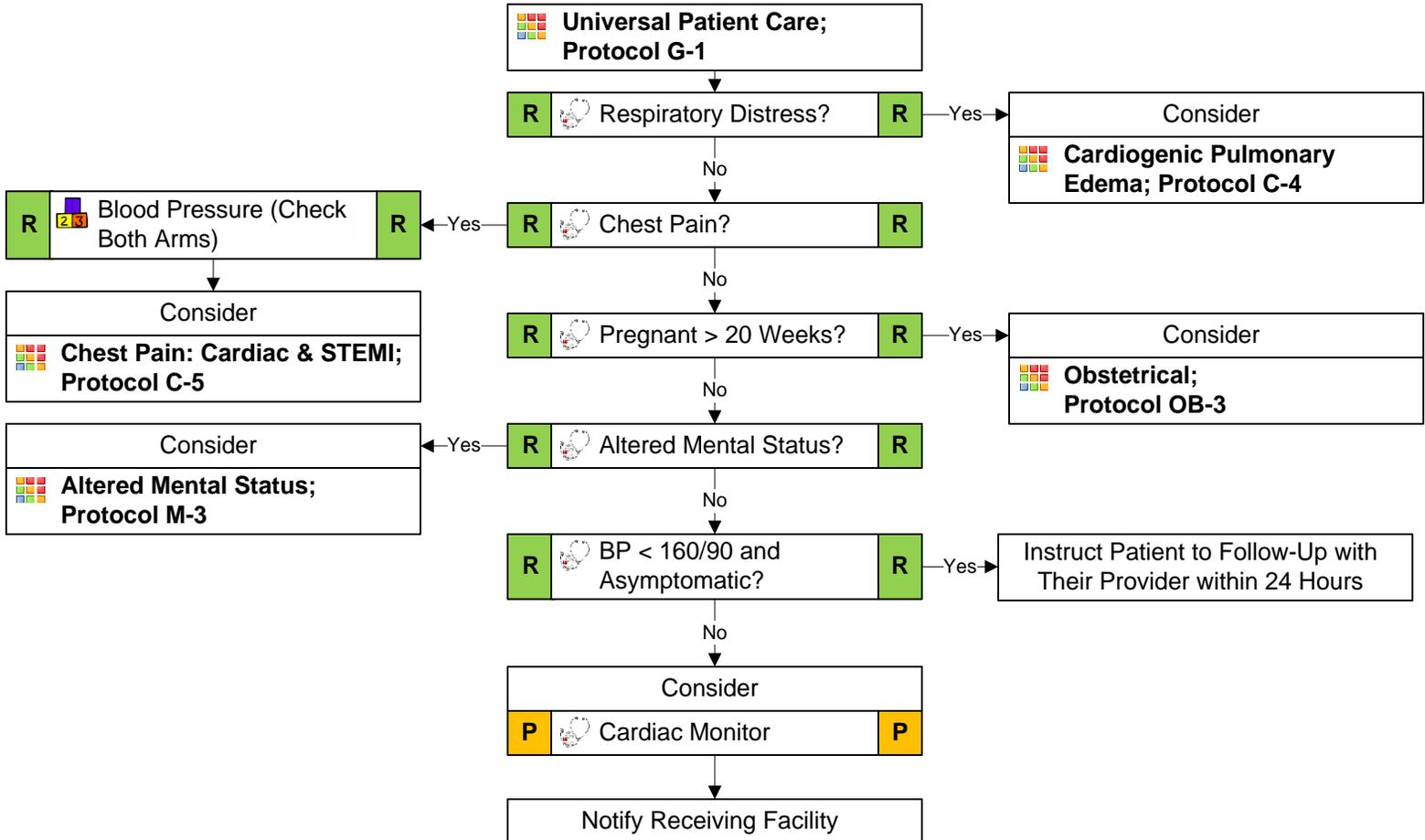
- Documented hypertension
- Related diseases:
 - Diabetes
 - CVA
 - Renal Failure
 - Cardiac disease
- Pacemaker
- Insecticide exposure
- Renal failure / dialysis

Signs & Symptoms

- Headache
- Epistaxis
- Blurred vision
- Dizziness
- Confusion
- Chest pain
- Shortness of breath
- Focal neurological deficit

Differential

- Hypertensive encephalopathy
- Primary CNS injury (Cushing's response = bradycardia with hypertension)
- Myocardial infarction
- Aortic dissection
- Pre-eclampsia / eclampsia
- Renal failure



Pearls

- Symptomatic hypertension is typically revealed through end-organ damage to the cardiac, CNS, or renal systems (e.g. congestive heart failure, stroke, renal failure).
- Aortic dissection classically presents with the sudden onset of tearing chest pain that radiates to the back with unequal upper-extremity blood pressures.

Performance Improvement Suggestions

- Documentation of blood pressure in both arms when chest pain is present
- Documentation of pregnancy status and gestation

Protocol Ci-1 – 2016 Hypertension

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Hypotension/Shock, Adult



History

- Blood loss (vaginal / gastrointestinal bleeding / AAA / ectopic)
- Fluid loss (vomiting, diarrhea, fever)
- Infection
- Cardiac history (MI, CHF)
- Medications
- Allergic reaction
- Pregnancy
- History of poor oral intake
- Trauma history
- Age

Signs and Symptoms

- Restlessness, confusion
- Weakness, lightheadedness
- Weak, rapid pulse
- Pale, cool, clammy skin
- Delayed capillary refill
- Coffee-ground emesis
- Tarry stools
- Declining BP
- Decreased pulse pressure

Differential

- Shock
 - Hypovolemic
 - Cardiogenic
 - Septic
 - Neurogenic
 - Anaphylactic
- Ectopic pregnancy
- Dysrhythmias
- Pulmonary embolus
- Tension pneumothorax
- Medication effect / overdose
- Vasovagal
- Physiologic (pregnancy)

Universal Patient Care; Protocol G-1

R Position patient supine; Keep patient warm & dry **R**

R Supplemental Oxygen **R**

Vascular Access; Protocol Ci-4

Determine Cause

Trauma

Cardiac

General Trauma, Adult; Protocol T-5

A Normal Saline/LR fluid bolus 1L IV/IO May repeat x1 **E**

Treatment per appropriate Cardiac Protocol

No Rales Present?
A Normal Saline/LR fluid bolus (250-500 mL) **E**

If Still Hypotensive after Fluid Bolus, Consider
P Dopamine 5-20 mcg/kg/min IV **P**
 Epinephrine 2-10 mcg/min IV

Notify Receiving Facility

Pearls

- Consider smaller fluid bolus (250-500 mL) in the elderly, who are at increased risk of tidal overload.
- Anaphylactic shock may not always present with rash or wheezing.
- Shock is defined as decreased end-organ perfusion; Hypotension is not required for the assessment of shock.
- Trendelenberg & leg elevation are ineffective treatments for shock.
- Treat shock with SHOCK:
Secure the airway. Heat conservation. Oxygenate the blood. Core perfusion improvements. Keep field time short.
- If shock is from hemorrhage target MAP of 70

Performance Improvement Suggestions

- Patient assessment after each fluid bolus
- Documentation of lung sounds

Protocol Ci-2 – 2016 Hypotension/Shock, Adult

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Hypotension/Shock, Pediatric



History

- Blood loss
- Fluid loss (vomiting, diarrhea, fever)
- Infection
- Cardiac history (Congenital, CHF)
- Medications
- Allergic reaction
- History of poor oral intake
- Trauma history
- Age

Signs and Symptoms

- Restlessness, confusion
- Weakness, lightheadedness
- Weak, rapid pulse
- Pale, cool, clammy skin
- Delayed core capillary refill
- Declining BP
- Lethargy
- Flat/depressed Fontanels
- Decreased Blood Pressure

Differential

- Trauma
- Infection
- Dehydration (Vomiting, Diarrhea, Fever)
- Congenital Heart Disease
- Medication or Toxin
- Allergic Reaction

Universal Patient Care; Protocol G-1

R Position patient supine; Keep patient warm & dry **R**

R Supplemental Oxygen **R**

Vascular Access; Protocol Ci-4

Determine Cause

Trauma

Cardiac

General Trauma, Pediatric; Protocol T-6

Unknown

Treatment per appropriate Cardiac Protocol

A **Normal Saline fluid bolus 20ml/kg Max. 1L May repeat x1** **E**

No Rales Present?

If Still Hypotensive after Fluid Bolus, Consider

P **Dopamine 5-20 mcg/kg/min IV** **P**

Epinephrine 2-10 mcg/min IV

A **Normal Saline fluid bolus (250-500 mL)** **E**

Notify Receiving Facility

Pearls

- Consider performing orthostatic vital signs on patients in non-trauma situations if suspected blood or fluid loss.
- Anaphylactic shock may not always present with rash or wheezing.
- Shock is defined as decreased end-organ perfusion; Hypotension is not required for the assessment of shock.
- Differentiate dizziness, is it vertigo or pre-syncope (lightheadedness)?
- Trendelenberg & leg elevation are ineffective treatments for shock.
- Treat shock with SHOCK: Secure the airway. Heat conservation. Oxygenate the blood. Core perfusion improvements. KeeP field time short.

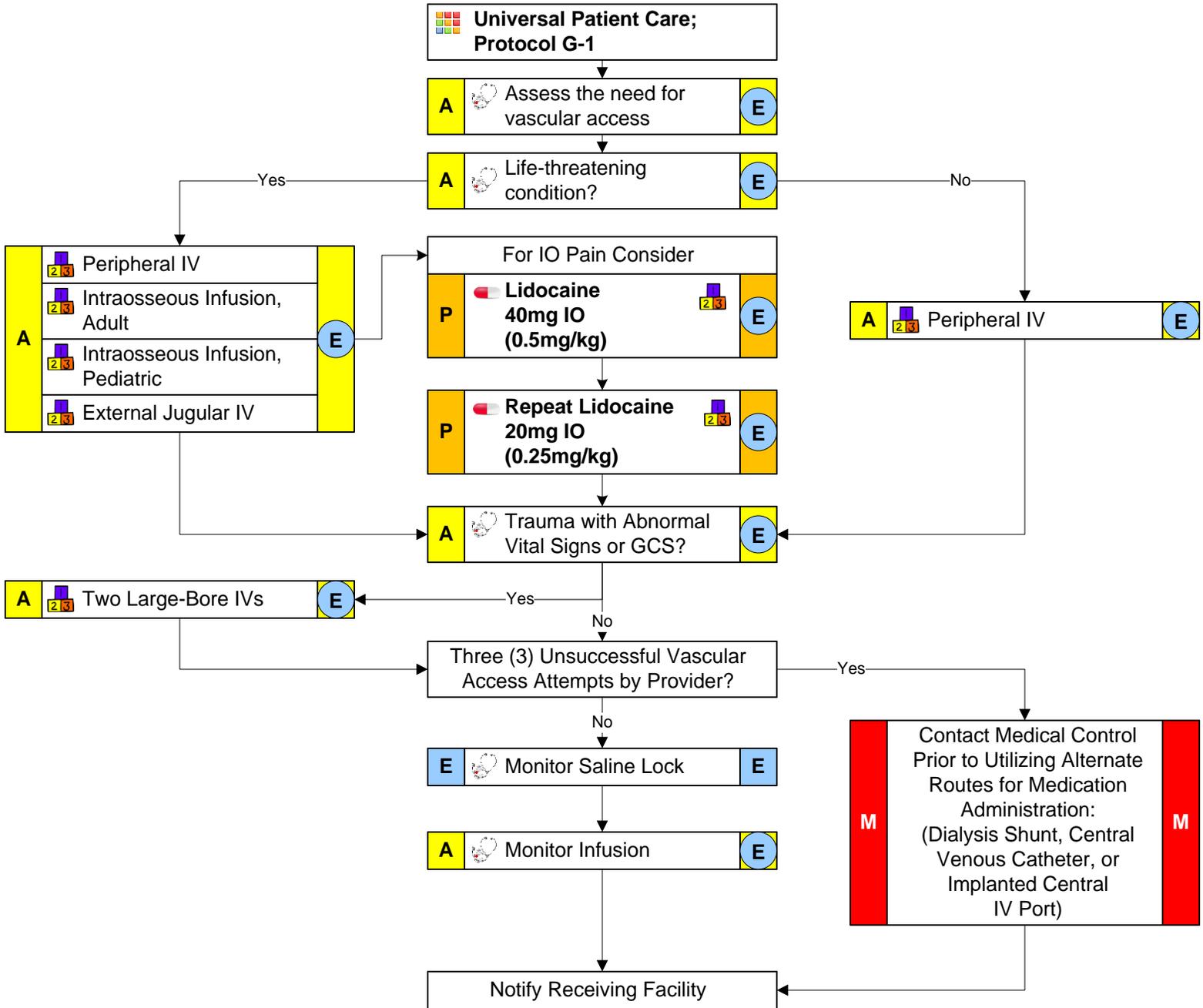
Performance Improvement Suggestions

- Patient assessment after each fluid bolus
- Documentation of lung sounds

Protocol Ci-3 – 2016 Hypotension/Shock, Pediatric

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Vascular Access



Pearls

- In the setting of cardiac arrest, any preexisting dialysis shunt or external central venous catheters may be used.
- Any prehospital fluids or medications approved for IV use may be given through an intraosseous (IO) infusion.
- All IV rates should be a KVO (minimal rate to keep the vein open) unless administering a fluid bolus.
- External jugular and IO lines may be attempted initially in life-threatening events where no obvious peripheral sites are noted.
- Any venous catheter that has already been accessed prior to EMS arrival may be used.
- Upper extremity IV sites are preferable to lower extremity sites.
- Lower extremity IV sites are discouraged in patients with vascular disease or diabetes.
- In post-mastectomy patients, avoid IV initiations, blood draws, injections, or taking a blood pressure in the arm on the affected side.

Performance Improvement Suggestions

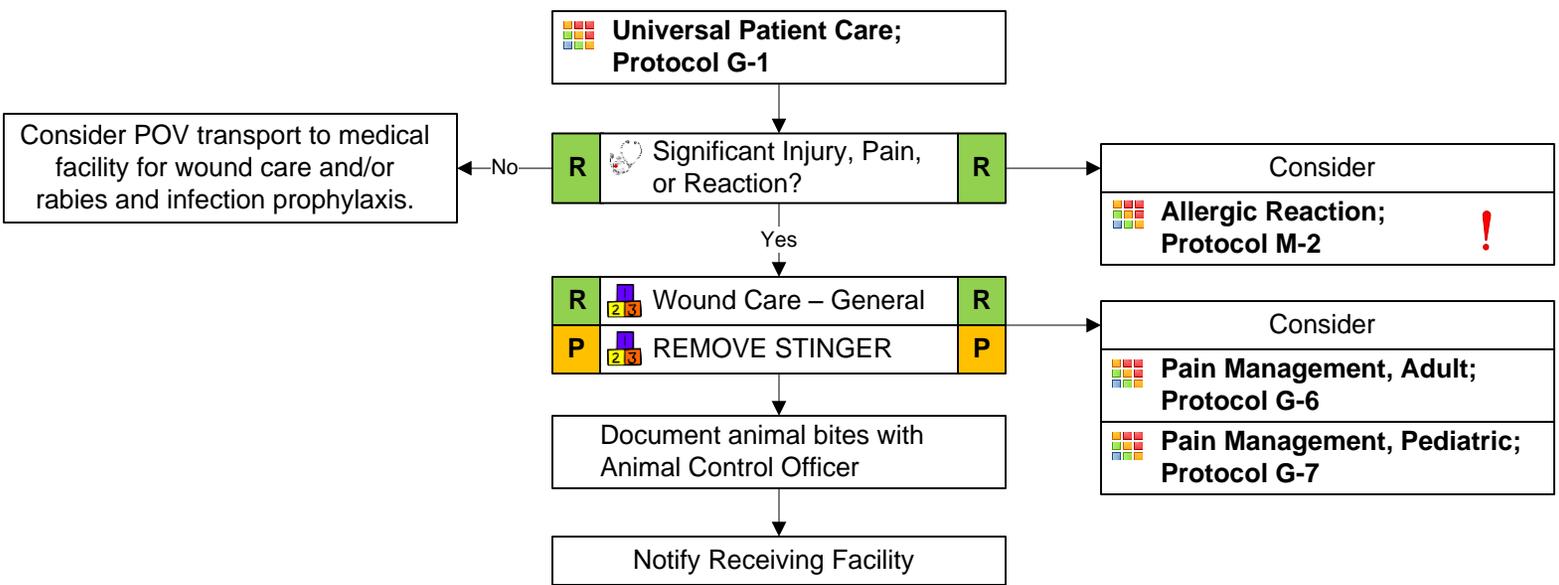
- Number of vascular access attempts and success rate

Protocol Ci-4 – 2016 Vascular Access

Bites & Envenomations



- | | | |
|---|---|---|
| History <ul style="list-style-type: none"> Type of bite or sting Bring description / photo of animal <ul style="list-style-type: none"> The actual animal, dead or alive Time, location, number, and size of bite(s) / sting(s) Previous reaction to bite / sting Domestic versus wild animal Tetanus and rabies risk Immunocompromised patient | Signs & Symptoms <ul style="list-style-type: none"> Rash, skin break, wound Pain, soft tissue swelling, redness Bleeding Retained foreign body / stinger Evidence of infection Shortness of breath, wheezing Allergic reaction, hives, itching Hypotension / shock | Differential <ul style="list-style-type: none"> Animal bite Human bite Snake bite (poisonous) Spider bite (poisonous) Insect sting / bite Infection risk Rabies risk Tetanus risk Predetermined severe allergic reaction (bees) |
|---|---|---|



- Pearls**
- Bites from humans have higher infection rates than bites from animals due to normal bacteria in the human mouth; they will require antibiotics for infection prophylaxis. Ambulance transport is not necessarily required.
 - In Idaho, bats are the most common carrier of rabies. If the patient awakes to find a bat in their bedroom, rabies prophylaxis is indicated, even in the absence of a bite. Likewise, incidental contact with a bat (e.g. children playing with a bat carcass) will also require rabies prophylaxis.
 - In Idaho, the rattlesnake pit viper is the most common poisonous snake. However, exotic snakes are sometimes kept as pets.
 - Do not apply suction or electricity as first aid for snakebites.
 - Do not incise the wound.
 - The amount of envenomation is variable; it is generally worse with larger snakes and bites in early spring.
 - If the patient experiences no pain or swelling, envenomation is unlikely.
 - In the absence of systemic symptoms, spider bites do not warrant emergency transportation. Note that some spider bites may delay presentation of systemic symptoms. Black widow bites tend to cause minimal pain but, over a few hours, can cause muscular pain and/or severe abdominal pain.

- Performance Improvement Suggestions**
- Documentation of previous allergic reaction(s) to bites or stings
 - Documentation of contact with animal control entities

Protocol E-1 – 2016 Bites & Envenomations

Chempack



History

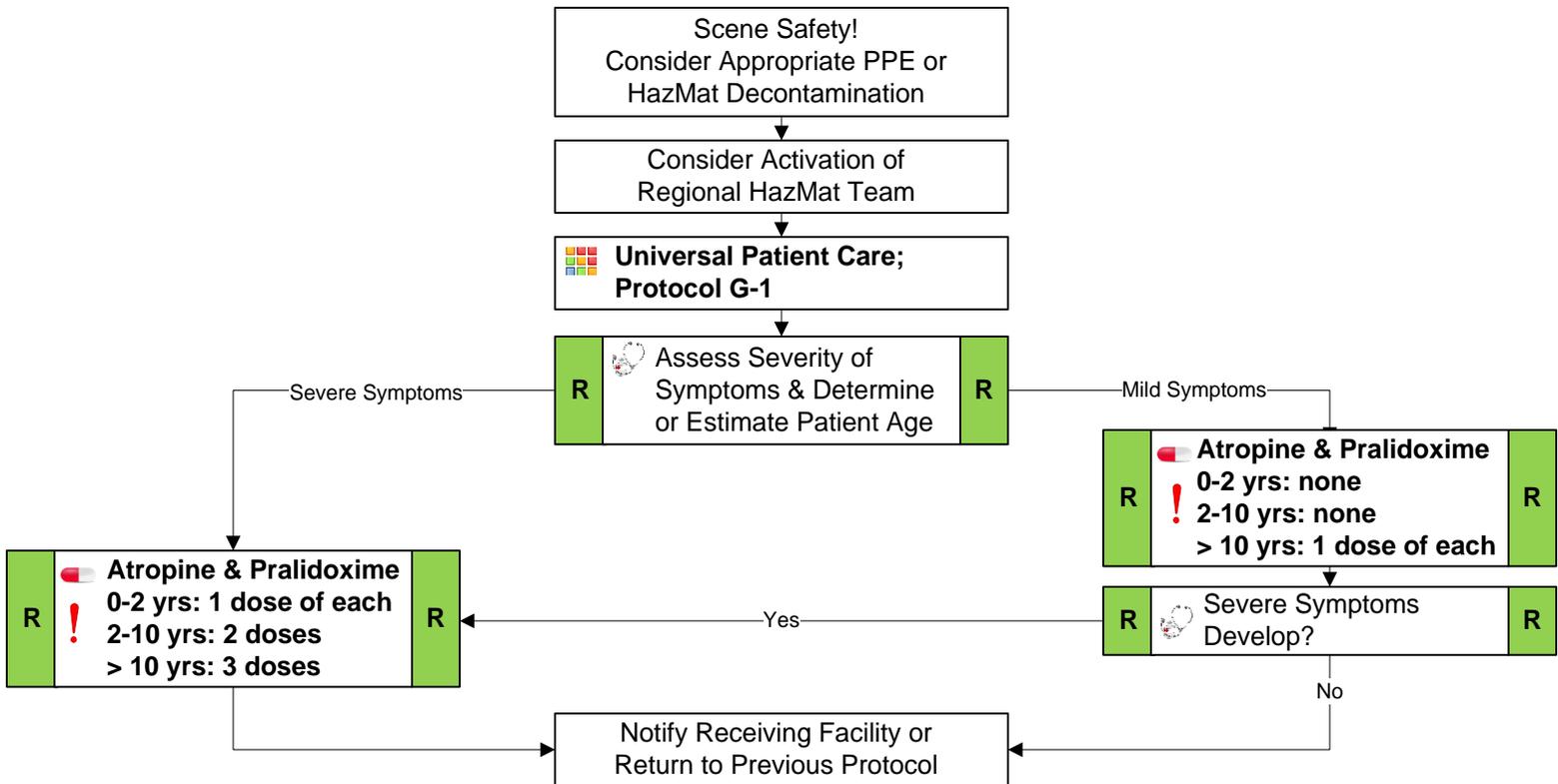
- An unexplained multi-casualty incident (MCI)
- Symptoms of nerve agent toxicity or organophosphate poisoning

Mild Signs & Symptoms

- Blurred vision, miosis (pinpoint pupils)
- Excessive, unexplained teary eyes
- Excessive, unexplained rhinitis
- Increased salivation / sudden drooling
- Chest tightness or dyspnea
- Tremors / muscular twitching throughout the body
- Nausea / vomiting
- Unexplained wheezing, coughing, or increased airway secretions
- Acute onset of stomach cramps
- Tachycardia or bradycardia

Severe Signs & Symptoms

- Strange or confused behavior
- Severe difficulty breathing or copious amount of secretions from lungs / airway
- Severe muscular twitching and general weakness
- Involuntary urination / defecation
- Convulsions
- Unexplained unconsciousness



Pearls

- If more than one dose of a MARK1 Kit or DuoDote are needed, give doses in rapid succession.
- At an MCI event, label the patient's forehead to indicate if they have received a MARK 1 Kit or DuoDote by writing "Mark 1" or "DuoDote" as appropriate. Indicate the number of doses and the time(s) of administration as well. If using triage tags, document the information on the tag.
- Auto-inject the lateral side of the patient's thigh, midway between the waist and the knee. Massage the injection site for several seconds.
- The auto-injector may inject through clothing; be careful to NOT hit buttons, zippers, etc. Make sure the patient's pockets are empty.
- Push the needle of the used auto-injector against a hard surface to bend the needle back against the auto-injector.
- Safely store and dispose of the used auto-injector (e.g. biohazard / sharps container).
- If the patient is potentially contaminated, contact the receiving facility to prepare them for possible decontamination.
- Each Chempack Kit contains 600mg Pralidoxime (2-PAM) and 2mg Atropine.

Performance Improvement Suggestions

- Documentation of symptom severity
- Assessment of scene safety

Protocol E-2 – 2016 Chempack Protocol

Environmental Hyperthermia



History

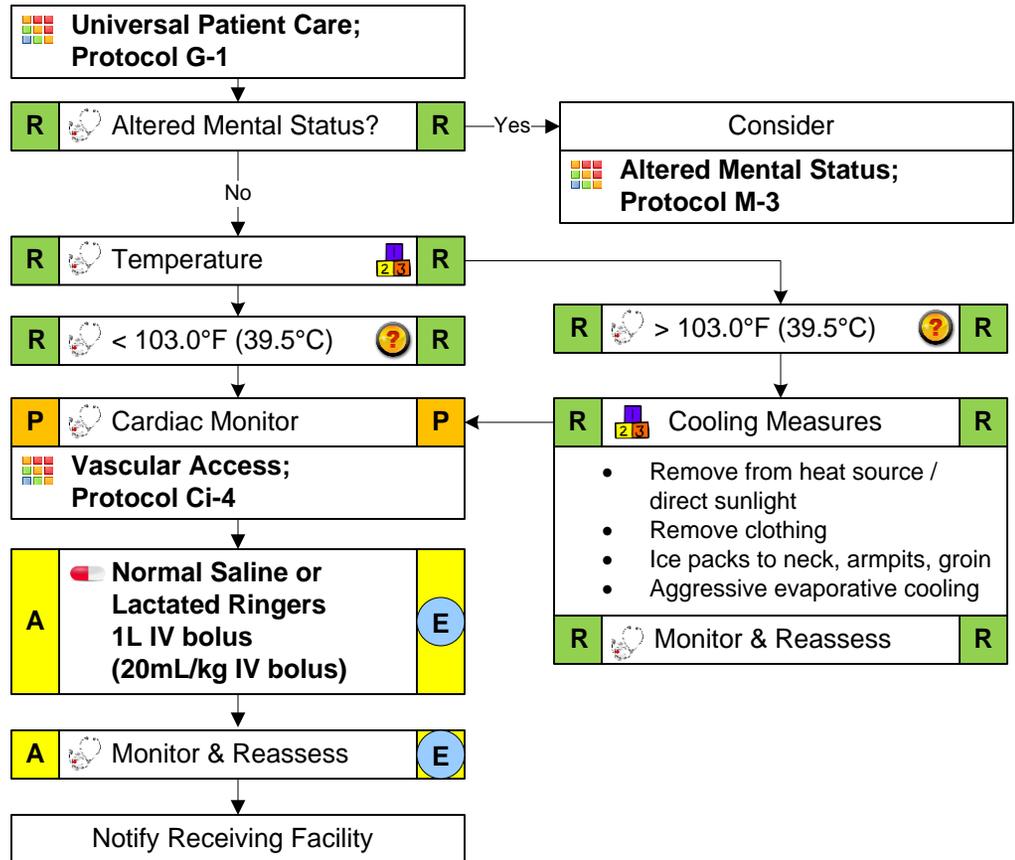
- Past medical history
- Medications
- Age
- Exposure to increased temperatures and / or humidity
- Time and length of exposure
- Extreme exertion
- Poor oral intake
- Fatigue

Signs & Symptoms

- Altered mental status
- Unconsciousness
- Hot and dry or sweaty skin
- Hypotension / shock
- Seizures
- Nausea / vomiting

Differential

- Heat cramps
- Heat exhaustion / stroke
- Agitated delirium
- Neuroleptic malignant syndrome
- Serotonin syndrome
- Thyrotoxicosis
- Delirium tremens
- Lesions / tumors of the central nervous system



Pearls

- Patients in extremes of age are more prone to heat-related emergencies.
- If the patient has had no environmental exposure, consider other causes such as infection (Fever / Infection Control; Protocol M-7).
- Hyponatremia can also mimic a heat emergency.
- Heat Cramps:
 - Consist of benign muscle cramping secondary to dehydration
 - Not associated with an elevated temperature
- Heat Exhaustion:
 - Consists of dehydration, salt depletion, dizziness, fever, headache, cramping, nausea, and vomiting
 - Indicative vital signs may include tachycardia, hypotension, and an elevated temperature
- Heat Stroke:
 - Consists of an altered mental status
 - Indicative vital signs may include tachycardia, hypotension, and a temperature > 104°F (39.5°C)

Performance Improvement Suggestions

- Documentation of effective cooling measures used, especially evaporative cooling
- Documentation of temperature trending

Protocol E-3 – 2016 Environmental Hyperthermia

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Hypothermia



History

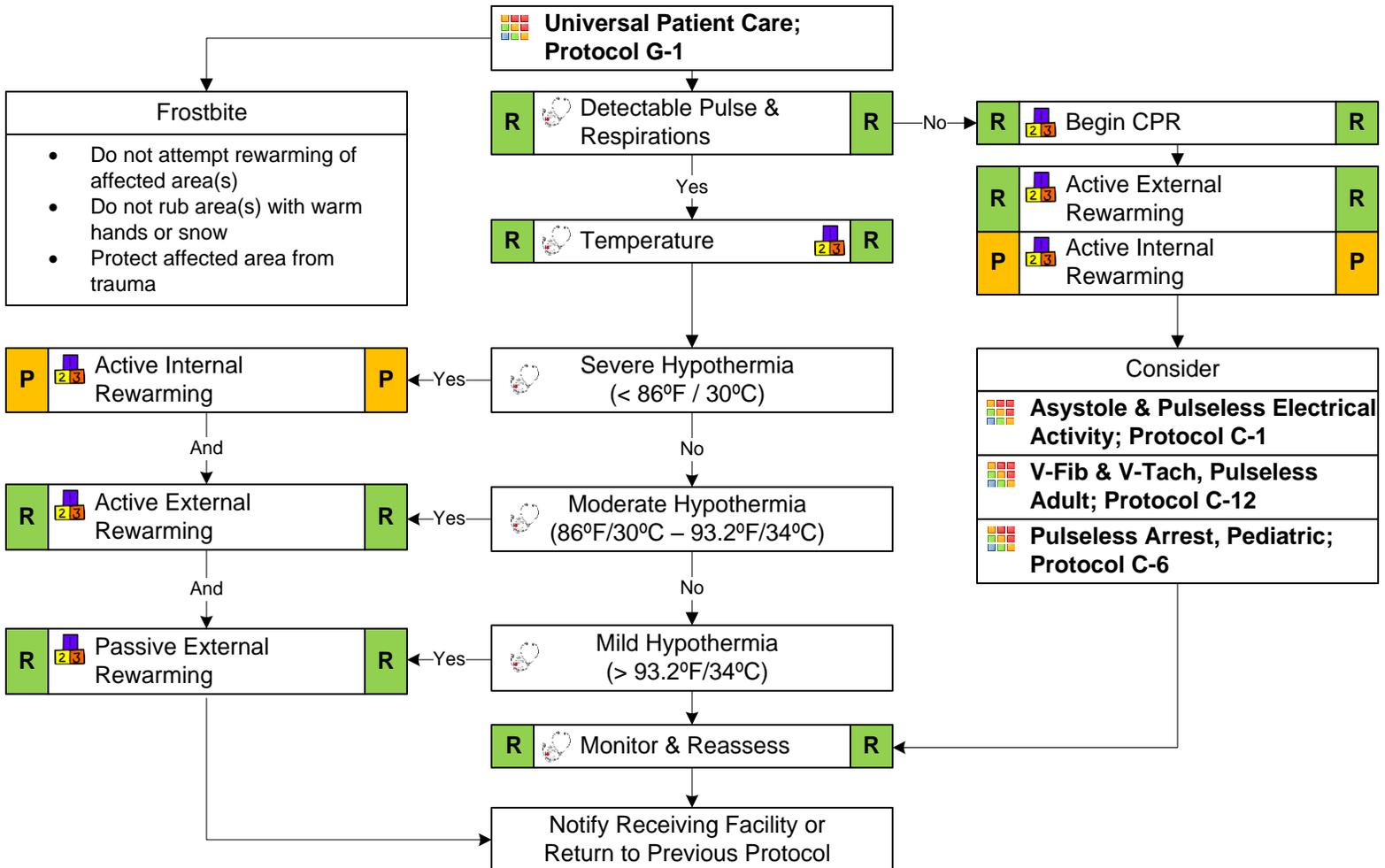
- Past medical history
- Medications
- History of diabetes or thyroid disorder
- Exposure to extreme cold and recent environment (even in normal temperatures)
- Duration of exposure
- Drug / alcohol use

Signs & Symptoms

- Mild (> 93.2°F / 34°C):
 - Shivering
- Moderate (86°F / 30°C – 93.2°F):
 - Confusion / stupor / apathy
 - Paradoxical undressing
 - Ataxia
- Severe (< 86°F / 30°C):
 - Comatose
 - Bradycardia
 - Prominent J wave (Osborn)

Differential

- Sepsis
- Environmental exposure
- Hypoglycemia
- Myxedema coma
- Stroke
- Head / spinal cord injury



Pearls

- NO PATIENT IS DEAD UNTIL THEY ARE WARM AND DEAD! Termination of resuscitation should not be considered if the patient's temperature is below 93°F (33.9°C).
- Cardiac irritability is increased with severe hypothermia and it may result in ventricular fibrillation. Be sure to handle these patients gently during repositioning, transfers, and intubation.
- Hypothermia may produce severe bradycardia – be sure to take at least 45 seconds to palpate for a pulse; in severe hypothermia, a patient may appear clinically dead.
- Standard ACLS protocol should be followed concurrent with re-warming efforts. Although ACLS may be less effective with patients suffering from severe hypothermia, do not delay ACLS drugs or repeat defibrillation until a certain temperature is reached.
- If available, hot packs should be placed in the armpits and groin – do not place heat packs directly against the patient's skin.

Performance Improvement Suggestions

- Documentation of measures taken for patient rewarming

Protocol E-4 – 2016 Hypothermia

Drowning



History

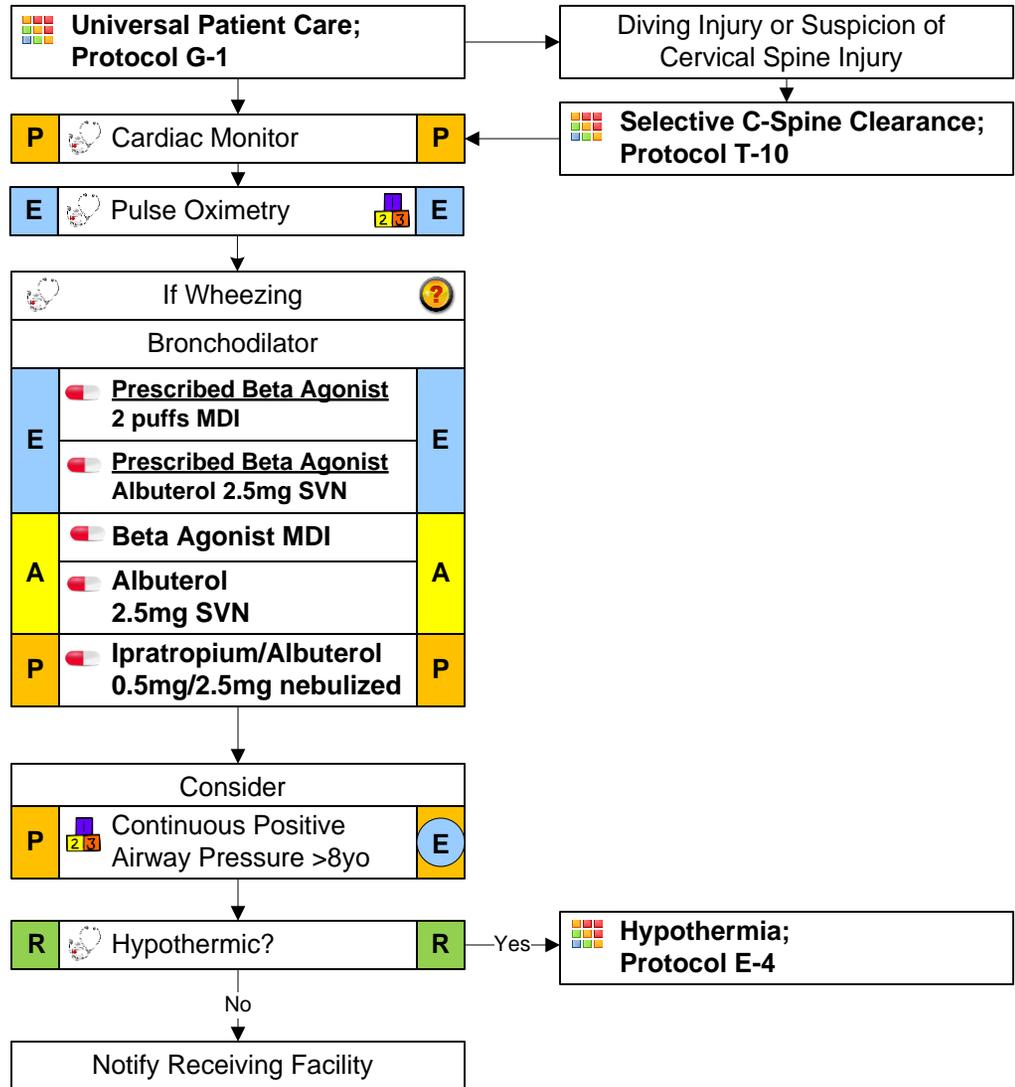
- Submersion in water (regardless of depth)
- Possible trauma to c-spine
- Possible mechanism of trauma:
 - Diving board
 - Underwater rocks
- Duration of immersion
- Temperature of water
- Age

Signs & Symptoms

- Unresponsive
- Change in mental status
- Decreased or absent vital signs
- Vomiting
- Coughing
- Apnea
- Stridor
- Wheezing
- Rales

Differential

- Trauma
- Intoxication
- Barotrauma
- Decompression sickness
- Post-immersion syndrome
- Hypothermia



Pearls

- Have a high index of suspicion for possible spinal injuries.
- In Idaho, all natural bodies of water are considered cold water.
- Survival after 1 hour of immersion in cold water is rare; consider transitioning from rescue to recovery.
- Respiratory distress may be delayed; therefore, all drowning patients should be transported for evaluation.
- Decompression illness may require hyperbaric therapy.

Performance Improvement Suggestions

- Documentation of immersion time
- Documentation of immersion mechanism

Protocol E-5 – 2016 Drowning

Toxic Inhalation



History

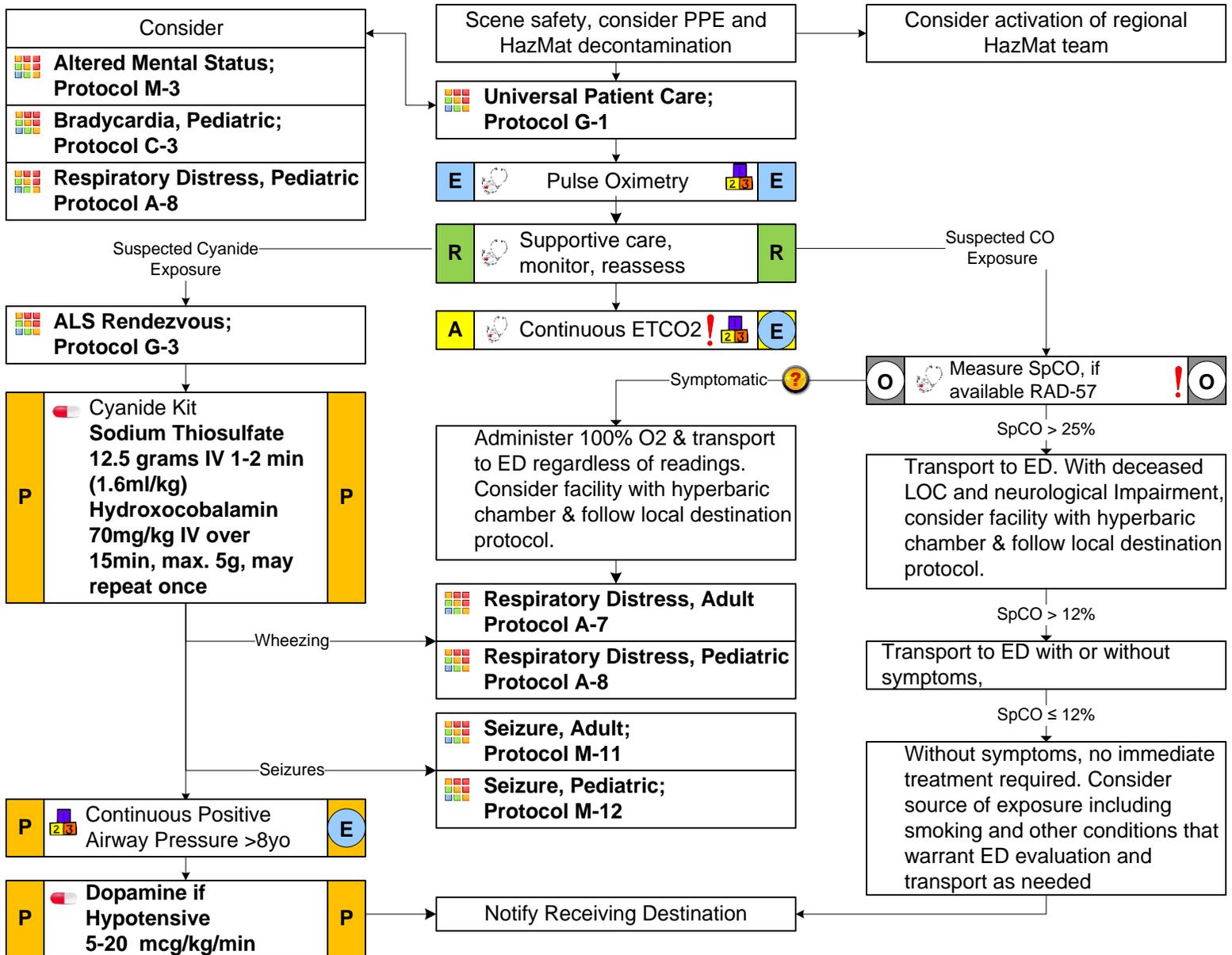
- Intentional use of inhalants: paint, amyl nitrate, huffing
- Carbon Monoxide exposure
- Toxic exposure
- Smoke inhalation
- CS spray Asthma; COPD – chronic bronchitis, emphysema, congestive heart failure

Signs and Symptoms

- Shortness of breath, wheezing, rhonchi
- Pursed lip breathing
- Decreased ability to speak, voice changes
- Increased respiratory rate and effort
- Use of accessory muscles
- Cough
- Tachycardia
- “SLUDGE” signs
- Face, Mouth burns

Differential

- Asthma, Anaphylaxis, Aspiration
- MI, CHF, COPD, Pneumonia, PE
- Pleural effusion
- Pneumo, pericardial tamponade
- Inhaled toxin, Cyanide
- Inhaled smoke, w/ burns
- CO Exposure
- HAZMAT
- Intentional inhalation



Pearls

- Pulse oximetry monitors may give falsely normal readings in patients who have been exposed to CO.

Performance Improvement Suggestions

- Documentation of exposure history
- Documentation of vital signs and mental status prior to administration of medications

Protocol E-6 – 2016 Toxic Inhalation

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Weapons of Mass Destruction: Nerve Agent



History

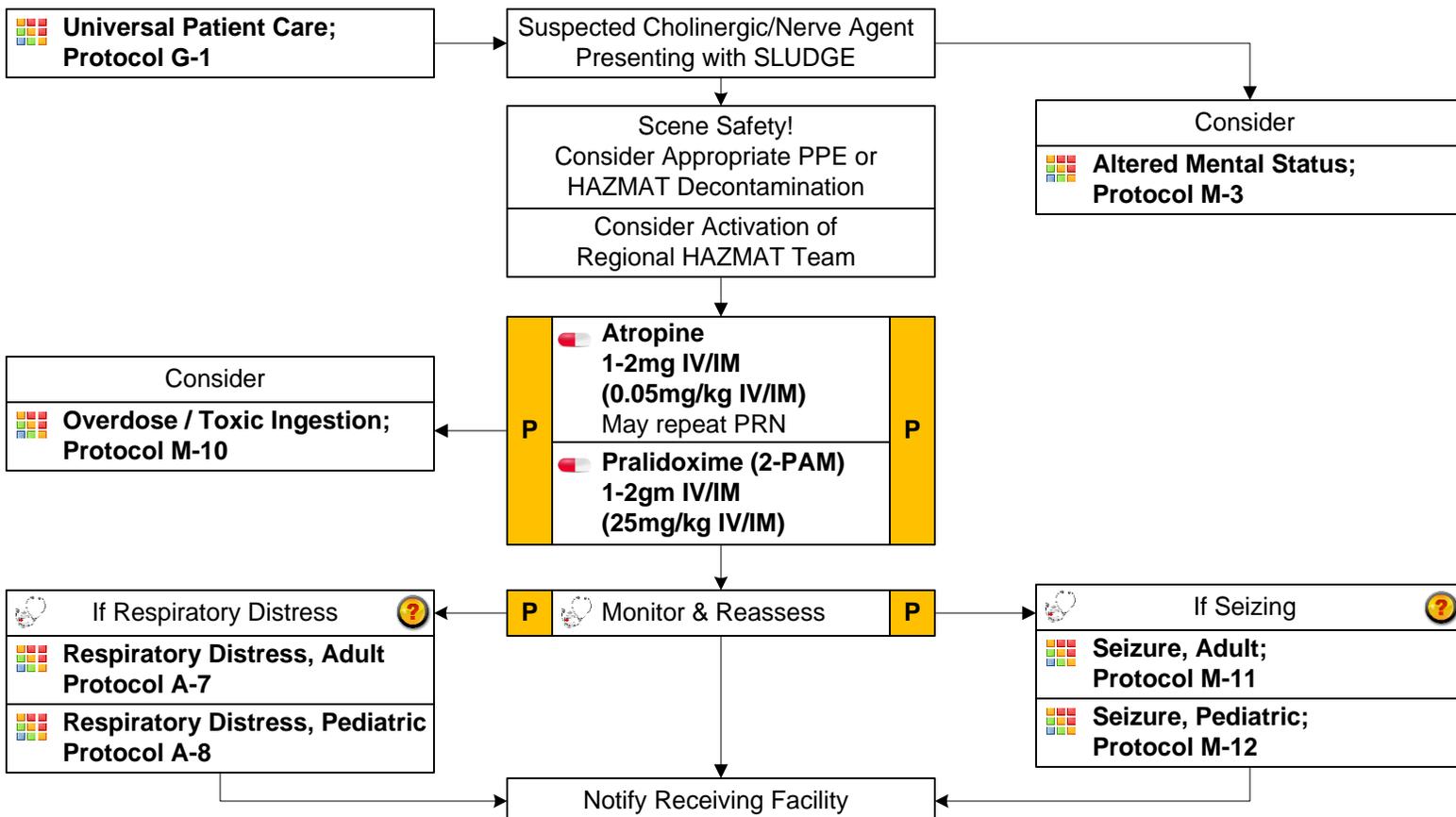
- Exposure to chemical, biologic, radiologic, or nuclear hazard(s)
- Potential exposure to unknown substance(s) / hazard(s)

Signs & Symptoms

- Visual disturbances, headache
- Diaphoresis
- Seizures
- Respiratory distress / arrest
- SLUDGE:
 - Salivation
 - Lacrimation (tears)
 - Urination
 - Defecation
 - Gastrointestinal upset
 - Emesis

Differential

- Nerve agent exposure: Sarin, Soman, VX, etc.
- Organophosphate (pesticide) exposure
- Vesicant exposure: mustard gas, etc.
- Respiratory irritant exposure: Hydrogen Sulfide, ammonia, chlorine, etc.



Pearls

- Follow local HAZMAT protocols for decontamination and use of personal protective equipment.
- Identification of the causal agent by the regional HAZMAT team may be delayed; initiate treatment based upon the patient's symptoms.
- For patients with severe SLUDGE symptoms, there is no limit for Atropine dosing; Atropine should be given until salivation improves.
- Each Chempack kit contains 600mg Pralidoxime (2-PAM) and 2mg of Atropine.

Performance Improvement Suggestions

- Documentation of decontamination procedures
- Documentation of SLUDGE symptom severity

Protocol E-7 – 2016 Weapons of Mass Destruction: Nerve Agent

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Abdominal Pain



History

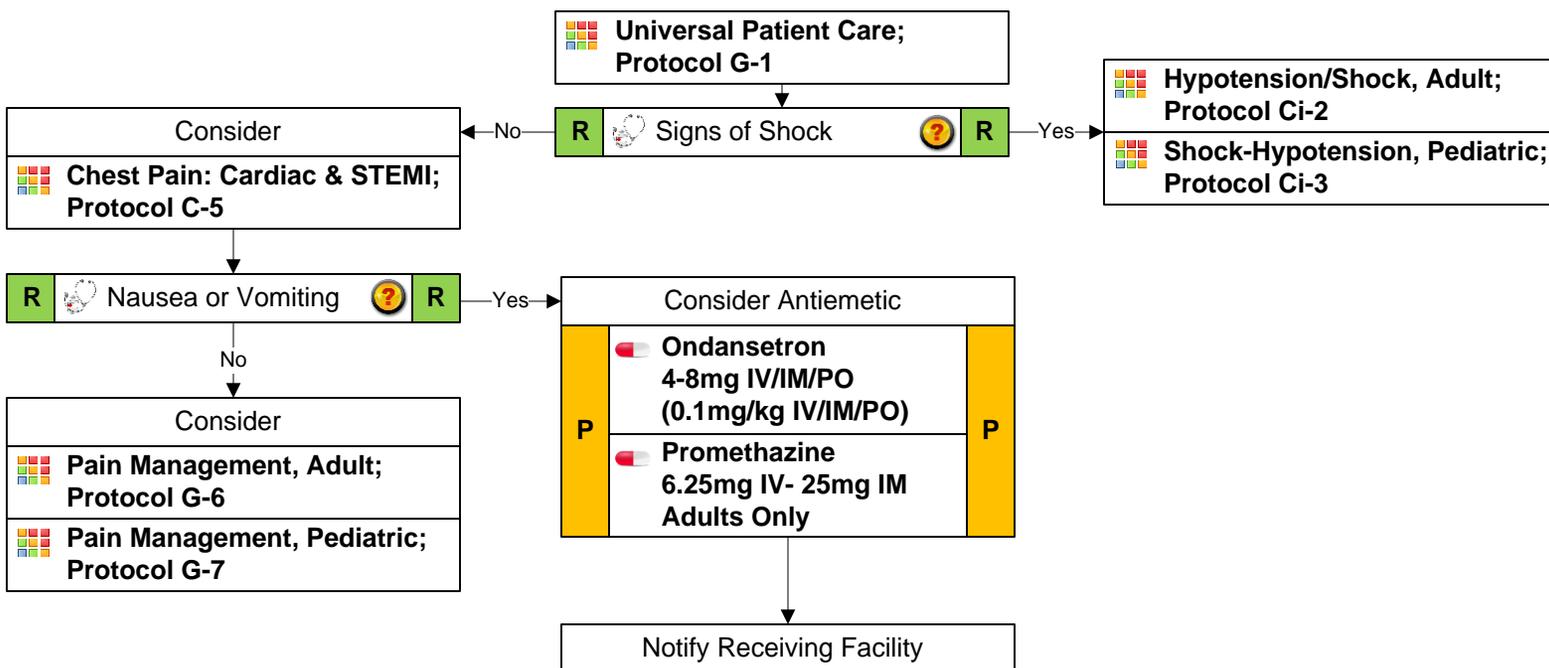
- Age
- Past medical history
- Past surgical history
- Medications
- Onset of pain / injury
- Palliation / provocation
- Quality (constant, sharp, dull, etc.)
- Region / radiation / referred
- Severity (pain scale)
- Time (duration, repetition)
- Fever
- Last meal eaten
- Last bowel movement / emesis
- Menstrual history (pregnancy)

Signs & Symptoms

- Pain (location / migration)
- Tenderness
- Nausea
- Vomiting
- Diarrhea
- Dysuria
- Constipation
- Vaginal bleeding / discharge
- Pregnancy

Differential

- Pneumonia or pulmonary embolus
- Liver (hepatitis, CHF)
- Peptic ulcer disease / gastritis
- Cholecystitis (gall bladder)
- Myocardial infarction
- Pancreatitis
- Kidney stones
- Abdominal aneurysm
- Appendicitis
- Bladder / prostate disorder
- Pelvic (PID, ectopic pregnancy, ovarian cyst, etc.)
- Splenomegaly
- Diverticulitis
- Bowel obstruction
- Gastroenteritis (infectious)



Pearls

- Abdominal pain in female patients of childbearing age should be treated as an ectopic pregnancy until proven otherwise.
- An abdominal aneurysm should be considered in patients over 50 years of age complaining of abdominal pain.
- Ondansetron (Zofran) is the primary medication for the treatment of nausea. Promethazine (Phenergan) may result in excessive sedation and may cause soft tissue necrosis when given via IV.

Performance Improvement Suggestions

- Documentation of vital signs and mental status prior to administration of anti-emetics

Protocol M-1 – 2016 Abdominal Pain

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Allergic Reaction



History

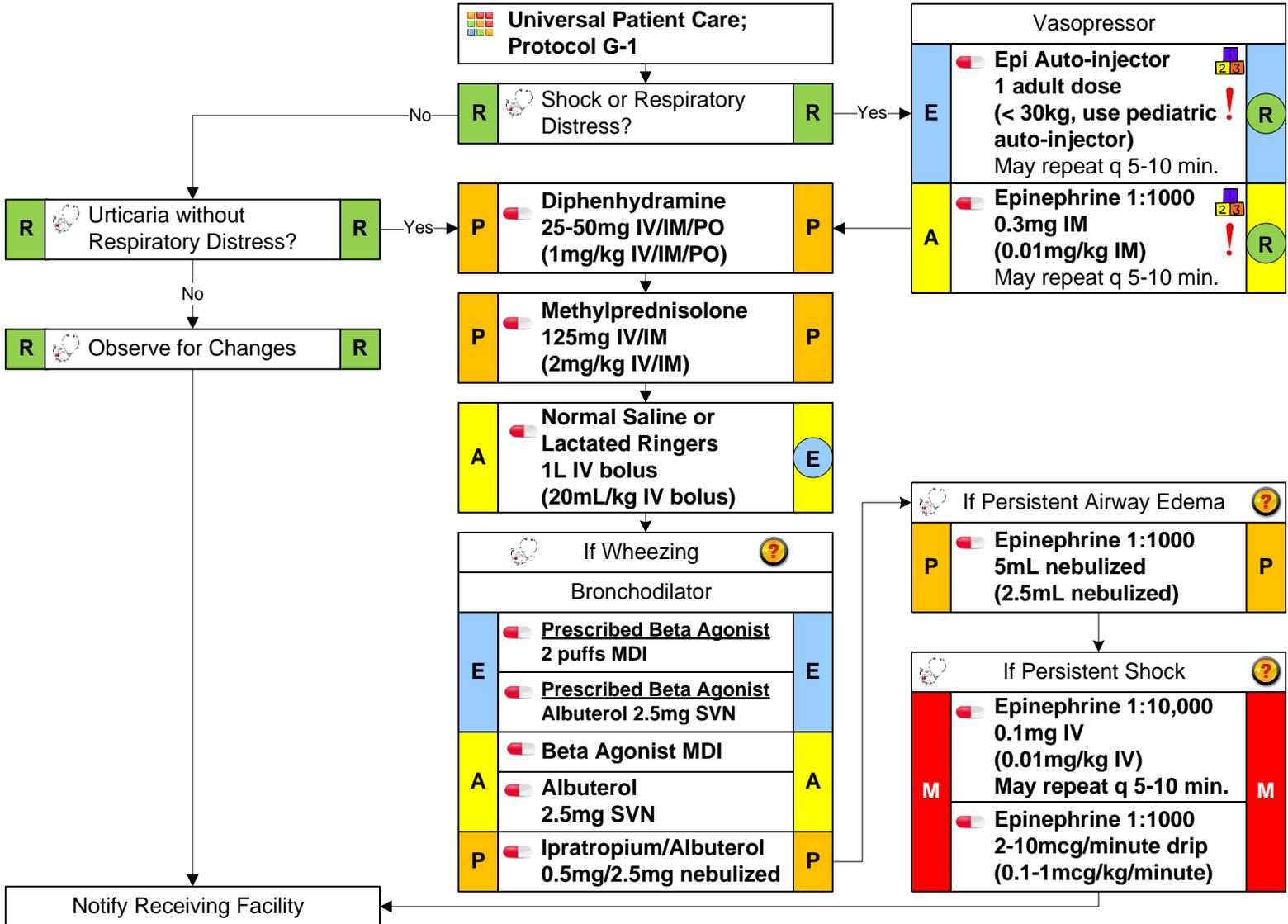
- Onset and location of reaction
- Insect sting or bite
- Food allergy / exposure
- Medication allergy / exposure
- New clothing, soap, detergent, etc
- Past history of reactions
- Past medical history
- Any medications recently taken (Benadryl, Epi-Pen, etc)

Signs & Symptoms

- Itching or hives
- Coughing, wheezing, or respiratory distress
- Chest or throat constriction
- Difficulty swallowing (dysphagia)
- Hypotension or shock
- Edema
- Rate of onset of symptoms
- Nausea, vomiting, GI upset

Differential

- Urticaria (rash / hives)
- Anaphylaxis (systemic effect)
- Shock (vascular effect)
- Angioedema (drug-induced)
- Aspiration / airway obstruction
- Vasovagal event
- Asthma or COPD
- Congestive heart failure



Pearls

- Anaphylaxis can occur without wheezes or rash.
- The lateral aspect of the thigh is the preferred site for IM epinephrine and the auto-injector.
- IV access should not delay the administration of IM epinephrine.
- Epinephrine is the primary treatment for anaphylaxis / allergic reactions.
- Patients who receive epinephrine that are over the age of 50 or have a history of heart disease need a 12-lead EKG and should be monitored for cardiac ischemia.

Performance Improvement Suggestions

- Failure to administer epinephrine
- Documentation of oropharyngeal swelling

Protocol M-2 – 2016 Allergic Reaction

Altered Mental Status



History

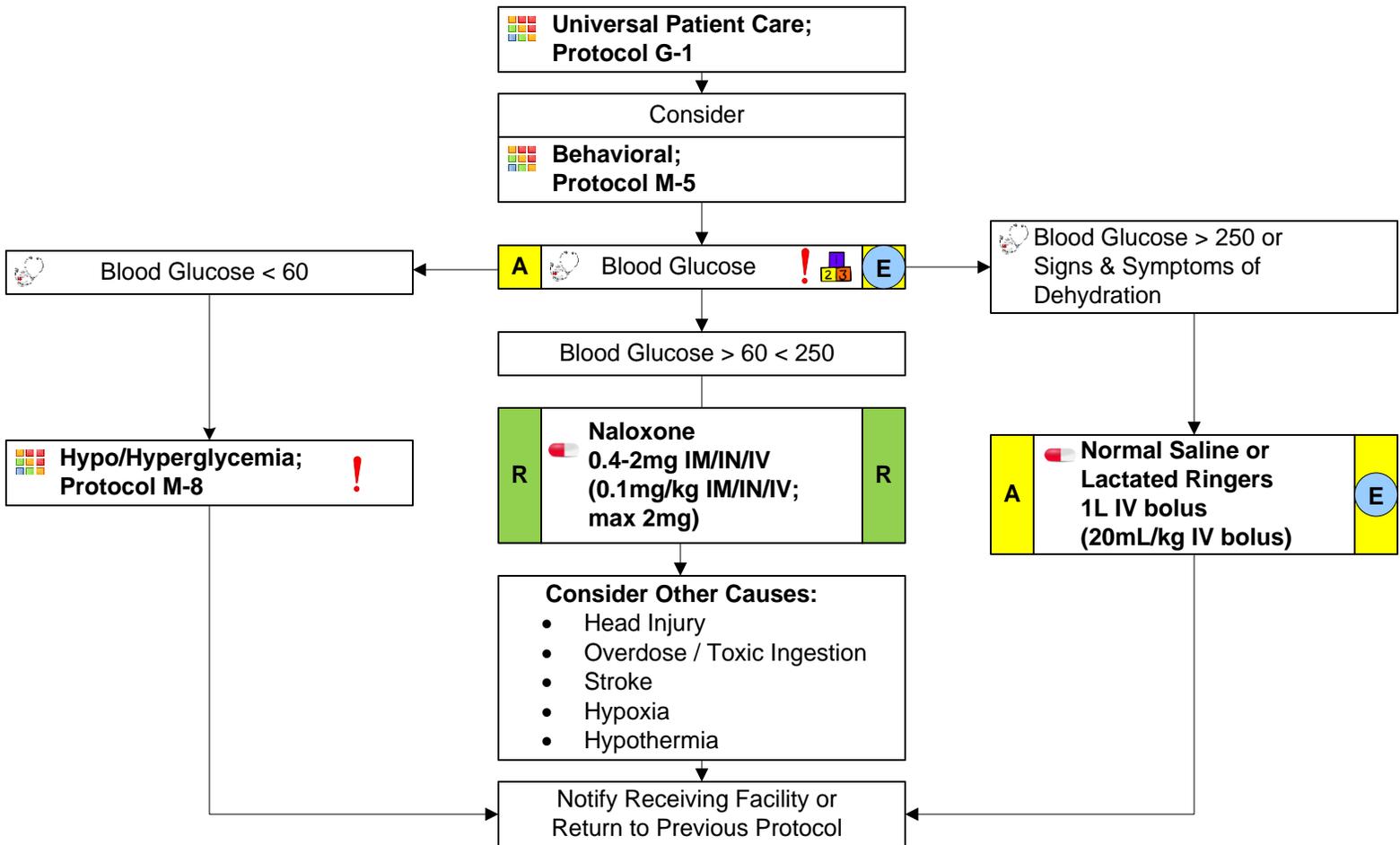
- Known diabetic (medical alert tag)
- Drugs or drug paraphernalia
- Evidence of drug or alcohol use or toxin ingestion
- Past medical history
- Medications
- History of trauma
- Changes in feeding / sleeping habits

Signs & Symptoms

- Decreased mental status or lethargy
- Change in baseline mental status
- Bizarre behavior
- Hypoglycemia (cool, diaphoretic skin)
- Hyperglycemia (warm, dry skin; fruity breath; signs of dehydration; Kussmaul respirations)
- Irritability

Differential

- A: allergies, alcohol, anoxia
- E: epilepsy, endocrine, environmental exposure
- I: infection
- O: overdose, opiates
- U: uremia
- T: trauma
- I: insulin-dependent diabetes mellitus
- P: psychosis, psychiatric, pulmonary
- S: sepsis, stroke, subarachnoid hemorrhage, space-occupying lesion



Pearls

- If unable to obtain blood glucometry, treat the altered mental status as hypoglycemia.
- Be aware that an altered mental status may present with signs of an environmental toxin or a hazardous material exposure.
- Never assume the patient is merely intoxicated; alcoholics often develop hypoglycemia and may have unrecognized injuries.
- Consider restraints if it is necessary to secure the protection of the patient and/or EMS personnel.
- Naloxone (Narcan) should be carefully titrated to reverse respiratory depression without inducing agitation or withdrawal.
- Consider the patient's core temperature; hypothermia and hyperthermia may present with an altered mental status.

Performance Improvement Suggestions

- Documentation of respiratory rate and response to intervention
- Documentation of blood glucose

Protocol M-3 – 2016 Altered Mental Status

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Back Pain



History

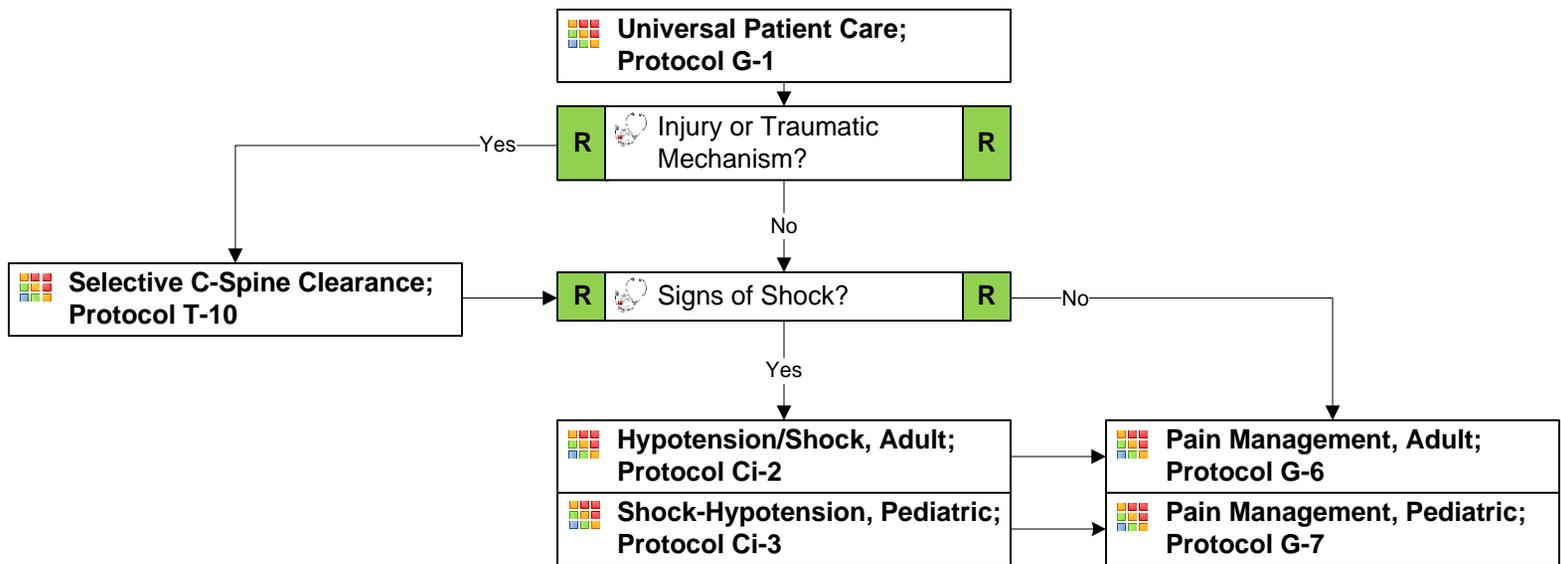
- Age
- Past medical history
- Past surgical history
- Medications
- Onset of pain / injury
- Previous back injury
- Traumatic mechanism
- Location of pain
- Fever
- Improvement or worsening with activity
- History of IV drug abuse

Signs & Symptoms

- Pain (paraspinous, spinous process)
- Swelling
- Pain with range of motion
- Extremity weakness
- Extremity numbness
- Bowel / bladder dysfunction
- Shooting pain into an extremity

Differential

- Muscle spasm / strain
- Herniated disc with nerve compression
- Sciatica
- Spine fracture
- Kidney stone(s)
- Pyelonephritis
- Aneurysm
- Pneumonia
- Spinal epidural abscess
- Metastatic cancer



Pearls

- Abnormal aneurysms are a concern in patients over the age of 50.
- Kidney stones typically present with an acute onset of flank pain that radiates forward to the groin area.
- Patients with midline pain over the spinous processes should be evaluated for spinally immobilizing. (Protocol T-10)
- Any bowel or bladder incontinence is a significant finding and requires immediate medical evaluation.
- In patients with a history of IV drug abuse, a spinal epidural abscess should be considered.

Performance Improvement Suggestions

- Documentation of the response to fluid bolus/challenge (if given)
- Documentation of the consideration for spinal immobilization in a trauma setting

Protocol M-4 – 2016 Back Pain

Behavioral



History

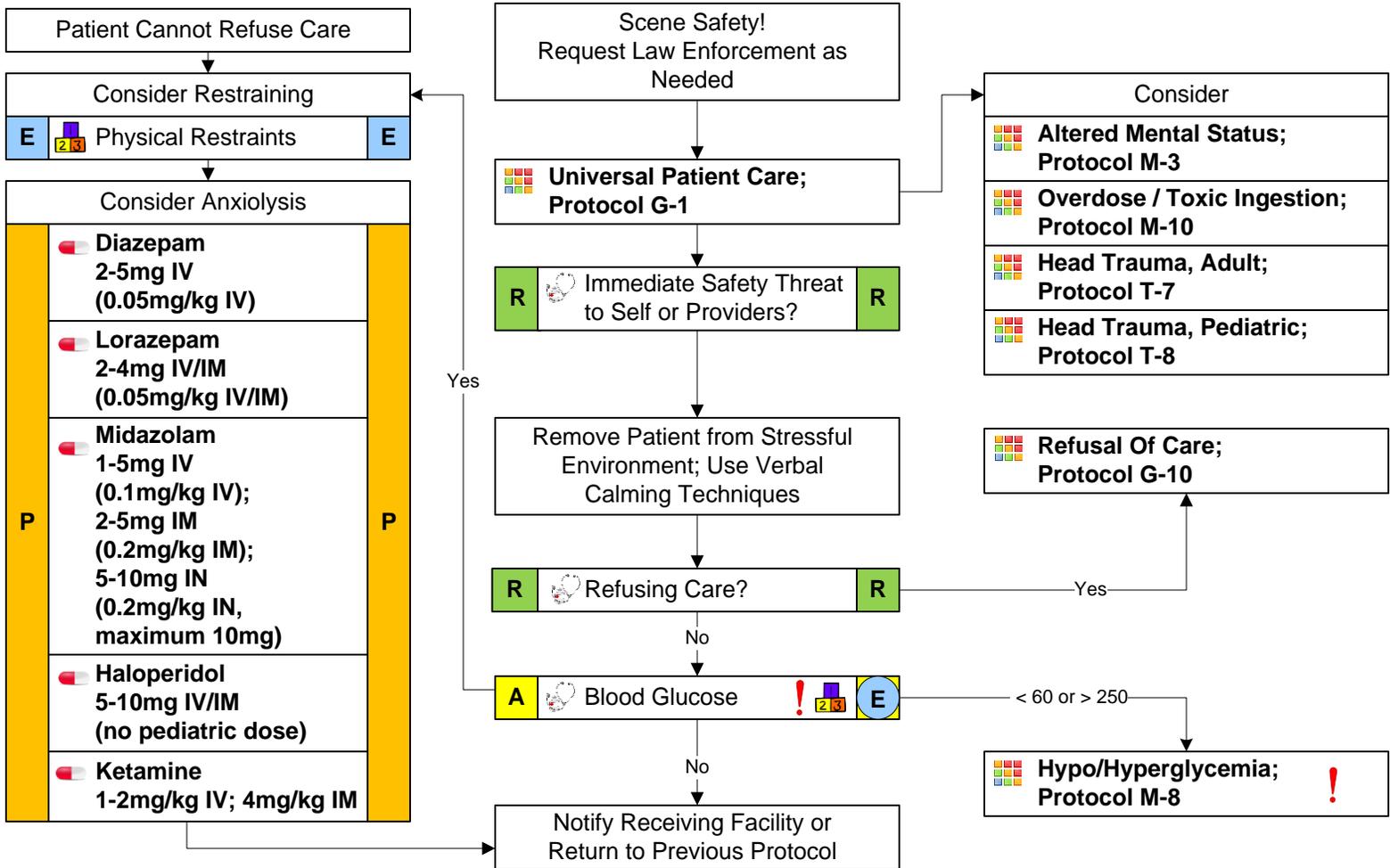
- Situational crisis
- Psychiatric illness / medications
- Injury to self or threats to others
- Medic alert tag
- Substance abuse / overdose
- Diabetes

Signs & Symptoms

- Anxiety, agitation, confusion
- Affect change, hallucinations
- Delusional thoughts, bizarre behavior
- Combative, violent
- Expression of suicidal / homicidal thoughts

Differential

- Excited delirium
- Alcohol intoxication
- Toxin / substance abuse
- Medication effect / overdose
- Withdrawal syndromes
- Depression
- Bipolar (manic-depressive)
- Schizophrenia
- Anxiety Disorders



Pearls

- Your safety comes first! Have law enforcement search and clear patients who pose a threat. Be aware of hidden weapons.
- Be sure to consider all possible medical / trauma causes for behavior (hypoglycemia, overdose, substance abuse, hypoxia, head injury, etc.).
- Do not irritate the patient with a prolonged exam.
- Do not overlook the possibility of associated domestic violence or child abuse.
- If patients with suspected excited delirium suffer cardiac arrest, consider a fluid bolus and sodium bicarbonate early.
- All patients who are handcuffed or restrained by law enforcement and transported by EMS must be accompanied by law enforcement in the ambulance.
- Do not position or transport any restrained patients in such a way that could impact their respiratory or circulatory status.
- Limit IN medications to 1mL per nostril. If more than 2mL is required, additional medications may be given IN after 10 minutes.

Performance Improvement Suggestions

- Documentation of the indication for physical or chemical restraint

Protocol M-5 – 2016 Behavioral

Epistaxis



History

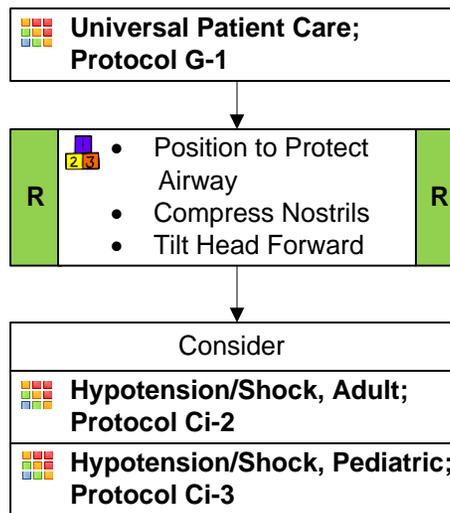
- Age
- Past medical history
- Medications
 - Anticoagulants
 - Aspirin
 - Clopidogrel
 - NSAIDs
- Previous episode of epistaxis
- Trauma
- Duration of bleeding
- Quantity of bleeding

Signs & Symptoms

- Bleeding from nasal passage(s)
- Pain
- Nausea / vomiting
- Dyspnea / respiratory distress

Differential

- Trauma
- Infection (viral upper-respiratory tract infection or sinusitis)
- Allergic rhinitis
- Lesions (polyps, ulcers, tumors)
- Hypertension



Pearls

- Instruct the patient to not swallow blood; swallowed blood may cause nausea / vomiting.
- The majority of epistaxis is due to anterior bleeding and may be controlled by compressing the nostrils.
- Bleeding may also be occurring posteriorly; evaluate for posterior bleeding by examining the posterior pharynx.
- When compressing the nostrils, maintain constant pressure for at least ten minutes. Compression will be ineffective if it is not continuous. Note that allowing the patient to blow their nose may cause bleeding to restart.
- Packing the nose with tissue paper, cottonballs, tampons, etc. is less effective than compressing the nostrils.

Performance Improvement Suggestions

- Uninterrupted compression of nostrils
- Documentation of medication history, especially anticoagulants and/or antiplatelet agents

Protocol M-6 – 2016 Epistaxis

Fever / Infection Control



History

- Age
- Duration of fever
- Maximum temperature
- Past medical history
- Medications
- Immunocompromised (transplant, HIV, diabetes, cancer)
- Travel history
- Last acetaminophen or ibuprofen

Signs & Symptoms

- Warm
- Flushed
- Diaphoretic
- Chills / Rigors

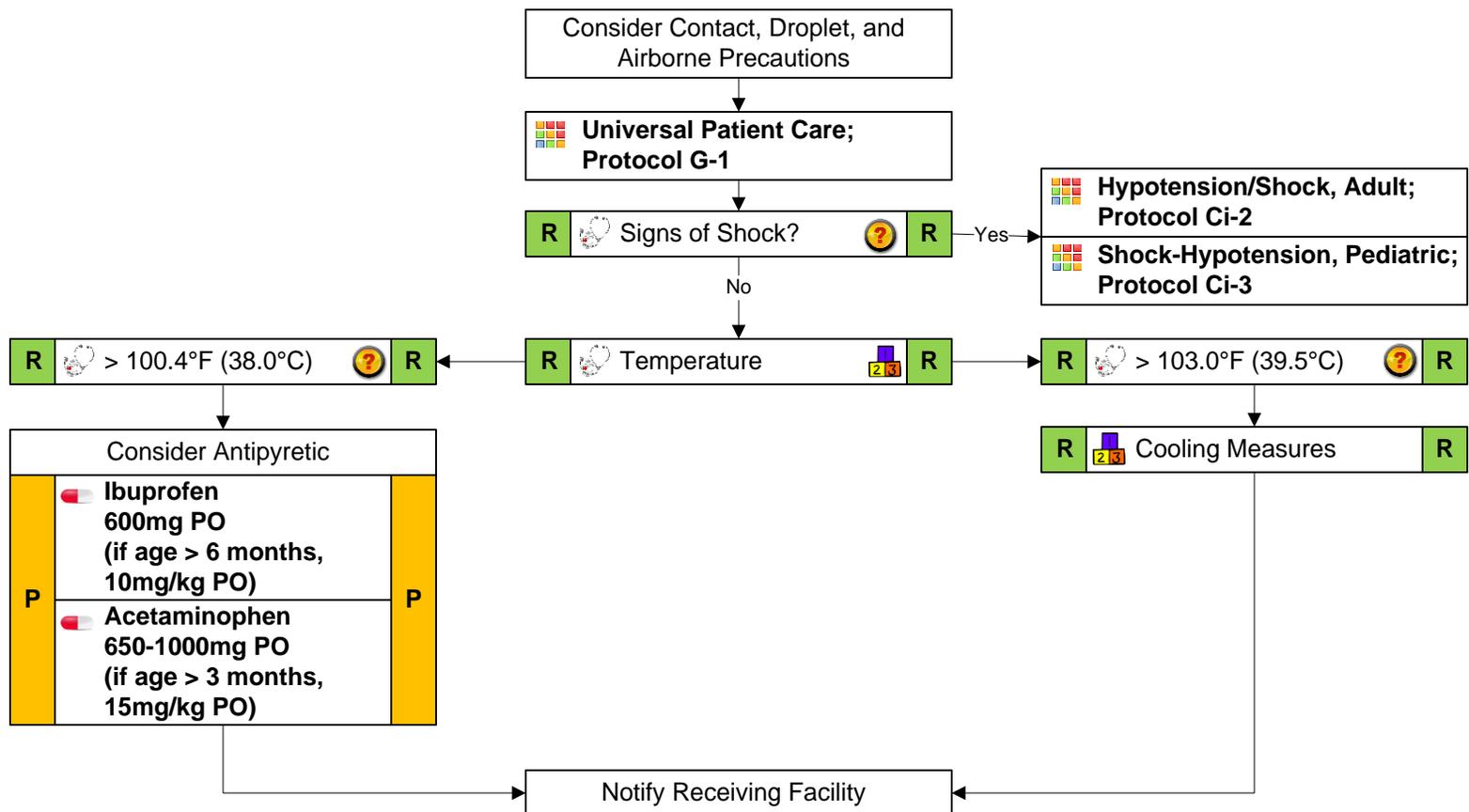
Associated Symptoms

(helpful to localize source)

- Myalgias, cough, chest pain, headache, dysuria, abdominal pain, rash, mental status changes

Differential

- Infections / sepsis
- Cancer / tumors / lymphomas
- Medication or drug interaction
- Connective tissue disease (arthritis, vasculitis)
- Hyperthyroidism
- Heat stroke
- Meningitis



Pearls

- **DO NOT** give aspirin to a child.
- Consider environmental hyperthermia if temperature is > 104-105°F.
- Utilize cooling measures:
 - passive cooling (removal of clothing)
 - active cooling (sponge patient's skin with tepid water)
 - do not use rubbing alcohol, cold water, or ice to cool

Performance Improvement Suggestions

- Documentation of temperature
- Assessment of end-organ perfusion

Protocol M-7 – 2016 Fever / Infection Control

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Hypoglycemia / Hyperglycemia



History

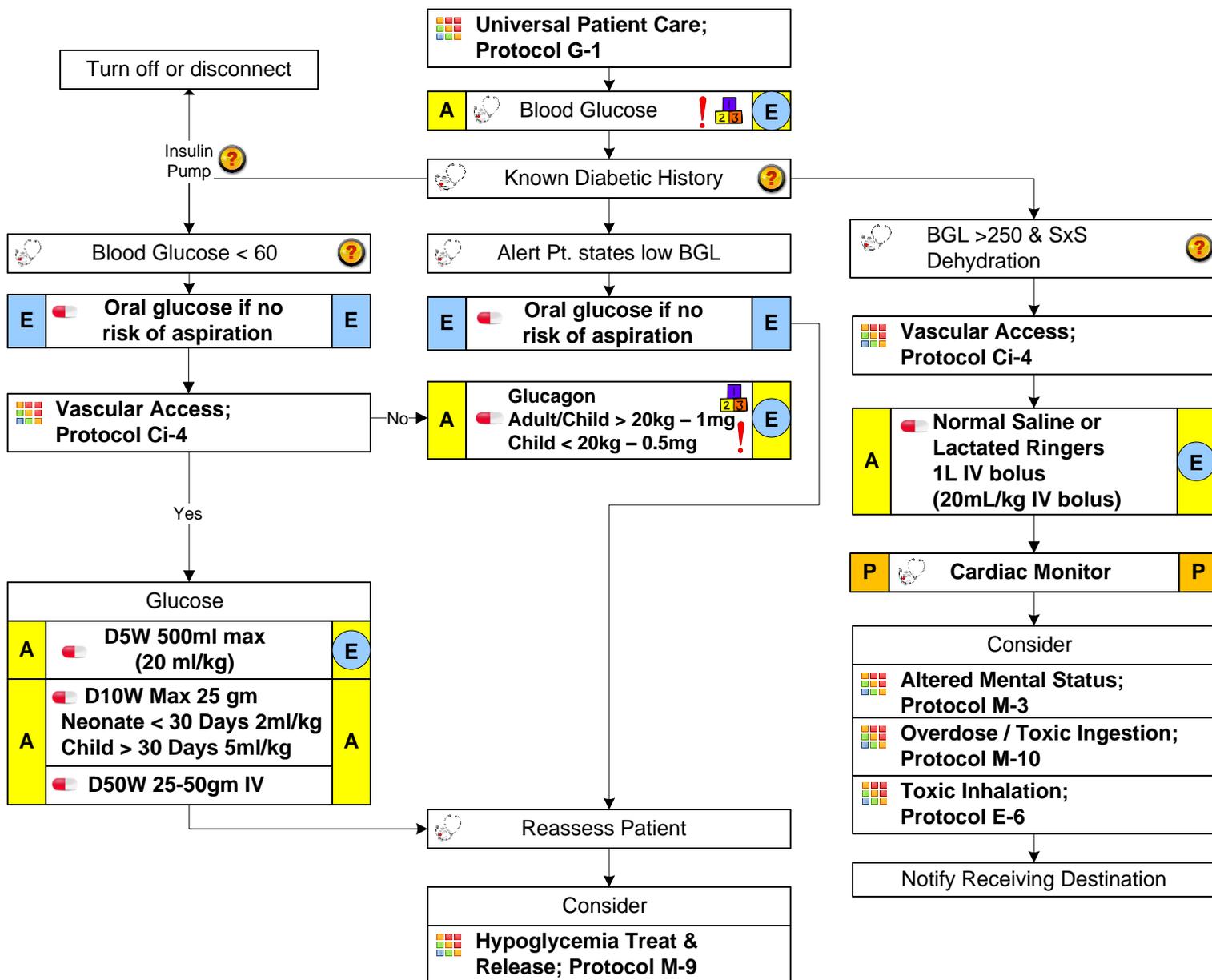
- Known diabetic, bracelet, or necklace
- Drugs, drug paraphernalia
- Report of drug use or toxic ingestion
- Insulin dependent
- Oral Hypoglycemic Agents

Signs and Symptoms

- Decrease in mental status
- Change in baseline mental status
- Bizarre behavior
- Measured blood glucose
- Dehydration

Differential

- Alcohol
- CNS (increased pressure, headache, stroke, CNS lesions, vestibular)
- Myocardial infarction
- Diabetes
- Sepsis
- Infections



Pearls

- Never assume the patient is merely intoxicated.
- If the patient has an altered mental status and blood glucometry is unable to be obtained, treat the patient for hypoglycemia.
- It may take 10-15 minutes for the patient to respond to IM Glucagon. When patient becomes alert, encourage oral carbohydrate intake.

Performance Improvement Suggestions

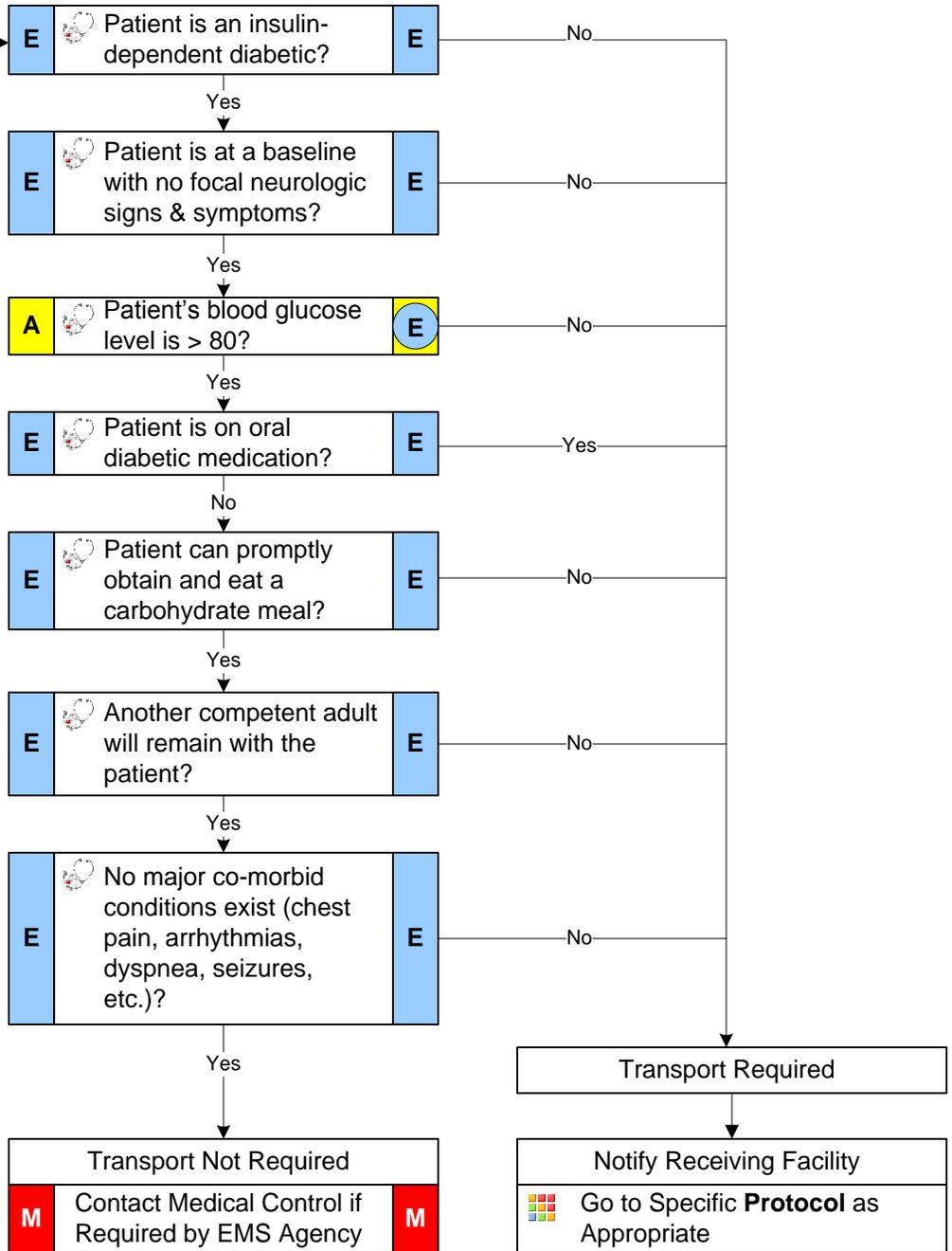
- Documentation of pre- and post-treatment blood glucometry
- Documentation of patient response to any treatment

Protocol M-8 – 2016 Hypoglycemia / Hyperglycemia

Treat & Release, Hypoglycemia



**Hypo/Hyperglycemia;
Protocol M-8**



Pearls

- Diabetic patients that are treated with sulfonylurea medications (Glipizide, Glyburide, etc.) may prolong hypoglycemia and usually require hospitalization.
- Some diabetic patients may develop recurrent hypoglycemia after treatment; consider remaining on-scene to recheck blood glucometry prior to releasing the patient.

Performance Improvement Suggestions

- Documentation of pre- and post-treatment blood glucometry
- Documentation of specific diabetic medications

Protocol M-9 – 2016 Treat & Release, Hypoglycemia

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Overdose / Toxic Ingestion



History

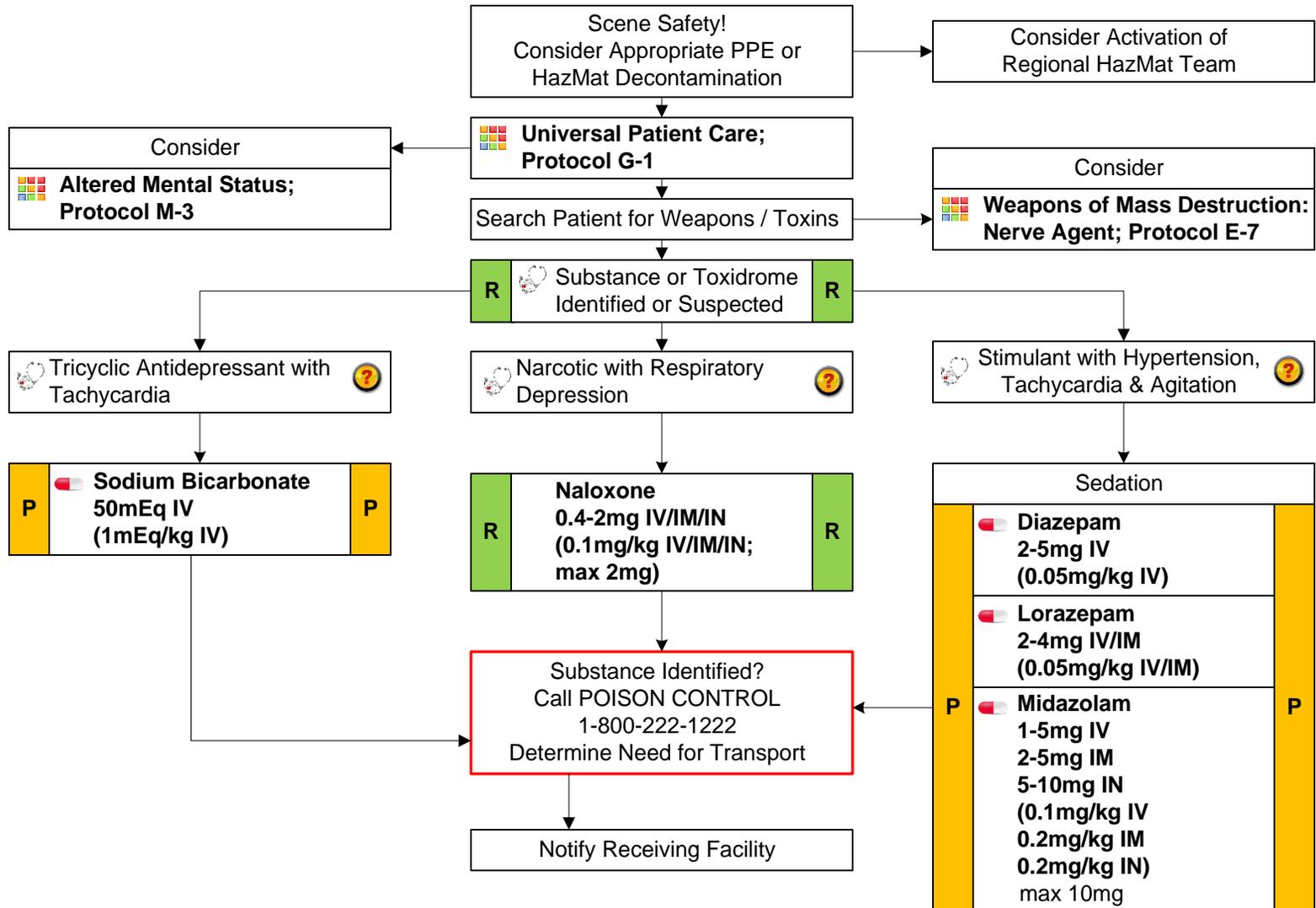
- Ingestion or suspected ingestion of a potentially toxic substance
- Quantity and route of substance ingested
- Time of ingestion
- Reason of ingestion (suicidal, criminal, accidental)
- Available medications in home
- Past medical history & medications

Signs & Symptoms

- Changes in mental status
- Hypotension or hypertension
- Decreased respiratory rate
- Tachycardia or bradycardia
- Dysrhythmias
- Seizures
- Mucosal burns
- Solvent odor

Differential

- Tricyclic antidepressants (TCAs)
- Acetaminophen or Aspirin
- Depressants
- Stimulants
- Anticholinergic agents
- Cardiac medications
- Solvents, alcohols, cleaning agents
- Insecticides or organophosphates



Pearls

- Do not rely on the patient's history of ingestion, especially in cases of attempted suicide.
- Make sure the patient is not carrying additional medications or weapons.
- Bring medication bottles, contents, and any emesis to the Emergency Department.
- Consider toxic gas if there are multiple patients in an enclosed space. Do not enter without proper training and equipment.
- Do not induce vomiting or administer Ipecac.
- In suspected tricyclic antidepressant (TCA) overdose, consider early intubation and hyperventilation.
- Notify the receiving facility to prepare for decontamination if the patient is potentially contaminated.

Performance Improvement Suggestions

- Documentation of utilization of antidotes
- Assessment of scene safety

Protocol M-10 – 2016 Overdose / Toxic Ingestion

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Seizure, Adult



History

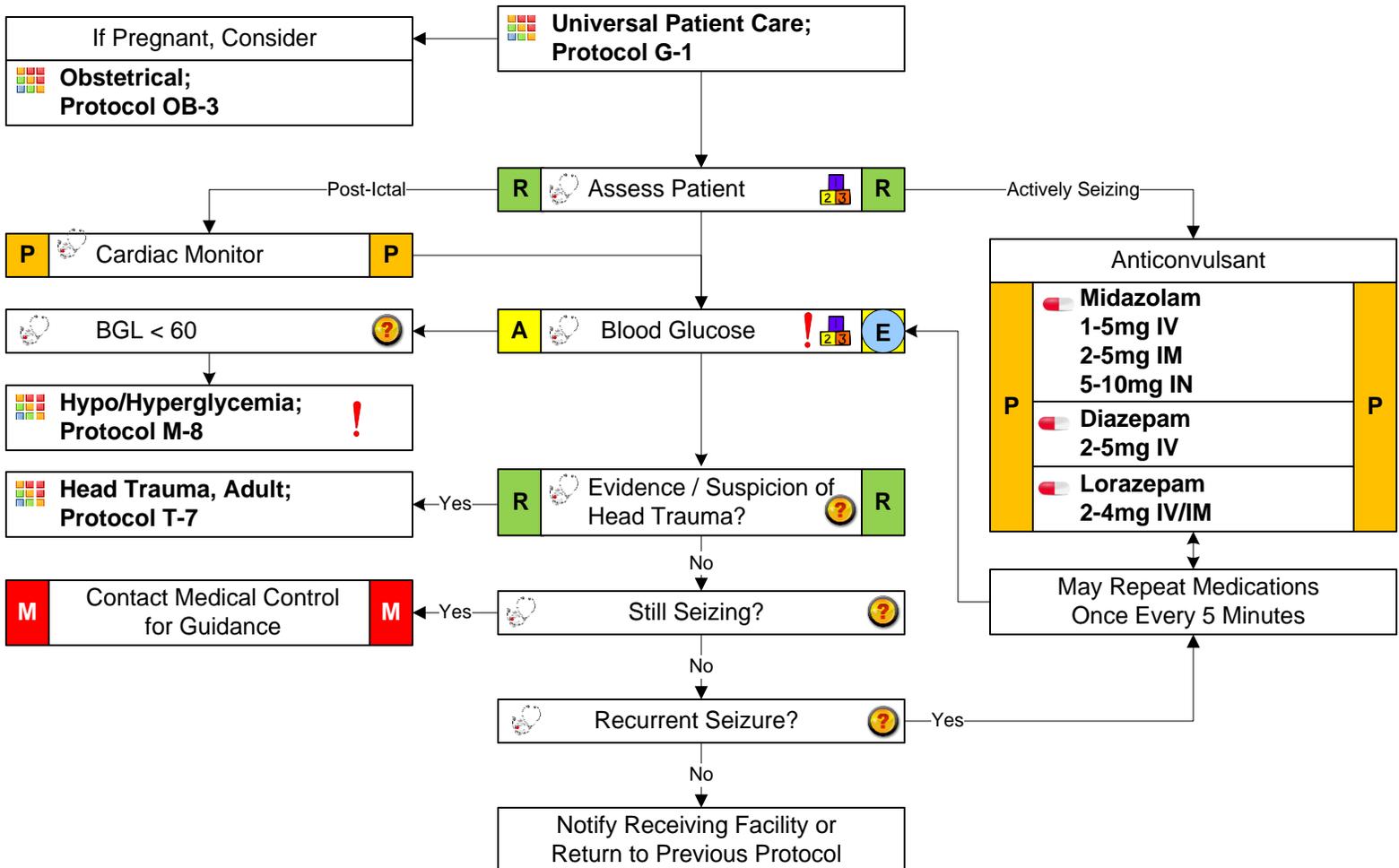
- Reported / witnessed seizure activity
- Previous history of seizures
- Medical alert tag information
- Seizure medications
- History of trauma
- History of diabetes
- History of pregnancy
- Substance abuse

Signs & Symptoms

- Decreased mental status
- Sleepiness
- Incontinence
- Observed seizure activity
- Evidence of trauma
- Unconscious

Differential

- Head trauma / tumor / stroke
- Metabolic, hepatic, or renal failure
- Hypoxia
- Electrolyte abnormality (Na, Ca, Mg)
- Hypoglycemia
- Substance abuse / withdrawal
- Medication non-compliance
- Infection / fever
- Eclampsia
- Dysrhythmia



Pearls

- Be prepared to assist ventilations, especially if a benzodiazepine is used.
- Seizures may be secondary to head trauma. Seizures may also be the cause of a head or c-spine injury.
- The preferred route for Midazolam is IM or IN if IV access is not available.
- Recheck glucometry after giving Dextrose or Glucagon; in the case of hypoglycemia, recheck glucometry if seizure reoccurs.

Performance Improvement Suggestions

- Documentation of glucometry
- Description of witnessed seizure activity

Protocol M-11 – 2016 Seizure, Adult

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Seizure, Pediatric



History

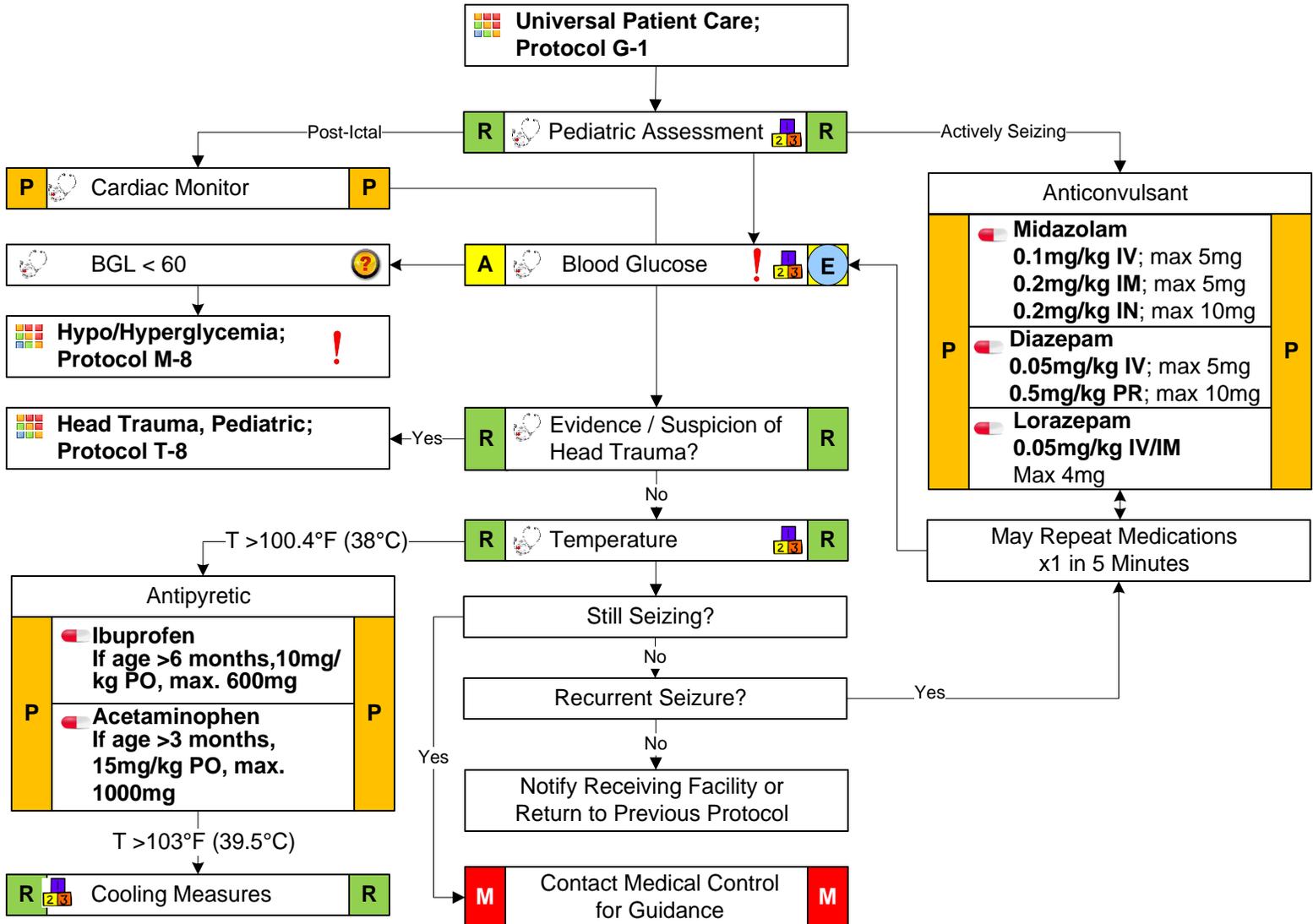
- Fever
- Reported / witnessed seizure activity
- Previous history of seizures
- Medical alert tag information
- Seizure medications
- History of head trauma
- History of diabetes
- Congenital abnormality

Signs & Symptoms

- Decreased mental status
- Sleepiness
- Observed seizure activity
- Evidence of trauma
- Hot, dry skin or elevated body temperature
- Unconscious

Differential

- Fever / infection
- Head trauma / tumor
- Medication / toxin
- Hypoxia / respiratory failure
- Electrolyte abnormality (Na, Ca, Mg)
- Hypoglycemia



Pearls

- Addressing the ABCs and hypoglycemia is more important than stopping the seizure.
- Be prepared to assist ventilations, especially if a benzodiazepine is used.
- Seizures may be secondary to head trauma. Seizures may also be the cause of a head or c-spine injury.
- In infant patients, a seizure may be the only evidence of a closed head injury.
- The preferred route for Midazolam is IM or IN if IV access is not available.
- Recheck glucometry after giving Dextrose or Glucagon; in the case of hypoglycemia, recheck glucometry if seizure reoccurs.

Performance Improvement Suggestions

- Documentation of glucometry & temperature
- Description of witnessed seizure activity

Protocol M-12 – 2016 Seizure, Pediatric

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Suspected Stroke



History

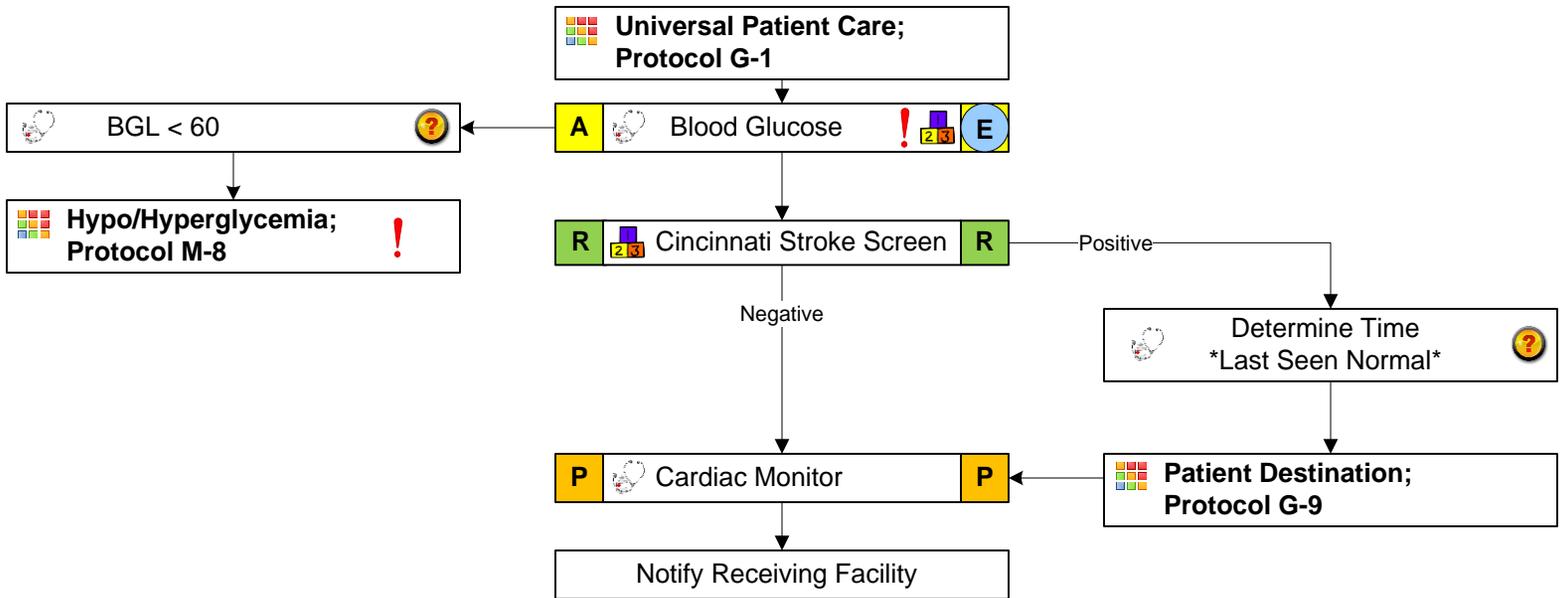
- Previous cerebrovascular accident or transient ischemic attack
- Previous cardiac or vascular surgery
- Associated diseases:
 - Diabetes
 - Hypertension
 - Coronary artery disease
- Atrial fibrillation
- Medications (anticoagulants)
- History of trauma

Signs & Symptoms

- Altered mental status
- Unilateral weakness / numbness
- Visual field deficit / cortical blindness
- Aphasia / dysarthria
- Vertigo / ataxia
- Vomiting / headache
- Seizures
- Hypertension / hypotension

Differential

- Transient ischemic attack
- Seizure / Todd's paralysis
- Hypoglycemia
- Stroke:
 - Thrombotic or Embolic ~85%
 - Hemorrhagic ~15%
- Tumor
- Trauma
- Migraine headache



Pearls

- The window for tissue Plasminogen Activator (TPA) is typically 3 hours but may be extended to 4.5 hours for certain brain attack patients. The window for intra-arterial TPA (IA TPA) is typically 6 hours. The window for mechanical thrombectomy is 8 hours. Consult with your local stroke center for specific patient criteria and the facility's brain attack capabilities.
- The phrase *last seen normal* is defined as the last witnessed time the patient was symptom-free. For example, a patient who awakens with stroke symptoms has a *last seen normal* time of the previous night when the patient was symptom-free, not when the patient awoke.
- Hypertension is commonly present with a stroke and is not generally treated unless severe or thrombolytic therapy is anticipated.
- Be alert for airway problems (dysphagia, vomiting, aspiration).
- Hypoglycemia can present as a localized neurologic deficit, especially in the elderly. Once hypoglycemia is corrected, be sure to return to this protocol.

Performance Improvement Suggestions

- Documentation of Cincinnati stroke screen results and, if applicable, time *last seen normal*
- Documentation of blood glucometry

Protocol M-13 – 2016 Suspected Stroke

Syncope



History

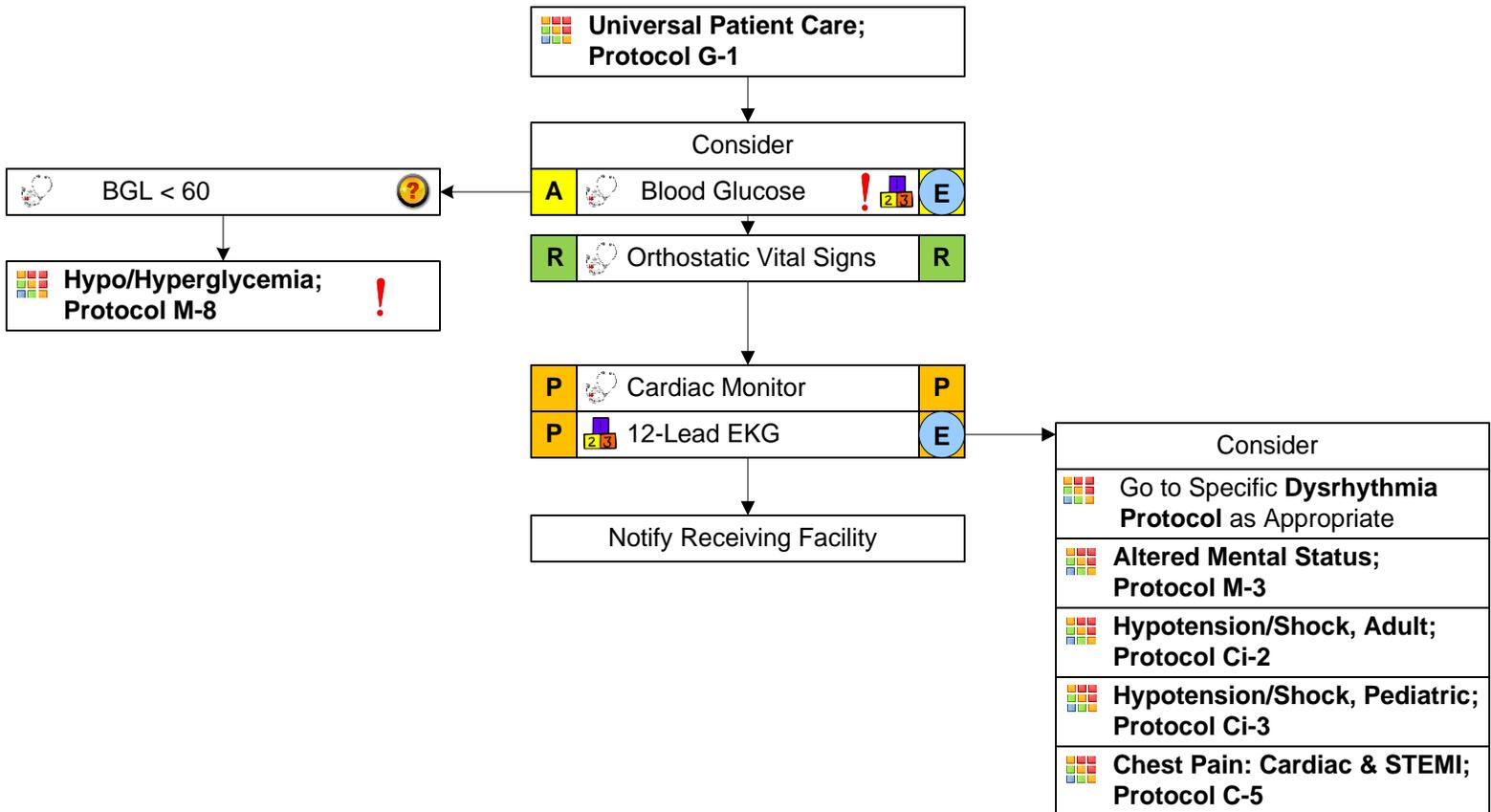
- History of cardiac problems, stroke, seizures
- Occult blood loss: gastrointestinal or ectopic
- Female patients: nausea, vomiting, diarrhea
- Any medications
- Past medical history

Signs & Symptoms

- Loss of consciousness with recovery
- Lightheadedness, dizziness
- Palpitations, slow or rapid pulse
- Pulse irregularity
- Decreased blood pressure

Differential

- Vasovagal
- Orthostatic hypotension
- Cardiac syncope
- Micturition / defecation syncope
- Psychiatric
- Pulmonary embolism
- Hypoglycemia
- Seizure
- Shock
- Toxicologic (alcohol)
- Medication side effect: hypertension
- Ectopic pregnancy



Pearls

- Assess for signs and symptoms of trauma if patient is associated with or had a questionable fall with syncope.
- Consider dysrhythmias, gastrointestinal bleeds, ectopic pregnancy, and seizure as possible causes of syncope.
- Although the patient may appear well at the time of EMS arrival, the patient should still be transported, even if no obvious cause of syncope is apparent.
- More than 25% of syncope in geriatric patients is cardiac dysrhythmia based.

Performance Improvement Suggestions

- Documentation of cardiac rhythm
- Consideration of cervical spine injury in case / setting of fall

Protocol M-16 – 2014 Syncope

Vomiting & Diarrhea



History

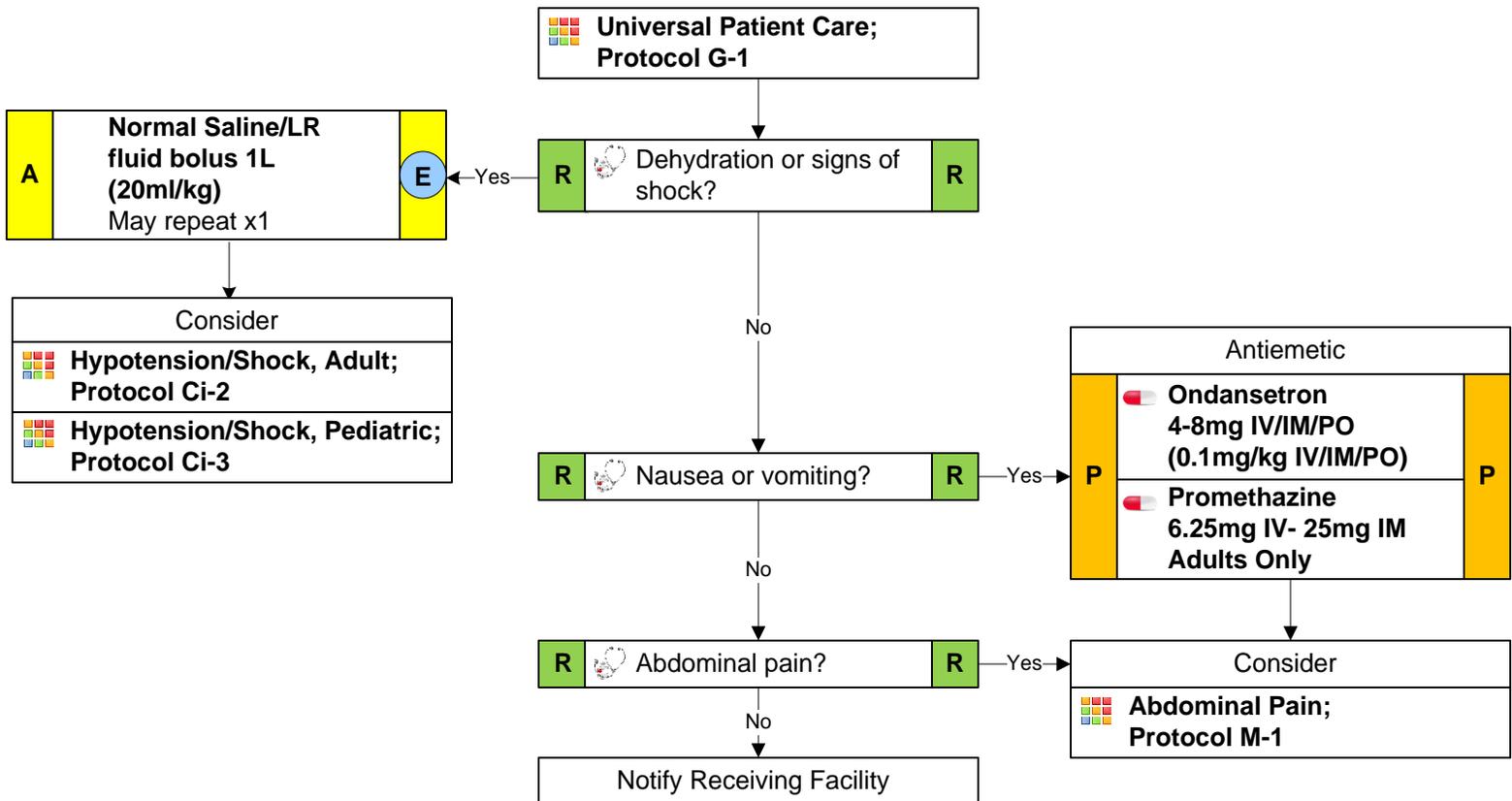
- Severity: frequency, quantity, duration
- Recent travel history
- Recent contact with ill persons
- Recent antibiotics / NSAIDs
- Previous abdominal surgery
- Alcohol abuse
- Possible pregnancy
- Abdominal pain

Signs & Symptoms

- Distention
- Abdominal tenderness
- Bilious, bloody, or coffee ground-like emesis
- Hematochezia or melena
- Fever
- Vertigo

Differential

- CNS (increased pressure, headache, stroke, CNS lesions, vestibular)
- Myocardial infarction
- Diabetic ketoacidosis
- Appendicitis, bowel obstruction, pyloric stenosis, gastritis / PUD, pancreatitis
- OB/GYN (pregnancy, ovarian cyst, PID)
- Infections (pyelo, colitis, pneumonia)
- Gastroenteritis (viral, bacterial, toxin)
- Renal failure



Pearls

- Promethazine (Phenergan) may cause sedation, especially in the elderly, as well as other undesirable effects. Ondansetron (Zofran) is preferred over Promethazine.
- Consider cardiac ischemia when the patient presents with vomiting and upper abdominal pain.
- In pediatric patients, assure an appropriate weight-based volume of intravenous fluids is given.

Performance Improvement Suggestions

- Documentation of pain severity, if present

Protocol M-15 – 2016 Vomiting & Diarrhea

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Dental Problems



History

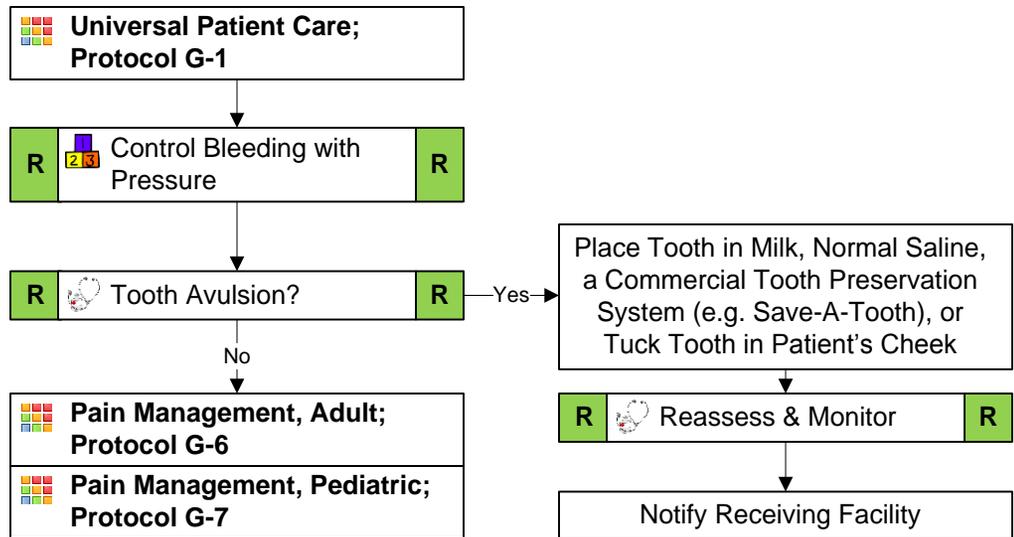
- Age
- Past medical history
- Medications
- Onset of pain or injury
- Trauma involving the teeth
- Location of tooth
- Whole versus partial tooth injury

Signs & Symptoms

- Bleeding
- Pain
- Fever
- Swelling
- Missing or fractured tooth / teeth

Differential

- Decay
- Infection
- Fracture
- Avulsion
- Abscess
- Facial cellulitis
- Impacted teeth (wisdom teeth)
- Temporomandibular Joint Disorder (TMJ) syndrome
- Myocardial infarction



Pearls

- Do not tuck an avulsed tooth into the patient's cheek if there is a possibility of aspiration.
- Significant soft tissue swelling to the face or oral cavity may represent cellulitis or an abscess.
- On-scene and travel times should be minimized for patients with complete tooth avulsions; re-implantation is possible within four hours if the tooth is handled properly.
- Avulsed teeth may be gently rinsed if grossly contaminated, but should not be scrubbed or brushed.
- Pain associated with the teeth should be assessed for sensitivity to cold or heat and tenderness to touch or tapping.
- Occasionally, cardiac chest pain may radiate to the jaw.

Performance Improvement Suggestions

- Proper handling of avulsed teeth
- Documentation of pain management

Protocol M-16 – 2016 Dental Problems

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Childbirth & Labor



History

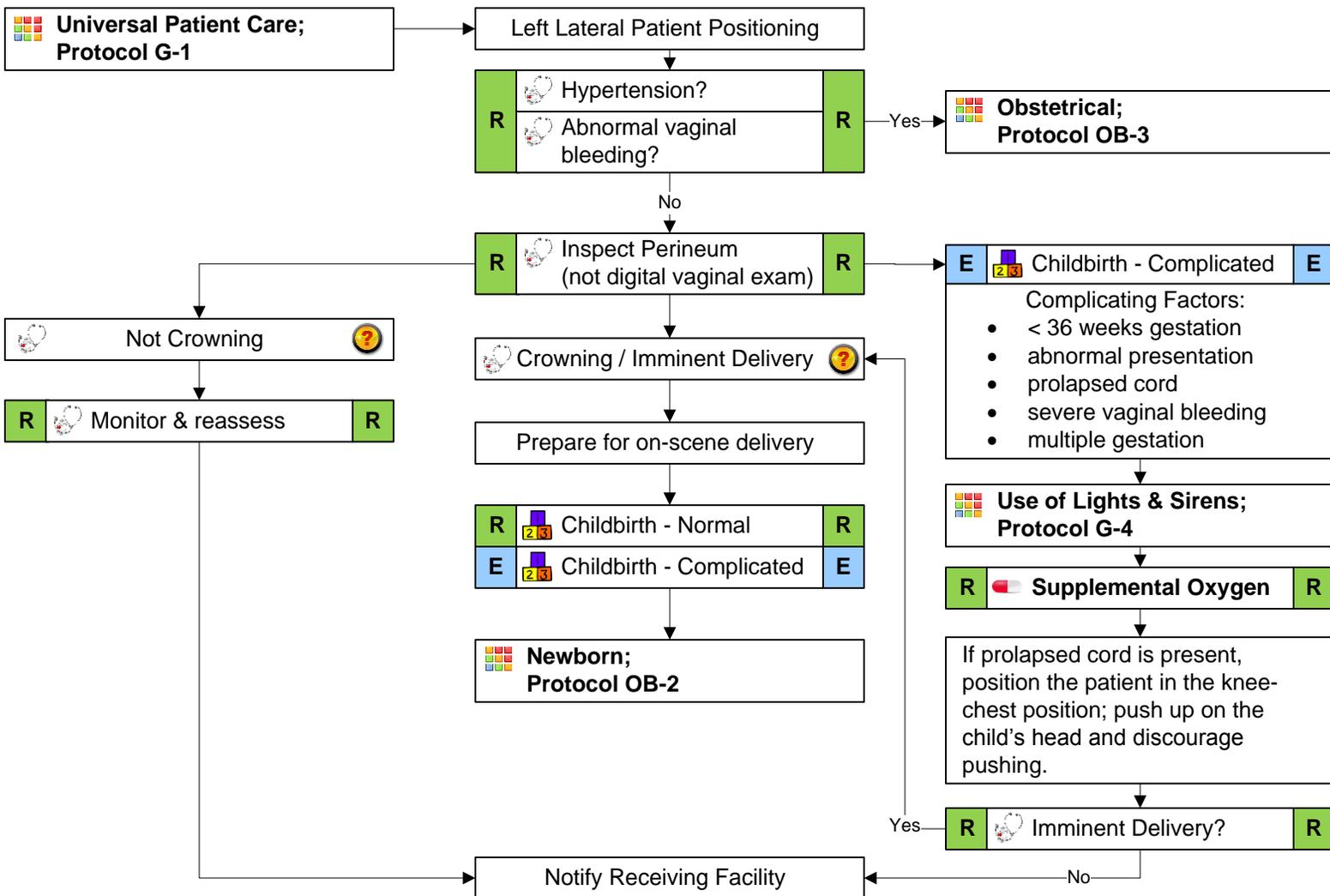
- Due date
- Time contractions started & interval
- Rupture of membranes
- Duration & amount of any vaginal bleeding
- Sensation of fetal activity
- Past medical & delivery history
- Medications
- Gravida / Para status
- High-risk pregnancy
- Twins, triplets, etc.
- Trauma

Signs & Symptoms

- Contractions / pain
- Vaginal discharge or bleeding
- Crowning or mother's urge to push
- Meconium

Differential

- Normal childbirth
- Abnormal presentation:
 - Buttocks
 - Foot / hand
- Prolapsed cord
- Placenta previa
- Abruptio placenta



Pearls

- If maternal seizures occur, refer to the Obstetrical Emergencies; Protocol OB-3.
- Some perineal bleeding is normal with any childbirth. Large quantities of blood or free bleeding are abnormal. After delivery, massaging the uterus (lower abdomen) will promote uterine contraction and help to control post-partum bleeding.
- In trauma, best care of the baby is best care of the mother.

Performance Improvement Suggestions

- Documentation of frequency and duration of contractions, if applicable
- Documentation of the presence or absence of complicating factors

Protocol OB-1 – 2016 Childbirth & Labor

Newborn Child Care



History

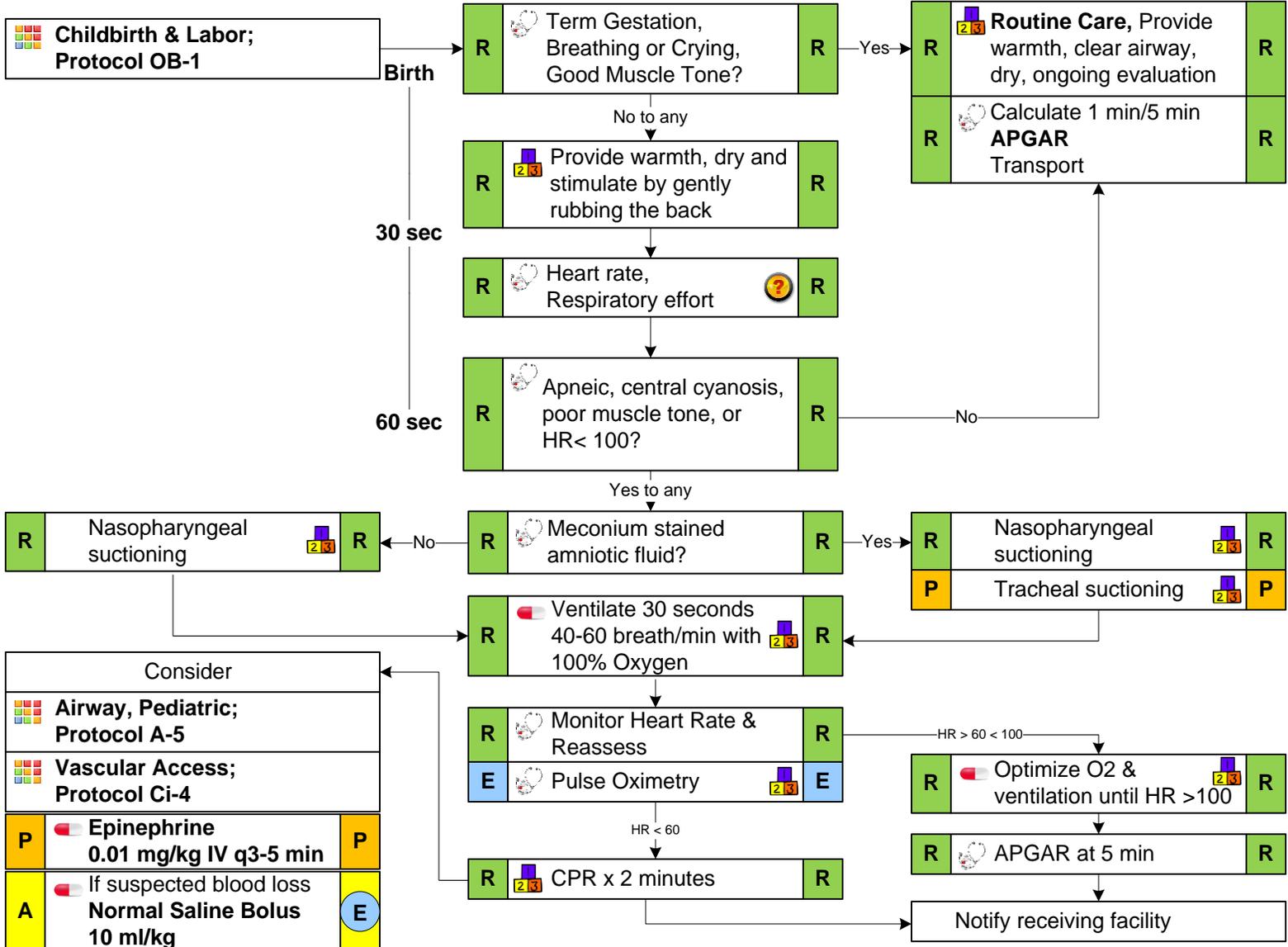
- Due date and gestational age
- Multiple gestation (twins etc.)
- Meconium
- Delivery difficulties
- Congenital disease
- Maternal medications
- Maternal risk factors
 - substance abuse
 - smoking

Signs and Symptoms

- Respiratory distress
- Peripheral cyanosis or mottling (normal)
- Central cyanosis (abnormal)
- Altered level of responsiveness
- Bradycardia

Differential

- Airway failure
 - Secretions
 - Respiratory drive
- Hypothermia
- Maternal medication effect
- Hypovolemia
- Congenital heart disease
- Infection



Pearls

- CPR in infants is 120 compressions/minute with a 3:1 compression to ventilation ratio.
- Avoid hypothermia. Cover infant's head and maximize ambulance temperature.
- Maternal medications may sedate the infant.
- Focus should be on newborn appearance, not the presence of meconium.

Performance Improvement Suggestions

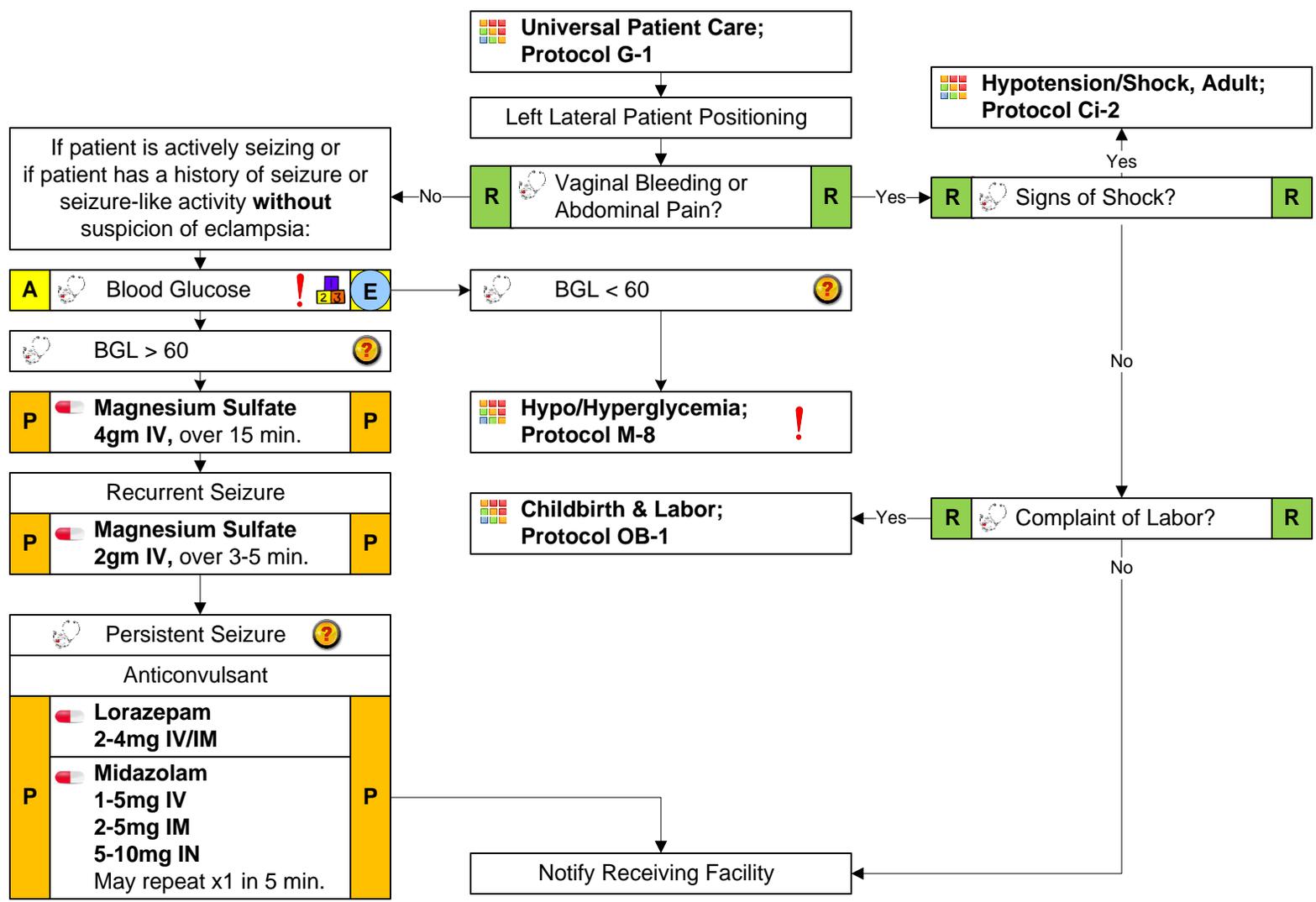
- Initial infant temperature at receiving facility
- Documentation of heart rate, central cyanosis and muscle tone

Protocol OB-2 – 2016 Newborn Child Care

Obstetrical Emergency



- | | | |
|---|--|---|
| History <ul style="list-style-type: none"> • Past medical history • Hypertension medications • Prenatal care • Prior pregnancies / births • Gravida / para status • Last menstrual period (LMP) and estimated due date (EDD) | Signs & Symptoms <ul style="list-style-type: none"> • Vaginal bleeding • Abdominal pain • Seizures • Hypertension • Severe headache • Visual changes • New onset of peripheral edema | Differential <ul style="list-style-type: none"> • Pre-eclampsia / eclampsia • Placenta previa • Placenta abruptio • Spontaneous abortion |
|---|--|---|



- Pearls**
- Maintain the mother in a left lateral position to increase venous return and to minimize the risk of supine hypotensive syndrome.
 - With a pregnant patient, hypertension is defined as a blood pressure greater than 140 (systolic) or greater than 90 (diastolic).
 - The most common complaint prior to an eclamptic seizure is a severe headache.
 - If a pregnant patient > 20 weeks has no pre-existing seizure disorder and presents with a seizure, consider eclampsia – even in the absence of hypertension. Treat non-eclamptic seizures in accordance with Seizure, Adult; Protocol M-11.
 - All pregnant patients involved in a motor vehicle collision should be seen immediately by a physician for evaluation and fetal monitoring.
 - Magnesium Sulfate may cause hypotension and a decreased respiratory drive. Loss of deep tendon reflexes (areflexia) is usually the first sign of magnesium toxicity which may be reversed with Calcium. Contact Medical Control prior to administering Calcium.

- Performance Improvement Suggestions**
- Documentation of blood glucometry in seizure patients
 - Documentation of last menstrual period and estimated due date

Protocol OB-3 – 2016 Obstetrical Emergency

Burns, Thermal



History

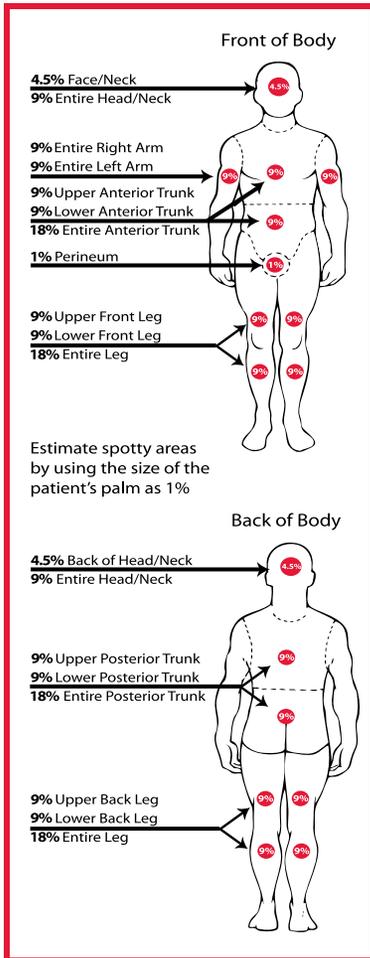
- Type of exposure (heat, gas, exposure)
- Inhalation / airway injury
- Time of injury
- Past medical history
- Medications
- Associated injury (blunt, blast, penetrating)
- Loss of consciousness

Signs & Symptoms

- Pain, swelling
- Hypotension / shock
- Airway compromise / distress
- Singed facial or nasal hair
- Hoarseness / wheezing

Differential

- Superficial (1st degree): red, painful
- Partial thickness (2nd degree): blistering
- Full thickness (3rd degree): painless charred / leathery skin
- Thermal burns
- Chemical burns
- Electrical burns
- Radiation burns



Universal Patient Care; Protocol G-1

STOP THE BURNING PROCESS

- Remove rings, bracelets, other constricting items
- Cool wound(s) with lactated ringers, normal saline, sterile water, or tap water
- Beware of hypothermia
 - Do not apply cold fluids to patients with burns > 10% BSA
- Cover burns with dry, sterile sheets or dressings

Hypotension / Signs of Shock?

2nd or 3rd Degree Burns > 20% BSA?

Consider

Pain Management, Adult; Protocol G-6

Pain Management, Pediatric; Protocol G-7

Determine Body Surface Area & Assess Severity

Consider

Toxic Inhalation; Protocol E-6

Normal Saline/LR fluid bolus 1L (20ml/kg) May repeat x1

Hypotension/Shock, Adult; Protocol Ci-2

Hypotension/Shock, Pediatric; Protocol Ci-3

Notify Receiving Facility

Pearls

- Burn patients are trauma patients! Evaluate for multisystem traumas and consider transport to the locally designated trauma center.
- STOP THE BURNING PROCESS!
- Be sure to maintain a high index of suspicion for airway / inhalation injury. Isolated skin burns are not immediately life-threatening.
- Early intubation is required when the patient experiences significant airway / inhalation injury.
- Circumferential burns to the patient's extremities are dangerous due to the potential vascular compromise secondary to soft tissue swelling and compartment syndrome.
- Burn patients are prone to hypothermia. Never apply ice to cool burns. Avoid overcooling; if available, administer warm intravenous fluids to help maintain a normal body temperature.
- Consider the possibility of child abuse in pediatric patients.

Burn Center Criteria

- Partial thickness (second degree) burns greater than 10% of the total body surface area (BSA)
- Full thickness (third degree) burns of patients in any age group
- Any airway / inhalation injury
- Burns that involve the face, hands, feet, genitalia, perineum or major joints
- Electrical burns (including lightning injury) and chemical burns

Performance Improvement Suggestions

- Documentation of airway and inhalation exposure
- Documentation of pain assessment and management

Protocol T-1 – 2016 Burns, Thermal

Burns, Chemical & Electrical



History

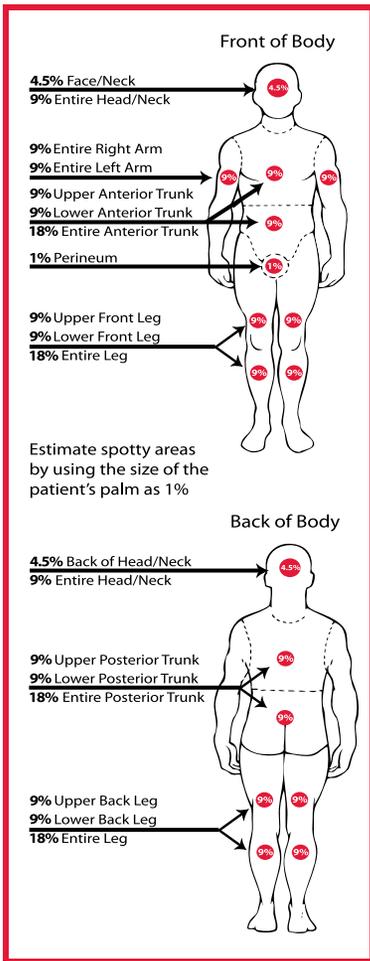
- Type of exposure (heat, gas, exposure)
- Inhalation / airway injury
- Time of injury
- Past medical history
- Medications
- Associated injury (blunt, blast, penetrating)
- Loss of consciousness

Signs & Symptoms

- Pain, swelling
- Hypotension / shock
- Airway compromise / distress
- Singed facial or nasal hair
- Hoarseness / wheezing
- Dysrhythmias
- Entry and exit wounds

Differential

- Superficial (1st degree): red, painful
- Partial thickness (2nd degree): blistering
- Full thickness (3rd degree): painless / charred / leathery skin
- Thermal burns
- Chemical burns
- Electrical burns
- Radiation burns



Scene Safety!
Consider Appropriate PPE or HazMat Decontamination

STOP THE BURNING PROCESS

Consider Eye Involvement

R	Eye Irrigation	R
P	Tetracaine Ophthal. 1-2gtts in affected eye	P
P	Proparacaine Ophthal. 1-2gtts in affected eye	P
P	Morgan Lens Irrigation	P

Universal Patient Care; Protocol G-1

R	Determine Body Surface Area & Assess Severity	R
P	Cardiac Monitor	P

- Remove rings, bracelets, other constricting items
- Immediately flush chemical burns with closest water source until burning stops (minimum 15 min.)
- Expose the patient to identify entry and exit sites
- Cover burns with dry, sterile sheets or dressings

A	Normal Saline/LR fluid bolus 1L (20ml/kg) May repeat x1	E
---	--	---

R	Hypotension / Signs of Shock?	R
R	2nd or 3rd Degree Burns > 20% BSA?	R

Hypotension/Shock, Adult; Protocol Ci-2

Shock-Hypotension, Pediatric; Protocol Ci-3

Consider

Pain Management, Adult; Protocol G-6

Pain Management, Pediatric; Protocol G-7

Notify Receiving Facility

Pearls

- Burn patients are trauma patients! Evaluate for multisystem traumas and consider transport to the locally designated trauma center.
- STOP THE BURNING PROCESS!
- Chemical Burns:
 - If possible, identify the chemical agent.
 - Do not attempt to neutralize the chemical agent.
 - If the patient is potentially contaminated, notify receiving facility that the patient may need decontamination.
- Electrical Burns:
 - Do not touch the patient until you are certain the electrical source has been disconnected.
 - Do not forget the cardiac monitor – anticipate ventricular or atrial irregularity (to include V-tach, V-fib, heart blocks, etc.)
 - Attempt to identify the nature of the electrical source (AC vs. DC), the amount of voltage, and the amperage the patient may have been exposed to during the electrical shock.

Performance Improvement Suggestions

- Identification of chemical or electrical source
- Documentation of pain assessment and management

Protocol T-2 – 2016 Burns, Chemical & Electrical

Crush Injury Syndrome



History

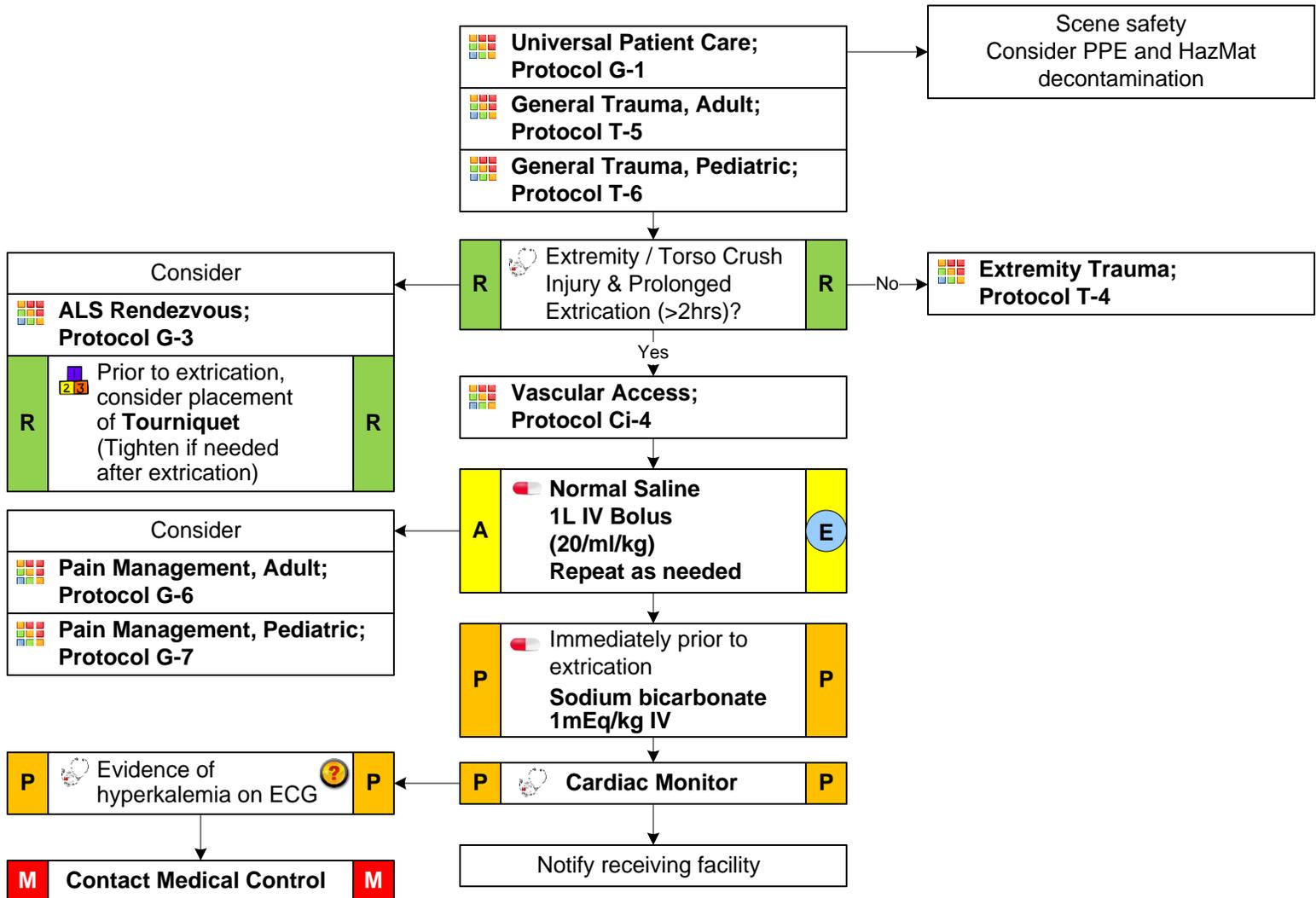
- Mechanism of injury
- Time of onset / duration of entrapment
- Environmental / biological hazards

Signs & Symptoms

- Pain
- Swelling
- Deformity
- Neurologic deficits (paralysis, parasthesia)
- Vascular deficits (pallor, pulse deficit)
- Poikilothermia

Differential

- Contusion(s)
- Laceration(s)
- Fracture(s) / dislocation
- Amputation / partial amputation
- Compartment syndrome
- Crush injury / crush injury syndrome



Pearls

- Crush injury refers to local tissue damage caused by direct injury and prolonged compression. In contrast, crush injury syndrome (CIS) refers to the systemic effects of potassium, myoglobin, and other toxins released from damaged tissue upon reperfusion.
- The likelihood of CIS increases with compression time and the patient's muscle mass.
- Consider respiratory, hearing, and eye protection for the patient during extrication; prevent hypothermia.
- Signs of hyperkalemia include peaked T-waves, a wide QRS, absent P-waves, bradycardia, and sinusoidal shape.
- Hyperkalemia is treated with Calcium, Sodium Bicarbonate, Insulin / Dextrose, and Albuterol. Calcium and Sodium Bicarbonate should be given in separate IV lines to avoid precipitation.
- Lactated Ringers contains potassium and, therefore, should not be given to CIS patients.
- Normal Saline fluid resuscitation prior to and after extrication will help prevent renal failure in CIS patients.

Performance Improvement Suggestions

- Documentation of presence/absence of hyperkalemia signs on EKG
- Documentation of entrapment duration

Protocol T-3 – 2016 Crush Injury Syndrome

Extremity Trauma



History

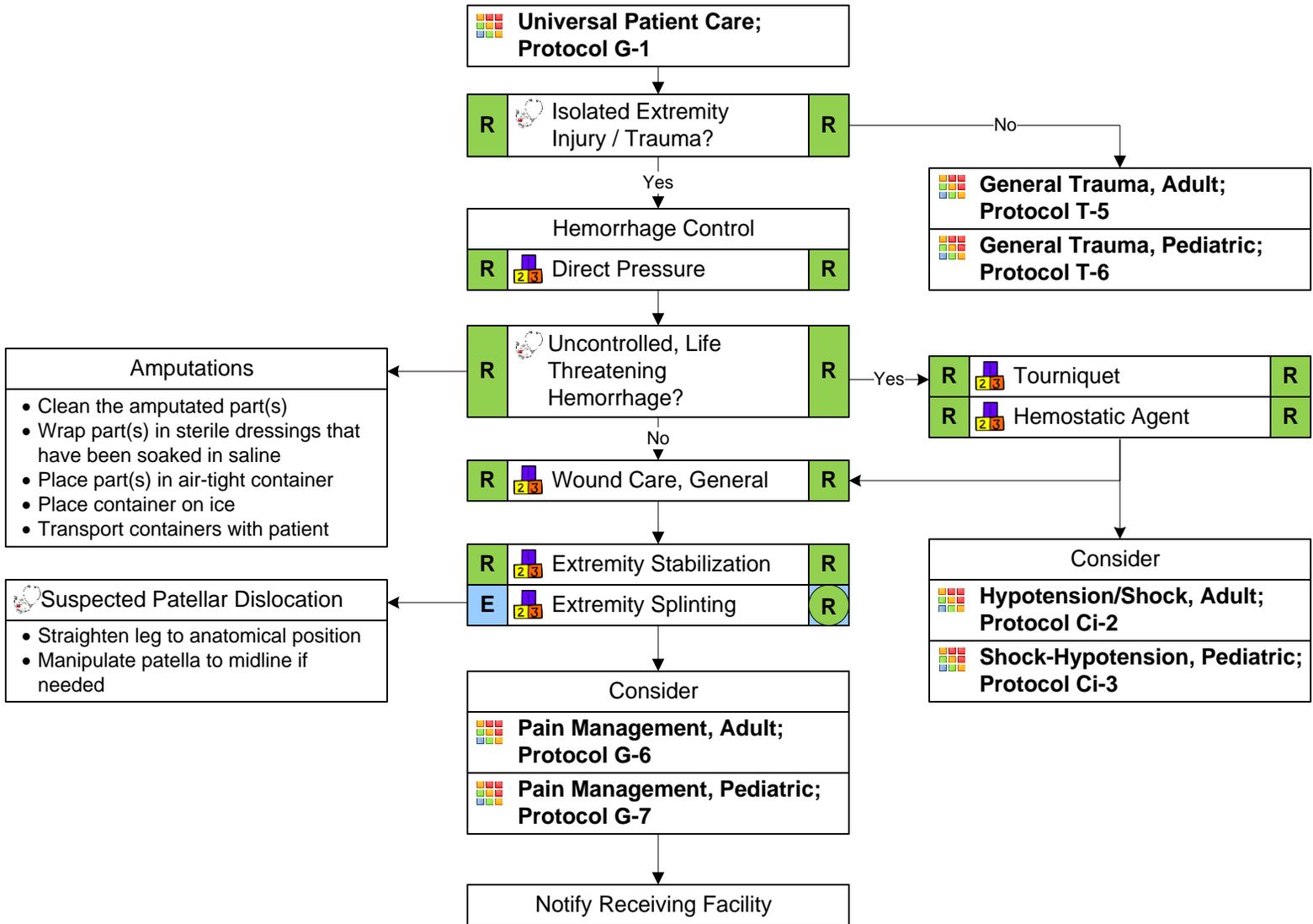
- Type of injury
- Mechanism: crush / penetrating / amputation
- Time of injury
- Open vs. closed fracture(s)
- Wound contamination
- Past medical history
- Medications

Signs & Symptoms

- Pain, swelling
- Deformity
- Altered sensation / motor function
- Diminished pulse / capillary refill
- Decreased peripheral extremity temperature
- Bony crepitus

Differential

- Abrasions
- Contusions
- Lacerations
- Sprains
- Dislocations
- Fractures
- Amputations
- Crush syndrome



Pearls

- With amputations, time is critical! Notify receiving facility as soon as feasible. Consider contacting Medical Control to help determine an appropriate destination.
- Knee dislocations and elbow dislocations / fractures have a high incidence of vascular compromise.
- Blood loss may be concealed or not apparent with extremity injuries.
- Lacerations should be evaluated for repair as soon as possible.
- Rapid transport is indicated for amputations and vascular compromise.

Performance Improvement Suggestions

- Documentation of distal neurovascular status
- Documentation of pain severity
- Care of amputated appendage(s)

Protocol T-4 – 2016 Extremity Trauma

General Trauma, Adult



History

- Time and mechanism of injury
- Height of any falls
- Damage to structures or vehicles
- Location in structure or vehicle
- Others injured or dead-on-scene
- Vehicle speed and details of motor vehicle accident
- Restraints / protective equipment
 - Helmet / pads
- Ejection from vehicle
- Weapon type
- Blast / explosion
- Past medical history
- Medications

Signs & Symptoms

- Pain
- Swelling
- Deformities
- Lesions / bleeding
- Altered mental status
- Unconsciousness or loss of consciousness
- Hypotension or shock
- Respiratory arrest
- Cardiac arrest

Differential

- Tension pneumothorax
- Flail chest syndrome
- Pericardial tamponade
- Open chest wound(s)
- Hemothorax
- Intra-abdominal bleeding
- Pelvis / femur fracture
- Spinal fracture / spinal cord injury
- Head injury
- Extremity fracture / dislocation
- Airway obstruction
- Hypothermia
- Domestic violence / abuse

Universal Patient Care; Protocol G-1

R Adult Assessment **R**

R Identify and control significant external hemorrhage **R**

Airway, Adult; Protocol A-1

R Vital Signs **R**

R Glasgow Coma Scale **R**

Abnormal

Patient Destination: Trauma Triage; Protocol T-9

Vascular Access; Protocol Ci-4

A **Normal Saline or Lactated Ringers 1L IV bolus** **E**

May repeat x1 for S/S hypotension or shock

Notify Receiving Facility

Consider

Head Trauma, Adult; Protocol T-7

Hypotension/Shock, Adult; Protocol Ci-2

Within Normal Limits

Consider

E Extremity Splinting **R**

R Hemorrhage Control **R**

Extremity Trauma; Protocol T-4

R Monitor & Reassess **R**

Consider

E Pelvic Immobilization Device **E**

E Extremity Splinting **R**

P Needle-Chest Decompression **P**

P TXA **P**

Pearls

- Geriatric patients should be examined with a high level of suspicion. The elderly have limited physiologic reserve and may decompensate with little warning.
- Examine all restraints and protective equipment for damage.
- Prolonged extrications or patients with serious trauma require early activation of air medical resources.
- Scene departure should not be delayed for procedures. If possible, procedures should be performed en route – rapid transport of the unstable trauma patient is the goal.
- Do not overlook the possibility of domestic violence or abuse.
- Bag-Valve-Mask is an acceptable method of managing the patient's airway if pulse oximetry is maintained above 90% SPO₂.

Performance Improvement Suggestions

- Documentation of air medical utilization, appropriate destination of patient, and scene times with consideration of mitigating factors

Protocol T-5 – 2016 General Trauma, Adult

General Trauma, Pediatric



History

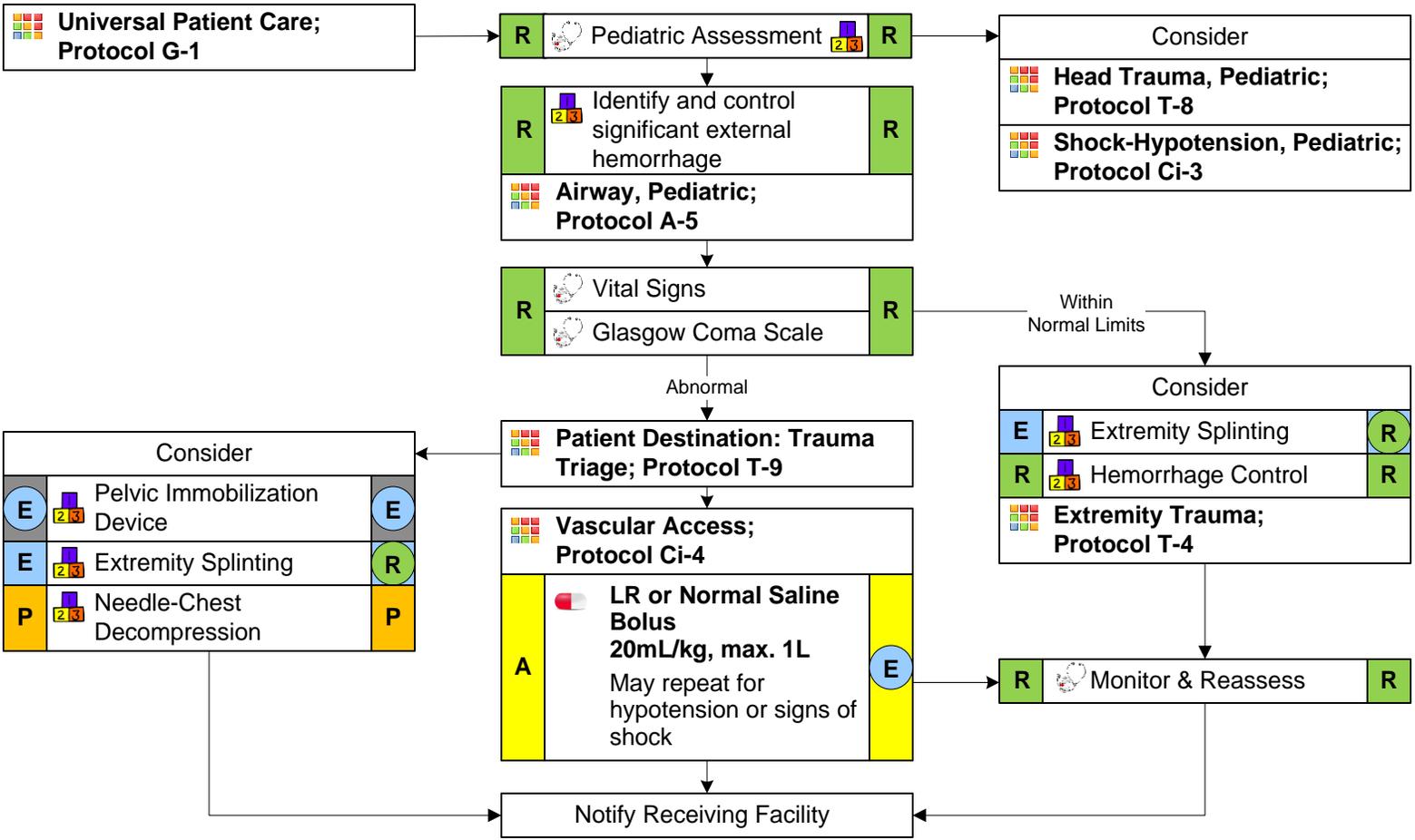
- Time and mechanism of injury
- Height of any falls
- Damage to structures or vehicles
- Location in structure or vehicle
- Others injured or dead-on-scene
- Vehicle speed and details of motor vehicle accident
- Restraints / protective equipment
 - Car seat
 - Helmet / pads
- Ejection from vehicle
- Weapon type
- Blast / explosion
- Past medical history
- Medications

Signs & Symptoms

- Pain
- Swelling
- Deformities
- Lesions / bleeding
- Altered mental status
- Unconsciousness or loss of consciousness
- Hypotension or shock
- Respiratory arrest
- Cardiac arrest

Differential

- Tension pneumothorax
- Flail chest syndrome
- Pericardial tamponade
- Open chest wound(s)
- Hemothorax
- Intra-abdominal bleeding
- Pelvis / femur fracture
- Spinal fracture / spinal cord injury
- Head injury
- Extremity fracture / dislocation
- Airway obstruction
- Hypothermia



Pearls

- Examine all restraints and protective equipment for damage.
- Prolonged extrications or patients with serious trauma require early activation of air medical resources.
- Scene departure should not be delayed for procedures. If possible, procedures should be performed en route – rapid transport of the unstable trauma patient is the goal.
- Do not overlook the possibility of child abuse.
- Bag-Valve-Mask is an acceptable method of managing the patient's airway if pulse oximetry is maintained above 90% SPO₂.

Performance Improvement Suggestions

- Documentation of air medical utilization, appropriate destination of patient, and scene times with consideration of mitigating factors

Protocol T-6 – 2016 General Trauma, Pediatric

Head Trauma, Adult



History

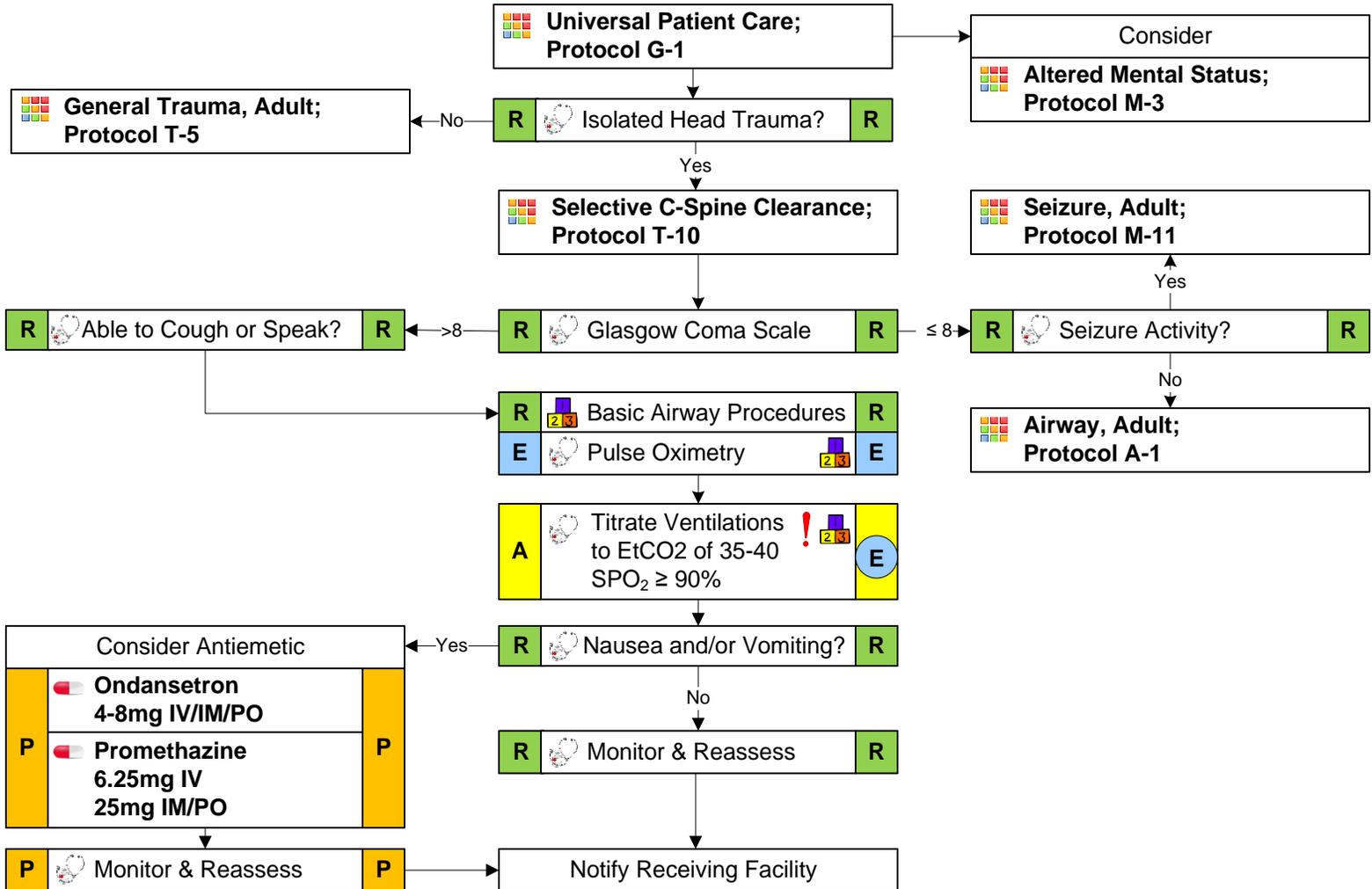
- Time of injury
- Mechanism (blunt v. penetrating)
- Loss of consciousness
- Past medical history
- Medications
- Evidence for multi-systems trauma

Signs & Symptoms

- Pain, swelling, bleeding
- Altered mental status
- Unconsciousness
- Respiratory distress / failure
- Vomiting
- Seizure activity

Differential

- Skull fracture
- Brain injury (concussion, contusion, hemorrhage, laceration)
- Epidural / subdural hematoma
- Subarachnoid hemorrhage
- Spinal injury
- Physical abuse



Pearls

- If Glasgow Coma Scale (GCS) is < 12, consider air or rapid transport. If GCS is ≤ 8, intubation should be anticipated.
- Avoid hyperventilation, except in cases of impending herniation (blown pupil, decorticate or decerebrate posturing, bradycardia). For impending herniation, maintain EtCO₂ between 25-30. In the absence of EtCO₂, hyperventilate at a rate of 25 breaths per minute.
- Increased intracranial pressure (ICP) may cause hypertension and bradycardia (Cushing's response).
- Hypotension usually indicates injury or shock unrelated to the head injury and should be treated aggressively.
- Limit intravenous fluids, unless the patient is hypotensive.
- A change in the patient's level of consciousness is the most important item to monitor and document.
- Concussions are periods of confusion associated with trauma and may resolve by the time EMS arrives. If the patient experiences any loss of consciousness or any prolonged confusion or mental status abnormality that does not return to normal within 15 minutes of injury, they should be evaluated by a physician as soon as possible.
- In areas with short transportation times, intubation is not recommended in patients who are spontaneously breathing and who have oxygen saturations greater than 90% with supplemental oxygen.

Performance Improvement Suggestions

- Documentation of frequency of GCS assessment
- Intubation in a short time of transportation

Protocol T-7 – 2016 Head Trauma, Adult

Head Trauma, Pediatric



History

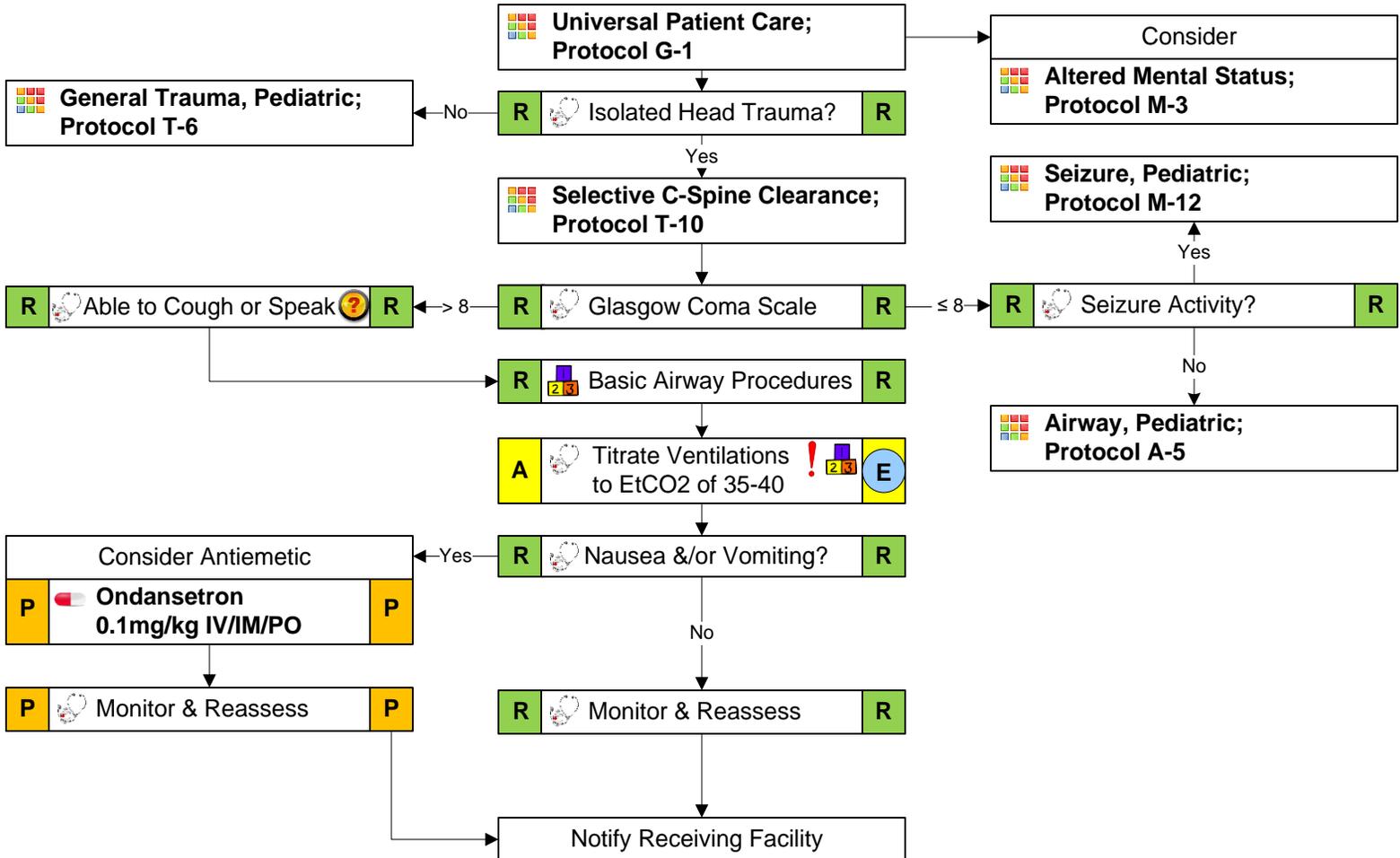
- Time of injury
- Mechanism (blunt v. penetrating)
- Loss of consciousness
- Past medical history
- Medications
- Evidence for multi-systems trauma

Signs & Symptoms

- Pain, swelling, bleeding
- Altered mental status
- Unconsciousness
- Respiratory distress / failure
- Vomiting
- Seizure activity

Differential

- Skull fracture
- Brain injury (concussion, contusion, hemorrhage, laceration)
- Epidural / subdural hematoma
- Subarachnoid hemorrhage
- Spinal injury
- Child abuse



Pearls

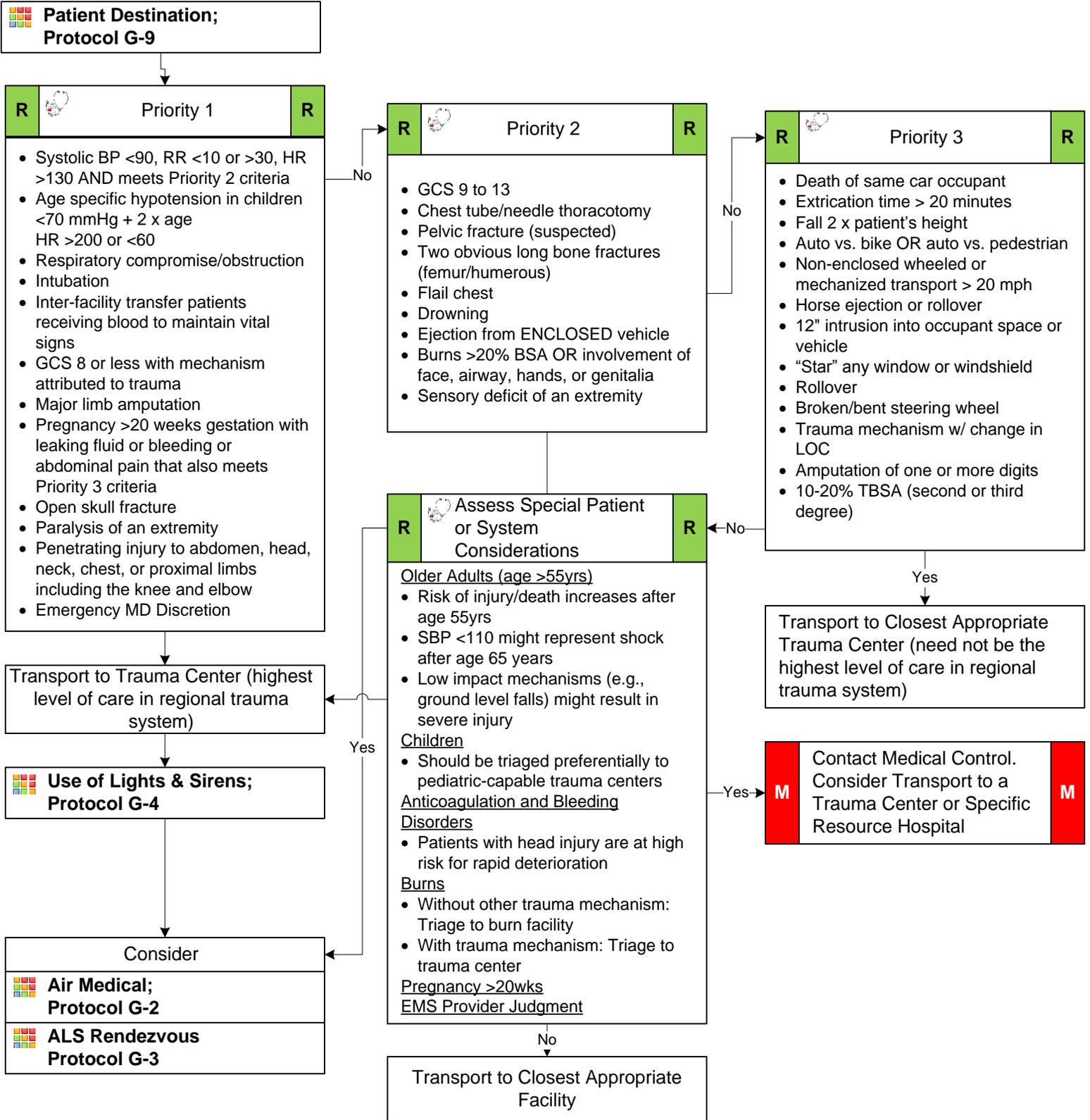
- If Glasgow Coma Scale (GCS) is < 12, consider air or rapid transport. If GCS is ≤ 8, intubation should be anticipated.
- Avoid hyperventilation, except in cases of impending herniation (blown pupil, decorticate or decerebrate posturing, bradycardia). For impending herniation, maintain EtCO₂ between 25-30. In the absence of EtCO₂, hyperventilate at a rate of: 35 breaths per minute (age < 1 year); 30 breaths per minute (age 1-5 years); 25 breaths per minute (age 5-12 years).
- Increased intracranial pressure (ICP) may cause hypertension and bradycardia (Cushing's response).
- Hypotension usually indicates injury or shock unrelated to the head injury and should be treated aggressively.
- Limit intravenous fluids, unless the patient is hypotensive.
- A change in the patient's level of consciousness is the most important item to monitor and document.
- Concussions are periods of confusion associated with trauma and may resolve by the time EMS arrives. If the patient experiences any loss of consciousness or any prolonged confusion or mental status abnormality that does not return to normal within 15 minutes of injury, they should be evaluated by a physician as soon as possible.
- In areas with short transportation times, intubation is not recommended in patients who are spontaneously breathing and who have oxygen saturations greater than 90% with supplemental oxygen.
- Consider the possibility of child abuse in all pediatric trauma victims.

Performance Improvement Suggestions

- Documentation of frequency of GCS assessment
- Intubation in a short time of transportation

Protocol T-8 – 2016 Head Trauma, Pediatric

Patient Destination: Trauma Triage



Pearls

- Priority 1 (physiologic criteria) and priority 2 (anatomic criteria) attempt to identify the most seriously injured patients.
- Depending on the local EMS system, the closest trauma center may not be the most appropriate for the patient.
- When in doubt, transport to a trauma center. Certain patients may benefit from air transport to a more distant trauma center.

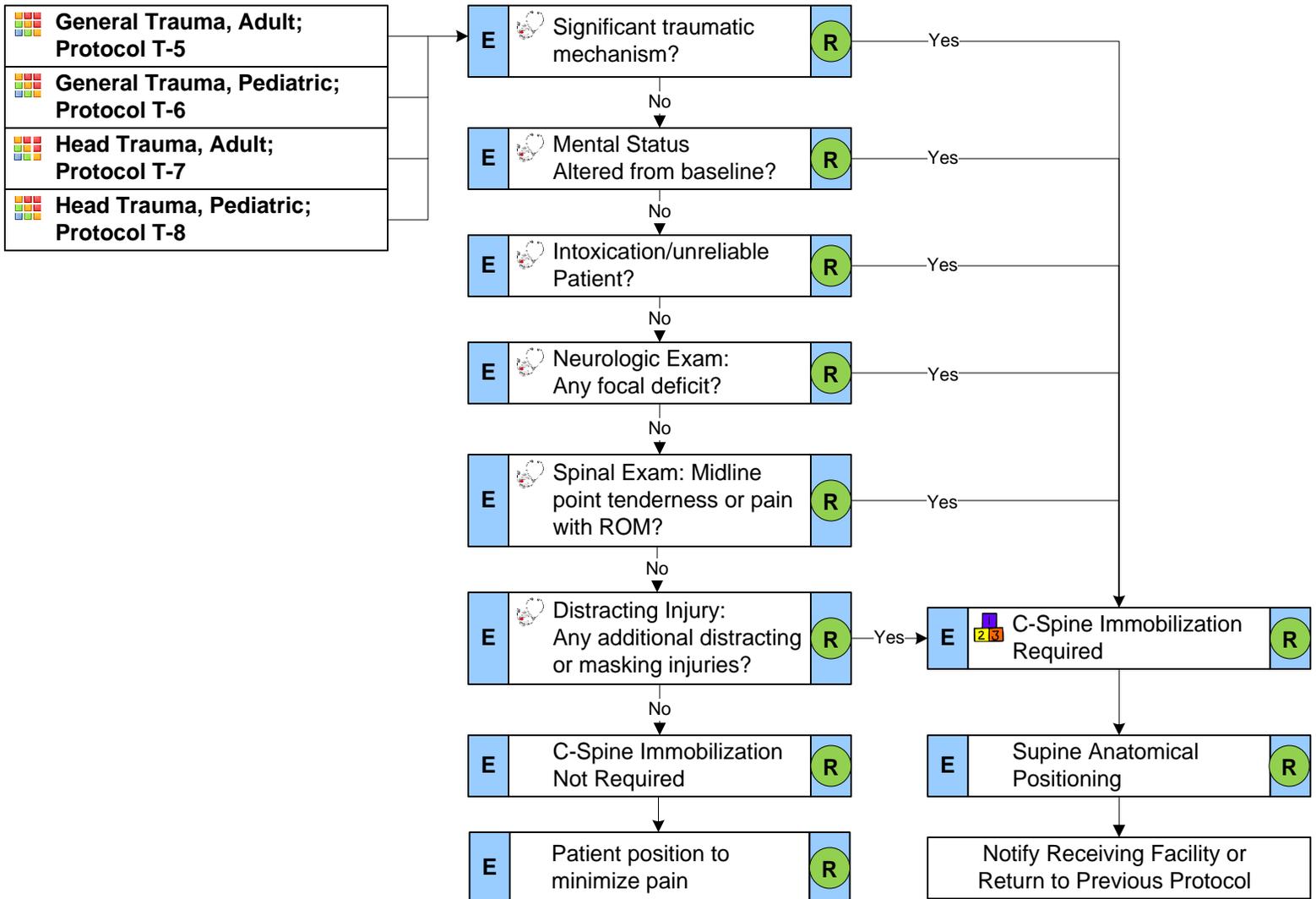
Performance Improvement Suggestions

- Documentation of criteria used to determine patient destination.
- Documentation of GCS and vital signs.

Protocol T-9 – 2016 Patient Destination: Trauma Triage

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Selective C-Spine Immobilization



Pearls

- A significant mechanism includes high-energy events such as ejection, high falls, and abrupt deceleration crashes. In the setting of a significant mechanism or extremes of age, consider spinal injury, even in the absence of symptoms.
- Range of motion (ROM) should NOT be assessed if the patient has midline spinal tenderness.
- Allowing the appropriate patients to self extricate and position themselves on a stretcher appears to be the most effective way to protect the spine.
- C-Collars should be used with extreme caution with unstable mandible/facial fracture.
- Long spine boards and scoop stretchers are transfer/extrication devices and should be removed as soon as safely possible.
- Cervical collars can be used without the use of full body immobilization..

Performance Improvement Suggestions

- Documentation of selective criteria

Protocol T-10 – 2016 Selective C-Spine Immobilization



Idaho EMS Ebola Guidelines



History

- Lived in or traveled from a country with widespread Ebola transmission within the past 21 days, or
- Had contact with an individual with confirmed Ebola within the past 21 days

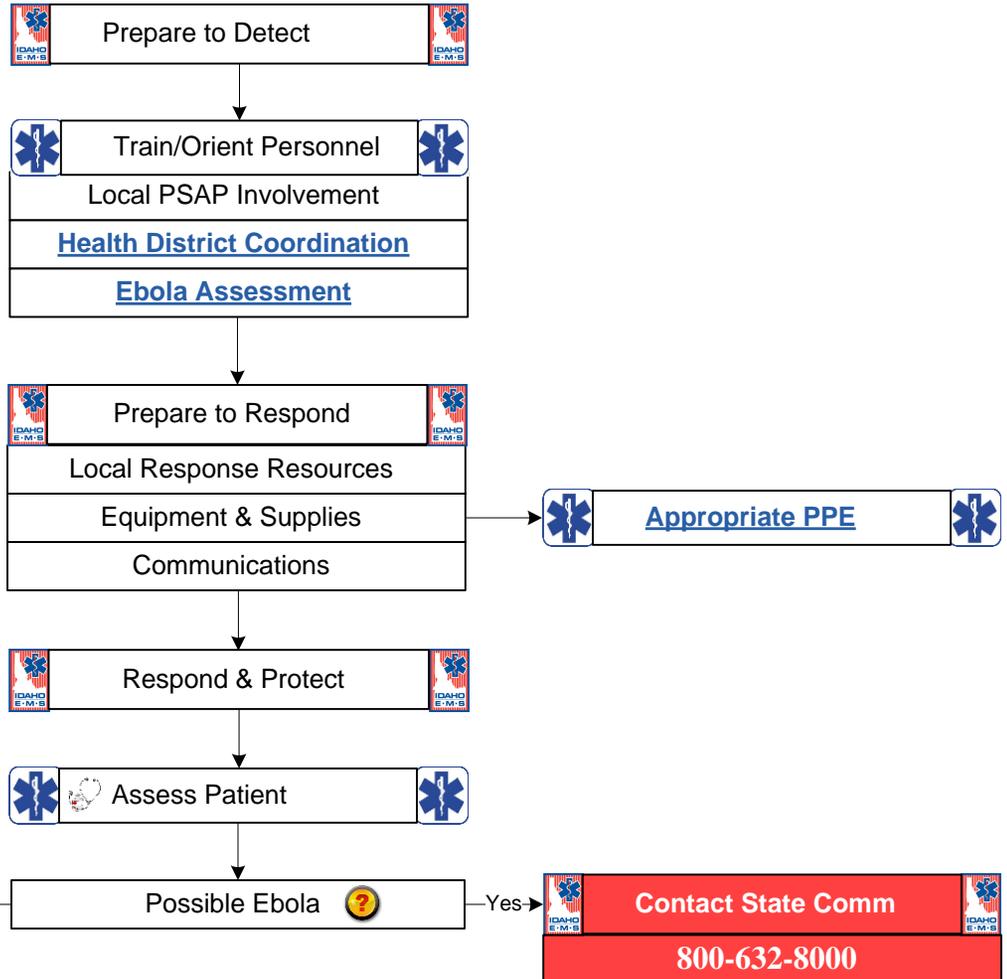
Signs & Symptoms

- Fever
- Severe headache
- Weakness, fatigue
- Diarrhea, vomiting
- Abdominal pain
- Unexplained hemorrhage (bleeding or bruising)

Differential

- Other febrile illnesses

! The Blue Underlined Text in this Document will take you to internet links with the source information by double clicking.



Pearls

- The Idaho State Communications Center acts as the Statewide coordinator for all suspected Ebola cases and should be the first contact for any suspected cases.
- The State Communications Center (State Comm) will assist with determining the appropriate resources and provide further instructions to responders.
- Regional resources and protocols are in place that will direct who will do this transport with specially prepared vehicles, higher level PPE, and specially trained staff.
- The CDC is continually updating resources as the Ebola outbreak evolves. Keep abreast of changes by coordinating efforts with your local health district.
- Symptoms may appear anywhere from 2-21 days after exposure but the average is 8 to 10 days.
- Ebola Virus Disease (Ebola) is a rare and deadly viral illness which is reportable to the National Notifiable Disease Surveillance System (NNDSS) in all U.S. states and territories. Early recognition of Ebola is critical for infection control. Health-care providers should be alert for and evaluate any patients suspected of having Ebola.
- The likelihood of contracting Ebola in the United States is extremely low unless a person has direct contact with the blood or body fluids (like urine, saliva, vomit, sweat, breast milk, semen and diarrhea) of a person who is infected with Ebola virus.

Procedure: Adult Assessment



Clinical Indications;

- Any patient who does not meet the definition of a pediatric patient.

Procedure;

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, bystander safety, and patient/caregiver interaction.
2. Assess need for additional resources.
3. Initial assessment includes a general impression as well as the status of a patient's airway, breathing, and circulation.
4. Assess mental status and disability (e.g., GCS, AVPU).
5. Establish spinal immobilization if suspicion of spinal injury.
6. Perform a focused history and physical based on patient's chief complaint.
7. Assess need for critical interventions.
8. Complete critical interventions and perform a complete secondary exam to include a baseline set of vital signs as directed by protocol.
9. Maintain an on-going assessment throughout transport to include patient response, possible complications of interventions, need for additional interventions, and assessment of evolving patient complaints/conditions.
10. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.
11. Document all findings and information associated with the assessment, performed procedures, and any administration of medications in the patient care report (PCR).

Skills Maintenance Suggestions;

- Practice full adult assessments on simulated adult patients on a periodic basis.

Procedure: Pediatric Assessment



Clinical Indications;

- Any patient <12 years of age or who can be measured with the Broselow-Luten Resuscitation Tape.

Procedure;

1. Scene size-up, including universal precautions, scene safety, environmental hazards assessment, bystander safety, and patient/caregiver interaction.
2. Assess need for additional resources.
3. Assess patient using the pediatric triangle of ABCs:
 - Airway and appearance: speech/cry, muscle tone, inter-activeness, look/gaze, movement of extremities
 - Work of breathing: absent or abnormal airway sounds, use of accessory muscles, nasal flaring, body positioning
 - Circulation to skin: pallor, mottling, cyanosis
4. Establish spinal immobilization if suspicion of spinal injury.
5. Establish responsiveness and disability appropriate for age (AVPU, GCS, etc.)
6. Color code using Broselow-Luten tape.
7. Perform a focused history and physical exam based on patient's chief complaint. Recall that pediatric patients easily experience hypothermia and thus should not be left uncovered any longer than necessary to perform an exam.
8. Assess need for critical interventions.
9. Complete critical interventions and perform a complete secondary exam to include a baseline set of vital signs as directed by protocol. If > 3 years of age, record BP. If < 3 years of age, record cap refill.
10. Maintain an on-going assessment throughout transport to include patient response, possible complications of interventions, need for additional interventions, and assessment of evolving patient complaints/conditions.
11. Include Immunizations, Allergies, Medications, Past Medical History, last meal, and events leading up to injury or illness where appropriate.
12. Document all findings and information associated with the assessment, performed procedures, and any administration of medications in the patient care report (PCR).

Skills Maintenance Suggestions;

- Practice full pediatric assessments on simulated pediatric patients on a periodic basis.

Procedure: Pain Assessment and Documentation



Clinical Indications;

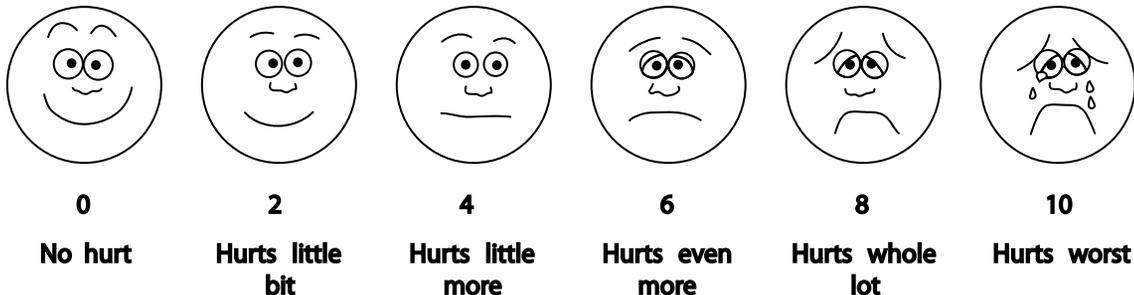
- Any patient with pain

Definitions;

- Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage.
- Pain is subjective (whatever the patient says it is).

Procedure;

1. Initial and ongoing assessment of pain intensity and character is accomplished through the patient's self report.
2. Pain should be assessed and documented in the PCR during initial assessment, before starting pain control treatment, and after pain control treatment.
3. Pain should be assessed using the appropriate approved scale.
4. Two commonly used pain scales are the "0 – 10" scale and the Wong - Baker "FACES" scale.
 - **0 – 10 Scale:** the most familiar scale used by EMS for rating pain with patients. It is primarily for adults and is based on the patient being able to express their perception of the pain as related to numbers. Avoid coaching the patient; simply ask them to rate their pain on a scale from 0 to 10, where 0 is no pain at all and 10 is the worst pain ever.
 - **Wong – Baker "FACES" scale:** this scale is primarily for use with pediatrics but may also be used with geriatrics or any patient with a language barrier. The faces correspond to numeric values from 0-10. This scale can be documented with the numeric value.



Skills Maintenance Suggestions;

- Practice pain assessments on a periodic basis.

Procedure: Pulse Oximetry



Clinical Indications;

- Patients with suspected hypoxemia.

Procedure;

1. Apply probe to patient as recommended by the device manufacturer. Pediatric patients may require pediatric specific sensors.
2. Allow machine to register saturation level. Monitor patient for a few minutes as oxygen saturation can vary.
3. Verify pulse rate on monitor with actual pulse of the patient.
4. Record time and initial saturation percent on room air if possible in the patient care report (PCR).
5. Monitor critical patients continuously until arrival at the hospital.
6. Document percent of oxygen saturation every time vital signs are recorded and in response to therapy to correct hypoxemia.
7. Treat the patient, not the data provided by the device. Use the pulse oximetry as an added tool for patient evaluation.
8. The pulse oximeter reading should never be used to withhold oxygen from a patient in respiratory distress.
9. Factors which may reduce the reliability of the pulse oximetry reading include:
 - Poor peripheral circulation (shock, hypothermia, cool extremities)
 - Excessive pulse oximeter sensor motion
 - Fingernail polish (may be removed with acetone pad)
 - Carbon monoxide bound to hemoglobin
 - Inflation of BP cuff on same extremity as pulse ox probe.

Skill Maintenance Suggestions:

- Practice placing pulse oximeter on all size patients on a periodic basis.

Procedure: Cincinnati Stroke Scale



Clinical Indications;

- Suspected Stroke Patient

Procedure;

1. Assess and treat suspected stroke patients as per protocol.
2. The Cincinnati Prehospital Stroke Scale interpretation. If any one of these three signs is abnormal, the probability of a stroke is 72%.
 - **Facial Droop** (have patient show teeth or smile)
 - Normal – both sides of the face move equally
 - Abnormal- one side of the face does not move as well as the other side
 - **Arm Drift** (patient closes eyes and holds both arms straight out for 10 seconds)
 - Normal both arms move the same or both arms do not move at all
 - (other findings such as pronator drift may be helpful)
 - Abnormal – one arm does not move or one arm drifts down compared with the other.
 - **Abnormal Speech** (Have the patient say “you cant teach an old dog new tricks”)
 - Normal Patient uses correct words with no slurring
 - Abnormal- patient slurs words, uses the wrong words, or is unable to speak
3. If any one of the three signs is abnormal, the stroke scale is positive.
4. Note any Conjugate Eye Deviation – patient’s with a positive Cincinnati Stroke Screen and positive eye deviation need to be transported to a Stroke Center.
5. The results of the Cincinnati Prehospital Stroke Scale should be documented in the PCR.

Skills Maintenance Suggestions;

- Practice performing the Cincinnati Stroke Scale on a periodic basis

Pearls;

- Conjugate Eye Deviation is a condition in which both eyes are turned to the same side during a CVA; eyes will deviate toward the affected side.

R



Cincinnati Stroke
Scale



R

Procedure: Blood Glucose Analysis



Clinical Indications;

- Patients with suspected hypoglycemia (Known Diabetic, Abnormal mental status, Sweating with rapid heart rate, Seizures, Focal neurological deficit, Behavioral changes.)

Procedure;

1. Prepare the device according to the manufacturer's instructions
2. Explain the procedure to the patient
3. Obtain verbal consent, if possible, from patient or family
4. Use body substance isolation procedures
5. Cleanse the puncture site prior to obtaining blood sample
6. Obtain a drop of blood
7. Apply the blood to the test strip according to the manufacturer's instructions
8. Obtain and record the reading from the device
9. Apply a dressing to the patient's puncture site
10. Properly dispose of test supplies
11. Continue your assessment and treatment of the patient

Skills Maintenance Suggestions;

- Calibrate a glucometer and perform a Blood Glucose Analysis on a periodic basis

Procedure: 12 Lead EKG

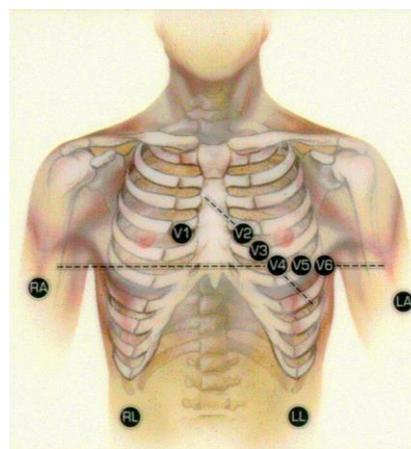


Clinical Indications:

- Suspected cardiac patient; Cardiac Chest Pain; STEMI
- Syncope
- Dysrhythmia

Procedure: Procedure may vary by manufacturer of Monitor

1. Assess patient and monitor cardiac status.
2. Administer oxygen as patient condition warrants.
3. If patient is unstable, 12 lead acquisition should not delay definitive treatment with sufficient resources present, treatment and 12 lead may be performed simultaneously.
4. Prepare ECG monitor and connect patient cable with electrodes.
5. Enter the required patient information (patient name, etc.) into the 12 lead ECG device.
6. Expose chest and prep as necessary. Modesty of the patient should be respected.
7. Apply chest leads and extremity leads using the following landmarks:
 - RA -Right arm
 - LA -Left arm
 - RL -Right leg
 - LL -Left leg
 - V1 -4th intercostal space at right sternal border
 - V2 -4th intercostal space at left sternal border
 - V3 -Directly between V2 and V4
 - V4 -5th intercostal space at midclavicular line
 - V5 -Level with V4 at left anterior axillary line
 - V6 -Level with V5 at left midaxillary line
8. Instruct patient to remain still.
9. Press the appropriate button to acquire the 12 Lead ECG.
10. If the monitor detects signal noise (such as patient motion or a disconnected electrode), the acquisition may be interrupted until the noise is removed.
11. Once acquired, transmit the 12 lead ECG to the appropriate hospital or print and deliver with patient. Contact the receiving hospital to notify them that a 12 Lead ECG has been sent.
12. Monitor the patient while continuing with the treatment protocol. Repeat 12 lead ECG after change in patient condition.
13. Document the procedure, time, and results in the patient care report (PCR). Attach a copy of the 12 Lead ECG to the PCR.



Skills Maintenance Suggestions;

- Acquire and transmit a 12 lead ECG according to local procedure on a periodic basis.

Procedure: Foreign Body Obstruction



Clinical Indications;

- Sudden onset of respiratory distress often with coughing wheezing, gagging, or stridor due to a foreign-body obstruction of the upper airway.
- Conscious and unable to speak with extreme anxiety.
- Unconscious and unable to ventilate.

Procedure;

1. Assess the degree of foreign body obstruction:
 - Do not interfere with a mild obstruction allowing the patient to clear their airway by coughing.
 - In severe foreign-body obstructions, the patient may not be able to make a sound. The victim may clutch his/her neck in the universal choking sign.
2. **For an infant**, deliver 5 back blows (slaps) followed by 5 chest thrusts repeatedly until the object is expelled or the victim becomes unresponsive.
3. **For a child**, perform a subdiaphragmatic abdominal thrust (Heimlich Maneuver) until the object is expelled or the victim becomes unresponsive.
4. **For adults**, a combination of maneuvers may be required.
 - First, subdiaphragmatic abdominal thrusts (Heimlich Maneuver) should be used in rapid sequence until the obstruction is relieved.
 - If abdominal thrusts are ineffective, chest thrusts should be used. Chest thrusts should be used primarily in morbidly obese patients and in patients who are in the late stages of pregnancy.
5. If the victim becomes unresponsive, begin CPR immediately but look in the mouth before administering each ventilation cycle. If a foreign-body is visible, remove it.
6. In unresponsive patients, Paramedic level professionals should visualize the posterior pharynx with a laryngoscope to potentially identify and remove the foreign-body using Magill forceps.

Skills Maintenance Suggestions;

- On a periodic basis perform digital foreign body removal and Magill-assisted (Paramedic) foreign body removal on adult, child, and infant intubation mannequins.
- On a periodic basis demonstrate the Heimlich Maneuver, chest thrusts, and back slaps on adult, child, and infant CPR mannequins.

Procedure: Nebulized Bronchodilator



Clinical Indication:

- Patients requiring nebulized medication.

Procedure:

1. Gather the necessary equipment.
2. Assemble the nebulizer kit.
3. Instill the premixed drug (such as Albuterol or other approved drug) into the reservoir well of the nebulizer.
4. Connect the nebulizer device to oxygen at 4 - 6 liters per minute or adequate flow to produce a steady, visible mist.
5. Instruct the patient to inhale normally through the mouthpiece of the nebulizer. The patient needs to have a good lip seal around the mouthpiece. Utilize a facemask for blow-by on patients who cannot tolerate a mouthpiece.
6. The treatment should last until the solution is depleted. Tapping the reservoir well near the end of the treatment will assist in nebulizing all of the solution.
7. Monitor the patient for medication effects. This may include the patient's assessment of his/her response to the treatment and reassessment of vital signs, ECG, and breath sounds.
8. Document the treatment, dose, and route in the patient care report (PCR).
9. Use an in-line adapter for nebulizer treatment of ventilated patient.

Skills Maintenance Suggestion:

- Assemble nebulizer and inline adapter on a periodic basis.

Procedure: CPAP



Clinical Indications; for Continuous Positive Airway Pressure (CPAP) Use;

- CPAP is indicated in all patients whom inadequate ventilation is suspected. This could be as a result of pulmonary edema, pneumonia, COPD, asthma, etc.
- May be a bridge in imminent respiratory failure to avoid/delay intubation.

Contraindications;

- Unconscious, unresponsive, inability to protect airway
- Inability to sit up
- Persistent nausea or vomiting
- Respiratory arrest or agonal respirations
- Suspected pneumothorax, penetrating chest trauma

Procedure; Be familiar with and follow the manufacturer recommendations for your device.

1. Ensure adequate oxygen supply to ventilation device.
2. Explain the procedure to the patient. Anticipate and control anxiety with verbal coaching. Consider low dose benzodiazepines.
3. Consider placement of a nasopharyngeal airway.
4. Oxygen should be flowing through the device before placement. Place the delivery mask over the mouth and nose.
5. Secure the mask with provided straps starting with the lower straps until minimal air leak occurs.
6. If the Positive End Expiratory Pressure (PEEP) is adjustable on the CPAP device adjust the PEEP beginning at 0 cmH₂O of pressure and slowly titrate to achieve a positive pressure as follows:
 - **5 – 10 cmH₂O for CHF**
 - **3 – 5 cmH₂O for all other conditions**

 - **EMT – 2011 can use setting of 5 cmH₂O**
 - **AEMT – 2011 and Paramedic – 2011 can use setting of up to 10 cmH₂O**
7. Evaluate the patient response; assess changes in breath sounds, oxygen saturation, and general appearance.
8. If chronic CO₂ retention is suspected, if possible, titrate FIO₂ to achieve a POX of 90-92%.
9. Encourage the patient to allow forced ventilation to occur. Observe closely for signs of complications.

Skills Maintenance Suggestion;

- Set up and operate CPAP on a patient, possibly yourself

Procedure: Verification of Tube Placement

Clinical Indications;

- Verifying correct placement of an endotracheal tube, nasotracheal tube, or BIAD.

After tube placement, utilize the following methods to verify:

- Continuous waveform capnography.
- Colorimetric device.
- Auscultate lung sounds as well as over the epigastrium.
- Observe bilateral chest rise and fall.
- Esophageal Detector Device.

Skill Maintenance Suggestion:

- Practice applying various types of tube placement verification devices.
- Practice auscultating breath sounds.
- Review capnography waveforms.

Pearls:

- Document method of tube verification and time of tube placement.

Procedure: Continuous ETCO₂



Clinical Indications:

- Capnography should be used when available with all invasive airway devices including endotracheal intubation, nasotracheal intubation, cricothyrotomy, or Blind Insertion Airway Devices (BIAD).
- Capnography should also be used, when possible, with CPAP.

Procedure: Assemble, prepare, and operate device according to manufacturer guidelines and instructions.

1. Attach capnography sensor to the BIAD, endotracheal tube, or oxygen delivery device.
2. Note and document CO₂ level and waveform changes. See protocols for specific target values.
3. CO₂ level should be continuously monitored throughout care and transport.
4. Any loss of CO₂ detection or waveform indicates an airway problem and should be investigated and documented.
5. Document the procedure and results in the Patient Care Report (PCR).

Skills Maintenance Suggestions;

- Review manufacturer guidelines for your agency device.

Procedure: Injections: Subcutaneous and Intramuscular

For the administration of Glucagon, Adrenaline and Epi-Pen



Clinical Indications;

- When medication administration is necessary and the medication is to be given via the SQ or IM route using a syringe or an auto injector.

Procedure;

1. Receive and confirm medication order or perform according to standing orders.
 - For glucagon, mix diluent with powder following manufacturers recommendations using sterile technique.
 - Ensure clarity and color of the medication is appropriate.
 - Check expiration date.
 - Withdraw medication from ampules or vials using sterile technique. An equal volume air may need to be injected into the medication vial to equalize pressure before medication is withdrawn. Use a filter needle to withdraw medication from a glass ampule; dispose after draw.
2. Expel air from the syringe and needle before injection.
3. Explain the procedure to the patient and reconfirm patient allergies. Confirm the 6 "Rights"
Rights:
 - Right medication**
 - Right route**
 - Right time**
 - Right person**
 - Right dose**
 - Right documentation**
4. The most common site for subcutaneous injection is the upper arm. Injection volume should not exceed 1 ml.
5. The possible injection sites for intramuscular injections include the deltoid, buttock, and thigh. Injection volume should not exceed 2 ml for the deltoid injection; volume should not exceed 5 ml in the thigh or buttock. (*Brady*)
6. The thigh should be used for injections in pediatric patients. Injection volume should not exceed 1 ml.
7. Expose the selected area and cleanse the injection site with alcohol.
8. Insert the needle into the skin with a smooth, steady motion
 - SQ: 45-degree angle skin pinched Needle size 24-26 gauge 3/8 - 1"
 - IM: 90-degree angle skin flattened 21-23 gauge 5/8-1.5"
 - Epi-Pen, remove cap and push injector firm against the patients lateral thigh at 90-degree angle. Hold in place for 10 seconds after it activates
 - Aspirate for blood, if blood is aspirated, choose new site.
 - Inject the medication slowly, withdraw the needle quickly, and dispose of properly without recapping.
 - Apply pressure to the site.
9. Monitor the patient for the desired therapeutic effects as well as any possible side effects.
10. Document the medication, dose, route, and time in the patient care report (PCR).

Skills Maintenance Suggestions;

- Practice complete Epi-Pen, SQ and IM procedure on appropriate simulated sites on a periodic basis.

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Procedure: Safe Haven



As of July 1, 2001, the Idaho Safe Haven Act protects abandoned infants. This law is intended to provide a safe alternative for parents who otherwise might abandon their babies.

A safe haven is authorized by law to accept a baby less than 30 days of age, directly from a parent, without identifying the parent. The parent is not required to provide any information to the safe haven, but may volunteer medical or other information. The parent remains anonymous and will not be prosecuted for child neglect or abandonment.

The law specifically identifies the following safe havens;

- Emergency medical personnel, when responding to a 911 call requesting a safe haven;
- Licensed physicians and staff working at the physician's office or clinic;
- Advanced practice professional nurses, including certified nurse midwives, nurse practitioners, and registered nurse anesthetists;
- Licensed physician assistants;
- Hospitals licensed in Idaho.

The safe haven will;

- Accept the baby from the parent;
- Make certain the baby receives necessary medical attention;
- Immediately contact law enforcement. Law enforcement will establish emergency protective custody of the baby and contact the Idaho Department of Health and Welfare, which will provide an emergency home and prepare and file a Certificate of Live Birth Foundling with the Vital Statistics Unit;
- Not ask the parent's name, but may ask the parent if they wish to provide medical or other information about the baby.

More Information;

- Idaho CareLine, 2-1-1 or 1-800-926-2588;
- Health and Welfare Child Protection:
 - Statewide: 1-855-552-KIDS (5437)
 - Treasure Valley: 208-334-KIDS (5437)

Procedure: Intubation, Medication Assisted Paralytic

Page 1



Clinical Indications;

- Need for endotracheal intubation in a non-cardiac arrest patient AND one of the following:
 - patient has intact protective airway reflexes
 - is not flaccid

Relative Contraindication;

- Anticipated difficult airway (consider drug assisted intubation-sedation only, nasal intubation).

Succinylcholine Contraindications;

- Significant burns between 24 hours old and 2 weeks old.
- Known neuromuscular disease such as myasthenia gravis, amyotrophic lateral sclerosis, muscular dystrophy, Guillain-Barre syndrome.
- Patient or family history of malignant hyperthermia

Minimum Required Equipment (Per EMS Minimum Equipment Standards);

- Oxygen delivery, Bag Valve Mask, Suction device,
- Endotracheal tubes: ETT size selection should be based on patient age or size of 5th finger or nares.
- Use “cuffed” ETT between sizes 3.5 and 8.0.
- Laryngoscope blades: Adult and pediatric blades. At least three sizes of two different blade types (e.g., Miller, Macintosh, other).
- Pulse oximeter: Pulse oximetry should be monitored before, during, and after intubation.
- Rescue device: At least one device must be available (e.g., Blind Insertion Airway Device, bougie/flexguide).
- ETT placement confirmation device: Either end-tidal CO₂ detection (qualitative or quantitative) or an esophageal detector device (EDD) must be available.

Procedure;

1. Prepare, position and oxygenate the patient with 100% Oxygen by BVM. Consider ear-to-sternal notch positioning unless C-spine immobilization is indicated. Consider apneic oxygenation via nasal cannula at 15 L/min.
2. Select proper ETT (and stylet, if used) and have suction ready.
 - If age <2yrs administer Atropine.
 - Administer sedation
 - Administer paralytic
3. Using laryngoscope, visualize vocal cords.
4. Limit each intubation attempt to 30 seconds with BVM between attempts.
5. Visualize ETT passing through vocal cords.
6. Inflate the cuff with 3-10 cc of air and confirm and document ETT placement using end-tidal CO₂ detection or an EDD. ETT placement should be confirmed using multiple additional methods such as presence of bilaterally equal breath sounds, absence of sounds over the epigastrium, chest rise, ETT misting, and patient response. If you are unsure of placement, remove ETT and ventilate patient with BVM.
7. Secure the ETT to the patient's face.
8. Consider using a BIAD, bougie/flexguide, or other difficult airway device or rescue airway device if intubation efforts are unsuccessful.

Procedure: Intubation Drug Assisted Paralytic

Page 2



Procedure (continued);

9. EMS personnel may not attempt intubation more than 3 times each. All EMS personnel from the same EMS agency may not collectively attempt intubation more than 5 times. An intubation attempt is defined as passing the laryngoscope blade or endotracheal tube past the teeth or inserted into the nasal passage.

10. Document ETT size, time, result (success), and placement location by the centimeter marks either at the patient's teeth or lips on/with the patient care report (PCR). Document all devices used to confirm initial ETT placement. Also document positive or negative breath sounds before and after each movement of the patient

11. Paramedics should consider NG or OG tube placement to clear stomach contents after the airway is secured with an ETT.

12. If available, continuous end-tidal CO₂ Capnography and Pulse Oximetry are strongly recommended to monitor the airway. Record readings on scene, enroute to the hospital and at the hospital.

Performance Assessment and Improvement;

- EMS personnel must maintain knowledge of the indications, contraindications, technique, and possible complications of the procedure.
- Assessment of this knowledge may be accomplished via quality assurance mechanisms, classroom demonstrations, skills stations, or other mechanisms as deemed appropriate by the local EMS System.
- Assessment must include an annual (or more frequent) demonstration of intubation proficiency and an annual (or more frequent) review of intubation to include cognitive and psychomotor components with an emphasis on team coordination.
- All intubation attempts must be monitored by the local EMS System. Monitoring must include 100% chart review and tracking of the following EMS agency and EMS personnel parameters:
 - Intubation success rate
 - 1st attempt intubation success rate
 - Complications including unrecognized right mainstem intubation, unrecognized esophageal intubation, airway or dental trauma, hypoxia during intubation, bradycardia during intubation, inappropriate ETT size' and inappropriate ETT placement location (ETT depth).
- The local EMS system must also monitor rescue airway device utilization.
- The local EMS Medical Director must oversee remediation of intubation performance.

Pearls:

- ETCO₂ is the gold standard for confirmation of tube placement.

Procedure: Needle Chest Decompression

Clinical Indications;

- Patients with increasing shortness of breath.
- Patients with hypotension (SBP <90), clinical signs of shock, and at least one of the following signs:
 - Jugular vein distention.
 - Tracheal deviation away from the side of the injury (often a late sign).
 - Absent or decreased breath sounds on the affected side.
 - Hyper-resonance to percussion on the affected side.
 - Increased resistance when ventilating a patient.
- Patients in traumatic arrest with chest or abdominal trauma for whom resuscitation is indicated. These patients may require bilateral chest decompression even in the absence of the signs above.

Procedure;

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Administer high flow oxygen.
3. Identify and prep the site:
 - Locate the second to third intercostal space in the mid-clavicular line on the same side as the pneumothorax.
 - If unable to place anteriorly, lateral placement may be used at the *fourth to sixth ICS mid-axillary line, avoiding liver/spleen puncture.*
 - Prepare the site with antiseptic.
4. Insert the catheter (14 gauge 3.25" for adults) into the skin over the rib and direct it just over the top of the rib (superior border) into the pleural space.
5. Advance the catheter through the parietal pleura until a "pop" is felt and air or blood exits under pressure through the catheter, remove needle, then advance catheter.
6. Secure the catheter hub to the chest wall with dressings and tape.
7. Secure a one way valve to catheter hub.

Skills Maintenance Suggestions;

- Perform a needle decompression on an appropriate mannequin on a periodic basis.

Procedure: Tranexamic Acid (TXA)

Clinical Indications;

- Patients with signs and symptoms consistent with traumatic hemorrhagic shock.
 - Tachycardia; Adults: HR >110bpm, Peds: related to age
 - Hypotension; Adults: SBP <90, Peds: related to age
 - **Suspected onset of injury must be < 3 hours; preferably given within 1 hour of injury**

Contraindications;

- **Contraindicated if onset of injury is outside of 3 hours**
- Isolated head injury

Procedure;

1. Secure and maintain the airway, administer oxygen and provide ventilatory assistance as needed.
2. Control external bleeding as effectively as possible. Consider use of tourniquet as appropriate.
3. Establish IV of Normal Saline.
4. Administer TXA:
 - Adult: 1 gram over 10 minutes (1gram/hour drip for 6 hours)
 - Pediatrics: 15mg/kg, max 1gram over 10 minutes (15/mg/kg/hour over 6 hours)

Pearls;

- If given too quickly, may cause hypotension.

Skills Maintenance Suggestions;

- Review the TXA procedure on a periodic basis.

Procedure: Wound Care - General

Clinical Indications:

- Protection and care for open wounds prior to and during transport.

Procedure:

1. Don BSI.
2. Apply direct pressure to bleeding site, followed by a pressure dressing.
3. For minor injuries or injuries with minimal bleeding, remove loose debris and irrigate with saline as appropriate. Consider analgesia per protocol prior to irrigation.
4. Cover wounds with sterile gauze/dressings. Check distal pulses, sensation, and motor function to ensure the bandage is not too tight.
5. Monitor wounds and/or dressings throughout transport for bleeding.
6. Document wound assessment and care in the patient care report (PCR).

Skills Maintenance Suggestions:

- Practice bandaging and dressing skills on a periodic basis.

Procedure: Hemorrhage Control

Clinical Indications:

- Patient with life threatening hemorrhage.

Procedure:

1. Apply direct pressure to bleeding site, followed by pressure dressing.
2. If direct pressure or pressure dressing is ineffective or impractical:
 - a. If the bleeding site is amenable to tourniquet placement, apply tourniquet to extremity
 - b. If the bleeding site is not amenable to tourniquet placement (i.e. joint injury).
 - c. Tourniquet should be placed 4" proximal to the injury, not over a joint, and tightened until bleeding stops.
 - d. If bleeding continues, place a second tourniquet proximal to the first
 - e. For thigh wounds, consider placement of two tourniquets, side-by-side, and tighten sequentially to eliminate distal pulse.
3. If groin/axillary injury:
 - a. apply direct pressure to wound
 - b. If still bleeding, pack wound tightly with gauze and continue direct pressure
 - c. Consider hemostatic adjuncts
4. Manage pain (see Pain Management Protocols G-6 and G-7).
5. Stabilize suspected fractures/dislocations.

Skills Maintenance Suggestions;

- Practice applying tourniquets used by your agency, on arms and legs, on a periodic basis.
- Train with the hemostatic gauze used by your agency on a periodic basis.

Pearls;

- If tourniquet is used, ensure that it is sufficiently tight to occlude the distal pulse.
- Tourniquet needs to be visible to ensure all subsequent providers are aware of the presence of the tourniquet.
- Do not remove tourniquet or dressing in order to assess bleeding.
- **Document time of tourniquet placement!**

Procedure: Extremity Splinting

Clinical Indications:

- Immobilization of an extremity due to suspected fracture, sprain, or injury.
- Immobilization of an extremity for transport to secure medically necessary devices such as intravenous catheters.

Procedure:

1. Assess and document pulses, sensation, and motor function prior to placement of the splint.

If no pulses are present and a fracture is suspected, consider gentle traction and realignment to neutral anatomic position prior to placement of the splint. If there is resistance, stop the realignment.

2. Expose the extremity as needed.
3. Select a site to secure the splint both proximal and distal to the area of suspected injury, or the area where the medical device will be placed. Immobilize the joint above and below injury if possible.
5. Pad and place the splint and secure appropriately.
4. Do not secure the splint straps directly over the injury or medical device.
6. Document pulses, sensation, and motor function after placement of the splint. If there has been a deterioration in any of these 3 parameters, remove the splint and reassess.
7. If a femur fracture is suspected and there is no evidence of pelvic fracture or instability, the following procedure may be followed for placement of a femoral traction splint:
 - Assess neurovascular function as in step #1 above.
 - Apply traction splint according to manufacturer guidelines.
 - Reassess alignment, pulses, sensation, and motor function. If there has been deterioration in any of these 3 parameters, release traction and reassess.
 - Assure foot does not rotate
 - protect genitalia.
8. Document the time, type of splint, and the pre and post assessment of pulse, sensation, and motor function in the patient care report (PCR).

Skills Maintenance Suggestions:

- Practice applying multiple types of splints on upper and lower extremities on a periodic basis.
- Practice applying your agency traction splints on a periodic basis.

Procedure: Pelvic Immobilization Device

Clinical Indications:

- Patients with suspected unstable pelvic fractures.

Procedure:

1. Assure the scene is safe and don BSI.
2. Remove objects from the patient's pocket or pelvic area.
3. Follow the manufacturers directions when applying the pelvic immobilization device.
4. Follow the protocol for Selective C-Spine Immobilization as needed.

Skills Maintenance Suggestions:

- Practice appropriate placement of pelvic immobilization device and review manufacturers directions.

Pearls:

- It is likely that a patient who has sustained a pelvic fracture has also sustained a mechanism of injury for a spinal cord injury.

Procedure: Eye Irrigation

Clinical Indications:

- For patients who have sustained chemical splashes to the eyes, patients who have non-penetrating superficial foreign bodies, or other foreign materials to the eye(s).

Procedure:

1. Assure the scene is safe and don BSI.
2. Seat or lie the patient with their head supported.
3. Consider administration of anesthetic eye drops prior to irrigation.
4. Choose a method to irrigate the patient's eye(s):

Nasal Cannula:

Set up a 1 L bag of Normal saline with a 10gtt set. Connect the nasal cannula to the end of the IV tubing. Place the nasal cannula over the bridge of the patient's nose with the prongs pointed toward the patient's tear duct. Irrigate the eye(s) for at least 5 minutes.

Shower:

Have the patient bend over with head tilted to the side with the effected eye downward so the irritant will not drain into the other eye. Have the patient or another provider hold the patient's eye lids open. Using the head of the shower irrigate the patient's eye(s) for 5 minutes.

Bottle:

While patient is laying down, hold patients eye lid open. Pour saline or sterile water into patient's eye near the tear duct. Irrigate eye(s) for 5 minutes.

Basin:

Fill a basin with sterile water or a saline solution. Have the patient tilt their head to the side and place their face into the water far enough to submerge the affected eye.

Skills Maintenance Suggestions:

- Practice choosing a method of irrigation and walking through the steps of how to irrigate the eyes.

Pearls:

- If the eye was burned by an alkali or strong acid, irrigate the eye continuously for 20 minutes.
- Always flush from the nose side of the eye toward the outside to avoid flushing material into the other eye.

Procedure: Active External Rewarming

Clinical Indications:

- Patients who are moderately hypothermic with a core temperature of 30° C to 34° C or 86° to 93.2°.

Procedure:

1. Assure the scene is safe and don BSI.
2. Maintain airway, breathing and circulation.
3. Actively rewarm the patient by:
 - Turning on heat in the ambulance.
 - Warm blankets or heating pads.
 - Placing hands and feet in warm water.
 - Using hot packs.
4. Monitor vital signs and patient's temperature.
5. Place patient on a monitor, watch for cardiac dysrhythmias in patients who are hypothermic.

Skills Maintenance Suggestions:

- Review types of Active External Rewarming procedures.

Pearls:

- Be sure to monitor the patient's skin after applying active external rewarming techniques to prevent dermal heat injuries.

Procedure: Passive External Rewarming

Clinical Indications:

- Patients who are mildly hypothermic or are becoming hypothermic with a core temperature greater than 34° C or 93.2° F.

Procedure:

1. Assure the scene is safe and don BSI.
2. Maintain airway, breathing and circulation.
3. Passively rewarm the patient by:
 - Removing wet clothing.
 - Drying the patient's skin.
 - Use blankets.
 - Use space blanket.
4. Monitor vital signs and patient's temperature.

Skills Maintenance Suggestions:

- Review types of Passive External Rewarming procedures.

Pearls:

- If patient is not responding to passive external rewarming techniques, utilize active external rewarming techniques.

Procedure: Active Internal Rewarming

Clinical Indications:

- Patients who are severely hypothermic with a core temperature less than 30° C or 86° F.

Procedure:

1. Assure the scene is safe and don BSI.
2. Maintain airway, breathing and circulation.
3. If needed follow Protocol C-1 Asystole & Pulseless Electrical Activity.
4. Actively rewarm the patient by:
 - Administering warm IV fluids.
 - Apply warm, humid oxygen.
5. Monitor vital signs and patient's temperature.

Skills Maintenance Suggestions:

- Review types of Active Internal Rewarming procedures.

Procedure: Morgan Lens Irrigation

Clinical Indications:

- For continuous medication or lavage to the cornea and conjunctiva
- Ocular injuries due to acid burns or solvents, gasoline, detergents, etc..
- Thermal, alkali or actinic burns
- Non-embedded foreign bodies or foreign body sensation with no visible foreign body

Contraindications:

- Do not use when there is a protruding foreign body
- Do not use with penetrating eye injuries
- Do not use with suspected or actual rupture of the globe
- Do not use anesthetic agents if there is a known allergy

Procedure:

1. Assure the scene is safe and don BSI.
2. If no known allergies, administer anesthetic eye drops prior to irrigation.
3. Attach Morgan Lens to Morgan Lens Delivery Set or IV tubing.
4. Prime tubing and lens with irrigating solution.
5. Start minimal flow of irrigation solution.
6. Insert lens: Have patient look down, insert lens under upper eyelid.
7. Have patient look up, retract lower lid, drop lens in place.
8. Release lower lid over Morgan Lens.
9. Adjust flow to desired rate.
10. Tape tubing to patient's forehead to prevent accidental removal.
11. Direct and absorb outflow with Medi-Duct, towels, blue pads, or fluid collection device.
12. Irrigate with amount specified in protocol or physician's order (generally continue irrigation until the pH of the eye returns to 7.5 to 8.0). Do not allow flow to stop.
13. Remove lens: Continue flow, have patient look up, retract lower lid
14. Hold position and slide lens out. Terminate flow.

Procedure: Morgan Lens Irrigation Cont.

15. Wait 5 to 10 minutes and check pH of eye to ensure it remains in acceptable range. Repeat irrigation if necessary until pH stabilizes.

16. Document procedure, noting use of the Morgan Lens, type, amount and strength of topical anesthetic and absence of allergy to medication, type and amount of irrigating solution used, length of time of irrigation, which eye/eyes were irrigated, patient tolerance to procedure, visual acuity (both pre- and post-therapy if available), pH readings (both pre- and post-therapy if available), and any treatment of other injuries or concurrent use of gross decontamination if indicated.

Skills Maintenance Suggestions:

- Practice procedure for Morgan Lens Irrigation.

Pearls:

- Mortan, Inc. recommends the use of lactated Ringer's (Hartmann's Solution) for irrigation due to its pH and buffering capacity.
- During insertion, the lens may be rotated slightly to fit more easily into a smaller opening such as a pediatric patient.

Procedure: Stinger Removal

Clinical Indications:

- Patients who have been stung or bit by arthropods.

Procedure:

1. Assure the scene is safe and don BSI.
2. Determine if the stinger still attached to the patient.
3. Remove:

Bee Sting:

- - Use a scalpel blade to gently scrape the stinger and venom sac from the wound
- - Use a credit card or other type of hard plastic to scrape the stinger and venom sac from the wound
- - *Do not use tweezers to remove the stinger*

Tick Bites:

- Use forceps or tweezers to grasp the tick by the head, as close to the skin as possible and pull straight upward.
4. Clean the wound thoroughly with soap and water.
 5. Apply cold packs to the site for pain relief.
 6. Follow Protocol “Allergic Reaction M-2” if needed.
 7. Consider Protocol “Pain Management Adult G-6” or “Pain Management Pediatric G-7”.

Skills Maintenance Suggestions:

- Review Stinger Removal procedure and protocol E-1 “Bites & Envenomations”.
- Review signs and symptoms of anaphylaxis caused by a bee sting.

Procedure: Ventilation - BVM

Clinical Indications:

- Patients who are in respiratory arrest or need to be ventilated.

Procedure:

1. Assure the scene is safe and don BSI.
2. Choose the proper mask size to seat the mask from the bridge of the nose to the chin.
3. Position the mask on the patient's face and ensure an adequate seal.
4. Open the patient's airway and hold the mask in place with one hand as you squeeze the bag with the other hand. Allow the bag to re-inflate slowly and completely.

Intubated patient:

- Remove mask and connect the BVM to the endotracheal tube.

Patient with tracheostomy tube:

- Remove the mask and attach the BVM to the tracheostomy tube.

Patient with a stoma:

- With the patient's head in a neutral position, locate and expose the stoma
 - Place the BVM over the stoma and ensure an adequate seal
 - Ventilate the patient
5. Assess for adequate ventilation by observing chest rise.
 6. Auscultate over the lungs to confirm adequate ventilation.
 7. If within your scope of practice, monitor the patient's SpO₂% level.

Skills Maintenance Suggestions:

- Practice using a BVM on a simulated mannequin.

Pearls:

- Be sure to assess the patient's airway prior to ventilating - check for teeth, food, blood, or dental appliances.

Procedure: Oral Airway

Clinical Indications:

- Patients who are at risk for airway obstruction due to relaxed upper airway muscles or blockage of the airway by the tongue.

Procedure:

1. Assure the scene is safe and don BSI.
2. Choose the correct size OPA by measuring from the corner of the patient's mouth to the angle of the mandible.
3. Before inserting the airway, be sure the mouth is clear of secretions by suctioning the airway as needed.
4. Place the oral airway into the mouth with the curved end toward the roof of the mouth.
5. As you are inserting the device and it approaches the posterior pharynx, rotate the device 180°.
6. After the airway has been inserted the flange of the device should rest on the patient's lip

Skills Maintenance Suggestions:

- Practice measuring and inserting an OPA on a simulated mannequin.

Pearls:

- Be sure to choose the correct size OPA, an OPA that is too big can cause injury or block the airway.

Procedure: Nasal Airway

Clinical Indications:

- Patients who need an open airway with an intact gag reflex.

Contraindications:

- Suspected fracture to the base of the skull or mid-face.

Procedure:

1. Assure the scene is safe and don BSI.
2. Choose the correct size NPA by measuring from patient's nostril to the meatus of the ear.
3. Apply lubricant to the NPA.
4. Insert the NPA with the bevel toward the septum.
5. Advance the NPA along the septum horizontally, then rotate 90° to lie in the nasopharynx. The flange should be resting on the flare of the nostril.
6. If you meet resistance, remove the NPA and try inserting in the other nostril.

Skills Maintenance Suggestions:

- Practice measuring and inserting an NPA on a simulated mannequin.

Procedure: Blind Insertion Airway Device

Clinical Indications:

- Inability to adequately ventilate a patient with a Bag Valve Mask.
- Endotracheal intubation is not possible due to patient access or difficult airway.
- Inability to secure an ET tube in a patient when at least one failed intubation attempt has occurred.

Contraindications:

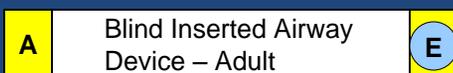
- Ingestion of caustic substances.
- Patient with intact gag reflex.
- Patient with known esophageal disease.

Procedure:

1. Preoxygenate the patient.
2. Select the appropriate tube size for the patient.
3. Test that cuffs properly inflate.
4. Lubricate the tube.
5. Open the patient's mouth by using the crossfinger technique or the tongue-jaw lift and position the patient's head.
6. Insert the BIAD according to manufacturer's directions.
7. Confirm placement of the tube with end-tidal CO₂, colorimetric device, auscultation of lung sounds, etc..
8. Continue ventilating the patient.
9. Secure the tube and note time of placement.

Skills Maintenance Suggestions:

- Practice using a BIAD on an adult and pediatric mannequin.
- **End-tidal CO₂ is the gold standard for tube placement confirmation.**



Procedure: Direct Laryngoscopy

Clinical Indications:

- Patient who is unable to control their airway.
- Inability to adequately ventilate or oxygenate a patient with a Bag Valve Mask.

Procedure:

1. Preoxygenate the patient for 2 to 3 minutes with a bag-mask device and 100% oxygen. Consider apneic oxygenation via nasal cannula at 15 L/min.
2. Check, prepare, and assemble you equipment.
3. Place the patient's head in the sniffing position.
4. Insert the blade into the right side of the patient's mouth, and displace the tongue to the left.
5. Gently lift the long axis of the laryngoscope handle until you can visualize the glottic opening and the vocal cords.
6. Insert the ET tube and visualize its entry between the vocal cords.
7. Remove the laryngoscope from the patient's mouth.
8. Remove the stylet from the ET tube.
9. Inflate the distal cuff of the ET tube with 5-10mL of air and detach the syringe from the inflation port.
10. Attach the bag-mask device, ventilate, and auscultate over the apices and bases of both lungs and over the epigastrium to confirm placement.
11. Attach the end-tidal carbon dioxide detector to the ET tube.
12. Confirm placement and then secure the ET tube.
13. Note the tube "length marking" in centimeters.

Skills Maintenance Suggestions:

- Practice intubation skills on a mannequin.
- Practice utilizing methods of tube placement confirmation.

Procedure: Nasotracheal Intubation

Clinical Indications:

- Patient who with impending respiratory failure.
- Patient who is breathing spontaneously but requires definitive airway management.

Contraindications:

- Apneic patients.
- Head trauma and facial trauma to maxilla or nose.

Procedure:

1. Preoxygenate the patient for 2 to 3 minutes with a bag-mask device and 100% oxygen.
2. Check, prepare, and assemble you equipment.
3. Place the patient's head in a neutral position and explain the procedure to the patient.
4. Pre-form the ET tube by bending it in a circle.
5. Lubricate the tip of the tube with a water-soluble gel.
6. Perform direct laryngoscopy or utilize bougie.
7. Remove bougie (if used) and remove laryngoscope.
8. Gently insert the ET tube into the most compliant nostril with the bevel facing toward the septum and advance the tube along the nasal floor.
9. Advance the tube through the vocal cords as the patient inhales.
10. Inflate the distal cuff with 5-10mL of air and detach the syringe.
11. Attach an end-tidal carbon dioxide detector to the ET tube.
12. Attach the bag-mask device, ventilate, and auscultate over the apices and bases of both lung and over the epigastrium.
13. After confirming placement, secure the ET tube.

Pearls:

- Bleeding is the most common complication associated with nasotracheal intubation; this can be reduced by gently inserting the tube into the nostril.
- When performing nasotracheal intubations, use the patient's spontaneous respirations to guide the ET tube into the trachea.

Skills Maintenance Suggestions:

- Practice intubation skills on a mannequin.
- Practice utilizing methods of tube placement confirmation.

Procedure: Nasal/Oral Gastric Tube

Clinical Indications:

- Provides a means for gastric decompression.
- Patient who will need positive-pressure ventilation for an extended period of time.

Contraindications:

- Use of an NG tube with severe facial injuries.

Procedure:

1. Prepare equipment:

- Select the proper size of tube.
- Measure the tube on the patient – the length of the tube should be the same as the distance from the lips (for OG) or tip of the nose (for NG) to the earlobe, plus the distance from the earlobe to the xiphoid process.
- Place the patient in a supine position.
- Assess patient's gag reflex – if the patient is unresponsive and has a poor or absent gag reflex, perform endotracheal intubation before gastric tube placement.
- In a trauma patient, maintain in-line stabilization of the cervical spine as needed.
- Lubricate the end of the tube.

2. Explain the procedure to the patient

OG Tube Insertion:

- Position the patient's head in a neutral or flexed position.
- Introduce the tube at the midline, and advance it gently into the oropharynx
- Advance the tube into the stomach

NG Tube Insertion:

- Advance the tube gently along the nasal floor.
- Encourage the patient to swallow or drink to facilitate passage of the tube into the esophagus
- Advance the tube into the stomach.

3. To confirm proper placement: auscultate over the epigastrium while injecting 30-50mL of air and/or observe for gastric contents in the tube.

4. Apply suction to the tube to aspirate the stomach contents.

Pearls:

- For children, use a tube size that is twice the ET tube that child would require. For example, a child who would need a 5.0-mm ET tube needs a 10F OG or NG tube.
- Use with extreme caution in patients with known esophageal disease.

Skills Maintenance Suggestions:

- Practice inserting NG and OG tubes on a mannequin.

Procedure: Upper Airway Suction

Clinical Indications:

- Obstruction of the upper airway (secondary to secretions, blood, or any other substance) in a patient who cannot maintain or keep the airway clear.

Procedure:

1. Ensure suction device is in proper working order.
2. Preoxygenate the patient.
3. Measure the catheter from the corner of the mouth to the earlobe.
4. Attach catheter to the suction device and be sure it is assembled properly
5. Before applying suction, open the patient's mouth by using the crossfinger technique or the tongue-jaw lift, and insert the tip of the catheter to the predetermined depth. *Do not suction while inserting the catheter*
6. Apply suction in a circular motion while removing the catheter.
7. Use the suction device to remove any secretions, blood, or other substance.
8. Record the time and result of the suctioning in the patient care report (PCR).
9. Insert an airway device and ventilate the patient as needed.

Pearls;

- Suctioning Time limits:
 - Adult – 15 seconds
 - Child – 10 seconds
 - Infant – 5 seconds
- Mechanical or vacuum-powered suction should be capable of generating a vacuum of 300mmHg.
- Be sure not to stimulate the back of the throat in young children and infants as the vagal stimuli can cause the heart rate to drop.

Skills Maintenance Suggestions:

- Perform suctioning on mannequin with agency equipment on a periodic basis.

Procedure: Tracheal Suctioning

Clinical Indications:

- Intubated patient who's secretions are interfering with ventilation.

Procedure:

1. Check, prepare, and assemble your equipment.
2. Preoxygenate the patient for 2-3 minutes.
3. Lubricate the suction catheter.
4. Detach the bag-mask device gently insert the catheter into the ET tube until resistance is felt.
Do not suction while inserting the catheter
5. Suction in a rotating motion while withdrawing the catheter. Monitor the patient's cardiac rhythm and oxygen saturation during the procedure.
6. Reattach the bag-mask device and resume ventilation and oxygenation.

Pearls:

- Suction for no more than 15 seconds.

Skills Maintenance Suggestions:

- Practice intubating and suctioning techniques on a mannequin.

Procedure: Percutaneous Needle Cricothyrotomy

Clinical Indications:

- Inability to ventilate the patient by other, less invasive techniques.
- Massive maxillofacial trauma.
- Inability to open the patient's mouth.
- Uncontrolled oropharyngeal bleeding.

Procedure:

1. Check, prepare, and assemble your equipment.
2. Attach a 14- to 16-gauge IV catheter to a 10-mL syringe containing approximately 3 mL of sterile saline or water.
3. Place the patient's head in a neutral position and locate the cricothyroid membrane.
4. Aspirate with the syringe to determine correct catheter placement.
5. Slide the catheter off the needle until the hub of the catheter is flush with the patient's skin.
6. Place the syringe and needle in a sharps container.
7. Attach BVM to the catheter and begin ventilating patient.
8. Auscultate the apices and bases of both lungs and over the epigastrium to confirm correct catheter placement.
9. Secure the catheter with a 4"x 4" gauze pad and tape
10. Continue ventilations while frequently reassessing for adequate oxygenation and any potential complications.
11. Place patient on capnography.

Skills Maintenance Suggestions:

- Practice performing a needle cricothyrotomy on a mannequin.

Procedure: Surgical Cricothyrotomy

Clinical Indications:

- Inability to ventilate the patient by other, less invasive techniques.
- Massive maxillofacial trauma.
- Severe foreign body upper airway obstructions that cannot be extracted with Magill forceps.

Procedure:

1. Check, prepare, and assemble your equipment.
2. Place the patient's head in a neutral position and locate the cricothyroid membrane.
3. Cleanse the area with an iodine-containing solution.
4. Stabilize the larynx and make a 1- to 2-cm vertical incision over the cricothyroid membrane.
5. Puncture the cricothyroid membrane and make a horizontal cut 1 cm in each direction from the midline.
6. Spread the incision apart with curved hemostats. The blunt end of the scalpel can also be used to facilitate passing the ET tube.
7. Insert the tube into the trachea.
8. Inflate the distal cuff of the tube.
9. Attach an ETCO₂ detector in between the tube and the bag-mask device.
10. Ventilate the patient and confirm correct tube placement by auscultating the apices and bases of both lungs and over the epigastrium.
11. Secure the tube with a commercial device or tape. Reconfirm correct tube placement and resume ventilations at the appropriate rate.

Skills Maintenance Suggestions:

- Practice performing a surgical cricothyrotomy on a mannequin or cadaver if available.

Procedure: Childbirth - Normal

Clinical Indications:

- Active labor, crowning confirmed by visual inspection.

Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Create a clean field around the vaginal opening with clean towels.
3. Prepare for delivery:
 - Have the mother lie in a semi-Fowler's or Trendelenburg position.
 - Elevate buttocks with pillows or blankets.
 - If another position is preferred, attempt to accommodate the mother.
4. Support the infant's head as it delivers. Apply gentle pressure on the baby's head with the palm of your gloved hand to prevent an explosive delivery.
5. As the head begins to deliver, the head will turn. Support the head as it turns; but DO NOT attempt to pull the baby from the vagina. If the amniotic sac remains intact after the head is delivered, tear the sac with your fingers or forceps.
6. Check for a nuchal cord. If there is a nuchal cord, try to slip it gently over the baby's head. If this fails, and if the cord is wrapped tightly around the neck, place umbilical clamps 2" apart and cut the cord between the clamps.
7. Clear the baby's airway by suctioning with a bulb syringe. Suction the mouth first and then the nose.
8. Gently guide the baby's head downward to allow delivery of the shoulder.
9. Gently guide the head upward to allow delivery of the other shoulder.
10. Once shoulders are delivered, the baby's trunk and legs will follow rapidly. Be prepared to grasp and support the newborn.
11. Clamp the umbilical cord about 8" from the infant's navel, using 2 clamps about 2" apart. Cut the cord between the two clamps.
12. Wipe any blood or mucus from the baby's nose and mouth with sterile gauze. Vigorously dry the baby with sterile, dry towels.
13. Record APGAR scores at 1 and 5 minutes.
14. The placenta will deliver spontaneously, usually within 5-25 minutes after delivery of the infant. DO NOT force the placenta to deliver or pull on the umbilical cord.
15. If mother and baby's condition allow, massage the uterus and/or initiate breast feeding to stimulate uterine contractions.
16. Expedite transport following the delivery of the baby. Do not delay transport for delivery of the placenta.

	Description	Score of 0	Score of 1	Score of 2
Appearance	Skin color/Complexion	Skin color is pale blue	Body is pink and extremities are blue	Entire body is pink
Pulse	Pulse rate is evaluated by stethoscope	Absent	Less than 100 beats per minute	Greater than 100 beats per minute
Grimace	Reflex irritability is a response to stimulation such as a mild pinch	No reaction	Grimace/feeble cry when stimulated	Grimacing and a cough, sneeze or vigorous cry. Cry or pull away when stimulated
Activity	Muscle tone	Muscle loose and floppy	Some muscle tone	Active motion, flexed arms and legs that resist extension
Respiration	Breathing effort	Not breathing	Respirations slow or irregular, weak, gasping	Strong, lusty cry

Procedure: Childbirth - Complicated

Clinical Indications:

- If complications of delivery are identified, follow the following steps

Procedure:

1. Don personal protective equipment (gloves, eye protection, etc.).
2. Apply supplemental oxygen to the mother.

Breech Presentation:

- If head fails to deliver, place gloved hand into vagina with your palm toward the baby's face to create an open airway. Form a "V" with your fingers on either side of the baby's nose and push the vaginal wall away from the baby's face until the head is delivered.
- Provide rapid transport as soon as possible.

Prolapsed Umbilical Cord:

- Position the mother supine with her hips elevated as much as possible.
- Instruct the mother to breathe with each contraction to prevent her from bearing down.
- With two fingers of a gloved hand, gently push the baby (not the cord) back into the vagina to prevent the presenting part from pressing on the cord.
- While one provider maintains pressure on the presenting part, another provider will cover the exposed portion of the cord with dressings moistened in normal saline.
- Provide rapid transport as soon as possible.

Shoulder Dystocia:

- Hyperflex the mother's hips to severe supine knee-chest position.
- Apply firm suprapubic pressure to attempt to dislodge shoulder.
- Provide rapid transport as soon as possible.

Uterine Inversion:

- Keep the patient lying down.
- If the placenta is still attached to the uterus DO NOT attempt to remove it.
- Carefully monitor vital signs and treat for shock.
- Make one attempt to replace the uterus by pushing the uterine fundus up through the vaginal canal by applying pressure with the fingertips and the palms of a gloved hand.
- If this procedure fails, cover protruding tissues with moist sterile dressings.
- Provide rapid transport as soon as possible.

Premature and Small Infants:

- Keep the baby warm and dry thoroughly, wrap in dry blanket or foil bunting, place baby on mother's chest.
- Keep the ambulance interior warm.
- Maintain the baby's airway.
- Prevent bleeding from the umbilical cord.
- Administer supplemental oxygen to the newborn.
- Prevent contamination.

Procedure: Childbirth – Complicated cont.

Postpartum Hemorrhage:

- Continue uterine massage.
- Encourage the mother to breast feed.
- Provide rapid transport as soon as possible.
- Manage external bleeding from perineal tears with firm pressure. Do not attempt to pack the vagina with any form of dressing.

Pearls:

- ***Alert the hospital, as soon as possible, so that they can have the appropriate personnel on hand when you arrive.***
- Recognize serious conditions associated with hemorrhage during pregnancy even when hemorrhage or pregnancy is not apparent, e.g. ectopic pregnancy, abruption placenta, placenta previa.
- Prolonged, non-progressive labor distresses the fetus and mother. Be sure to reassess mother's vital signs often.
- Average blood loss during labor is ~150mL of blood. When blood loss exceeds 500mL of blood in the first 24 hours it is considered postpartum hemorrhage.

Procedure: Physical Restraints

Page 1



Clinical Indication;

Patients of all ages who are exhibiting agitated, violent, or uncooperative behavior or who are a danger to self or others

Procedure;

1. Patient Rapport:

- Attempt verbal reassurance and calm patient prior to use of chemical and/or physical restraints
- Engage family members/loved ones to encourage patient cooperation if their presence does not exacerbate the patient's agitation
- Continued verbal reassurance and calming of patient following chemical/physical restraints

2. Chemical Restraints

3. Physical Restraints

- Body
 - i. Stretcher straps should be applied as the standard procedure for all patients during transport
 - ii. Sheets can be used as additional stretcher straps if necessary
 - iii. Stretcher straps and sheets should never restrict the patient's chest wall motion
 - iv. Placement of stretcher straps or sheets (to prevent flexion/extension of torso, hips, legs) around:
 - 1. the lower lumbar region, below the buttocks, or
 - 2. the thighs, knees, and legs
- Extremities
 - i. Soft or leather restraint devices should not require a key to release them
 - ii. Restrain all four extremities to maximize safety for patient, staff, and others
 - iii. Restrain all extremities to the stationary frame of the stretcher
 - iv. Multiple knots should not be used to secure the restraint device

Patient Safety Considerations;

1. Don personal protective equipment (PPE)
2. Do not attempt to enter or control a scene where physical violence or weapons are present
3. Dispatch law enforcement immediately to secure and maintain scene safety
4. Urgent de-escalation of patient agitation is imperative in the interest of patient safety as well as for EMS personnel and others on scene
5. Uncontrolled or poorly controlled patient agitation and physical violence can place the patient at risk for sudden cardiopulmonary arrest due to the following etiologies:
 - a. Excited delirium/exhaustive mania: A postmortem diagnosis of exclusion for sudden death thought to result from metabolic acidosis (most likely from lactate) stemming from physical agitation or physical control measures (including TASER@s) and potentially exacerbated by stimulant drugs (e.g. cocaine) or alcohol withdrawal
 - b. Positional asphyxia: Sudden death from restriction of chest wall movement and/or obstruction of the airway secondary to restricted head or neck positioning resulting in hypercarbia and/or hypoxia

Procedure: Physical Restraints

Page 2



Patient Safety Considerations (continued);

6. Apply a cardiac monitor as soon as possible, particularly when chemical restraints have been administered
7. All patients who have received chemical restraints must be monitored closely for the development of oversedation. Utilize capnography if available
8. Patients who have received antipsychotic medication as a chemical restraint must be monitored closely for the potential development of :
 - a. Dystonic reactions (this can easily be treated with diphenhydramine/benzodiazepines)
 - b. Mydriasis (dilated pupils)
 - c. Ataxia
 - d. Cessation of perspiration
 - e. Dry mucous membranes
 - f. Cardiac arrhythmias (particularly QT prolongation)
9. Placement of stretcher in sitting position prevents aspiration and reduces the patient's physical strength by placing the abdominal muscles in the flexed position
10. Patients who are more physically uncooperative should be physically restrained in the lateral decubitus position (one arm above the head and the other arm below the waist), rather than the prone, to avoid airway compromise
11. Patients should never be transported while hobbled, "hog-tied", or restrained in a prone position with hands and feet behind the back
12. Patients should never be transported while "sandwiched" between backboards or mattresses

Pertinent Assessment Findings;

1. Airway patency
2. Respiratory status with pulse oximetry and/or capnography
3. Circulatory status with frequent blood pressure measurements
4. Mental status and trends in level of patient cooperation
5. Cardiac status, especially if the patient has received chemical restraints
6. Extremity perfusion with capillary refill in patients in physical restraints

Skills Maintenance Suggestions;

- Review the physical restraints procedure on a periodic basis.

Procedure: Taser Barb Removal

Clinical Indications:

- Patient received either the direct contact discharge or the distance two barbed dart discharge of the conducted electrical weapon.

Procedure:

1. Assure the scene is safe and don BSI.
2. Before the removal of the barbed dart make sure the cartridge has been removed from the conducted electrical weapon.
3. To remove, grasp barb firmly with one hand and pull. Remove one dart at a time.

*Do not remove dart if barb is located in the eye, face, neck, breast, or groin area.
4. Reassess the patient, to include EKG or 12-lead.
5. Follow Protocol "Behavioral M-5" if needed.

Skills Maintenance Suggestions:

- Review Taser Barb removal procedures.

Pearls:

- Patient may have sustained fall or physical confrontation trauma

Procedure: CPR

Clinical Indications:

- Patient who is not breathing and does not have a pulse.

Procedure:

1. Assure the scene is safe and don BSI.
2. Position the patient supine and on a hard flat surface.
3. Place the heel of one hand on the center of the chest (lower half of the sternum). Place the heel of your other hand over the first hand.
4. With your arms straight, lock your elbow and position your shoulders directly over your hands. Be sure to allow full chest recoil between compressions.
 - Compress the chest at least 2 inches in adults and at least one third the dimension of the chest in children and infants.
5. Use a CPR ratio of 30 compressions to 2 breaths for adults.
 - 15 compressions to 2 breaths for 2-rescuer CPR on a child or infant
6. Minimize interruptions in chest compressions to less than 10 seconds.
7. Open the patient's airway and ventilate. Avoid excessive ventilation by looking for minimal chest rise at a rate of <12 breaths/min.
8. Place AED/monitor on patient as soon as possible.
9. Continue chest compressions until ROSC or termination of resuscitative efforts. Rotate compressors every 2 minutes.

Skills Maintenance Suggestions:

- Practice CPR on a CPR mannequin.

Pearls:

- Application of a mechanical CPR device should not delay the initiation of CPR or delay chest compressions.
- Airway management should not interrupt CPR. High quality CPR and defibrillation are the priority in resuscitation.

Procedure: Automated Defibrillation

Clinical Indications:

- Patient who is not breathing and does not have a pulse.

Procedure:

1. Assure the scene is safe and don BSI.
2. Attach the two self-adhesive electrode pads firmly to the patient's chest – the sternal pad at the junction of the right clavicle and upper border of the sternum; the apex pad along the left lower rib margin at the anterior axillary line.
3. Turn on the AED.
4. Stop CPR, and instruct everyone to get clear of the patient.
5. AED assess patient's heart rhythm (for 6 to 20 seconds) and determines whether it is a "shockable" rhythm.
6. If the AED detects a shockable rhythm, it automatically starts charging, which takes 5 to 10 seconds.
7. Defibrillating shocks are then delivered (automatically or by the rescuer, depending on the AED).

Skills Maintenance Suggestions:

- Practice CPR and utilizing an AED with a CPR mannequin and an AED trainer.
- Train with the manufacture's instructions for the AED that your agency carries.

Pearls:

- Be sure to minimize interruptions of chest compressions to less than 10 seconds.

Procedure: Manual Defibrillation

Clinical Indications:

- Patient who is not breathing and does not have a pulse.

Procedure:

1. Assure the scene is safe and don BSI.
2. Turn the power to the monitor on, and make sure the synchronize switch is off.
3. Set the energy level at 200 Joules (biphasic) and 360 Joules (monophasic).
4. Lubricate the paddles and position them on the chest or place the hands-free pads on the chest.
5. Charge the paddles.
6. Instruct everyone to get clear of the patient.
7. Discharge the defibrillator.
8. Resume CPR and recheck the rhythm in 2 minutes.

Skills Maintenance Suggestions:

- Train with the manufacturer's instructions for the monitor that your agency carries.

Pearls:

- Be sure to minimize interruptions of chest compressions to less than 10 seconds.

Procedure: Transcutaneous Pacing

Clinical Indications:

- Patient with bradyarrhythmias or heart blocks.

Procedure:

1. Assure the scene is safe and don BSI.
2. Apply the pads to the patients and explain the procedure to them.
3. Consider sedation for the conscious patient.
4. Apply pads to the patient in sternum/apex or anterior/posterior placement. Ensure the monitor is set to limb leads.
5. Turn on the pacing function and set the pacing rate between 60 and 80.
6. Set the milliamps reading to "0"
7. Evaluate the EKG to confirm the pacemaker is recognizing QRS complexes.
8. Beginning at 20mA, increase the amperage in increments of 20 mA until electrical capture has been achieved (pacer spike followed by a wide QRS).
9. Check the patient's pulse for mechanical capture and assess patient's blood pressure.

Skills Maintenance Suggestions:

- Train with the manufacture's instructions for the monitor that your agency carries.

Procedure: Cardiac Monitor

Clinical Indications:

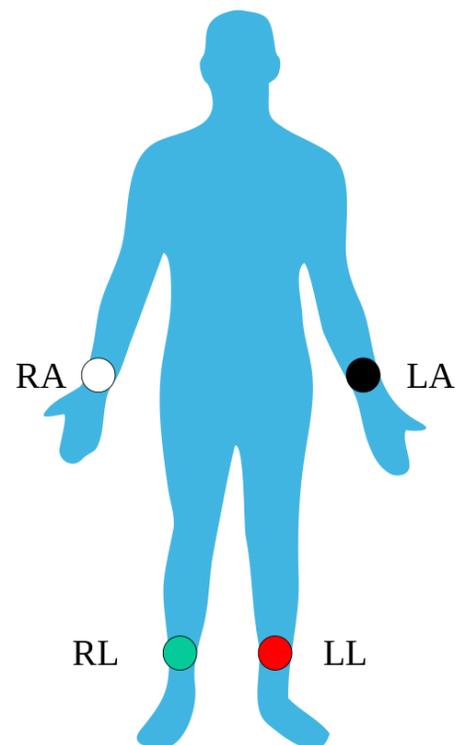
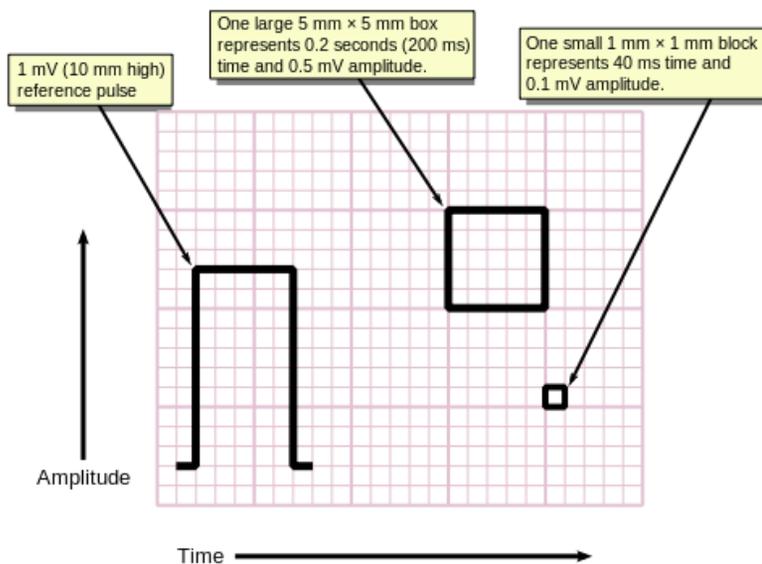
- All unconscious patients or syncopal patient's.
- Patient's with chest pain or dyspnea.
- Patient's with abnormal vital signs.
- Other reasons as indicated by the provider.

Procedure:

1. Explain the procedure to the patient.
2. Skin may need to be dried, cleaned or hair may need to be shaved to ensure the electrodes will adhere.
3. Attach the electrodes to the monitoring leads.
4. Electrodes are placed distally on limbs.
 - LA (black) and RA (white) are placed proximally on the arms.
 - LL (red) and RL (green) are placed proximally on the legs.
5. If the strip shows any artifact, verify that all electrodes are firmly applied to the skin and the monitor cable is plugged in correctly.

Skills Maintenance Suggestions:

- Practice reading ECG rhythms on a regular basis.



Procedure: Vagal Maneuvers

Clinical Indications:

- Narrow complex tachycardia.

Procedure:

1. Explain the procedure to the patient. Patient should have continuous EKG monitoring and IV access.
2. Instruct the patient to inhale and hold their breath and bear down as if to have a bowel movement and hold this position for 20-30 seconds or blow forcefully through a straw for as long as possible.
3. Monitor rhythm continuously.
4. Stop maneuver if:
 - Patient becomes confused.
 - HR drops below 100 BPM.
 - Asystole occurs.
5. Document any changes noted.

Pearls:

- Vagal maneuvers shall not delay in synchronized cardioversion when needed.

Skills Maintenance Suggestions:

- Review protocols for Tachycardia with a Pulse, Adult and Pediatric (C-8 and C-9).

Procedure: Peripheral IV

Clinical Indications:

- Patient who needs fluid resuscitation.
- Patient who needs medication.

Procedure:

1. Assure the scene is safe and don BSI.
2. Spike a bag of IV fluid, fill the drip chamber, and flush or “bleed” the tubing to remove and air bubbles by opening the roller clamp.
3. Tear a piece of tape or have Tegaderm available.
4. Apply the constricting band above the intended IV site.
5. Palpate a suitable vein.
6. Clean the area using aseptic technique. Use an alcohol pad to cleanse in a circular motion, from the inside out. Use a second alcohol pad to wipe straight down the center.
7. Choose the appropriate sized catheter and examine it for any imperfections.
8. Insert the catheter at a approximately 45° angle with the bevel up while applying distal traction with the other hand.
9. Observe for a “flash” as blood enters the catheter.
10. Occlude the catheter to prevent blood leaking while removing the stylet.
11. Immediately dispose of all sharps in the proper container.
12. Attach the prepared IV line or IV lock.
13. Remove the constricting band.
14. Open the IV line or flush the lock to ensure fluid is flowing and the IV is patent. Observe for swelling or infiltration around the IV site.
15. Secure the catheter with tape or Tegaderm.
16. Secure the IV tubing/lock and monitor patient.

Skills Maintenance Suggestions:

- Practice and review steps for initiating IV.

Pearls:

- You should start distally and work your way up the patient’s extremity when starting an IV.

Procedure: IO Infusion, Adult

Clinical Indications:

- Patient who needs infusion therapy or medication administration urgently.
- Unable to obtain peripheral IV and patient has an altered mental status (GCS of 8 or less), respiratory compromise, hemodynamically unstable (BP <90mmHg), or in cardiopulmonary arrest.

Contraindications:

- Fracture of the tibia, femur, or humerus.
- Previous orthopedic procedure (knee or shoulder replacement) or IO within 24 hours.
- Infection or burn.
- Inability to locate landmark due to:
 - Significant edema
 - Excessive tissue

Procedure:

1. Assure the scene is safe and don BSI.
2. Identify an appropriate insertion site.
3. Cleanse the skin using aseptic technique.
4. Determine the appropriate needle length.
5. Perform IO procedure based on manufacturer's recommendations.
6. Attach the syringe and extension set to the IO needle. Pull back on the syringe to aspirate blood or marrow. Note that you may not get any return.
7. For a conscious patient, administer 20-40mg of LIDOCAINE 2% over 30-45 seconds, wait 20-60 seconds then flush with normal saline.
8. Connect the administration set and adjust the flow rate.
9. Secure the needle with tape and bulky dressings.

Skills Maintenance Suggestions:

- Practice and review steps for initiating an IO.
- Understand the possible complications of an IO.
- Review manufacturers directions for the IO device your agency carries.

Pearls:

- Fluid does not flow as rapidly through an IO and a infuser device needs to be utilized.

Procedure: IO Infusion, Pediatric

Clinical Indications:

- Pediatric patient who needs infusion therapy or medication administration urgently.
- Unable to obtain peripheral IV and patient has an altered mental status (GCS of 8 or less), respiratory compromise, hemodynamically unstable (BP <90mmHg), or in cardiopulmonary arrest.

Contraindications:

- Fracture of the tibia, femur, or humerus.
- Previous orthopedic procedure (knee or shoulder replacement) or IO within 24 hours
- Infection or burn.
- Inability to locate landmark due to:
 - Significant edema
 - Excessive tissue

Procedure:

1. Assure the scene is safe and don BSI.
2. Identify an appropriate insertion site (distal or proximal tibia).
3. Cleanse the skin using aseptic technique.
4. Determine the appropriate needle length for a pediatric patient.
5. Perform IO procedure based on manufacturer's recommendations.
6. Attach the syringe and extension set to the IO needle. Pull back on the syringe to aspirate blood or marrow. Note that you may not get any return.
7. For a conscious pediatric patient, administer 0.5mg/kg of LIDOCAINE 2% over 30-45 seconds, wait 20-60 seconds then flush with normal saline.
8. Connect the administration set and adjust the flow rate.
9. Secure the needle with tape and bulky dressings.

Skills Maintenance Suggestions:

- Practice and review steps for initiating an IO.
- Understand the possible complications of an IO.
- Review manufacturers directions for the IO device your agency carries.

Pearls:

- Fluid does not flow as rapidly through an IO and a infuser device needs to be utilized.

Procedure: Intraosseous Lidocaine



Use only 2% concentration Intravenous Lidocaine that is preservative free and does not contain epinephrine

Recommended anesthetic for adult patients responsive to pain from IO fluid infusion:

- Observe recommended cautions/contraindications to using 2% preservative and epinephrine free lidocaine (intravenous lidocaine)
- Prepare 40mg dose of lidocaine dose for injection by drawing up 2ml of 2% solution in the syringe
- Administer through EZ-Connect extension set or closest tubing port
- *Note that the priming volume of the EZ-Connect is approximately 1.0mL*
- Slowly infuse 40mg lidocaine IO over 2 minutes then flush tubing with 1-2 ml saline
- Allow lidocaine to dwell in IO space 1 minute
- Flush with 5 to 10mL of normal saline
- Prepare 20mg dose of lidocaine by drawing up 1ml in syringe
- Slowly administer the additional 20mg of lidocaine IO over 1 minute followed by a 1-2 ml saline flush
- Allow lidocaine to dwell in the IO space for 60 seconds then infuse IV fluids
- Consider systemic pain control for patients not responding to IO lidocaine

Recommended anesthetic for infant/child responsive to pain:

- Observe recommended cautions/contraindications to using 2% preservative and epinephrine free lidocaine (intravenous lidocaine)
- Use Broselow Tape or Pedi-Wheel to estimate patient weight
- Prepare initial dose of 0.5mg/kg, not to exceed 40mg by drawing up the appropriate amount in a syringe. 1ml = 20mg
- Administer through EZ-Connect extension set or closest tubing port
- *Note that the priming volume of the EZ-Connect is approximately 1.0mL*
- For small doses of lidocaine, consider administering by carefully attaching syringe directly to needle hub (prime EZ-Connect with normal saline)
- Slowly infuse lidocaine over 2 minutes followed by 1-2ml tubing flush with normal saline
- Allow lidocaine to dwell in IO space 1 minute
- Flush with 2-5 mL of normal saline
- Prepare and administer subsequent lidocaine 0.25ml/Kg IO over 1 minute followed by 1-2ml tubing flush with normal saline or begin fluid infusion
- Consider systemic pain control for patients not responding to IO lidocaine

Skills Maintenance Suggestions;

- Practice complete drug dosage calculations and IO drug administration procedure on appropriate simulated sites on a periodic basis.

Procedure: External Jugular IV

Clinical Indications:

- Patient who needs fluid therapy.
- Patient who needs medication.
- Unable to initiate IV in a peripheral vein.

Procedure:

1. Assure the scene is safe and don BSI.
2. Spike a bag of IV fluid, fill the drip chamber and flush or “bleed” the tubing to remove and air bubbles by opening the roller clamp.
3. Tear a piece of tape or have Tegaderm available.
4. Apply the constricting band above the intended IV site.
5. Place the patient in a supine position, turn the patient's head to the side opposite the intended venipuncture site.
6. Locate and palpate the external jugular vein.
7. Cleanse the site.
8. Align the catheter in the direction of the vein, with the point aimed toward the shoulder.
9. Make the puncture midway between the angle of the jaw and the midclavicular line.
10. Observe for a “flash” as blood enters the catheter.
11. Occlude the catheter to prevent blood leaking while removing the stylet.
12. Immediately dispose of all sharps in the proper container.
13. Attach the prepared IV line or IV lock.
14. Open the IV line or flush the lock to ensure fluid is flowing and the IV is patent. Observe for swelling or infiltration around the IV site.
15. Secure the catheter with tape or Tegaderm.
16. Secure the IV tubing/lock and monitor patient.

Skills Maintenance Suggestions:

- Practice and review steps for initiating an external jugular IV.

Procedure: Cooling Measures

Clinical Indications:

- Patients suffering from heat illness.

Procedure:

Monitor cardiac rhythm, vital signs, temperature, and end-tidal carbon dioxide.

Heat Cramps

1. Remove the patient to a cool environment.
2. If the patient is not nauseated, encourage to drink a diluted sports drink.
3. If patient is nauseated (and if it's within your scope of practice) administer normal saline via IV.

Heat Exhaustion

1. Remove the patient to a cool environment.
2. Spray, sponge, or drip the patient with tepid water and fan gently.
4. Oral hydration with sports drinks and water may be appropriate.

Heat Stroke

1. Remove the patient to a cool environment.
2. Remove the patient's clothing.
3. Spray the patient with tepid water and fan constantly.
4. Apply ice packs to the patient's neck, groin, and axillae.
5. If within your scope of practice – start an IV line, give normal saline.
6. Check blood sugar level.

Skills Maintenance Suggestions:

- Practice and review steps for initiating cooling methods.

Procedure: Targeted Temperature Management

Clinical Indications:

- Return of spontaneous circulation (ROSC) patient that remains unconscious.

Contraindication:

- Conscious patient.
- Pregnant patient.
- Pre-existing hypothermia.

Procedure:

1. Assure the scene is safe and don BSI.
2. Secure and maintain airway, administer oxygen and provide ventilatory assistance as required. If the patient is intubated, ensure adequate ventilation to maintain waveform capnography between 35-45mmHg
3. Initiate cardiac monitoring, document a rhythm strip, and acquire and interpret a 12-lead.
4. Cool the patient externally, by applying ice packs to the neck, groin, and axilla.
5. Initiate IV and infuse chilled Normal Saline.
6. Patient should be cooled to a target temperature of 90°-96° F.

Skills Maintenance Suggestions:

- Practice and review steps for Targeted Temperature Management

Pearls:

- **External cooling is preferred over a rapid infusion of chilled saline.**